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'The Science of Sleep': Another 'UFO' From Michel Gondry

Alain Bielik explains the imaginative vfx and animation in Michel Gondry's *The Science of Sleep*.

By [Alain Bielik](#) | Thursday, September 21, 2006 at 12:00am
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The Science of Sleep director Michel Gondry (standing) turned to Partizan Lab to enhance a scene in which an actor swims across an aquarium in front of a Parisian cityscape. All images © 2006 Gaumont-Partizan Films-France 3 Cinema-Mikado Film S.P.A.

Renowned for the inventiveness of his music videos, influential French director Michel Gondry has been using the same innovative approach for his feature films. Both *Human Nature* (2001) and *Eternal Sunshine on the Spotless Mind* (2004) were unique movies with intriguing storylines and strong visuals. Gondry pushes the envelope one step further with *The Science of Sleep* (released by Warner Independent Pictures on Sept. 22), a movie in which fantasy, romance and imagination combine to shape a truly fascinating world. It tells the story of Stéphane (Gael Garcia Bernal), a young dreamer who settles down in Paris and falls in love with Stéphanie (Charlotte Gainsbourg), his charming neighbor. In order to seduce her, he turns their daily lives into a world full of fantasy.

As always, Gondry turned to practical means to realize most of the unique ambiances the script required. In one scene, Stéphane pretends he can fly, and he proves it by swimming across an aquarium in front of a Parisian cityscape. In order to enhance the illusion, the sequence was subtly retouched at Partizan Lab, Gondry's long-time visual effects partner. Michel wanted to get as much material as possible in camera, says visual effects supervisor Jean-Gabriel Saint-Paul. Still, we ended up doing about 150 shots for the movie, but the majority of them will go unnoticed by the audience. Most of our shots involved augmenting or retouching practical effects to add a true sense of magic to the scenes. For instance, in the aquarium scene, we painted out hundreds of bubbles around Gael's body as to emphasize the illusion that he was flying. It was a huge undertaking, as, for every bubble, we had to reconstruct the background. We also had to digitally extend the back projection of Paris, as the edges of the screen appeared in some of the shots. At Partizan Lab, Saint-Paul's team included post-production manager Robin Accard, and lead 2D artists Muriel Archambaud, Antoine Gineste and Julien Héry.

All the visual effects roscoping, paint work, warps, compositing as well as the color grading, were created on several high end Quantel eQ in HD 4:4:4. Some shots were produced in After Effects and the sole 3D effect shot was realized with Maya. The only thing that we did in 3D was to replace the sticker on a spray-can after Michel had changed his mind about what it should read. Everything else was handled in 2D. It was often subtle touches, just like in the scene where Stéphane and Stéphanie throw large puffs of cotton to the ceiling of the apartment. Magically, the puffs remain suspended under the ceiling and form a cloudy sky. During principal photography, the actors pretended to throw the puffs in the air while these were actually pulled up by a wire. But when they reached their position, the cotton puffs had a tendency to sway back and forth on their wire, which ruined the illusion. So, we roscoped them out, reconstructed the missing parts of the ceiling, and put the clouds back in a still position. We also painted out all the wires from which the clouds were suspended.

Low-Key Approach

In another magical scene, Stéphane becomes frustrated with a high precision manual assignment at work, which translates into his hands growing ridiculously large. Most of the scene was realized with the actor wearing giant prosthetic hands, but visual effects were required to create the first part of the scene. It starts with a POV shot of Stéphane trying to work it out. His inability to perform the task makes him feel like his hands are growing larger. For this shot, we needed the hands to manipulate real objects, which meant we couldn't use the prosthetics yet. So, we filmed Gael sitting at a desk that we had built at a smaller scale and decorated with smaller scale objects. In comparison, the hands looked much larger, which was a nice trick. We augmented it by digitally shrinking the wrists and the arms. So, everything in this shot is reduced in one way or the other, except the hands, but on screen, it looks like everything is normal, but the hands!

Partizan combined practical effects and a low-key approach for a

The same combination of practical effects and low-key approach was used for a shot in which an elderly character, seen from the back in front of an opened window, falls over and disappears. The first part of the shot was photographed with the actor bending over as far as he could. Then, a stunt man was filmed performing the actual fall in front of a black background. Since only the stuntman's legs would ultimately be used, it was not deemed necessary to use video assist to line up the two actors. We first warped the actors back to flatten it as if he had fallen over, and painted his legs out. Then, we roscoped the stuntman's legs and composited them in the first plate, synchronized with the actors' movement. So, it's the actor that you see starting the fall, but it's the stuntman's legs that you see taking the actual fall.

Mixing Live Action and Stop Motion

The most intriguing and original aspect of *The Science of Sleep* is its regular use of stop motion to illustrate specific states of mind of Stéphane. The animation technique was used either to create complete shots, or as back projection footage to be combined in camera with the live action. Reminiscent of Gondry's early days in the industry, the stop motion footage was photographed by renowned expert Éric Valin, and animated by Cédric Mercier and Éric Montchaud, while Valérie Piron took care of the 2D animation. The miniature sets were designed and built by Pierre Pell. The material was shot in regular 35 mm on an old DeBrie camera, Mercier explains. Initially, Michel Gondry didn't even want to hire animators. He wanted to do it himself with Éric Valin. What he had in mind was a very crude type of stop motion animation, something that would feel amateurish and energetic at the same time, as to reflect the characters' childish personality. This was never meant to be a Tim Burton-type of animation with motion control and everything. When we stepped in, I had to fight to get a line test, a system that would allow us to review the work in progress and edit it. It was just a webcam attached to the camera and a laptop, but Michel really wanted the animation to feel improvised. Sometimes, he would change the position of a light right in the middle of a shot! The trashier the shots were, the happier he was. The scenes that we put a little more effort into were the horse shots.

Transported by Stéphane's limitless imagination, Stéphane and Stéphanie ride on a crude artificial horse made of fabrics. The creation appears both as a stop motion element and as a full size creature. For the live-action shoot, we used a real horse equipped with a costume, Saint-Paul comments. However, in order for the horse to retain his mobility, the costume was not entirely sealed. The legs were not attached to the torso, and the head and neck were also a separate piece. So, we painted the seams out and digitally joined the various parts as to create the illusion of one continuous surface. It required a lot of work as for each seam, we needed to put texture back in frame-by-frame. We also added fabric on top of the eyes, as the horse had been filmed with his eyes uncovered. For the stop motion model, we painted the mounting rod and its shadow out, but we also stabilized the carpet on which it was galloping: with the animators repeatedly stepping in and out of frame, the surface of the carpet presented variations that had to be taken out.

Stop motion was used to illustrate specific states of mind. Here animator Cédric Mercier adjusts an artificial horse made of fabrics. The horse is seen both as a stop motion element and full size creature in the film.

Changing Shots in Post

Other stop motion augmentations involved adding a rolling movement to a ship that had been animated with a simple linear movement. There again, for every frame, the background had to be reconstructed around the ship model and the roll added via warping. We also had a shot in which Michel, as an afterthought, wanted to add a character to a group of stop motion skiers on a mountain top, Saint-Paul says. We roscoped one of the skiers, changed the color of his outfit, and added it in another part of the frame with a delayed animation as to hide the fact that he was a cloned character. We had a lot of shots of this kind to do, when Michel changed his mind about a shot and requested modifications. He's always looking for new ideas, for different ways of doing things. For instance, after the animation on the stop motion cityscape had been photographed, he decided that he wanted a specific name to appear on every single sign in the set. So, all the original artwork was digitally covered with new artwork.

Interestingly enough, the spectacular swirling graphics of the opening credits were not created in 3D. To create this vortex of color and textures, Gondry simply used an old animation technique called Spin Art in which paint is poured on a spinning disk while a camera, spinning at exactly the same speed, films the liquid spreading over the surface. Partizan Lab simply stabilized the camera in order for the image to remain rock steady throughout the sequence.

Unclassified

For visual effects artists and animators, Gondry's movies and music videos are always very special projects. It was even more so with *The Science of Sleep* as the movie was like unlike anything that had ever been done in France. This film is what we call a UFO, which means it can't be identified, nor can it be classified in any category, Saint-Paul concludes. It is a very unique film, a very enjoyable film, and I'm very happy about the way the visual effects helped Michel carry his vision. Too bad there aren't more filmmakers like him, directors who are not scared to let their imagination go free.

Alain Bielik is the founder and editor of renowned effects magazine S.F.X, published in France since 1991. He also contributes to various French publications and occasionally to Cinéfix. Last year, he organized a major special effects exhibition at the Musée International de la Miniature in Lyon, France.

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The actor and stuntman's bodies were combined to create this scene in which an elderly character falls over and disappears. The stuntman's legs were roscoped out, composited in the first plate and then synchronized with the actors' movement.

Stop-motion animator Éric Montchaud and miniature set designer and builder Pierre Pell put the finishing touches on a mountaintop. As an

afterthought, Gondry added a character to a group of stop motion skiers, which had to be roscoped out.

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That's right, I didn't get the "talk" until I was 12 or 13 years old, really shows the political double-standard being applied here. I've seen heterosexual couples kissing long before my parents...

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• Don

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