

actions # man

ADOBE'S SEAN PARENT IS A PIONEER OF PHOTOSHOP DEVELOPMENT. HE'S WATCHED IT BECOME THE STAR IT IS TODAY, AND CREATED ITS SCRIPT TOOL ALONG THE WAY

It's hard to imagine a time when Adobe didn't make much money from its lauded graphics suite. Sean Parent, now senior computer scientist at Adobe, was hired back in '93 to work on Photoshop – the company's new runaway success story. He came from Apple, where he was one of the senior developers charged with moving the Mac over to the PowerPC chip.

Back then *Illustrator* was just a tool to boost printer sales. Adobe released *Photoshop* in 1990 as a companion to *Illustrator*. Both were aimed at the company's client base at the time: high-end printers outputting to film. *Illustrator* and *Photoshop* answered their need to create graphics to sell hardware, and to edit their scanned photography. Nobody at the time realised how important both products were about to become.

Photoshop has since been adopted by upwards of four million people all over the world. It's now on its seventh version, and it's had several .5 releases, too.

When Sean joined back in 1993, the company was making most of its money from postscript sales. *Photoshop* was largely a print tool developed by a Mac-oriented team led by Thomas Knoll and Mark Hamburg. Developer Seetha Narayan was responsible for porting their work to the Windows platform. Now, there's a joint development team working together cross platform. Most of them have been there for over ten years.

But in technology terms, ten years is a long time. Since then, a new suitor has arrived, constantly vying for developers' attention: the World Wide Web.

Name:	Sean Parent
Job title:	Senior Computer Scientist, Adobe
Company:	Adobe
Location:	San José, USA
Goals for five years' time:	"To change the way software is developed. I watch an artist use <i>Photoshop</i> or a musician play an instrument, and I want to make software development that kind of experience."
Contact:	www.adobe.com

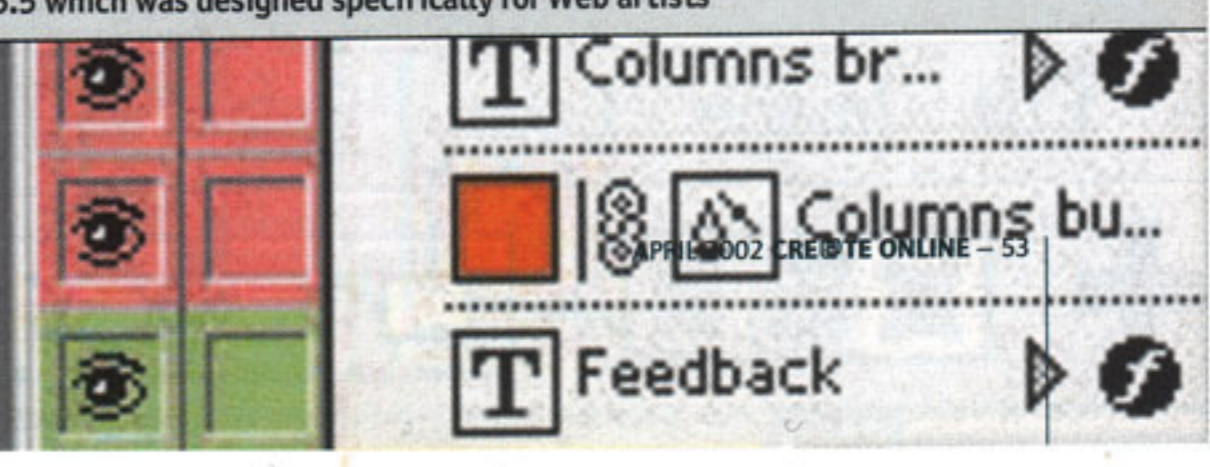
"It's changed things quite a bit," Sean says. "Doug Olson, who was my boss when I was hired, was the engineering manager for *Photoshop*, decided to go lead up a new effort to do a *Photoshop* version for the Web: *ImageReady*."

He continues: "The thought was that *Photoshop* was already getting big and heavyweight, and with the Web, your images were a lot smaller, and you had a different set of things to do."

The company thus decided to create an entirely new package with *ImageReady* and shipped version 1.0 as a standalone product. However, for version 2.0, the company found that customers were becoming confused by the similarities between the two products. People were already using *Photoshop* as an image editor for the Web. So Adobe made a decision.

"It was decided even if *ImageReady* 2.0 doubled or quadrupled the revenue stream of *ImageReady* 1.0, 

MAIN IMAGE: *Photoshop* began life as a print application, used by high-end printers to create graphics that would sell their hardware. Its user base has grown steadily over last decade, especially since version 5.5 which was designed specifically for Web artists





(still checking on authorisation for this one)
Jeff Schewe's *Globe Hands* inspired the development team to come up with the History palette for Photoshop 5

SEAN'S INSPIRATION

SOFTWARE ARCHITECTURE MAY BE DEAR TO HIS HEART, BUT WHAT ELSE MAKES SEAN PARENT TICK? WE FOUND OUT.

ONE WEBSITE:

There isn't any single website that inspires me; the Web as a whole does. Isn't that the point?

ONE FILM:

Ronin: Pay attention to the job at hand (and some great car chases).

ONE BOOK:

A Wizard of Earthsea, Ursula K. Le Guin – I read the Earthsea trilogy before Tolkien and it forever left me wanting to shape the world by pure thought. Writing software is the closest thing to performing magic.

ONE PIECE OF MUSIC

Anything by Fiona Apple – just listen.

ONE PERSON:

Ella May Knowles – my 7th grade math teacher. Finding a solution is the fun part.

“THE PHOTOSHOP TEAM IS A PARANOID TEAM. IF YOU COME ALONG AND YOU SAY: ‘THIS IS A PHOTOSHOP KILLER’, SUDDENLY NOW, YOU’RE A TARGET. THE TEAM IS VERY QUICK TO RESPOND”

SEAN PARENT

we could do better than that by turning it into a new release of *Photoshop: Photoshop 5.5*,” says Sean.

“The two applications are slowly working together,” he continues. “The two teams are combined again.” For the foreseeable future though, *ImageReady* and *Photoshop* are separate applications, mainly due to differences over interface design.

“The *ImageReady* application is a way to manage interface complexity,” clarifies Sean. “You can only present the user with so much complexity and *Photoshop* has been at the limit since *Photoshop 3*, I think, in terms of how much complexity you can put in the user’s face”

He explains further: “It’s been a long-standing unwritten rule that if you’re going to add a palette, you have to take one out. The team doesn’t want *Photoshop* to become this morass, so that when you look at it, you have these little one-letter palette names everywhere.”

He concedes that the team hasn’t always been successful with this, but he feels that integrating *ImageReady* completely into *Photoshop* would be a tough thing to do.

“The idea is to figure out how to integrate the features better, to simplify the user interface,” he clarifies. “So if *ImageReady* is going to fold into *Photoshop*, somebody needs to have a huge epiphany about how to better manage the interface. That’s a difficult challenge.”

ARCHITECTURE AND PARANOIA

The *Photoshop* team are on permanent standby for such challenges, and for any others that might come up to threaten their protegee’s position, making sure that the application’s code is always in good shape, for instance.

“With *Photoshop 6* there was an entire year of development where half the team was working on *Photoshop 5.5* and the other half of the team was working on *Photoshop 6*,” recalls Sean. “But they weren’t adding any features to *Photoshop 6*. All they were doing was working on architecture. What that enabled was that when the folks rolled off *Photoshop 5.5*, they were able to step into a clean house. And all of a sudden, the possibilities of what you can do are greatly improved. You don’t have to vacuum the carpet before you put the new sofa in.”

LEARNING THE SCRIPT

Sean’s work on *Photoshop* through the years has involved managing the development team and coming up with new features. If you use *Photoshop* Actions, the image editor’s scripting function, you have first hand knowledge of his work.

“I did that for *Photoshop 4*,” he explains. “The idea was that we wanted scripting for *Photoshop*. It had not been designed for scripting; AppleScript didn’t

exist when *Photoshop* was written. And the developers had wanted to get scripting into *Photoshop 3*, but when they looked into it, it was too big of a feature to do in one release. So the challenge was: how do you carve up the scripting so that you can get a meaningful subset of scripting into one product release?”

The solution was to rethink the way the scripting function operates. Sean decided that the best plan was to devise an intelligent mechanism to record a user’s actions within the software. This meant there would be no need for a full-blown AppleScript function. Rather than the user having to actually write a script, complete with its text-based list of commands, Sean’s solution simply followed what a user does and the directory to which he or she saved created work. Thus far it’s proven to be far more simple and efficient than trying to write a script via the Finder. There are still plans to completely integrate AppleScript and *Photoshop* but it’s no longer a priority.

“It’s still a long term direction,” explains Sean. “Originally scripting had been on the top ten list, and Actions kind of pushed it down somewhere in the top 50.”

CREATIVE DEVELOPMENT

Of course there’s more to *Photoshop* than its ability to script user behaviour. Its big draw for designers and creatives is its ability to generate astounding visuals. It makes you wonder how software engineers and technical developers create the tools so admired by artists worldwide. The trick, says Sean, is by watching the artists at work.

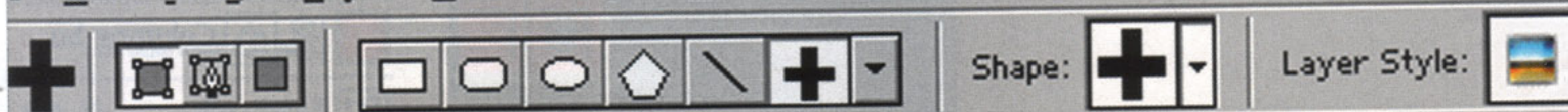
“The team now works very closely with marketing, which keeps it very in touch with the *Photoshop* customer base,” he begins.

“There’s a select group of artists; you can kind of think of them as beta testers, but they always have access to the product,” Sean continues. “There are probably less than a dozen very high calibre artists who would get the first release of *Photoshop 7*, that might be at the first couple of weeks into development. So they’re able to give input.”

The software’s chief architect essentially watches these people work and figures out what they’re trying to do. He’s then able to translate their ideas into code, and eventually into features for new versions of the software. It might sound a little convoluted, but it works.

“The whole notion of the history brush that appeared with *Photoshop 5*: that came from watching Jeff Shewe, who is a commercial artist,” Sean begins. Jeff Shewe created, right before Mark Hamburg’s eyes, an image called *Globe Hands*. It’s a picture of two hands, linked and cupped, so that they form a sort of sphere. Jeff then superimposed a globe, with all the oceans and countries of the

File Edit Image Layer Select Filter View Window Help



A BRIEF HISTORY OF PHOTOSHOP

HERE'S A QUICK TIMELINE OF PHOTOSHOP'S METEORIC RISE TO FAME AND FORTUNE

1987:

Thomas Knoll writes a subroutine on his Mac Plus to assist him with his post-graduate work on digital image processing. His brother John visits him while on vacation from George Lucas's Industrial Light and Magic. He encourages his brother to develop his ideas. The pair develops an application called Display

1988:

The pair ship the application, now called *Image Pro*, around Silicon Valley looking for industry support. Most companies turn it down, failing to see a market for Knoll's work. Adobe, however, shows its first interest.

1989:

Barneys can takes a non-exclusive licence for the product. It's now called *Photoshop*, and it's bundled with the company's slide scanner. Adobe agrees a licence too and develops the new product

1990

Photoshop 1 ships in February. Version 2 follows in the autumn.

1993:

Version 2.5.1 ships. It's one of the first applications that take advantage of Apple's new PowerPC, which Sean Parent had helped to develop. Sean Parent leaves Apple and begins his work at Adobe. The rest is history.

world, on top. It looks as if a globe had been painted onto the hands, due to all the subtle textures in the image, but it's 100 per cent *Photoshop* work.

Sean tells the story: "He did it with *Photoshop 4* and he kept flipping back and forth between multiple documents, sampling with the clone tool from one document and painting into another. Then tearing off a copy of that document and doing this repeatedly. It was a very cumbersome process."

Mark Hamburg posed a question. Explains Sean: "He said: 'Well, you know, if we could go back in history and sample from what you were doing, and just kind of paint into the present, then you could just keep clicking back on the history to select what you were painting from. You could do this kind of work so much easier. It would be so much more streamlined. You wouldn't be flipping between documents and losing your place.' And that was the genesis idea for the history brush."

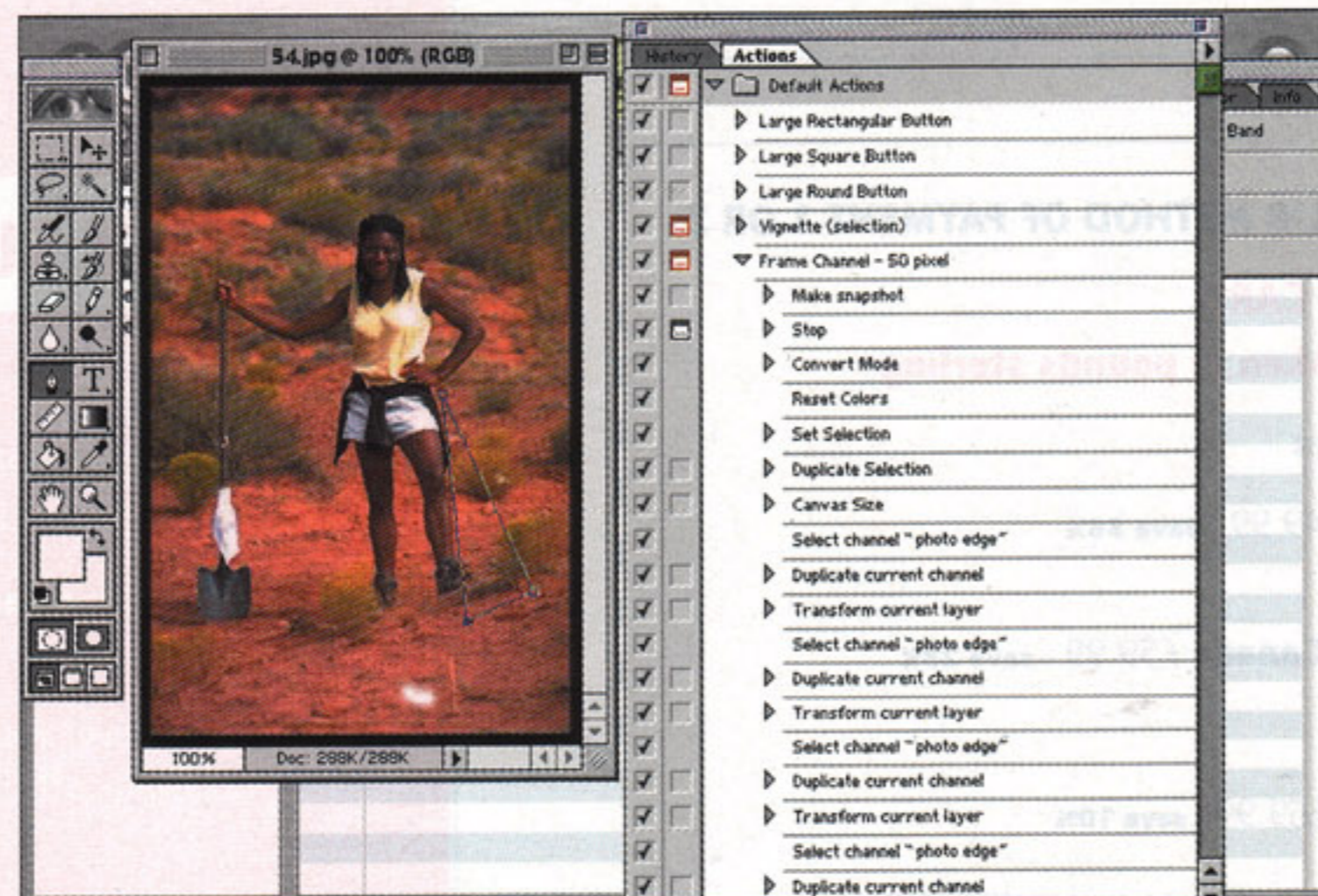
TIME CHANGES EVERYTHING

Looking towards the future Adobe invests heavily in research and development, and has relationships with various universities. It also has its own advanced technology group (ATG) that works on innovating its products, which is where Sean now spends his working days.

"A lot of companies have advanced technology groups and university research going on that's irrelevant, and never turns into a product," Sean explains. "Xerox is the quintessential example of that with Xerox PARC. So many great ideas came



Sean Parent is responsible for *Photoshop*'s scripting function Photoshop Actions



The development team tries to keep the user interface relatively uncluttered

out of it, but Xerox never capitalised on them. A lot of Adobe's ATG group came out of Xerox PARC, and recognised those mistakes. So a lot of effort's been put into place to say make sure that everything ATG does is relevant. The extraction tool in *Photoshop* came out of ATG."

There's something else that keeps the team on its toes though: good old-fashioned fear.

"The *Photoshop* team is a paranoid team," says Sean. "If you come along and you say: 'This is a *Photoshop* killer', suddenly now you're a target. The team will usually respond within one product cycle to a competitive threat."

Presently, though, Sean is working within the ATG on a project designed to make it easier to design software. It's all hush-hush right now but expect him to make an impact. After all, his work on *Photoshop* Actions did earn him the nickname 'The *Photoshop* Action figure' with the team.

"Ah ... yes," he responds warily. Are there any Sean Parent, *Photoshop* Action figure dolls in the pipeline, then?

He chuckles. "Hopefully not." ■

TEXT: GRAEME AYMER / PHOTOGRAPHY: JULIAN DODD

"YOU CAN ONLY PRESENT THE USER WITH SO MUCH COMPLEXITY AND PHOTOSHOP HAS BEEN AT THE LIMIT SINCE PHOTOSHOP 3, I THINK, IN TERMS OF HOW MUCH COMPLEXITY YOU CAN PUT IN THE USER'S FACE"

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