

After Effects 3D Distortion Effect

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In this technical paper, I will be explaining how to create a 3D Distortion effect using the Adobe compositing software, After Effects. This effect is something I recently learned while working on compositing for shot 27 for our Fall 2020 end of semester presentation. You can view the finished shot 27 here:

<https://www.youtube.com/watch?v=onuVlB8phvg>

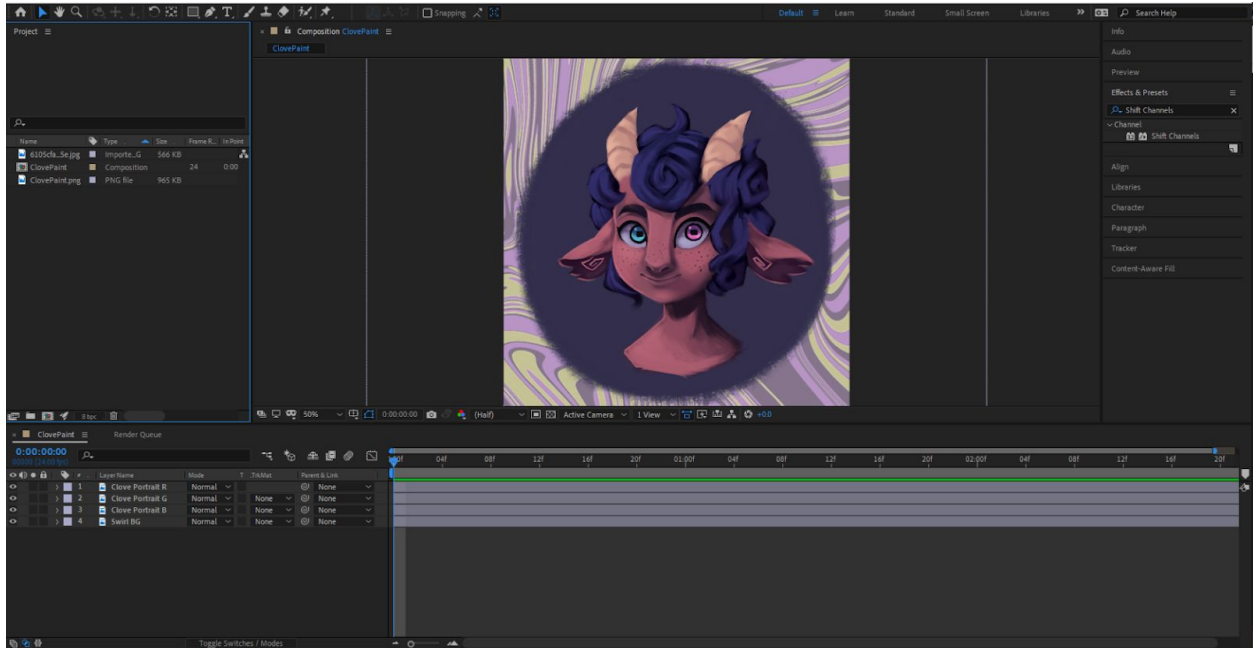
We wanted a sort of trippy, psychedelic color alteration to the overall piece and this was the perfect fit. While we didn't use the effect to its' fullest potential to prevent viewers from growing dizzy, we were able to implement this effect and strike the perfect balance of skewing the colors just slightly to add a more dimensional feel to the color, without making the viewer nauseous. The effect is conceptualized and based around this tutorial by Ben Marriott on Youtube:

<https://www.youtube.com/watch?v=mnx43P88xr0>

Without further ado, let's get into After Effects and start compositing!

Tutorial

1. To start, open up After Effects and import the file you'd like to add the effect to in your project bin. You're going to want to drag your clip onto the timeline in order to start your comp, and if you don't see it in the viewing panel, double click so that it appears.



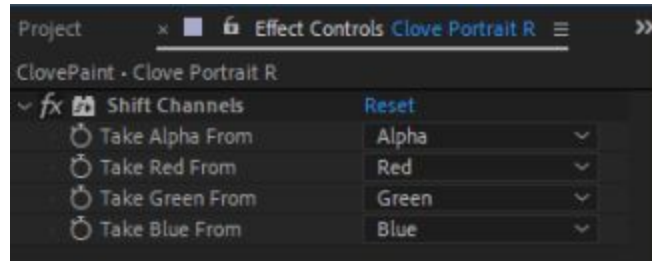
Notice how, in my viewing panel, I am viewing the composition of my entire piece. On the left is my project bin, where I can see my imported items.

2. After dragging the clip you'd like to edit onto the timeline, copy and paste it twice - thus, allowing three identical clips on the timeline. This step is important - you will be dividing each individual clip into only one color channel in order to make this effect work.

	Layer Name	Mode	T	TrkMat	Parent & Link
1	Clow Portrait R	Normal			None
2	Clow Portrait G	Normal		None	None
3	Clow Portrait B	Normal		None	None
4	Swirl BG	Normal		None	None

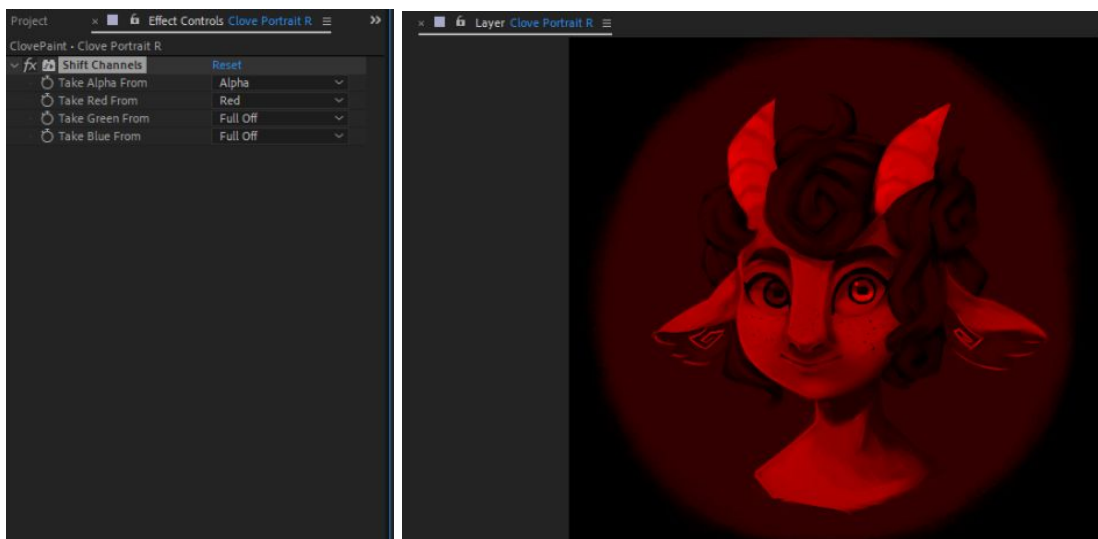
You can see, in my layer editor, how I have duplicated the identical layer three times as well as renamed according to what color will be visible on said layer after separating the channels.

3. After you have all three clips in the timeline, search for the effect “Shift Channels” in the effects sidebar. Once you find it, you can click and drag it onto each of the three clips you created in the layer editor. Hover the effect over the name of the layer you want to add it to and drop. Now, when each clip is selected, you should see the Effect Controls for that layer appear with the different options for Shift Channels.

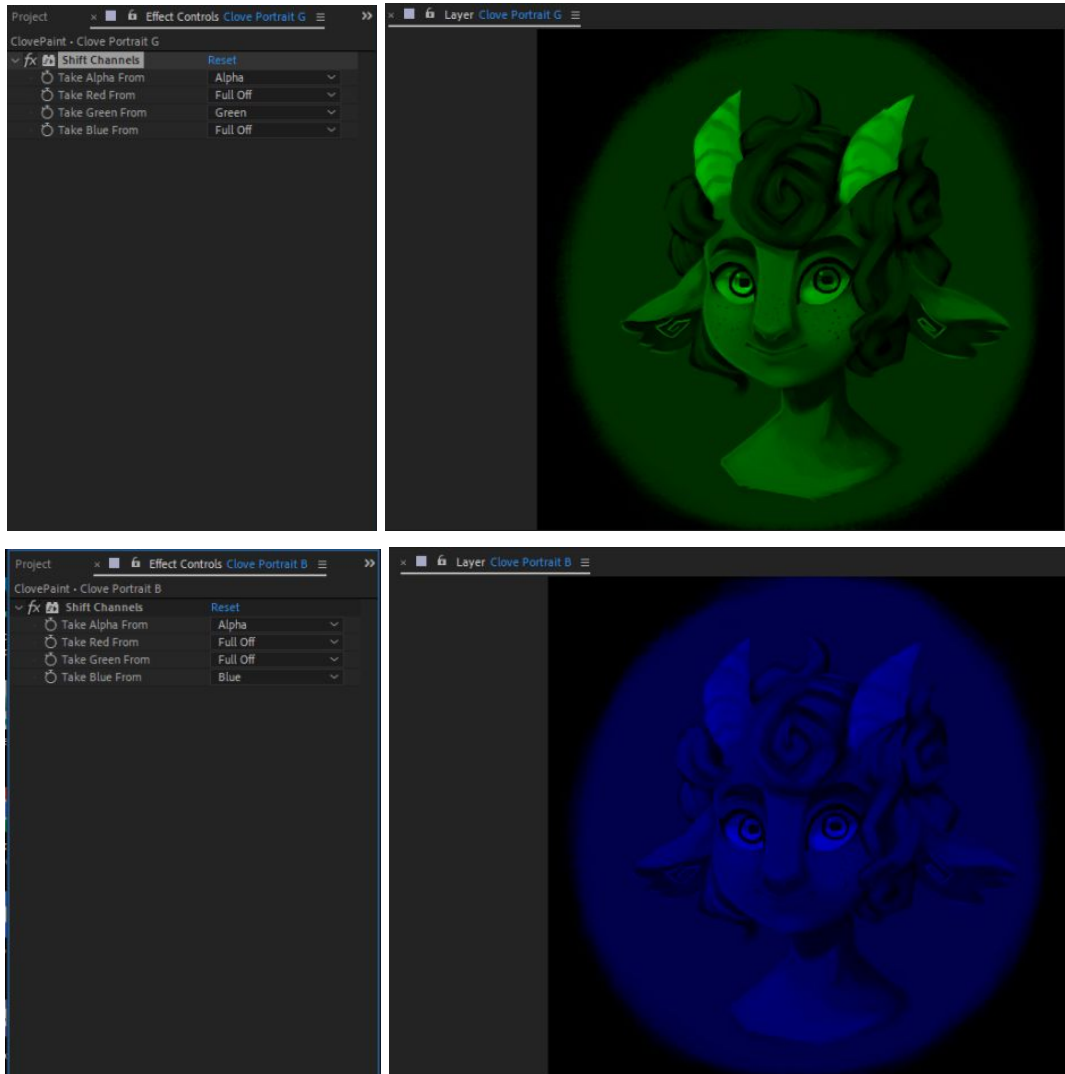


By default, these will be your settings. We’re going to modify them each differently in order to get the right effect.

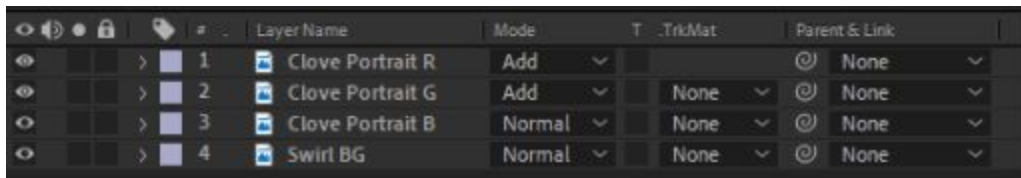
4. Starting with your R layer you’re going to want the color that comes through to only be red tones - think of dividing this how a printer would when it prints. So for “Take Red From”, let it stay as Red. For “Take Green From” and “Take Blue From”, set it to “Full Off”. To double check that you did it correctly, you can view only the layer in the view panel by double clicking, and your image should only be red.



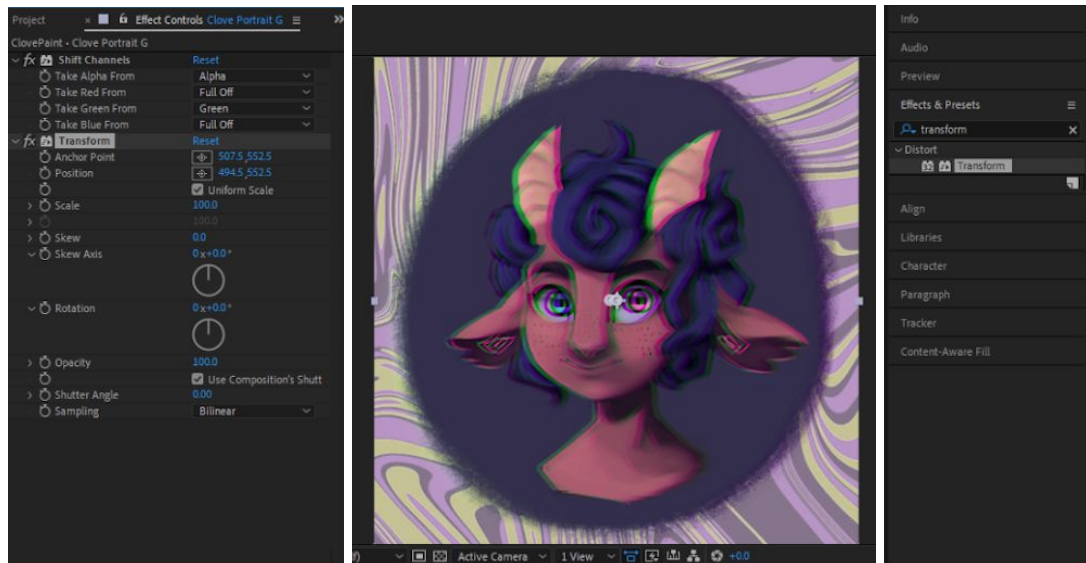
5. You'll want to replicate this for the next two layers as well, each time leaving one color set to default and the other two colors set to "Full Off". Throughout this process, you can leave alpha untouched. In the end, you should have one layer set to red, one set to blue, and one set to green.



- Go back to “composition” in the viewing panel in order to see all three stacked on top of each other. You’re not finished yet - in order to make the colors show correctly, you’ll need to set the top two layers to Add. This should make the piece look normal again, but the real fun comes next.



- Look up “transform” in the effects panel and drag the Transform effect onto your top two layers. In your Effects Controls, find the label “Position” and you can click and drag the first number in order to move your layer back and forth from left to right in order to get the trippy effect we’re looking for.



Notice how I skewed the number next to “position” on the green layer - the effect made it so that the green is slightly offset from the rest of the image by an amount of pixels, giving this image a sort of 3D distortion quality.

8. Test it out! There are many settings you can mess with here in order to make the effect more prominent - you can rotate, stretch, scale, adjust in position from top to bottom instead of left to right, move both layers, rearrange each layer in order to get a different color difference, and even keyframe the layers to move so that the 3D quality changes over time! There's lots of ways to use this established setup in order to achieve the 3D color distortion effect. Once you're done, you can add to Render Queue and export to whatever file format you need - I decided to make mine move and put my image sequence through Premiere to get this trippy GIF. Enjoy!

In conclusion, I solved the problem of getting a color-manipulatable 3D glasses sort of effect by using 3 different color coded layers and applying specific adjustments in order to get the most perfect subtle 3D distortion effect for the purposes of making that dimensional color come through in our psychedelic montage. I'm overall really happy with how well this strategy has worked in shot 27 and I look forward to messing with it more in future!