CT scans confirm 17th-century medical mannikins are mostly made of ivory

Enlarge / An ivory manikin after removal of the abdominal and chest wall, ribs, and part of the uterus. Internal organs such as the lungs, intestines, as well as a fetus inside the uterus are visible.

reader comments

24 with 19 posters participating

Share this story

Researchers at Duke University have completed digital scans of small medical manikins and identified the materials used to make them. They will be presenting their findings next week at the annual meeting of the Radiological Society of North America (RSNA) in Chicago.

These are not the department-store mannequins familiar to most of us today. Rather, they are tiny, intricately carved anatomical figurines dating back centuries. According to the New York Academy of Medicine, there was an explosion of interest in three-dimensional anatomical models in the mid-16th century, typically made of wax molds or carved from wood or ivory. The manikins likely emerged as a result of this trend. Scholars have pegged their origins to Germany in the late 1600s or early 1700s, possibly created in the Nuremberg workshop of sculptor Stephan Zick, known for his ivory models of human ears and eyeballs.

The figurines measure between 12 to 24 centimeters (4 to 9

inches) and have movable arms. The torso has a lid that can be removed to reveal tiny, intricately carved organs within the cavity. The removable organs include lungs, heart, intestines, bladder, kidneys, stomach, liver, and pancreas. There are some male and female pairs, but most of the manikins are pregnant female figures, with a tiny carved fetus attached to the uterus with a red cord.

What are they good for?

Exactly what the manikins were used for is unclear. Historians don't believe they were teaching aids, given the lack of intricate details of the carved internal organs. It's been suggested they may have been used by doctors to explain childbirth to their pregnant female patients, but art historian Cali Buckley, among others, thinks it is far more likely they were collectibles, popular with male physicians as a display of luxury or wealth.

Duke University has one of the largest collections of the surviving manikins: 22 of the 180 known to be in collections around the world. The figurines were donated in 1956 from the private collection of a thoracic surgeon at Duke named Josiah Trent. They are fragile items, susceptible to light damage, and thus are rarely displayed. "They are usually stored in a library vault and occasionally rotated into a special display unit in the Duke Medical Library for visitors to appreciate," said co-author Fides R. Schwartz, a research fellow in the Department of Radiology at Duke.

Two years ago, university conservationists teamed up with the Shared Materials Instrumentation Facility (SMiF) to use micro-CT scanning to digitize the entire collection. The objective was to preserve the fragile pieces in digital form, as well as enabling 3D printing of replicas for more frequent display.

- Male and female manikins from the collection in the

Wellcome Institute of the History of Medicine.
- Male and female manikins from the collection in the Wellcome Institute of the History of Medicine.
- Duke University's 3-D X-ray scans reveal how the manikins were put together or repaired as they changed hands over the centuries.

https://arstechnica.com/?p=1605087

Netflix cancels its Mystery Science Theater 3000 revival

Enlarge / *Mystery Science Theater 3000*.

reader comments

112 with 78 posters participating

Share this story

Netflix will not produce a third season of its *Mystery Science Theater 3000* revival, according to a series of tweets from the show's star, Jonah Ray Rodrigues.

The text of his Twitter thread follows:

> *So, Netflix decided to not do another season of MST3K. We are off to Get Down in Lilyhammer while the OA helps us take it One Day At A Time. We will be in group therapy with Tuca & Bertie, Jessica Jones, & Lady Dynamite. The sessions will be run by Gypsy (w/ Naomi Watts.) thread*

> *We don’t know what the future holds for the show, it always seemed to figure out how to survive. From Comedy Central to SyFy. Then kept alive by RIFFTRAX & Cinematic Titanic. whatever happens, I want everybody to know that getting a chance to be on this show was a dream come true*
>
> *Getting to work with old friends while making new ones was a gift I didn’t take lightly. Collaborating with heroes from my childhood is something I’ll never stop beaming about.*
>
> *So, Thank you Joel & especially all the MSTies who embraced me as a mug in a (yellow) jumpsuit. I know it wasn’t easy accepting a new guy, so I appreciate the warmth.*

This is the fourth time in the series’ history that it has been canceled in one way or another. Fans have repeatedly rallied to bring it back on new networks or, in some cases, in totally new formats and spinoffs like RiffTrax. Also on Twitter, *MST3K* creator Joel Hodgson said, “It’s not the end of *MST3K*, It’s just the end of the first chapter of bringing back *MST3K*.”

The most recent revival started with a massively successful crowdfunding campaign before Netflix picked the series up. The first new season (season 11 in the grand scheme of the show) was released to critical acclaim, and it brought in some old series fans and attracted newcomers with a new cast that included Felicia Day and Patton Oswalt, among others. However, statements by Hodgson and others involved in the show indicated that Netflix was displeased that users weren’t binge-watching it in the same way that they do a show like *Stranger Things* or *House of Cards*.

The ill-advised answer was to bill the second new season as “The Gauntlet,” with a weak narrative framing suggesting that viewers should watch all of its 90-minute episodes in one sitting. Most fans of the series would acknowledge that this sort of bingeing is not really a fit for the show, despite a

tradition of the most dedicated fans marathoning it on Thanksgiving. The Gauntlet does not seem to have worked to Netflix's satisfaction.

This cancellation may hit diehard fans particularly hard, because as noted, Thanksgiving has become associated with *MST3K* enthusiasts in many viewers' eyes. The first run of the show premiered on Thanksgiving in 1988, and networks that have carried the show (like Comedy Central and Netflix) have aired episodes on Thanksgiving before.

If you're looking for an *MST3K* fix to make you laugh away the pain of the show's latest cancellation, you can watch a marathon of old episodes tomorrow, Thanksgiving Day, on *MST3K*'s Twitch channel.

https://arstechnica.com/?p=1624513

Google is offering refunds for players who bought new Stadia freebies

reader comments

4 with 4 posters participating

Share this story

- Embossed text, 'cause it's fancy.

Kyle Orland

- The Stadia controller looks a lot like every controller these days.
- Keep digging and find a plug for your controller.
- Dig one more level and there's the Chromecast Ultra.
- A special message for early adopters.
- The Stadia controller is solidly built with springy, responsive inputs.

Kyle Orland

- Both the d-pad and analog stick feel nice and responsive under the thumb.
- USB-C for charging and for sending data over a cable to a mobile phone or PC.
- The top two buttons are roughly the equivalent of Select and Start for Stadia games. The bottom two are Assistant (which doesn't do much of anything just yet) and screenshot (which only sends shots to a mobile app where they can't be made portable).
- The controller has a built-in microphone and a standard headphone jack for audio.

Google had some good news to share with Stadia streaming's early adopters yesterday: their $10/month Stadia Pro subscription will grant access to two new titles—*Farming Simulator 19: Platinum Edition* and *Tomb Raider: Definitive Edition*—starting next month.

That didn't come as welcome news to all Stadia owners, though, because those games had already been on sale as Stadia launch titles for the week leading up to the announcement. That means a fair number of Stadia Pro subscribers had spent $49.99 (for *Farming Simulator*) or $9.99 (for *Tomb Raider*) on games that would be free in less than two weeks' time.

Google, to its credit, has not ignored these players. "Because of the proximity between the launch of the platform, and the announcement of these titles in Stadia Pro, we're happy to assist you if you'd like to request a refund if you have

purchased either or both of these titles, even if it’s outside of our normal policy,” a Google community manager wrote yesterday afternoon.

The new Stadia Pro freebies come on top of *Destiny 2* and *Samurai Shodown*, which were offered to pre-order customers who subscribed to Stadia Pro in November. Those games will be accessible for those subscribers as long as they maintain their Stadia Pro subscription. Games purchased directly on the Stadia Store will not require a continuing Pro subscription to keep (even if they are purchased with a Pro discount). Of course, a Stadia Pro subscription is currently the only way to access Stadia, so that issue is kind of moot until Google launches its planned free tier next year.

The addition of two new Stadia Pro freebies is a welcome sign for Google’s nascent gaming service. Before now, Google was only able to confirm that new Stadia Pro titles would be coming at a “regular cadence” going forward. The current rate of two free games per month would put Stadia Pro on par with PlayStation Plus and Xbox Live Gold, both of which charge $60 a year for two free monthly titles and other benefits (including online gameplay).

That said, there are only 22 games currently in the Stadia Pro library, with four more announced for the rest of the year. Adding two free games a month would quickly exhaust that initial lineup, and the 14 titles for a 2020 Stadia release so far would only pad things out a bit (especially since brand-new releases seem unlikely candidates for Stadia Pro freebies).

The initial dearth of Stadia titles isn’t out of the ordinary for newly launched game platforms, and Google no doubt has more publisher partnerships and Stadia game announcements in the works (including planned Stadia-exclusive games from its own internal studios). But recent examples like the Wii U show that major game makers can quickly abandon a platform if

players don’t show much inherent post-launch demand to be playing there. If more than 4,000 developers actually expressed interest in developing for Stadia, as Google claimed back in July, then Google would be wise to use them to expand the service’s library quickly in the coming months.

Listing image by Kyle Orland

https://arstechnica.com/?p=1624469

Disney+’s The Mandalorian joins a long list of fake HDR content, analysis finds

Enlarge / Pedro Pascal stars as the Mandalorian.

reader comments

141 with 114 posters participating

Share this story

High Dynamic Range (HDR) is the most notable new display technology for rich-media consumption since high definition, but judging from some implementations of it, you wouldn’t necessarily know it.

YouTube channel HDTVTest is known for doing quality analysis of the HDR implementations in popular media like films, games, and TV shows, and it found that Disney+’s *The*

Mandalorian live-action *Star Wars* series is the latest in a long line of high-profile content that is just SDR wrapped up in an HDR package. The show has none of the actual benefits of HDR and a number of additional downsides, such that viewers might actually prefer to disable HDR on their TVs when viewing.

Most good TVs that support HDR are capable of displaying specular highlights at around 800-1,200 cd/m² in brightness, and that range of brightness from black (or close-enough to it on LCD displays) is what makes HDR possible. By presenting such a wide range of brightness, content has realistic and visually arresting contrast between the brightest and darkest parts of the image—and that range and granularity in brightness has a big impact on color, too.

In what has become a common test for assessing HDR implementation, HDTVTest measured the luminance of every part of the screen and heat-mapped the image for the YouTube video to make it clear how bright each part of the image is even if you're not watching the analysis video on an HDR display. The test found that at no point did any part of the image in *The Mandalorian*—even highlights like blaster fire, a forge of molten metal, or the Sun—appear at more than 200 cd/m².

- In this image of the helmet, we're hanging at or below 100 cd/m2 for the most part. You might think that's OK since it's just his helmet in a dark place, but…
- These are burning-hot flames in a Mandalorian armor forge. They peak at around 200 nits, far below what HDR TVs are capable of.
- The problem is especially apparent in this image, which shows a sunlit sky and blaster fire, again hard capped at around 200 cd/m².

The channel speculates that Disney has simply put the SDR content in an HDR wrapper, with associated HDR-10 or Dolby

Vision flags for the TV enabled regardless. It’s also possible that Disney sees this flat look as part of the aesthetic for the show. But in any case, the result is that users expect to be watching it in the full HDR experience, but they’re not really, and they don’t have a good way (outside of watching this video) to know what’s up besides the fact that the image looks awfully dim and isn’t living up to expectations.

Further, this has ramifications beyond image quality. When an HDR-capable TV gets that flag to display HDR content, it may use considerably more power than if it’s in SDR mode—especially if it’s an LCD TV with a backlight that has to be amped up to allow high-brightness highlights. This can affect the lifespan of the TV for some TV technologies, and it will definitely affect power draw and environmental impact in others. https://arstechnica.com/?p=1624145

Xbox chief: “Nobody’s asking for VR” for Project Scarlett

Enlarge / Microsoft’s own Windows Mixed Reality VR headsets aren’t set for support on the Xbox side, according to Spencer.

reader comments

4 with 4 posters participating

Share this story

Microsoft Head of Xbox Phil Spencer told Australian gaming site Stevivor that virtual reality support is “not where our

focus is” for next year’s planned release of an Xbox One successor known as Project Scarlett.

“I have some issues with VR,” Spencer told the site. “It’s isolating and I think of games as a communal, kind of together experience. We’re responding to what our customers are asking for and… nobody’s asking for VR.”

That closely mirrors comments Spencer made to Ars Technica in 2017, when he said, “We haven’t had people climbing over us saying, ‘Hey, when can you deliver a family room VR experience.’ I think a little of the setup with TV and dragging cables across the room is a little difficult.” Apparently Microsoft’s view of its customers’ VR demand hasn’t changed much in the intervening years.

Players who really want virtual reality, Spencer suggested to Stevivor, are well served by the PC market and “other places,” presumably including PlayStation VR. But Spencer added that Microsoft “see[s] the [sales] volumes of those on PC and other places… [and] nobody’s selling millions and millions [of VR headsets].”

Is anybody asking for VR?

Spencer’s numbers aren’t totally accurate there. Sony announced back in March that PlayStation VR has sold 4.2 million units since its 2016 launch. And analysis firm Superdata estimated an install base of 14 million VR users in 2018 across all platforms, a number it projects will grow to 51 million by 2022.

But Spencer’s implied point about VR’s underwhelming market impact so far does have some merit. In September, for instance, Oculus announced cumulative sales of $100 million in VR software through the Oculus Store. That means total platform sales across more than three years and multiple Oculus VR headsets can’t even match the launch window revenue

for a single console blockbuster like *Red Dead Redemption 2*.

Some back-of-the-envelope math suggests this year's standalone Oculus Quest only sold about 100,000 units in its first two weeks as well. Compare that to the million Xbox One units Microsoft managed to sell in the console's first day of availability years ago, and you can see why Spencer might consider VR a relative market niche.

Microsoft previously mentioned VR support in the 2016 announcement of Project Scorpio, and at least one developer said at the time it was working on an Xbox One game with VR support. But when that hardware launched as the Xbox One X in 2017, virtual reality compatibility was nowhere to be found, even with Microsoft's own PC-based Windows Mixed Reality hardware.

While Spencer allowed to Stevivor that "I think we might get there [eventually]" when it comes to virtual reality on an Xbox console, it seems that thus far his opinion of the technology hasn't changed much since a 2016 Stevivor interview. "I don't think the creators in the [VR] game space have yet found—well, they haven't obviously perfected the craft of building VR games," he said. "It's so early, I think we're a couple of years before we'll really see that hit mainstream."

Three years later, and that mainstream acceptance point for VR still hasn't come.

https://arstechnica.com/?p=1623945

Google addresses complaints of sub-4K image quality on Stadia

reader comments

188 with 118 posters participating

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- A shot of *Destiny 2* streamed at 4K to a Chromecast Ultra (image shot using a DSLR off a TV because we were unable to break the HDCP on the Chromecast).
  Kyle Orland
- A similar shot of *Destiny 2* on the PS4 Pro (also taken using a DSLR).
  Kyle Orland

Since March, Google has been promising that its streaming Stadia platform would be capable of full 4K, 60fps gameplay (for users with a robust Internet connection and $10/month Stadia Pro subscription). But technical analyses since launch have shown that some of the service's highest profile games aren't hitting that mark.

A Digital Foundry analysis of *Red Dead Redemption 2* on Stadia, for instance, found that the game actually runs at a native 2560×1440 resolution, which is then upscaled to the 4K standard of 4096×2160 via the Chromecast Ultra. And a Bungie representative said that the Stadia version of *Destiny 2* runs at the PC equivalent of "medium" graphics settings and that the game will "render at a native 1080p and then upsample [to

4K] and apply a variety of techniques to increase the overall quality of effect."

As we noted in our review, at normal TV viewing distances, Stadia's apparently upscaled 4K images can look relatively comparable to a native 4K image from a high-end console (Stadia's PC and mobile resolution is currently limited to a disappointing 1080p). But with Google claiming server instances that have a console-beating "10.7 GPU teraflops" of polygon pushing power to devote to a game, many Stadia customers are wondering why they aren't getting the full native resolution that the company has long promised.

Over the weekend, Google issued a statement to 9to5Google that essentially places the blame for this situation on Stadia developers themselves (emphasis added):

> *Stadia streams at 4K and 60fps—and that includes all aspects of our graphics pipeline from game to screen: GPU, encoder, and Chromecast Ultra all outputting at 4K to 4K TVs, with the appropriate Internet connection. Developers making Stadia games work hard to deliver the best streaming experience for every game. Like you see on all platforms, this includes a variety of techniques to achieve the best overall quality. We give developers the freedom of how to achieve the best image quality and frame rate on Stadia, and we are impressed with what they have been able to achieve for day one.*
>
> *We expect that many developers can, and in most cases will, continue to improve their games on Stadia. And because Stadia lives in our data centers, developers are able to innovate quickly while delivering even better experiences directly to you without the need for game patches or downloads.*

This answer is a bit unsatisfying, since games like *Destiny 2* and *Red Dead Redemption 2* are already running at 4K resolutions on home consoles and PCs. If Linux-based ports running on Stadia's high-end servers can't achieve that same

native performance at launch, it’s concerning to say the least.

- A gallery of *Destiny 2* screenshots, running at 1080p via Stadia in a Chrome browser…
- …and via a local Steam client at the same resolution (with all settings maxed out)

https://arstechnica.com/?p=1623593

Review: Twists upon twists in Knives Out will keep you guessing ’til the end

Enlarge / Daniel Craig sports a Southern accent and plenty of panache as Det. Benoit Blanc in *Knives Out*.
YouTube/Lionsgate

reader comments

54 with 37 posters participating

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A wealthy family patriarch dies under mysterious circumstances, and a brilliant detective suspects foul play in *Knives Out*, Director Rian Johnson’s terrific postmodern take on the classic whodunnit. Frankly, I can’t tell you much without spoiling the fun—there are twists upon twists upon twists throughout—but the film should be on everybody’s must-

see list.

(We are very mindful of spoilers below, apart from brief descriptions of the premise and main characters, and well-known tropes of classic mystery novels.)

It's not as much of a radical departure for Johnson as it might seem. His debut feature film, *Brick* (2005), was a crime drama with *film noir* overtones, largely inspired by the works of Dashiell Hammett and starring Joseph Gordon-Levitt. (The actor would go on to star in Johnson's third film, 2012's *Looper*.) For *Brick*, Johnson had his actors read Hammett and watch classic screwball comedies like *His Girl Friday* to bring a lighter touch to the traditional *noir* genre.

Now, he has brought that same sensibility—mixing dark subject matter with a lighter touch—to *Knives Out*. Think *Clue* meets *Murder on the Orient Express*—or any number of adaptations of novels by the grande dame of murder mysteries, Agatha Christie—both of which the director has cited as influences via a Twitter thread of movie posters that also includes *Deathtrap, Evil Under the Sun, Gosford Park*, and *Murder by Death*.

Knives Out features a premise entirely worthy of Christie. Various extended family members assemble at the family estate to celebrate their patriarch Harlan Thrombey's (Christopher Plummer) 85th birthday. Thrombey made his fortune by writing tons of best-selling mystery/thriller novels and dies unexpectedly later that night under mysterious circumstances. Could it be foul play? Det. Benoit Blanc (Daniel Craig) suspects it might be, and he detains the entire family in the mansion until he completes his investigation. Naturally, the surviving family members are none too happy about this, since they don't particularly get along.

- It always begins with an isolated manor.
  YouTube/Lionsgate

- Christopher Plummer as family patriarch Harlan Thrombey
  YouTube/Lionsgate
- One of Thrombey’s many novels.
  YouTube/Lionsgate
- Celebrating Thrombey’s 85th birthday.
  YouTube/Lionsgate
- The dysfunctional family assembles.
  YouTube/Lionsgate
- Lakeith Stanfield is Det. Lt. Elliot.
  YouTube/Lionsgate
- Daniel Craig sports a Southern accent as Det. Benoit Blanc.
  YouTube/Lionsgate
- Jamie Lee Curtis commands the room as Linda Drysdale, the dead man’s daughter.
  YouTube/Lionsgate
- Ransom Drysdale (Chris Evans) has a colorful vocabulary and an insouciant attitude.
  YouTube/Lionsgate
- Walt Thrombey (Michael Shannon) takes umbrage at the suggestion he could be the killer.
  YouTube/Lionsgate
- Richard Drysdale (Don Johnson) has just a hint of smarm.
  YouTube/Lionsgate
- Surely Jacob Thrombey (Jaeden Martell) is too young to be a killer?
  YouTube/Lionsgate
- Another family tableau.
  YouTube/Lionsgate
- Det. Blanc does the carpet crawl to hunt for clues.
  YouTube/Lionsgate
- Looking for more clues.
  YouTube/Lionsgate
- A lethal shot of morphine?
  YouTube/Lionsgate
- A threatening anonymous note.
  YouTube/Lionsgate

- A mysterious fire breaks out.
  YouTube/Lionsgate
- Det. Blanc suspects foul play.
  YouTube/Lionsgate

Johnson has assembled an impressive cast, all of whom deliver top-notch performances. Craig's Southern accent might be initially distracting for those more familiar with his James Bond films, but that fades as one gets caught up in the story. Jamie Lee Curtis plays the deliciously condescending Linda Drysdale, Harlan's daughter, who likes to humble-brag about building her real estate empire from the ground up. Don Johnson plays her smarmy husband, Richard, while Michael Shannon plays youngest son Walt Thrombey, who has been running his father's publishing empire.

Other dysfunctional family members include Linda and Richard's ne'er-do-well son, Ransom (Chris Evans); Harlan's widowed daughter-in-law, Joni (Toni Collette), a "lifestyle guru"; Joni's daughter Meg (Katherine Langford), a left-leaning college student; and Walt's teenaged son Jacob (Jaeden Martell), who spends much of his time online as an alt-right troll. (Johnson told Deadline Hollywood that Jacob's character was inspired by all the online hate he received from angry *Star Wars* fans for *The Last Jedi*.) Also present are the housekeeper, Fran (Edi Patterson), and Harlan's nurse and primary caretaker, Marta (Ana de Armas), who had the misfortune to discover Harlan's body.

That's really all I can say without giving too much away, because Johnson has masterfully plotted *Knives Out* down to the very last tiny detail. The clues are all there for sharp-eyed audiences to follow, in fine Christie fashion, along with a fair amount of clever misdirection, perfect pacing, and plenty of sly humor. Just when you think you've figured it out, Johnson adds a few more surprising twists, culminating in Benoit's inevitable dramatic revelation of the truth. Agatha Christie would most definitely approve.

Knives Out hits theaters Wednesday, November 27, 2019, just in time for the Thanksgiving holiday weekend.

https://arstechnica.com/?p=1622621

Love Baby Yoda, you must

Enlarge / Awwwww…

reader comments

80 with 60 posters participating

Share this story

No matter how frequently it happens, when people online love something obsessively, when they simply must stan, it always brings out the cynics. Their cynicism, in turn, will be understood as intellectual seriousness. As maturity. To wit: This week the internet pledged its fealty to Baby Yoda—the tiny alien from Disney+'s *The Mandalorian*—and was immediately met with the rationale of Adult Nerds eager to pronounce each fan a nerf-herding sap who doesn't really understand the object of their affection. It's a reality created by clicks as much as crotchetiness. Baby Yoda hype has produced beatific meme-collection posts showcasing how many adherents would die for the li'l green cherub, speculations about what role Baby Yoda will play in *The Mandalorian*, and beyond. Naysaying is the obvious next step. Baby Yoda backlash has already begun.

Take the bait, I will not.

Reasons to be suspicious of the creature, and its popularity, do exist. The best one is that Baby Yoda is a bit of marketing calculus on Disney's part, a being engineered to be cute enough to move scores of toys this holiday season. OK, sure. There is Baby Yoda merch on the way, but, historically speaking, there have been toys, T-shirts, keychains, and all manner of schwag for nearly every Star Wars character regardless of their adorableness level. Even if Disney didn't release official items, someone else would, as evidenced by the "black market" guides to Baby Yoda gear that went up before news broke about the official products.

The Star Wars universe also has a mixed track record with its ritual infusions of cuteness. Jar Jar Binks is an insipid scaly rabbit-frog who never needed to exist, and porgs are a mostly plot-irrelevant bit of filler designed to mask puffin infiltration. Hating ewoks is a meme of its own, though the reason most give for hating them—that they disrupt the original trilogy's supposed seriousness and grit with their mawkish fluffiness—is a bit much. Are the ewoks, who brutally murder multiple stormtroopers and were instrumental in helping the rebels capture the Empire's base on Endor really more of a distraction than C-3PO's constant dithering and disassembly? Or do people hate them out of spite because they know they're supposed to love them, but a part of them can't help but do just that?

We must resist this ewokification of Baby Yoda, because it hurts everyone invested in Star Wars. There's something grindingly, performatively grouchy in leaping forward to damn something that "everyone" likes, in no small part because everyone likes it. It's like when stuffy grown-ups poo-poo anything teenage girls like because they believe their youthful enthusiasm is somehow tainting art. As Adult Yoda says, "Anger leads to hate. Hate leads to suffering." Yes,

people love Baby Yoda. Yes, people are meant to. But suggesting that Disney and *The Mandalorian* are somehow cheating by making Baby Yoda so cute that it brought Werner Herzog to tears (<ahref="https://www.gq.com/story/werner-herzog-baby-yoda">a real thing that happened) is like faulting a chef for salting their food.

Spoilers: Baby Yoda has done next to nothing in *The Mandalorian* except float in an egg-cradle, nap, eat a frog, and use the Force to help the Mandalorian kill a beast so he could steal its baby, which isn't even a very Light-side move. Despite this, Baby Yoda is, in fact, so lovable that its lovability is evidence of storytellers and character designers at the peak of their powers. Typically, building a character out of elements people are sure to adore is a ticket to Try-Hardsville. (If your mind is like mine and only hangs onto bizarro scraps of internet culture, the ultimate example is Mountain Dew's 2016 Super Bowl commercial, "Puppy Monkey Baby," featuring a creature that was a nightmarish amalgam of what should have been the internet's favorite things.) Baby Yoda is different. The character is simply a mashup of the most beloved being in the Star Wars universe, Disney's cuteness formula, and a superbaby. The adorableness of its innocent corgi-monkey-gremlin face is only enhanced by your memory of Yoda's wisened visage; it easily unseats Baby Groot as the best babified grizzled genre character. Internet obsession with Baby Yoda was bound to happen—it's *science*. Love it, you must. OK to enjoy things, it is.

This story originally appeared on wired.com.

https://arstechnica.com/?p=1622541

BBC drops an action-packed Doctor Who trailer 56 years after show first aired

reader comments

79 with 51 posters participating

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[embedded content]
The Time Lord and her faithful companions face all new adventures in series 12 of the BBC's *Doctor Who*.
Jodie Whittaker returns as everyone favorite kooky-yet-brilliant Time Lord in the first action-packed trailer for the upcoming 12th series of *Doctor Who*. And it just so happens the trailer's debut coincides with BBC One's airing of the very first *Doctor Who* episode, "An Unearthly Child," 56 years ago.

(Some spoilers for series 11 below.)

There were lots of big changes to *Doctor Who* last season. In addition to Whittaker's first female Time Lord (Time Lady? Eh, we'll stick with the original), longtime showrunner Steven Moffat left the show. He was replaced by Chris Chibnall, who not only wrote for *Who* and its spinoff *Torchwood* but was also the creator of the successful *Broadchurch* series (which featured Whittaker and the 10th Doctor, David Tennant).

Here's a brief recap for those who might have missed last season. Right after regenerating, the Doctor landed in Sheffield, *sans* TARDIS, just as an alien from the warrior Stenza race named T'zim-Sha (the Doctor calls him "Tim Shaw")

arrived to ritually hunt a human to advance his status. She teamed up with some locals to defeat the alien: Graham O'Brien (Bradley Walsh, *Coronation Street*) and his wife, Grace (Sharon D. Clarke, *Holby City*); her grown son Ryan Sinclair (Tosin Cole, *Hollyoaks*); and Ryan's old school chum, Yasmin "Yaz" Khan (Mandip Gill, also from *Hollyoaks*), a rookie police officer eager to prove herself.

The resourceful Doctor had to make herself a new sonic screwdriver. And when she finally reunited with her TARDIS—"Come to daddy… um, mummy," she crooned—it had a gorgeous new interior, courtesy of concept artist Darren Fereday. Among other perks, the revamped TARDIS boasts a biscuit dispenser.

Despite some unevenness overall, last season had several especially strong episodes, such as the fairy-tale flavored "It Takes You Away," in which a young blind girl named Hanne in a cabin in the Norwegian woods has lost her father through a portal to a parallel universe—lured by what appears to be his dead wife. "The Witchfinders" brought a lighter touch, as the Doctor found herself in the midst of a witch hunt in 17th-century England. (Alan Cumming was a sheer delight as King James I.)

In "Demons of the Punjab," Yaz convinces the Doctor to take them to her grandmother Umbreen's past in the Punjab, on August 14, 1947, the eve of India's partition—and learns way more about her family history than she bargained for. The finale, "The Battle of Ranskoor Av Kolos," was a bit weaker, but at least we came full circle in the season arc. The team ran into T'zim-Sha again. Responding to nine different distress calls, the TARDIS deposited the crew on the mysterious titular world, rife with debris from long-ago battles. It had been 3,407 years since T'zim-Sha was blasted into the past by the Doctor, and he'd been plotting his revenge ever since. Fortunately, the Doctor and her companions prevailed yet again.

- Jodie Whittaker is back as the 13th Doctor in series 12 of *Doctor Who*.
- Ryan (Tosin Cole), Graham (Bradley Walsh), and Yaz (Mandip Gill) are also back as the companions.
  YouTube/BBC Studios
- The TARDIS lands in a seemingly peaceful vineyard.
- Black tie optional?
  YouTube/BBC Studios
- “I’m not where I wanted to be.”
  YouTube/BBC Studios
- Looks like Goran Višnjić guest stars in one of the new episodes.
  YouTube/BBC Studios
- Hey, Stephen Fry makes a cameo!
  YouTube/BBC Studios
- Easy rider.
  YouTube/BBC Studios
- Space lasers FTW.
  YouTube/BBC Studios
- What is this monster?
  YouTube/BBC Studios
- Looks like Racnoss, the giant arachnid centaur creature from the 2006 episode “The Runaway Bride.”
  YouTube/BBC Studios
- Mysterious beings of light.
  YouTube/BBC Studios
- Could this be a Cybeman? Sure looks like one.
  YouTube/BBC Studios
- It’s Graham’s turn to wear the funny headgear.
  YouTube/BBC Studios
- The TARDIS trying to chillax on the beach, but those pesky birds are ruining its chill.
  YouTube/BBC Studios
- The Doctor does some soul-searching.
  YouTube/BBC Studios

In my review of last season, I concluded, “Chibnall succeeded

in making his *Doctor Who* fresh and memorable. Now I'm hoping he'll up the stakes a bit and give us more of the classic Whovian tropes we've come to know and love." For instance, last season, fan favorites like the Daleks and the Cybermen were nowhere to be found. There are still no Daleks, judging by this new trailer, but we do catch a glimpse of what looks like a Cyberman. And is that a brief shot of Racnoss, the giant arachnid/centaur like creature featured in the 2006 episode "The Runaway Bride"?

It definitely looks like Chibnall and his stable of writers are upping their game on the storytelling front. This is an exciting trailer, full of spaceship battles, black-tie hijinks, a stint in 1943 Paris under Nazi occupation, and the usual colorfully nefarious creatures threatening the universe. All in all, I have high hopes for the forthcoming season. Long may the Good Doctor travel through time.

Doctor Who's 12th series will air in early 2020.

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Turn your tabletop into a real Game of Thrones with Oathbreaker game

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Welcome to Ars Cardboard, our weekend look at tabletop games! Check out our complete board gaming coverage at cardboard.arstechnica.com.

Game of Thrones: Oathbreaker is the newest game to bring the popular HBO series (and the endless George R.R. Martin book series) to tabletop, this time in a social deduction format. We already have a *Game of Thrones* "dudes-on-a-map" game, a deckbuilder, a hand-management bluffing game, and a very light set collection game, but nothing else in this lineage really gets into the social-deduction space popularized by titles like *Coup* or *Deception: Murder in Hong Kong*.

While *Game of Thrones: Oathbreaker* seems to start in the right place with its setup of loyalists vs. conspirators, the game lacks balance. It's just too easy for the conspirator team (which starts with a large advantage anyway) to win. The king must play a nearly perfect game to take the crown.

Find the traitor

In *Oathbreaker*, one player takes the role of the king; everyone else plays nobles with hidden identities (either loyalist or conspirator) that the king must guess. Players may benefit from guessing which other players are on the same side as they are, but it’s not necessary to win the game.

Oathbreaker requires a minimum of five players; with eight, two players are known as the king and queen, and they split responsibilities by each dealing with three of the six nobles. Players try to push their side to victory by scoring points. They also try to achieve their individual objectives (which are hidden from other players), where they have to end the game with certain cubes representing honor or power. The loyalists’ side is called Order and is represented by a white token on the scoring track, while the conspirators’ side is called Chaos and is represented by a black token.

The game plays over a series of rounds that alternate between mission cards, where the nobles will try to complete or to sabotage, and decrees, where the king will play two cards to all nobles or to specific ones.

In each round where mission cards are played, the king turns over two or three such cards. The nobles then go around the table and play at least two of their influence cards to the missions, and then they place their sigil token on the mission where they played the most cards. Mission cards have one of three symbols—crown, raven, or swords—and carry instructions for how much to move the Order or Chaos tokens if the mission succeeds or fails. They also give rewards for players who place their sigil tokens on those missions.

After all nobles have played cards to the missions, the king collects the cards from each mission, shuffles them, and reveals them. These influence cards can have crown, raven, sword, or skull symbols, or some combination of those. If there are more symbols on these cards matching the symbol on the mission card than there are skulls, the mission succeeds. The Order token moves up, and any player with a sigil on the card gains any cube rewards shown on the success side. If there are more skulls than matching symbols, or if the two sides are equal, the mission fails. The Chaos token moves up, and for some cards the failure rewards go to players who had sigil tokens on that mission.

The king doesn’t know who played which cards to each mission, only whether a noble played any cards to a mission and how many. But one of the king’s main tasks throughout the game is to try to figure out which nobles are loyalists and which are conspirators. The king gets to “bet” on certain nobles during the decree phases by playing Loyalist and Conspirator cards directly to nobles, which will score at game end, advancing the Order token if the King guessed correctly while advancing the Chaos token if the king guessed incorrectly.

The game alternates between mission phases and decree phases until the round token reaches the end of its track, at which point the one loyalist/conspirator card that was set aside at the start of the game is revealed, moving up the Order or Chaos token accordingly. The king then guesses what side each

of the nobles was on, guessing all nobles before any reveals their loyalty. The nobles then reveal their loyalty cards one by one, moving up the Order token (if decree cards played to them match their loyalty) or the Chaos token (if the decree cards didn’t match). If the king got all nobles’ loyalties correct, the Order token moves up three spaces; if even one is wrong, the Chaos token moves up.

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