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O'REILLY

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How PES makes his stop-motion movies.

Boiling Spaghetti Without Water

BY PES

■ MY ANIMATED SHORT FILM ENTITLED

Western Spaghetti features me cooking spaghetti with all sorts of familiar objects substituted for real ingredients. For example, rubber bands double as spaghetti, Post-it Notes as butter, and tinfoil as olive oil (Figures B, C, and D).

I brought all the objects to life using traditional stop-motion animation, and created all the effects entirely in-camera by manipulating the objects from frame to frame (see the setup in Figure A). There are no computer-generated effects in the film.

Stop-motion animation requires that one control objects and move them in small increments from frame to frame, photographing them in each position. You can do this with puppets, objects, or people — anything that can be put in front of a camera can be moved incrementally and photographed in this manner.

The resulting sequence of images (approximately 1,500 in *Western Spaghetti*) creates the illusion of motion when played back at normal speed. You can bring inanimate objects to life at will, as long as you are willing to put in the time.

Sometimes animating objects is straightforward. You find the objects, you arrange them in front of the camera, you photograph them. Then you move them (or replace them) and repeat the process over and over. For instance, to make a sugar cube (represented in *Western Spaghetti* by a single die) appear to dissolve in tomato sauce (undulating red velvet), I replaced the die in each frame with smaller and smaller versions of the die, all the way down to an 8mm doll-sized die. When played at normal speed, the cube appears to dissolve into the red velvet.

Sometimes, though, you come up against a real challenge when animating objects — like water, for instance. Real water cannot be manipulated frame by frame because it cannot be controlled like clay, a more traditional material choice for stop-motion.

This makes water one of the most stop-motion “unfriendly” substances. Unfortunately for me, water was the one ingredient I needed most: you can’t make spaghetti without water.

Water appears in seven shots in *Western Spaghetti* — 20% of the film — and a different creative solution was required each time. Here are four different methods I used to portray water:

How I Created the “Water”

1. I began with a shot of my hands placing a pot full of water on the stovetop. To create this “water” I used a single sheet of acetate, the kind you’d put in an overhead projector. It was cut in the shape of an oval, slightly larger than the diameter of the pot, so that it would suspend itself naturally in the pot. It could then be manipulated frame by frame to behave like real water swishing around a pot. A small light was reflected off the acetate to further sell the shiny water effect to the viewer (Figure E, page 145).

2. As every Italian cook knows, sea salt (represented in the film by googly eyes, chosen because of the pun “see salt”) must be added to the water before boiling. The challenge was how to get the googly eyes to sink through the acetate water like real salt does when you throw it into the pot.

In addition, I didn’t want the googly eyes to sink to the bottom of the pot all at once. I wanted them to have a slight delay when falling, staggered in three groups to feel more natural.

The solution: three small braces were affixed to the inside of the pot, out of frame. Each brace had ten notched grooves, so that ten sheets of acetate could be suspended simultaneously inside the pot (Figure F). The idea was to move the sheets of acetate — each with googly eyes glued to them — down one layer in each shot, giving the impression



A



B



C



D



How PES makes his stop-motion movies.

that the googly eyes were sinking toward the bottom of the pot.

To enhance the feeling of depth to the water, the large googly eyes were replaced with incrementally smaller googly eyes as they progressed down the structure, for a total of four different sizes of googly eyes (Figure G).

3. Next up: a pot of boiling water. In order to create this effect I manipulated different sizes of bubble wrap in stop-motion.

The boiling water shot begins with a lidded pot boiling over with water. To achieve the effect I cut small pieces of bubble wrap and moved them incrementally down the side of the pot and in the crevice between the pot and lid. This was detailed work, at one point calling for the use of a single bubble of bubble wrap squeezed between the pot and the lid (Figure H). One of the absurdities of making a film like this is discovering that there can be a use for such a thing as a single bubble of bubble wrap.

When my hand lifts the lid off the pot, I reveal a pot full of boiling water. It is made of big, clear, juicy bubble wrap cut in a disc to fit perfectly in the pot (Figure I). The disc's position was alternated randomly so that it would look like boiling water rather than a piece of bubble wrap being turned like a disc.

4. In order to achieve the final three-second shot of the wooden spoon stirring the cooked spaghetti, I used a combination of the previous techniques. My first goal was to make the spaghetti appear to float in the water; my second goal was to make the spaghetti move clockwise when stirred (as in real life, responding to the spoon pushing it); and my last goal was to keep the water boiling on top of it all.

First, I suspended a few layers of thick acetate in the pot, with rubber bands (my spaghetti) resting on each layer (Figure J). This gave dimension to the spaghetti and made it appear as if it were floating in the pot, at different levels.

A hole was then cut in the top acetate layer to allow the wooden spoon to sink in and appear

submerged in the “water.” Then, a circular sheet of bubble wrap was laid on top of everything, hiding both the hole in the acetate and the plastic tabs that were holding up the acetate layers on the side of the pot (Figure K).

The final trick was to animate all these elements — including my hand — together. The layers of acetate with the spaghetti resting on them had to be twisted clockwise in small increments while, on top, the bubble wrap was moved randomly to make it appear that the water was boiling.

Conclusion: The Allure of Hands-On Puzzle-Solving

There is a directness to working with objects in front of a camera rather than inside the theoretical space of the computer that stimulates both the thinker and the tinkerer in me. The allure of making a film like *Western Spaghetti* is that it requires hands-on puzzle-solving bound by real-world limitations.

With stop-motion you aren't playing in a realm of infinite possibility as is often the case inside the virtual environment of the computer. You are bound by the laws of physics and gravity and materials, and must find creative ways to deal with them. I find that these limitations often lead to harder thinking and more creative solutions — solutions that connect with audiences on a deeper psychic level because they are rooted in reality.

Making a film like *Western Spaghetti* is very much like being a sleight-of-hand magician. The results can feel magical, but there's no actual magic. If you look closely (you can do this by scrubbing through frame by frame on the QuickTime movie) you can probably figure out exactly how every effect was created and what material was used. My job is to exploit the cracks and weaknesses in viewers' perceptions so they don't fixate on the process and can instead just sit back and enjoy the trick.

▶ Watch *Western Spaghetti*: eatpes.com

PES is an artist who has earned global recognition for his innovative short films and unique approach to stop-motion animation. Often working with familiar foods, household items, and found objects, PES has crafted some of the most memorable short films of recent years, including *Roof Sex*, *KaBoom!*, *Game Over*, and *Western Spaghetti*. In addition to his short films, he has become one of the most commercially successful independent artists working today.



E



F



G



H



I



J



K

BUBBLING WATER: Make Labs re-created PES' boiling water illusion frame by frame to experience how it's done, from building the braces to suspending the acetate (F) to adding the "see salt" (G), "bubbling" over (H), cooking the "noodles" (J), and seamlessly stirring them (K).