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## “Undone” – Q&A with Hisko Hulsing

by [Joe Fordham](#)

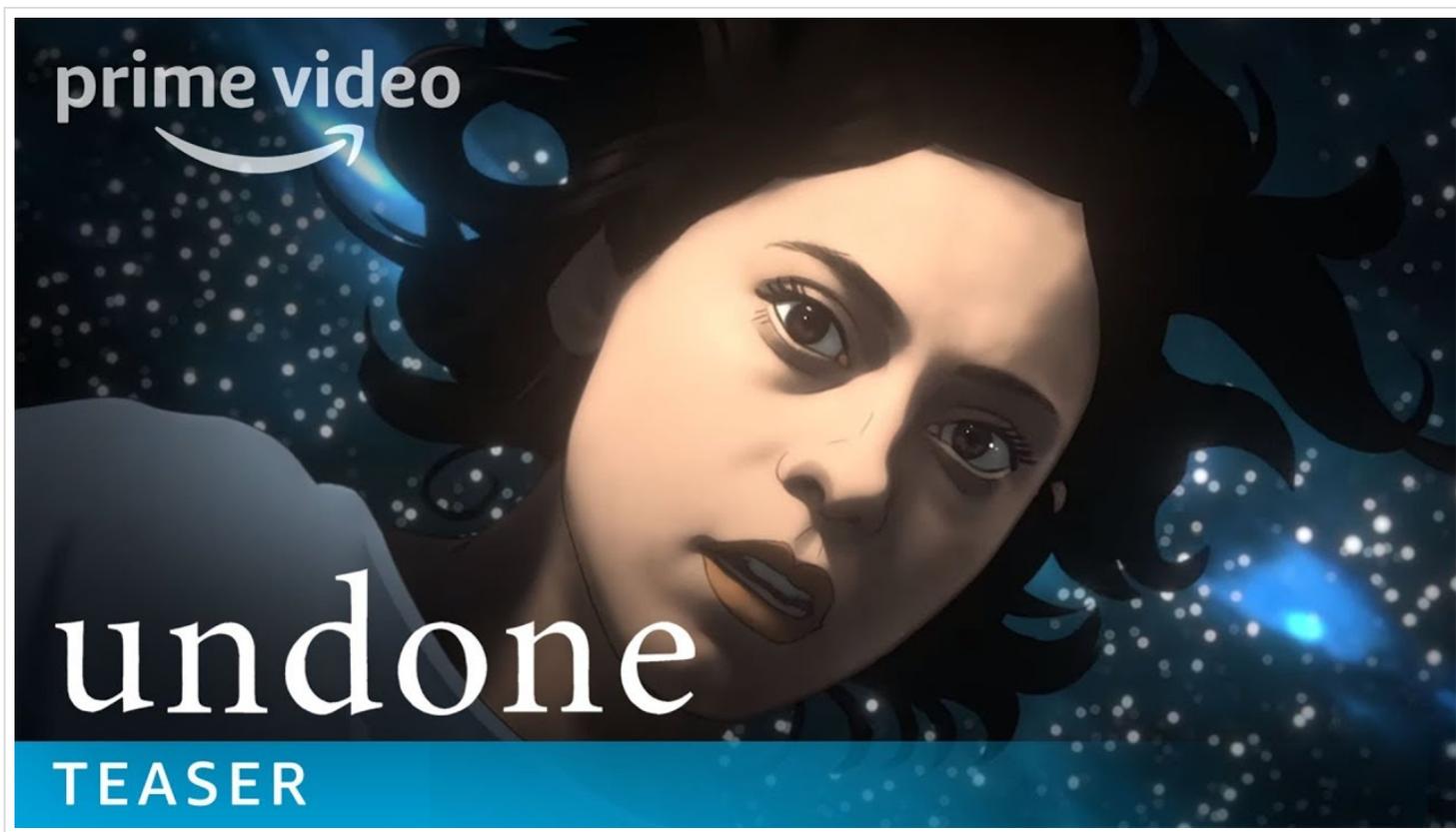
Posted on [March 18, 2020](#) by [Joe Fordham](#)



Anyone who tuned into Amazon Studios' eight-episode, three-hour animated drama, *Undone*, last Fall knew they were in for a strange ride.

From its first episode, the series depicted its heroine, Alma Winograd-Diaz (Rosa Salazar), as a feisty young kindergarten teacher, in painterly rotoscoped animation, with limpid eyes and a feisty temper. As Alma argues with her nuptial-obsessed elder sister (Angeliqe Cabral) and spars with her constantly-critical mother (Constance Marie), she communes with visions of her long-deceased father, Jacob (Bob Odenkirk), a former physicist, who flits in and out of existence, product of a mental breakdown possibly triggered when a car crash knocks Alma's reality askew.

While the screenplay – by Raphael Bob-Waksberg and Kate Purdy, veterans of *BoJack Horseman* – was set in the here-and-now of Alma’s family life in San Antonio, Texas, the naturalistic performances and contemporary settings played in counterpoint to the animation style. Alma’s world melts and dissolves, transporting her back and forth through time, while Jacob guides his daughter through space and time, unraveling a mystery that, he suspects, led to his premature death.



To bring Alma’s world to life, Michael Eisner’s Tornante Company sought out Hisko Hulsing, a Dutch animation director whose work had appeared in HBO’s Emmy-nominated documentary *Kurt Cobain: Montage of Heck*, dramatizing episodes of rock star Kurt Cobain’s life with expressionistic rotoscope-based animation. The technique was an outgrowth of Hulsing’s award-winning short, *Junkyard*, which blended rotoscoped performance with expressive facial animation. “I think my ability to touch people with visual storytelling was what attracted the producers of *Undone*,” Hulsing recalled. “When they sent me the script, I loved the material. I met with screenwriters Kate and Raphael and we clicked right away. We very much understood each other, and what we wanted to do with *Undone*.”

Speaking from his studio in Amsterdam, Hulsing shared with Cinefex his process as production designer and director of the hybrid animated series, which sprang to life from a studio shoot in California and collaborations with Austin, Texas, animation studio Minnow Mountain and with the Amsterdam-based Submarine, who generated more than 800 oil-paintings and digital renderings of Alma’s world.

CINEFEX: How specific were the *Undone* screenplays in describing the fracturing nature of Alma’s world?

HULSING: The scripts were all very dialog-based. They had brief descriptions of transitions from one place to another, from one time to another. But some were more precise than others. We developed those ideas during storyboarding, visual effects meetings and designs.

CINEFEX: Back in 2006, Cinefex covered Richard Linklater’s animated adaptation of Philip K. Dick’s *A Scanner Darkly*, which used rotoscope animation to depict characters slipping through altered states of reality. What is it about that medium that fascinates you?

HULSING: Well, I started using rotoscoping in *Junkyard*, but I didn’t use it for character’s faces and heads. The same with *Montage of Heck*. I filmed actors, because my style of storytelling was so realistic, it didn’t feel right to animate them completely by hand. In *Undone*, it was different. I read the script and I figured the dialog was very sophisticated, very realistic, very subtle, and I felt we needed



— Hisko Hulsing, director and designer of Amazon Prime’s animated series “Undone.”

real actors. That way we could extract all the micro-expressions from their acting.

Early on, we discussed if we should treat all of Alma's realistic scenes differently from her hallucinations, her psychosis, or dreams, whatever they were. I thought that it would be much better to treat them all the same, with rotoscoping in combination with all the backgrounds painted as oil paintings. That gave us a very dreamy, almost-real atmosphere, which made Alma's reality almost as suspect as the other scenes. At all times, I wanted to viewers to wonder, 'What is actually reality?'



— Hulsing oversaw the creation of more than 800 oil paintings that formed the basis for all of the backgrounds in the animated world, based on photographic reference of San Antonio, Texas.

CINEFEX: For your oil painting backgrounds, how did you decide what you would paint, how much you'd paint, and how that worked with the real world? For instance, did you have a location shoot?

HULSING: No, none at all. We filmed everything on a greenscreen stage, without sets. Did you see Lars von Trier's film *Dogville*? What we did was very comparable. We started with a set plan on a stage. My assistant, Nora Höppener, and I taped floor plans on the ground. Wherever we needed props, we set out tables or chairs, but we had no scenery. We had to completely make up the whole world. The story was set in San Antonio, where Kate comes from. She gave us reference photos of certain churches or houses. Our designers used those as base for their designs. And then also, based on the script, we broke down the scenes and then decided what to paint. We used computer models as basis for drawings, and for layouts. And we used those layouts for all our oil paintings, which we created completely by hand.

CINEFEX: How big was each painting?

HULSING: The paintings were pretty big, about 120-centimeters horizontal, and they were conceived together with our rotoscope designs. We set up reference grids on the set to help determine background perspectives. I trained as an artist, so I am very aware of perspective, and I always kept that in mind during the storyboard process. And then, on set, I determined if we'd use very wide lenses or long lenses, and those determined painting perspectives. Those techniques were not that different from live-action filmmaking. But because everything was painted, that enabled us to put more emphasis on light and shadow, depth and drama.



— Submarine generated 3D models of all environments, which allowed Hulsing and his animation team to make dramatic use of photographic perspectives in

camera layouts. By projecting oil painting textures onto 3D surfaces, artists imbued painterly environments with a dimensional living presence.

CINEFEX: How long was your shoot?

HULSING: The shoot took about a week per episode. We shot everything on a greenscreen soundstage in West Hollywood. I was new in Hollywood, and so I was a little bit surprised when Rosa Salazar and Bob Odenkirk told me that they thought I was a good director. I think the reason for that was because I was extremely well prepared. We storyboarded 3,000 shots, we had all the floor plans, we knew exactly where the cameras would be. And, although there were no sets, just tape on the ground to guide where the walls were supposed to be, I was impressed how the actors used their imaginations to follow my imagination and perform in that environment.

What I understood was that on most movie sets performers have to wait around between setups, sometimes spending hours in their trailer. This was like doing a play for 12 hours! So, it was hard on them, but it was also rewarding because they could act all day long. We were very quick. We did two takes, maximum, per shot.

CINEFEX: What was your camera, or capture setup?

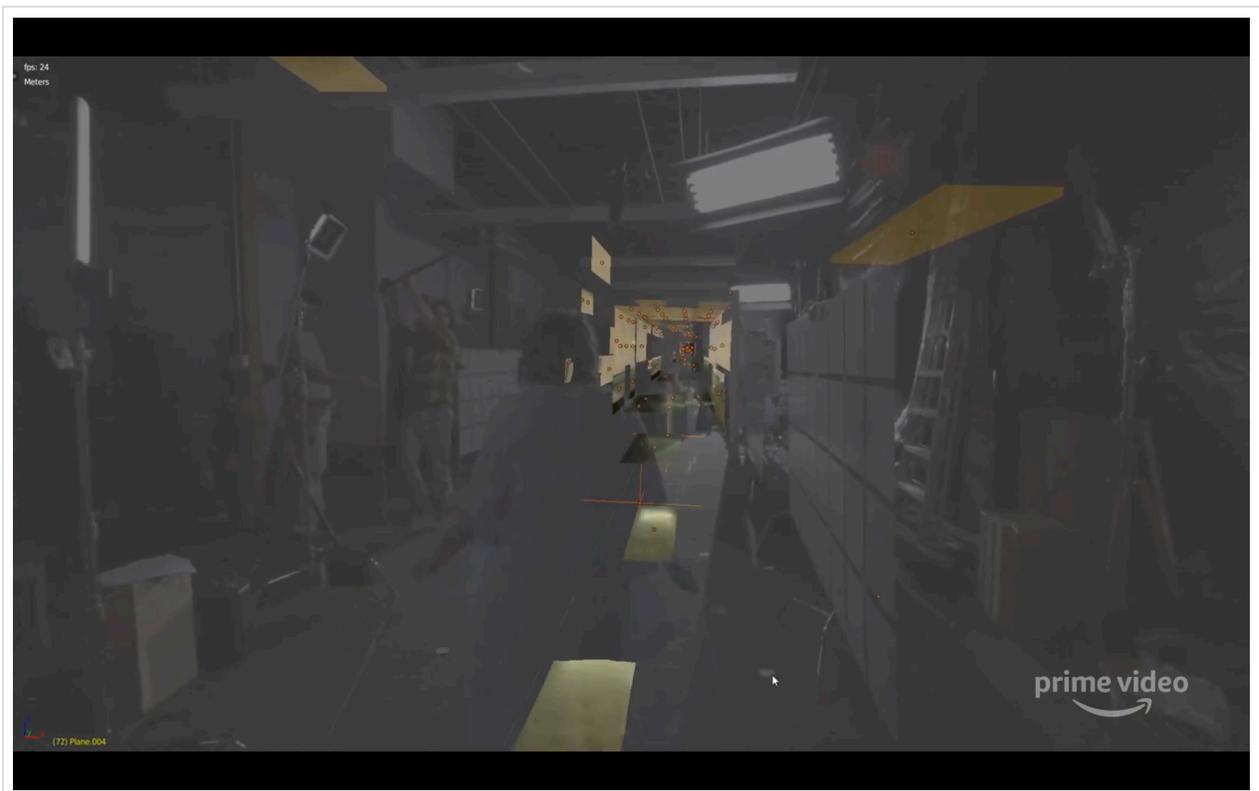
HULSING: Our budget was not big enough to afford a lot of moving cameras, so most of our shots were static, on sticks. We shot every take with two cameras. On our busiest day, we did 77 camera setups, which amounted to 144 camera angles in one single day. Our director of photography Nick Ferreiro and I worked very closely to change the camera positions on every take. And we also moved the lights around. We had a crew of about 20 people to accomplish that on set, moving very fast.

When we did have tracking shots, where we followed actors with a camera, and we completely rebuilt the environments in 3D. For the backgrounds in those shots, we projection-mapped our oil paintings onto a 3D model of the environment. Once we built that model, we did motion tracking, and then onto that we projection mapped our oil paintings in 3D so it felt like we were moving through an oil painting.

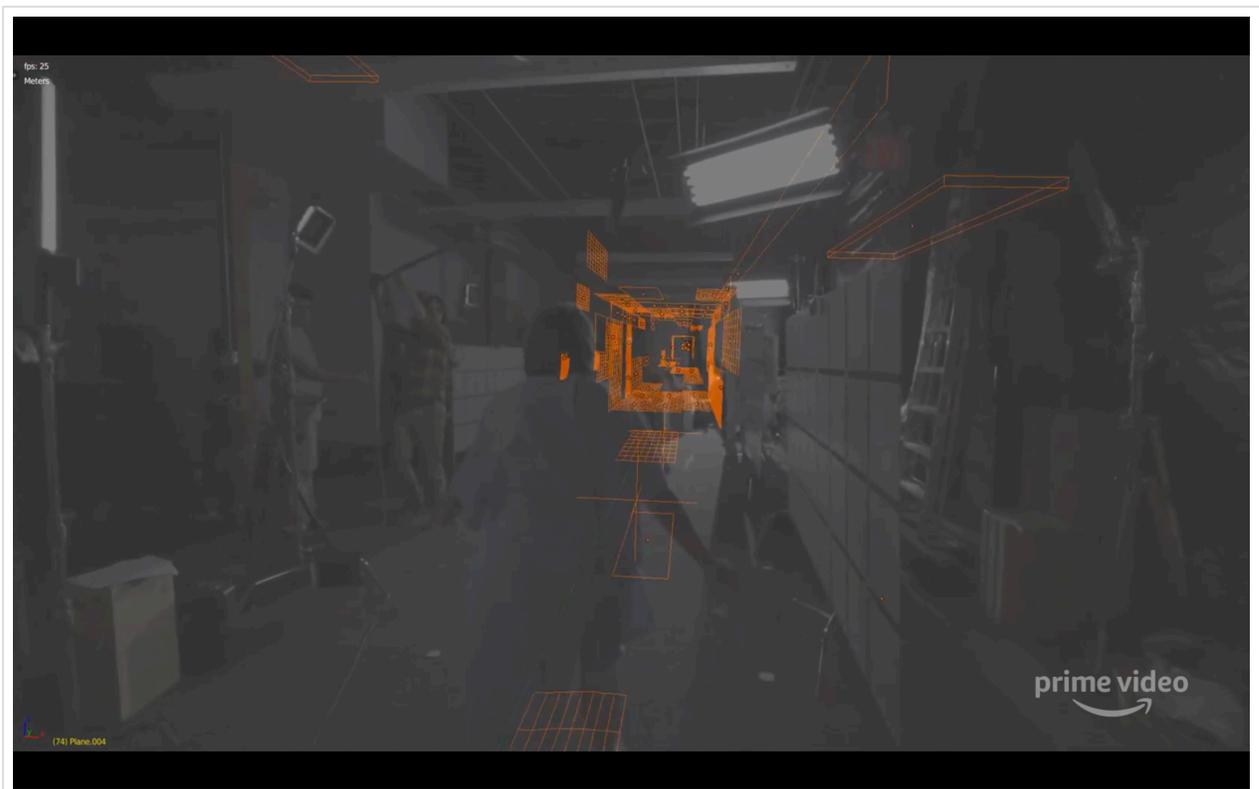
CINEFEX: There is impressive dimensionality when Alma is in hospital and she runs through a long corridor. How did you shoot that scene?



— The filmmakers laid out floor plans on the soundstage set using minimal set dressings.



- Submarine mapped Alma's hospital corridor flight to create a dizzying perspective.



- Camera layouts refined placement of the hospital corridor walls and floor that appear to elongate and swim around Alma.

HULSING: We laid out the floor plan first in our design. There is a difference between designs and layout – layout is a very specific rendering, made from a basis of what has been shot. The correct order was: storyboards and designs, and then the shoot, and then the layouts. So, when we came to shoot that scene, we didn't have the layout yet, but we had a very clear floor plan, which allowed us to go into production.

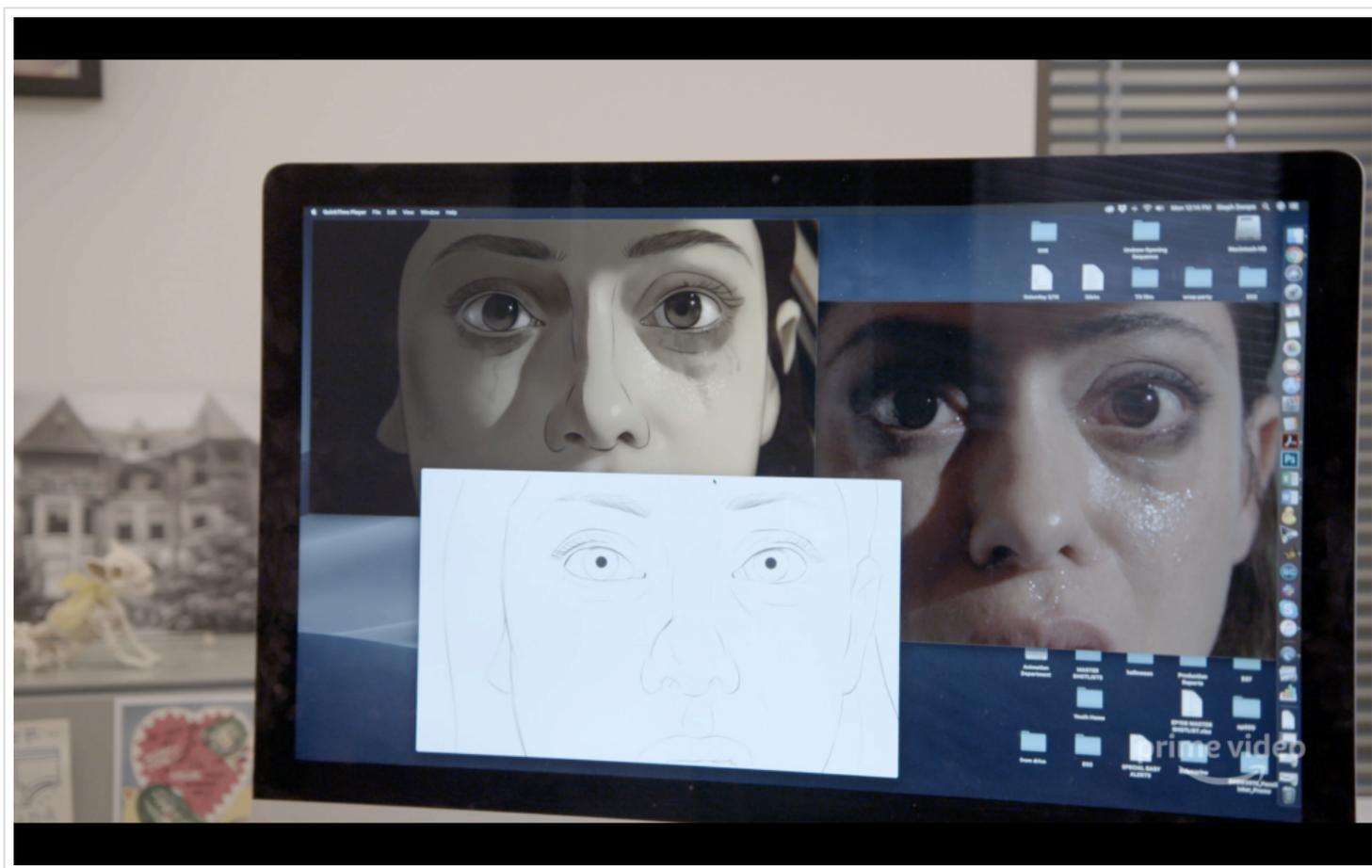
CINEFEX: Who built that 3D geometry?

HULSING: That was all done in Amsterdam at Submarine. We had about a hundred people working at Submarine and at Minnow Mountain, in Texas. At Submarine, we did all the storyboards, layouts, designs, 2D animation, 3D animation, paintings and compositing. Minnow Mountain did the rotoscoping, and what they call performance capture – they traced the actors in lines, which they did very beautifully.

Earlier, you referenced *A Scanner Darkly*. I did ask Tommy Pallotta, who was a producer on *A Scanner Darkly*, to help with our rotoscoping – he approached Minnow Mountain because some of the artists there had worked on that film, so there was a connection. But, truthfully, I was not influenced by that film, although it is mentioned in almost every article I've seen about *Undone*! I understand why; but for me it was not a reference. Rotoscoping goes back to the Fleischer brothers.

CINEFEX: Yes, and what the Fleischer brothers did so well, more than a hundred years ago, is they understood an economy of line. What were the key ingredients for you to translate Rosa's acting through renderings of Alma?

HULSING: One of my biggest fears was that the actors' performances wouldn't come through. I have to give credit to Minnow Mountain for that, and Craig Staggs who is co-founder and producer over there. It took us a while to get there. We created Alma as a simplified version of Rosa – 'simplified' because you have to know which lines to animate. Minnow then used a pencil my partner developed at my own small studio in Amsterdam developed in TVPaint, which gave the lines a soft feel.



- Working from Minnow Mountain's sensitive rotoscoped line drawings, Submarine developed highlights and shadows that helped capture Rosa Salazar's highly emotive performance.

One aspect that often disturbs me in rotoscoping is when it makes a performance feel shallow, and it feels flat, or like a filter. At Submarine, we animated shadows to make characters feel more three-dimensional. We used production footage as basis for those shadows, which gave us a lot of micro-expressions. That involved many layers of filtering, and many animators worked to stylize the shadows and give the characters more depth.

CINEFEX: How did you put that glint of life into Alma's eye?

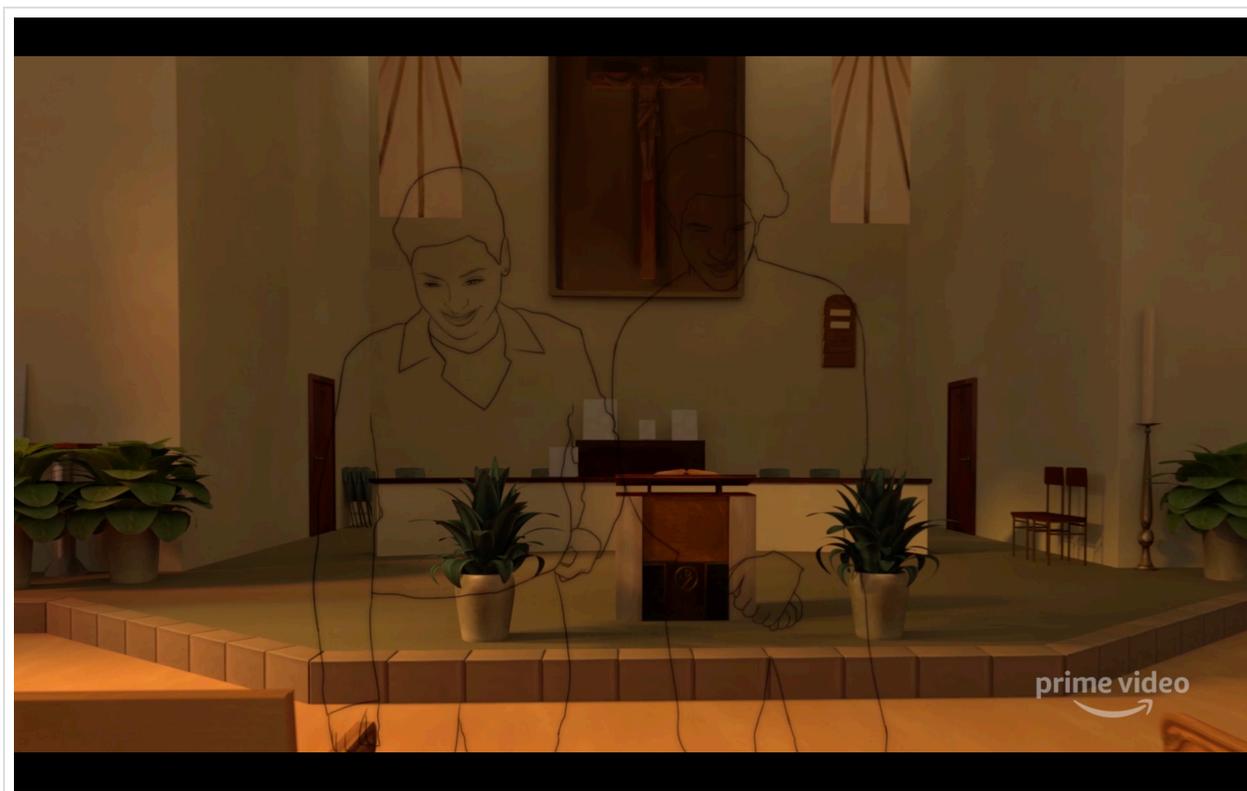
HULSING: That was very interesting, because when we were doing the first two episodes, I got very worried because that characters were going into an Uncanny Valley look. I got very scared by that, because it would have been horrible if the animation appeared scary and not at all doing service to the great

acting. So, we did have to tweak our methods a little, and the highlights in the characters' eyes was a very important part of that.

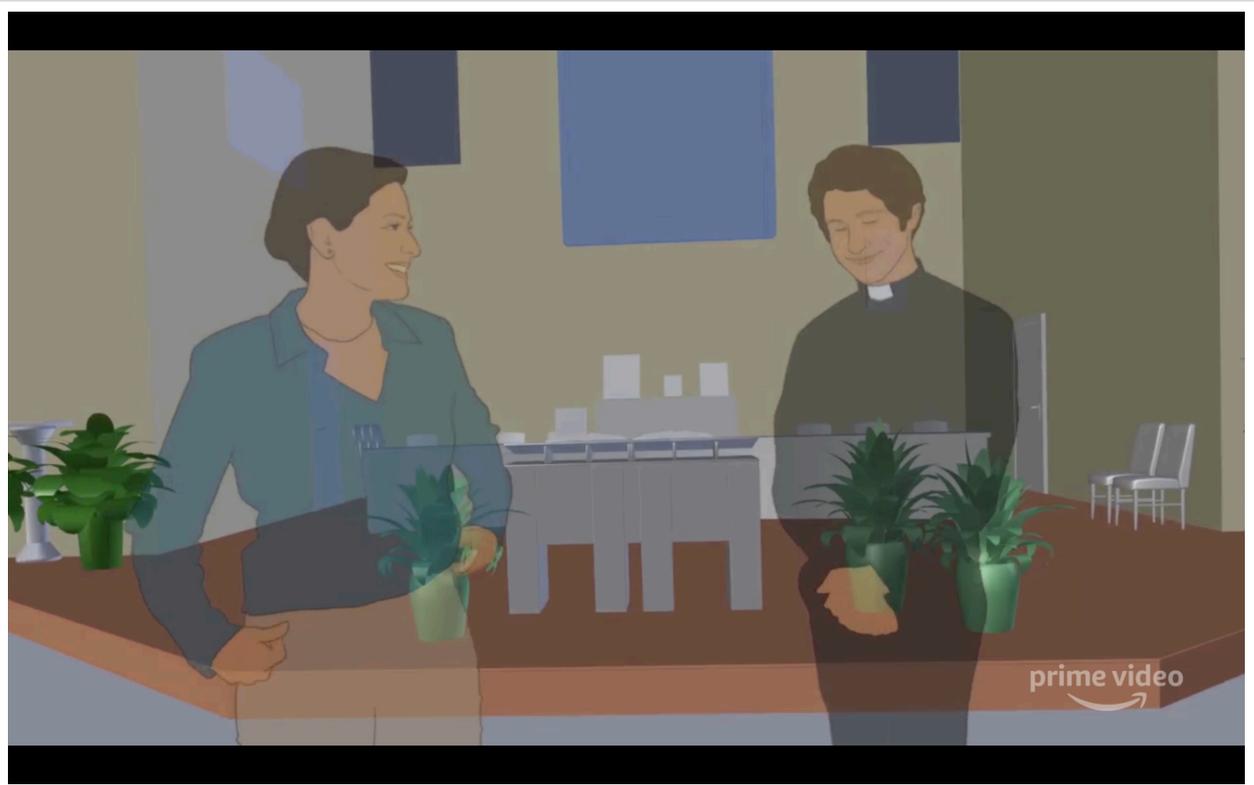
It turned out we had to be very faithful to the lighting in the live-action, and when our 2D department drew those details they had to obey the exact position of those lights. Because if we were not accurate, or if we make it up, it became very creepy. Those highlights in the eyes were instrumental in communicating emotions; and we could never draw them where they were not present in the live-action frames.

CINEFEX: Did that involve any procedural processes, or machine learning?

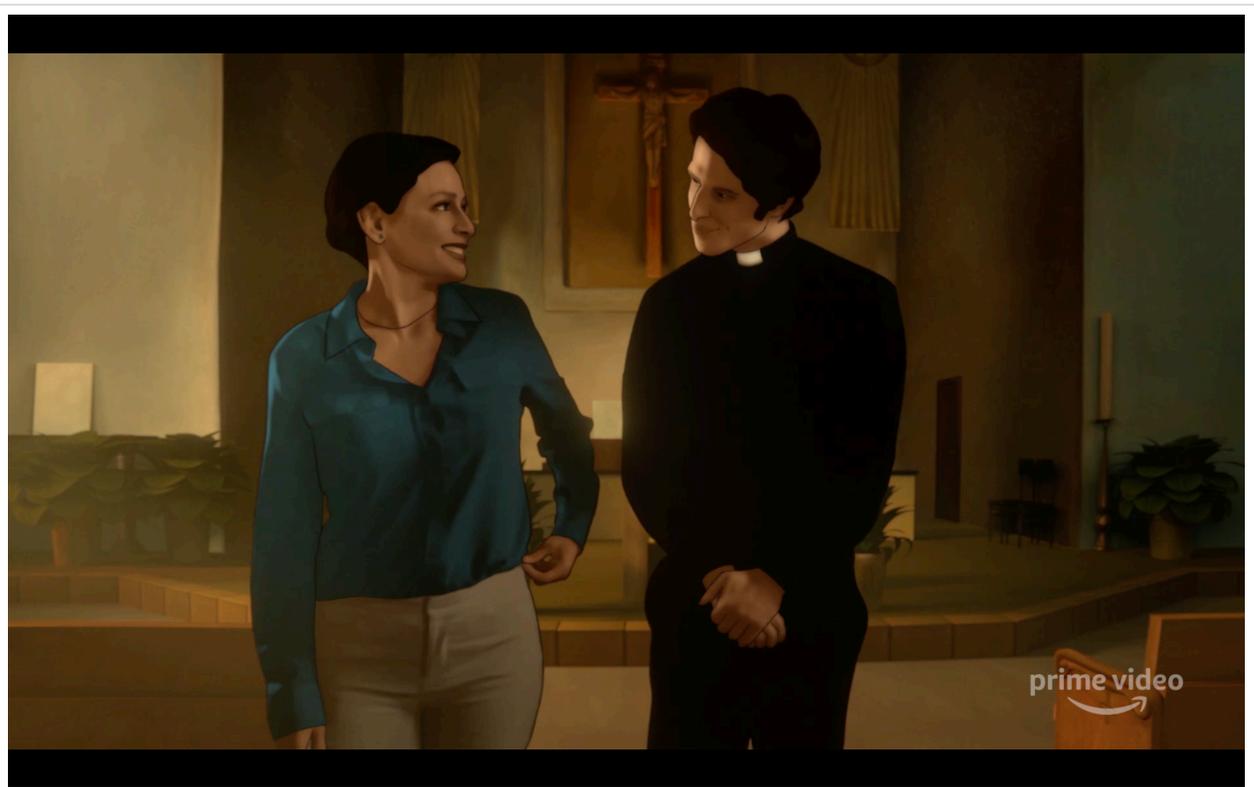
HULSING: Oh, no! 2D team at Submarine hand drew all lights in the characters' eyes; there was no machine learning there. For the shading of the characters, we used a filtering of the live-action. And then, our 2D animators worked on top of that.



- Alma's sister (Angelique Cabral) discusses her upcoming nuptials with a local priest (Tyler Posey). Rotoscoped performances laid over painted background.



— 2D animated color layers and 3D layouts.



— Artists then modeled light and shade to atmospheric effect in final composites.

CINEFEX: It was impressive how much the performers came through that medium.

HULSING: Yes, especially Rosa. All of our actors were successful, but Rosa was excellent, very precise, and expressive. I'm hoping she will break through into more live-action roles, because she is so good. But somehow, she lends herself very well for animation. She is so expressive.

CINEFEX: Tell us how you expressed Alma's breakdown in your scene transitions – sometimes Alma appears to lose gravity, sometimes her world appears to flip like a camera lens turret rotation. How did you design those moments?

HULSING: Those techniques started back on *Junkyard* – back then, I never had any budget for the live-action, so I did everything very simply – and we used similar tricks on *Undone*. For example, when Alma is floating in space, she was half-laying on a barstool and we twisted her around. When she was in a canteen and suddenly the whole canteen broke apart, that was a stunt girl on a trampoline. She wore Alma's wardrobe, and our animators changed the face. We did discuss hanging actors on wires, but there was no budget for that. So, we chose the simple way and, when we worked that into the animation, we got away with it.

CINEFEX: Alma's hallucinations, or her moments of psychosis, feel very authentic. What was your inspiration for visualizing those scenes?



HULSING: Well, I'm from Amsterdam. I started smoking marijuana when I was 12, like a lot of kids, unfortunately. When I was about 17, I dropped out of school. I wasn't diagnosed psychotic, but I think I was. That became a source for a lot of my own films, and I used those moments. It's scary when you cannot trust your senses, and you lose ground in reality. My memory of those experiences helped my imagination. And that was also part of what led me to *Undone*. I actually was planning to stop doing animation because I had been feeling that the process was too complicated. And then, at that moment, they offered me *Undone*. I was like, wow, this is a dream project. It's like everything I ever wanted to do, you know?

I also took inspiration from the films of Roman Polanski, especially *The Tenant*. That's my favorite film, I have seen it 25 times, and I can sing along to the music. When I talked to Kate and Raphael, I showed them a clip from Polanski's *Rosemary's Baby*, the dream sequence where Rosemary floats on her bed. That was so beautiful to me. I used that as an example of how I wanted the story to be with Alma all the time, not literally seeing everything from her point of view, but I wanted to be completely in her reality, and so the audience lost track about what is real and what is not real.

CINEFEX: It felt like you were tapping into something very interesting and heartfelt with *Undone*; and I wanted to see more.

HULSING: Well, we are now in preproduction for a second season. And it is laborious – today, I made thumbnails for around 110 shots, and I filled seven pages in one day! It is insane, the amount of work. But when I hear that people connected to the story psychologically, then I know we did a good job. That mostly comes from Kate and Raphael. I helped; but it's their brainchild.

- [Undone at Amazon Prime.](#)

- Hisko Hulsing [website](#).
- [Submarine](#).
- [Minnow Mountain](#).
- *A Scanner Darkly* in [Cinefex 107](#).

Images courtesy Prime Video. Thanks to Rachel Aberly, Joe Incollingo, Shealyn Smales.

