cliffhanger visuals

stereo tutorial

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3D visualisatie 3D illustratie 3D animatie

Introduction

Because your eyes are placed in your head some 7 to 8 centimeter apart, both of them see a different version of what you look at. Your left eye will see things slightly from the left whereas the right eye sees things slightly from the right. The difference between the both is called parallax.
In your brain, parallax pictures are combined to a single image that contains some crucial extra information: depth. Depth enables you to catch a ball, shake hands, light a cigarette and have a feeling of where you are in the space that surrounds you, to avoid you from making painful contact with it. The reason that you see double pictures when you're really drunk is that your brain is no longer able to correct the parallax of your eyes, which themselves could also be quite out of synch.

Usually you don't really notice depth very much as you're completely used to it. However, when a printed image or a monitor image contains depth, it will strike you as being something quite special for the oppsite reason: You're not used to it.
In order to see depth in a printed ot monitor picture, two versions of what you see are needed: once photographed from the left and once 7-8 centimeter further to the right. When both versions of the image are presented to your eyes seperately, that is, with your left eye not seeing what your right eye is seeing and vice versa, depth will be registered by your brain.

There are a couple of ways to present two different pictures to the brain, one seen by the left eye and the other by the right eye. I will describe the anaglyph method, that is caracterised by the red-and-blue glasses that you need to evoke the illusion.

I bought a pair of anaglyph speculars for $9,- at http://www.rainbowsymphony.com. Mine fit over my pair of ordinary glasses but they also sell simple cardboard versions. By the way, they sell a plethora of stereo solutions. They even have a section where you can get your speculars for free. Worth checking out.

In an anaglyph, the parallax information that reaches the brain is devided by color filtering. As red pixels or red print on a white background will pass through a red lens unharmed, they will show up just as white as the background and be virtually undisguisable from it. The cyan picture is blocked by the red lens and will show up as black. So the right eye can only capture the cyan information in the image wheraes the left eye only sees the red information. Placed transparantly on top of each other you can feed your eyes with the information they need.

stereo photography

Once stereo imaging caught me, I made some efforts getting it right. Since I don't have a special stereo camera, which would be a chemical one whereas

http://www.rbt-3d.de/

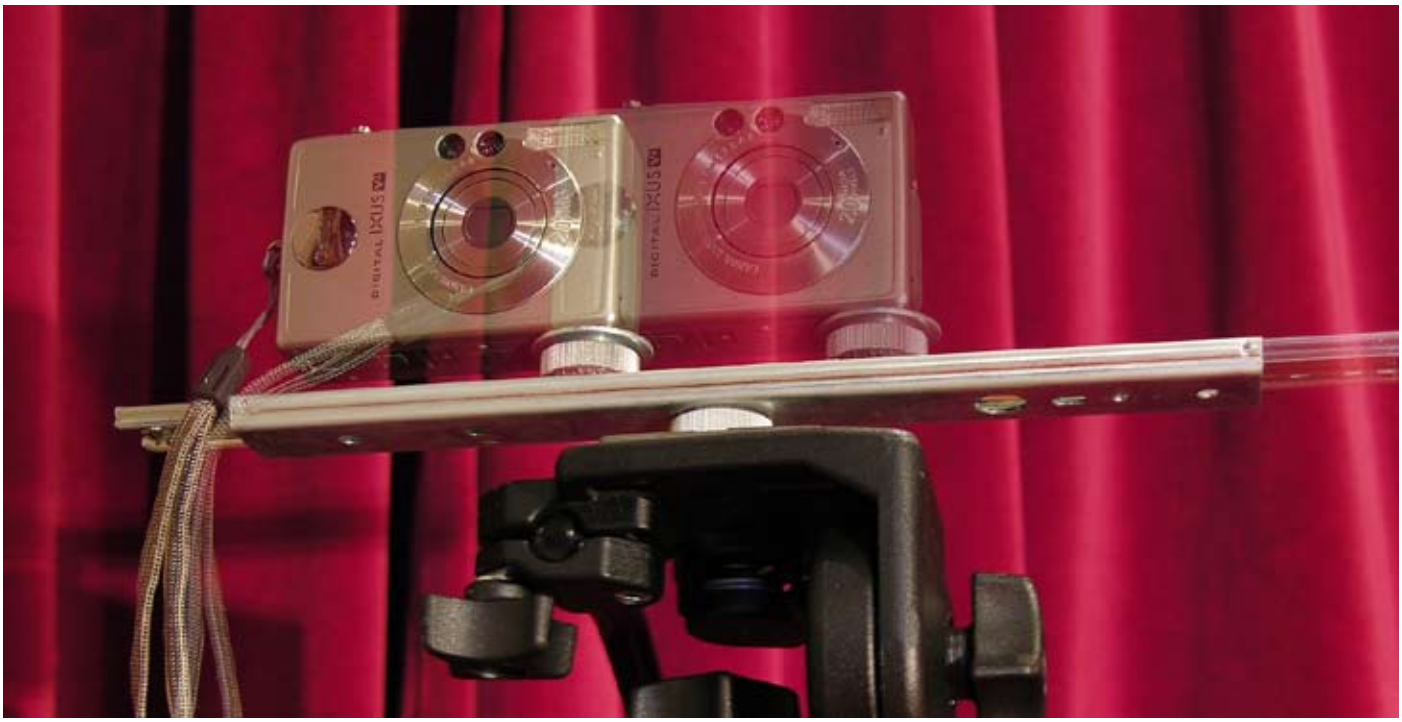
I have switched to the digital world and learned my part about megapixels and image chips, I decided to make a camera rail onto which I could mount my camera.

The rail can slide left and right about 25 cm but there's no real need for that. It mainly kept the design of the rail simple, which is basically a drawer glider with photo screw threads glued on top and below, mounted on a tripod.

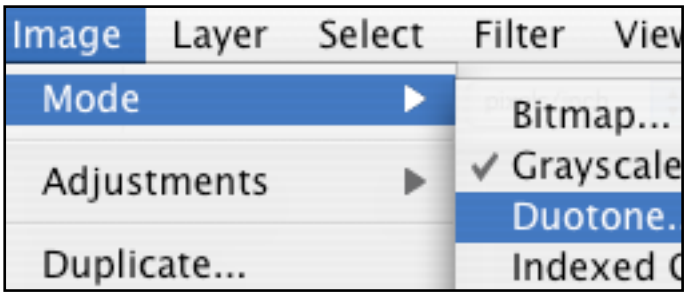
In fact, when you're cautious, you don't even need a rail. The eye might be sensitive, the brain is quite eager to snap things to something it can use and small flaws in the parallax aren't desastrous. However, there's a lot going for perfection and that is why I conceived the rail. It will keep the camera perfectly parallel in both shots.

The procedure is very simple: Point the camera, take a picture, slide 7 to 8 centimeters to the right and take a second picture. Be sure the settings of both photo's are equal or you're in the middle of an experiment in an experiment.

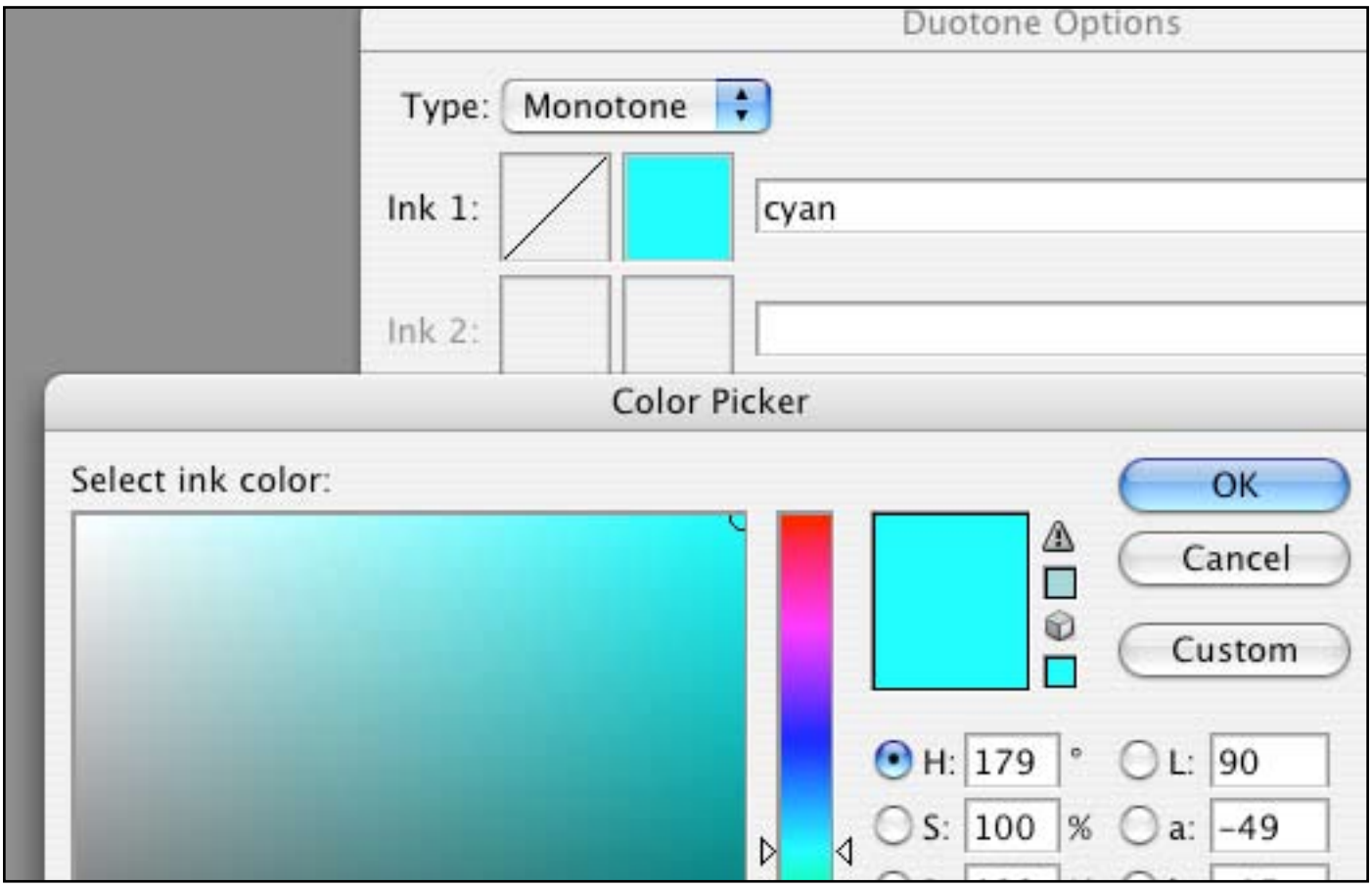
Taken from the hand:



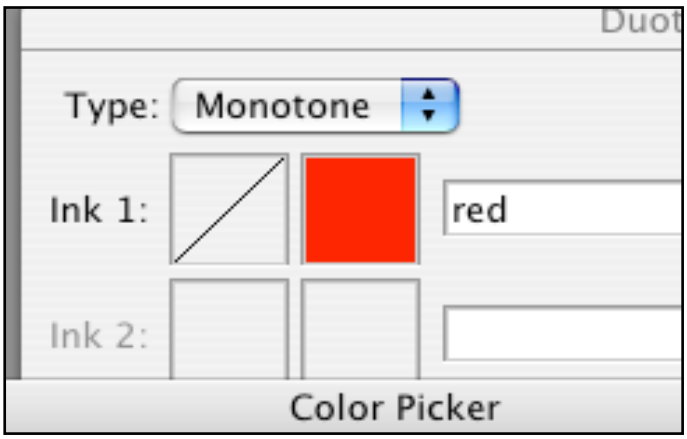
1. In Photoshop, load both photo's. Change Image mode to grayscale and change grayscale to duotone. In duotone, change to monotone.



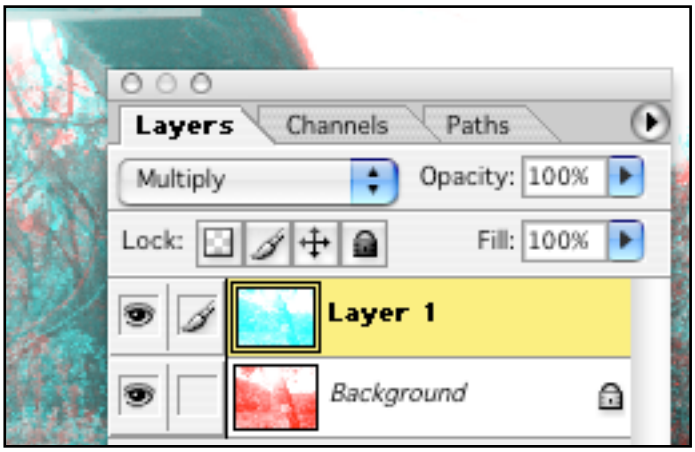
2. In the monotone settings, choose a cyan that turns to (almost) white when you look at it with your left eye closed, looking through the cyan glass of your stereo spectacles.



Assign the cyan to the left photo.
Assign red to the right foto. A simple way to remember what photo should have which colour is to remember "Red is Right".



4. Select the cyan image and paste in on top of the red image. Then set layer to “Multiply”. The characteristic grayscale stereo picture with cyan and red coloured “bleeding” appears.
Now, when you put your stereo glasses on you should immediately see the depth effect. Sometimes it is somewhat out of balance, due to the images being too far apart. The brain cannot deal correctly with that and what you see is partly depth and double vision which is unfriendly to the eye.



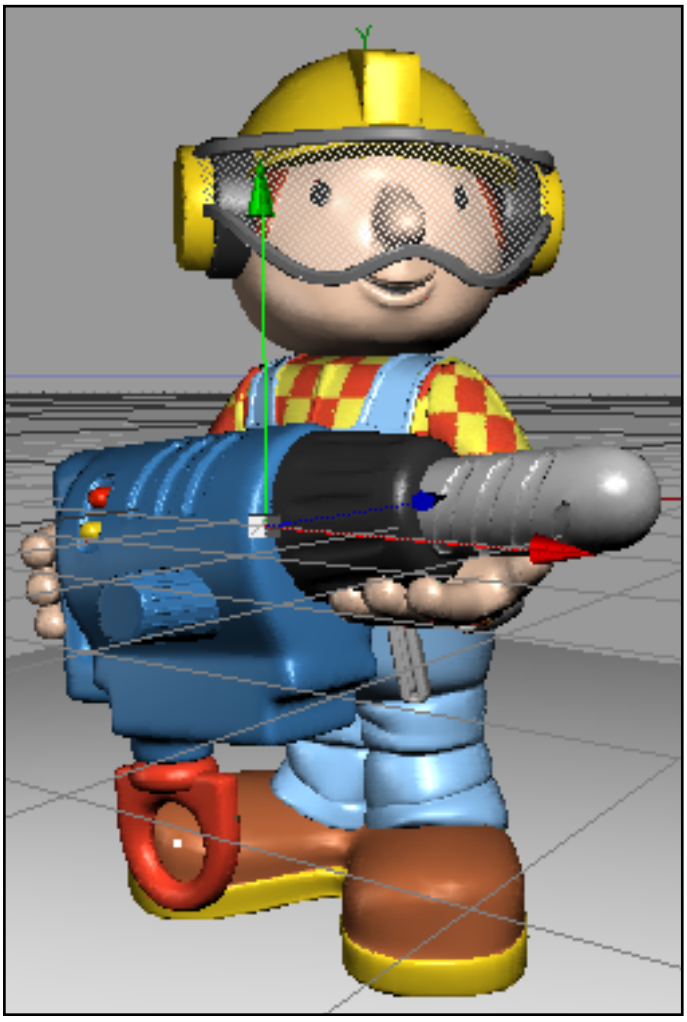
5. With the arrow keys on your keyboard, try to get the depth effect as comfortable to your eyes as you can get it, by moving to the cyan layer left or right and up or down. Remember that both colours should be placed at the same horizontal level since your eyes are also placed horizontal.

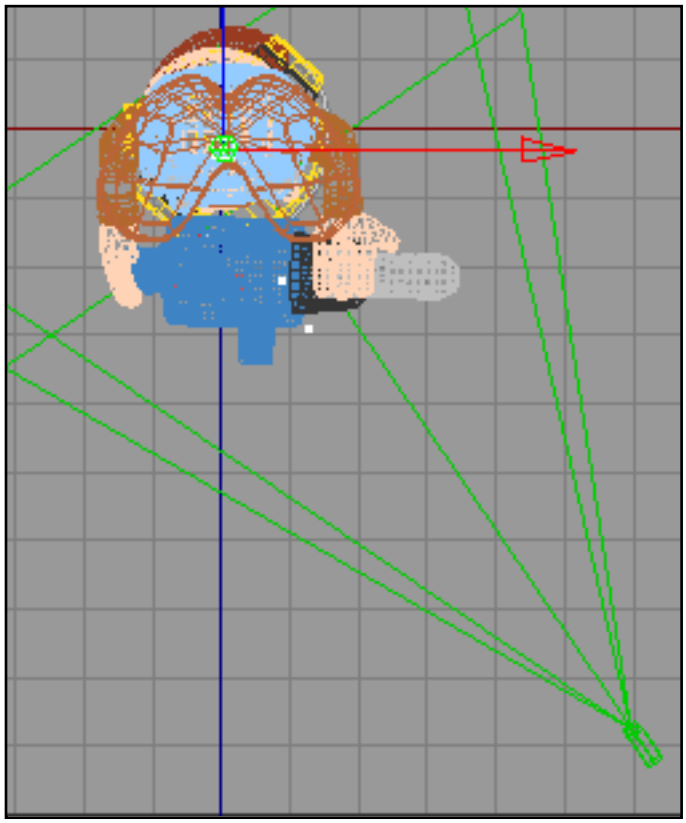
When saving the stereo image, be careful with unsharp mask and jpg conversion as they can quite undo the illusion

stereo in 3D software

What is possible in photography of course goes for 3D. In fact, the whole thing is easier. You don't have to leave home, you don't need a camera and you can tweak forever to get the illusion perfect. The principal is the same: You use two camerapositions (or two cameras, which is easier and they cost zilch), slightly left and right from each other and render.
For these examples Cinema4D was used but the technique is very straightforward and should give no problems in different 3D software.

For this example we'll use Bob the Builder. His drill, that he sticks out in front of him, should give a nice depth effect.



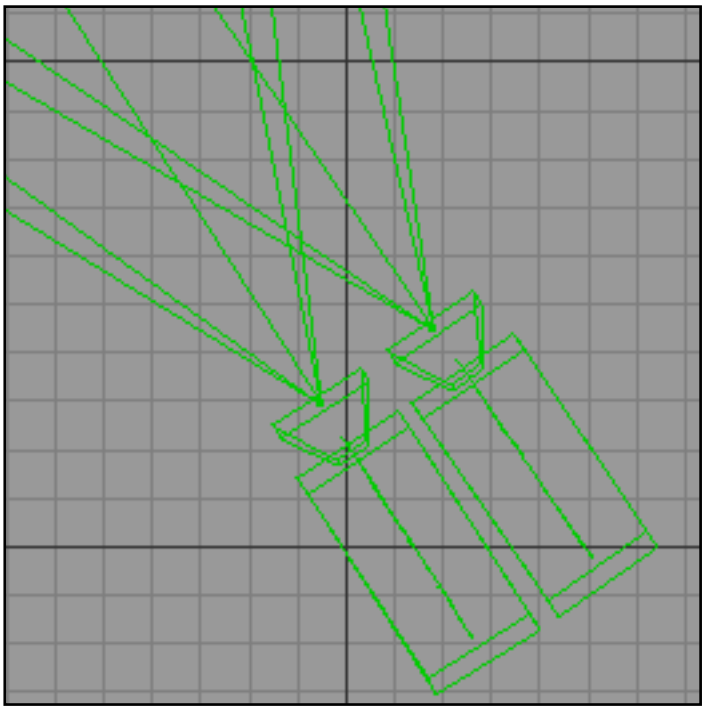


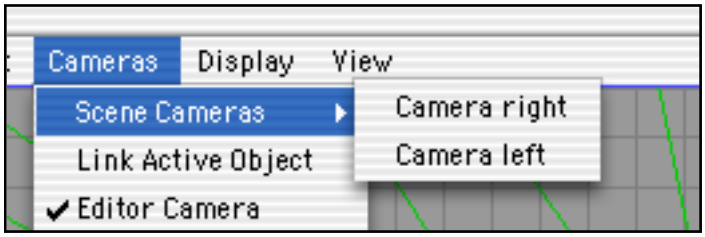
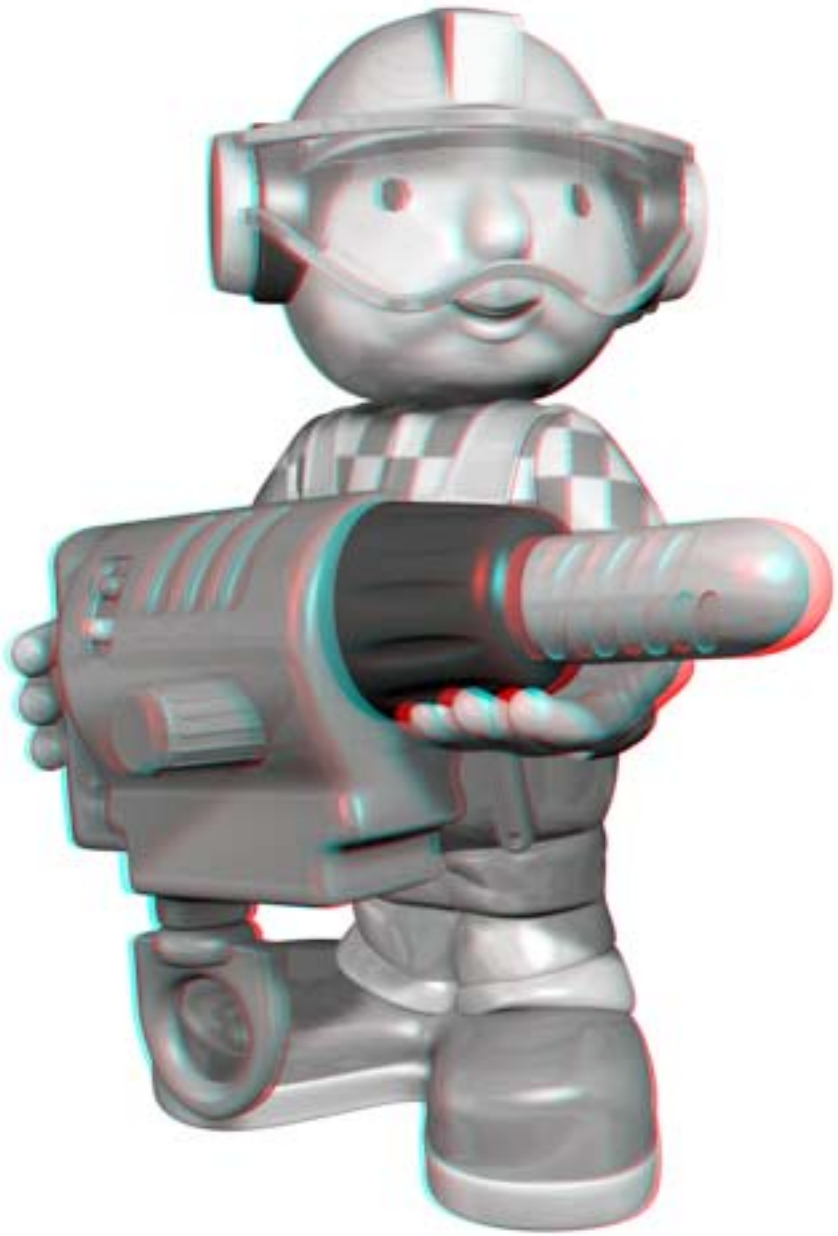
1. In top view, set up a camera and point it at your object with the use of a Target Expression. Name the camera Camera right

2. Copy both camera and Target expression and link the new camera to the new target. Rename them Camera left and Camera.target left. Be sure to link the new camera to the new target

stereo in 3D software

3. Drag both “Camera left” and left “Camera.Target left” to the left, just slightly. It is hard to say what is 7 to 8 cm. in 3D.
The Bob the Builder doll in reality is just 20 cm high but you can’t tell what his size is when placed on a white background. Then he might just as be as high as a tree. As a rule I found that placing both camera right next to each other is enough to provoke a depth effect without visual distortion.



4. Render the images from both camera’s.

5. In Photoshop, follow the same procedure to colour the rendered images and place them on top of each other. Again, with the arrow keys you can finetune the image