



“Oh, it’s you...”

“It’s been a *long* time. How have you been? I’ve been *really* busy being dead. You know...after you *murdered* me? Okay look, we both said a lot of things that you are going to regret. But I think we should put our differences behind us. For science. *You monster.*”

PORTAL 2

by Meagan VanBurkleo

An Unexpected Triumph

When Valve approached a team of students from the nearby DigPen Institute of Technology with job offers and the opportunity to flesh out their senior project – Narbacular

Drop – back in the summer of 2005, it did so cautiously. Measured steps were taken to minimize risk. The team was kept small. Art assets were reused, drawing heavily from prefabricated pieces of the Half-Life universe. Then the final product, Portal, was released as part of the Orange Box.

The investment paid off. With over 70 industry honors, and 30 Game of the Year awards, it’s impossible to deny Portal’s success. Portal was, and still is, unlike anything else in Valve’s stable of action-centric titles. Valve knew it had something special, but didn’t anticipate the degree to which fans would gravitate toward the budding franchise. Their only complaint? They wanted more.

“Portal was so short because it was a trial,” explains Doug Lombardi, vice president of marketing at Valve. “We paired it with [Half-life 2] Episode 2 and Team Fortress 2, which were recognizable and safe. Then

we had this Portal thing, and we had no idea if people would dig it, even though we thought it was a cool idea. So it was put out there safely in the Orange Box, and the results came back wider than we could have ever imagined.”

It didn’t take long for legions of Valve fans to embrace it. Within months, “the cake is a lie” memes were all over the web, Valve started receiving videos of high school choirs singing “Still Alive,” and the song even found its way into the Rock Band catalog. “There was no way we could have planned for it,” says Lombardi. “So we knew we had to double down and give them more. Portal was a test bed. Portal 2 is a game.”

The trial by fire is over – the safety net removed. Portal’s endearing antagonist, quip-filled dialogue, and mind-altering gameplay are proven commodities. A rabid fan base is established. Now it’s time to up the ante. Instead of merely hoping for the best, Valve is now banking on Portal 2’s success. The fiercely independent studio is investing more time, more capital, and more risk into a standalone, full-price retail release.

» Platform
Xbox 360 • PC • Mac

» Style
1 or 2-Player Puzzle
(2-Player Online)

» Publisher
Valve

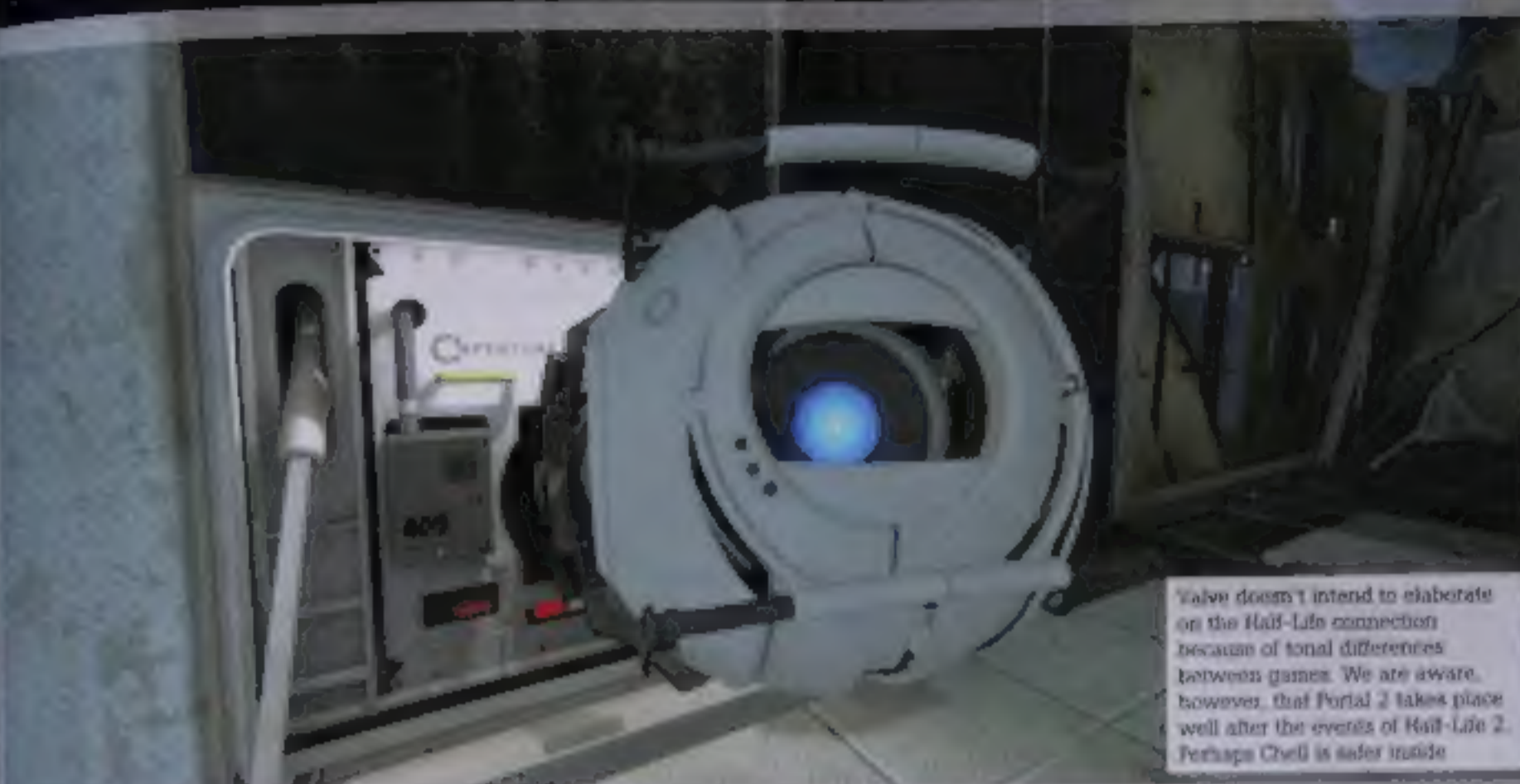
» Developer
Valve

» Release
Fall

While the team dynamic changed when lead designer Kim Swift left Valve for a job at Airtight Games, Valve's investment in Portal 2 is evident. The staff size has increased from 8 to 28 dedicated staffers, and they've already got two years of headway on the title.



Still Alive



Valve doesn't intend to elaborate on the Half-Life connection because of tonal differences between games. We are aware, however, that Portal 2 takes place well after the events of Half-Life 2. Perhaps Chell is safer inside.

I don't take an Aperture scientist to piece together that GLaDOS resumes her role as the omnipresent antagonist in Portal 2. The leit-like melody "Still Alive" at the end of Portal was evidence enough. Chell's fate, however, remained a wildcard until the aforementioned update. Previously, we saw Chell catapulted to freedom following GLaDOS' demise. Assuming she avoided any grievous injuries, her escape was fathomable. Now we know better. She's back in captivity once again.

One new detail complicates Valve's carefully implemented continuity — Portal 2 takes place hundreds of years after the original game. We assume the party associate stashed Chell in some sort of stasis chamber in which she's quietly passed time.

While Chell appears relatively unscathed, the Aperture Science facilities haven't fared as well. Centuries after the explosion, no one has been around to repair the sprawling campus. Overgrown areas are interspersed with cold and clinical test chambers, now in various stages of decay. As far as we (and Chell) can tell, no one has stepped foot in the decrepit labs for decades. But loneliness won't overtake you, in a cast of slightly less organic characters has thrived in GLaDOS' absence.

At the end of Portal, illuminated by a flickering candle atop the tabled cake, two spot rows of personality cores were awakened. These spheres are the same as those Chell ripped from GLaDOS' head as she incinerated her captor one drop at a time, introducing this new "speaking AI personalities" without introducing human peers. It also addresses the conundrum that returning to an isolated GLaDOS and Chell relationship would feel too much like a retreat.

Migrating from their sublevel confines throughout the centuries, these spheres have carved out sections of the neglected facility as their own. Wheatley, one such personality core, proves to be the perfect tour guide to lead us through our first glimpse of Portal 2 gameplay. Concerned about the building's deteriorating conditions and tired of his limited mobility (personally, *never use your appendages*), and thus confined to rails on laboratory ceilings, Wheatley ponders his odds of surviving a jump from his lofty position, ultimately deciding that he wouldn't go unscathed. Instead he awakens Chell from her slumber and propositions her for help. Promising to share his knowledge of an escape route, Wheatley hesitantly puts his faith in Chell to catch him. His fears become justified when Chell fails the simple task.

Quick to forgive — and fueled by self-preservation — Wheatley navigates Chell throughout the facility from his new station in her hands, all the while blabbering incessantly. He proves useful for more than a laugh, however. Chell can plug Wheatley into various ports throughout the labs, allowing him to access the mainframe and bypass obstacles. Wheatley's a bit gun-shy, though, making clear that he can't perform with Chell watching.

As the duo make their way through the defunct facilities, the extent of the damage becomes clear. Debris often blocks the path as they traverse a massive cylindrical room populated with breaker switches. Here Wheatley warns that only the switch to power the escape pod should be flipped — or else. When Chell can't spot the switch amongst hundreds, she instead pops Wheatley into another port so he can do the dirty work himself. Almost instantly, the neglected equipment malfunctions, and the floor below them

reveals itself as an elevator that begins ascending, flipping all the switches on the periphery in the process. Acutely aware of the damage that's been done, Wheatley scrambles to find an abort password, forgoing a practical algorithm for a sequential brute-force strategy. "AAAAAA? No, that's not it. AAAAAB? No? AAAAAC? You've got to be joking!"

The climb halts as the platform comes flush with the floor of a chillingly familiar location: an overgrown courtyard now housing the soulless shell of GLaDOS. Having no luck with the password, Wheatley trembles in fear at the first rumblings of a returning foe. We all knew the GLaDOS-less respite wouldn't last long. Slowly reborn in a bath of sparks and debris, GLaDOS awakens. Recognition crests immediately.

"...Oh, it's you," accuses GLaDOS in the throaty, sultry voice she first slipped on at the end of Portal. She continues, punctuating each short sentence with a drip of venom. "It's been a long time. How have you been? I've been *really* busy being dead. You know...after you murdered me?" Collecting her thoughts with another brief pause, an exaggerated and very human exhalation follows. The menace dissipates and she comes on. "Okay look, we both said a lot of things that you are going to regret. But I think we should put our differences behind us. For science. You monster."

The short exchange is chilling, even after GLaDOS makes it obvious that she's more interested in resuming your relationship than revenge. With Chell once again a pawn in Aperture Science's grasp, the tests recommence. Even though the playing field is drastically different this time around, the odd couple falls back into routine like old lovers.

An Intimate Affair

As far as relationships between sentient robots and unwilling test subjects go, GLaDOS and Chell have had a fairly exclusive fling. Trapped in a mad funhouse of science, circumstances gave Chell little choice other than to play along. The evolving relationship positioned GLaDOS as the game's sole authority figure, training and nurturing Chell while simultaneously becoming an architect of her own demise.

In the early ideation stages of Portal 2, Valve played around with scrapping Chell altogether, starting a new relationship with a fresh test subject. Valve opted to keep the near-tangible history intact for several reasons.

"Portal 1 told a very intimate story video game-wise," explains Portal writer Eric Wolpaw. "It was you and GLaDOS. We never even mentioned Chell. People pulled her name out of the model files. We wanted her to be you, the player — more so even than Gordon Freeman. We wanted you to have this very intimate connection with this AI that changes and evolves over time, leading up to the point that you betray her and do the most intimate act you can do with someone — murdering them in cold blood. So we didn't want to rebuild this relationship with GLaDOS. It starts where you left off."

Although there are an undisclosed number of new denizens in Aperture Science's ruined facilities, Valve intends to keep the focus on the player. Personality cores won't ignore Chell to bicker amongst themselves. This player-centric focus will help the game remain grounded in intimacy — despite the forfeited monogamy.



Party Submission Position



Though instances when Chell views herself through a portal are uncommon, we were keenly aware of her prison-like garb in the original Portal. For the sequel Valve is redesigning Chell's threads to better reflect her station as a lab rat. While not finalized, this concept art gives a good idea as to the direction Valve is taking.

"We are pleased that you made it through the final challenge where we pretended we were going to murder you," chirps GLaDOS, the homicidal computer and antagonist of Portal, ad-libbing after Chell sees through her shallow attempt at encouraging self-incineration. "We are very, very happy for your success. We are throwing a party in honor of your tremendous success. Place the device on the ground then lie on your stomach with your arms at your sides. A party associate will arrive shortly to collect you for your party. Make no further attempt to leave the testing area. Assume the party escort submission position or you will miss the party."

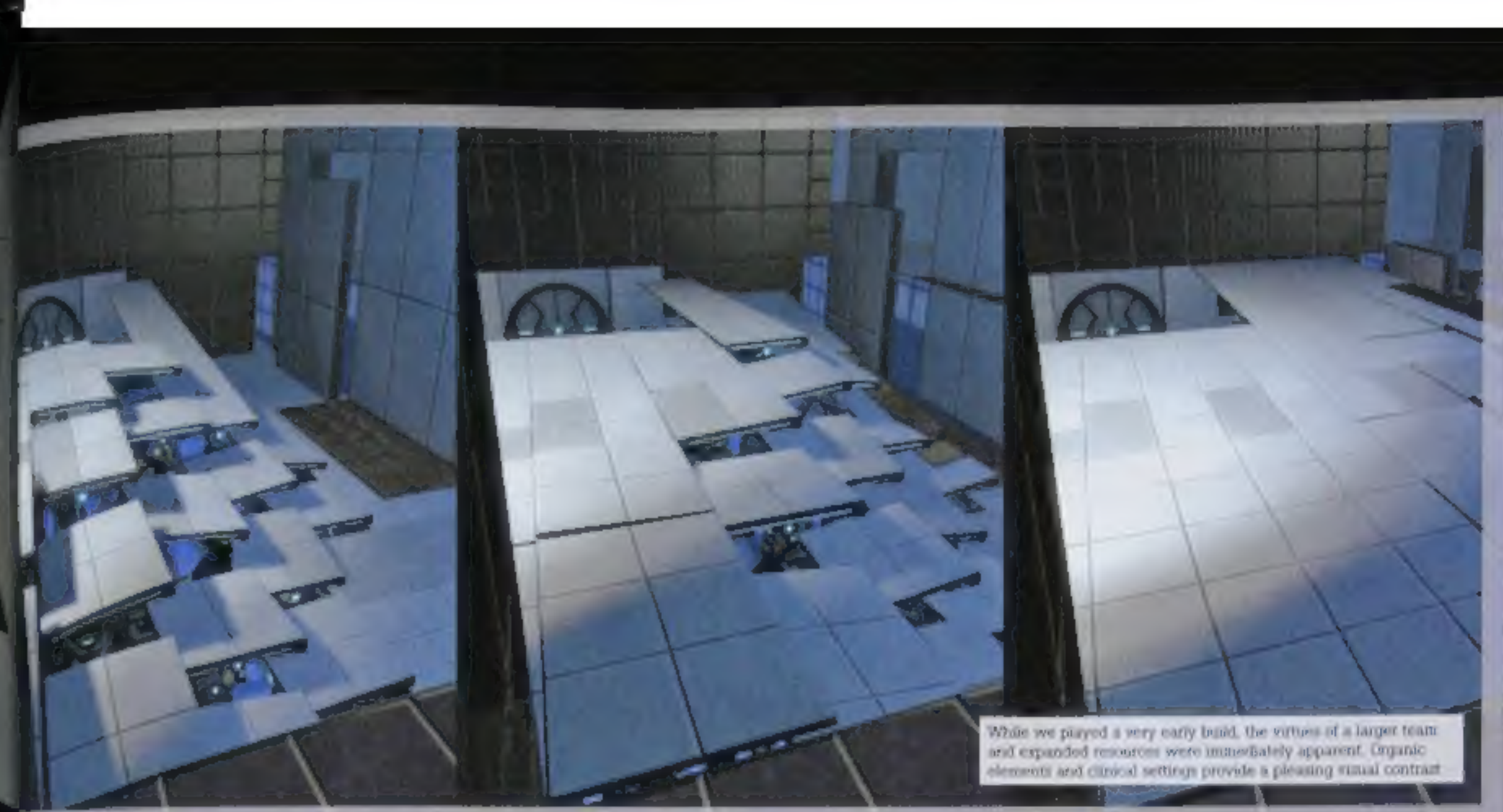
In the original Portal, GLaDOS' casual disregard for Chell's safety was a constant. For many, however, this moment was a memorable one; it was at this instant Chell took back control over her destiny.

This exchange has recently come into new relevance, providing a bridge between Portal and Portal 2 through a retroactive update Valve released on the sly. Astute fans may have noticed that a patch for Portal launched recently with no press release or fanfare. Several cosmetic updates play second fiddle to a short but significant change to Portal's ending.

"The thing that is interesting for us is we've never really had a game that's been focused on single player and narrative that released so close together," explains Erik Johnson, senior project manager at Valve. "Half-Life and Half-Life 2 were obviously about 15 or 20 years apart, or that's at least what it felt like [laughs], but now we have Steam, and Portal was only released in 2007. So we still have a really strong tie to the first game. The update seemed to be the perfect way to re-energize Portal and link the games together."

The seemingly dismissive reference to a "party associate" now provides a perfect segue. In the most subtle of alterations, Chell is now thanked by a disembodied voice for assuming the party escort submission position as she lays passed out in the Aperture Science parking lot, seconds before she is dragged off by an unseen force. This definitive chain of custody over Chell makes it possible for her to resume her role as a lab rat in Portal 2, despite an extraordinary change in circumstances between games.

Valve isn't ready to commit an hour count to their new title, but they assure us that it is significantly longer than the original.



While we played a very early build, the virtues of a larger team and expanded resources were immediately apparent. Organic elements and clinical settings provide a pleasing visual contrast.

Thinking With Portals

Explaining the concept of Portal's mind-bending puzzles to a layman would likely result in head scratching, but the game did a wonderful job of building up difficulty and teaching players new ways to think about problem solving as they progressed through the facility. Getting players to reach the elevated level of consciousness needed to "think with portals" in a way that doesn't frustrate them isn't easy, so Valve makes it immediately clear that augmented mechanics and new gameplay elements in Portal 2 haven't been created to make you pull your hair out.

"It's worth clarifying our approach to Portal 2," Johnson begins. "It's less about putting a portal on the wall and walking through it and more about making people think differently while they are playing the game. And making people feel smart while they are playing the game. And really surprising people with this kind of video game. We're not aiming to make this an action or twitch game - that seems way off track. There are many more elements that we are adding to Portal 2 - it's a bigger game and stands on its own - but it isn't about making a really hard game. It's more interesting to simply reward your thinking."

To keep players in the realm of familiarity, your Aperture Science Handheld Portal Device remains unchanged in the sequel. Valve realizes that two connecting portals remain the best way to communicate with your environment.

The original Portal used repetition and pitch-perfect pacing to train players to understand a very foreign concept. After some training, players began to associate objects with mechanics. Boxes designated a nearby button. Angled concrete slabs indicated flinging was in order. These types of associations are expanded upon in Portal 2, largely because of a new approach to environmental design.

"The world was a series of constraints telling you what you couldn't do in Portal - you could place a portal here and couldn't place a portal there," Johnson explains. "In a lot of ways it was a very binary interaction with the world. In Portal 2 the surfaces and objects in the world have a bunch of different states. The surfaces themselves can be changed to alter the way you can navigate through the world. And then there are other physical forces that you can use as well. To put it simply, you can send physics through the world."

Portal physics is a game changer. Now physical forces can bleed through carefully placed portals, resulting in an increased number of ways to interact with your environment. Continuing our demo, Valve walks us through a string of carefully composed test chambers to illustrate these new mechanics. Vital Apparatus Vents - connected to the pipe network as a means of distributing objects to test chambers - provide strong suction where they terminate. Now Chell can use this to her advantage. Placing a portal under the tube and another under an unsuspecting turret, the threat is immediately leeched upwards and eliminated. During the demo, we watch this concept applied to a test chamber littered with objects. When Chell places the portal in the center of the mass, it creates a swirling vortex of debris.

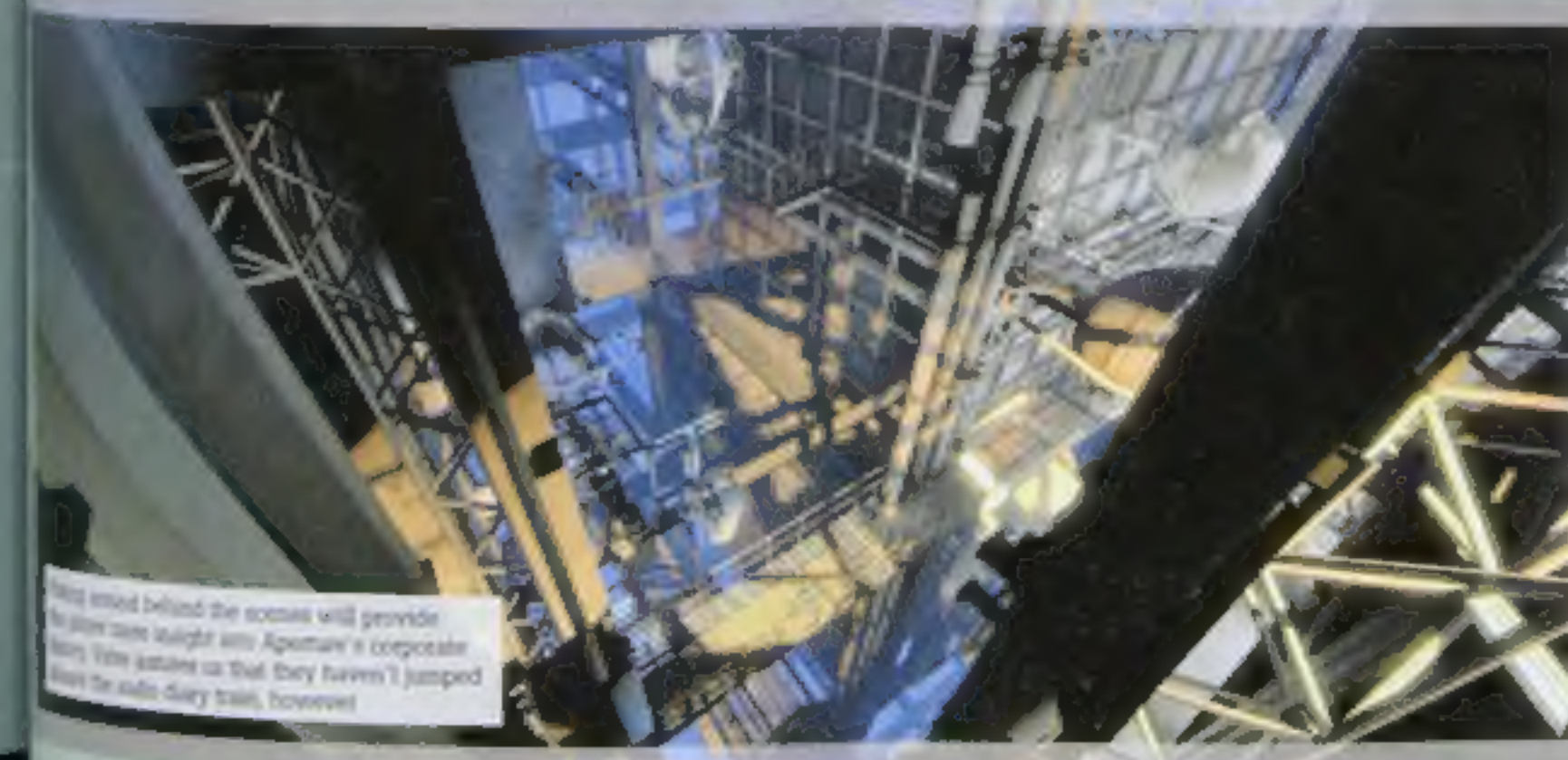
The tractor beam, another new addition, acts in a similar manner. A cylinder of oscillating blue rings, tractor beams can be combined with portals to transport Chell or objects to otherwise unreachable areas. Projected bridges - a translucent but solid walkway - can also be redirected through portals. These two additions indicate that flinging may be less of a crutch in this iteration.

The most significant physics upgrade Valve introduces is the concept of paint, which gives players more control over their environment than ever before. Toward the end of the demo we come upon a test chamber slick with an orange substance across the floor. Upon closer inspection, we discover that walking on the surface will rocket Chell to high speeds, allowing her to vault over pits or reach the far end of a long expanse quickly enough to beat a ticking clock. These liquids are dynamic and play quite well with portals. Placing a portal under a paint vent and another on a wall, we were able to coat specific areas of the chamber in order to progress past an obstacle.

A second paint type is introduced in another puzzle. Blue paint transfers its properties to any object it touches, giving them a trampoline-like surface. Coating parallel walls on either side of a large pit, Chell ricochets back and forth across the pit. Flipping over all over's weighted storage cube causes it to barrel across the room, shattering glass and taking out turrets in its path. The expanded gameplay produced by these two paint types alone is staggering, and Valve indicated a willingness to include more if it sees fit.

A few smaller mechanics also join Chell's arsenal. Redirection Cubes - similar in size and shape to a Weighted Storage Cube, only with reflective surfaces on each face - allow players to redirect laser beams into awaiting receptacles. Aerial Faith Plates are an exercise in trust. These platforms fling Chell high into the air, allowing her to bridge massive gaps or place portals in otherwise inaccessible areas. Weighted Storage Balls are the last new feature on the roster, which function exactly like their cube counterparts, except they are paired with buckets instead of turrets.

continued on page 58



Being seated behind the scenes will provide the player some insight into Aperture's corporate history. Valve assures us that they haven't jumped down the rabbit-hole trail, however.

Behind The Curtain

Despite its short length, Portal's unique puzzle gameplay made it a fulfilling experience. Much of this had to do with Valve's intentional pacing. Chell began her journey guided by the hand through a very controlled environment. As the story progressed, Chell became more autonomous and GLaDOS conversely became unhinged, subtly alluding to trouble behind the scenes. At the pinnacle of her skills, Chell then pulled back the curtain and proceeded into the great unknown. Not wanting to rely on the same formula, Portal 2 unfolds at a staccato pace, not a crescendo.

"We've had the idea in Portal 1 that the labs were reconfigurable through this modular system, but we were never able to show it," laments Wolpaw. "Because the fiction dictates that the labs were destroyed at the end of Portal 1, she [GLaDOS] is having to rebuild things as she is putting you through these tests. So the labs reconfiguring is going to play a much bigger role in the game itself."

The extensive damage to the test chambers is too much for GLaDOS to repair unaided, but she refuses to delay resuming her tests. This means she will begrudgingly allow you behind the scenes of Aperture Laboratories in order to reach the next testing chamber. This will result in a less predictable progression, allowing you to periodically escape her sphere of influence. Or so we think. Panopticon-inspired paranoia will probably keep the player intensely aware of GLaDOS' silent omniscience. Is Chell ever really alone?

You, And Me, And GLaDOS Makes Three

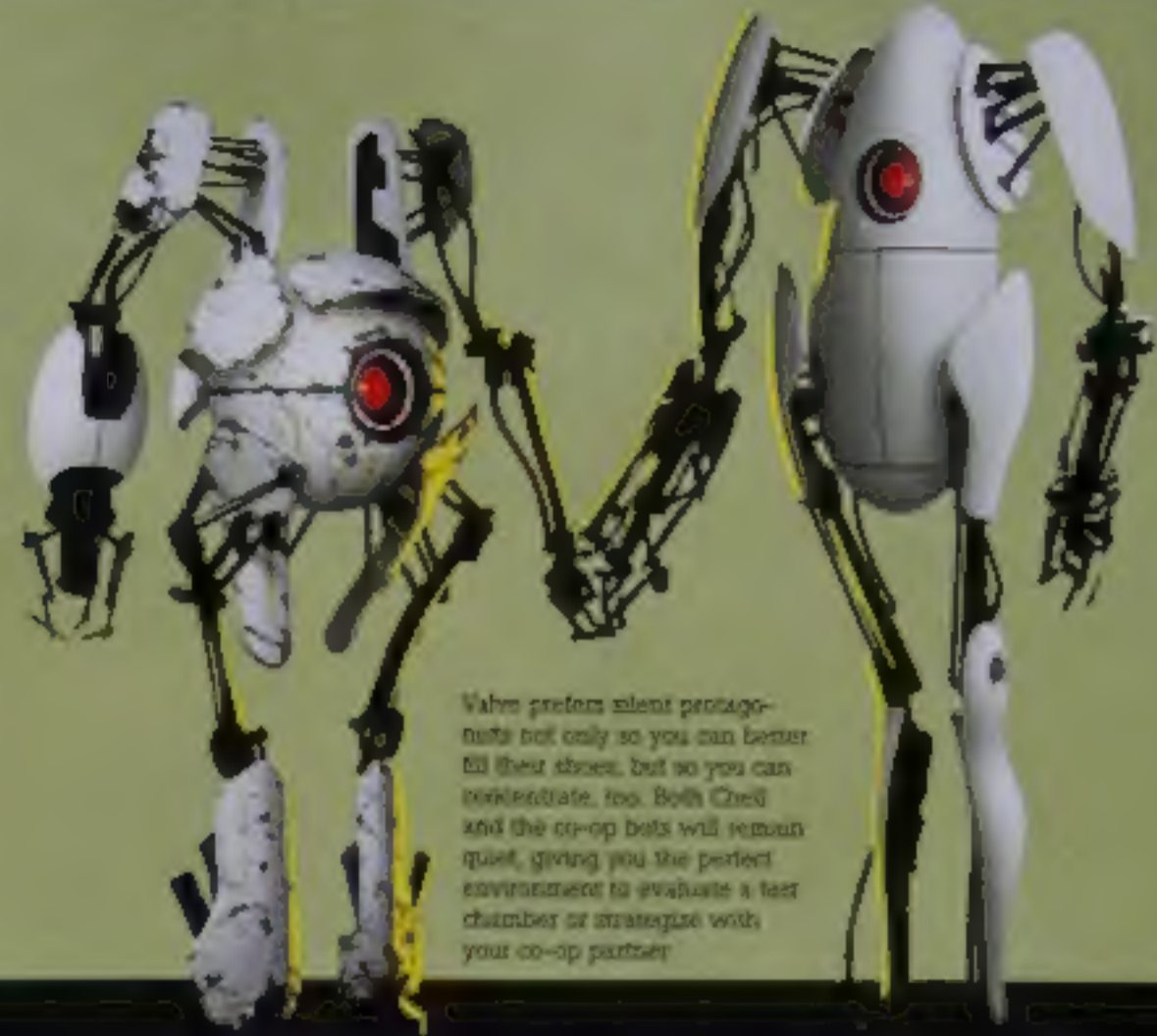
Co-op coming to Portal 2 was a given – primarily because the bulk of Portal fans already acted as if the functionality was native. Friends, siblings, and significant others often sat together on the couch, pointing and placing portals until they mutually solved a puzzle.

"When we shipped Portal 1, it was really common to hear that people already played co-op," Johnson reveals. "It was really interesting. It was the most common girlfriend game and it also wasn't unusual for moms to watch their kids play. So it made sense for us to put a controller in another person's hands."

Cooperative gameplay is undisputedly the most significant addition to Portal 2, and is being implemented through a separate, full-length co-op campaign. Fittingly, logically within the single-player narrative of Portal 2, players can choose which story to tackle first.

Since Chell has a deficiency of human companions, she isn't the star of the co-op campaign. Instead, Valve created two new characters – bipedal robots modified from a personality core and a turret – to star in the complementary mode. We know very little about these characters, though Valve is considering making one masculine and the other feminine. They also like to hold hands. But don't go writing fanfics yet – the gesture is a sign of innocence more than an indication of romance.

Each co-op player has his or her own portal gun and the capacity to transport through their companion's portals. Doubling the number of passageways, however, doesn't necessarily make beating chambers a breeze. While Valve wants to ensure that the single-player campaign tests your brain over reflexes, they



Valve prefers silent protagonists not only so you can better fill their shoes, but so you can concentrate, too. Both Chell and the co-op bots will remain quiet, giving you the perfect environment to evaluate a test chamber or strategize with your co-op partner.

feel a bit more comfortable pushing players in co-op.

"When you are playing single-player and get frustrated, we consider that a failure," proclaims Josh Weier, project leader and programmer on Portal 2. "We don't want you to hit that point. But in co-op it's really easy to bounce ideas off each other, so complicated ends up being more fun."

Both brains and sets of thumbs will be needed to best what GLaDOS throws your way. Communication will be key, and Valve has implemented several handy features to help in that regard. Spitscreen will be available for those who prefer couch co-op, with a picture-in-picture option catering to remote play. To assist with verbal communication, there's a system of contextual commands that will allow you to place icons throughout the environment, instructing your partner to shoot a portal here or look over there.

While the single-player and co-operative campaigns share the same puzzle elements, things get hairy quickly when we try out the co-op. Early rooms

train us to think with two sets of portals, taking us with reorienting a laser towards a row of successive concrete slabs with a provided cube. Next, all four portals are needed to clear a path from a laser to the receptacle at the other end of the room, which subsequently opens the exit. Easy enough.

In the next room, things get complicated. The chamber divides the players from the start. While one player uses a redirection cube to guide a laser to multiple receptacles scattered about the room, each firing a particular hazard out of the way, the other player must traverse the dangerous obstacle course. Easy, difficult hazards, such as a massive concrete block adorned with spikes, begin to fall once the laser stops fusing the corresponding receptacle, requiring precise actions by players in order to progress. After completing each level, GLaDOS commends you in her own way, gazing aside of you into thinking the other player is dead weight. GLaDOS doesn't feel any particular kinship with these robots, to be sure.

continued on page 60



Funny Business

Humor was an important aspect of the original Portal, and that isn't changing for the sequel.

When Portal writer Erik Wolpaw is returning, joined by fellow Valve scribe Chet Faliszek, lead writer of Left 4 Dead and Left 4 Dead 2, and Jay Pinkerton, a new recruit who honed his considerable talents while writing for National Lampoon. The challenge will now be uniting these three unique voices into one: a disgruntled computer system with an affinity for neurotoxins. This humor is already evident in some of the early art we've seen from the game, helping to set the mood until gamers have a chance to check out Portal 2 in action. The below pair of Aperture Science posters are a prime example, illustrating the merits of using a turret to ward off potential baby snatchers.

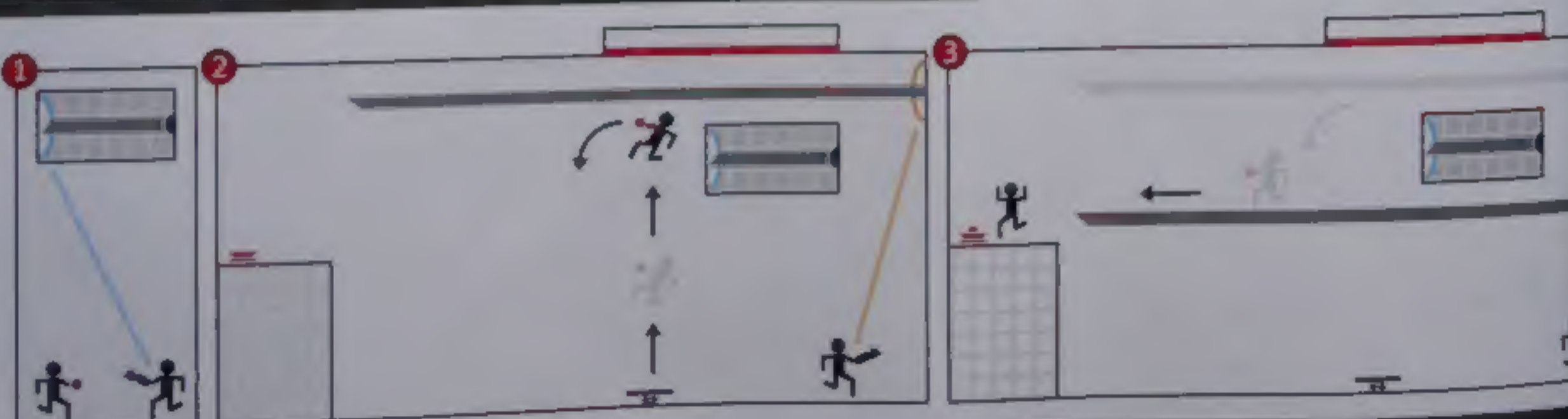
As for the more memorable moments in the original Portal, the cake may, in fact, be a lie in the follow-up. Not willing to rest on their comedic laurels, the writing staff refuses to beat a dead horse by reusing memes from the original game.



Bridging The Gap

The last chamber we had a chance to test is a doozy. Allotted 30 seconds to press four buttons at various heights in a chamber, we are forced to divide and conquer. Once the requirement is met, a weighted storage ball releases, which then needs to be escorted to a ledge high above the chamber floor. An aerial faith plate is found flush to the floor and a projected bridge is tucked away in a recessed alcove. We notice the bridge can be reoriented to allow a player to walk safely across to the awaiting bucket. Problem is, a fuzzer field (the luminous field at the end of a level that eliminates cubes, ball, and portals) blankets a recessed section of the ceiling that looks impossible to avoid when the faith plate launches a player uncontrollably to the bridge. If the threshold is crossed, the ball disappears.

To help illustrate the solution, we've whipped up a completely unofficial diagram. This isn't aimed to be an exact replica of the room, rather an abstract interpretation to help to clarify the basic concepts of the puzzle.



continued from page 58

Smooth Operator

Ambient noise and the occasional mood-setting music in the original *Portal* may not have left much of an impression (there was music?!), but we assume that, like the rest of us, Jonathan Coulton's "Still Alive" was stuck in your head for weeks after completion. Valve is aware of the fan connection to *Portal*'s now iconic anthem, and plans to integrate music into *Portal 2* in more deliberate and surprising ways.

"The music was something that so many people identified with in the first game — it was the last thing they saw," Johnson recalls. "So yes, Coulton is going to be involved. When we sat down to work on *Portal 2* it was clear that music had to be a bigger part of the game. There is going to be ways in *Portal 2* that you can find and discover new songs. It's not going to be a musical, but it's not going to be a simple case of having a new song at the end of the game."

Though Coulton is already collaborating with the team to infuse his flair into the project, they remain quiet about the exact applications of his music, primarily because they don't want to ruin the surprise.


"It was kind of surprising that there was a song at the end of *Portal*," Johnson elaborates. "And while we're 99 percent sure that we'll end with a song again, we can't recapture that moment. So we spent quite a bit of time thinking about where and how we could use music throughout *Portal 2* to surprise people."

We happened across one such bolt from the blue in our demo session, although not one that utilized Coulton's skills. Feeling particularly punishing, GLaDOS attempted to use smooth jazz as a weapon to keep us in line. It worked.

From Trial To Triple-A

With its augmented length, fresh puzzle elements, polished presentation, and new cooperative campaign, *Portal 2* hardly needs to be tucked into a value package. From what we've seen of the sequel, this is a fully featured game that will be right at home amongst other high-profile titles at retail. Due out this fall, you won't have to wait too long to spend more time with GLaDOS. She can't wait to rekindle the relationship. ♦

Want to learn more about the sordid history of Aperture Science? How about the process of creating a challenge room? Or a more extensive peek at *Portal 2*'s redesign? Visit gameinformer.com/portal2 for all that and more as we roll out an entire month of *Portal 2* coverage.



"We're a lot alike, you and I. You tested me. I tested you. You killed me. I—oh, no, wait. I guess I haven't killed you yet. Well. Food for thought during this next test."