

£3

ALL FORMATS

Wireframe

LIFTING THE LID ON VIDEO GAMES

User Research

Game design's best-kept secret?

Links to the past

The art of making great Zelda-likes

Rage 2

Playtesting the neon apocalypse



Issue 9 £3
wfmag.cc



Sea Change

Rhianna Pratchett rewrites the adventure game in Lost Words

Subscribe today

12 weeks for £12*



Visit: wfmag.cc/12weeks to order

* UK Price. 6 issue introductory offer

The future of games: subscription-based?

How many subscription services are you shelling out for each month? Spotify and Apple Music provide the tunes while we work; perhaps a bit of TV drama on the lunch break via Now TV or ITV Player; then back home to watch a movie in the evening, courtesy of Netflix, Amazon Video, Hulu...

The way we consume entertainment has shifted dramatically in the last several years, and it's becoming increasingly the case that the average person doesn't buy physical boxsets or CDs anymore. Why bother when you have it all at the click of a button?

Now video games are on the cusp of catching up with the subscription model hype. Sign up to services like Xbox Game Pass, PlayStation Now, and Discord Nitro, and you'll receive hundreds of games each month, including brand new titles that you might otherwise slap good money down for. For the consumer, this rise of the video game subscription could potentially be a huge boon for your wallet.

But have you ever stopped to wonder how subscription models affect the creators of the content you consume? How are artists even paid anymore? The subscription model can be a tricky beast for those providing the goods, depending on how the gatekeepers – the people who own the platforms – decide that the money should be doled out. And in most cases, the subscription model is a scary prospect for those creators who perhaps don't have the background to negotiate a decent price for their work.

This is why it's incredibly important that game studios, alongside these gatekeepers, should be trying to get ahead of the inevitable, and begin pondering now over what a possible Netflix or Spotify-dominated games industry would look like.

Let's get one fact out of the way first: the Spotify model, whereby artists are paid per listen rather than



MIKE ROSE

Mike Rose is the founder of No More Robots, the publishing label behind titles like *Descenders*, *Not Tonight*, *Hypnospace Outlaw*, and *Family Man*.

upfront, would be devastating for video games. Triple-A titles still dominate the market in terms of raw sales and player numbers, so while the largest publishers may prosper in a Spotify world, all your favourite indie and mid-tier developers would no doubt flounder.

Put it this way: if Spotify is currently paying artists £1 per 20,000 listens, what sort of terrible deal are game developers working from their bedroom going to get?

And before you think to yourself, "This would never happen!" – it already is. In the last six months, I've been approached by more than a dozen upcoming game subscription services who plan to pay developers "based on the number of minutes your game has been played" – this is a direct quote from one of the brochures. We're not talking small-fry companies either, as a couple of the outfits that have approached me are huge names in retail.

So what about the Netflix model, where the platform pays the developer a chunk of money upfront? This is a more reasonable approach for creators, and we've already seen Microsoft implementing it with Xbox Game Pass.

But what happens in the future when you *have* to put your games on these platforms, otherwise barely anyone will ever play your game? Will every single developer have to negotiate a price for their game to appear on these services?

And why would a subscription service pay good money for a title from a new developer with no track record, when they can throw money at EA or Ubisoft in the hope of securing exclusivity for the latest in a long-running franchise?

The future of video games is subscription-based, I have no doubt about that. Now is the time to talk about how smaller and mid-sized studios fit into that future, otherwise we're going to lose a ton of great talent who leave for other careers, simply because they couldn't pay the bills. 🙄

#09



Contents



Attract mode

Interface

06. Lost Words

Rhianna Pratchett on adventure writing and the power of imagination

10. Hamsterdam

How *The Wire* inspired a brawler filled with angry rodents

12. Rage 2

We take a closer look at a febrile shooter sequel

16. Incoming

Body-popping grim reapers, martial arts, and Peter Molyneux

18. The perfect Zelda-like

The indie developers who've made their own twists on a classic formula

24. The Rainsdowne Players

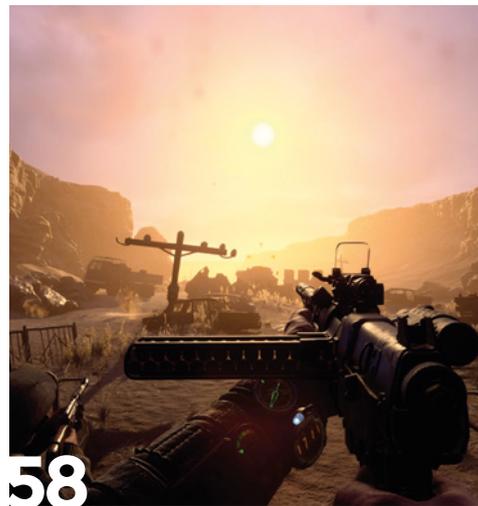
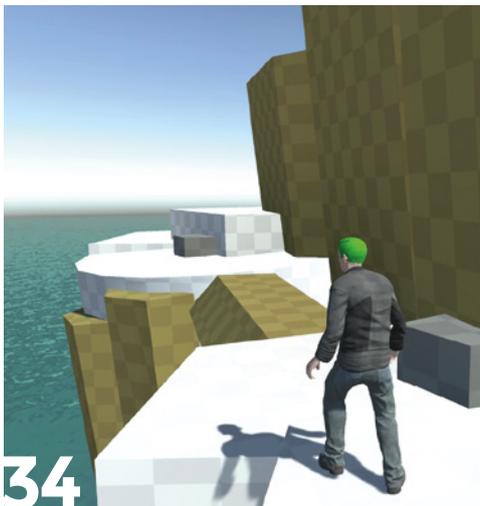
A solo dev's RPG about a tired theatre and its ornery audience

44. User Research

Why analysing player data is game design's best-kept secret

50. Ultimate Play The Game

A legendary studio from the ZX Spectrum era profiled



Toolbox

- 28. Design Principles**
The power of marketing – and a strong game title
- 30. CityCraft**
Understanding the hierarchies of villages, towns, and cities
- 32. Source Code**
Recreating the disintegrating shields from Space Invaders
- 34. Character building**
Import and animate a 3D character model in Unity

Rated

- 56. Degrees of Separation**
Come for the puzzles, stay for Chris Avellone's story
- 58. Metro Exodus**
Underground, overground, scavenging free
- 63. ToeJam & Earl 4**
A comic book roguelike returns from the nineties
- 64. Far Cry New Dawn**
The best bits of Far Cry, distilled into one solid shooter

WELCOME

As you'll see on page 65, we've been playing *Tetris 99* quite a lot this month. It's a barebones yet unnervingly addictive multiplayer take on the falling-block classic.

Keen to sharpen my skills, I started looking at how other, better players (which is, I'll admit, all of them) approached the game on YouTube and Twitch – and in the process, I came to realise that *Tetris 99*'s 2D action is as gripping to watch as any other esports game you could mention.

For proof, look no further than Ray Narvaez Jr's recent game, which he also shared as a clip on Twitter (wfmag.cc/tetris99). In the space of a couple of minutes, Narvaez Jr somehow manages to avoid death by falling junk blocks at least a dozen times. No matter how cluttered the screen becomes, he keeps his cool and carries on, carefully slotting the tetriminoes into the handful of spaces he has left.

In the video's dying moments, defeat seems inescapable as blocks continue to flood the play area. But somehow, Narvaez Jr snatches a first-place victory in the last fraction of a second – a turn of events so improbable that even he looks stunned.

Suspense, jubilation, a pulse-quickenning soundtrack: it is, quite simply, an underdog drama to rival *Rocky*.

Ryan Lambie
Editor



Live journal

Rhianna Pratchett on the power of imagination in *Lost Words: Beyond the Page*

'U sing the power of words' takes on a far more literal – there's another pun – meaning in *Lost Words: Beyond the Page*. Essentially a puzzle-platformer, the game sees its young protagonist enter into the fantasy world she creates in her diary; there she navigates its hazards and hurdles using the power of the words and doodles she's composed in said journal.

What that amounts to is *actually* using those words and doodles – for example, you might use the word 'extinguish' to put out fires in your path, or at another point 'raise' would lift platforms so you can progress. It's a smart way of mixing narrative with actual mechanics, and the team at Sketchbook Games has been hard at work for around four years now perfecting the blend.

To find out more about this unique marriage of procedure and prose, we spoke to Mark Backler, founder of Sketchbook and creative director on *Lost Words*, and Rhianna Pratchett, writer on the game.

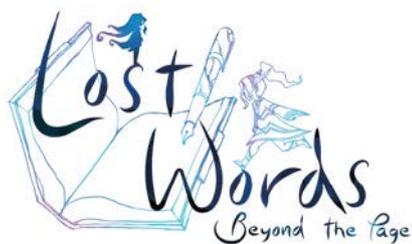
What was it that drew you to the project, Rhianna? What was it that tempted you in?

Rhianna: It was a couple of things, really – the unusual way narrative was being used in the game, how narrative was being used as mechanics; as level design. It seemed very exciting and challenging to me. Throughout the development process we've found out just how challenging it *is* to use narrative as mechanics – it's been one of the big challenges of the project. But also its potential to tell stories about emotional journeys and represent those journeys, not only through mechanics, but also through environmental storytelling, which we do a lot of in the game, linking level design to the storytelling. There's also being able to explore through the journal of a young girl – I found that very appealing. The juxtaposition between her journal and the fantasy world of her creation; it felt there was a lot of meat there, a lot of scope for a writer to play around with.

And how has the experience been, working on a game so intimately tied to writing?

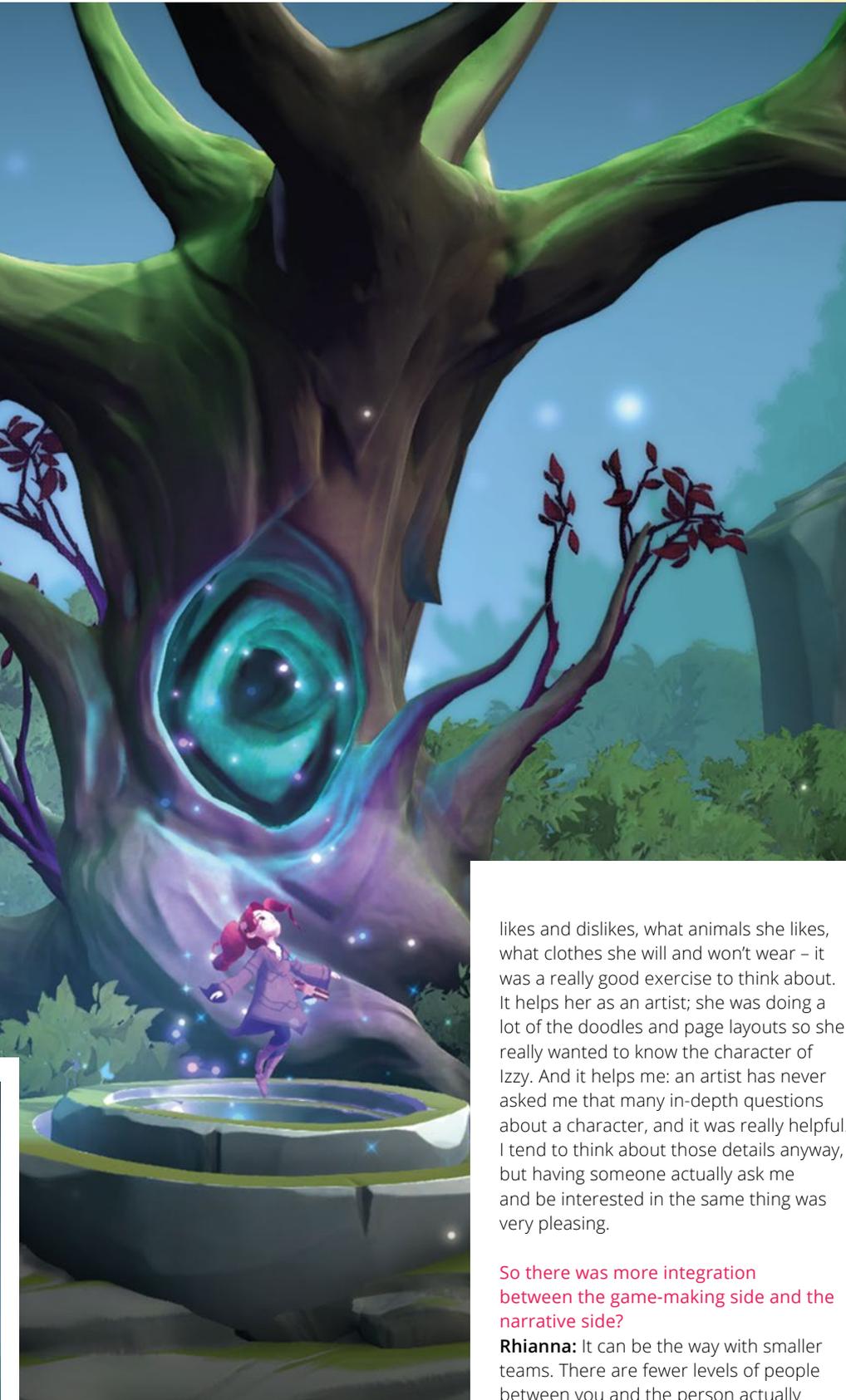
Rhianna: It's been very positive, working with Mark and the team at Sketchbook. It's been challenging – in a good way – finding that sweet spot between what is making narrative sense and what's going to make mechanical sense with a puzzle. That was a bit of a head-scratcher at times; I think we all underestimated how difficult that could be. In the original demos we had a few ideas strung together that weren't really a narrative, but you could see how the mechanics were working. Trying to create a narrative out of them was quite hard, but I think we've done it pretty well.

I remember I had to do a long list of [the main character's] likes and dislikes for one of the artists, which was actually really useful for me as a writer – what food she



✓ The world of a young girl's journal comes to fantastical life.





“It’s been a great experience; to go from *Tomb Raider* to a smaller project like this has been refreshing”

putting it in the game. It’s easier to communicate within smaller teams – Mark and I have been on Skype, talking for years, so it’s really easy for us to communicate, it’s easy to get that integration. It was a similar situation to the *Overlord* games – even though it was a bigger team, it was still much smaller than something like *Tomb Raider*, which had a lot of people between you and whoever puts your work in the game. In smaller teams you can actually talk to that person and kind of work out problems and solutions between you. That’s satisfying – it’s one of the great things about working with smaller teams; you can get this closeness between members, and problem-solving as a group, and I think there’s often more trust – because there has to be more trust. You’re a small team, you’re in it together, you do whatever you can. It’s been a great experience; to go from *Tomb Raider* to a smaller project like this has been refreshing in some ways.

likes and dislikes, what animals she likes, what clothes she will and won’t wear – it was a really good exercise to think about. It helps her as an artist; she was doing a lot of the doodles and page layouts so she really wanted to know the character of Izzy. And it helps me: an artist has never asked me that many in-depth questions about a character, and it was really helpful. I tend to think about those details anyway, but having someone actually ask me and be interested in the same thing was very pleasing.

So there was more integration between the game-making side and the narrative side?

Rhianna: It can be the way with smaller teams. There are fewer levels of people between you and the person actually

How much involvement have you had in the design of puzzles and the like? Or is it more hands-off than that?

Rhianna: There’s been bits along the way – it was more when I was writing scenarios ➔



▲ Rhianna Pratchett, in the wind, yesterday.



▲ Mark Backler, not standing out in the wind.

it would be 'Here is something you could maybe do', or 'Maybe you could use these words/this theme/this doodle'. It was more in the journal sections where I did that, because they were a bit more tied to the words and the page architecture, so I'd make these suggestions. As our narrative designers got more involved they would make suggestions as well, and I would give my feedback on that. So it started as me making a few suggestions, then, as the design team grew, they started taking over more of that and I gave feedback on it.

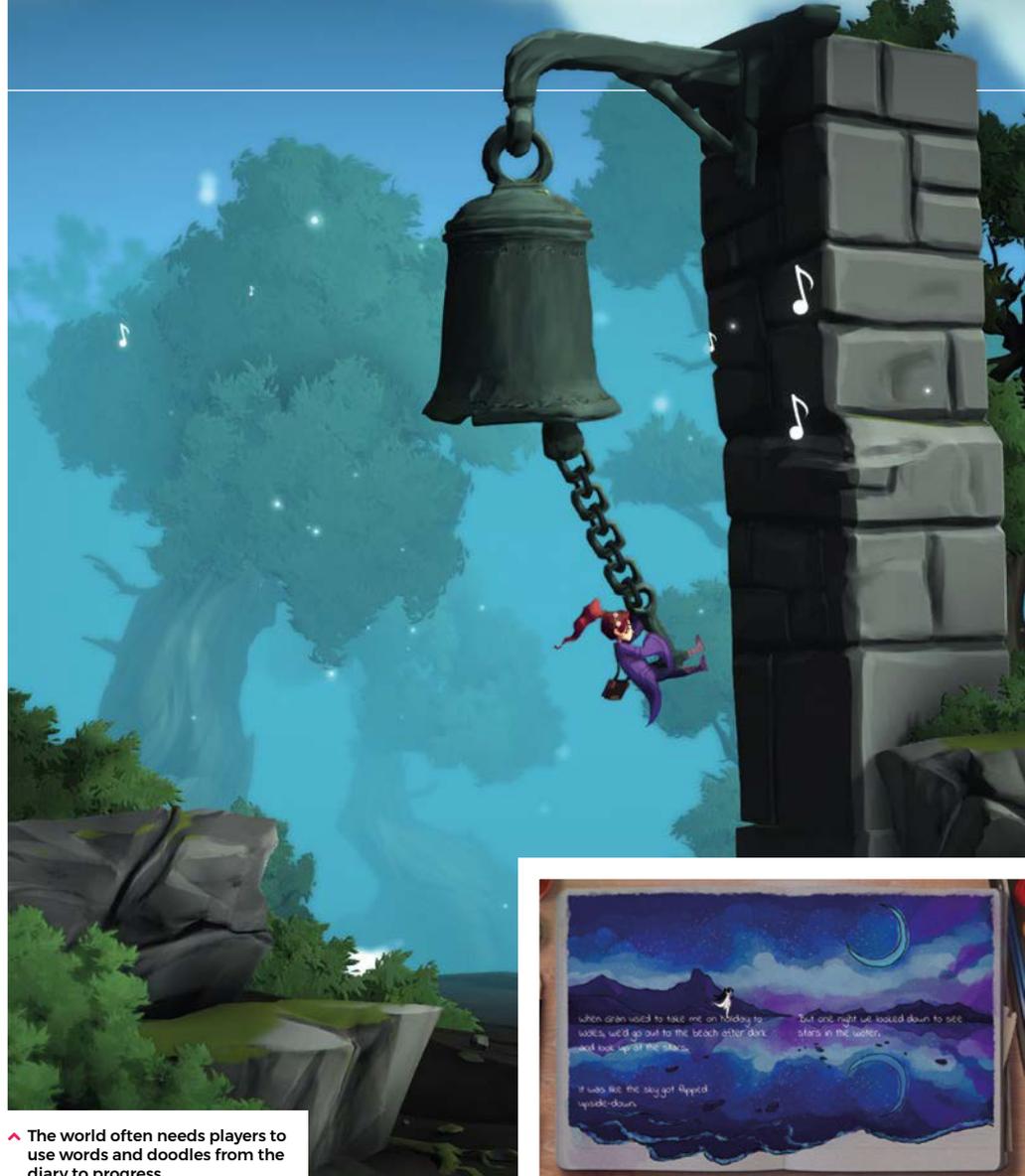
Mark: I think it's been a mix, yeah. We'd had some ideas to begin with and Rhi used some of those, then there were bits where she would make suggestions on different mechanics. One of her puzzles – growing an acorn from a watering can using two doodles together – has been a player favourite [when we've demoed the game].

Rhianna: That's probably my big design thing: doodle on doodle action. That's my design contribution.

Compared to your previous projects, this feels a little bit different – more fairy-tale-fantastical than *Overlord*, and a fair few steps away from the likes of *Tomb Raider*. How has this change in style been for you?

Rhianna: It's been very refreshing. I do like taking on different challenges. I've been a freelancer since I left *PC Zone* – that was, what, 2002? Since then I've worked in various genres of games, I've also worked in TV, film, and comics, and I really like to have that variety. Not just variety in mediums, but variety in genre within those mediums too. Having different styles of game to work on folds in very well with my particular brain chemistry.

I think I was maybe a little burnt out from working on two triple-A games back



▲ The world often needs players to use words and doodles from the diary to progress.

“There were times when it could have been a different outcome, but [getting funding] made a massive difference”

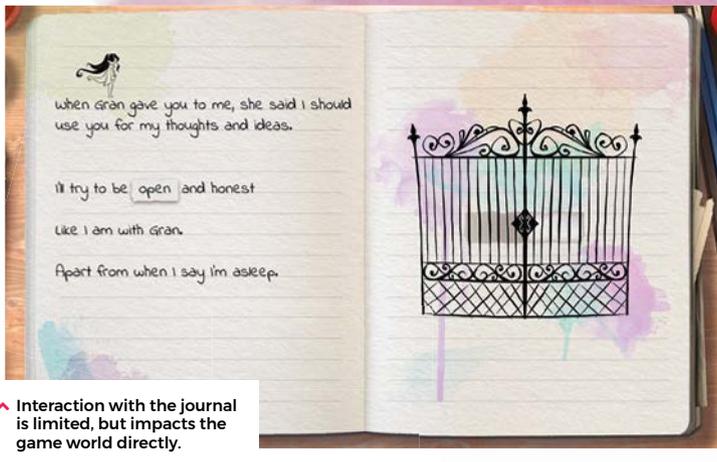


▲ Your traditional platforming is well represented.

to back, as I think a lot of developers have been burned out by the triple-A scene. *Tomb Raider* and *Rise of the Tomb Raider* were great projects to work on, but were obviously very hard. So working on something smaller... it's kind of a balm for the soul, to work with smaller teams I could have easier interaction with, and to take on some new challenges. That's what it's always about for me, finding those new challenges and telling different stories, and using game mechanics and level design to tell those stories; using things that are unique to games to create interesting journeys and experiences.

How's it been finding the balance between allowing players a bit of creativity in the 'writing' they produce, while at the same time pushing them forward through what is a fairly linear experience?

Mark: It is tricky, and it's one thing we wanted to be careful of with the trailer, to



Interaction with the journal is limited, but impacts the game world directly.



not big up the choices too much, because like you say it is mostly a linear experience, but with opportunities for players to flavour different bits of it. The name of the character and her fantasy world, and her look being the main points – then we've got some other choices throughout. But it is a tricky balance to find, really, especially with a small team where you can't have a big branching narrative like *Mass Effect* or *Detroit* or something has. But we've just been trying to make some smart choices on the decisions that we do have.

To be fair, linear shouldn't be seen as a dirty word.

Rhianna: A lot of the games I've worked on have been linear; I'm also someone who believes a good cutscene can be well worth your time... the *Tomb Raider* [games] were quite linear in their storytelling – *Overlord* not so much – but sometimes you want to take players on a journey and put them in the shoes of a particular character and show them their world. It's not necessarily about giving lots of choices, it's about taking them on a specific journey, which I think that's very much what we want to do with *Lost Words*.

There are plenty of logos for different funding organisations on the game's site – how did these grants and helping hands come about?

Mark: It was through applying to lots of things, really. I think that's why development has been so extended – making an initial demo and taking that to show to people, seeing if we could get different funding, then with that you

make the game better, then you're taking it different places, and it just went on and on and scaled up and up. Originally it was meant to be a year-and-a-half project, then it grew a bit – and when we got funding from a few different groups, we needed finishing funding, then we were at a point where it was good to look for a publisher. We found Modus Games; they funded the rest of development and have been really good to work with so far.

Would you recommend this path?

Mark: It was the only path that seemed to work. If you apply to a thing and you can get some money, then you can use that and take the game further, then get funding from other places, then I do say go for it, it's better than not doing the game at all. Ideally you want to be able to make a concept or prototype to begin with then take it to a publisher and have them fund it; otherwise it can be quite tricky to bring all the different funds together. Often they want different things – sometimes the requirements of one contradict the requirements of another, so we had to work closely and do lots of negotiating to make sure that everyone was on the same page. It's definitely simpler to go with fewer groups. But when we were that early along it was a completely different project, and it would have been different if we had just gone with a publisher straight away.

Would *Lost Words* have existed without the funding?

Mark: Probably not. There were times when it could have been a different outcome, but it made a massive difference really, we were able to take a small basic prototype on further. The Wellcome Trust and Creative England were the first groups to fund it, and that made a massive difference... I'd probably have carried on working on it in my spare time, but when we had some funding and that was running out, that was a critical time too. [If we'd run out of] funding it would have been very difficult – with all those people working on it, then for me to just finish it on my own would have been pretty much impossible. So if we didn't then get the later funds, like working with the UK Games Fund [and others], as well as claiming our video games tax relief... it all made a massive difference.

Finally: are you going to have a battle royale mode? We're suggesting it be titled *War of Words*.

Mark: Sounds... good? Can we have that one for free? We hadn't considered it, but maybe now you've suggested it, maybe we should. 🙄

Lost Words: Beyond the Page releases on PC and Xbox One in 2019



▲ Protagonist Pimm practices a version of kung fu passed down by his grandfather called – yes – Hamster-fu.

Hamsterdam

We find out how *The Wire* and *Batman* inspired Muse Games' cutesy brawler, *Hamsterdam*

Info

GENRE
Brawler

FORMAT
Android / iOS /
PC / Switch

DEVELOPER
Muse Games

PUBLISHER
Muse Games

RELEASE
Q2 2019

The upcoming beat-'em-up *Hamsterdam* traces its inspiration back to the gory brawls of *Street Fighter*, the killer choreography of eighties kung fu movies, and the feel-good family Pixar film, *Ratatouille*. It's a wacky combination that immediately captured players' attention, with New York-based developer Muse Games raising nearly double its Kickstarter goal last year. Also, you play as a hamster whose job is to clean up the mean streets of Hamsterdam. We like the pun.

Hamsterdam's campaign marked the latest in a series of successfully Kickstarted games by the team. Their previous titles, *Guns of Icarus Alliance*, and *Guns of Icarus Online*, were online first-person shooters where the steampunk theme dominated everything from the airships players pilot into battle to the weapons they use to mow down opponents. It was a design choice that didn't exactly allow for a bright colour palette – greys and browns dominated the screen, and everything felt imposing and bulky.

In other words, they were the polar opposite of *Hamsterdam's* cute, brightly coloured kung fu rodents.

"*Hamsterdam* is part a passion project and part because we were staring at steampunk airships for too long," Tsao tells us. Still, breaking free from a style Muse Games had maintained for the better part of a decade proved difficult. The team's 3D artist, Ava Sawicka, explains how the team's first few passes at concept art for *Hamsterdam* looked vastly different from the vibrantly cute design they eventually settled on.

"I wouldn't say it was similar to *Guns of Icarus*, but it had this sort of grungy theme," Sawicka says. "It kind of evolved and departed into its own style... to be more inviting to players. Now it looks friendly and happy and fun instead of like a really serious hamster game. The grunge didn't fit the character, so the style evolved to fit the character."

Creating a protagonist with adorably chubby cheeks wasn't an excuse for any narrative leniency, Sawicka adds. As the hamster hero, Pimm, players use martial arts to tackle a seedy mob boss whose addictive tonic leaves citizens desperate for more – when they're not hopelessly inebriated. "It's a serious story with a very playful take on it," says Sawicka.

The game's inception came from the team's mutual love of beat-'em-ups. Even during development, *Hamsterdam's* artists and animators routinely squeezed in a few matches of *Street Fighter* on their lunch breaks – solely for inspiration, of course. Then came the idea to bring the genre to life through gestural controls,

▼ Each gang member's guard requires specific gestural inputs to break, and failing to both attack and evade while staying in rhythm can prove deadly.





▲ Brawling Vermin Gang degenerates in the street may be fun, but boss battles break up the action as Pimm battles his way through Hamsterdam.

replacing the frantic button combos of classic arcade titles with more modern touch controls.

The decision to fill *Hamsterdam* with adorable brawling hamsters, and add a cheerfully bright colour scheme, wasn't made straight away, however. "Our first reference was actually more like *Fist of the North Star* or *Dynasty Warriors* and *Batman*," Tsao says. "Pretty early on while we were jamming, we realised that's been so done. So we wanted to turn everything on its head; let's find some really unassuming character that is non-human and see if we can animate martial arts and make this whole thing work."

The gritty drama of *The Wire*, particularly its *Hamsterdam* episode, also galvanised the team, so when someone off-handedly mentioned that male hamsters fight ferociously when cornered, the gears clicked into place, creating the perfect pun in the process.

The launch of the Nintendo Switch was the last piece of the puzzle. Its release encouraged the team to think beyond the gestural controls of mobile devices and develop a combat experience more suited to the Switch's combination of Joy-Con and touchscreen. "I think, mechanically, that's sort of the vision we had for the core of the brawler," Tsao says. "We looked at what would natively feel best for touch controls. So we ended up deciding not to do virtual D-pads or virtual buttons and tried to make things as native to the input scheme as possible. For the most part, it's really just about taps, swipes, and variations of those, and we tried to come up with interesting combinations that people could react to. So it's not just purely mashing; there are a lot of reactive rhythm and timing components to the game."

This ambition to grow beyond simple button-mashing fuelled much of the team's experimentation with rhythm mechanics in

Hamsterdam's combat. In particular, Tsao differentiated between typical combat (active gameplay) and rhythm game mechanics (reactive gameplay). By relying on both in *Hamsterdam's* fights, the team intertwined frenetic, fast-paced action with a more skill-based approach. And since damage increases correlate with how well the player stays in flow, taking down enemies through brute-force tactics is not only discouraged, but it also makes for a genuinely difficult experience if the game's demo is any indicator.

Muse Games has *Hamsterdam's* development on track for a quarter two release this year, with ports planned

for mobile, PC, PlayStation Vita, and Nintendo Switch. So far, fans of Muse Games' earlier titles and *Hamsterdam's* Kickstarter backers have all responded positively – both to its friendly art style, and the darker, tougher edge that lurks beneath. "Everybody really enjoys how cute all the characters are," Sawicka says. "It's very colourful and inviting – even when the environment, when you look closer, isn't so much." 🐹

"Our first reference was more *Fist of the North Star* or *Dynasty Warriors*"



▲ Acing a series of quick-fire gestural inputs can lay an enemy flat, but only after Pimm's KO meter fills up from successfully landing regular attacks.

FORGOTTEN FAMILIARITY

While Muse Games has been knee-deep in development for its gritty steampunk FPS, *Guns of Icarus*, for the better part of the last decade, *Hamsterdam* isn't the studio's first foray into a softer and more colourful aesthetic. Its 2011 platformer, *Creavures*, another successfully Kickstarted project, stars five miniature creatures traveling along a forest floor so bioluminescent it looks more like a black light rave. Not that this previous experience helped much; team lead Howard Tsao said the studio had been consumed by its online shooter for so long that *Hamsterdam's* development felt more like wading into new waters than returning to familiar roots.



Some of the enemies you face off against are impressively menacing.

Rage 2

Walker walks the wasteland while Willits wangles weapons

Info

GENRE
First-person shooter

FORMAT
PC / PS4 / XBO

DEVELOPER
Avalanche Studios /
id Software

PUBLISHER
Bethesda Softworks

RELEASE
14 May 2019

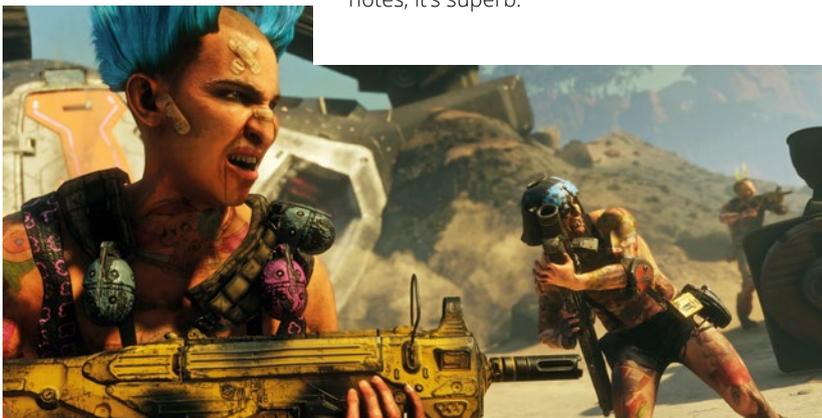
For all its pink-punk-hued dabbling with madness, its courting of Andrew W.K., its very *Internet* sense of humour, I'm a mite underwhelmed by *Rage 2*. Playing a game, as we all know, is a vastly different experience to watching a few trailers, mouth agape, and listening to the promises of a couple of well-respected studios working on it. I didn't expect it to be as thrilling as we've all been told it will be, but it still comes as a surprise just how docile *Rage 2* feels so far.

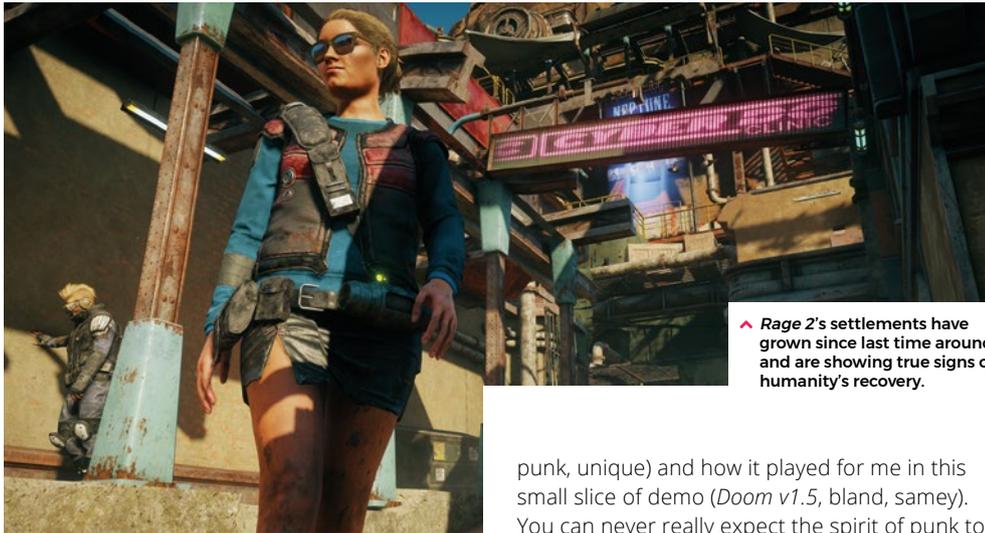
Let's not get ahead of ourselves, though: Avalanche, in partnership with id Software, has put together a game that looks wonderful and – at times – plays with the unrestrained fervour of *Doom 2016*'s finest baddie-blasting. Heading into any one of *Rage 2*'s combat situations presents the player with a dilemma: just how do you want to dispose of these naughty future-folks this time around? When it hits the high notes, it's superb.

It's not smart, but it is satisfying – banging and thwacking enemies around with your selection of firearms, but also mixing in a few different superpowers (they have a name, but they're superpowers so let's stick with that) allowing a force push, a shield, a jumping ground smash, that sort of thing. It is, from what I played, a system that will serve those of us who like to muck about with our shooters well, and a live demo from id's Tim Willits proved there's more than a few ways to tackle the same situation using *Rage 2*'s shooting-and-Jedi trick combinations.

So far, so *Doom*. What does Avalanche seem to have brought to the table? Well, the studio – which is in the lead development role, it should be pointed out, with id providing support – has added in a dash of its open-world expertise, sprinkling it over *Rage 2*'s post-apocalyptic wasteland and ending up with... a post-apocalyptic wasteland with a bit more colour? I don't know, what I saw really didn't blow me away in any real sense – there is more colour than in the first game, though it's not hard to use anything other than brown. But the general feeling of the world as you clumsily explore it still came across as sterile and – fittingly, though not in the good way – as lifeless as in 2011's original.

I'm open to being wrong here – dare I say, I'd like to be wrong here – but *Rage 2* doesn't feel like an open-world game. It feels like a series of corridors and arenas ripe for some experimentation in your assaults, joined together by interminable driving that I only figured out you could skip (thanks, fast travel!) 90% of the way through my hands-on.





▲ *Rage 2's* settlements have grown since last time around, and are showing true signs of humanity's recovery.

It's not that the driving is specifically bad, it's functional and brings to mind the desert driving of Avalanche's *Mad Max*. But it's not free, or particularly open, or really much fun. At least not in this short play.

There's a lot of pretty on show throughout *Rage 2*, though, and the vibrant communities of this post-society are present and accounted for. The player character, Walker, is monologued at by a bunch of quest-givers, and the inner machinations and endless politicking of this new world order plays out very much like our modern-day version: money matters, you do not, shooting people gets attention. I'm not going to hold out much hope for a bewildering and beguiling storyline to back all of this up, but the world-building is definitely something to keep an eye on. As well as those deliciously vibrant hues...

I'm trying to find the major positives here, I really am, but there's a significant schism between how *Rage 2* presents itself (manic,

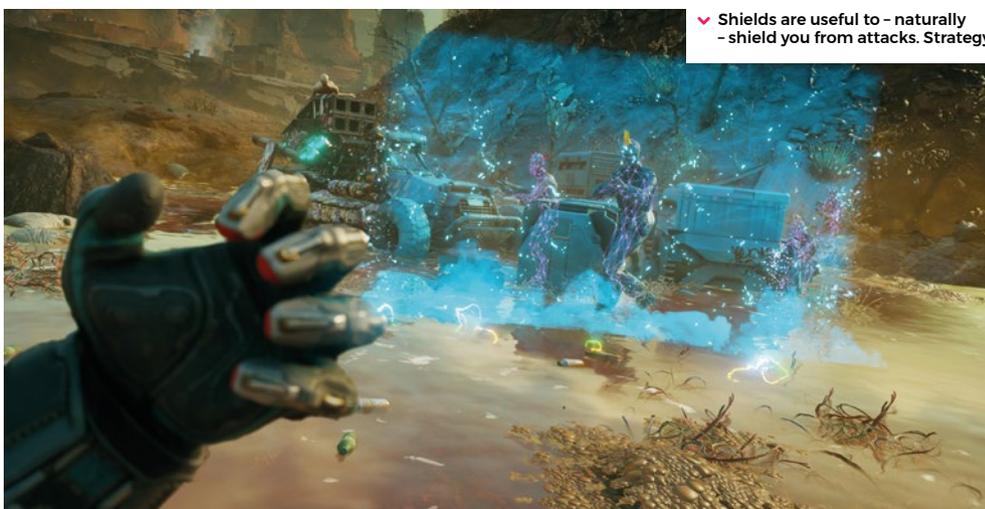
punk, unique) and how it played for me in this small slice of demo (*Doom v1.5*, bland, samey). You can never really expect the spirit of punk to be prevalent in a multimillion-pound production from one giant gaming publisher and two large game development studios. There's little room for true spurts of uniqueness here.

No, projects of this size are always going to factor in some level of design by committee, and their marketing budget is often going to be smashed across the hull of the good ship *Misthpoint*. That's not what's disappointing me so far about *Rage 2*; see, even with the promotional bluster, my expectations were still quite realistic – but going (admittedly briefly) hands-on with the game has left me, honestly, a bit bored.

Your obligatory disclaimer goes here about this being a pre-beta version of the game, and how an hour or so spent playing a massive open-world title isn't truly representative of the whole package.

But that doesn't change the fact that this game felt, mere months before its release, like it would bring about as much interest to the table than even the original *Rage* did. And that says a lot. ☹

“The vibrant communities of this post-society are present and accounted for”



▼ Shields are useful to – naturally – shield you from attacks. Strategy!



▲ Characters range from 'a bit nicer and in need of a wash', to 'terrible bastard and in need of a wash'.

IT LIVES (AGAIN)

Rage 2's journey to being something tangible has been full of ups and downs, with the current game not finding its feet until Avalanche Studios was asked to take the helm by id Software. A sequel purely by id was in the works, but – following John Carmack's departure from the studio – ZeniMax put a hold on the project around 2014 in order to focus the team on *Doom*.

Avalanche was approached some time later and asked to run with the project – a huge vote of confidence from both id and Bethesda. The *Rage 2* we see now is one with a lot of the Swedish team's fingerprints smeared across it, not least of which because it uses the studio's proprietary Apex Engine. *Rage 2* is dead; long live *Rage 2*.

Headlines

from the virtual front



01. Super Nintendo Chalmers

Nintendo's deal with Universal to create Super Nintendo World – that's a Nintendo theme park, fact fans – is going ahead as planned since its groundbreaking ceremony in 2017.

Shigeru Miyamoto commented on the progress of SNESworld (not its actual name), saying: "Every effort is being made to advance preparations, and Universal Studios Japan is a top priority, as is making sure we will be ready by the start of the Tokyo Olympics in 2020.

"We are in frequent contact with Universal Parks and Resorts," Mario's dad continued, "working closely together to develop the theme park from a creative standpoint... Osaka is close to Kyoto, so we check on the progress of the work frequently. I think it will be really worth the wait."

The plan is to expand to Universal's Orlando and Hollywood resorts. We've received no word as of yet if Virtual Boy Town will be coming to Bognor Regis for 2025.



02. Group hug

A new group has been set up, POC in Play, which aims to address the lack of representation for people of colour across the games industry in the UK.

Chella Ramanan, co-founder of the organisation, explained the need for it to The Guardian: "The newest figures are from a 2015 Creative Skillset report and it shows that just 4% of the UK games industry is from ethnic minority groups. If you compare that with film and TV in the UK, it's 30% in London and 15% nationally. There's a big disparity between games and other creative sectors."

The first meet-up of the group is to be held on March 22, so if you're reading us early there's still time to attend the gathering at ustwo Games' studio in London: wfmag.cc/Zynzxv.



03. Reggie retiring

One of gaming's greatest people, Reggie 'my body is ready' Fils-Amié, has announced he is stepping down from his role as Nintendo of America's president. Honestly, he did a short video announcing the retirement and there wasn't a dry eye in the house.

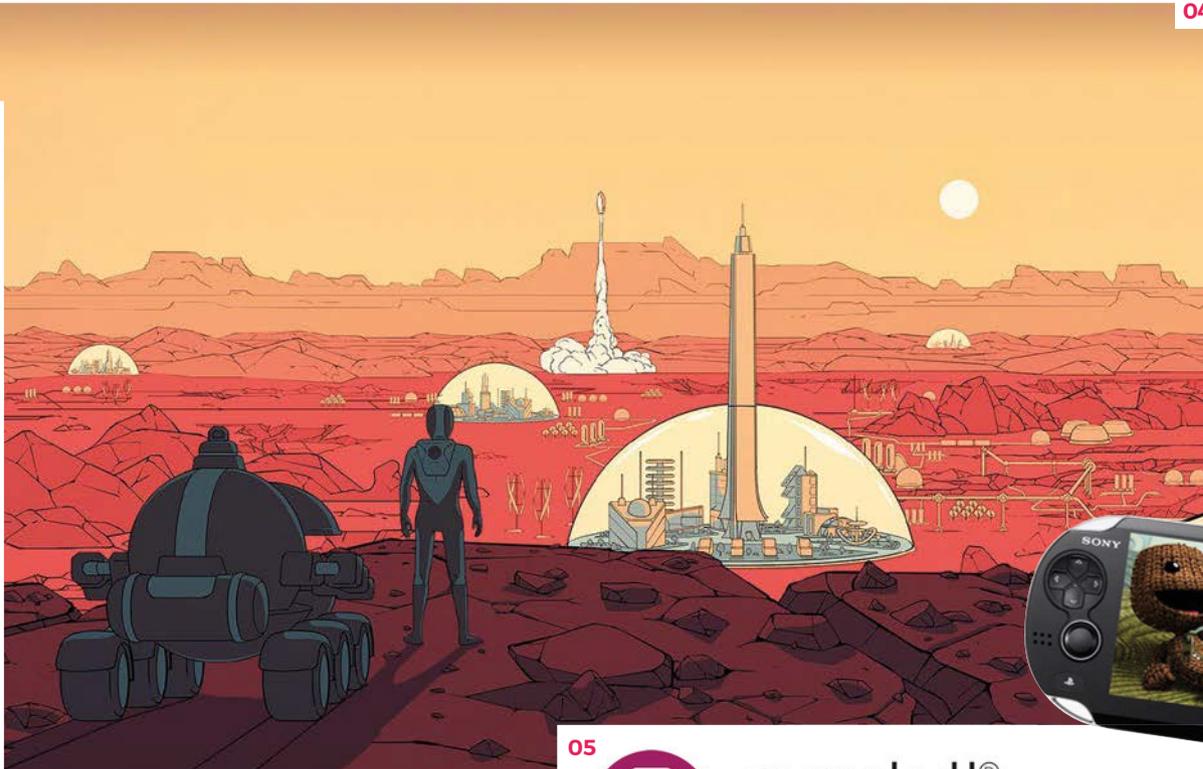
The American son of Haitian immigrants will make way for new Nintendo chief (we're not making this up) Doug Bowser on April 15. Fils-Amié's post-Ninty plans include spending time with his family and friends, being fondly remembered, and making sure he always responds to the name 'Regginator'. Bowser's plans, meanwhile, won't involve kidnapping princesses and being underrated on *Mario Kart*.



Crackdown 3 (Xbox One, G) £26.95 from 25+ shops Also 4 stars 9 product reviews Time to step up your boom and sit Microsoft Xbox One Adventure

Crackdown battles Fallout 76 for 'quickest price drop' record.

Sony also stops Vita/PS3 games for PS Plus; few mind.



04

04. PC gone mad

A couple of big-ish steps for the Xbox (and PC) have come about from a couple of sources, with publisher Paradox Interactive announcing its game *Surviving Mars* will see unrestricted mods allowed on the Xbox One version, uploaded and available directly. This marks the first time modding has been allowed on the format without the usual pre-approval process, or 'the first direct pipeline', as Paradox puts it, for Xbox mods.

Elsewhere, Microsoft has been making slow, quiet progress towards making everything Xbox work on the PC – so sort of a different direction, bringing console features to the humble (boastful) personal computer. Updates are bringing more and more cross-platform system services and APIs originally built for the Xbox to the PC. One day, we will all be PCs. Apparently.

05



numskull®
G A M E S

05. Rising scar

Gaming merchandise firm Numskull has set up a new publishing arm of the company, Numskull Games. While no titles were announced at the time of writing, Numskull says it has the potential to publish physical and digital titles, and is able to offer worldwide services.

The new venture will be led by ex-Rising Star bods Martin Defries and Martin Mathers, who left the company following its acquisition by Thunderful in 2018. Defries founded Rising Star in 2004 and previously worked at the likes of Sony and Ocean Software, while Mathers played two *Virtua Cop* 2 machines at once on the TV show, *GamesMaster*. We're honestly not sure which is more impressive.

06



06. Goodbye, Switch v0.5

Sony's greatest handheld nobody cared about has drawn its last breath, or whatever metaphor that should be for something that's no longer having new versions of it made. Yes, the PlayStation Vita is no longer being manufactured. Originally released in 2011, the Vita never *really* caught on with the gaming public. This was, those of us who owned the device will tell you, really sad because it was ahead of its time in many ways. To the point where we can lovingly call it a proto-Switch. Ur-Switch. The not-as-good-as-but-debuted-a-bunch-of-features-used-better-on-Switch.

The machine is not dead, though, and its vibrant selection of great games will remain available as long as Sony can be bothered maintaining them online. So go forth and get involved – it's a bit late now, but the Vita is still worth a pop.

Turns out Shaggy won't be in *MKII*. Hmph.



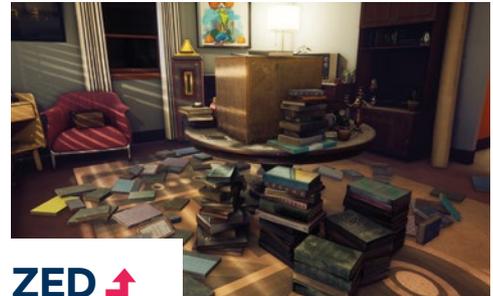
ToeJam & Earl: Back in the Groove's executive producer is, in real life, Macaulay Culkin.

VR ROOM



9 Monkeys of Shaolin ↑

Inspired by arcade and console titles like Konami's *Teenage Mutant Ninja Turtles*, *9 Monkeys of Shaolin* is a co-op brawler from Russian developer, Sobaka Studio. There are three martial arts styles which can be used to beat people up in elaborate ways, and – as you may have guessed from the glorious title – the game's story and visuals are drawn from seventies Hong Kong movies.



ZED ↑

Virtual reality games excel at plonking us in weird and wonderful places, so how about this: Oculus Rift and HTC Vive-compatible adventure *ZED* is set in the dream world of an ageing artist. A lifetime of memories and paintings coalesce into a digital landscape of interactive puzzles, partly conceived by *Myst* and *Command & Conquer* artist, Chuck Carter.

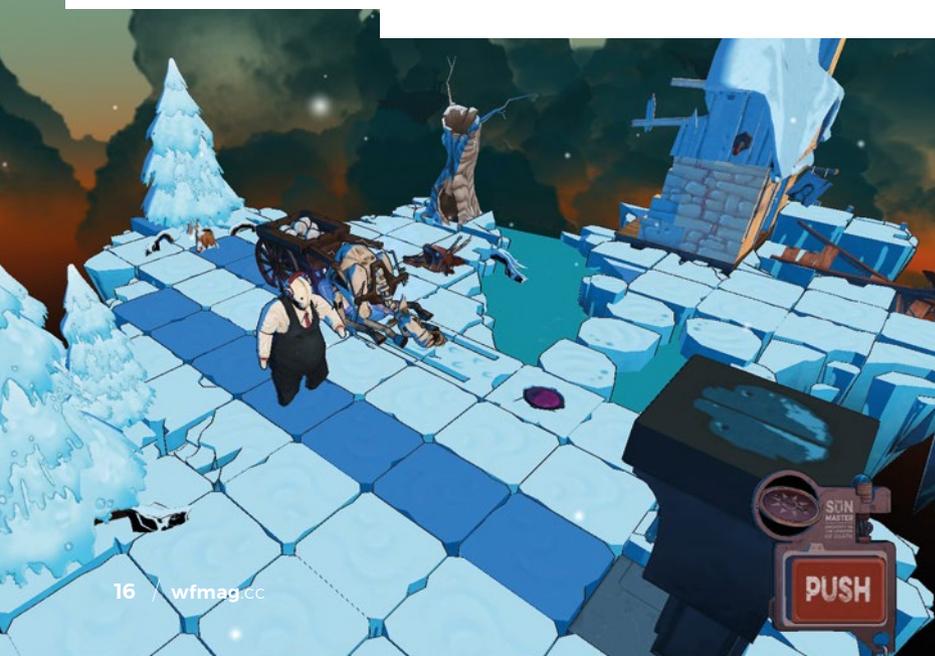
Felix The Reaper ↓

As a smartly-dressed, body-popping embodiment of death, you must traverse each stage, repositioning objects to create an elaborate demise for its non-player characters. Place a barrel on a rickety wooden ramp, for example, and it'll roll down and crush the luckless peasant sitting in its path. To these objectives, developer Kong Orange adds a further twist: Felix can only move in shadowy areas, so the player must create shaded paths for him to walk along by shifting the sun's position. Sounds great.



Overland ↑

From the developers who brought us *Canabalt*, *Overland's* been in 'first access' for a couple of years on itch.io, but the finished game is finally set to emerge this year. It's a turn-based survival game set in a post-apocalypse of giant killer insects, and takes in the expected mix of creature-killing and resource management. What appeals to us is the bite-sized nature of it all, with encounters taking place on single screens: it's a snack-sized strategy game we can enjoy between meals.



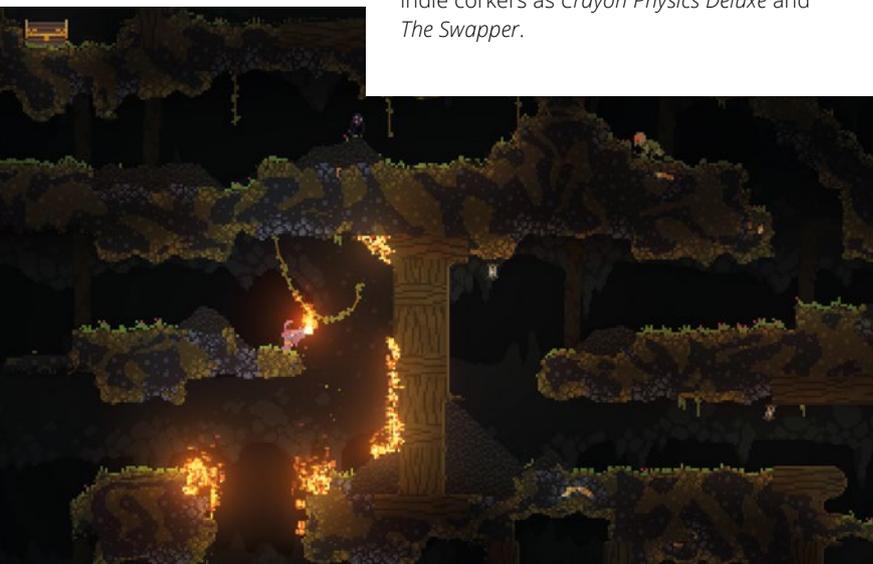


Legacy ↗

It's the next game from *Populous* creator Peter Molyneux – a proposition that, thanks to recent gambits like mobile app, *Curiosity*, and the disappointing god sim, *Godus*, doesn't exactly set the pulse racing in the way it might have done a few years back. All the same, there are some neat ideas emerging from his latest project, *Legacy*: it's a sim-management game, this time casting the player as an inventor who starts creating products in his shed, and gradually grows into a business empire of factories, trucks, and an army of workers. Art director Paul McLaughlin (a regular Molyneux collaborator) describes it as a game about building things – we'll have the freedom to make and sell strange contraptions of all sizes, from teddy bears to aeroplanes. Meanwhile, the business layer of the game will present its own moral dilemmas: do we ensure a safe and happy environment for our workers, or prioritise profits over being a good boss? Here's hoping this is one game that will match up to the ambition of Molyneux's enthusiastic ideas.

Noita ↘

Yes, it's another pixel art game, but what *Noita* does with those pixels is quite eye-popping. Every chunky block is physically simulated, so casting a fire spell will cause flammable pixels to burn, while ice spells will make rivers of pixel lava turn to traversable stone platforms. *Noita*'s a procedurally generated roguelite set in a monster-infested network of caverns – so think *Spelunky*, but with wizards and startlingly destructive spells. Then consider the game's pedigree: *Noita* is from Nolla Games, a new studio formed from devs who worked on such indie corkers as *Crayon Physics Deluxe* and *The Swapper*.



Train Station Renovation ↘

If Peter Molyneux's *Legacy* is a construction-management sim aimed at would-be industrialists, here's an equivalent for train enthusiasts. Yes, *Train Station Renovation*'s premise is all there in the name: you're presented with a tired, weather-beaten Victorian railway station, and you have to restore it to its former glory. Pull weeds from overgrown train tracks; replace the tired and broken bricks on a dilapidated train shed; replace rusted parts on locomotives. Sounds like quite a soothing pastime to us.



Interface

Making the perfect Zelda-like

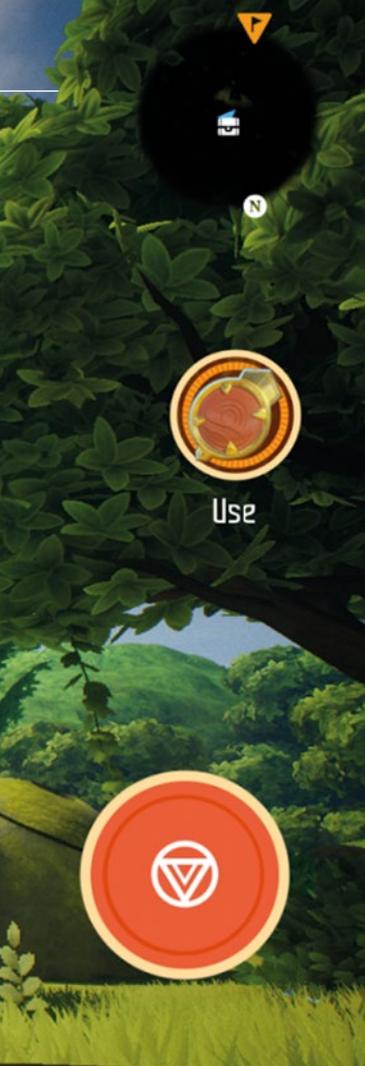


Aim



▲ Clockwise from top:
Oceanhorn; Monster
of Uncharted Seas;
Hob; Ittle Dew 2;
The Legend of Zelda:
A Link to the Past;
Hyper Light Drifter.





Making the perfect Zelda-like

With Nintendo pushing The Legend of Zelda in new directions, we talk to the indies following the classic series format while adding their own unique ideas

WRITTEN BY
AARON POTTER

If there's one thing indie game developers have learned in recent years, it's that nostalgia is a powerful tool. While triple-A studios might feel obliged (often contractually) to make games that are technically cutting-edge, a community of smaller-scale developers are reworking the mechanics of past genres for fresh ideas. Take the *Zelda*-like: a type of action adventure generally (though not always) played from a top-down perspective, and influenced by designer Shigeru Miyamoto's genre-defining titles, *The Legend of Zelda* and *A Link to the Past*.

So, with Nintendo recently announcing its own reworking of a top-down classic – the Game Boy gem *Link's Awakening* is coming to the Switch this year – we caught up with a few indie developers to learn their thoughts on making the perfect *Zelda*-like.

A CALL TO ADVENTURE

"I think the most important thing for us was to capture the warmth of the classic adventure games," says Heikki Repo, creative director of Cornfox & Bros., the Finnish game studio behind *Oceanhorn: Monster of Uncharted Seas*. Released in 2013, the game places you in the role of an unnamed boy on a quest to save the land from evil. The only way to do so? By travelling

from dungeon to dungeon, of course, gaining weapons and abilities, and besting the malicious beastie that awaits at the end of your journey. Sound familiar? Of course it does.

As slavish as games like *Oceanhorn* might seem to the *Zelda* formula on the surface, Repo is a firm believer in iterating on the franchise's familiar hallmarks. "It's more streamlined than *Zelda*," Repo says, "as we wanted to strip the experience from tutorial sections and make dungeons more organic."

Rather than sticking slavishly to the past, the makers of the best *Zelda*-likes have a willingness to add ideas from other genres into

the mix. This is something that's particularly true of *Oceanhorn*, as Repo explains. "We have lightweight RPG mechanics, like XP and level ups as you gain Adventurer Rank. We have a spell system where spells are used to manipulate the environment as well as in combat. These are not unique features for video games, but for a *Zelda*-like, we're steering them in our own direction."

Oceanhorn might be an original game in many aspects, yet it's fair to say that it still couldn't exist had Nintendo not laid down the initial *Zelda* foundation in 1986 – then firmly cemented it five years later with *A Link to the Past*.

For Patrick Blank, creative director of Runic Games' *Hob*, a designer's desire to reinvent



Interface

Making the perfect Zelda-like



▲ Each of *Oceanhorn's* bosses have a unique weakness - in this case, its mouth. Open wide...



▲ Alex Preston, founder of Heart Machine and director of *Hyper Light Drifter*.



▲ Joel Nyström, CEO of Ludosity.

what's come before shouldn't come at the cost of what made players fall in love with the formula in the first place. This begs the question: what is the *Zelda* formula, exactly? "A sense of exploration, discovery, seeing your character progress to become more than they were at the start," Blank suggests. "There's so much there, I'm sure it's a bit different for each individual. For me personally, it's definitely all of those, combined with an interesting world to experience them in."

About a cloaked traveller tasked with bringing life back to a broken world, *Hob* was Runic Games' final game before its staff were forced to form a new, Seattle-based studio called Monster Squad Games in 2018. Despite these events, Blank fondly remembers how Nintendo's NES classic action-adventure informed his studio's own *Zelda*-like. "The biggest takeaway from *Zelda* was seeing a problem or path that you couldn't access right away, and needing to come back later with the right item to gain access," he says. "We did build the world of *Hob* around that a lot."

Although influenced by *Zelda*, *Hob* is far less verbose than Nintendo's series. Like such celebrated indie classics as *Journey* and *Limbo*, *Hob* tells its story without in-game text - a stylistic choice that wasn't without its challenges for developer, Runic Games. "It was very difficult to do," says Blank, adding that, if anything, the lack of text forced the team to lean even more

on purely visual, *Zelda*-like design ideas. "We relied a lot on exploration, letting the player discover new areas and moments, and having environmental storytelling in those areas hint at events, or ask questions," he says. "It was intentionally vague."

PLAN OF ATTACK

Hob is a *Zelda*-like that relies more on its setting and exploration than combat, so traditional items from Nintendo's series - hookshot, bombs, boomerang - are replaced by simple swings of the protagonist's hefty stone fist. By contrast, indie developer Heart Machine's hit *Zelda*-like, *Hyper Light Drifter*, offers a richer, more free-form combat system. Described by lead developer Alex Preston as a combination

of *A Link to the Past* and *Diablo*, *Hyper Light Drifter* replicates the look and feel of old-school SNES games

through its 16-bit pixel art, environments, and top-down perspective.

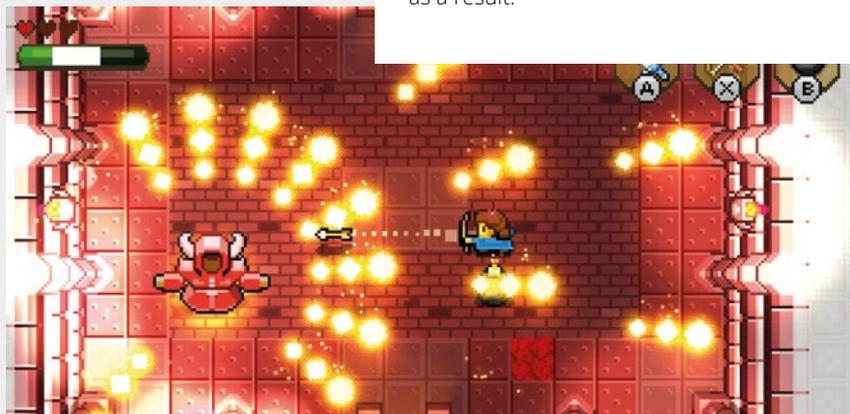
"You want to give the audience enough information to draw them in and keep them interested," Preston says, "but you don't want to push them too far so that it becomes boring."

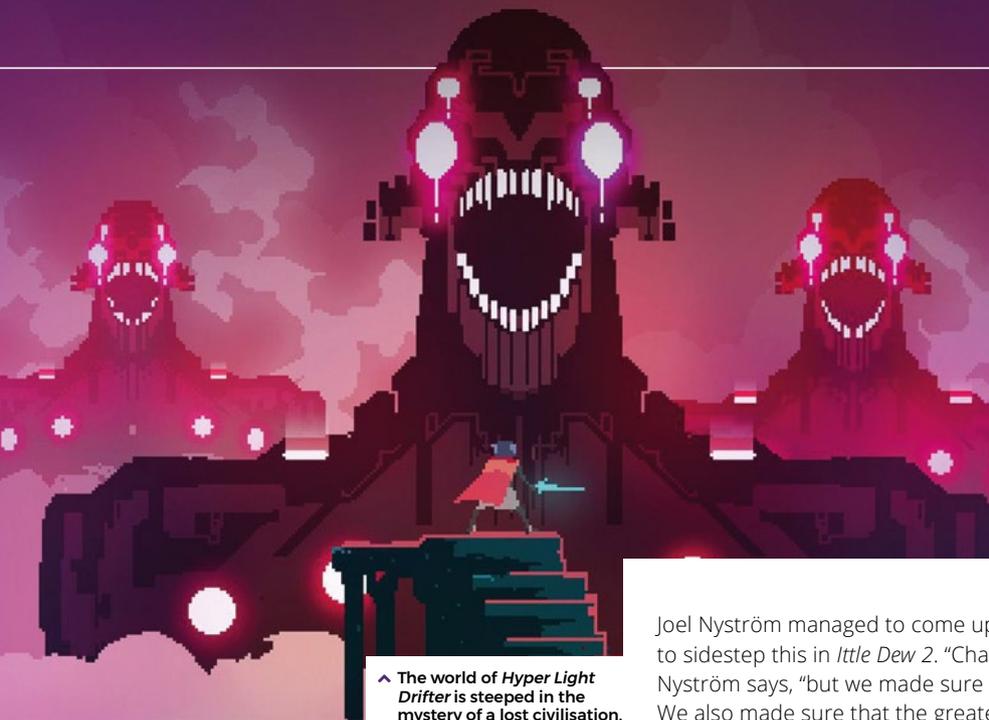
Hyper Light Drifter's combat is designed to ensure this doesn't happen, as the protagonist is equipped with a wide variety of weapons with which to beat each dungeon's enemies and bosses. In the original *Zelda*, attacks amounted to little more than arrow shots and sword swings. *Hyper Light Drifter*, meanwhile, bucks this trend, and is much faster-paced than its peers as a result.

"We relied a lot on exploration, letting players discover new areas and moments"

THE SINCEREST FORM OF FLATTERY

Of all the indies to jump aboard the *Zelda*-like train, Castle Pixel's *Blossom Tales: The Sleeping King* is among the most faithful to *A Link to the Past's* mould. Taking place within a storybook being read to two children by their grandfather, it's the perfect example of a developer taking an 'if it ain't broke, don't fix it' approach to design - *Blossom Tales* even replicates the Super Nintendo game's vibrant colour palette. Still, while *Blossom Tales'* look and feel may be cheekily close to *A Link to the Past*, it's a fun homage to the series' top-down era.





▲ The world of *Hyper Light Drifter* is steeped in the mystery of a lost civilisation.

RISE TO THE CHALLENGE

Despite the many ways modern games seek to rework *Zelda*'s core elements, it's arguable that a *Zelda*-like is only as good as its dungeons. Of course, *Breath of the Wild*'s shrines represented a shift away from this series staple; indie developers, meanwhile, are still flying the flag for the earlier *Zelda* games' puzzle box gauntlets, and Swedish studio Ludosity's *Little Dew* series is a prime example of this. With a bold cel-shaded art style, 2016 sequel, *Little Dew 2*, is notable for its light-hearted tone; it openly (and affectionately) parodies the series from which it draws its inspiration. From the aptly named Pillow Fort tutorial to the deceptive trickery of Slippery Slope, *Little Dew 2* centres each of its dungeons on a specific theme in true *Zelda*-esque fashion. But while some *Zelda* dungeons were capable of causing frustration (*Ocarina of Time*'s tricky Water Temple, say) Ludosity CEO

OCEANHORN 2?

So what about the sequel to *Oceanhorn*, subtitled *Knights of the Lost Realm*? Well, we had to ask Heikki Repo that very question. "*Oceanhorn 2* is more ambitious in many ways," Repo tells us. "It is a third-person game with features that you would expect from many modern console games. This time, we wanted to enable the players to explore in detail and take advantage of the 3D world. You can dive into the bodies of water, you can crawl under the houses and look for small treasures. This time your character is not adventuring alone, but is joined by two companions. We have elements from the JRPG genre as well, not only *Zelda*-likes. *Oceanhorn 2: Knights of the Lost Realm* will be a unique game, our vision on where to take the console-style adventure game genre."

Joel Nyström managed to come up with a way to sidestep this in *Little Dew 2*. "Challenge is fun," Nyström says, "but we made sure it was also fair. We also made sure that the greatest challenges in the game were optional, leaving them for players who wanted to challenge themselves."

Creating finely tuned, multilayered dungeons is crucial, but more and more *Zelda*-likes are letting players choose the order in which they complete them – an approach that's akin to the open-world design found in many recent triple-A blockbusters. "For the first *Little Dew*, we switched up the structure of the dungeon-item loop by providing a store where you buy items, and [players are] able to tackle dungeons in any order," Nyström says, before adding, jokingly, "This was stolen from us in the *Zelda* game, *A Link Between Worlds*, and we're definitely suing Nintendo."

As great as increased player choice may be, *Hob*'s Patrick Blank suggests that, when it comes to dungeon design, there's no replacement for good, old-fashioned playtesting and iteration. "Making fun puzzles is really hard," Blank tells us. "We would do a lot of prototyping and early on pass it around to others in the studio to get feedback. Like everything else, you temp it out, test it, and see what else you can add to it or tweak about it."

This was certainly the case for *Hob*, Blank adds. "Lots of things shifted around as new gameplay elements got [added] to the game, and we would go back and try to fit more into the puzzles based on those. It's a long process."

Ultimately, with the *Zelda* series being so good at reinventing itself, it only makes sense that games that seek to transport players back to the early games' mix of exploration, action, and puzzle-solving would also move with the times. Whatever twists and contortions modern indies might make to Shigeru Miyamoto's original concept, though, there's one thing that any great *Zelda*-like needs to create: the sense of a lone, ambitious adventurer striking out in a dangerous yet captivating world. 🗡️



▲ Each of *Little Dew 2*'s areas riff on a unique elemental theme.



▲ Patrick Blank, creative director at Monster Squad Games.



▲ Heikki Repo, creative director at Cornfox & Bros.

▼ *Hob* follows a wordless wanderer's attempt to restore life to the world.



How to grow a raspberry Pi

Video game pioneer Mel Croucher continues his journey through the growth of the UK games industry

WRITTEN BY
MEL CROUCHER



▲ Drawn by artist Christopher Penfold, The PiMan was Automata's mascot and regular multimedia star throughout its heyday.

▼ The humble Sinclair ZX81, which played host to several of Automata's unique game compilations.



When Automata got going as a video games company 40 years ago, we loaded our code into a primitive duplicator from an audio cassette recorder, and we cranked it through a four-way deck at eight times normal speed. We could turn out three dozen copies of commercial computer games in an hour, complete with self-adhesive labels and fancy cassette sleeves. But the thing about an audio cassette is that it has two sides, and the thing about computer data is it only needs one side to record on. So I reckoned the thing to do with the blank side was record comedy sketches and give each title its own theme song, all stuffed with references and clues to the gameplay. This would be called transmedia sometime in the future, back then it was called idiocy.

When the British computer boom arrived in 1981, so did micro-clubs and micro-fairs, and I got to meet my games players in the flesh for the first time. They were a whole lot smaller than I'd expected! I discovered I was writing games for a bunch of kids. I had no desire to change my output, so there was only one course of action open to me, and that was to treat the little sods as equals. If they didn't understand my adult themes, or pick up on my references or wordplays, then I reckoned it was better for them to float to the top of my pond, because I was certainly not prepared to meet them at the bottom. It was good to make them laugh, but it was equally good to make them think.

The rest of the British video games industry didn't amount to very much.

By 1980, there were a handful of us in the land, and we could all fit into one scout hut and share a taxi home. That's not a metaphor, that's a memory. The following year there were still less than a hundred of us, but by the end of 1982 we numbered around 460 labels with 1200 titles competing for a slice of the market, and the traditional media were taking notice.

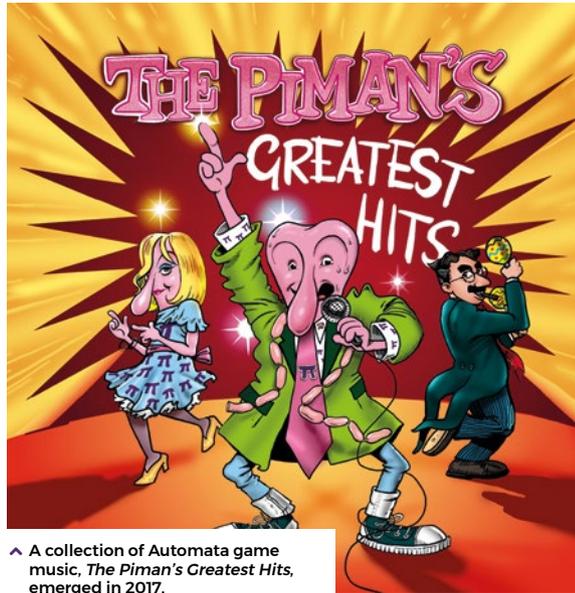
As for Automata, our first proper commercial success in video gaming came in 1981, by accident. I was offered a bulk buy of poor-quality C30 audio cassettes. C30 meant that the recording time available was fifteen minutes a side, so I planned to get rid of this stockpile by filling them up with as many games and audio entertainments as possible and flogging them cheap. The result was a compilation tape called *Can Of Worms*, packing in eight games and eight comedy tracks for the grand sum of £3. We had no overheads or business sense, and we sold them mail-order direct, so our competitors simply couldn't compete at that volume and that price. I guess today's download market means the industry has come full circle.

LOVE AND DEATH

When the first software charts began to appear in the early computer magazines, we found ourselves among the bestsellers, which was nice, and soon we were headed for the top of the heap, which was very nice indeed. And so it was that the first big Automata hit was a rag-bag of puerile stuff, offering instant gratification to the non-discerning player with a few minutes to spare and three quid in their pocket. As a reward to my fans, I increased the price of the next compilation tape to a fiver. I called it *Love And Death*. For the third compilation, I distilled *The Bible* down to eight games of 1K memory



▲ Automata's hand-drawn adverts were a common sight in UK computer magazines of the eighties, and continued their games' irreverent line of humour.



▲ A collection of Automata game music, *The Piman's Greatest Hits*, emerged in 2017.

each and heard the first industry rumblings to the effect that I was economically if not mentally insane.

PIMANIA

But Automata was now a household name in the growing number of households that knew what video games were. Then, in April 1982, the Sinclair Spectrum was launched, and Automata was poised, ready, willing, and able to take a crack at making a little bit of gaming history. We had no experience of the video games industry, because the video games industry had just been born, and I was the midwife.

My favourite, and the most commercially successful title, was just like my very first radio broadcast computer treasure hunts from the 1970s, it was a head-on collision between the virtual world and the real world. This time round I hung it all on an anarchic cartoon character called The PiMan.

And yes, he was raspberry-coloured. The whole thing revolved around exploiting this raspberry Pi in its various forms. Do I get my royalties now, guys?

Looking back, I don't know if I invented multimedia gaming or not, but when I conjured up the computerised quest *Pimania*, I saw no reason to stay within the confines of the computer monitor. It was released in 1982 as a video game, a rock album, a comic strip, a t-shirt, a jumpsuit, a magazine, a social network, and a

real-world treasure hunt for a gold and diamond prize, all of which needed the other elements for maximum participation. At one point, we had thousands of self-styled Pimaniacs searching for the prize in the real world, and I trickle-fed them clues via the game content, the weekly comic strips, and the music albums. The prize was eventually won in 1985, but commemorative cartoon books and Pimania albums are still selling, so I guess the little bastard has done OK for me.

The video games business that began in backrooms and bedrooms was now based in offices. The computer fairs had seriously outgrown the early venues and were now held in national exhibition arenas. In a way, the rot had already set in, and those vast expos were the death knell for most of the original games companies. They simply couldn't afford to attend. By 1983 the video games business was going mainstream. Enthusiasts and small

companies like mine had done the spadework, laid the foundations, built the fabric and decorated the nursery, and then big business came sniffing around for an easy profit from our labours. Some small companies expanded too fast and overreached themselves, others were swallowed up by big players in media and entertainment. As for my little gang, we simply kept doing what we had always done, until I produced the game which nearly killed me. But that's another story. 🍷

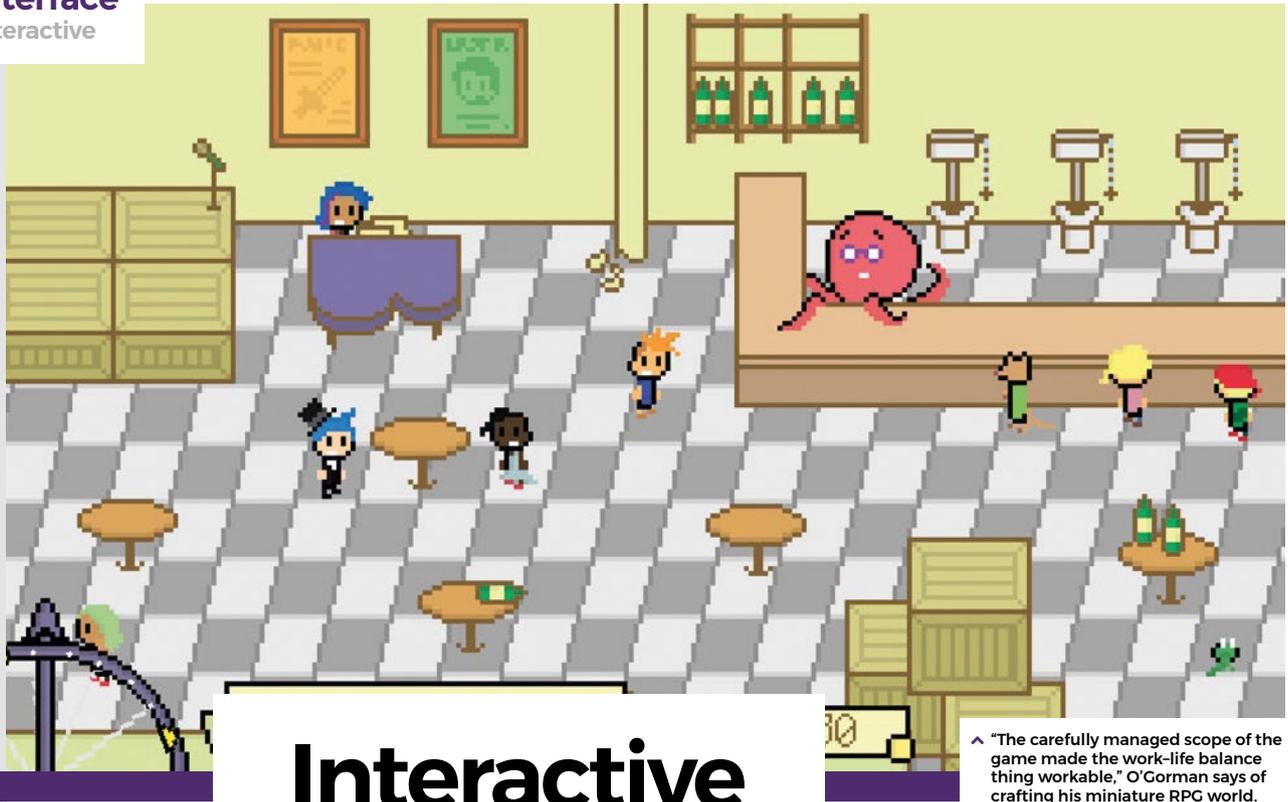
“The video games industry had just been born, and I was the midwife”



THE BEST POSSIBLE TASTE

While other tiny software companies and bedroom coders were knocking out clones of *Asteroids* and *Space Invaders* in the early eighties, Automata were busy exploring the stranger, more adult possibilities of their medium. Among the mini-games available on its 1981 compilation tape *Can of Worms* were such titles as *Vasectomy*, *Smut*, and *Hitler*; in the latter, you had to kill the now-elderly Nazi leader by sneaking a whoopee cushion under him, thus triggering a heart attack. It's fair to say that, even at this early stage, Automata was crafting experiences you couldn't find anywhere else.





Interactive

Restoration comedy

We meet Steve O’Gorman, creator of *The Rainsdowne Players* – an RPG with a theatrical edge

▲ “The carefully managed scope of the game made the work-life balance thing workable,” O’Gorman says of crafting his miniature RPG world.

Are you a solo developer working on a game you want to share with Wireframe? If you’d like to have your project featured in these pages, get in touch with us at wfmag.cc/hello

M

y play about a bear visiting a market in search of a pile of cash hasn’t gone down well, and now the jeering audience is pelting me and my co-star

with armfuls of bottles, rocks, and rotten fish. Such is the life of an actor in *The Rainsdowne Players*, a likeably lo-fi RPG about two would-be thespians trying to launch their own theatre in a rough part of town. The roofs leaking and the clientele are rowdy, but by talking to individual audience members and tailoring performances to their liking, it’s possible to gradually amass a loyal following and, as ticket sales grow, use the funds to restore the theatre to its former glory.

Created by Rutland-based solo developer, Steve O’Gorman, *The Rainsdowne Players* establishes a wonderfully everyday tone: its events take place in a single town rather than a sprawling fantasy world, while its inhabitants talk about such mundane things as what they had for dinner or the science project they’re currently working on. These conversations do, however, offer useful clues to the kinds of performances the townsfolk would like to see, which leads to the other major parts of the game: planning out your play’s story, by selecting characters, scenarios and outcomes from a set of collectible cards, and then actually performing

the play – triggering a rhythm-action mini-game where you press the left and right keys to dodge incoming projectiles lobbed by the rowdy audience. The narrow focus not only gives *The Rainsdowne Players* its homespun charm, but also helped keep the project manageable enough for O’Gorman to complete in his spare time.

“I’m certain every solo indie developer has at some stage started plotting their 70-hour RPG opus that never made it past the first intricately designed town,” O’Gorman tells us. “Limiting my scope to a game set within a single neighbourhood which was just big enough to contain everything my game needed was a crucial decision to making this thing manageable.”

Before *The Rainsdowne Players*, O’Gorman had spent several years working on smaller iPhone games in his spare time; it was in 2016 that he decided to make the leap from smartphone strategy apps to a larger indie game he could sell on Steam.

STAGECRAFT

“I’ve been designing and making small games for about 12 years,” O’Gorman says. “Most of them are small iPhone games, now currently lost in time, as I got too cheap to continue



▲ *The Rainsdowne Players* creator Steve O’Gorman, enjoying a well-earned rest next to an ornate wooden fish.



∨ Plays are constructed from cards garnered from the audience – and there are loads to collect.

^ “All the pixels are super-chunky to hide my lack of artistry,” O’Gorman says. We rather like the chunky sprite design, in fairness.

paying for the Apple Developer membership in order for them to remain on the App Store. *The Rainsdowne Players* is my first attempt at a biggish project, mainly because I felt like I should try to make at least one game of this size sometime in my life.”

By carving out an hour each day between his job as a web developer and other daily tasks, O’Gorman worked away on the project for the next two years or so, using tools like Paint.NET for creating his pixel sprites.

“I’m always working on art, programming, and design at the same time,” O’Gorman says, “so there’s usually always something tangible to show for an evening’s work, even if it’s just a funny couple of lines of dialogue. I don’t get bogged down doing a whole week of art or a whole week of script writing.”

Setting goals has helped maintain a sense of progress, says O’Gorman (“I had a lot of key scenes sketched out on paper or just in my head that I spent, in some cases, years looking forward to being able to finally put into reality”), but the game’s development has still thrown up a few challenges from time to time.

“Even at this scale, building a not-entirely-linear RPG means keeping tabs on a lot of moving parts,” O’Gorman tells us. “Which NPC needs to be where, at what time of day, what quest lines affect the world, and so on.”

The result is a game that takes in a range of influences, from JRPGs to rhythm-action games, but works them into a title with its own atmosphere and humour. (A particular highlight: the delightfully sour Marji, who sells tickets at the box office and says things like, “Profits have been surprisingly existent so far.”)

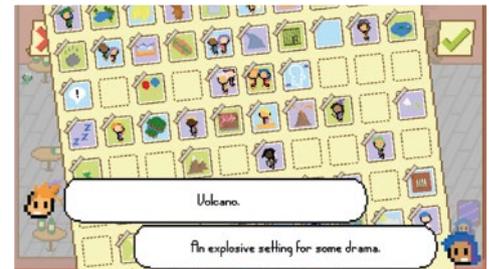
“I wanted a colourful, miniature world with lots of silly, humorous characters”

“There’s definitely a lot of *Paper Mario* DNA in there, in that I wanted a colourful, miniature world with lots of silly, humorous characters,” O’Gorman says. “*Majora’s Mask* is an influence, too, as far as wanting every NPC to be unique, with an adherence to a daily schedule. As far as story and characters are concerned, I was inspired by modern animated shows like *Steven Universe*, which do great things with character-driven and emotional storytelling in settings where the stakes don’t have to be life or death.”

The Rainsdowne Players launched on Steam in September 2018, but with the sheer volume of other indie games floating around, O’Gorman describes the process of selling a game on the platform as being “a bit like throwing a pebble in the sea.”

In February this year, though, *The Rainsdowne Players* landed on Nintendo Switch – a console that’s become something of a refuge for unusual indie games. “Switch sales might help decide whether I’ll ever make another game requiring a three-year commitment like this one,” O’Gorman says, “but I’ll still keep working away at something.”

At the time of writing, however, there’s good news on the Switch sales front: O’Gorman announced via Twitter that *The Rainsdowne Players* sold more copies on its first day on the Nintendo eShop than it had during its entire lifetime on Steam up to that point. O’Gorman’s chaotic theatre RPG has, it seems, finally found the appreciative audience it deserves. 🎮



SWITCHED ON

Getting a game on the Nintendo eShop is a goal for many an indie developer, so what was O’Gorman’s process? “Pitching your game for Switch involves finding the right balance between a colourful pitch about the unique and fun aspects, and also some more businesslike assurances,” he tells us. “I think it helped that the game was already complete and I had some positive review quotes to include in the pitch email. Also, sitting on the pitch email for a whole month because you’re nervous about rejection gets you nowhere!”



^ O’Gorman turned to Swedish illustrator Makku for his key art.

The Company Is Not Your Friend



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 current BAFTA Breakthrough Brit, and founder of Coven Club, a women in games support network. She produces, markets, bizzes and arts, and previously worked on *Fallen London*, *Sunless Sea*, *Zubmariner*, and *Sunless Skies* as producer at Failbetter Games.

“The company is never your friend. It's never on your side”

When you're looking at a payroll of 9,800 names, it's hard to see the human in the numbers. 'Developers 1 through 799 have to go,' you sigh, fleetingly considering the pain of telling developers 1 through 799 their fate. Of course, you don't have to. You're just the finance guy. And this is just the best thing for the company.

Activision's decision to lay off 800 employees at the same time as posting record earnings makes their priorities clear. It's unusually brazen: the company is unapologetically exchanging employees for money – money that seems destined to flow into shareholders' pockets or into other Activision games (themselves money-making vehicles which also flow into shareholders' pockets). I'm not anti-capitalist, but I can see why people are miffed.

The thing is, the company is never your friend. It's never on your side. Even when it's run by benevolent humanists, the company and its employees have fundamentally opposing agendas: companies want to make money, people want to get paid. People who work for a company may value humans over cash, but the company itself doesn't. There are many pragmatic reasons why businesses might want to treat staff well: it's more expensive to replace staff than retain them, mistreatment gives bad PR, happy workers are more productive and do better creative work, some people want to go to bed at night feeling like they're not a bastard. But if it ever comes down to a choice between 'do the right thing' and 'secure company funds', most people with a stake in the company's finances choose the latter.

Again and again, I see developers expect their small indie studios to look out for them, or their kindly middle-manager protect them from the unknowable triple-A board they've never met. I wish developers would place less faith in the machine, living as we are in an industry that makes a lot of money and fires a lot of people.

The problem, as it usually is, lies in the money itself. Give perfectly decent, kind people

shares in a big pot of gold and watch their priorities shift. Would you feel better about the Activision debacle if 800 people had to go, but the remaining 9000 Activision employees got an equal share of the pie? What if you were one of those 9000? How about if Activision had only fired 400 people and the extra cash got your project green-lit? One studio I worked for binned four out of 16 developers, then posted their biggest ever profit, nearly a million pounds. Choosing money over employees isn't a problem unique to Activision, or to big business: it's a conflict of interest in companies of every size.

I've heard a lot of studios describe themselves as 'families' and many studios, obviously, treat their people well (see 'pragmatic reasons why you'd want to do that as a business', opposite). But families fundamentally care about the people they are. Imagine your mum throwing her hands up in front of a spreadsheet and saying, 'I'm afraid we have to let you go, dear. It's just the best thing for the family.' We should stop expecting companies to look after us like friends and family would, because they consistently prove that they won't. Unions are a great start – they should force workers into companies' priorities lists, though they'll never get them to #1. But I'd urge everyone who works for someone to remember that companies ask you to an agenda that isn't yours. Don't let them fool you into loving them for it. 🗨



^ Activision Blizzard CEO, Bobby Kotick, who makes a reported \$30 million a year. No wonder he's smiling.

Toolbox

The art, theory, and production of video games

28. Design Principles

The importance of great game marketing

30. CityCraft

Understanding settlement hierarchies

32. Source Code

Recreate Space Invaders' crumbling shields

34. Set up a character in Unity

Importing, rigging, and animating made easy

40. Indie Reflections

Planning your game's scale and scope

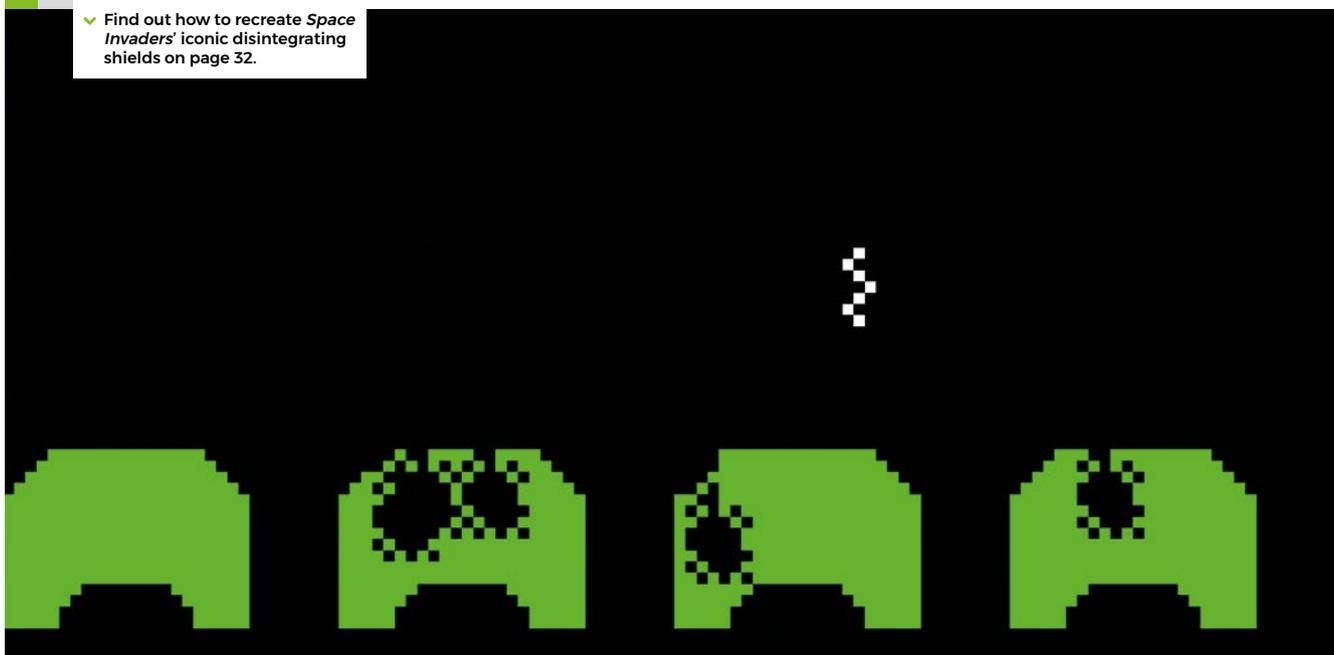
42. Directory

Forthcoming UK game dev events in 2019



▲ A quick and simple way to set up a controllable player character in Unity. See page 34.

▼ Find out how to recreate *Space Invaders*' iconic disintegrating shields on page 32.



The principles of game design

A great game also needs great marketing – and a killer title, Howard writes



AUTHOR
HOWARD SCOTT WARSHAW

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles onceuponatari.com



▲ Atari head honcho, Ray Cassar: unwitting inspiration for *Yars' Revenge*.

The game was finished. It was a good game, but it had no name. That's OK. In my view, you don't start with a label. You start with interesting tweaks and techniques to maximise the hardware impression. Then you make sense of it later with a game concept and possibly a storyline. That was my approach to *Yars* – and all my games for that matter.

The Yar was the first graphic I designed. It had nothing to do with a fly, it was simply something with moving arms that might look cool and symmetric when animated. The game's original working title was *'Time Freeze'*, which alluded to an elaborate payoff sequence when the big win occurred. The concepts of Ion Zone, Qotile and all the *Yars' Revenge* lore were a retro-fit on the graphics and gameplay that already existed.

Like life, I did what I thought was cool and then made up reasons for it later. We act on our emotions and then we rationalise things to make sense. That's how I believe we are wired. That's certainly how I approach game design.

Naturally, for planning's sake, there came a day when marketing needed an official name. I wanted everything about my first game to sing, so I asked the marketing rep if I could make my own submission for the name. He said fine. I told him to come back tomorrow morning and I'd have something for him. I spent the rest of that day and all night in my office trying to come up with the best name I could.

WHO'S TAKING REVENGE?

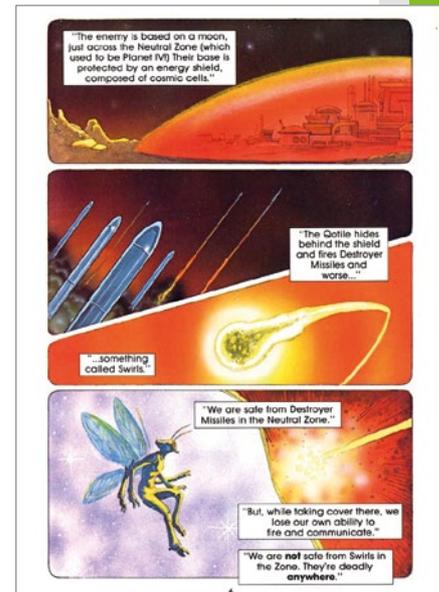
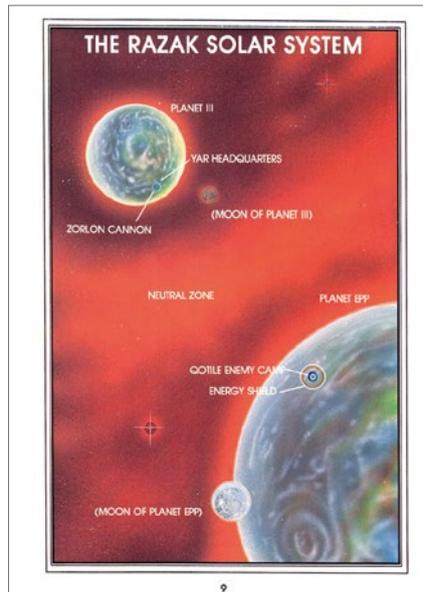
I wanted something simple but sharp. Compelling and intriguing without being off-putting. It should connote action in a way that's inviting to a player. Hmmm. It occurred to me that 'Revenge' is a great title word because it tells a whole story by itself. And after all, who doesn't want revenge? OK, I'll grant you there are monks in Tibetan ashrams who have no inclination toward revenge whatsoever, but they're not the target demographic. So, the next obvious question is: who is taking revenge? This, I realise, poses a very interesting possibility.

One thing I've always wanted to do is add a word to the English language. It's one of my many dreams. This is my golden opportunity. Everybody knows what *Pac-Man* is. If my game becomes popular, then the character name I choose now could become common parlance. But have you ever tried to make up a word? I start reeling off possibilities, but everything sounds stupid. This is my chance to enhance the language and nothing is working. I'm frustrated.

Eventually I give up on sounding good and start thinking about alternative ways of approaching the problem. This calls for an



▲ Howard Scott Warshaw: expert game designer, fan of massive hats.



algorithm! I need a systematic way of choosing a name. Then it occurs to me that it needs to be more than a name, and my mind starts to spin up. The name becomes a concept, then a theme, and finally the whole thing congeals into a marketing plan. My plan to market my plan to marketing. And here's how my plan goes...

I'll use a cipher. The name will be an encoding of something else. Something irrefutable. Something like Ray Kassar, the CEO of Atari. Yes! The title of the game should be *Yars' Revenge*, with Yar being Ray spelled backwards. What's Kassar backwards? Rassak? OK, the game will be set in the Razak solar system. But that's not enough. What makes a name stronger for marketing?

A package. How can I make *Yars' Revenge* a package? I know, I'll write a story to go with the game.

So I start writing, and by the crack of dawn, I'm staring at 12 handwritten pages entitled, 'The Yarian Revenge of Razak IV'. I'm too tired to realise it, but I've just created the first backstory in video game history. It's an action-packed jaunt through space, detailing how Yars came to be and how they came to inhabit the Razak solar system. I finish tweaking it about 7:30am-ish, and have it typed up and handed off to marketing by 10am. The game's afoot.

By late afternoon, I'm informed (by the self-same rep) that my naming package is officially submitted and under consideration. Time to activate phase two. I thank him and offer to share an insider insight if he'd care to hear it.

"I've just created the first backstory in video game history"

This piques his interest. I insist this is top secret and must be held in strictest confidence, lest it influence the outcome unduly. He assures me he shan't tell a soul.

"OK then," I say, "You know the Yar in the title?"

"Yeah."

"Spell that backwards."

He thinks for a moment and says, "Ray?"

"Right. And how about Razak?"

After another moment or two, "Kazar? Ray Kassar? Does Ray know about this?"

"Of course," I tell him, "I wouldn't do this without his knowledge. But I don't want this to influence anything so you can't tell anyone about it."

I swear him to secrecy twice more and send him on his merry way. I now feel quite confident about three things: first, this marketing rep is going to run right back and tell everyone. Second, no-one in marketing has the stones to broach this with Ray Kassar, which is good, because the third thing is that Ray knows absolutely nothing about this. A perfect bluff. Feeling right chuffed, I head home for some well needed rest.

The next day, the marketing rep tells me, "We're going with *Yars' Revenge*. Congratulations!" His face beaming with delight. And at that I started beaming a bit myself.

That's how the *Star Castle* coin-op conversion became *Yars' Revenge*. A game that most people liked, and some people didn't. This contrast led me to an interesting life lesson: a friend of Yars is a friend of mine. 🐝

▲ Based on Howard's original ideas, *The Qotile Ultimatum* was a small comic book that came with *Yars' Revenge* and filled in its sci-fi backstory.

Life Lessons

Another life lesson I acquired from my time at Atari was gleaned from the process of game testing. *Yars' Revenge* was Atari's most tested game; consequently, I sat through lots of focus groups, interviews, surveys, and then the ultimate play test. One thing became abundantly clear to me. When you ask people if they like something or not, you get very good information. When you ask people why, not so much. The reason is simple: knowing what we like is about us. Creating justifications is about other people. And we never know anyone else as well as we know ourselves.

CityCraft: A hierarchy of settlements

Understanding the evolution and hierarchy of villages, towns, and cities will result in better game worlds, as Konstantinos explains

Planning and defence

Historically, the way a settlement is built is tied to its defensive needs, which is in turn determined by contemporary technologies of warfare, geopolitics, and location. In World War II, London had to deploy countless anti-aircraft batteries, in contrast to the relatively peaceful smaller settlements north of the capital. Medieval villages, meanwhile, were simply left undefended – their population would often seek refuge in nearby towns or castles. Interestingly, most inland ancient Egyptian towns were constructed without walls, as the Pharaoh could easily guarantee and enforce peace throughout the kingdom.



AUTHOR
KONSTANTINOS DIMOPOULOS

Konstantinos Dimopoulos is a game urbanist and designer, currently working on the *Virtual Cities* atlas, and consulting on several games. game-cities.com

Not all settlements are the same. They come in different sizes and shapes, and with different elements defining them. Villages, walled towns, industrial cities, and metropolises are all distinct historical and geographical entities. They appear, evolve, and disappear as human societies progress or regress, and vary wildly when it comes to size, functions, planning, and image. It is technology, and societal organisation, that allow settlements to redefine their structure, overcome size restrictions, and increase their complexity, without of course ever achieving uniformity.

Societies, whether they're contemporary or historical, have never lived in a single, particular type of settlement. There have always been geographical hierarchies of diverse civic types, and often planned ones. Studying such hierarchies and regional plans when creating a new imaginary world – or when making sure an imaginary city feels grounded in its environment – is always a wise idea.

SETTLEMENT TYPES

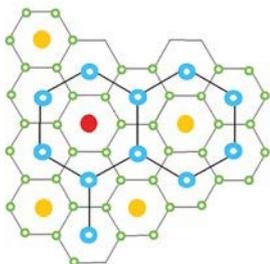
The industrial towns of the late 19th century don't exist anymore, and a Neolithic village is vastly different from the one Luke Skywalker grew up in, but there are some rough typologies we can distinguish in history. Roughly speaking, the most common types of settlements have so far been villages, towns, cities, and, more recently, metropolises.

Just as a few houses near each other do not constitute a village, the differences between settlement types are not simply a matter of size. As quantitative differentiations turn into qualitative ones, a growing group of buildings can only be considered a village when it assumes the functions of one. A tavern, a few shops, a square, village life, and a church all indicate such an evolution. As a village grows, and takes on more urban functions – when it can support guild halls, a bishop, and protective boundary walls if we're talking about a settlement in the Middle Ages – it further evolves into a town. Adding even more complexity, and even greater populations, would probably allow us to reclassify a town as a city. A true explosion of variety, population, civic size, and economic importance would lead to a metropolis.

The metropolis is the newest settlement in history. Having evolved from the large industrial city, it embraced the tertiary sector, intense internal specialisation, claimed variety itself as a function, and its huge internal market allows for the most specialised of tastes to be catered to. Interestingly, as the historical process never ceases, some geographers have argued the metropolis will be followed by the megalopolis: a conurbation of conurbations. A gigantic, regional-sized city. Science fiction authors have also suggested fully urbanised planets as a further evolution of civic scope.

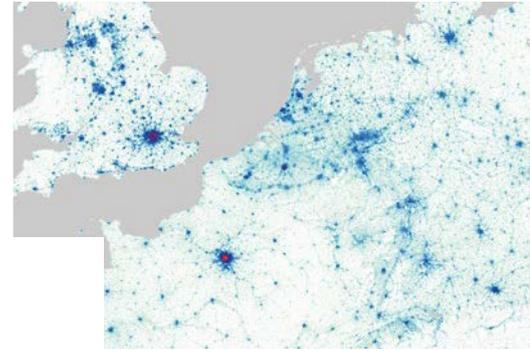
On the other hand, fantasy world builders can get away with regions comprised exclusively of

✓ **Figure 1: The Central Place Theory** by Walter Christaller, famous for its hexagons, can provide a handy way of (initially at least) ordering game geographies.





▲ From imperial cities to solitary temple complexes, *Total War: Three Kingdoms* constructs a believable and intriguing hierarchy of settlements.



▲ Population densities in contemporary Europe [via wfmag.cc/density]. Notice the different settlement patterns in England, France, Germany, Belgium, and the Netherlands.

primitive villages. It, after all, took thousands of years of village life taming the countryside for the first city, possibly Eridu, to emerge. Similarly, a late 19th century historical setting should only feature a handful of metropolises.

In fantasy, historical, contemporary, or near-future sci-fi worlds, villages should, as a rule of thumb, outnumber towns. Even today, when the greater part of humanity lives in urban environments, an industrialised country like Germany has several thousand villages and small towns, less than 100 cities with populations larger than 100,000, and essentially a single metropolis.

“The metropolis is the newest settlement in history”

REGIONAL ORGANISATION

Villages and towns are neither randomly nor haphazardly arranged in space. They are instead parts of settlement networks, and often form interconnected regions. Such a region could, for example, organise itself around a major metropolis, surrounding it with smaller specialised urban centres, themselves supported by a larger number of agricultural villages. We can also be fairly certain that, alongside a road connecting two cities, a few smaller settlements are bound to appear. A grid of industrial towns would be a sensible choice when aiming to mine a vast, but more or less uniform area, and an agrarian city-state would include several villages orbiting its core.

There are essentially infinite ways to spatially organise or plan regions, especially when the imaginary geographies often demanded in gaming are taken into account. The Roman Empire, early 19th century USA, a planetary system, and Tolkien’s fields of Rohan all have wildly different arrangements of settlements. Among the countless predictive models, and planning prescriptions, I have found that Walter Christaller’s Central Place Theory (see **Figure 1**) is a decent and easy-to-grasp introduction to

the concepts of regional planning and settlement hierarchies. Being based on hexagons makes it handy for many game maps, too. In **Figure 1**, the red circles are metropolises, the yellow ones cities, the blue ones towns, and the green ones villages.

Architect Christopher Alexander has also developed theories regarding the placement of settlements in regions (see **Figure 2** for an example), and his famous 1977 work ‘*A Pattern Language: Towns, Buildings, Construction*’ has deeply influenced regional and city planning thought. His ideas are even evident in the design and positioning of the towns and villages in *World of Warcraft*, where his suggestions on placing major civic centres on the edges of zones have been faithfully implemented.

COMMUNICATION AND TRANSPORT

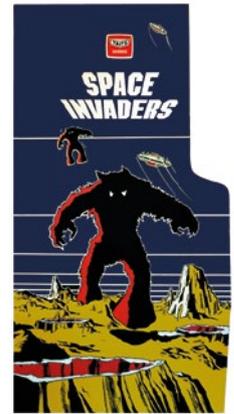
Not unlike civic sizes, regional and settlement network sizes and their internal organisations are, to a substantial degree, further defined by available telecommunication and transportation technologies. The construction of a groundbreaking, efficient, and vast road network kept the Roman Empire connected – the Hanseatic League was based on its naval prowess – whereas atmospheric and space flight can respectively craft regions in space, and networks across oceans. And just as the telegraph sped up communication between continents, and the beacons of Gondor warned of great dangers, so do telecom technologies bind regions together, and define the importance of their centres. ^W



Settlements

Geographer Walter Christaller sought to explain and also optimise the number, size, type, and relevant location of settlements via the theory of central places, which – being based on regular hexagons – can easily be adapted for more about it over at wfmag.cc/central-theory. Briefly reading through the relevant chapters of Christopher Alexander’s ‘*A Pattern Language*’ can also provide some handy ideas on settlement placement, and practical yet pleasing regional patterns.

▼ **Figure 2:** A famous Christopher Alexander pattern describing settlement choices based on topography. Villages and small towns tend to be found on hills, and crops in valleys.



Source Code

Space Invaders' disintegrating shields

They add strategy to a genre-defining shooter. Andrew lifts the lid on Space Invaders' shields



AUTHOR
ANDREW GILLETT

Rleased in 1978, *Space Invaders* introduced ideas so fundamental to video games that it's hard to imagine a time before them. And it did this using custom-made hardware which by today's standards is unimaginably slow.

Space Invaders ran on an Intel 8080 CPU operating at 2MHz. With such meagre processing power, merely moving sprites around the screen was a struggle. In modern 2D games, at the start of each frame the entire screen is reset, then all objects are displayed.

For *Space Invaders*' hardware, this process would have been too slow. Instead, each time a sprite needs to move, the game first erases the sprite from the screen, then redraws it in the new position. The game also updates only one alien per frame – which leads to the effect of the aliens moving faster when there are fewer of them. These

techniques cut down the number of pixels which need to be updated each frame, from nearly 60,000 to around a hundred.

One of *Space Invaders*' most notable features is its four shields. These provide shelter from enemy fire, but deteriorate after repeated hits. The player can take advantage of the shields' destructible nature

“Space Invaders introduced ideas fundamental to video games”

– by repeatedly firing at the same place on a shield's underside, a narrow gap can be created which can then be used to take out enemies. (Of course, the player can also be shot through the same gap.)

The system of updating only the minimum necessary number of pixels works well

as long as there's no need for objects to overlap. In the case of the shields, though, what happens when objects do overlap is fundamental to how they work. Whenever a shot hits something, it's replaced by an explosion sprite. A few frames later, the explosion sprite is deleted from the screen. If the explosion sprite overlapped with a shield, that part of the shield is also deleted.

The code to the right displays four shields, and then bombards them with a series of shots which explode on impact. I'm using sprites which have been scaled up by ten, to make it easier to see what's going on.

We first create two empty lists – one to hold details of any **shots** on screen, as well as explosions. These will be displayed on the screen every frame. Each entry in the **shots** list will be a dictionary data structure containing three values: a position, the sprite to be displayed, and whether the shot is in 'exploding' mode – in which case



Disintegrating shields in PYTHON

Here's a code snippet that shows Andrew's *Space Invaders*-style disintegrating shields working in Python. To get it running on your system, you'll first need to install Pygame Zero – you can find full instructions at wfmag.cc/XVIIeD

```
from random import randint

WIDTH,HEIGHT = 1200, 700 # Dimensions of the screen (pixels)
shots, to_delete, first_frame = [], [], True

def create_random_shot():
    shots.append({'pos': [randint(0, (WIDTH-images.shot.get_
width())/10)*10, 0],
                'sprite': images.shot,
                'exploding': False})

# A shot will be created in random position every half second
clock.schedule_interval(create_random_shot, 0.5) # Try
reducing number to 0.1!

def draw():
    global first_frame, to_delete
    if first_frame:
        for x in range(50, WIDTH, 300):
            screen.blit(images.shield, [x, 500])
            first_frame = False

    for item in to_delete:
        screen.blit(item['sprite'], item['pos'])
        to_delete = [] # Clear list

    for shot in shots:
        screen.blit(shot['sprite'], shot['pos'])

def update(dt):
    # Step backwards through shots list; avoids errors that occur
    # when deleting items from the list during the for loop
    for i in range(len(shots)-1, -1, -1):
        shot = shots[i]
        if shot['exploding']:
            shot['timer'] -= 1
            if shot['timer'] <= 0:
                to_delete.append({'pos':shot['pos'],'sprite':images.explode_black})
                del shots[i]
            else:
                # Before moving shot, add the current position to the
                to_delete list
                to_delete.append({'pos':shot['pos'].
copy(),'sprite':images.shot_black})
                shot['pos'][1] += 20 # Move down the screen
                # Do collision detection based on the centre of the
                sprite
                half_width = shot['sprite'].get_width() // 2 # // =
integer divide
                half_height = shot['sprite'].get_height() // 2
                if shot['pos'][1]+half_height >= HEIGHT:
                    del shots[i] # Gone off bottom of screen
                else:
                    # Hit something? If so change to exploding sprite
                    collide_check_pos = (shot['pos'][0]+half_width,
shot['pos'][1]+half_height)
                    if screen.surface.get_at(collide_check_pos) !=
(0,0,0):
                        shot['sprite'] = images.explode
                        shot['exploding'] = True
                        shot['timer'] = 5
```

it's displayed in the same position for a few frames before being deleted. The second list, `to_delete`, is for sprites which need to be deleted from the screen. For simplicity, I'm using separate copies of the shot and explosion sprites where the white pixels have been changed to black (the other pixels in these sprites are set as transparent).

The function `create_random_shot` is called every half second. The combination of dividing the maximum value by ten, choosing a random whole number between zero and the maximum value, and then multiplying the resulting random number by ten, ensures that the chosen X coordinate is a multiple of ten.

In the draw function, we first check to see if it's the first frame, as we only want to

display the shields on that frame. The `screen.blit` method is used to display sprites, and Pygame Zero's `images` object is used to specify which sprite should be displayed. We then display all sprites in the `to_delete` list, after which we reset it to being an empty list. Finally we display all sprites in the `shots` list.

In the update function, we go through all sprites in the `shots` list, in reverse order.

✓ *Space Invaders*-style shields running in Pygame Zero – watching them gradually disintegrate is oddly soothing.



Going through the list backwards avoids problems that can occur when deleting items from a list inside a `for` loop. For each shot, we first check to see if it's in 'exploding' mode. If so, its timer is reduced each frame – when it hits zero we add the shot to the `to_delete` list, then delete it from `shots`.

If the item is a normal shot rather than an explosion, we add its current position to `to_delete`, then update the shot's position to move the sprite down the screen. We next check to see if the sprite has either gone off the bottom of the screen or collided with something. Pygame's `get_at` method gives us the colour of a pixel at a given position. If a collision occurs, we switch the shot into 'exploding' mode – the explosion sprite will be displayed for five frames. 🎮

Set up a controllable player character in Unity

Importing a 3D model and turning it into an animated, controllable player character is easy when you know how. Stuart explains all



AUTHOR
STUART FRASER

Stuart is a former designer and developer of high-profile games such as *RollerCoaster Tycoon 3*, and has also worked as a lecturer of games development.

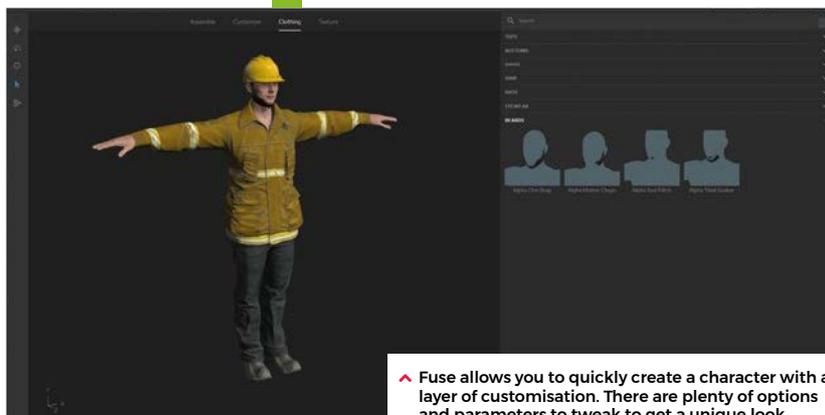
In previous editions of Wireframe, we've looked at how to use Unity's powerful tools to quickly build a first-person shooter. We're now going to look at how to use Unity – as well as a few other tools – to create a pipeline. This will allow us to import our own 3D character model – or an existing one – into Unity, and develop our own fully animated third-person character.

We're going to use a couple of tools that are currently free and created by Adobe, the developers of such packages as Photoshop

and After Effects. These tools are widely used by professionals in the games industry and beyond. The tools we will look at are Fuse, which allows us to generate humanoid models, and Mixamo, which allows us to rig and animate models. To create a unique character and set of animations is time-consuming and specialised, but the method outlined here lets us explore the process with a generic character and set of animations; this could be really useful if you want to quickly prototype a new game idea.

GETTING HOLD OF FUSE

First, go to the following address to access the Fuse application: wfmag.cc/tpLJyx. You need to select the download link and wait for this to complete. Next, run the application – this will also install their download manager for the other Adobe products. This will require you to select the option to sign up for an account – unless you're already using an Adobe product, in which case, you can just sign in. If you did choose to sign up, then go ahead and fill in your details and make a new account. Once the account is created, just sign in using your new account. After a few questions, the launcher will start downloading the Fuse software ready for you to use.



▲ Fuse allows you to quickly create a character with a layer of customisation. There are plenty of options and parameters to tweak to get a unique look.



▲ By using predefined characters and animation, you can prototype design quickly and easily.

Once the installer completes, the program will automatically start and we can choose some of the options to build our character. Think about it like a character creator found in a game like *Skyrim*, where you can create a unique look by adjusting each individual part of the body: this is very similar to how the Fuse creator works. First, we'll need to choose from the various head meshes from the right-hand side of the screen. Each time you make a selection, you'll be greeted with another section of the character creator to select from. You are completely free to mix and match or choose the same group of parts. Once you have the base body complete, we need to select Customize from the menu options above our main viewport.

“This could be really useful if you want to quickly prototype a new game idea”

This will essentially take us to the advanced editor; we can tweak almost any part of the character by using the sliders on the right-hand side. You can also pick specific areas by just clicking on the character. To focus the view on different parts of the character you can use the left mouse button and move the mouse to rotate. Finally, to zoom in on an area, use the scroll wheel to control the magnification.

Once you're happy, select Clothing from the menu and we should see options similar to what we used to build the body of our character. Again, we want to choose from these options to build the outfit we want our character to

wear. This also includes options for changing our hairstyle and other add-ons. We can also recolour both the character and outfit by selecting the Texture option from the menu. Remember, by clicking on the mesh you can quickly tweak a specific area of the character and then use the properties provided to enhance the look.

Finally, we should save up and then send this to Mixamo to add some animations. First, we

can save by selecting File > Save As... and set a suitable file name for our creation. Next, along the top-right, we can easily launch the Mixamo website by

clicking the Send to Mixamo button. This will pop up a window that will use the file name we set as the name for the mesh when it's sent over. Once this is processed, you should see the Mixamo Auto-rigger open in a browser window. For now, we will select the Finish button to set the default options for this rig. On the next page, you will see two options to select from; we want to select the animate button so we can customise the animations we'll use.

BUILDING OUR ANIMATION SET

We need to assign some animations to our character; this will allow us to set up the locomotion of the character in Unity. First, we need an idle animation, so we can simply search for the word 'idle' in the applicable box along ➔

RIGGING?

Rigging is the process of adding a 3D skeleton to a model; this is usually for human characters but it's not always the case. There is more to the process of rigging, but all we need to know is that we can apply animation to a character and it will correctly deform.

Toolbox

Set up a controllable player character in Unity



Our character is now imported into Unity and we can begin the process of hooking up our animations to our control system.

CHARACTER BUILDING

You can really go to town on creating your custom character with the options that Fuse provides. Try adjusting elements like the skin colour or age of your character to make a weird or wonderful creation.

the top-left. Pick one of the idle animations of your choosing from the previews, and then select the download button. You should see a pop-up that deals with the download settings. We need to choose the option FBX for Unity from the Format drop-down, and as this is the first animation, we need to make sure we have the option With Skin selected from the Skin drop-down; finally, continue to download the FBX file.

Next, we'll grab a walk animation; again, we need to search for the word 'walk', and pick a suitable animation. We will select download and then make sure FBX for Unity is still selected for the Format, and change the drop-down for Skin to Without Skin, then download the FBX. We need to search and download some more animations in the same fashion. So, in turn, we should search for the following set of animations: run, jump, left turn 90, and right turn 90. When picking the jump animation, make sure that it's not one that starts in mid-air. I would always make sure that the animations

are set to FBX for Unity for the Format and Without Skin for the Skin option in the download dialogue before downloading.

IMPORTING INTO UNITY

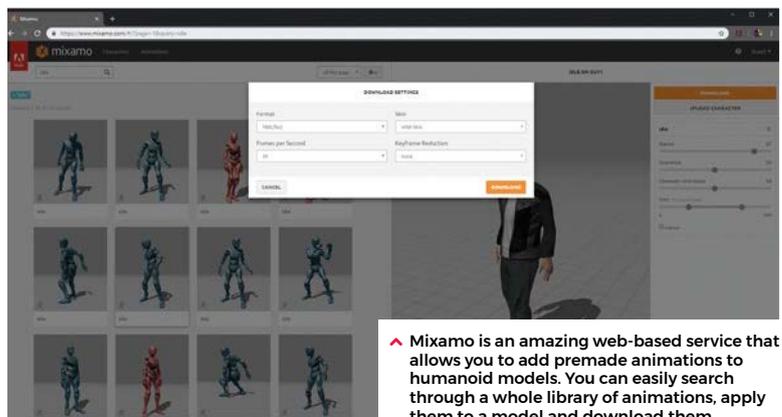
The next stage of our pipeline is to take the character and animations over to Unity; our first step is to use the Unity Hub to select New from the Projects page. Give the project a unique name and select Create Project. Once in Unity, we simply select all the animations in a Windows browser and drag them into the Project window in Unity. You might get a pop-up about a normals issue – it's fine to select Fix Now. Once the import processing completes, we want to drag our Idle animation, which contains the character mesh, to the Hierarchy window.

We should see our character, but it may look a bit weird. This is due to some setting with texture alphas conflicting between Fuse and Unity. For our purposes, we'll select the Materials folder in the project view, and we should see several materials. Select the first material and then hold the left-shift key and select the last material in this view.

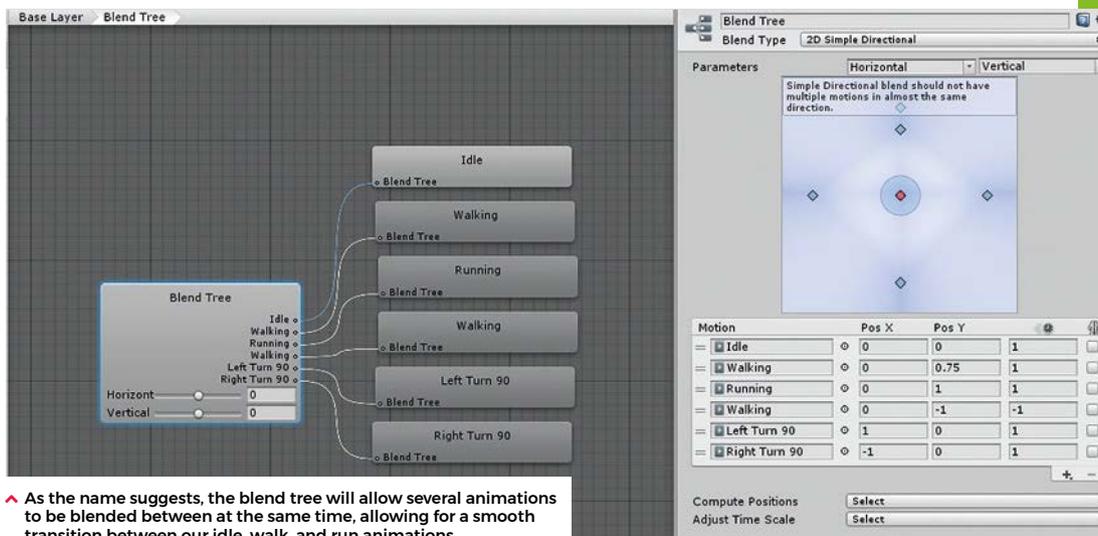
In the Inspector, change the drop-down for the Rendering Mode to Opaque instead of Transparent. Next, we need to tell Unity that we're using a humanoid character for this set of animations. Select all the animations in the Project view by using the left-shift key and clicking. In the Inspector, select the Rig tab and change the animation type drop-down to Humanoid, and then select Apply. We're now going to use the Unity animation system and some scripting to drive how the character will move when we use inputs from a controller.

POWER OF MIXAMO

Mixamo usually has a huge array of animations for any search term; it's always worth looking at several of the previews and applying them to your character to find one that looks suitable. Some animations are specifically created for a particular type of character and may look odd when applied to yours.



Mixamo is an amazing web-based service that allows you to add premade animations to humanoid models. You can easily search through a whole library of animations, apply them to a model and download them.



^ As the name suggests, the blend tree will allow several animations to be blended between at the same time, allowing for a smooth transition between our idle, walk, and run animations.

BUILDING YOUR CHARACTER CONTROLLER

In the Project window, right-click and select Create > Animator Controller. Rename this to CharacterController. Select the character that you added to the Hierarchy and you should see an Animator component in the Inspector. Select the CharacterController from the Project window and drag this into the Controller slot on the Inspector. Now we have those assigned, we want to set up this Animator Controller, so we need to double-click on it in the Project window.

A new window should open and will be docked near the Scene tab. Inside the Animator, we want to right-click in the grid space and select Create State > From

New Blend Tree. Select this new blend tree node and double-click to open it. Select the Parameters tab that is along the top-left of the Animator window. You should see an entry called Blend matching that of the one in the blend tree. Select the Blend parameter and double-click until it allows you to rename it. Change the name to Horizontal: this should update on the blend tree. We need another parameter, so select the + icon, select Float from the drop-down, and then name this to Vertical. With the blend tree highlighted, select the blend type drop-down in the Inspector and change it to 2D Freeform Directional. You also need to check that the drop-downs for the parameters are set to Horizontal and Vertical from our created parameters.

We then need to right-click on the blend tree and select Add Motion. We need to repeat this

process five more times, and you should see six entries under Motion in the Inspector. Select the first entry in the Inspector by clicking the circle icon. We want to select the Idle animation from the Select Motion window. We then select a motion for each of the remaining slots, so go down the remaining list and add the following animations: Walk, Run, Walk, Turn 90 Left, Turn 90 Right. We also need to set the values for when the animation will blend and the animation speeds. To make this easier, you can follow the values in the matrix below and match these in the Inspector view.

Before we move on, we can also add the trigger for the jump animation. First, we need to select the words Base Layer along the top of the Animator window. This will take us back to the previous view. Now, select the jump animation from

the Project and drag this into the animator next to the blend tree node. Select the Blend Tree and right-click and then select Make Transition and drag the line that appears onto the Jump animation node.

We now need to select the Jump animation node and right-click and select Make ➔

Motion	Pos X	Pos Y	Weight
Idle	0	0	1
Walking	0	0.75	1
Running	0	1	1
Walking	0	-1	-1
Left Turn 90	1	0	1
Right Turn 90	-1	0	1

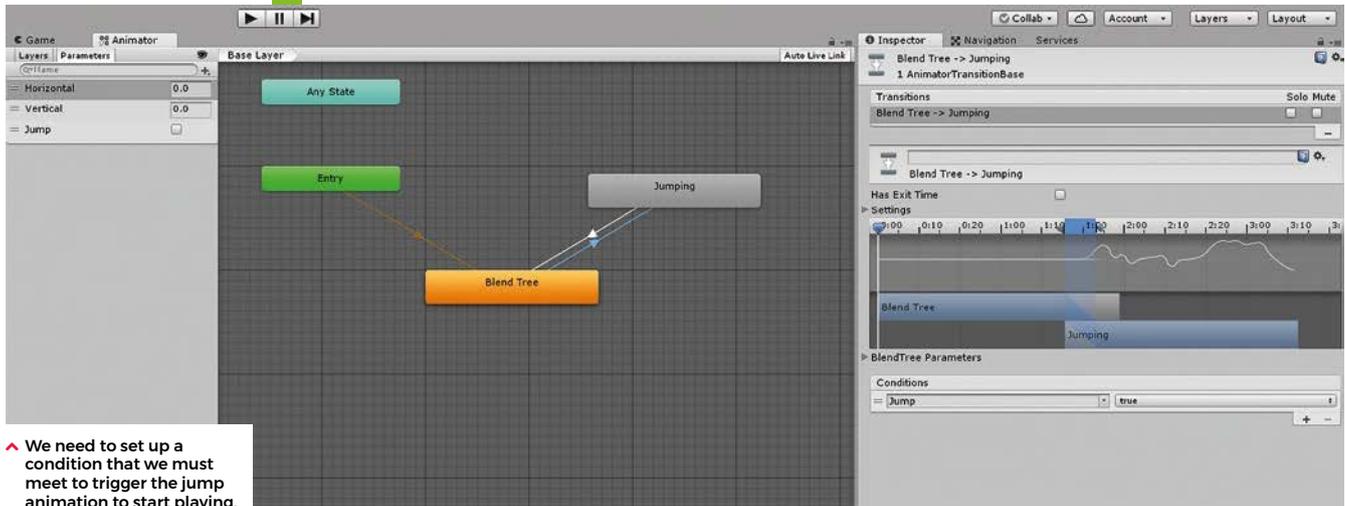
EBB AND FLOW

The Unity animator is a Finite State Machine; this means that the logic in the state machine will run in a sequence and by meeting criteria you will move to the next block in the sequence. This is often visualised as a flow diagram and represented by nodes that are linked by some sort of line or wire.

✓ This shows the float values that we can use to drive the animation from our controller input. Remember that the analogue values for an axis are typically between -1 to 1 with 0 being no input value.

Toolbox

Set up a controllable player character in Unity



^ We need to set up a condition that we must meet to trigger the jump animation to start playing.

MOONWALKING

Note that we are reusing the walk animation but setting the input direction to -1 and the speed to -1. This means that moving in a negative direction will play the walk animation in reverse, thus your character steps backwards.

Transition and drag the line that appears onto the Blend Tree. Now these are both linked, we need to make a new parameter. Click the + icon on the transitions, select the arrow on the connection from the Blend Tree to the Jump animation node. In the Inspector, untick the option for Has Exit Time. We then select the + icon on the bottom-right of the Conditions entry. Change the drop-down that appears in this entry to the jump bool we created.

Now, select the arrow that's connected between the Jump node and the Blend Tree. We need to select the same + icon in the Inspector and set the parameter to Jump once again. We'll also make sure that we change the drop-down to false for this parameter.

We can quickly test how the animations will work by pressing the play button to preview. We can also type in values between 0 and 1 into the parameters to switch between animations. You may notice we have two problems: the animation stops rather than loops, and some of the animations have glitches on certain frames. We need to make some changes to

the animation files in Unity, so stop playing the game preview.

Now, in the Project window, select the Idle, Left Turn 90, Right Turn 90, Walk, and Run animations, and then in the Inspector, select the Animation tab. Look for Loop Time in this tab and select the checkbox next to it. To fix the animation glitch, we'll use the avatar from the Idle animations as the basis for all the others. We need to multiselect all other animations, and then switch to the Rig tab. We then need to change the drop-down for the Avatar Definition to Copy From Other Avatar, and finally, for the Source set the Idle avatar definition and Apply this.

FINALISING OUR INPUTS

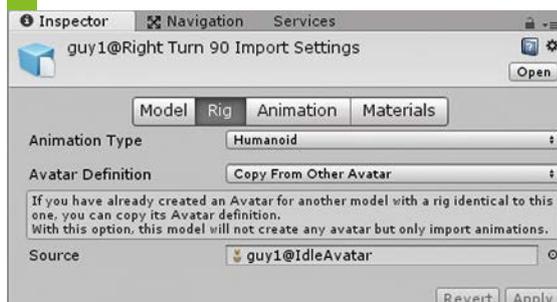
Our final step is to create a simple script to allow us to drive the animations by using the controller. We need to select our character, and then in the Inspector choose Add Component and then select New Script. Type in a script name of MyCharacterController and select Create and Add. We then need to open the script in your preferred script editor and replace the template code with the code below.

```
using UnityEngine;

public class MyCharacterController : MonoBehaviour {
    Animator anim;

    void Start () {
        anim = GetComponent<Animator>();
    }
}
```

> Copy the avatar definition for the idle animation onto all of the other animations you are intending to use, this should stop weird animation glitches.





▲ Don't worry, readers: the green hair's optional.

```

void Update () {
    Walk();
    Jump();
}

void Walk()
{
    anim.SetFloat("Vertical", Input.
GetAxis("Vertical"));
    anim.SetFloat("Horizontal", Input.
GetAxis("Horizontal"));
}

void Jump()
{
    anim.SetBool("Jump", Input.
GetButton("Jump"));
}
}
    
```

Once you've saved the script, you should be able to press play to preview it. If you have a controller plugged in, you should be able to move around with the analogue stick and jump using one of the face buttons. This system could easily be extended and even adhere to physics

by adding components like the Rigidbody that we explored in previous tutorials. If you do add a rigid body, you may have issues with gravity not updating when playing animations; in this case, you'll need to look at setting the bake into pose option on the character animation's Y transform.

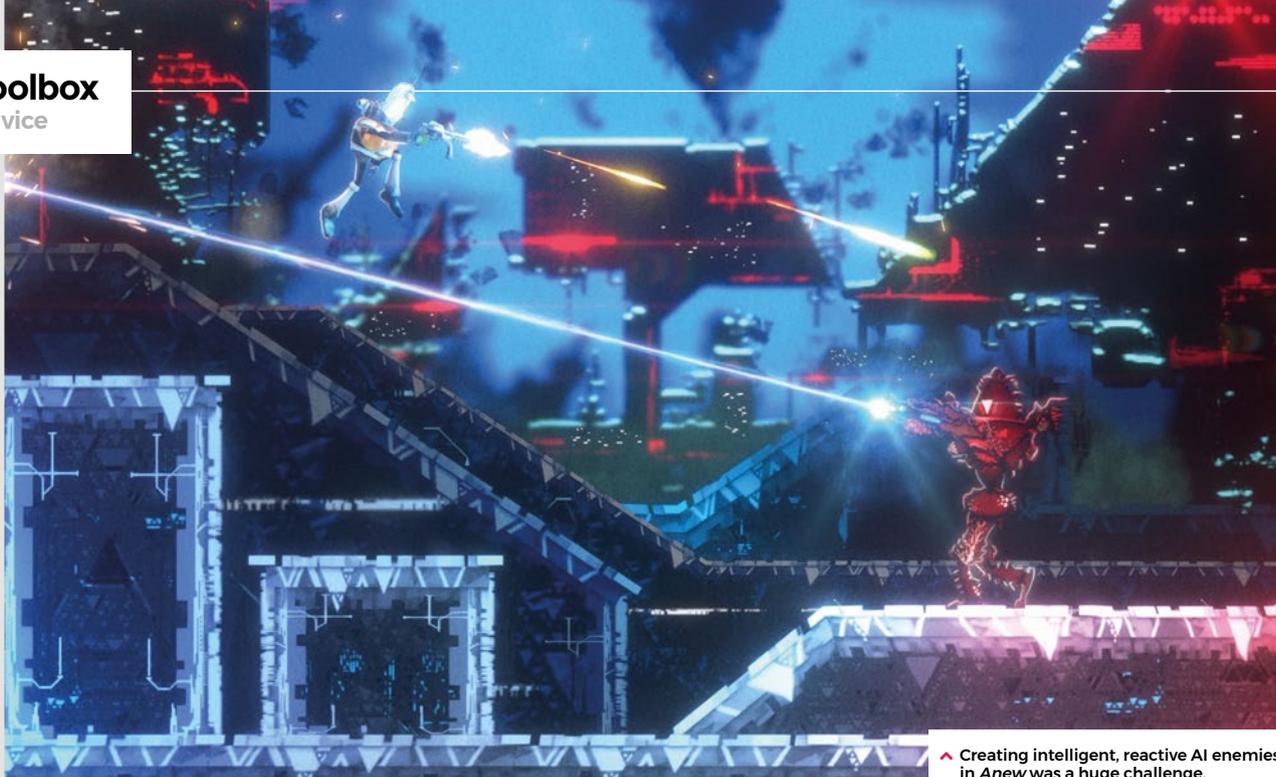
Nevertheless, you can see from this tutorial just how simple it can be to get a prototype character running in Unity – and with full controller support to boot. 🙌

FLASHDANCE

You could always add another animation and set it to one of the other controller face buttons. How about adding a fancy looking combat slide or a *Fortnite*-style dance move?



▲ You can start to build up a level to try out your character motion in. Remember that you will need a rigidbody and a collider to handle gravity and collision.



Creating intelligent, reactive AI enemies in *Anew* was a huge challenge.



AUTHOR
JEFF SPOONHOWER

Jeff Spoonhower is a developer, artist, and college professor who's been working on triple-A and indie games for over 17 years.
anewthegame.com

Indie reflections: Making *Anew* Part 2

In this second diary, developer Jeff Spoonhower discusses the importance of planning scope

Now that you have an idea of the type of indie game you'd like to make, let's explore the concept of scope. Scoping is a tricky business, even for seasoned industry vets who've shipped several titles. If it was easy, every game would launch on time, bug-free, with a Metacritic score in the 90s!

PLANNING SCOPE

What is scope? Scope is the breadth and depth of your game. It's a measurement of total complexity and scale. It requires you to balance your grand vision for the game with your ability to execute it. Scope accounts for many things, such as the amount and complexity of environments, vehicles, weapons, characters, cinematics, dialogue, gameplay systems and mechanics, and much more. Scope encompasses every piece of your planned game and affects the amount of time and money you'll need to spend to bring it to completion. Scope acts as an early filter system, or reality check, for the design decisions you're considering for your game.

Limit your project's scope as much as possible. Try making a few simple, quick-turnaround playable prototypes so you can

strengthen your development chops. Did any of these experiments yield interesting results? Take note of the mechanics and systems that were fun, and the ones that weren't. Track the amount of time it took you and your team to complete each specific task. This data will be invaluable when you work on the scope, schedule, and budget of your inevitable magnum opus, lore-rich, sci-fi online multiplayer walking simulator. In addition to the typical complexities of development that we all face, you, as a newcomer to this arena, bear the additional burden of having to learn a host of new tools and processes. This will take time, and should be factored into the scope of your game.

Temper your expectations regarding outcomes for the first game you produce. You probably won't release it on Steam to an onslaught of critical praise and commercial success, and it likely won't stand out amongst the sea of other smaller games flooding the marketplace. Instead, chalk up this project as a learning experience, during which you will improve your development and planning skills. Remember, the act of finishing something you've started is deceptively difficult. The execution of even a 'simple' game idea will be more complex

✓ Pictured left, the game you want to make. Pictured right, the game you probably should make. Let's talk about scope.





▲ An example weapon design sheet. These helped us to create weapons that look distinct and function uniquely.

than you can imagine! Complete a few smaller-scope projects, then try to tackle a larger one.

Ideally, your game's scope will be fully planned out before production begins. You'll determine clear goals for the breadth and depth of the many features and systems that are included in your game's design. In reality, this rarely occurs. There are hundreds of components that must be factored into the scope of a game. On almost every large studio project I've ever worked on, it took the team months, or longer, to wrangle its scope. Are the game's mechanics fun and challenging? Do the combat systems work well? Does the look and feel of the characters and game world seem consistent and unified? Does narrative delivery make sense within the context of gameplay systems? It usually takes a long time to get to a point in production where you have a solid understanding of your game and whether or not it is actually working.

SCOPING ANEW

My development partner, Steve Copeland, and I discussed and planned out the scope of *Anew* during pre-production. Since we were designing a Metroidvania-style game, we knew the world itself would need to be large and complex – one that would encourage exploration and discovery. Each zone required a distinct look and feel, unique enemies, challenges, puzzles, and gameplay mechanics. We collaboratively documented our ideas in a Google sheet, detailing each zone, enemy, vehicle, narrative moment, and more, in an attempt to roughly

“Scope encompasses every piece of your planned game”

scope out our project. We did our best to write down each individual component of our larger vision for the game as we imagined it.

Next, we spent several months creating a small playable slice of the game in order to gauge our ability to tackle the proposed scope. We knew the project was going to be large and complex, and would likely take many years to complete. We accepted this, because we wanted our game to look and feel unique. All of the art and much of the code in our game has been made from scratch. We hedged our bets on creating a larger-scope game that would stand out in a marketplace full of smaller-scope indie titles.

As we moved into full production and began building the game, we realised that our initial scope wasn't entirely accurate. For example, after building and playtesting several environments, I realised that they needed to be significantly larger, with more points of interconnection, areas for side missions, and spaces carved out for combat and narrative exposition. We also found that we would need a larger number of creatures and enemies with complex AI and behavioural patterns in order

to make the world feel alive and reactive. The art direction also evolved over time, from a rough, conceptual look to a more detailed, higher-fidelity style. These common types of realisations and adjustments led to an expansion in scope. As we continued to build the game, we reached a point where we had to stop inventing new things (which is extremely time-intensive) and cut off the ideation and development of new features. In order to avoid scope blowout, we also had to cut certain features and content. These decisions are always painful to make.

HIT ME WITH YOUR BEST SHOT

As with all facets of game development, scoping is hard. Nobody is good at scoping a project unless it's something very similar to one they've already undertaken in terms of resources, technology, and creative direction (Pro tip – this is why sequels are so prevalent). Take your best shot at planning the scope for your indie game up front, but be prepared to make adjustments along the way. Keep your first few projects simple, and finish them. These accomplishments will boost your confidence as you attempt to tackle more complex projects. 🍷



▲ An early pre-production zone sketch that eventually turned into a much larger, more complex in-game environment.

Into the unknown

Creative invention comes with a mountain of 'unknowns'. As a game developer working on a first indie game, you'll inevitably face many unexpected challenges on all fronts – art, code, design, marketing, PR... the list goes on. Be mentally prepared to run into these types of obstacles. Take care of yourself. Go for walks, eat well, get sleep, and then take another run up the hill to solve the problem at hand with a refreshed mind and body.

▼ A pre-production character sheet for *Anew*. Planning out enemy designs is a critical component of scope.



GET INVOLVED

Do you have an online tutorial you'd like to share with readers? Have you created an online resource that other game developers might find useful? Maybe you have a local code club you're keen to promote? If you have something you'd like to see featured in the Directory, get in touch with us at wfmag.cc/hello

✓ You can keep up to date with forthcoming events and training events at ukie.org.uk/events-and-training



Directory

Upcoming events for game developers

Courtesy of Ukie, here's a selection of game dev events coming up around the UK this year

➤ #Include 2019: Ukie Office, London, 21 March

Don't sit at home or work feeling sorry for yourself while everyone else is at GDC. #Include 2019 has a day of speakers lined up, including developers Cliff Harris, Megan Fox, and Mark Drew. wfmag.cc/include

➤ ESI Forum Spring: Manchester, 22 March

These evening industry meet-ups consist of networking, good food, drinks, and a panel with audience Q&A. wfmag.cc/esi-forum

➤ Gamers Unite 2019 Launch Party: Manchester, 26 March

Will feature special appearances from *Star Citizen* and Ubisoft developers, the creators of the *Overcooked* franchise, and some of the North West's finest indie game studios. wfmag.cc/gamers-unite

➤ XRTGO 2019: Newcastle, 4 April

This business-to-business event returns for its fifth year with a line-up of leading immersive tech speakers, exhibitors, and delegates. Ukie members get a 10% discount. wfmag.cc/xrtgo

➤ More Than Just A Game: London, 4-5 April

The fifth edition of MTJG is dedicated to the role that games and interactive entertainment play in society, and their profound impact on human interactions and democracy. wfmag.cc/more-than

➤ Get Your Game On: London, 26 April

A full-day conference with guest speakers in the morning, two-hour workshops in the afternoon, a panel, a voiceover jam, and networking drinks to wrap up the day. wfmag.cc/get-your

➤ Gamedev.world: Ukie Offices, London, 21-23 June

This summer, Ukie will be opening its office doors for everyone to watch gamedev.world, a global game developer conference translated into eight languages, for free. wfmag.cc/gamedev

Wireframe

LIFTING THE LID ON VIDEO GAMES

Download the app

Out now for smartphones & tablets



£1.99 or **£34.99**
rolling subscription subscribe for a year





USER RESEARCH

Game design's best-kept secret?

We sit down with three experts in the field of User Research to discover how it's changing the way we play

We live in a world where data is king. Everything, from our shopping habits to our Facebook likes, is used to create a profile of us, which in turn is supposed to make our experience on the internet better. By the same token, that data can be used to tailor what we see – not just what's presented to us, but how it's presented to us. Now imagine every input you've ever made in a game, every choice you've ever made and the reasons behind them – to all intents and purposes, a player's time with a game – can be seen as a stream of data. That's where User Research comes in.

User Research in games is something of a nascent field. Although it's been around in one form or another since the start of the industry, it's in the past 20 years, starting with games like *Crash Bandicoot 2* and *Age of Empires*, that analysing player data has started to become an essential part of the development process. Nowadays, bigger studios have User Research labs on-site, and there are third-party services for studios that can't afford to build their own in-house teams.

Jonathan Dankoff is Senior Manager for User Research at Warner Brothers Games. He's been in the industry for around 15 years, having spent time at Ubisoft working on the *Assassin's*

WRITTEN BY
HARRY SLATER



^ Player Research's playtesting rooms, where players provide feedback on prototype games.

Creed franchise before making the switch to Warner. "Going back to when I started, about 15 years ago, there was a lot more energy spent on convincing developers that what we brought to the table was worthwhile," Dankoff says. "Whereas now, with the work we've done throughout the community and across all the different studios and developers, and the conferences and the push to get information out there about how important it is to get your game in front of players, that's changed pretty drastically. Now you see more and more developers reaching out to us asking for studies, rather than us constantly having to chase them down."

USER RESEARCH: WHAT DOES IT DO?

Before we go any further, it's a good idea to take a look at what User Research does, and, perhaps more importantly, doesn't do. Even now it's a discipline that a lot of other members of the game development community don't really understand. Dankoff explains how a study might proceed under his watch.

"First, you get a design question from a development team, you choose a demographic of player, you find a way to recruit them using a



^ Crash Bandicoot 2 was one of the first games that used User Research data to help improve its design.

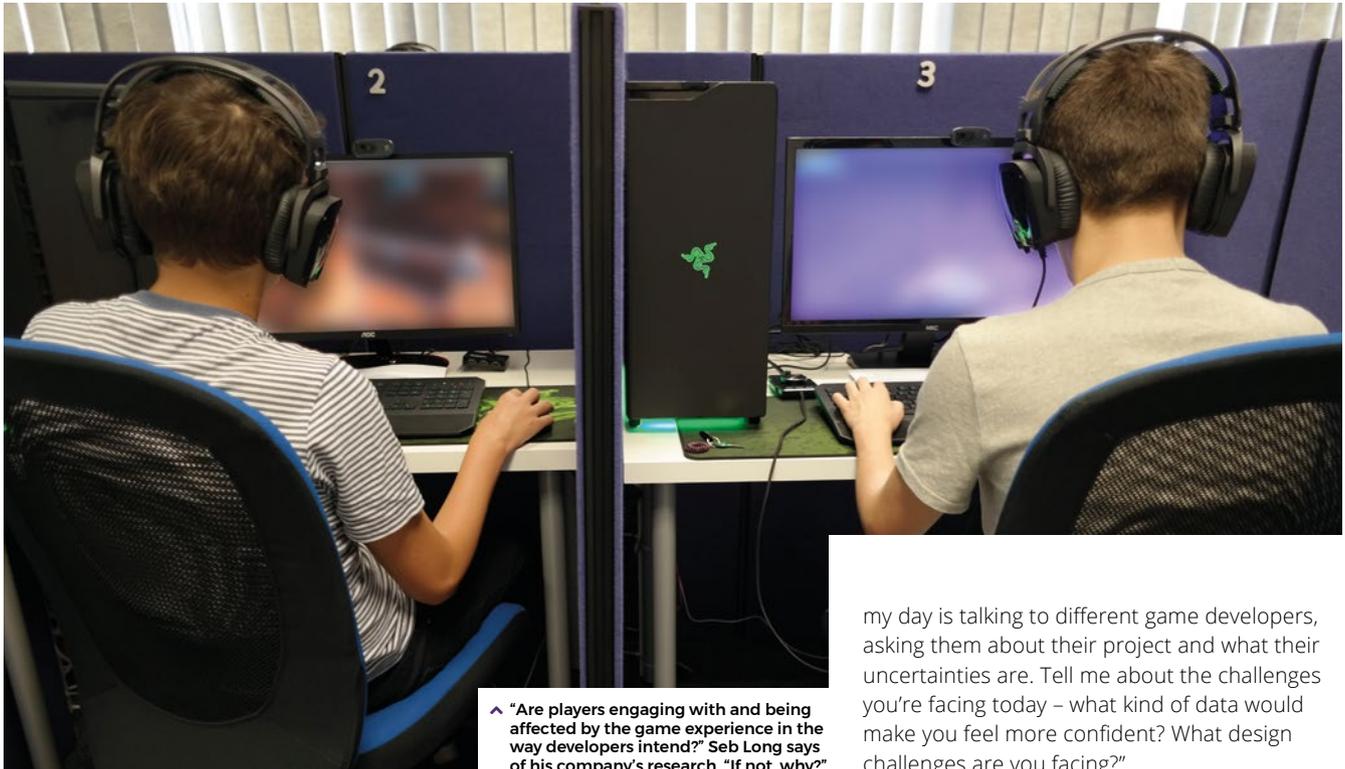
variety of different tools and methods. You get them into the lab, they play the game, you ask them some questions. You take that data and you turn it into something that is valuable to a dev team and you report back to them. And you follow up, you repeat that loop. The goals and the different things you're working on will vary over the course of a year, two years, three years, but broadly speaking that's the groundhog day we're looking at as researchers."

What sort of data is the test looking to find? Well, that very much depends on what the development team is concerned about. Seb Long is a director at Player Research, a third-party UR company. He explains how one of the most important parts of User Research is working closely with the team that's making the game.

"Most of my time is spent talking to a lot of development teams. As a third party, we work with lots and lots of companies, so a lot of ▶

▼ Seb Long, director at third-party User Research company, Player Research





^ “Are players engaging with and being affected by the game experience in the way developers intend?” Seb Long says of his company’s research. “If not, why?”

my day is talking to different game developers, asking them about their project and what their uncertainties are. Tell me about the challenges you’re facing today – what kind of data would make you feel more confident? What design challenges are you facing?”

“A terabyte of data on a spreadsheet or a hard drive doesn’t make better games”

ACCESSIBILITY

Accessible gaming is something that User Research is often at the forefront of, according to Dankoff. “The FCC has legislated certain amounts of accessibility into games as of this year, there’s going to be similar legislation coming up in Europe soon, and so making sure that our games are compliant, and playable by people who either have vision, motion, or hearing impairments – or any sort of cognitive impairments – has been a really interesting thing that’s being pushed. We’re part of the driving force that’s pushing our teams to not just be compliant but to push the boundaries of accessibility in our games.”



^ Games User Research is at the forefront of accessibility in gaming.

LOOKING FOR THE RIGHT ANSWERS

User Research, then, is a way of answering specific questions using data that’s generated by people who are actually playing the game. Even what it comes to collating that data, Dankoff has seen some massive changes in his time in the industry. “So, ten years ago I was counting the number of grenades that people threw manually, and giving out questionnaires on pieces of paper and transcribing them; today both of those things would sound really funny to a new researcher.”

Nowadays, User Research is much closer to the cutting edge of game development. Biometric devices like eye-trackers and heart-rate monitors are used, and the telemetry that’s being built into games means massive amounts of data can be collected with ease. As a discipline though, User Research isn’t just about how much data can be sucked in.

“There’s more players and more data available to us now by the nature of having devices connected to the internet,” explains Long. “More data doesn’t mean more understanding. There’s an even greater need for professionals like us to come in and help teams action that data they’re providing. A terabyte of data on a spreadsheet or a hard drive somewhere doesn’t make better games.”



^ Much of Cabeen's work has been on the *Skylanders* series.

THE FUTURE

When asked about the future of the discipline, Long knows there's work to be done, but it's clear from his words that everyone involved is passionate about rolling up their sleeves and getting stuck in. "We'll still be fighting the same problems – that it's very hard to teach people things, that tutorials are generally rubbish the first time you have a go at them, that people are hard to understand and hard to motivate, and that it's hard to get people to understand what games are about and what the narrative is about. All of those challenges need addressing tomorrow as much as they did yesterday and for the last 20 years. And I think we're all going to enjoy addressing them in the future."



^ Player Research has worked on games including *Fightback* from *Ninja Theory*.

Instead, it's about understanding that data, and using it to help developers make the experiences they're designing even more interesting and exciting. Michele Cabeen is a Lead User Researcher from Activision, whose remit covers everything apart from *Call of Duty* on consoles. I ask her about what a normal day for a User Researcher looks like, and her answer shows the variety of different disciplines involved in her job.

"It depends on where we're at in a project. If we've got a study coming up it would be getting a build to play through to familiarise myself with anything that's changed. Possibly hopping on a call with the developers or stopping by the producers' office on our end, chatting to them about certain questions I might have about the build. It could be putting together a survey, it could be putting together a test flow and making sure that everything's timed out correctly. Working with our recruiter to figure out the profile we need for the study or working with an external recruiter if it's a profile we can't get ourselves. On any other day it could be actually running the study, and that can go very smoothly, or that can go very poorly. It all



^ Michele Cabeen, a Lead User Researcher at Activision.

depends on if we have a build and what state that build is in, how stable it is, if our playtesters are late or get sick or anything along those lines. On another day it's doing analysis on that data and presenting that data to the team."

UR AND GAMEDEV ARE CHUMS

It should be clear by now that there's a tight connection between UR and game development. User Research isn't going to discover the holy grail of game design on its own, because it needs to understand and evolve alongside the rest of the disciplines that go into making a game. For Dankoff, strengthening that connection is only going to make the work of User Researchers even better, and it's something he's seen more of in his time in the industry.

"We started to see the rise of embedded researchers on dev teams, so rather than being an in-house group at arm's length, they're having researchers sit with the teams and coming to the meetings and really being a part of the development process. That speeds up the loop between the issues the developer's facing and how we can quickly brainstorm ▶

▼ Jonathan Dankoff, Senior Manager for User Research at Warner Brothers Games.



and workshop with them on what you would have to do to solve it. I think that was a huge sea-change for us – having people as part of the development process really helped move our discipline forward.”

And moving forward is something that User Research is always interested in. Again, though, it’s a case of evolving sympathetically with the other core areas of game making, to ensure that the tools and insights that the discipline is offering are the most useful they can be. For Long, “in terms of how games user research is changing, it can’t be detached from how game development is changing. What’s inside our remit is just what developers are uncertain about. What creative and business challenges are they facing today, as opposed to yesterday or last week? Things like the changing business models of gaming: how do we understand that? Live ops and games with two-, three-, five-year retention? There are huge creative and business challenges that need insight into players to either solve or understand.”

Cabeen understands that too, and explains how the changing face of creating games is as much a part of User Research as it is other parts of the process.

“Narrative games are coming back, and they’re a lot bigger, and if that’s something your team is on, you’re going to be working on them for a long time,” she says. “Esports is a bit of a big push for a lot of companies and I’m curious how

user research will tie into that, if at all, and is that something that falls under User Research’s umbrella, is it something where we combine with another discipline to deal with it? How do we look into streaming and how that affects playing and interacting – whoever’s live and who’s watching them, too.”

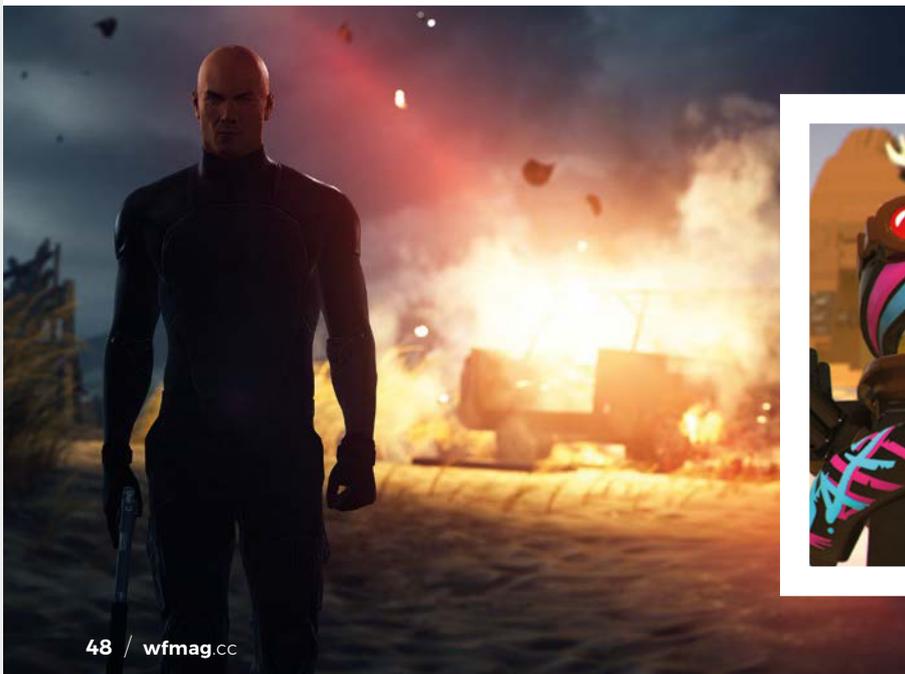
AN ACADEMIC DISCIPLINE?

One thing that’s clear from talking to people involved in the discipline is that there’s an academic background to User Research. This isn’t just putting together panels of people for focus testing, it’s about processing and comprehending the answers delivered by the in-game data those people create.

“I started as a games user researcher in 2012,” explains Long. “Immediately before that I’d done a degree in interaction design, which is the exploration of how humans interact with technology, but my true passion was video games. I chose my university based on the presence of a video games lab doing this kind of work, which was the University of Sussex.”

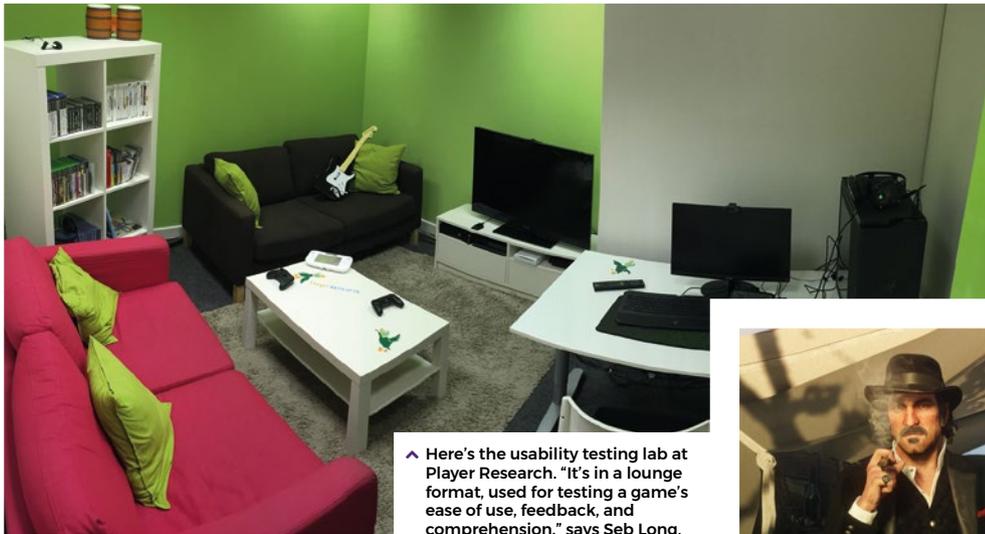
Cabeen and Dankoff have similar stories – Cabeen came to User Research with a degree in communications, Dankoff with a degree in marketing. That really highlights the diversity of roles that exists within User Research – it’s a combination of schemes, ideas, and strategies that’s working towards a common goal of making video games more enjoyable for the people who play them. If there’s a mantra for User Research, then it’s probably players first. That’s because the data that forms the bedrock of the discipline comes directly from people playing

▼ Dankoff’s current work spans the gamut, from hardcore games like *Hitman 2*...



▼ ...to more family-friendly games and movie tie-ins like *The Lego Movie 2: The Game*





^ Here's the usability testing lab at Player Research. "It's in a lounge format, used for testing a game's ease of use, feedback, and comprehension," says Seb Long.

v Red Dead Redemption 2 was one of Long's favourite games of last year.

v Dankoff worked on the Assassin's Creed series during his time at Ubisoft.



INTEGRATION

One thing that everyone involved with User Research is adamant about is that this isn't some subsection or afterthought when it comes to development. Instead, it's a discipline that should be a core part of that process. As Cabeen puts it, "Wherever the game industry is going, user researcher will follow." Or, to quote Dankoff, "as games continue to evolve, so will we."

games – just because an idea works well on paper, doesn't mean it won't fall apart when it becomes playable.

BACK TO THE FUTURE

With its eye-tracking devices and brain-wave monitors it can sometimes feel like UR lives in the future, but really it's a discipline that's stood, by its very nature, in the here and now. It's about finding problems and working out solutions to the problems, both those that we know and those that we don't, at the heart of gaming. Whether that's issues surrounding accessible gaming, esports, streaming, or something more fundamental like how and why we actually play.

"One of our peers is going to introduce some really interesting research she's doing, using Twitch mixed with surveys and a couple of other things to more accurately understand the player experience from home," explains Dankoff. "Being able to get a lot closer to the players and the

"We're having a massive and profound impact on some of the best games in the world"

ways they're playing and the experiences that they're having is quite exciting."

There's still a lot of work to do to push User Research into the mainstream, but it's something that Long and the others are only too keen to put their backs into. "I still feel that UX is the best-kept secret in gaming," says Long. "There's still not been that breakthrough moment that we were all thinking would happen in the last five years. We're having a massive and profound impact on some of the best games in the world, but we're always just at the cusp of breaking into the zeitgeist, of breaking into the consciousness of game developers. To say 'we are here, we have this information and certainty, and approaches ready for you to make better games'. Whether it's called UX design or UX research, it's about making developers aware of the professional people and professional tools that we have in this discipline, ready to help them make something amazing." 🗨️



Developer Profile

Ultimate Play The Game

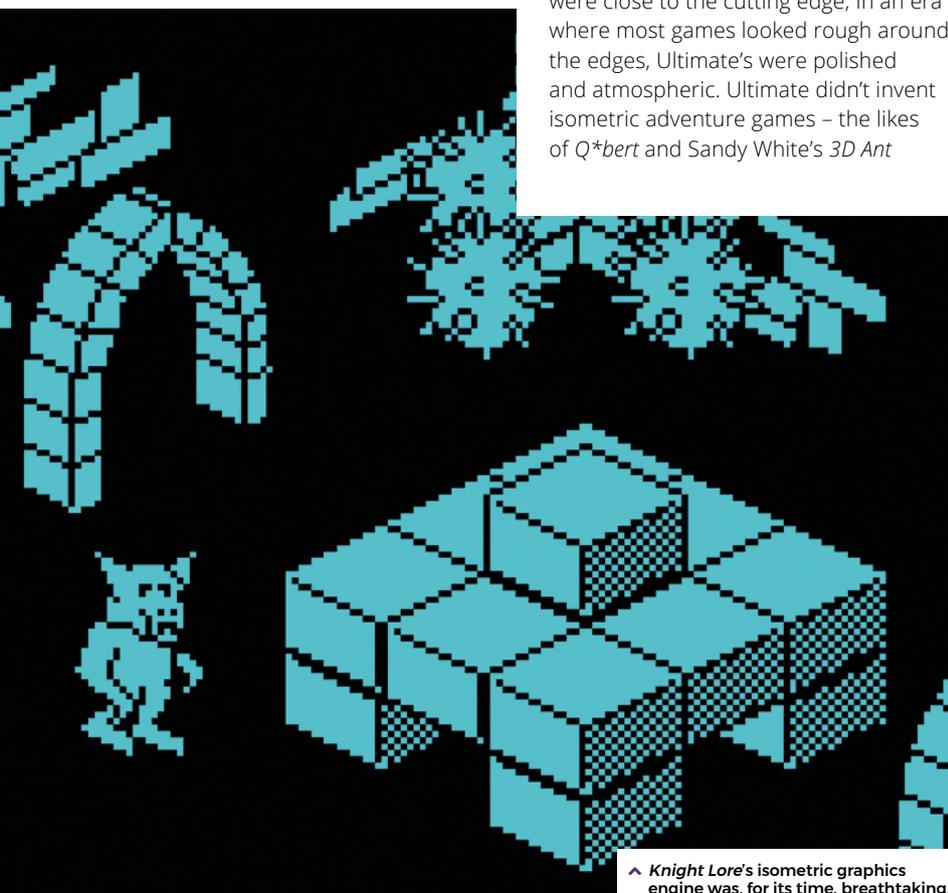
In an era when games were sold on cassettes, Ultimate provided a glimpse of the future

Glance around the screenshots on this page, and you might not think too much of the pixelated characters and blocky environments. But in the halcyon days of 8-bit computers, the games of the oddly-named Ultimate Play The Game were close to the cutting edge; in an era where most games looked rough around the edges, Ultimate's were polished and atmospheric. Ultimate didn't invent isometric adventure games – the likes of *Q*bert* and Sandy White's *3D Ant*

Attack got there earlier – but titles like *Knight Lore* and *Alien 8* felt sharp and accomplished in a way that few others of the time did.

Ultimate also carried a mystique that other UK studios of the era lacked. The company's founders, Tim and Chris Stamper, seldom gave interviews; according to eighties developer Rod Cousens, speaking on the documentary *From Bedrooms to Billions*, the Stampers once showed up outside an awards ceremony in a white limousine, ducked inside to take their statuette, then got back in the car and trundled off. Such aloof antics would become slightly more common later, thanks to studios like the Bitmap Brothers, but were comparatively rare when the industry was still finding its feet in the early eighties. Imagine Software garnered a bit of attention with their sports cars and absurdly well-paid staff, but unlike Ultimate, their games seldom lived up to the hype generated by their slick, airbrushed advertising.

Before Ultimate was formed, the Stampers worked somewhat anonymously in the arcade industry. When the Stampers decided to set up a studio of their own, they brought some of that direct, arcade sensibility with them; their earliest titles, which included *Jetpac*, *Pssst*, and *Cookie*, could easily have been arcade machines themselves, were it not for the telltale colour clash and grating sound of the Sinclair ZX Spectrum. In those 1983 releases, it was easy to see the care and craft that had gone into them: *Jetpac* involved



^ *Knight Lore's* isometric graphics engine was, for its time, breathtaking.



^ Even Ultimate's loading screens, like this one for *Atic Atac*, were polished and well-crafted.

grabbing bits of a rocket dotted around the screen and dropping them back onto a launchpad while shooting enemies. What set it apart was its execution: the satisfying explosions, the precision of the controls.

SABRE IN THE ATTIC

It was when Ultimate started moving beyond fixed-screen arcade games that things really started to happen. *Jetpac* sequel *Lunar Jetman* was a more involved experience than its predecessor, with a scrolling landscape and multiple items that had to be juggled to destroy alien bases. *Sabre Wulf* and *Atic Atac* offered up complex mazes of items and monsters; packed with colour, *Atic Atac*, in particular, contained ideas that modern gamers would recognise: the constant need for food to fend off death, and gravestones that serve as a permanent reminder of the player's last fatal mistake. Next came *Knight Lore*, which showcased Filamation: an isometric graphics engine that allowed for some fun and downright ingenious spatial puzzles on a humble 8-bit computer. (*Knight Lore* was also notable for introducing an early kind of day-night cycle.)

LittleBigStudio

Like so many companies of the ZX Spectrum era, Ultimate Play The Game were a smaller outfit than their polished games and packaging suggested. Brothers Tim and Chris Stamper set up the studio in Ashby-de-la-Zouch in late 1982, with Tim and his wife Carol designing graphics while Chris and another co-founder, John Lathbury, handled the programming. The firm's secrecy was such that, according to a magazine report from 1985, Ultimate worked in a former shop with the windows blanked out with thick sheets of Perspex. As for the striking artwork, which appeared on the games' covers and numerous magazines of the period, this too was handled in-house – for that, we have Tim Stamper, and his skills with an airbrush, to thank.



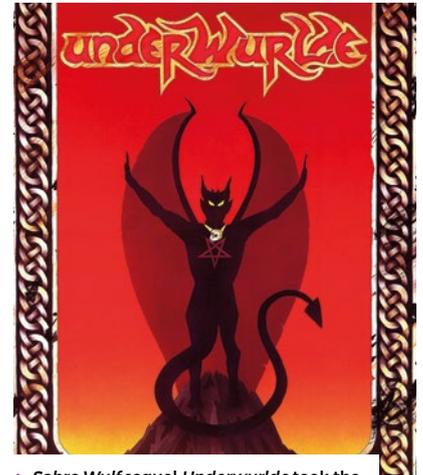
^ *Dingo* was a pre-Ultimate arcade game from the Stammers that looks and feels very like the pair's early Spectrum games.

Throughout its comparatively short existence, Ultimate displayed an uncommon balance of artistic brilliance and commercial shrewdness. It put out games regularly enough to keep up with a brisk market without tarnishing its reputation with a rushed, shoddy

“It's remarkable just how many great games the studio made in 1983 alone”

release – it's remarkable, really, just how many great games the studio made in 1983 alone. Ultimate also had a nose for what game would work at the right time: *Knight Lore* was actually in a playable state before *Sabre Wulf*, but was delayed because it looked so much more advanced than the latter's 2D maze action.

The Stammers were also sharp-eyed enough to see where the video game market was going towards the end of



^ *Sabre Wulf* sequel *Underwulde* took the form of a tough side-scrolling platformer.

the eighties. With Ultimate's reputation intact but facing dwindling sales, its name and catalogue were sold to the publisher US Gold in 1985. Around the same time, the Stammers had set up another company: Rare, which soon dedicated itself to making games for the Nintendo Entertainment System. The console hadn't yet gained much traction in Europe, but the Stammers clearly recognised the wider potential in its global market. Where so many other UK developers born in the eighties withered, Rare, in time, would flourish with such hits as *Donkey Kong Country*, *Banjo-Kazooie*, and *GoldenEye* on Nintendo's systems. That, of course, is a story for another profile. ☺



^ Tim Stamper's cover art was an Ultimate staple.

The Ultimate collection

10 not-so-Rare greats

The company barely lasted six years, but made some superb games



01
Jetpac

ZX Spectrum / various – 1983

Jetpac was, in its own way, a technical marvel. You control a flying astronaut who scoots around the screen, assembling a rocket from the parts scattered around, and then priming it for launch by collecting crates of fuel. It was one of the earliest Spectrum games that felt somehow perfect: like a golden-age arcade game crammed into 16kB.



02
Pssst

ZX Spectrum – 1983

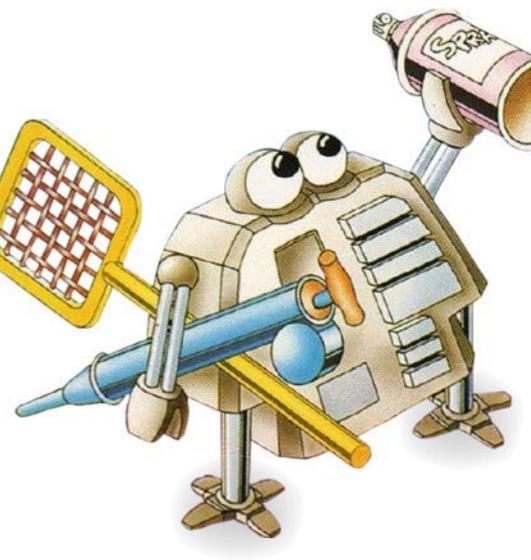
Less long-lasting than *Jetpac*, which sparked sequels and a very good remake for the Xbox, *Pssst* is still another arcade gem from Ultimate. Cast as a plucky flying robot, it's your job to defend a burgeoning flower from bugs by spraying them with the appropriately coloured canister. Again, its cartoon style and clean execution made it remarkable for its time.



03
Tranz Am

ZX Spectrum – 1983

Ultimate wanted each game to improve on the last, and you can see that evolution in *Tranz Am*. It's a top-down racer with a *Mad Max* theme: you avoid the hazards and collect precious fuel in a sprawling (for the time) post-apocalyptic USA. It was a sign that Ultimate was moving away from the quick-fix arcade action of *Jetpac*, *Pssst*, and manic cake-making sim, *Cookie*.



04
Lunar Jetman

ZX Spectrum / BBC Micro – 1983

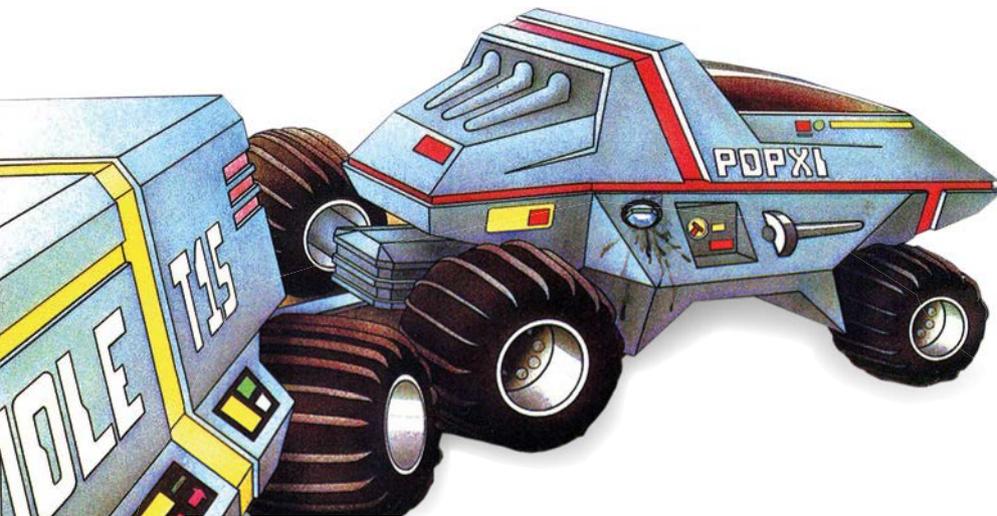
With *Lunar Jetman*, Ultimate took the shooting-and-collecting of *Jetpac* in a more sophisticated direction. Now, the player had a vehicle, a scrolling lunar landscape, and a more complex objective (shepherd a bomb to an alien base) to achieve. It was challenging, addictive, and beautifully designed. Just look at how Ultimate animated the vehicle's big chunky wheels.



05
Atic Atac

ZX Spectrum / BBC Micro – 1983

Ultimate made an absurd number of classic games in 1983, and *Atic Atac* is arguably the high point. A top-down fantasy adventure with a captivating comic book style, it sent the player scrambling around a haunted maze of monsters and collectibles. Another huge hit for Ultimate, *Atic Atac* also inspired another eighties touchstone: the cult TV game show, *Knightmare*.



06 Sabre Wulf

ZX Spectrum / various – 1984

More top-down maze roaming, but the jungle setting and faintly manic turn of speed made *Sabre Wulf* feel subtly different from *Atic Atac*. The game also introduced its hero, Sabreman, who would appear in several future Ultimate titles, including 1984 platformer *Underwulde* and 1986's *Pentagram*. Sabreman's career high, though, was arguably the next entry on this list.



07 Knight Lore

ZX Spectrum / various – 1984

Ultimate's first Filmation game, *Knight Lore* was full of invention: there was the eye-popping appeal of its pseudo-3D maze; the urgency generated by its day-night cycle, which ticked down the time the player had left to find all the ingredients to a life-saving potion; the character animation, as Sabreman morphed from human to werewolf and back. An absolute classic.



08 Alien 8

ZX Spectrum / various – 1985

Like *Pssst* before it, *Alien 8* starred a little robot charged with protecting life; in this case, a spacecraft full of frozen humans. Were the Stampers fans of the 1970s sci-fi movie, *Silent Running*? Quite possibly. Whatever the influences were, *Alien 8* was a satisfying follow-up to *Knight Lore*: another flip-screen maze of puzzles to solve, and items to track down.



09 Nightshade

ZX Spectrum / various – 1985

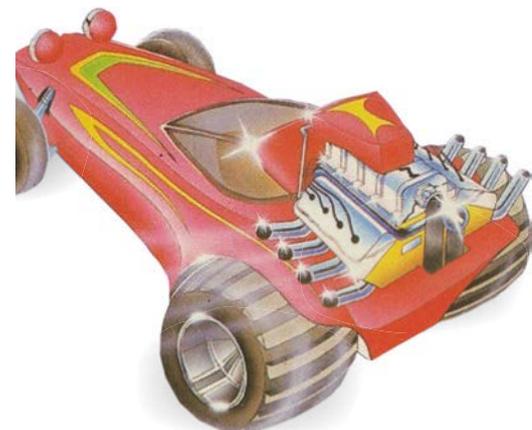
Ultimate's pace of development was such that it came up with an improved version of the Filmation engine just one year after *Knight Lore*. *Nightshade* showed what it could do: unlike its flick-screen predecessors, this adventure scrolled smoothly as the player explored a monster-infested town. It was another technical marvel.



10 Gunfright

ZX Spectrum / Amstrad CPC / MSX – 1985

It's *Nightshade* with a cowboy hat on, but *Gunfright* was still a fun adventure game, spiced up with bouts of quick-draw shooting. Sadly, it was one of the last true Ultimate titles; the company name was sold to publisher US Gold, and the Stampers focused their attention on Rare. For two short years, though, Ultimate was nothing less than a ZX Spectrum hit factory.



Subscribe today



SAVE
49%

wfmag.cc/subscribe

Try 12 weeks for only £12

Subscriber benefits

- > **Free delivery**
Get it fast and for free
- > **Exclusive offers**
Great gifts, offers, and discounts
- > **Great savings**
Save up to 49% compared to stores

Introductory offer

wfmag.cc/12weeks

- > **Low initial cost** (from £12)
- > **Cancel at any time**
- > **Free delivery to your door**
- > **Available worldwide**

Subscribe for 12 months

wfmag.cc/12months

£40 (UK) £75 (USA)

£65 (EU) £75 (RoW)

Offers and prices are subject to change at any time



Digital subscriptions from

£1.99



wfmag.cc/subscribe

Info

GENRE
Puzzle

FORMAT
PC (tested) / PS4
/ Switch

DEVELOPER
Moondrop

PUBLISHER
Modus Games

PRICE
£15.49

RELEASE
Out now

REVIEWED BY
Jason Coles

HIGHLIGHT

The game asks you if it's better to be stronger alone, or weaker together. This is at the core of the game and the closer the characters get, the less unique they become. It's a fascinating concept and works well.

✓ The screen splits off completely if you journey far enough.



Degrees of Separation

And not a Kevin Bacon in sight

Being kept apart from someone you love is heartbreaking. Whether it's temporary or permanent, something you want to do or something you *have* to do, it tugs at you in a way that few things do. *Degrees of Separation* takes this basic concept and turns it into a puzzle game. You play as two characters, Ember and Rime; Ember is a being from a world of heat and flame, while Rime is from one of cold and snow. Both are inexplicably drawn out of their homes when a strange feeling washes over them; unable to resist, each character travels until the two meet for the first time at a bridge – thus beginning their journey together.

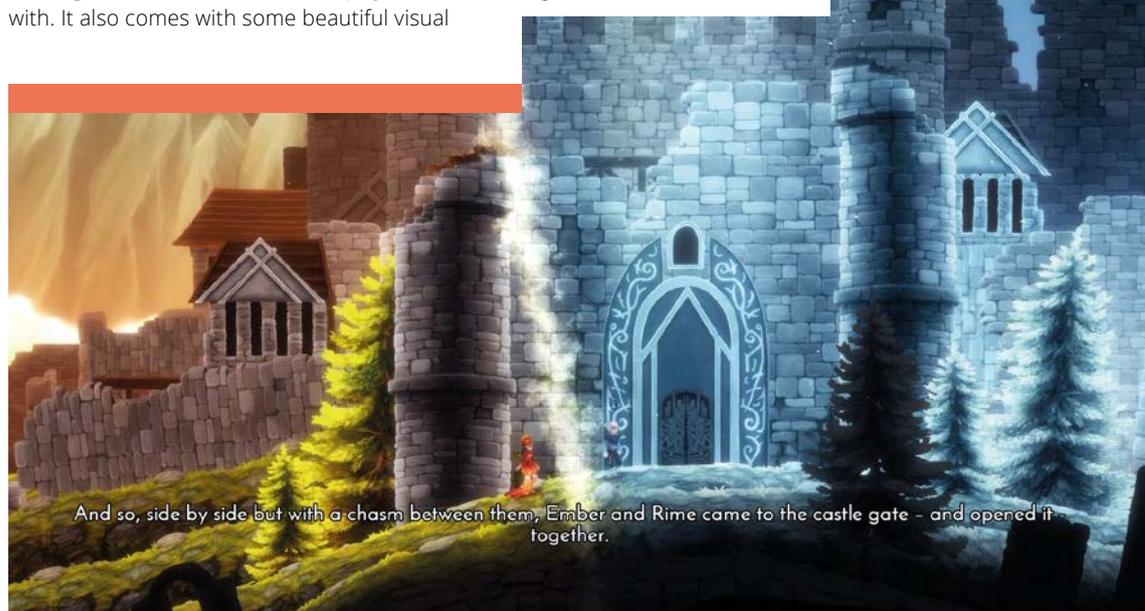
You switch between the two characters, and can get the other to follow you or stand in place. Radiating from each are the elements of their own world. While water becomes ice in Rime's plane of existence, it melts under Ember's influence. This is the core mechanic of the game and it's a lot of fun to play around with. It also comes with some beautiful visual

effects. Everything twinkles with permafrost when Rime is near, and you can see specks of ash and sparks of flame rising up around Ember. This leads to moments where you just stare at the screen, watching as two opposing forces of nature exist in perfect harmony... Not that things stay like this throughout, of course.

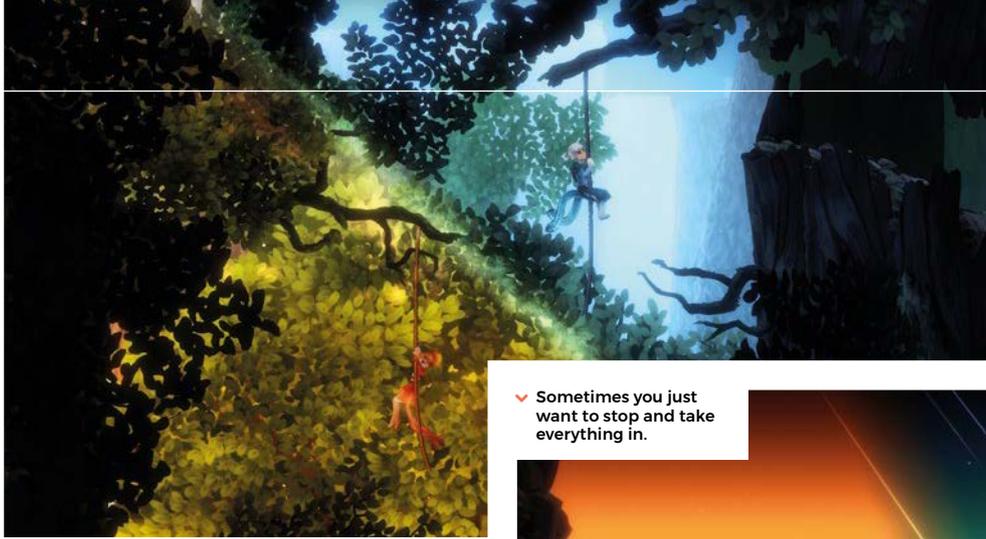
It isn't long until the two star-crossed beings fall in love with one another. Actually, it takes a shockingly small amount of time for this to happen, so I assume they must both be teenagers – anyone older is surely too jaded to feel so strongly so quickly. Of course, the game isn't all that long, so things have to move at a fair pace. Still, seeing the narration escalate so quickly is genuinely a bit jarring.

As you make your way through, you come across a castle with links to other worlds. Said worlds all contain a new mechanic for you

✓ The narration is so good it should get its own audiobook.



And so, side by side but with a chasm between them, Ember and Rime came to the castle gate – and opened it together.



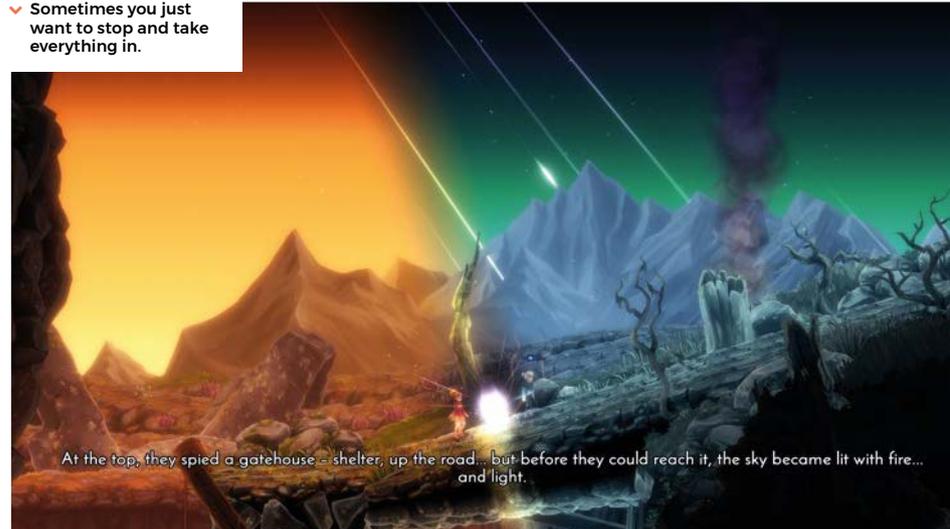
▼ Sometimes you just want to stop and take everything in.

to grapple with, each of which reflects both the world *and* the state of Ember and Rime's relationship. The first mechanic/world comes in the form of the ability to build a bridge where the two protagonists' worlds collide, reflecting a state of harmony with one another. Another world, meanwhile, sees explosions forming whenever the two touch, thus creating a palpable tension between Ember and Rime that builds as the level progresses. These mechanics make the puzzles different in each world, but they're really not distinct enough from one another in each world specifically. Each puzzle is fairly short, but there is a huge amount of them – as such, it doesn't take long until you see thematic repeats. While a definite negative, it isn't the biggest problem.

No, *Degrees of Separation's* AI is the biggest let-down. In a world defined by hot and cold, you don't want the word 'tepid' springing to mind. But that's just what it is. You can call the other character to you, for example, no matter how large the gap between the two is. Whether or not your partner can figure out how to get to you is another story entirely. There were moments when they got so confused by a rope that they decided the best thing to do was to just walk at the wall in front of them. And it's not an uncommon occurrence. If Ember and Rime aren't within kissing distance, then there's every chance the AI-controlled of the two would be getting stuck somewhere.

The best part of the game by far is the story itself. Throughout your journey you are joined by a charming and well-written narrator, wielding words in a way that drag you into the world. It isn't just her, with the story itself hitting some wonderful beats. Throughout you are asked to consider if it is better to be weaker together, or stronger alone – if, by giving up what makes us unique, we are better off by being with someone. It's an intriguing idea brought up not just narratively, but mechanically, too. It's just a shame that this is let down by the occasionally

“The best part of the game by far is the story”



At the top, they spied a gatehouse – shelter, up the road... but before they could reach it, the sky became lit with fire... and light.

repetitive puzzles and the easily bewildered AI.

Degrees of Separation shines in other ways, too. The art design, always in flux, is gorgeous. The sound is beautiful, with stunning orchestral pieces weaving themselves in with the visuals

to make some genuinely striking moments. It's at these points – when the audio and the visuals are almost overwhelming – that the game is at its most disjointed. The

beauty of its design is laid bare by some of the more irksome puzzles. It looks and sounds as though you should be relaxing, but instead you are being blown across the screen for the fiftieth time because the AI wouldn't keep its distance. It's jarring, and it lets the whole thing down. Even so, there's a lot to love – and a lot of love – in *Degrees of Separation*. 🎮

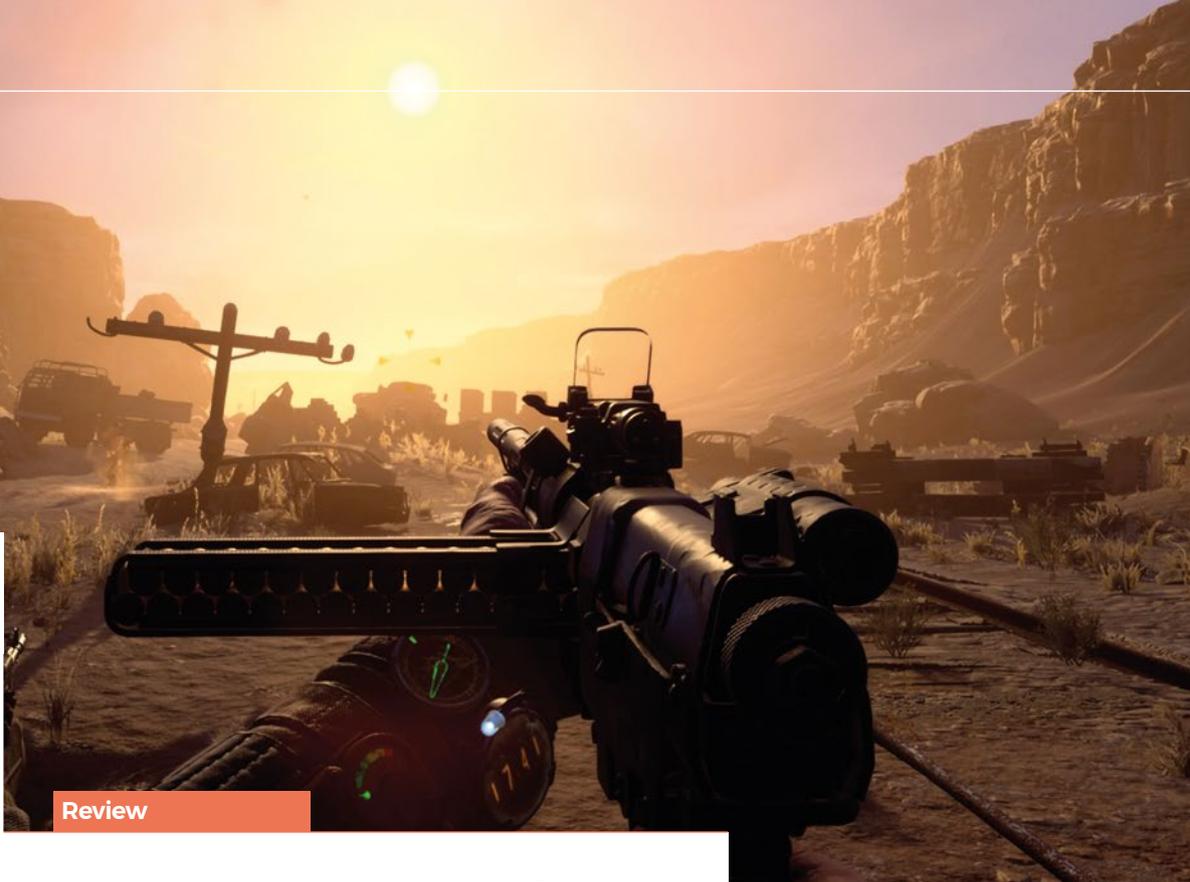
VERDICT

An enjoyable story with a few too many repetitive puzzles and a lacklustre AI.

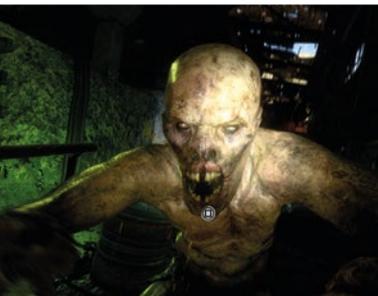
66%



▲ Nowhere is the divide between the two clearer than with water.



▼ The terribly-named humanoid will throw rocks, before leaping to attack. Be prepared to mash buttons to get them off. You'll be doing it a lot.



Review

Metro Exodus

▲ Dust, sand, and dirt will clog up your weapons, making cleaning them at a workbench a necessity.

Info

GENRE
FPS
FORMAT
PS4 (tested) /
PC / XBO
DEVELOPER
4A Games
PUBLISHER
Deep Silver
PRICE
£49.99
RELEASE
Out now

Metro Exodus takes the series on a post-apocalyptic rail tour

I'm hunkered down on a rickety boat, and I know there are mutants around me – I can hear their mandibles clicking. But I'm transfixed by something else: an oil slick, catching the light and swirling on the surface of the water. It may be an odd thing to be struck by, but it was in this moment that I truly appreciated *Metro Exodus'* level of craft. Regardless, my moment of awe was interrupted by a giant shrimp leaping onto my boat and trying to eat me.

Metro Exodus, the third game in the series, has been getting such a push that many new players may be curious. This is my first proper foray into the series, but I found I quickly picked up the story – a sweeping knowledge of earlier *Metro* games isn't required here. *Exodus* sees Artyom and the rest of his elite group of soldiers leave the home they've known for the past 20 years, the Moscow metro, and journey across post-apocalyptic Russia on a train. You sneak, shoot, scavenge, and explore your way through a number of areas; some linear, others pleasingly manageable open worlds.

These areas are the star of the show. Impressively crafted and saturated with atmosphere, they range from snow-covered marshes to a desert complete with sandstorms. Small details give a great sense of time and place: characters tan in the sun, rivets are

missing from armour, humble Russian Orthodox shrines decay in abandoned homes. Electrical anomalies that set ablaze anything in their path, winged demons that pluck you off the ground unexpectedly, and the ticking of your Geiger counter all make you feel genuinely vulnerable.

I came to cherish my time spent alone exploring these areas, however, because the characters in *Exodus* love talking. What's impressive is that they manage to talk so much while saying so little: what's largely blurted at you is exposition that could be summarised in a quarter of the time. They also have a terrible habit of talking over one another, making it impossible to understand what's being said.

None of this is helped by the incredibly poor English voice acting; changing the language to Russian makes things more bearable, but I soon had to switch back to English, as subtitles don't appear when tinkering at a workbench. This is why the train is the best character: its rust and haphazard improvements suggest more depth and character than its crew.

The characters may get the odd minor development, but there are too many of them and they're all fairly dull – the game's writing of and around the limited number of female characters had me shouting at the TV at one point. The game comes close to having an interesting female character on occasion,

REVIEWED BY
Holly Nielsen

▼ While stunning to look at, moments like this are often spoiled by characters talking over one another at the same high volume.





but despite their competence, the vast majority wind up being romantic interests. All enemy NPCs are male. Your wife, Anna, the best sniper on the squad, needs rescuing more times than is comfortable. It's distractingly outdated.

Another issue is Artyom's silence: the only time he speaks is during long monologues in opening screens. While silent protagonists can work, the conceit doesn't in *Metro Exodus*. I was sent to negotiate with a character on multiple occasions, and you can practically hear the writers figuring out how to work around Artyom's silence with unintentionally humorous results. After 'persuading' someone, which involved sitting silently while other characters popped in doing my job for me, I was celebrated by my crew for my influencing skills. Perhaps Artyom has the universe's most convincing face, we just don't know.

There are flashes of potential elsewhere. It's not a game about saving the world, but about moving forward. Travel on the train and watch the crew unwind, and they feel like people rather than cardboard cut-outs; some watch the scenery go by, one strums on a guitar, others prepare equipment or sneak off for a cigarette. The broad strokes of the story paint some compelling possibilities. It genuinely feels like a long journey; knowing you're leaving an area permanently feels liberating in an age of huge open-world games. Some of the groups populating the landscape also offer intrigue – my favourite being an odd tree-dwelling community. But all this potential is frustratingly let down by

“It’s not a game about saving the world, but about moving forward”

^ The armour, weapons, and settlements all feel hand-crafted or repurposed, the attention to detail hugely impressive.

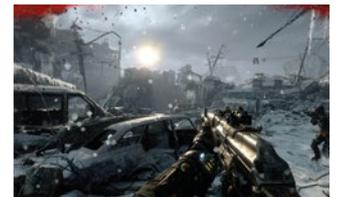
the dialogue and pacing: it consistently feels as though the writing's getting in the way of the fun.

The combat, meanwhile, is slow-paced at times, but it works well in the post-apocalyptic context: crafting and limited ammo create an effective sense of dread; at one point I found myself running out of gas mask filters, crafting more that only lasted twenty seconds at a time, as I desperately scavenged materials while avoiding enemies. It can be a thrill.

The packs of mutants in the open areas can be more of an annoyance than a challenge, particularly as Artyom seems to occasionally get stuck on the tiniest bit of scenery, and you have to throw yourself at a wall a few times before triggering the climb animation. The enemy AI isn't particularly sharp, either, with enemies occasionally running back and forth in a loop, or freezing altogether; that said, the mechanic of having enemies surrender once you've terrorised them enough is a great touch.

The more choreographed parts of the game are often effective, too: there are giant spiders scared of light, while you only have a small flashlight to fend them off. Turning around to see one scuttle away is shiver-inducing.

While playing *Metro Exodus*, I fluctuated between enjoying myself and sighing in frustration. Its looks may have advanced, but the writing hasn't grown to match the sheen. Despite its beauty, *Metro Exodus* is still, at its heart, stuck in its 2010 roots. 🗿



^ Fighting while wearing your gas mask leads to cracks that will urgently need patching up.

HIGHLIGHT

It's a mainstay of the series, but the 'wipe your mask' button was a revelation to me. So many games throw grime at the screen; *Metro Exodus'* ability to clean it away is a small yet noteworthy testament to the series' attention to detail.

VERDICT

Metro Exodus has a wonderful atmosphere and solid combat, but poor writing and some annoying issues derail it occasionally. It's an enjoyable, but frustrating, experience.

71%

^ The variety in the environments is a welcome change to the often grey and repetitive depictions of the post-apocalypse in video games.



Rated
Review

HIGHLIGHT

Every once in a while, *Aragami* will throw out some really clever level design that will take you by surprise. A huge city guarded by snipers, temples dedicated to the four elements with unique puzzles, houses built over the sea on stilts, or campsites illuminated by numerous fires all make for some excellent moments that almost make up for everything else.

Review

▲ For all of its problems, the gorgeous painterly aesthetic isn't one of them.

▲ There are plenty of layered environments for *Aragami* to cake with enemy blood.

Aragami: Shadow Edition

A stealth game that looks elegant, but trips over its iffy AI

Info

GENRE

Stealth

FORMAT

Switch (tested)
/ PC / Linux /
Mac / PS4

DEVELOPER

Lince Works

PUBLISHER

Merge Games

PRICE

£24.99

RELEASE

Out now

REVIEWED BY

Joe Parlock

VERDICT

Aragami has a cool central idea and art style, but is fundamentally flawed. If the wonky controls and technical hitches don't drive you away, the stiff AI almost certainly will.

52%

Stealth fans don't have a massive amount of choice when it comes to the Switch; *Never Stop Sneakin'*, *Mark of the Ninja*, and *The Swindle* are practically the only quality games on it at the moment. At least *Aragami* is now creeping its way onto the platform, too, but whether it could be described as 'quality' is open to interpretation.

Summoned as a shadowy spirit of vengeance, it is up to you, the Aragami, to rescue an ethereal young woman from the centre of an invading army. Awkwardly for the embodiment of darkness, they wield light as a weapon, making being spotted by anybody across the game's 13 chapters almost certain death. Instead, Aragami can teleport to any other shadow in the area, among other magical tricks that are all powered up once in the dark.

As far as core conceits go, it's pretty clever, as the shadows quickly become as much a part of Aragami as his legs. The downside is that what is considered a valid shadow in the environment is often unclear, with lots of time, and opportunities to progress, wasted from testing each area for valid spots to teleport to.

Stealth needs clever AI to be engaging, and *Aragami* severely lacks that. Enemies can see you from miles away and just one hit from them is

fatal, making even a slight stumble devastating. They also rigidly follow predetermined routes and respond to suspicious occurrences (read: you) in the same way every time, removing any semblance of threat or immersion from dealing with them.

It doesn't help that this new Switch edition is full of technical problems. Aiming at small, distant patches of darkness is infuriating, thanks to the control scheme, and the constantly dropping frame rate makes it all the more difficult. Stealth games should be about learning

and mastering your tools, not fighting with the controls to perform basic manoeuvres.

Still, for a game I've just spent a few hundred words ragging on, *Aragami* is weirdly compelling, especially with the

slim pickings on the Switch right now. It's nice to have a pure and punishing stealth game that doesn't allow you to go full Rambo at the first triggered alarm. The environments are often incredibly impressive, too, especially in the latter half of the game where there are large, open-ended maps with plenty of places to hide and things to collect.

In certain moments, it's easy to forgive *Aragami* for all its problems. These moments are, sadly, too rare to make this particular stealth-em-up worthy of a wholehearted recommendation. 🙄

“Aiming at small, distant patches of darkness is infuriating”

HIGHLIGHT

Take the time to experience beaches, cliffs and the lovely Lyndowian architecture at different times of day. Watching the play of light and shadow from the right angles, from frosty blue very early in the morning to the soft golden hues of a late afternoon, can change the scenery dramatically.

✓ *Eastshade* has its own fully realised world with background lore and a ropeway transportation system.



Review

Eastshade

^ Some quests depend on the time of day - here, we're waiting for the daily eclipse.

The town in this RPG finally has a decent arts and culture budget

You may not have a name or a face, but you do have a mission. No, this is not the latest dramatic tale of revenge, but a calm exploration about finding inspiration in the ordinary. In *Eastshade*, you're a painter who travels to the eponymous country in order to immortalise some of its sights. At first, all you know about the place is what your mother told you on her death bed: tales of beautiful giant trees and unforgettable vistas. As is customary for many RPGs, you start your journey with nothing, your ship having run into a coral reef not far from the small town of Lyndow. Thankfully, you still have your easel, and the residents immediately take to you when they find out about your painting skills.

Eastshade is completely free of combat. Whenever someone needs something or you're trying to acquire an item for yourself, you have to find a way to barter for it. Sometimes, that simply means producing a painting of a specific view. You put a canvas together out of wood and fabric which you find strewn around nearly everywhere, pick the scenery and watch as the fruits of your

labour slowly emerge onto the canvas, all with the press of a button. It's surprising how rarely you're actually prompted to paint, and so what was meant to be the main mechanic is quickly relegated to the sidelines. This, however, gives you the freedom to do as you please. While your quest for vistas to paint roughly holds the rudimentary plot together, *Eastshade* isn't all that concerned with giving you tasks to fulfil, and instead invites you to stroll around and explore every last corner at your leisure. To do so, you have to acquire or craft items, such as a coat to stay warm or tea (... obviously?) to fast travel with.

There is plenty to see and do; unfortunately, textures also tend to load at a leisurely pace, causing sights and items to pop up even at short distances, shattering the mood *Eastshade* otherwise upholds so well through ambient noise, soft lighting effects and a calming soundtrack. The people of Lyndow and the nearby city of Nava are actually friendly, if slightly unsettling anthropomorphic animals, and while you gather topics to chat about over time, most of them remain mere quest-givers. Given how small both communities you visit are, actual relationships between people there would have done a lot to make the world feel more lived in.

Despite some obvious flaws, however, it's near-impossible not to fall in love with the sheer beauty of it all. The unusual satisfaction of everyone being nice to each other and generally being content with little is a great alternative to traditional RPG storylines and mechanics - one that will hopefully create a trend many other games will follow. 🗣️



^ You can enter every home, chat with the inhabitants, or help yourself to some materials.

Info

GENRE
RPG

FORMAT
PC (tested) / Mac / Linux

DEVELOPER
Eastshade Studios

PUBLISHER
Eastshade Studios

PRICE
£19.49

RELEASE
Out now

REVIEWED BY
Malindy Hetfeld

VERDICT

Eastshade deftly eclipses its flaws thanks to the strength of its atmosphere and breathtaking world.

73%



HIGHLIGHT

AWAY's beautiful anime-inspired artwork and attention to detail is a constant delight throughout. When taking the role of a drunken, geriatric wizard, you'll find a crack in your vision meant to emulate his broken glasses.

▼ I mean, who are we to argue with a levitating feline?

Review



AWAY: Journey to the Unexpected

The talking toilet frog is the least strange thing you'll find here

▲ AWAY's gorgeous art is like a Studio MDHR anime.

Info

GENRE

Adventure

FORMAT

PC (tested) /
PS4 / Switch
/ XBO

DEVELOPER

Aurelien
Regard Games

PUBLISHER

Playdius

PRICE

£13.49

RELEASE

Out now

REVIEWED BY

Nic Reuben

VERDICT

Despite its brevity and dull combat, AWAY is just too colourful to dislike. It feels like we need more of its charm right now.

60%

In my short time with *AWAY: Journey to the Unexpected*, I've pondered the mysteries of the universe with a levitating cat, been asked to leave my bathroom for the sake of the frog in my toilet's modesty, and used complex maths to convince a heavily armed robot that I, too, am made of nuts and bolts. *AWAY* is a charming, self-aware Saturday morning anime condensed into a four-hour, first-person action RPG. If you're willing to overlook some wonky combat, it's a journey you might find well worth taking.

I jumped into *AWAY* between yet another pair of gaming's grim, grimy and gritty apocalyptic wastelands, and the first thing that struck me is just how incredibly sunny this game is. Not just in the yellow beams that light up a starting house so homely it makes Chrono's bedroom look like Gitmo, but in the sheer bouncy joy that flows from each musical note and character design. Even the enemies in *AWAY* seem like they'd prefer to be friends than throwing bombs or spitting poisonous globs at you.

Things aren't all sunshine, though. You need an excuse to hit things, after all. After a brief jaunt through the pleasantly bucolic first area, you might notice fluorescent pools of acidic goop between the lush greens and sparkling waterfalls. A chat with the locals ends up placing the blame squarely at the betentacled feet of construction company, LABIWORKS™. So it's up to you, a drunken wizard and a hyperactive tree stump to find out what the problem is.

Oh, and maybe find out what's happened to your missing parents along the way. Your progress in *AWAY* is based on collecting glass boxes called Friendship Cubes and using them to recruit all eight of the potential companions scattered across the game world. Once recruited, you can switch between them in combat, providing you don't max out their energy bar.

AWAY has a roguelike structure, so each time you die you'll be transported back to the start, but with any gold and experience you've collected intact. Hitting new experience levels nets you stuff like more health, shortcuts to later levels and a metal pot lid to block incoming attacks. Your character can feel frustratingly weak at first, especially before you get used to the floaty dodge and lunge melee combat, but learning how to employ items and teammate abilities soon makes combat bearable.

Bearable is the word I'm sticking with, though. It's fun to move and hop and explore in *AWAY*. Fun to meet each new foe, to appreciate the art and sound that brings them to life. But the combat itself never really grows into anything much more than a passable default method of engagement. Although the "Feel Good FPS" tagline the game touts is a novel one, it leaves me wondering if this world, with its standout character design and writing, wouldn't be better suited to another format of game altogether. *AWAY* did manage to leave a huge smile on my face on more than one occasion though, and the imagination on display here is refreshing. 🐸

Rated
Review

HIGHLIGHT

Even though the game's numerous enemies don't force you to change your strategy, there are some great, strange designs in here. The rabid fan that chases you begging for attention, the hula girl who makes you dance... and then it gets weirder, like the squadron of birds who fire eggs at you from a cannon.

▲ You can do your own thing in multiplayer, although if one player gets in the next level elevator they'll need to wait for their friend.

ToeJam & Earl: Back in the Groove

This retro revival's nineties jams aren't quite as funky in 2019

It's fair to assume that most of the folks who funded *ToeJam & Earl: Back in the Groove* on Kickstarter were fans of the original. The pair's first outing in over 16 years is somewhere between a reboot and a remake, one that looks and plays an awful lot like the original *Mega Drive* game. It's a roguelike about slacker aliens exploring a bong-ripped vision of Earth for the missing parts of their spaceship, with a heavy focus on chilled vibes and a nineties cartoon aesthetic.

As in the first game, you wander between floors – either the fixed levels designed for the game or randomly generated ones, once you unlock that option – searching for ship parts. You also need to collect presents, which are imbued with random, occasionally vital power-ups, and money, which can be spent on presents, healing and the other various advantages offered by the idiosyncratic NPCs who wander through each level. Meanwhile, you'll be beset by 'Earthlings', which take on various forms – there's a devil that chases you, a 'Man in Black' who can rip away your presents, a man who can run you down with his lawnmower, and many more. You can only fight back if you've just opened one of the

game's very few combat-oriented presents, so expect to spend a lot of time running away.

Despite all the quiriness, there's not much real variety to *ToeJam and Earl's* latest adventure. On some floors, you'll need the right presents to reach the missing ship piece, or even the elevator up to the next floor; but you often don't know what presents contain until you open them, which leads to a lot of guesswork.

If a level is split between multiple islands, for instance, you'll need wings, spring boots or a teleporter to jump between them. You can level up and get faster, luckier and stronger as you go, but because presents are all temporary, there are no lasting changes to your 'build' that change how you play the game. The game's sense of challenge comes more from the tedium of needing to explore each level thoroughly than any roadblocks you face, and your expeditions can start to feel like unending fetch quests.

You can play the whole game in two-player couch co-op, which is perhaps the best way to play it. This is a 'hangout' game more than something to be taken seriously, although if neither of you have much nostalgia for the *Mega Drive*, it likely won't last long. The updated visual style and soundtrack maintain the spirit of the original game, but the game's slavish recreation of that old nineties gameplay means that it feels stuck in the past. *Back in the Groove* is a game designed very specifically for fans, who will probably enjoy its focus on nostalgia, at least for a few hours. It's just a shame that there isn't a more interesting game underneath all that old-school fan service. 🗣️

Info

GENRE
Roguelike

FORMAT
Switch (tested) / PS4
/ XBO / PC

DEVELOPER
HumaNature Studios

PUBLISHER
HumaNature Studios

PRICE
£16.99

RELEASE
Out now

REVIEWED BY
James O'Connor

VERDICT

A groovy throwback for series fans, but beyond aesthetics, it's all a bit dull.

55%



▼ This boom box doesn't serve much purpose beyond the cute little dance animation, but it's a nice touch.



Rated
Review



HIGHLIGHT

The characters make *New Dawn*. Whether it's the Twins being a scarily unpredictable force of nature, pyromaniac Sharkey discovering his maternal side, or Hurk being... well, Hurk... *New Dawn* brings out the best in its characters – something *Far Cry 5* often smothered with its family of boring villains.

Expeditions whisk you away from Hope County to fight the Highwaymen in whole new locations.

Review

Far Cry New Dawn

Aka, for those who haven't finished *Far Cry 5*: 'Spoiler Warning'

Info

GENRE
FPS, RPG, Open-world
FORMAT
PC (tested) / PS4 / XBO
DEVELOPER
Ubisoft Montreal
PUBLISHER
Ubisoft
PRICE
£37.99
RELEASE
Out now

REVIEWED BY
Joe Parlock

VERDICT

What it loses in storytelling, *New Dawn* makes up for in bombast. Loud, vibrant and funny, it brings together all the best bits of the series.

79%

W

hat do you get if you take *Far Cry 5*, cut away the boring antagonists and repetitive mission structure, and then drop a few atomic bombs on

it? You get *Far Cry New Dawn*, a return to form for the series.

Set years after a nuclear war has devastated the United States, *New Dawn* returns you to 5's Hope County to face off against new poster children antagonists, the Twins, and their gang, the Highwaymen. Hope County is very different from when we last saw it, featuring bands of survivors, hordes of bandits, mutated creatures and a lot of very pink flowers.

Far Cry has never been a series known for its stories, and *New Dawn* is no exception. It jumps from plot thread to disparate plot thread until an undeveloped conclusion with a pretty naff final boss. But what it does have is character, with the blasted-out setting giving the cast, both returning from 5 and brand new, room to breathe. The Twins are a particularly entertaining addition to the pantheon of *Far Cry* villains, with the way they play off each other letting them stand shoulder to shoulder with the likes of Vaas and Pagan Min.

Smaller than the rest of the series, falling between an expansion and fully fledged game, *New Dawn* distils the very best bits of the formula that is so often dragged down by

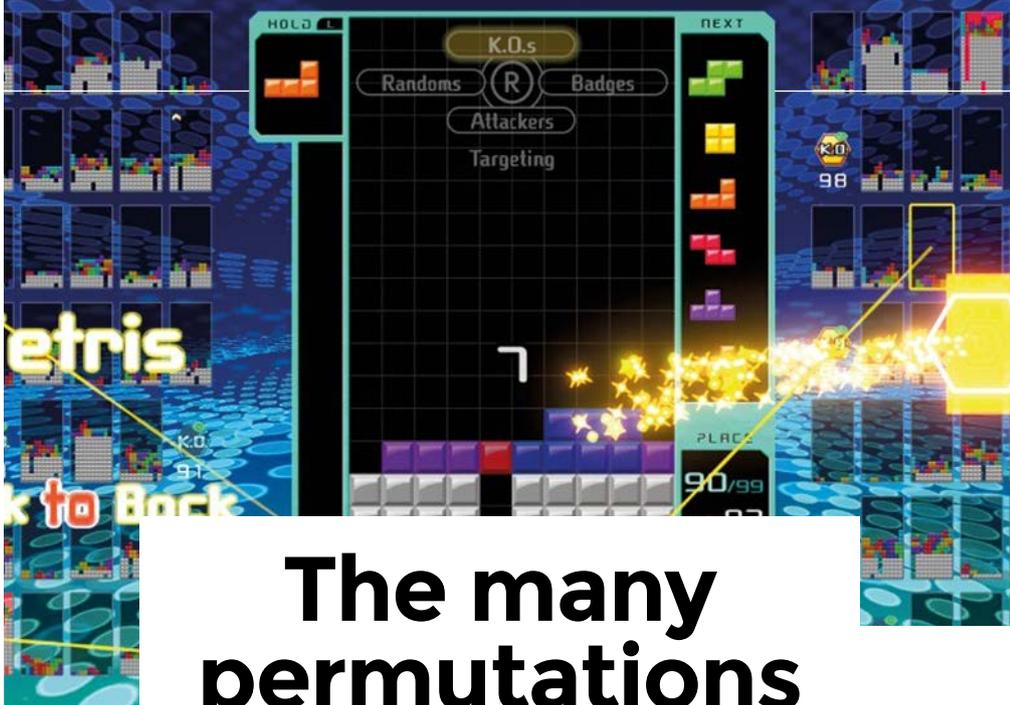
superfluous stuff since it was first codified in *Far Cry 3*. Outposts can be surrendered to the Highwaymen to recapture for greater reward, meaning clearing the whole map isn't necessarily the end of what there is to do; there's greater variety in the story missions, silly weapons like flamethrowers and the new saw-blade launcher are available much sooner, and the recruitable companions are far more interesting.

A particularly exciting new feature is the Expeditions, where you can be airlifted to discreet locations away from Hope County with the goal of stealing resources from the Highwaymen. These are practically outposts on steroids in self-contained stages, offering up huge and open-ended levels set

everywhere from the Deep South to a funfair. It's not only a perfect, bite-sized chunk of what makes *Far Cry* so good when it's at its best, but it also helps flesh out the aftermath of the war by showing outside of the open-world map's boundaries. Hopefully, future updates will add more expeditions to the game, as they're easily the star of the show.

This is *Far Cry* with the bad bits ripped out and the good bits put front and centre: a fantastic reinterpretation of Hope County, some buck-wild weapons and enemies, memorable characters, excellent new features and a whole lot of pink stuff. *Far Cry New Dawn* beats its immediate predecessor in every way imaginable. 🍷

"This is Far Cry with the bad bits ripped out"



The many permutations of Tetris

The multiplayer-enabled Tetris 99 is further proof that a brilliant game design can be pushed in all kinds of new directions

How can something so infuriating be so gnawingly addictive? It's something I ask myself at close to midnight on a Tuesday, as I try for what might be the 150th

time to improve my position on the *Tetris 99* leaderboard. If you own a Nintendo Switch, you may have sampled Japanese developer Arika's take on the eighties classic already. Essentially, it takes Alexey Pajitnov's time-honoured falling-block puzzler and nails it to the battle royale zeitgeist: you're fitting shapes together and clearing lines against 98 other players all doing the same thing; by clearing lines, you can then send piles of junk blocks onto your opponents' boards, while they can, of course, do the same thing to you.

Arika provides ways of scuppering your rivals' chances of success – you can target them with junk blocks yourself, or set the game to attack certain kinds of players automatically – but really, *Tetris 99* doesn't feel like a player-versus-player competition as much as a test of your own ability to remain calm under mounting pressure. Your own play area is surrounded by dozens of thumbnails of other players' areas, all in varying states of crisis. Most of the time, you're too engrossed in your own unfolding drama to so much as glance at what anybody else is doing, but the addition of all those other tiny boards crammed onto the screen adds

to the game's pachinko parlour-like sense of controlled chaos. As your board fills with unexpected and unwanted piles of junk blocks, and the *Tetris* theme tune kicks into another gear (signifying you've somehow made it to the final 50 players still standing), the sense of exhilaration and mild panic is surely as keen as any multiplayer shooter or racing sim.

It's testament, really, to the flexibility and genius of Pajitnov's original game design. Programmers have been riffing and iterating on the *Tetris* concept almost since its birth, as the game filtered out of the Soviet Union and was gradually ported to just about every other platform in existence. We've seen *Tetris* with hats (that'll be *Hatris*), *Tetris* viewed from above (*Welltris*), and early attempts to turn it into a competitive experience (*Tetris Battle Gaiden*). Some of those iterations are better than others, inevitably, but it's fascinating to see how *Tetris* has adapted to fit its environment, from the 8-bit Game Boy to the latest HD consoles.

Tetris 99 taps into the current trend for last-person-standing anxiety inducers, but at its heart, it's still basically *Tetris* – albeit an iteration of *Tetris* that is wont to leave your humble writer shouting at the television at midnight on a Tuesday as he loses yet another round in a hail of falling blocks. That a 35-year-old game concept can still evoke such responses is an extraordinary achievement. 🎮

“Tetris 99 taps into the current trend for last-person-standing anxiety inducers”

Wireframe Recommends



Gussun Oyoyo

ARCADE, SNES, PS1, SATURN
Gussun Oyoyo was basically *Tetris* meets *Lemmings*: you guide a hapless character to an exit by dropping blocks to act as bridges or barriers from enemies.



Lumines

PSP, VARIOUS
Conceived by Tetsuya Mizuguchi, the Japanese master of psychedelic games, *Lumines* is a falling-block puzzler fused with rhythm action. Play through headphones at a ferocious volume for maximum impact.



Tetris Effect

PS4, PSVR
The PlayStation 4 got an exclusive iteration of *Tetris* last year, and what a corker it is: pulse-pounding music, trippy visuals, and exhilarating twists to the standard block-clearing rules.



Vanquish

Well before there was sliding into your DMs, there was sliding into this

PLATINUMGAMES / 2010, 2017 / XBOX 360, PS3, PC

Shinji Mikami's overlooked masterpiece managed to confound as much as it frustrated; the typical intense difficulty you would associate with a PlatinumGames title was backed up by mechanics masquerading as one thing, when actually – on closer inspection – revealing themselves to be something else entirely. What looked like a basic cover-based shooter with bullet time elements – that being the most du jour of all genres at the time – was actually revealed to be... well, it's hard to describe. A combo-based, third-person shoot-'em-up/beat-'em-up in which hiding in cover was actually a sign of failure on the player's part, and where getting your backside out there into the action was both an invitation for the AI to batter you, and for the player to have an absolute belter of a time... though mainly the former.

How did this come about? The main culprit was *Vanquish's* obsession with sliding: lead character Sam Gideon goes into battle sporting an augmented battle suit (and that's about all the story worth mentioning). Said suit comes with a bunch of boosters all over the place, allowing our protagonist to expedite his process around a room – not when running, but when knee, back, side, or bottom-based. Yes, *Vanquish's* Killer Feature was its sliding. Its controlled slipping. Its manic scooting.

The pace at which a player character moves is often limited – plodding, you might say, unless you're clicking on sprint and enjoying a brief spell of less-slow action. As such, it was to be expected players would approach *Vanquish* with this

ingrained pace in mind, and it's no surprise a fair few were left underwhelmed with what they played. But engaging those boosters, sliding about the arena of combat on your knees, engaging bullet time, and picking apart waves of enemies with frenzied precision was the reward for those who stuck with it and picked up the game's unique take on the third-person field.

At first, it feels like a bit of a gimmick, but it really isn't long until the sliding becomes second nature and forms an intrinsic part of your *Vanquish* experience. And that's where

the game's length – another woefully misunderstood element – came into its own, too. When you start the game, you're a mite lost at sea, but after picking it up and mastering the mechanics (to some extent), you find yourself wanting to go again from the beginning with all this knowledge to

hand, to truly take in the whole game as it was meant to be played. *Vanquish's* campaign lasts about five hours – a criticism levelled at it at the time – but it's *meant* to be played and played again, just like any shoot-'em-up or beat-'em-up.

Any longer and few would bother starting again. Any shorter and few would actually get to grips with that sliding mechanic. Five-ish hours was perfect, and made *Vanquish* the kind of game you wanted to go back to again and again. Its PC re-release in 2017 just helped to highlight how much of an overlooked gem the game really is. And none of that would have been possible without the ability to slide into combat at high speed on your arse. 🤖

“At first it feels like a bit of a gimmick, but it really isn't long until the sliding becomes second nature”

Next Issue

ON SALE 28 MARCH

HEAVEN'S VAULT

Digging into a new adventure from
the creators of 80 Days



Don't miss out!
Subscribe
PC54

Editorial

Editor

Ryan Lambie

Email ryan.lambie@raspberrypi.org

Features Editor

Ian Dransfield

Email ian.dransfield@raspberrypi.org

Sub Editors

David Higgs and Vel Ilic

Design

criticalmedia.co.uk

Head of Design

Lee Allen

Designer

Harriet Knight

Contributors

Lottie Bevan, Jason Coles, Mel Croucher, Konstantinos Dimopoulos, Stuart Fraser, Andrew Gillett, Malindy Hetfeld, Holly Nielsen, James O'Connor, Joe Parlock, Aaron Potter, Nic Reuben, Mike Rose, Harry Slater, Jeff Spoonhower, Alyse Stanley, Howard Scott Warshaw

Publishing

Publishing Director

Russell Barnes

Email russell@raspberrypi.org

Tel +44 (0)7904 766523

Director of Communications

Liz Upton

CEO

Eben Upton

Distribution

Seymour Distribution Ltd

2 East Poultry Ave, London EC1A 9PT

Tel +44 (0)207 429 4000

Subscriptions

Raspberry Pi Press, Mann Enterprises, Unit E, Brocks Business Centre, Haverhill, CB9 8QP

To subscribe

wfmag.cc/subscribe

To get help:

rpiresshelp@raspberrypi.org



This magazine is printed on paper sourced from sustainable forests and the printer operates an environmental management system which has been assessed as conforming to ISO 14001.

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).

Also

- ▶ The art of making unforgettable boss battles
- ▶ Eighties killer robot design in Avalanche's Generation Zero
- ▶ How to create interactive fiction in Twine
- ▶ The Oliver Twins: Dizzy's creators on their new venture

My name is Izzy.

You will be my journal.

Today, I went in a huge...

A wonderful day, the...

Time gone so fast...



wfmag.cc

