

Sonification and data bending of a RAW file

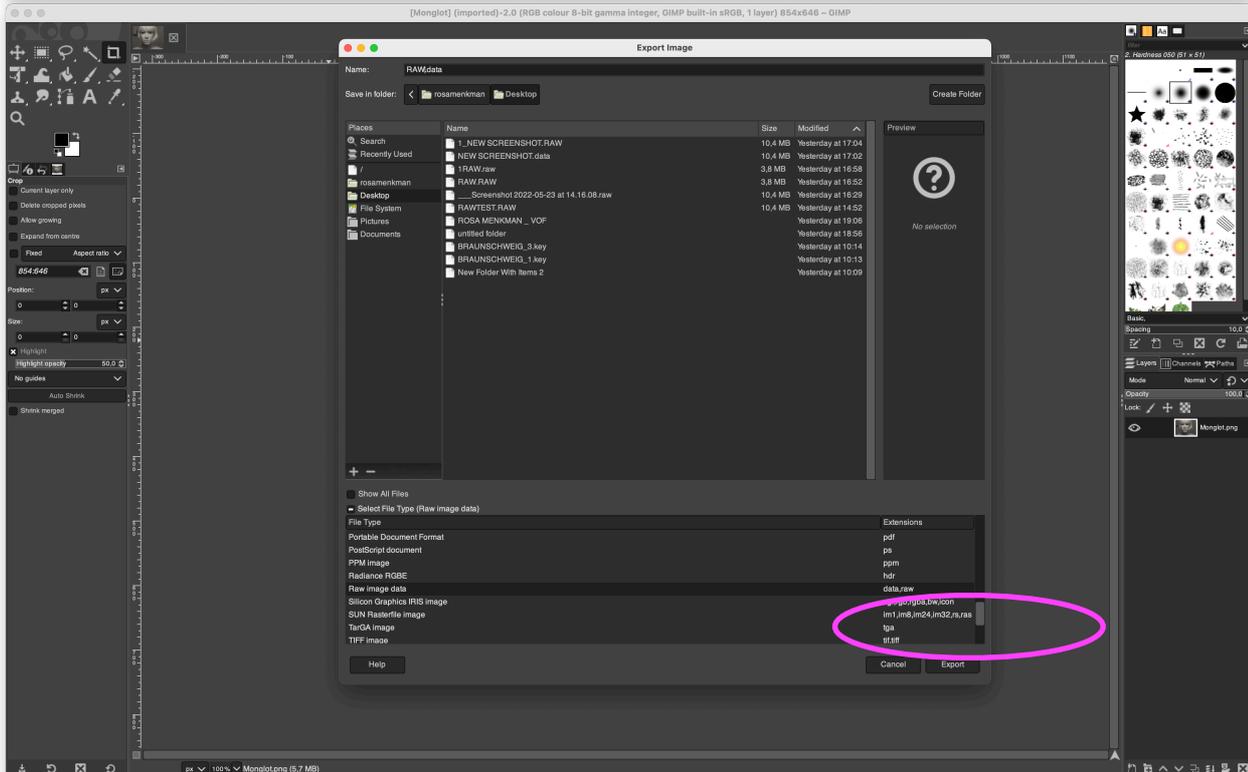
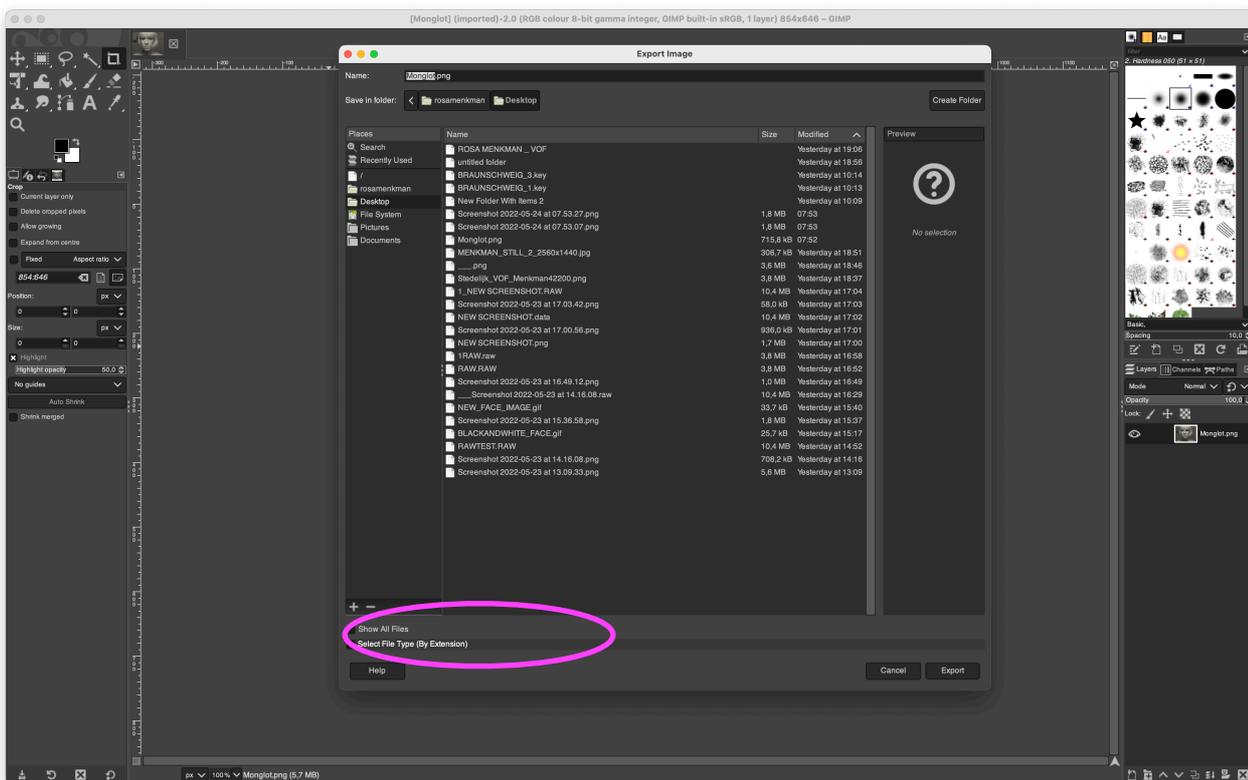
Slides of the workshop (theoretical input)

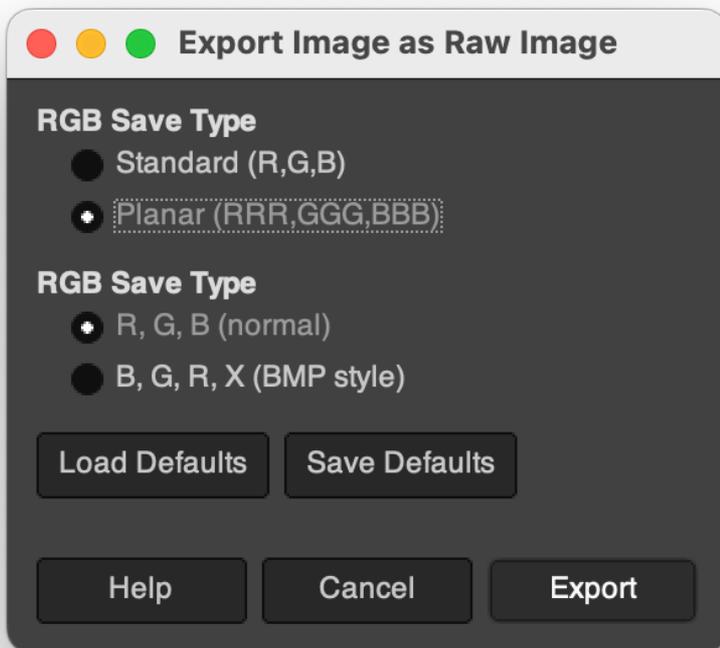
https://beyondresolution.nyc3.digitaloceanspaces.com/ABOUT_DATA_BRAUNSCHWEIG/BRAUNSCHWEIG_1.pdf

https://beyondresolution.nyc3.digitaloceanspaces.com/ABOUT_DATA_BRAUNSCHWEIG/BRAUNSCHWEIG_2.pdf

For this exercise we first need to create a RAW file. As far as I can see, photoshop (proprietary software) does not allow us to encode an image file into the Photoshop .RAW format anymore. This is why we use GIMP (open source).

Open a copy of your image (don't use any originals) in GIMP and export it as "RAW, DATA". This option appears when you click dialogue box "Select File Type (by extension)"





Choose the right settings: planar (RRR,GGG,BBB) in GIMP means your color channels will be saved as non interleaved —

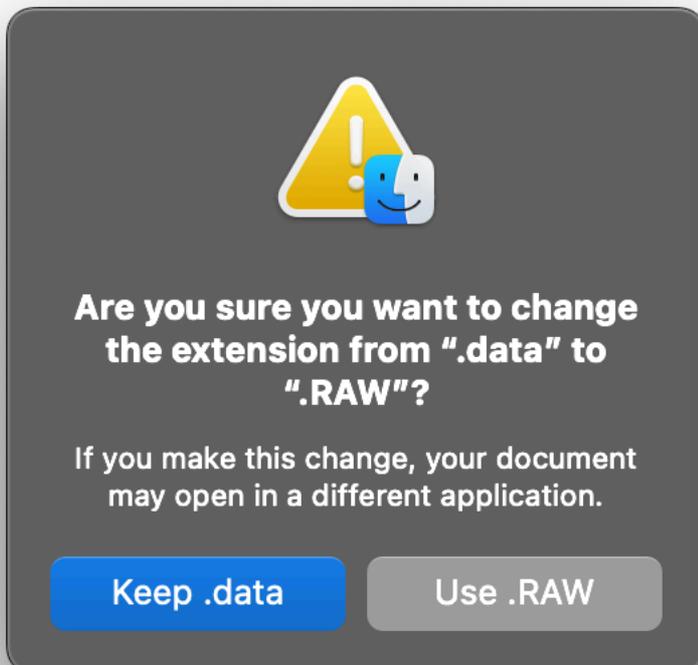
This means that instead of saving the image data away with a color value per pixel (RGB values), it will save the full Red, then a full Green and then a full Blue image and overlay them later.



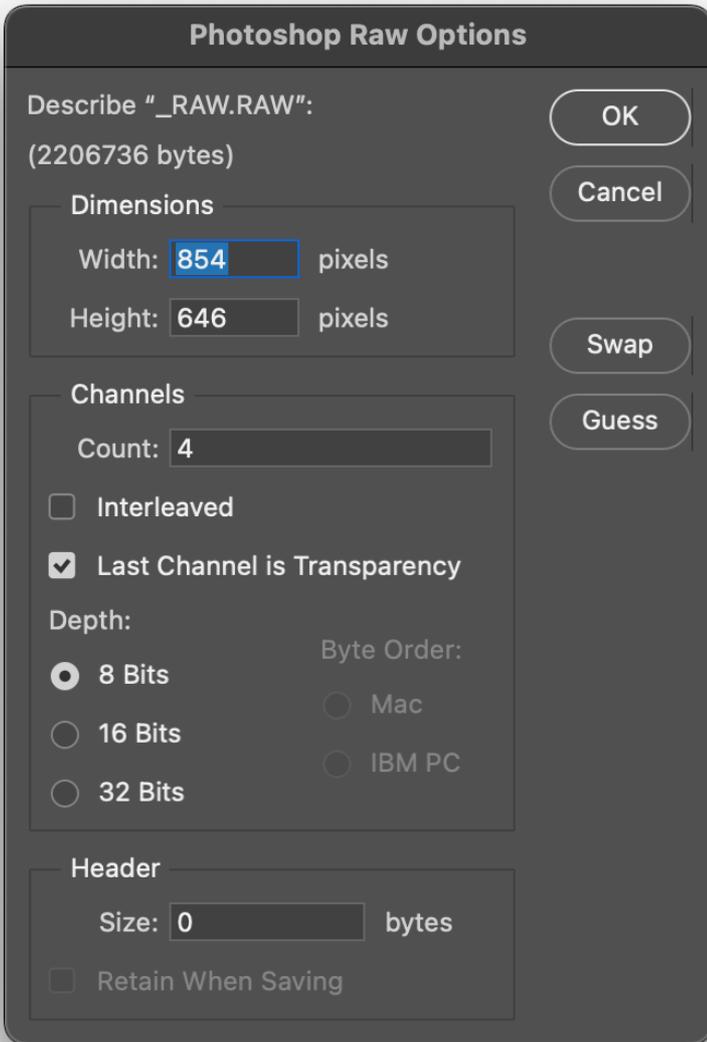
RAW.data

RAW.data now has appeared where you saved it.

To work with this file in Photoshop, you will have to change its extension into RAW



So change the extension of the file and Use .RAW



Now open the file in Photoshop.

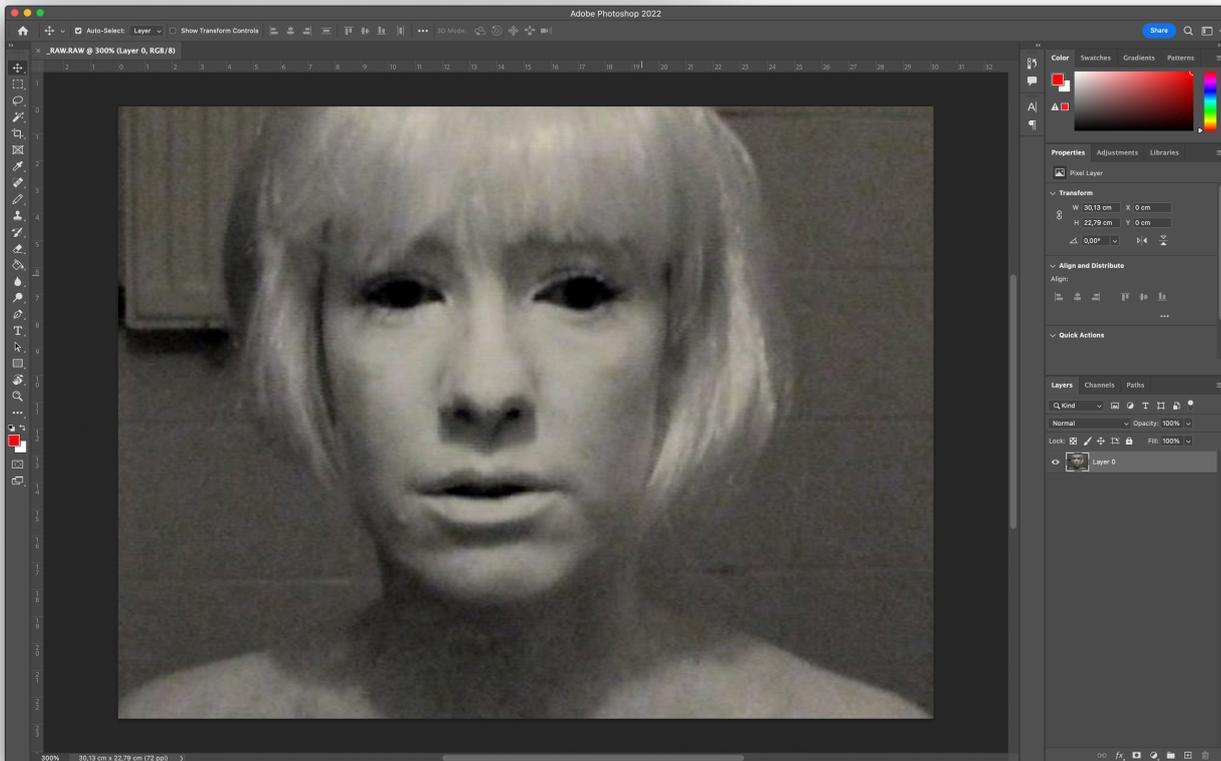
It will have no header, so no place to save any image metadata such as the amount of color channels or width and height of the image.

Meaning it will leave Photoshop guessing how to open it - and ask you for some settings.

I first wanna see if I can open the file in settings that make it look the way it was saved.

For this I need to fill in the right pixel dimensions (in this case 854x646),

The right amount of color channels (in my case it was a color image, with a transparency, so 4, and then tick at Last Channel is Transparency.



Yes, that looks alright

Photoshop Raw Options

Describe "RAW.RAW":
(2206736 bytes)

Dimensions

Width: pixels

Height: pixels

Channels

Count:

Interleaved

Last Channel

Depth:

8 Bits

16 Bits

32 Bits

Header

Size:

Retain

OK

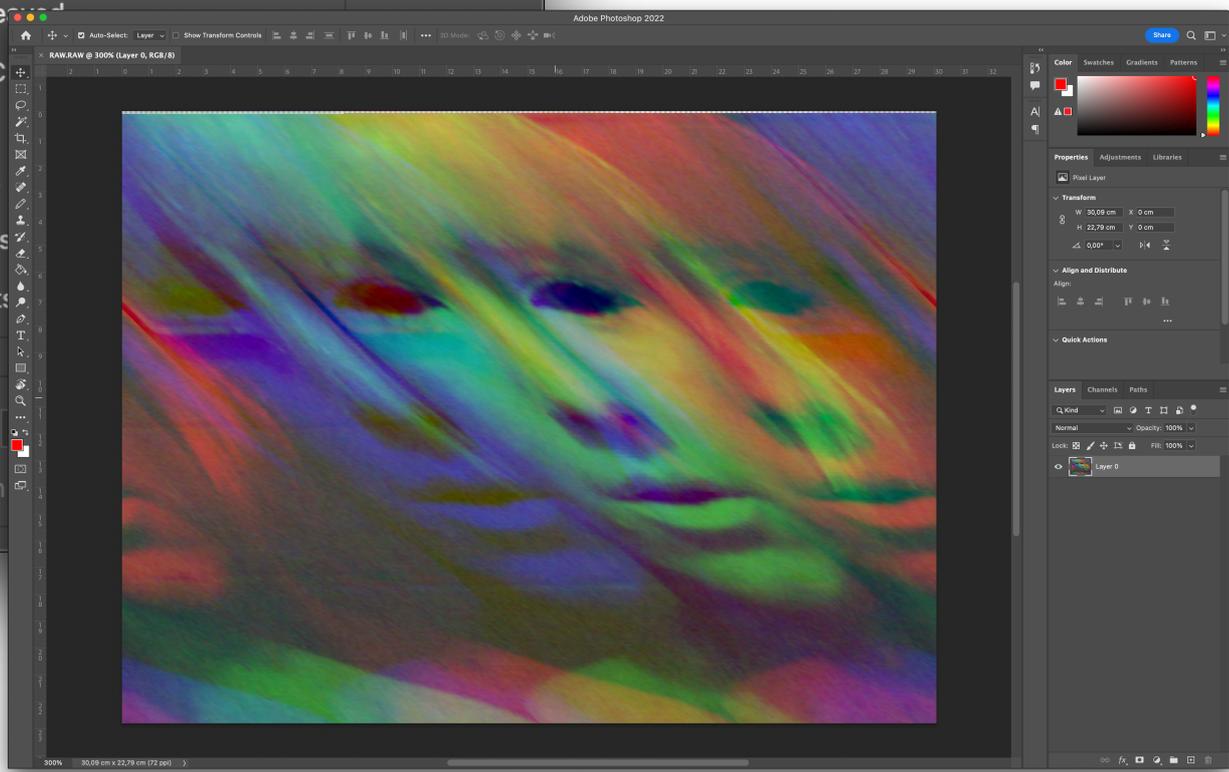
Cancel

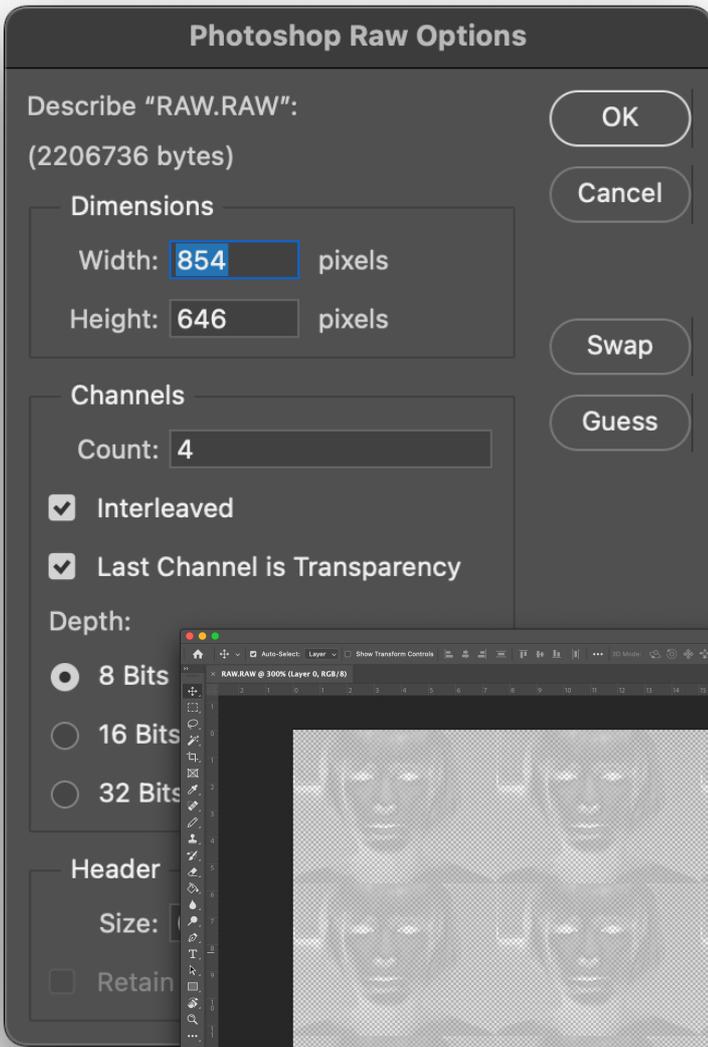
Swap

Guess

Now lets read the data file with one pixel in with short.

Yes!!

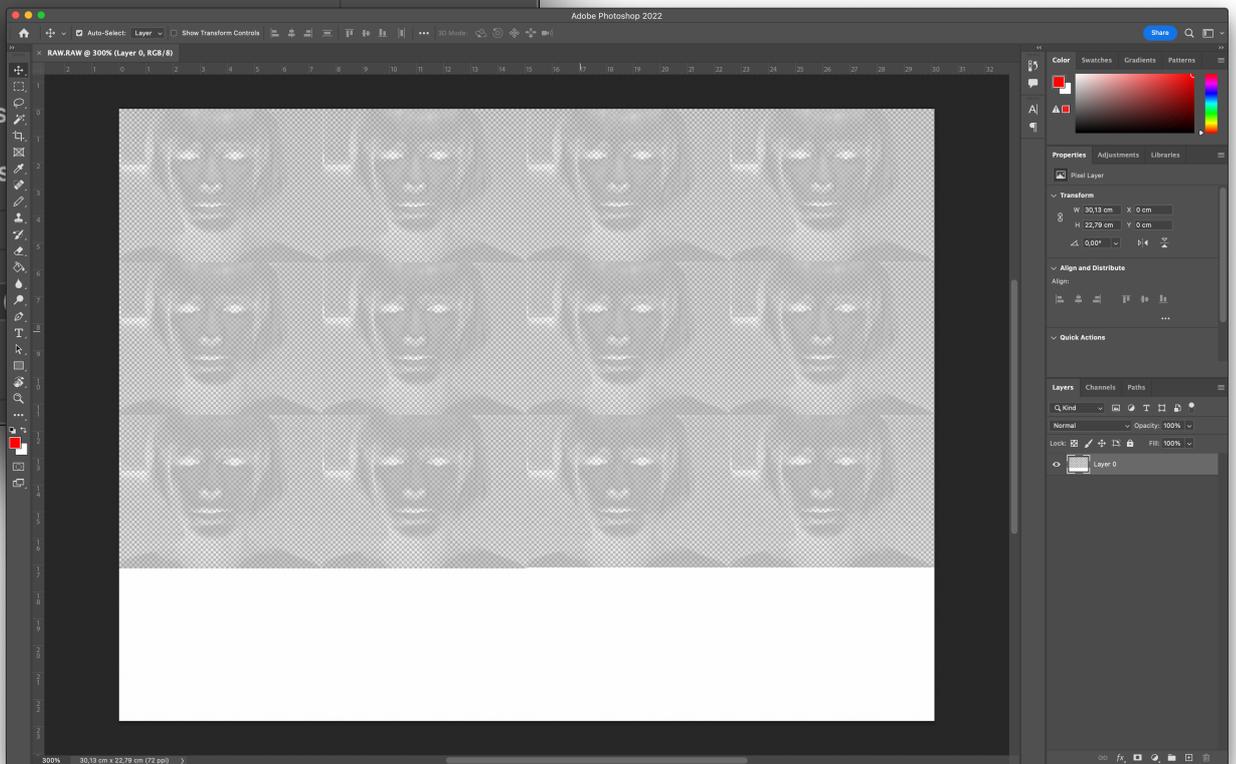




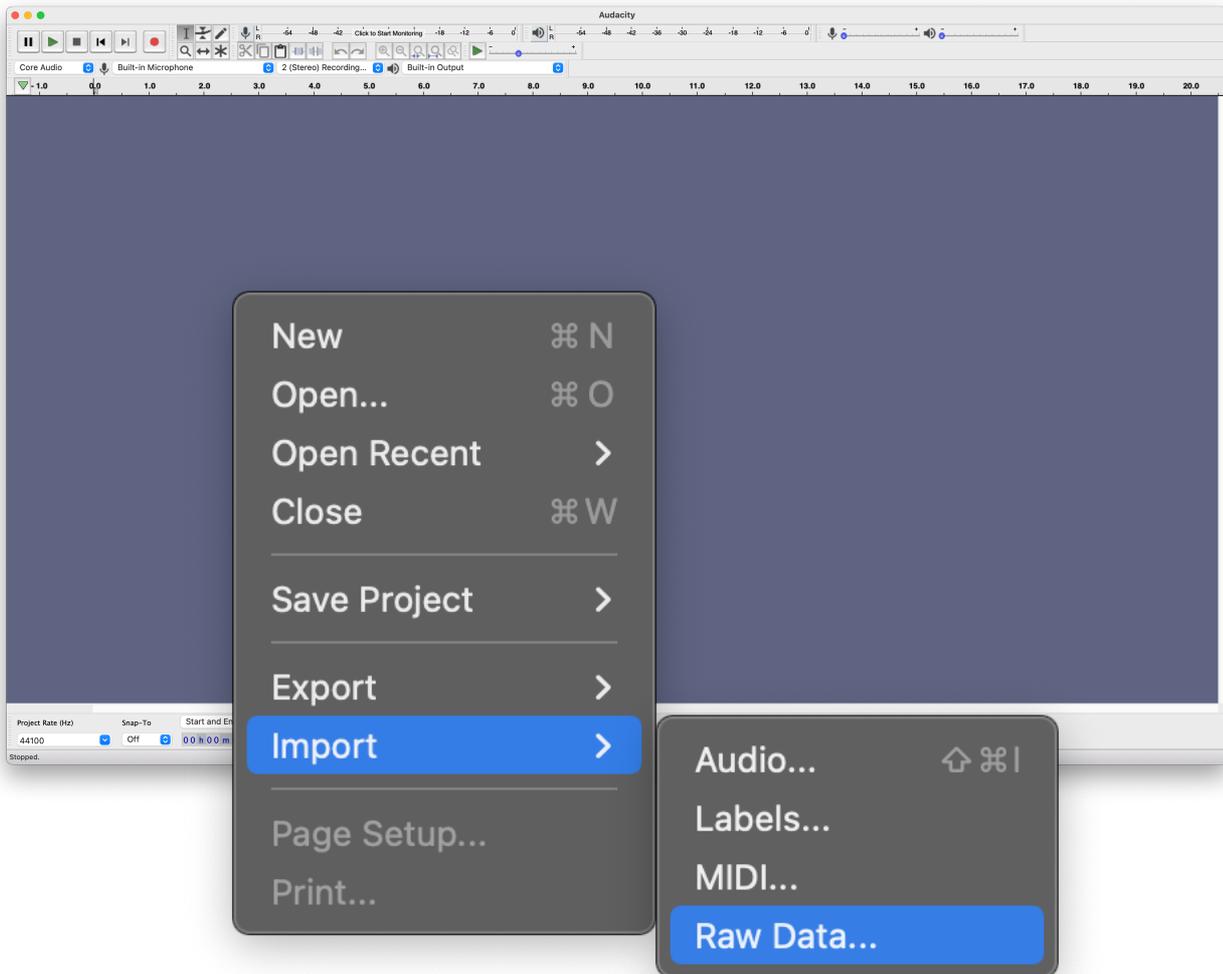
Or open the data file with the right pixel dimensions, but with the color channels (remember, the planar RGB stuff) in an interleaved way (RGBx RGBx RGBx instead of RGB RGB RGB XXX)

(X is the forth, transparency channel)

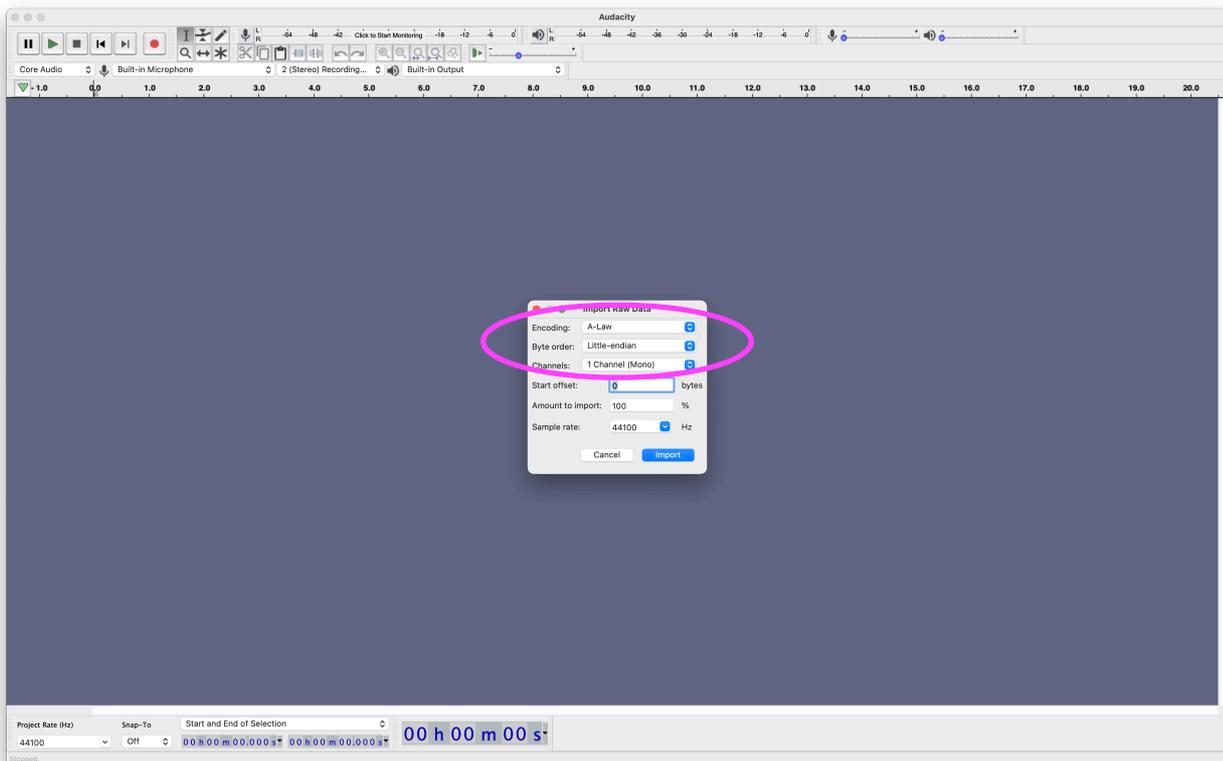
SPOOKY

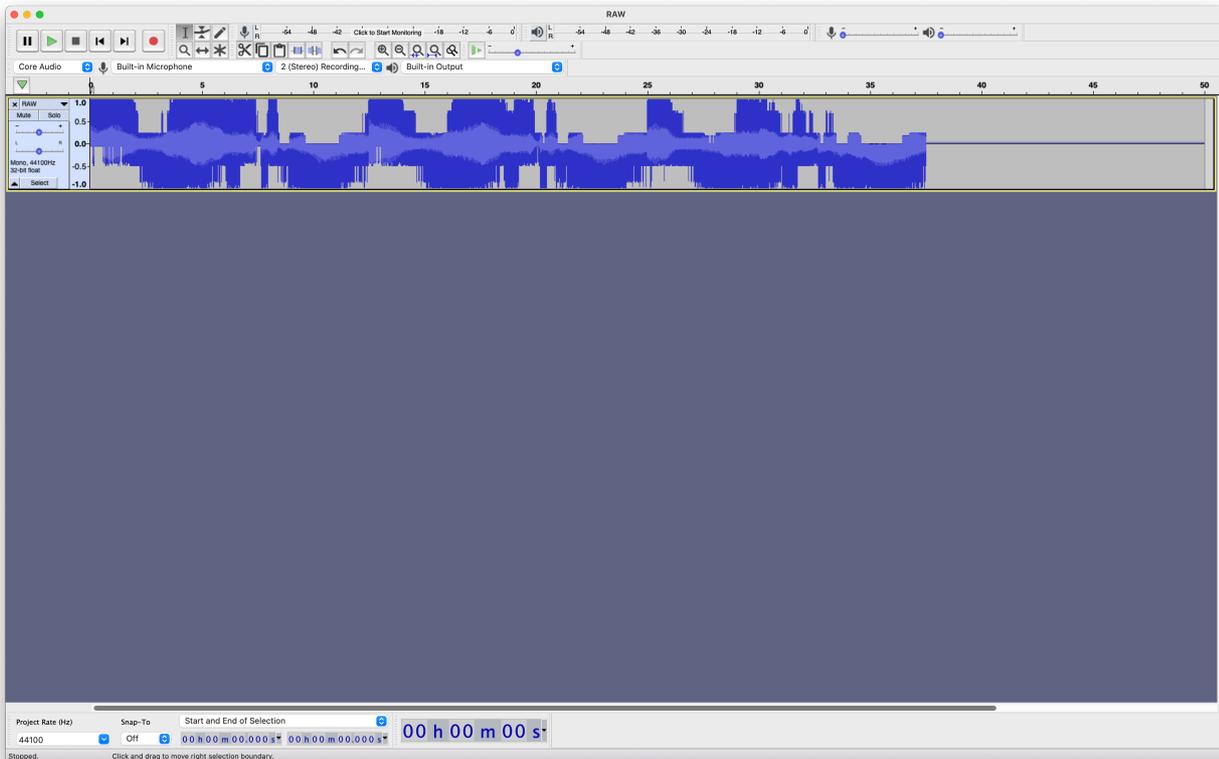


Now, lets open the file in AUDACITY

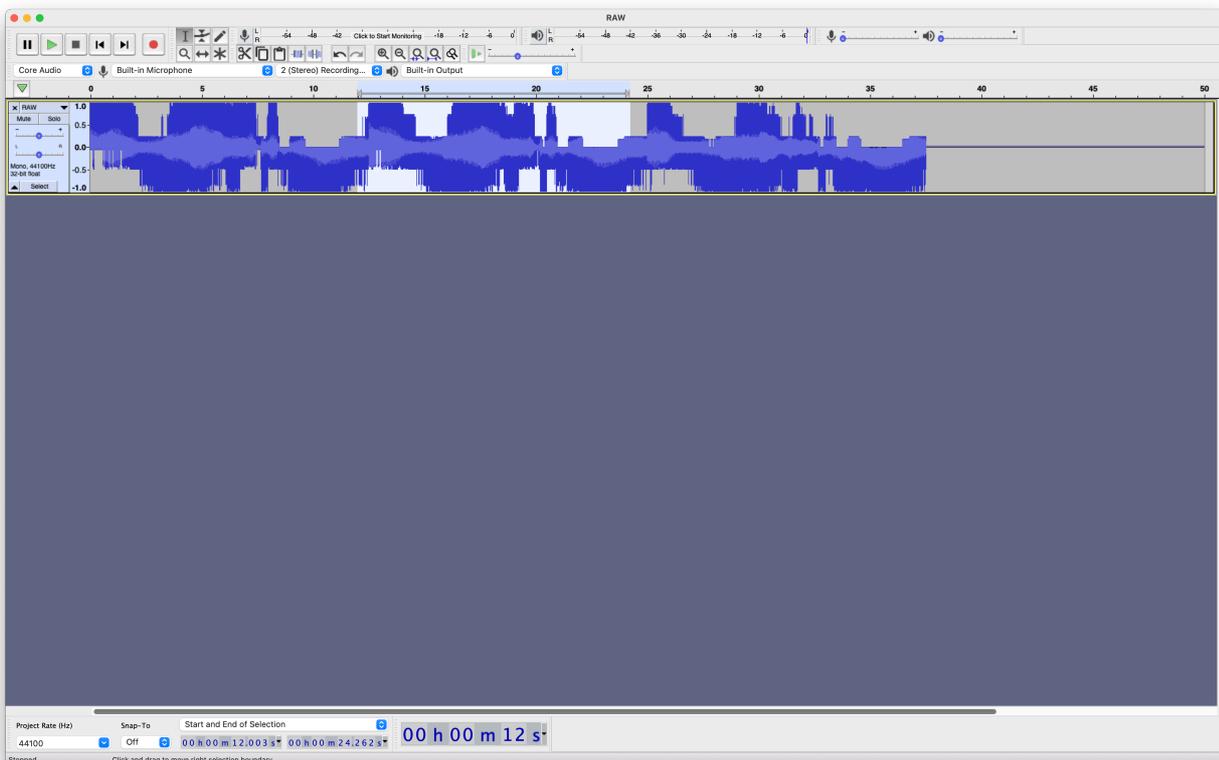


Choose import -> RAW DATA —> **Encoding A-LAW**



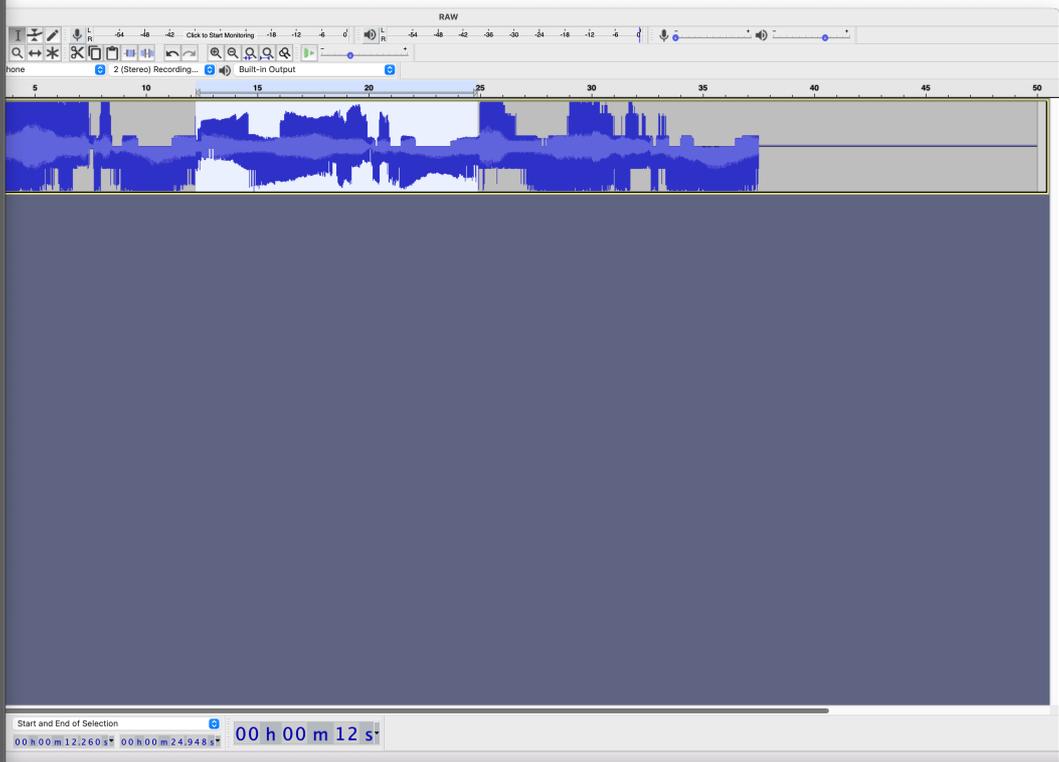


Sounds like a fog horn...



Lets put an effect on a selection of our fog horn,

- Add / Remove Plug-ins...
- Repeat Last Effect ⌘R
- Amplify...
- Auto Duck...
- Bass and Treble...
- Change Pitch...
- Change Speed...
- Change Tempo...
- Click Removal...
- Compressor...**
- Distortion...
- Echo...
- Fade In
- Fade Out
- Filter Curve EQ...
- Graphic EQ...
- Invert
- Loudness Normalization...
- Noise Reduction...
- Normalize...
- Paulstretch...
- Phaser...
- Repair
- Repeat...
- Reverb...
- Reverse
- Sliding Stretch...
- Truncate Silence...
- Wahwah...
- Adjustable Fade...
- Clip Fix...
- Crossfade Clips
- Crossfade Tracks...
- Delay...
- High-Pass Filter...
- Limiter...
- Low-Pass Filter...
- Noise Gate...
- Notch Filter...
- Spectral Delete
- Spectral edit multi tool
- Spectral edit parametric EQ...
- Spectral edit shelves...
- Studio Fade Out
- Tremolo...
- Vocal Reduction and Isolation...
- Vocoder...



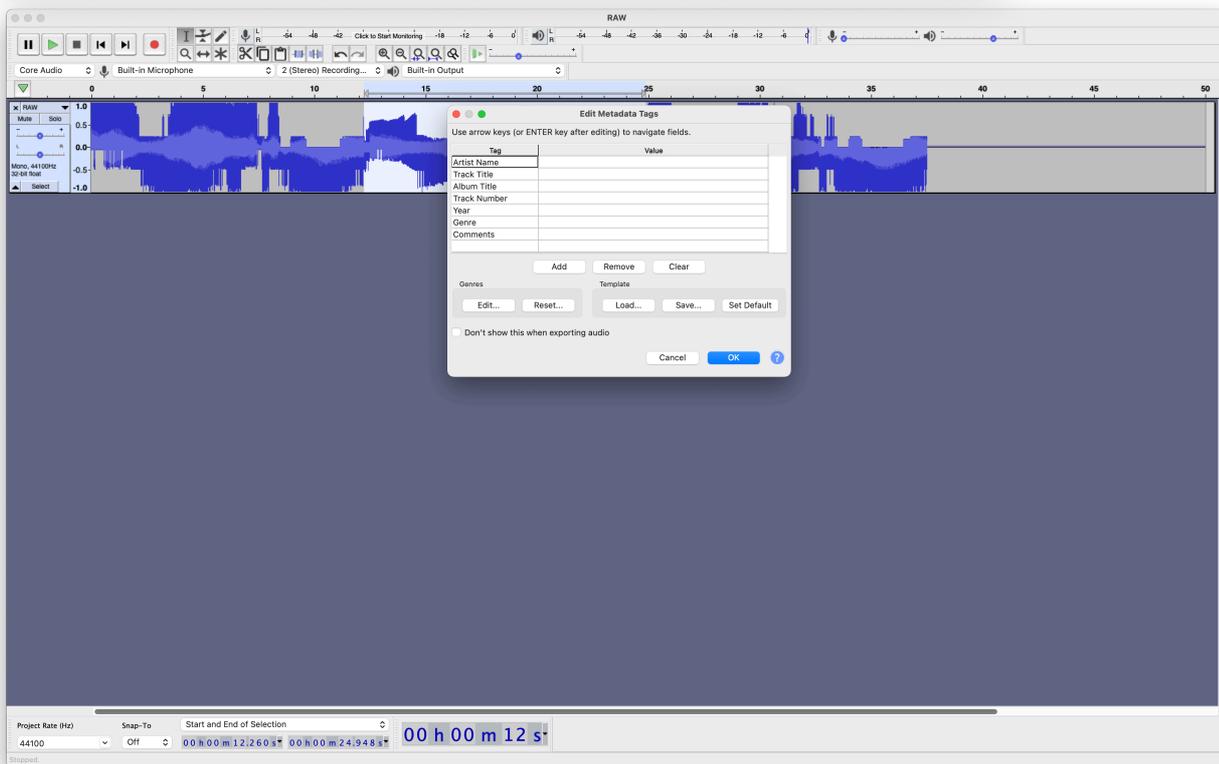
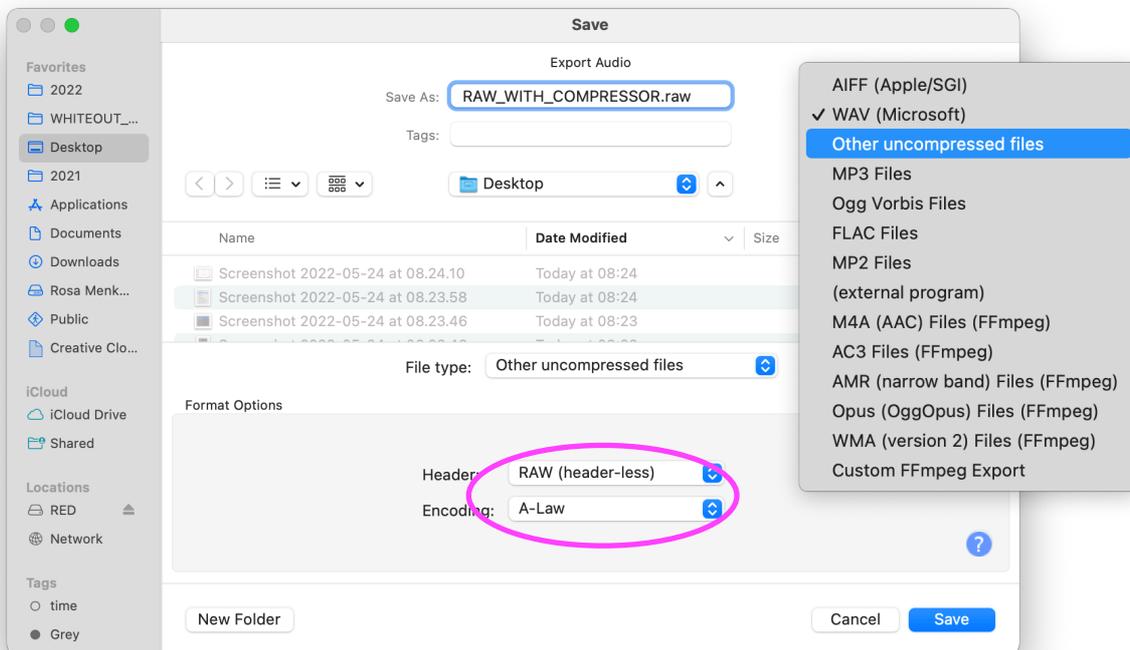
like ... Maybe a compressor?...

Lets now export the image again to a RAW file, so we can see the outcome of our audio effect on our sound.

- New ⌘N
- Open... ⌘O
- Open Recent >
- Close ⌘W
- Save Project >
- Export** >
- Import >
- Page Setup...
- Print...

- Export as MP3
- Export as WAV**
- Export as OGG
- Export Audio... ⇧ ⌘E
- Export Selected Audio...
- Export Labels...
- Export Multiple... ⇧ ⌘L
- Export MIDI...

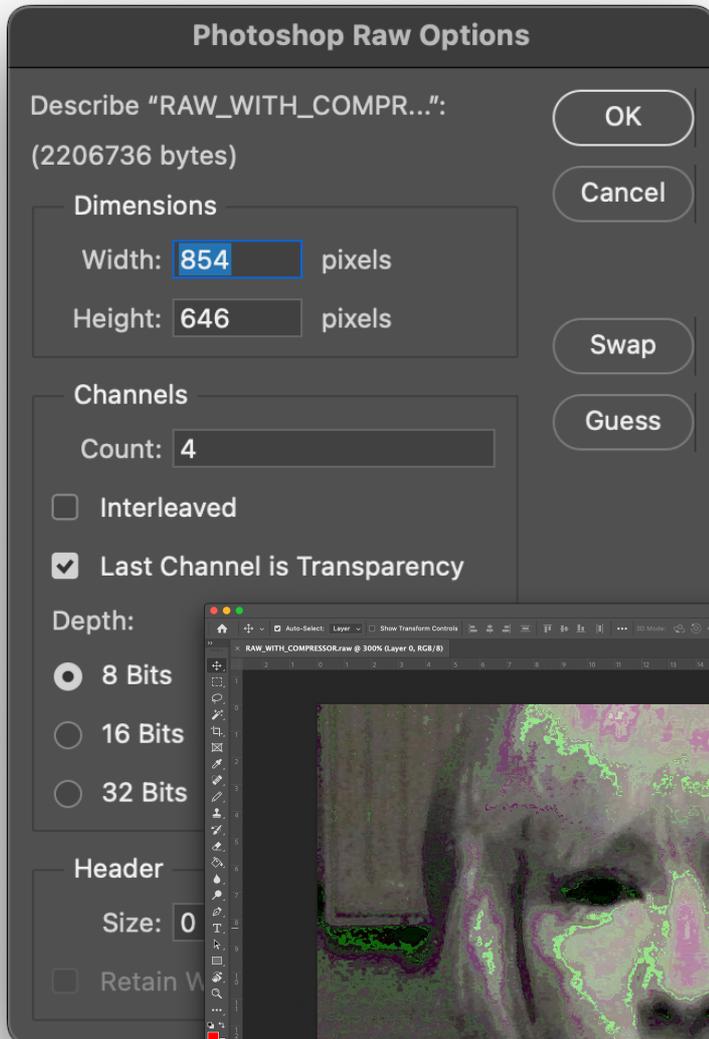
And export the file, in the right bite order.
So: Other uncompressed files, RAW (header less), **A-law encoding**.



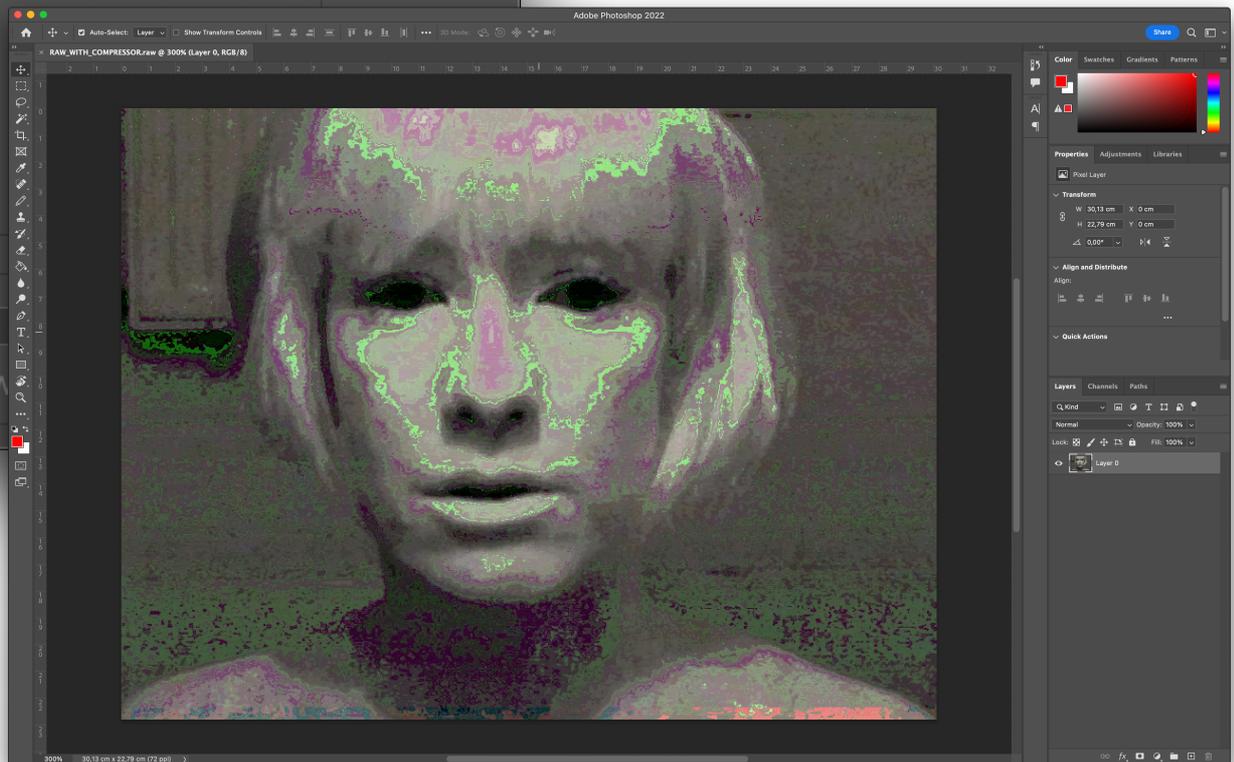
Do not save any meta data to your track!

Now lets open the new RAW in photoshop.

Remember your settings!!! (See above)



YESS ...



So what's the point, you may ask?

Just think about the humpback whales.

<https://kcimc.medium.com/data-of-the-humpback-whale-9ef09c5920cd>



Self portrait with COMPRESSOR audio effect.

So what is the point of all of this?

First off, I use this workshop to show that data is more 'fluid', or more *malleable*, than we are normally conditioned to think it is.

I also use this workshop as a starting point to conversations about:

- Algorithmic bias in our compression technologies (for instance JPEG and MP3 encoding),
- Transcoding and its effects on the perception of data - for instance as it is moved from the visual domain to the domain of sound:
The sound domain is based on rhythm while in the visual domain, humans can perceive spatial discrepancies - so a translation from the one domain to the other may play a humans strength of perception.
- Considerations into truth making see:
- Danah Boyd: "Conspiracies and Post Truth"
<https://www.pbs.org/wnet/amanpour-and-company/video/danah-boyd-on-the-spread-of-conspiracies-and-hate-online/>
- And finally data mining by Big Tech see:
Wendy Chun "Discriminating Data"
<https://www.artandeducation.net/classroom/video/310820/ariella-asha-azoulay-potential-history-unlearning-imperialism>
&&
Shoshana Zuboff: "Magical Surveillance Dividend"
<https://www.youtube.com/watch?v=QL4bz3QXWEo&t=1350s>

which all play huge roles in our daily realities.