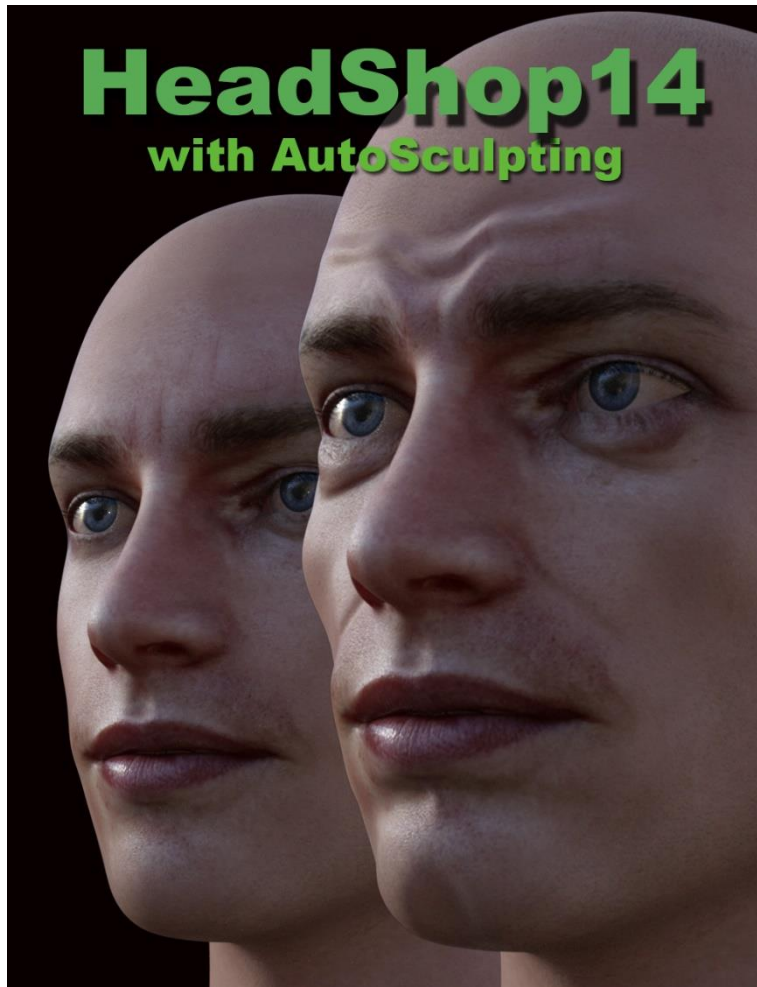


HeadShop14 with LoveChild, OneClick2022

For Windows

User Manual

www.printahead.net,



Abalone LLC.

First edition
June 2021

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System requirements

Required hardware

WIN: HeadShop14 runs with the following minimal hardware:
A Windows-based personal computer or laptop with the following minimal requirements:

8 Gb of RAM, 64-bit
Screen of a resolution at least 1024x768, but no more than 3000
800 MB free disk space

Needed software

HeadShop14 runs under the following software:
Windows 10 operating systems, 64-bit only
DAZ Studio 4.9 or later, 64-bit version
Genesis (3,8) Base (male and female), Genesis (3,8) Starter Essentials.

To read pdf manuals Adobe Acrobat is recommended

To watch "How-to" videos Windows Media player is recommended:

<https://youtu.be/5N-8KE4BCbo>

Abalone LLC offers tech support through email.

Email address is abalonellc@yahoo.com

About the manual

Preface – What is New in HeadShop14/OneClick2022?

Chapter 1 – Installation

Chapter 2 – Workflow

Chapter 3 – Advanced Operation

Chapter 4 - Troubleshooting

Chapter 5 - White Paper

What is HeadShop 14.1 and OneClick2022?

HeadShop 14/OneClick are software products used to automatically create 3D heads from photographs. They are used inside DAZ Studio as a plugin. Both work with Genesis 3, 8, and 8.1 figures. Both are outputting a modified morph OBJ file and 4096x4096 texture files. HeadShop has been in development since 2007 and regularly introduces features not found in other photo-to-3D software.

What is the difference between HeadShop 14.1 and OneClick2022?

OneClick is a simplified version of HeadShop 14.1 OneClick2022 misses LoveChild (a utility that allows making inbetweens between two photos), and it does not come with Style (hair), Accessories and Material libraries.

What is new in HeadShop 14.1/OneClick2022?

- Both products feature a new architecture that supports third-party add-ons (morph libraries) to add such features as special chin, teeth, lips or noses.
- Support for Genesis 8.1 Basic Male and Female figures
- A new AutoSculpt tab that lets users alter Nose shapes, add Additional shapes such as eyebags, hollow cheek, chin cleft and others, and add facial creases of all kinds.
- Improved retouching tool makes retouching texture blamishes on the fly

In Addition HeadShop 14 has

- Love Child, an additional piece of sophisticated software that allows the morphing between two photos to create a third image. A slider can regulate the degree of resemblance to one or the other photo.
 - Introduction of much improved texture belending that samples 3 separate point of skin surface.
 - Generation of full body textures and a wrinkle „bump” map.
- In addition, HeadShop 14 features a number of breakthrough technologies that cannot be found in other similar programs. See Chapter 3 – White Paper.

To review Installation and Operation of HeadShop 14 visit:

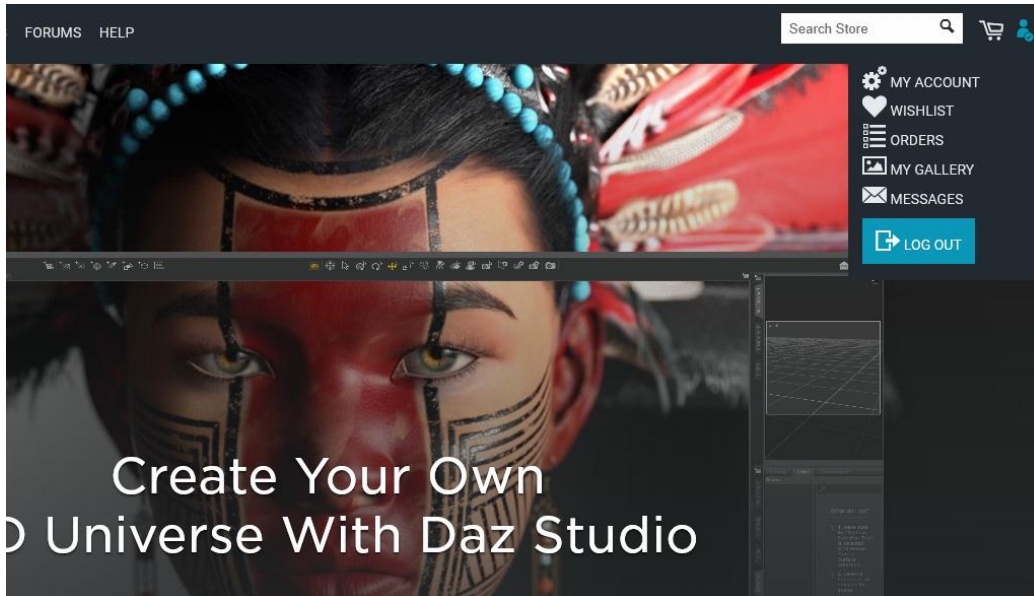
<https://youtu.be/5N-8KE4BCbo>

Chapter 1 -Installation

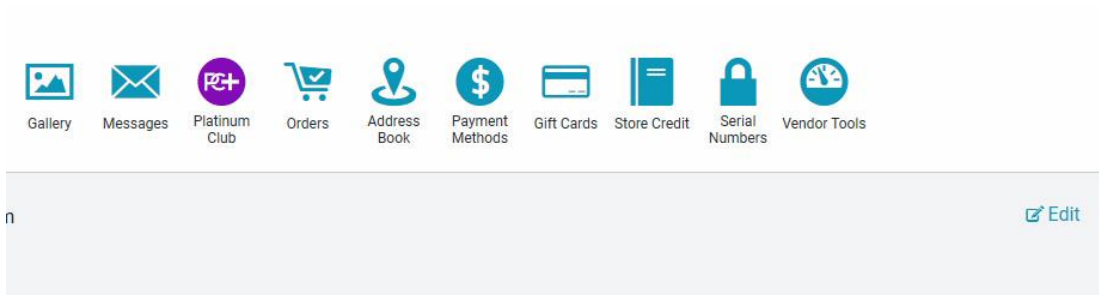
HEADSHOP 13 README, LICENSE_INFO

Where is my License key?

Open “daz3d.com” and go to “My Account”



Find “Serial Numbers” and open.



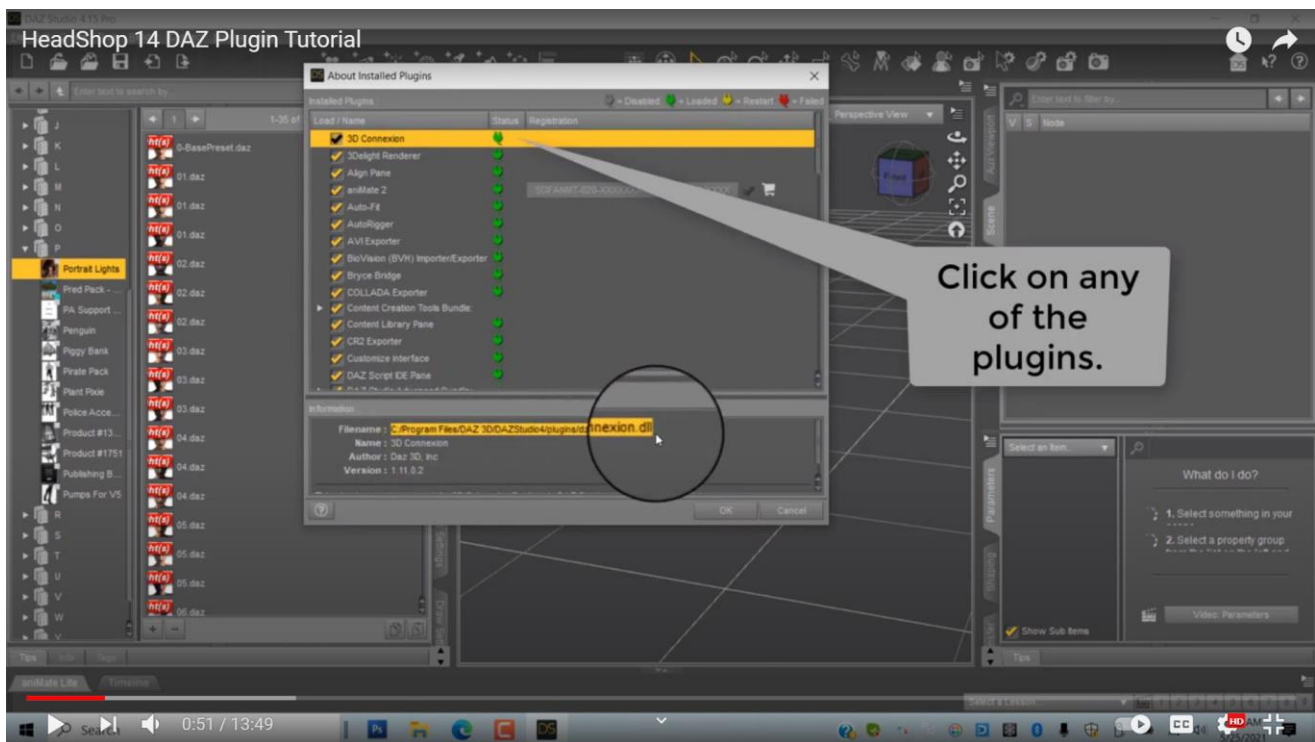
How do I install HeadShop 14?

HeadShop is a plugin that works inside DAZ Studio and must be installed to the same folder as the working copy of DAZ Studio.

While DAZ Studio installs by default into C:/Program Files/DAZ 3D, some users may have installed it to another drive and often do not remember where.

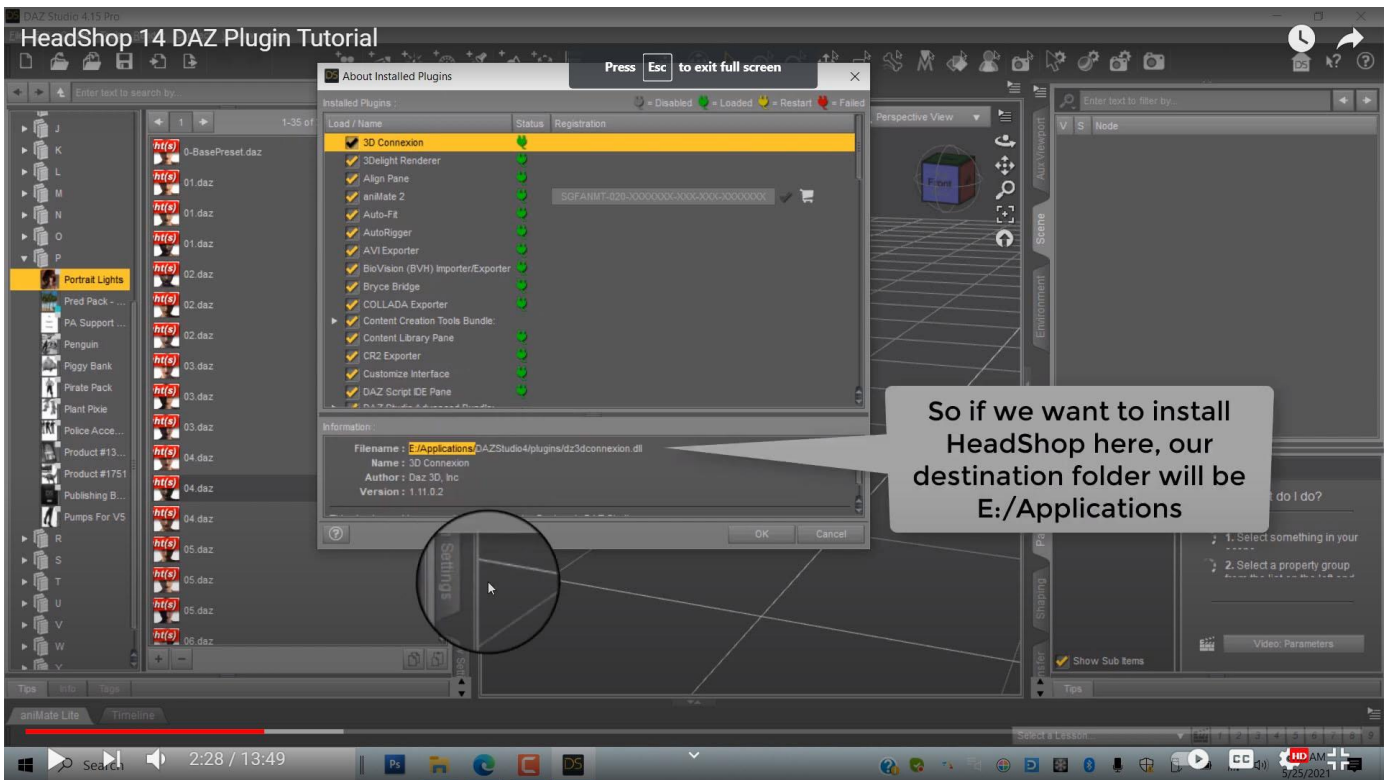
In this segment we show you an easy way to find the exact location of your DAZ Studio to avoid miss-installation of HeadShop.

1. Let's start by launching your DAZ Studio in order to read its installed location. Go to the Help menu and scroll for "About Installed Plugins". Highlight any of the plugins in order to read DAZStudio4's location. In this case we can see that the install location is on C: drive under Program Files/DAZ 3D. Make a note that C:/ Program Files/DAZ 3D. (This happens to be the default location. Make a note of this.

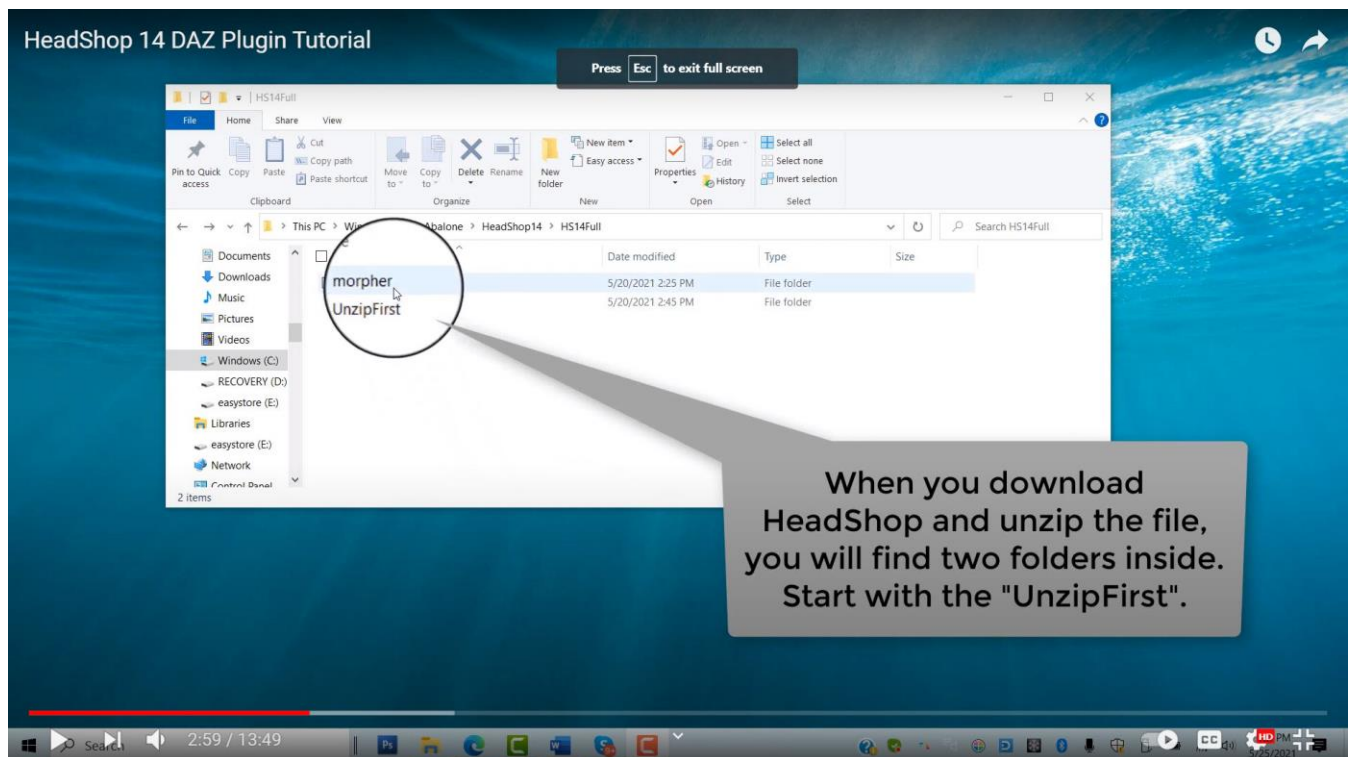


2. Now explore a possibility that DAZ Studio is NOT on the default location but somewhere else. We open another copy of DAZ Studio to explore.

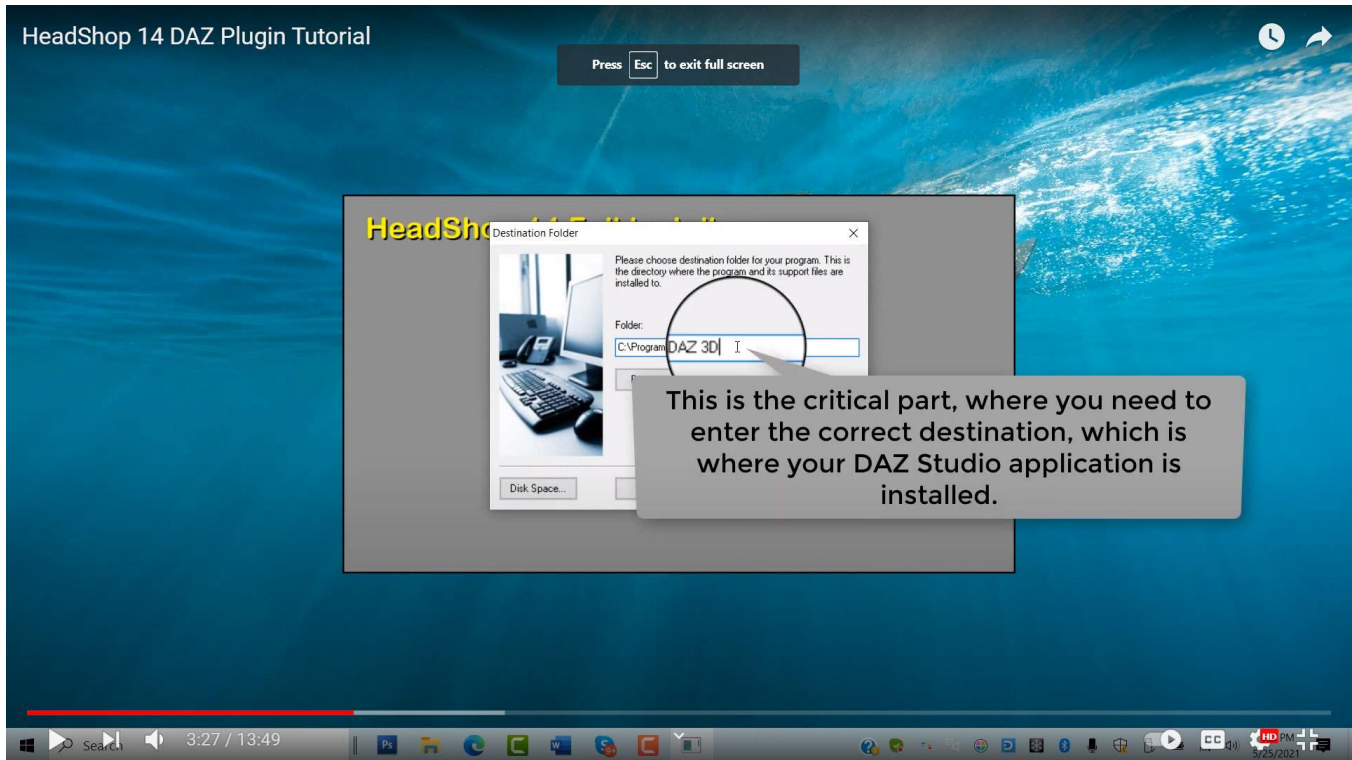
Again, we open Help/About Installed plugins. Again we highlight one of the plugins to see where it is located. We find that this copy of Studio is located on the E:/ drive inside a folder called "Applications". You can make a note of this location. As you can see in this instance you have a choice of where to install HeadShop plugin.



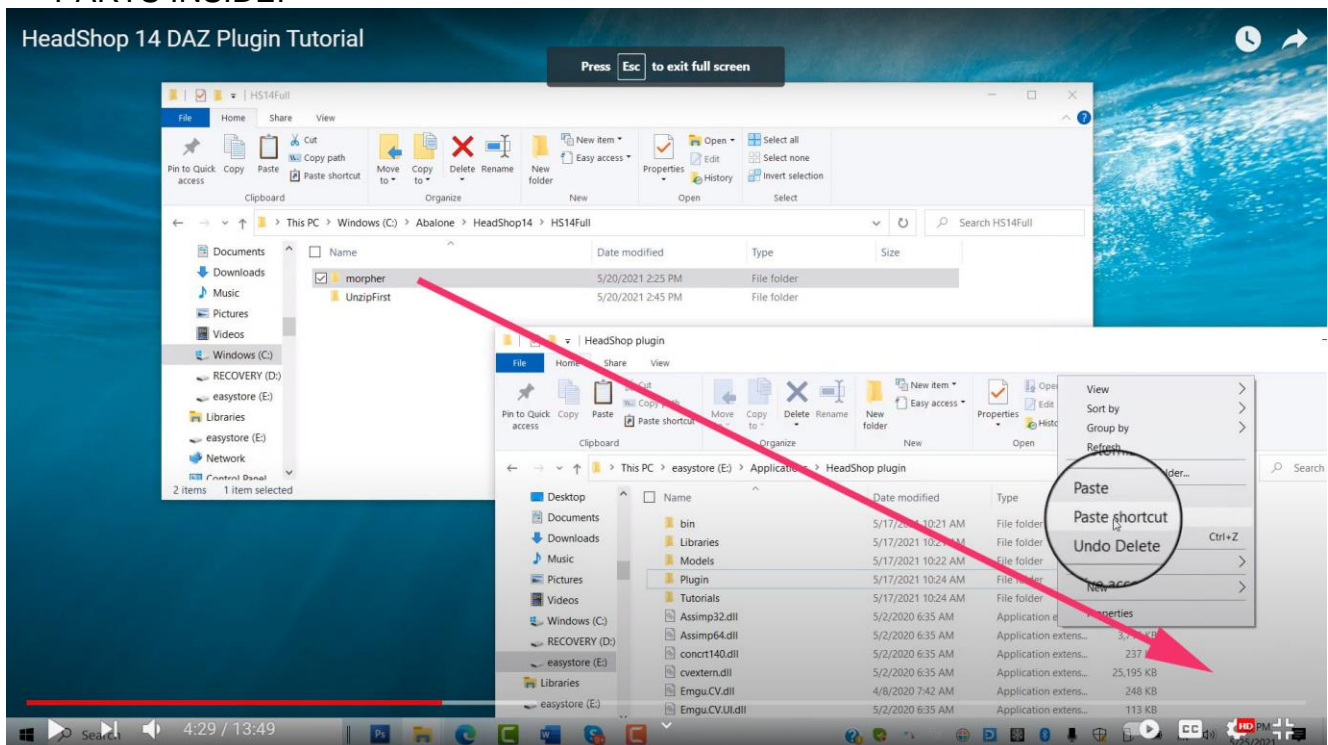
- Now we can start the actual installation. Opening and unzipping the downloaded HeadShop package, you find two folder: "morpher" and "UnzipFirst". Opening "UnzipFirst" there is an installer and a README file. Launch installer.



4. The installer will walk you to the few steps needed. Enter you serial key (found in DAZ3D.com under “MyAccount/Serial keys”). Next is the critical step of browsing for destination. As we discussed, it could be either one of the locations we found. In the picture below we browse for the location we discussed in Point 1 (see above), C:/Program Files/DAZ 3D. Click “Install”. In a few seconds the app is installed.



5. There is one more task: open the HeadShop package and copy/paste the entire folder of “morpher” into the newly created E:\ Applications\HeadShop plugin folder. DO NOT EXTRACT THE CONTENT OF THE FOLDER, IT NEEDS TO TRANSFER AS A FOLDER WITH ALL PARTS INSIDE!

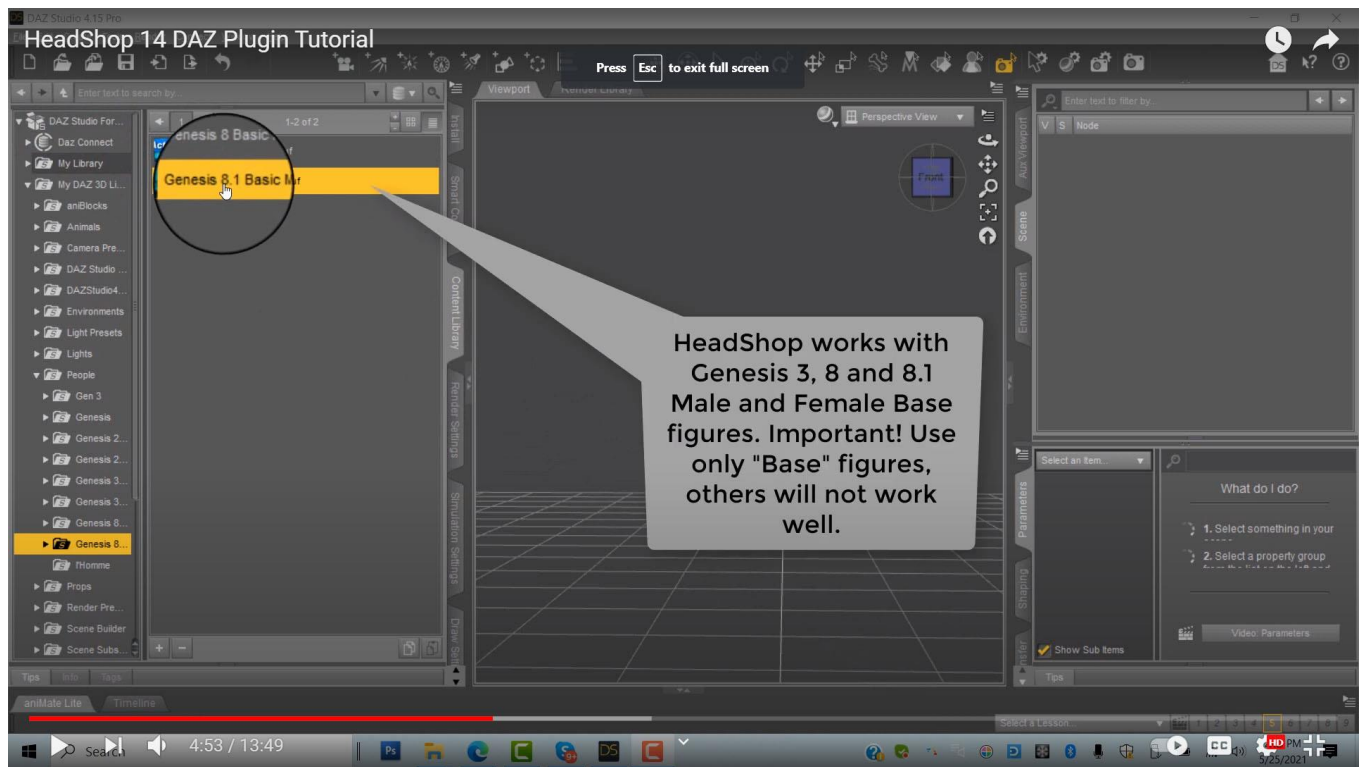


You are all done. Time to run HeadShop.

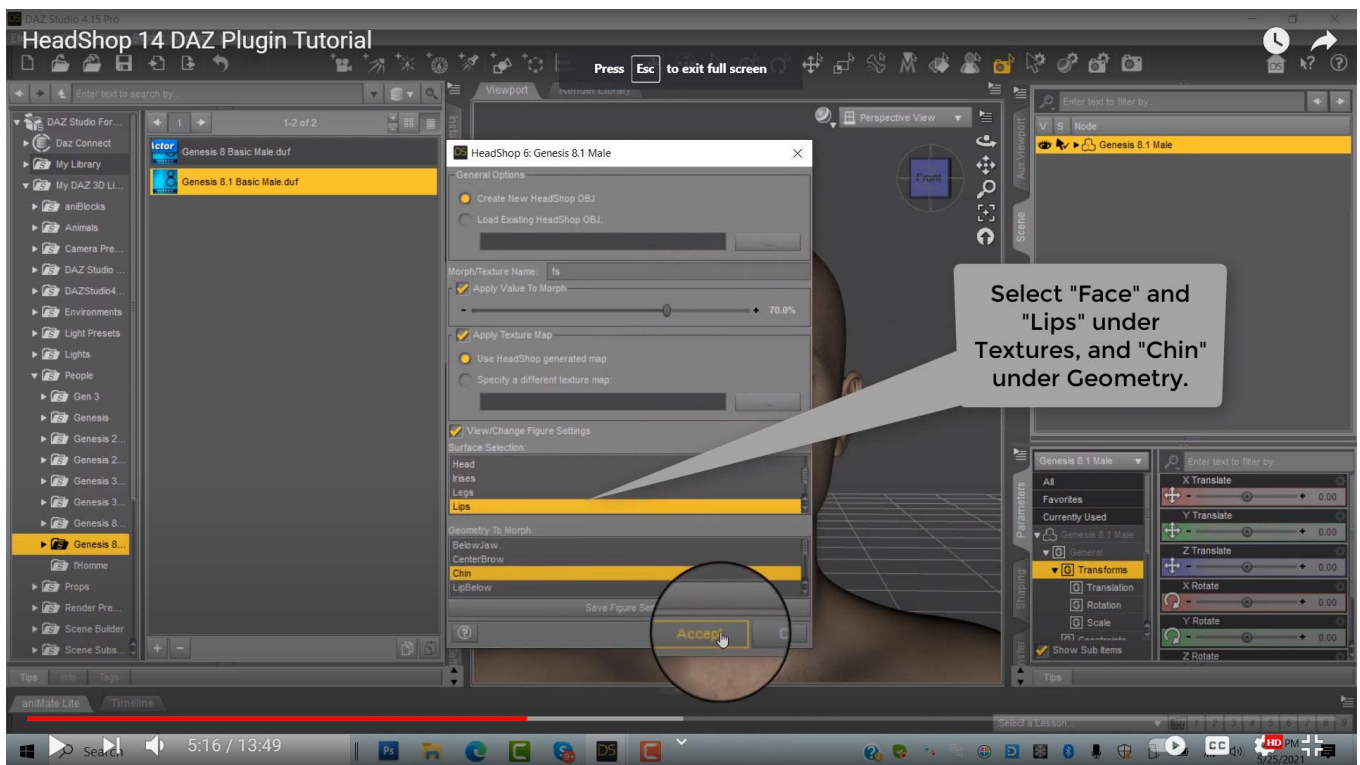
Operation of HeadShop 14 DAZ plugin

A few words about operation: You will find that not all photos translate well into 3D heads. In general higher resolution photos make much better candidates. If one photo does not work well, we suggest that you try another photo. You may also encounter other issues (we talk about these in Chapter 4: Troubleshooting). HeadShop 14 offers new features over previous versions, but added features sometimes add complexity and complications, so the best advice is to watch the how-to videos and also when encountering artifacts consult Chapter 4 to read about remedies.

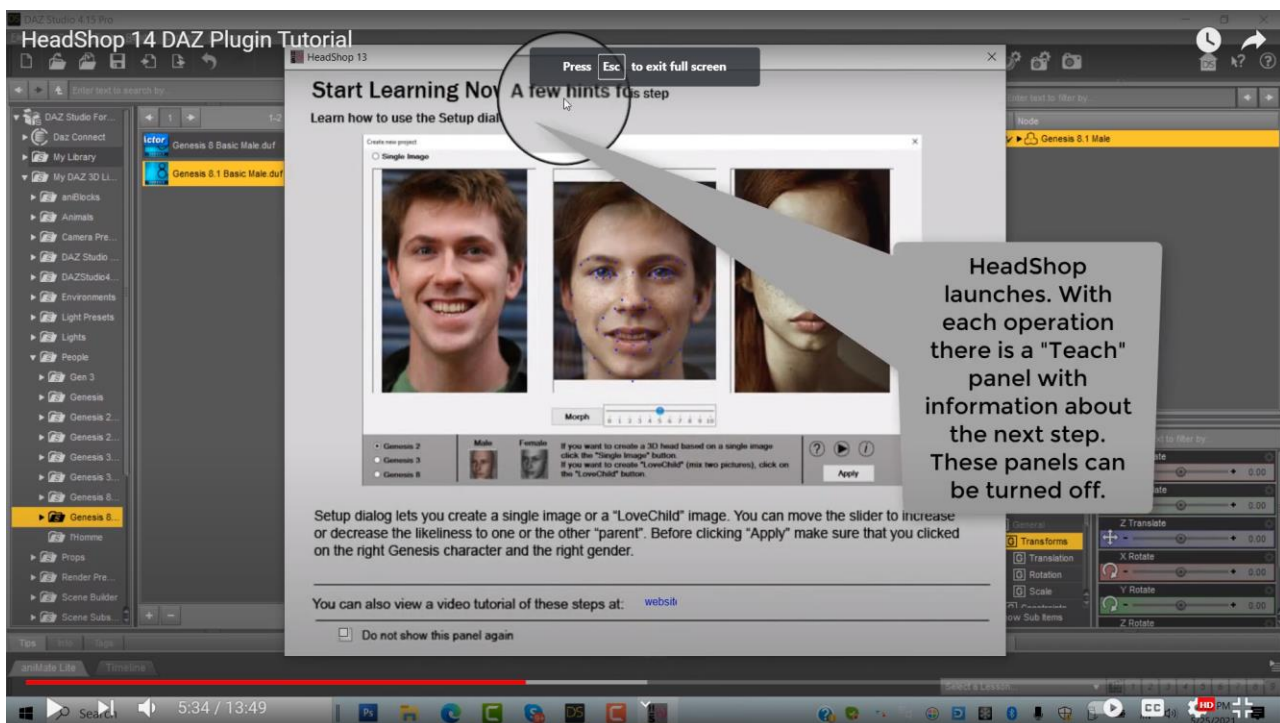
Now time to start!



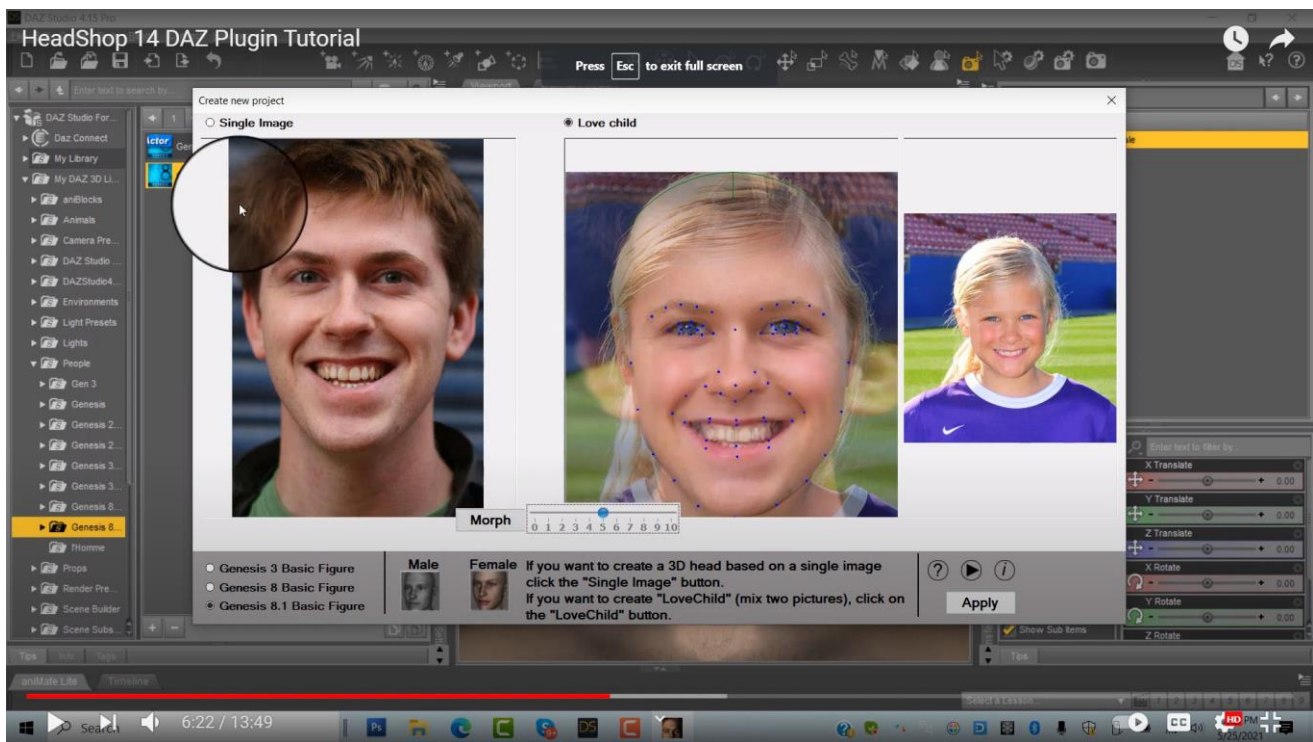
1. Start DAZ Studio and place Genesis 8.1 Basic Male on stage. Make a note that HeadShop works with Basic Male and Female figures and not with derivative 8.1 based figures.
2. Start HeadShop from under the Edit menu. In the case of Genesis 8.1 figures you need to manually select "Face" and "Lip" under Textures, and "Chin" under Geometry as shown. Click "Accept".



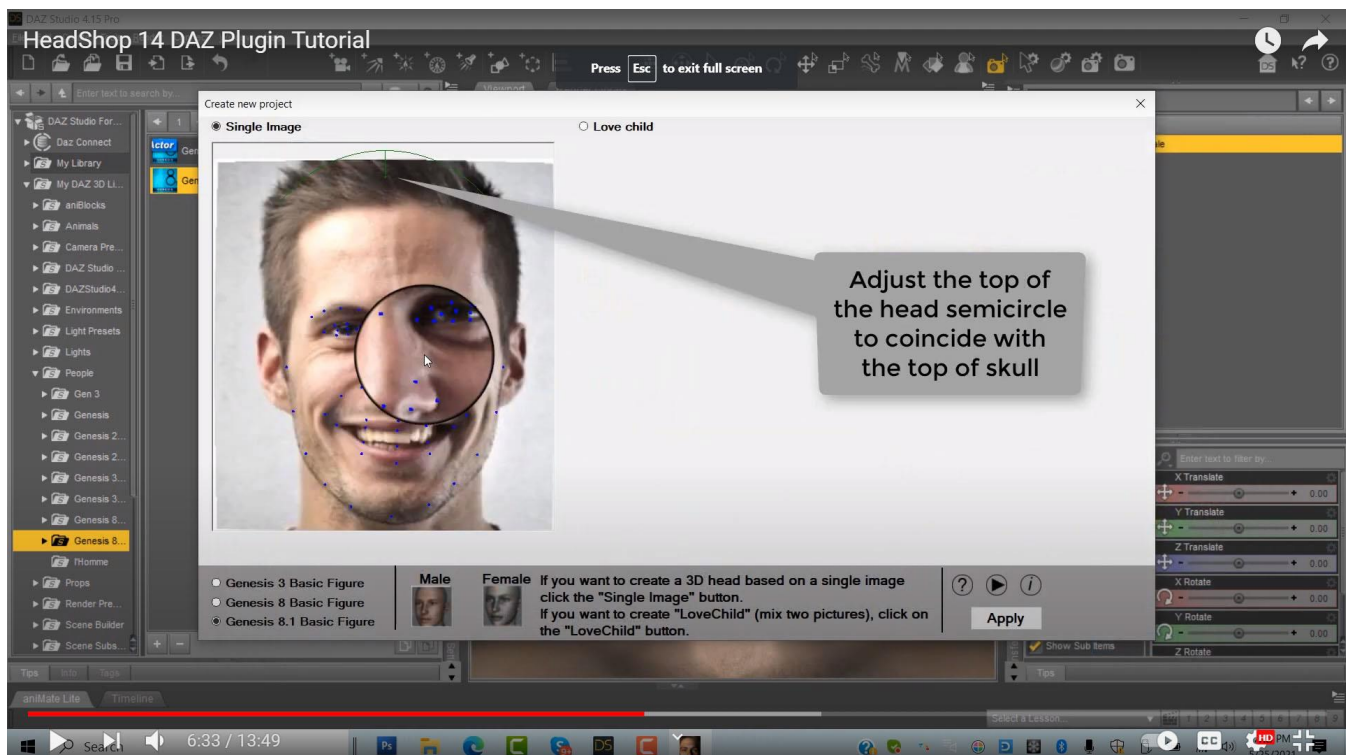
3. HeadShop plugin launches. What you first see is a “Teach” panel. These panels contain information about the next step. You can also turn off these panels in the box in the lower left corner.



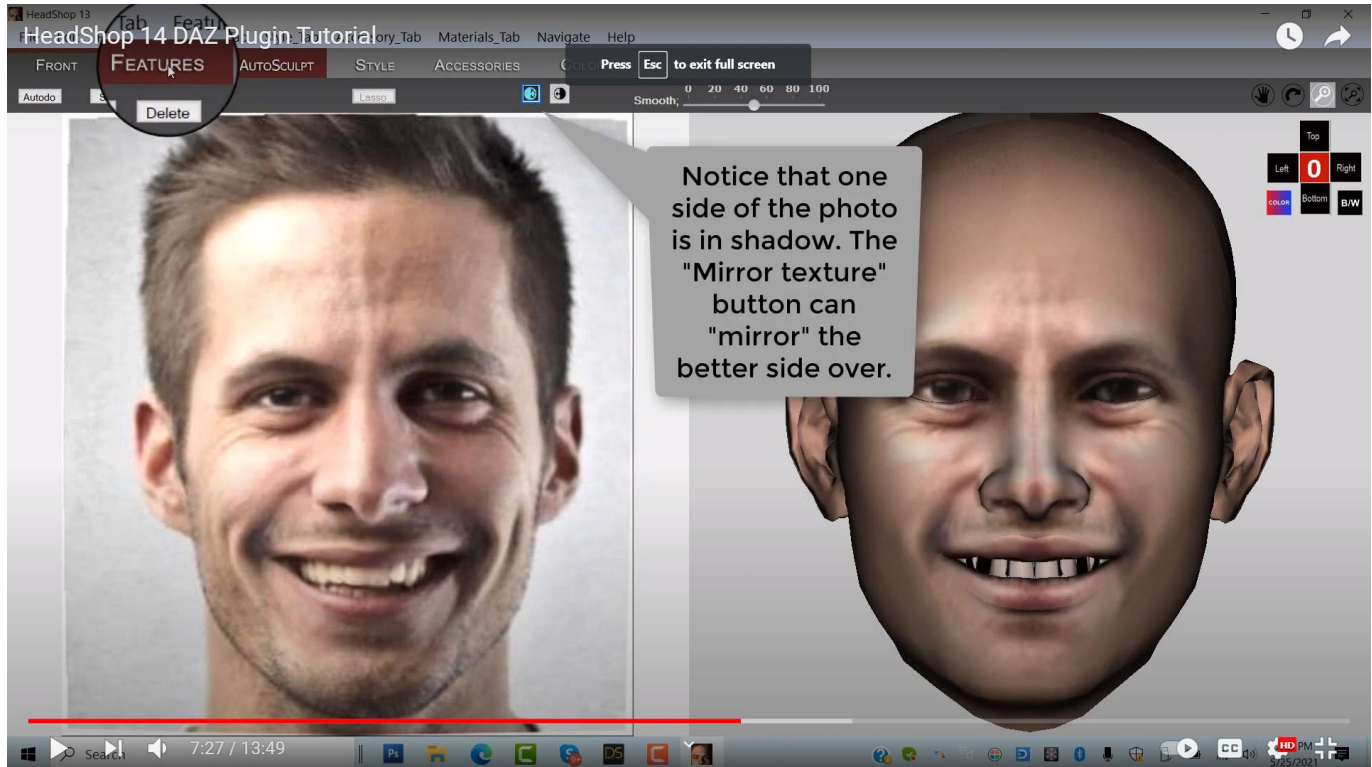
4. Next comes the “Selection screen”. Here you have two options; either use a single photo or create a “Love Child” which is a mix of two different photos. The degree of resemblance to the one or the other photo could be changed via the slider.



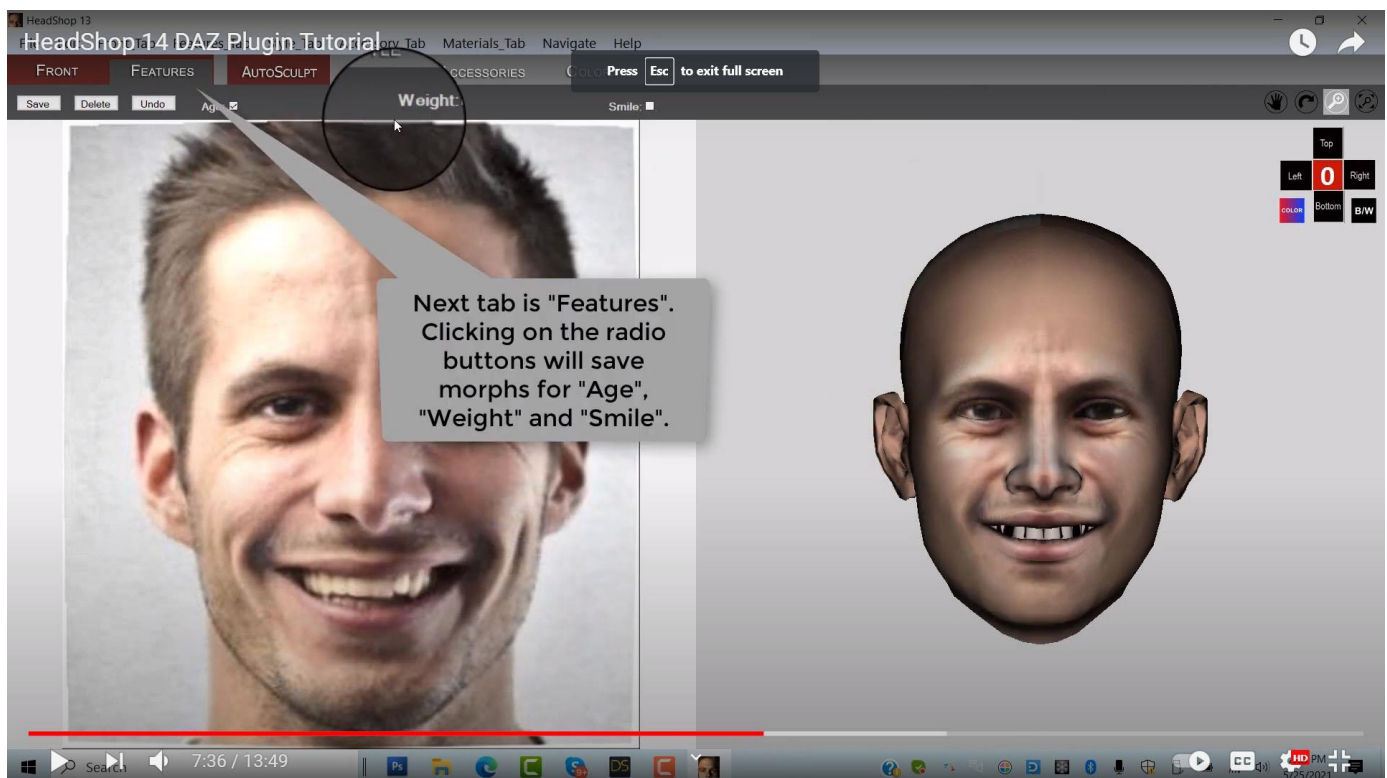
For the purpose of this tutorial we will go with the single photo options and browse for a male photo with open smile. This is considered a difficult photo that other applications cannot handle very well. What makes a photo difficult? A few things: instead of straight on, the head is rotated away from us, it is also tilted back, and there is the open smile, which most apps simply can't handle. HeadShop, by contrast, automatically detects the difference between close and open smile as well as the gender of the photo. Click Apply.



5. Now the work screen opens, with the original photo on the left and the 3D head on the right. Note that the work screen has 6 tabs on top, each for a phase of the work. (Of course you don't need to use each phase. You can click "Export" at any time. Since the photo is unevenly lit, we can mirror the better side over using the mirror function.

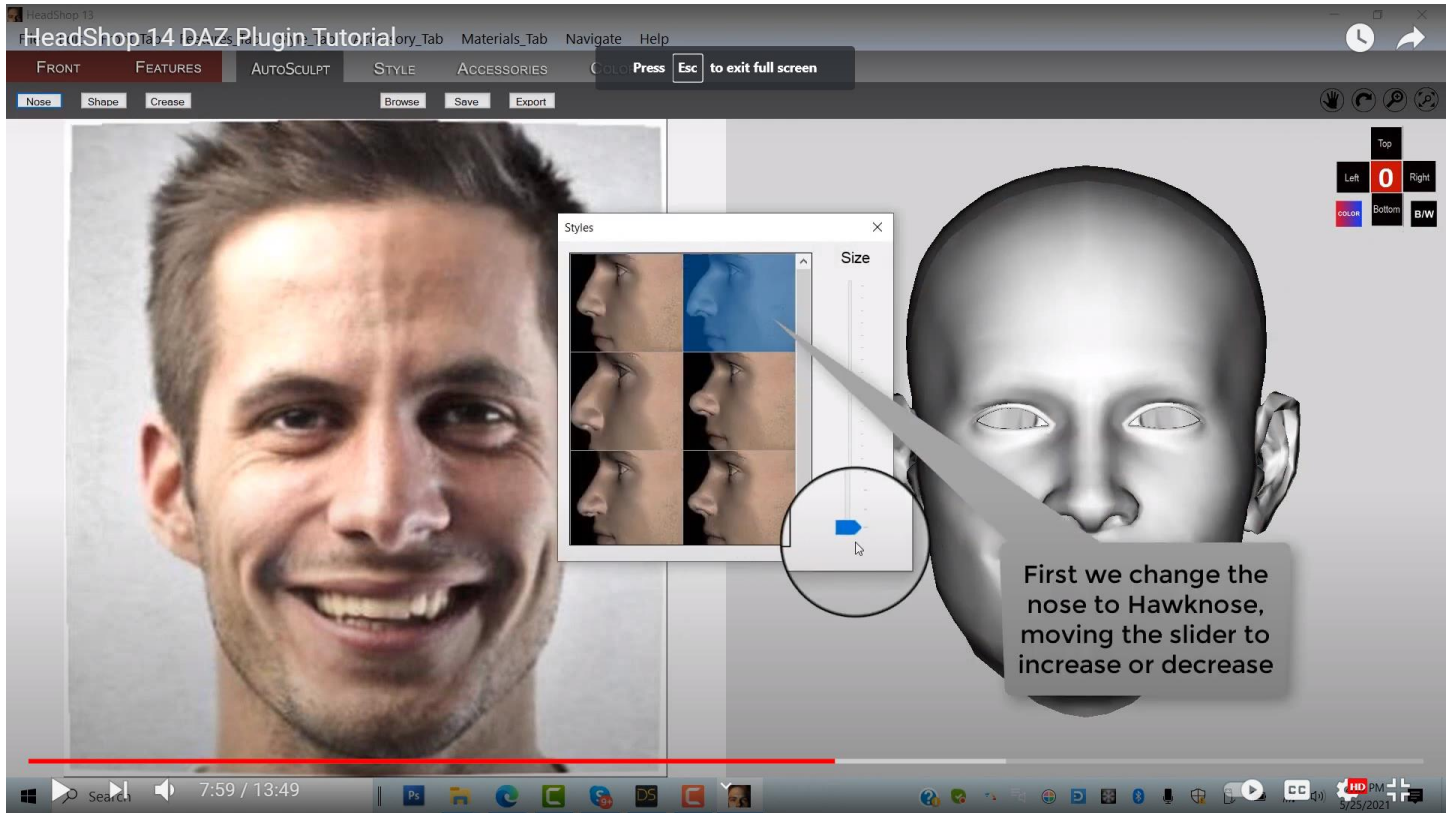


6. Next tab is the "Features" tab. Here you can click on 3 radio buttons, Age, Weight and Smile. A morph will be saved after Export.

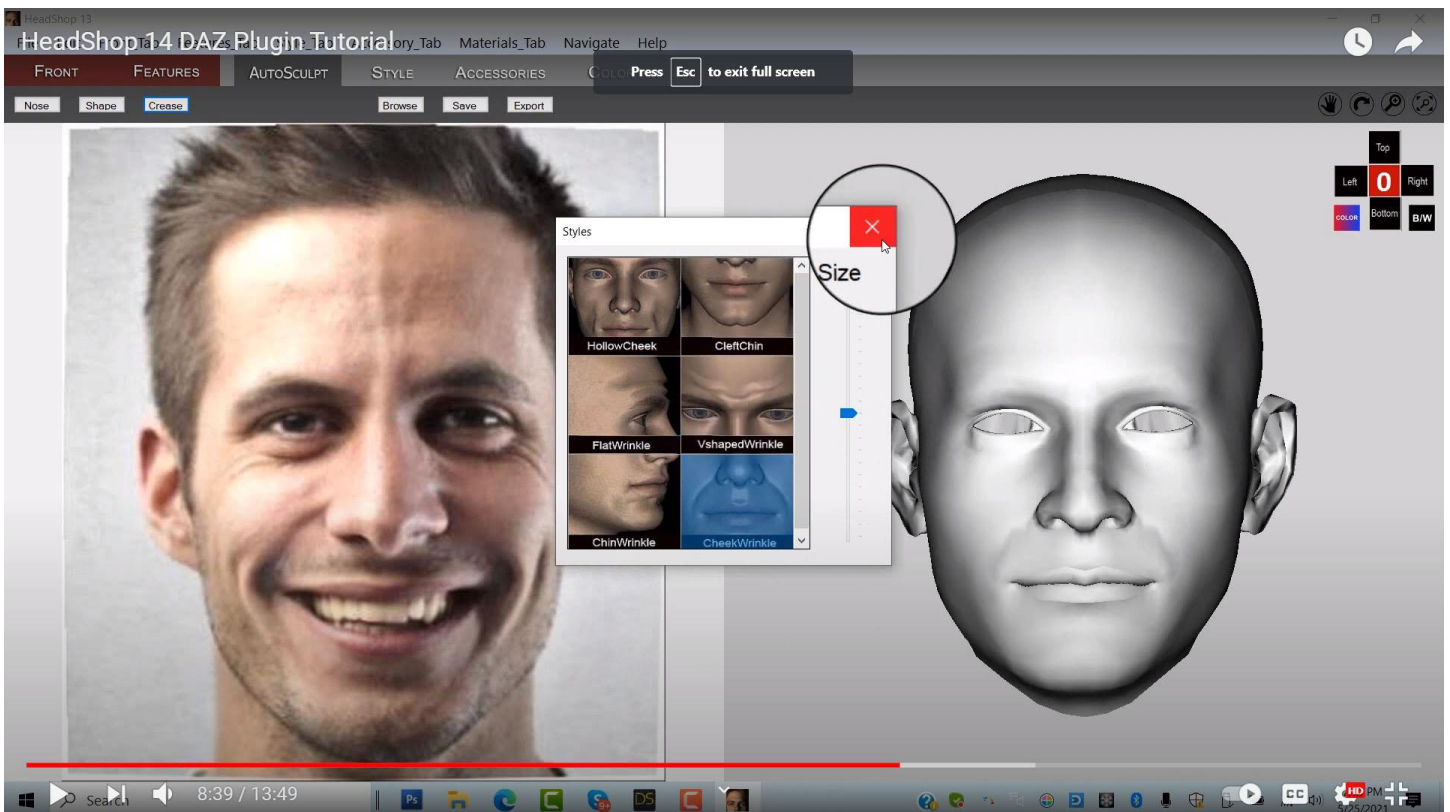


7. Next is the brand new tab of AutoSculpt. Here we will add nose shapes, face shapes like eyebags, chin shape, etc and creases. To better see the changes, you can change the right

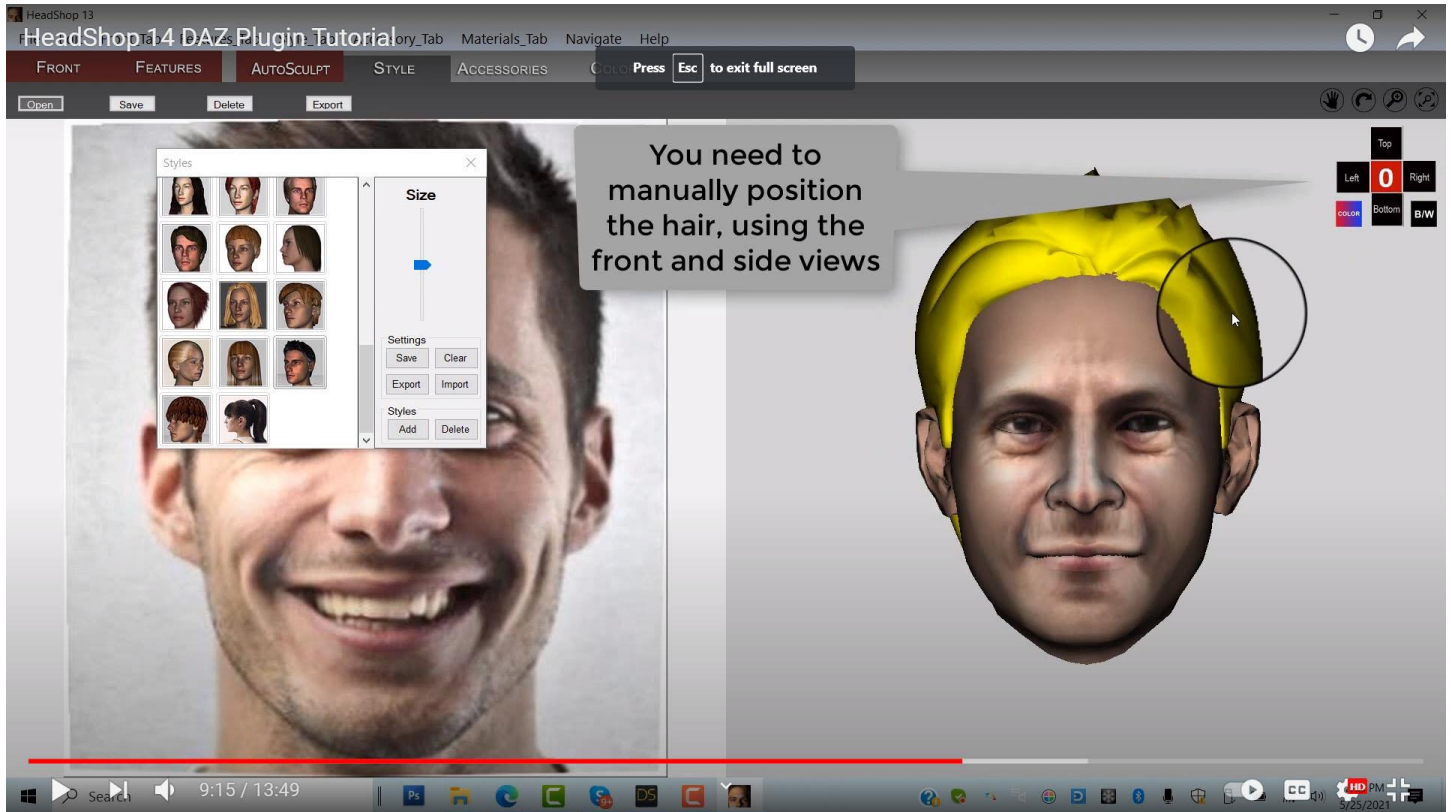
view to black and white. First we open “Nose” and select a “Hawk nose”. Moving the slider we can increase or decrease the effect.



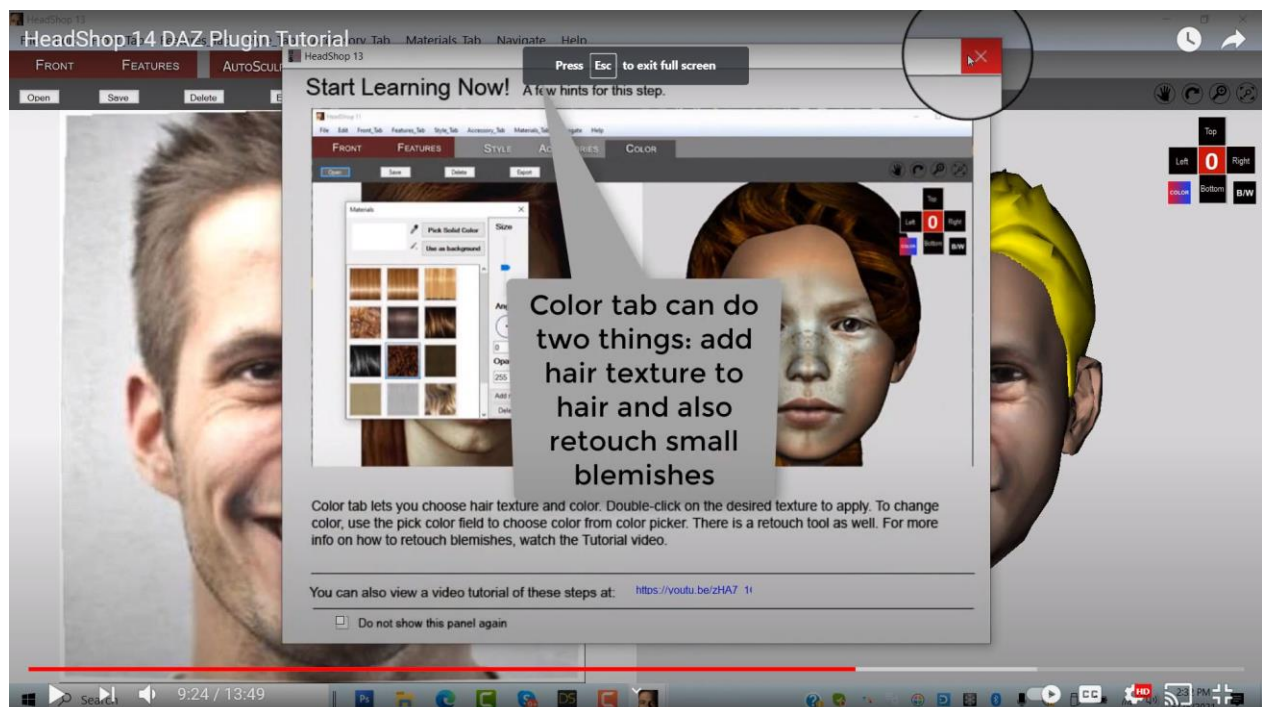
8. Next we open the “Shapes” library and add some eyebags under the eyes. Finally we open “Crease” and add cheek creases next to the mouth. Notice that his smile disappeared as we added effects. No worries, we will add the smile back in DAZ Studio.



9. Next tab is the “Style” tab where we can choose and drag/drop any hairstyle to the 3D head. Hair size can be changed, and the hair needs to be manually adjusted for a perfect fit.



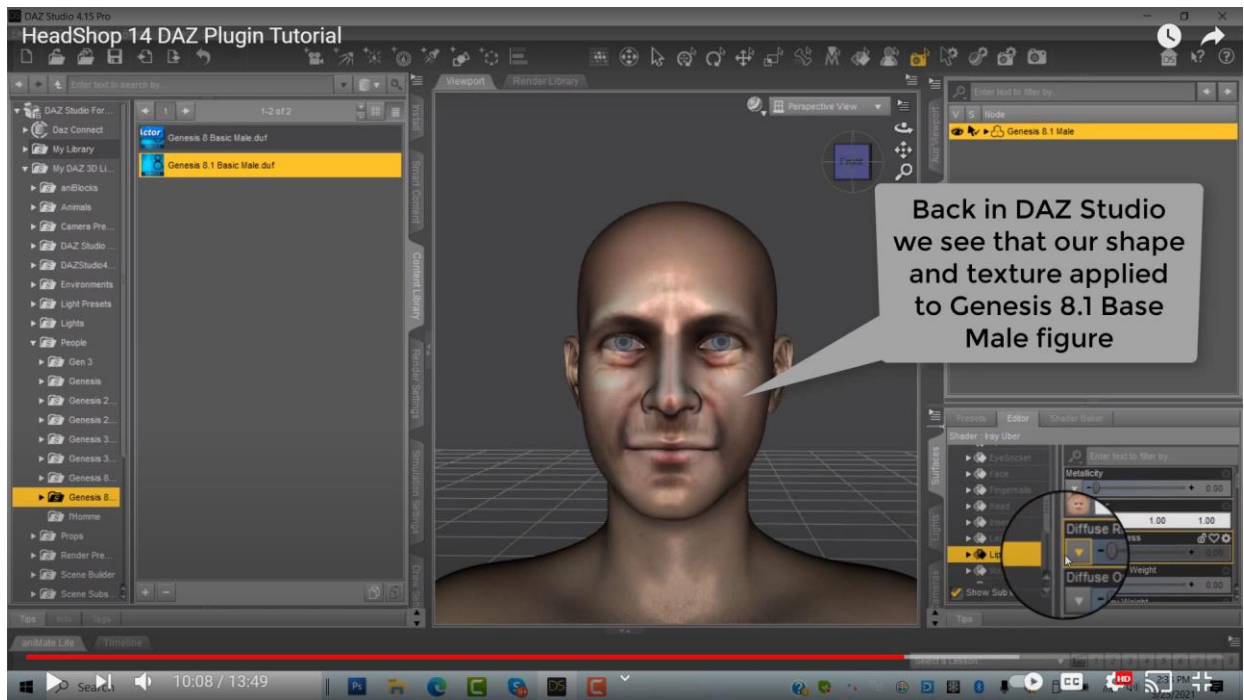
10. Final tab is the Color tab. It can do two things: one: when hair is selected (yellow highlight), it can add hair texture and two: it can also retouch small blemishes like the artifact created by mirroring. There is a color picker to pick the right color and a brush for touching up.



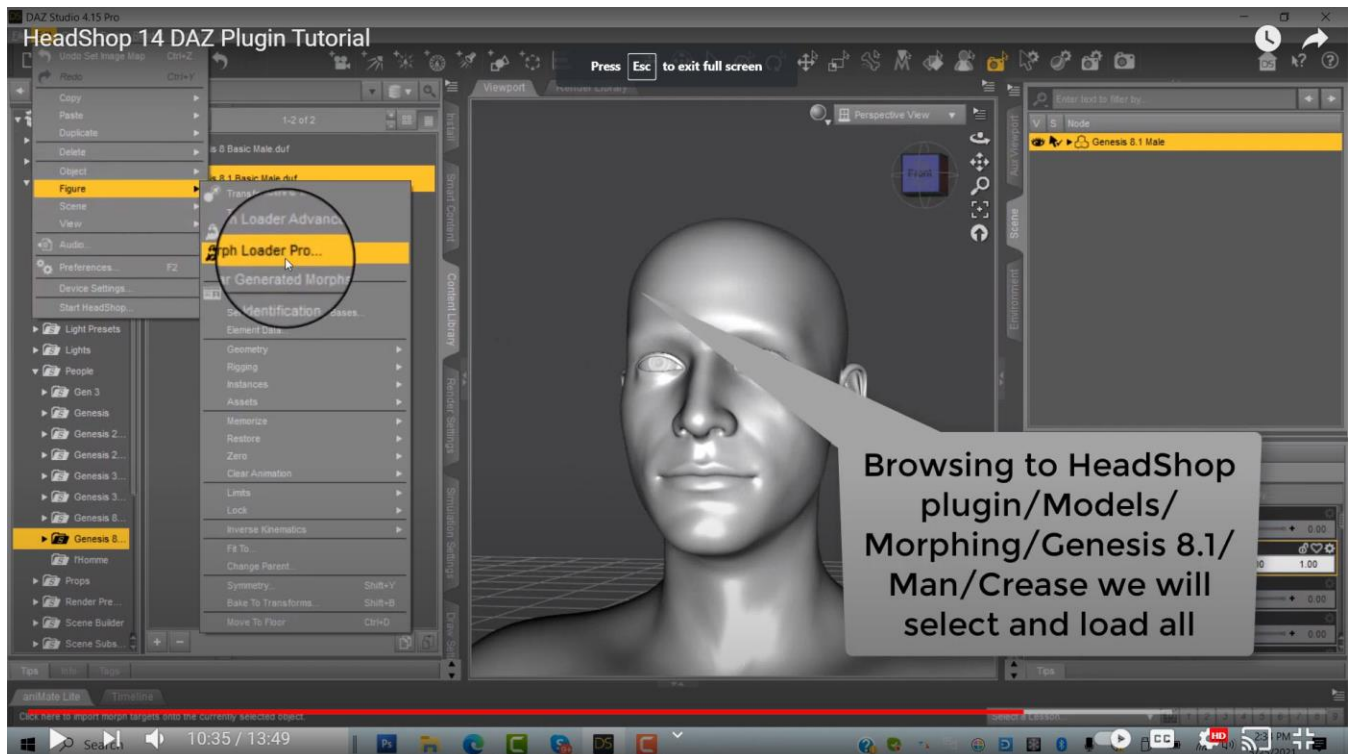
We are ready to click “Export”. This will close HeadShop plugin and transfer both shape and texture to Genesis 8.1 in Studio.

Continue in DAZ Studio

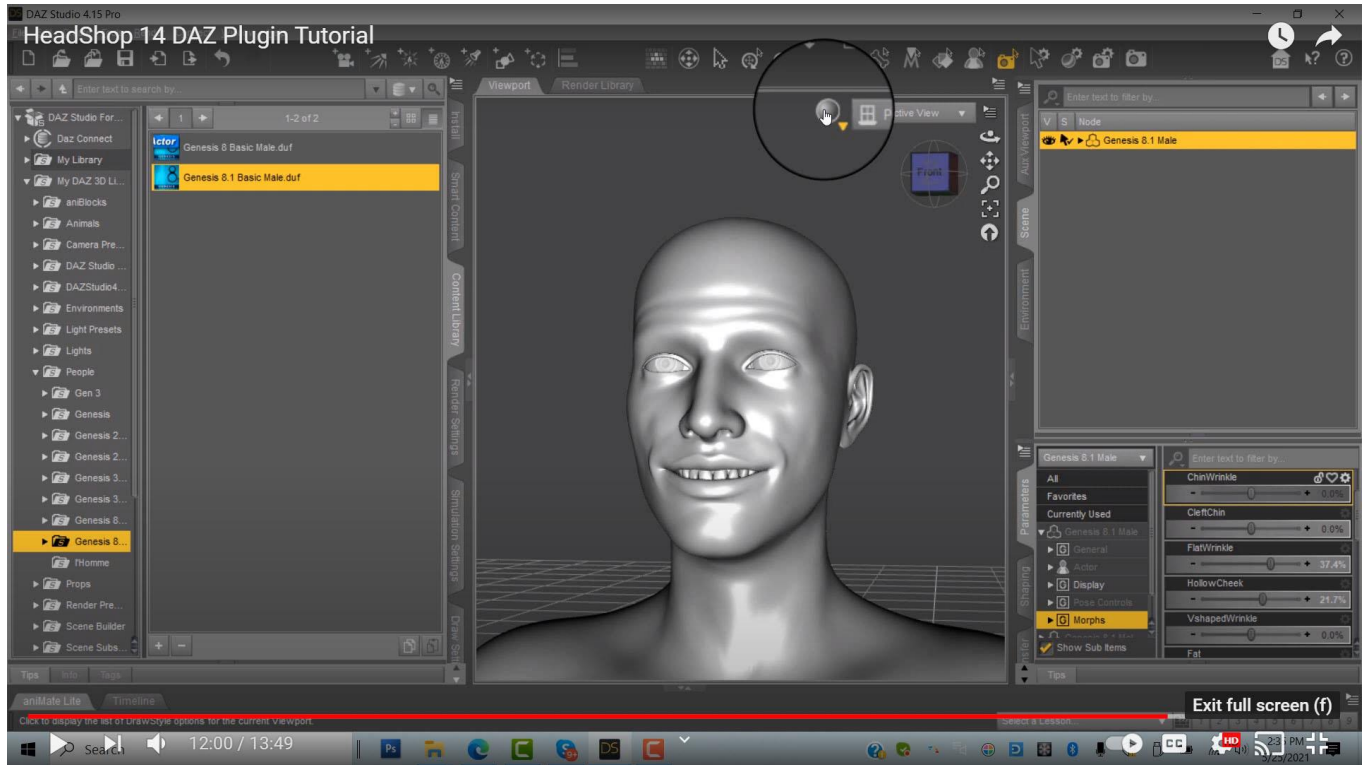
1. We can view the figure in Studio. If we decide to use the retouched texture, we use Studio's Texture tab, open "Face" and browse for our new texture folder at Users/Public/My DAZ 3D Library/Runtime/FaceShop/fs/SmoothedModelTextures. The retouched file's name ends with "...retouch". Double click to replace original texture.



2. Now it time to import some additional morphs to enhance the head shape. Using "Edit/MorphLoader Pro" we open a bunch of different morphs at once from the HeadShop plugin/Models/Morphing/Genesis8.1/Male/ folder, like creases, shapes, and basics (Fat, Old and Smile). You can set the view to Flat Shaded to better see shapes.

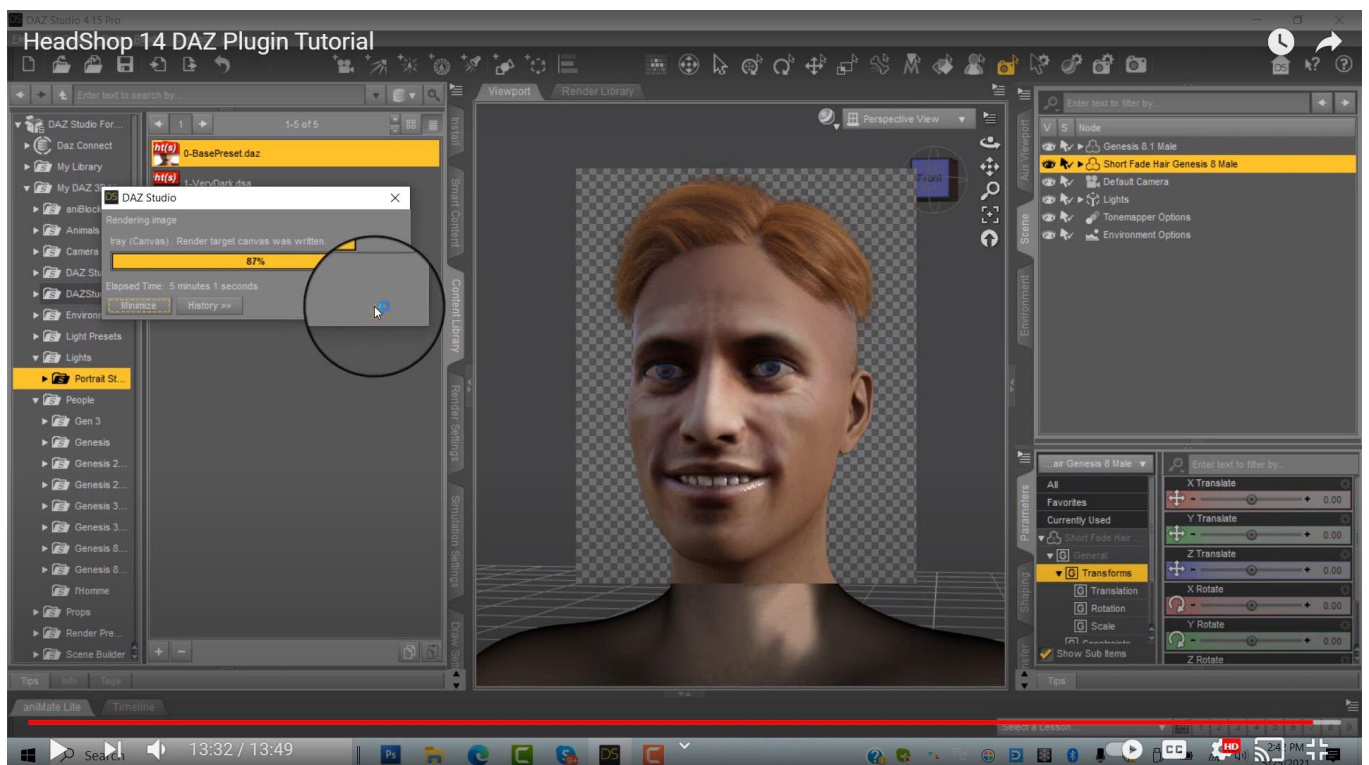


3. In Studio's Parameters tab we go to Morphs and can start playing with the different morphs one by one. First you can start by adding back the missing smile. Have fun!



4. Finally using File/Import, you can add the hair OBJ created in HeadShop. It is in Users/Public/My DAZ 3D Library/Runtime/FaceShop/fs folder.

You can of course use another hair from your DAZ library.



Chapter 3: Advanced Operations

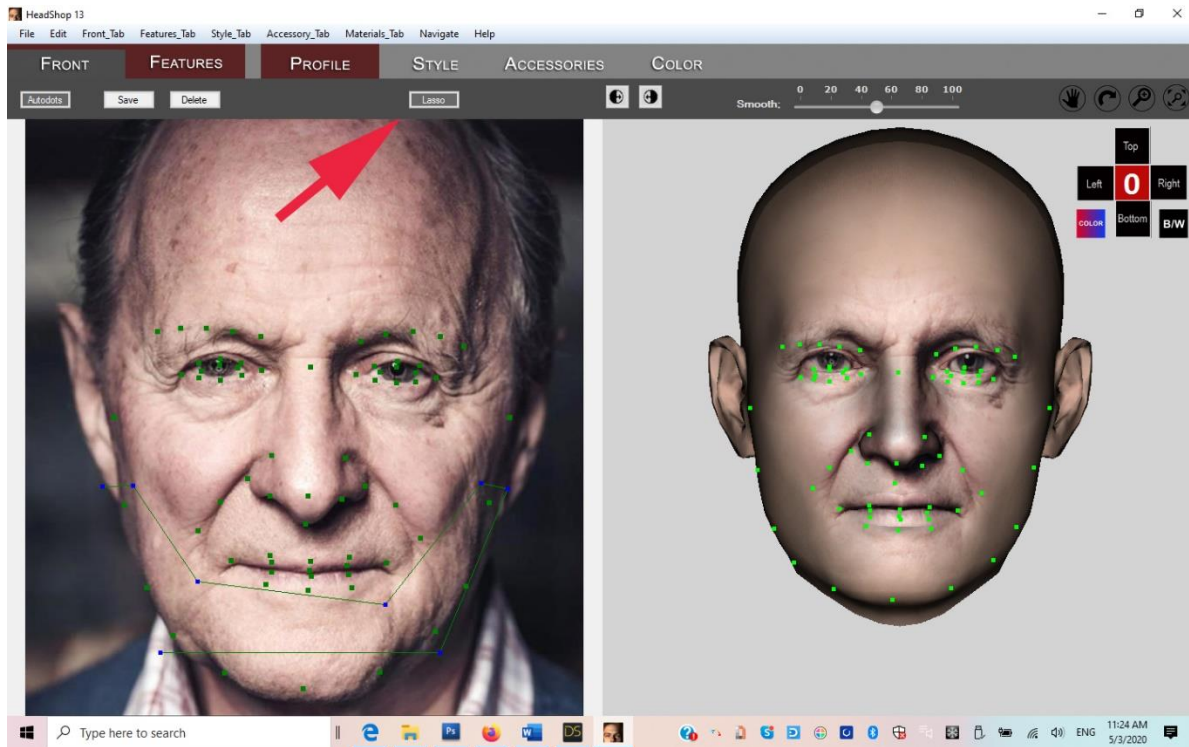
In the following we offer a few hints for Advanced Operations.

Using (carefully) Autodots

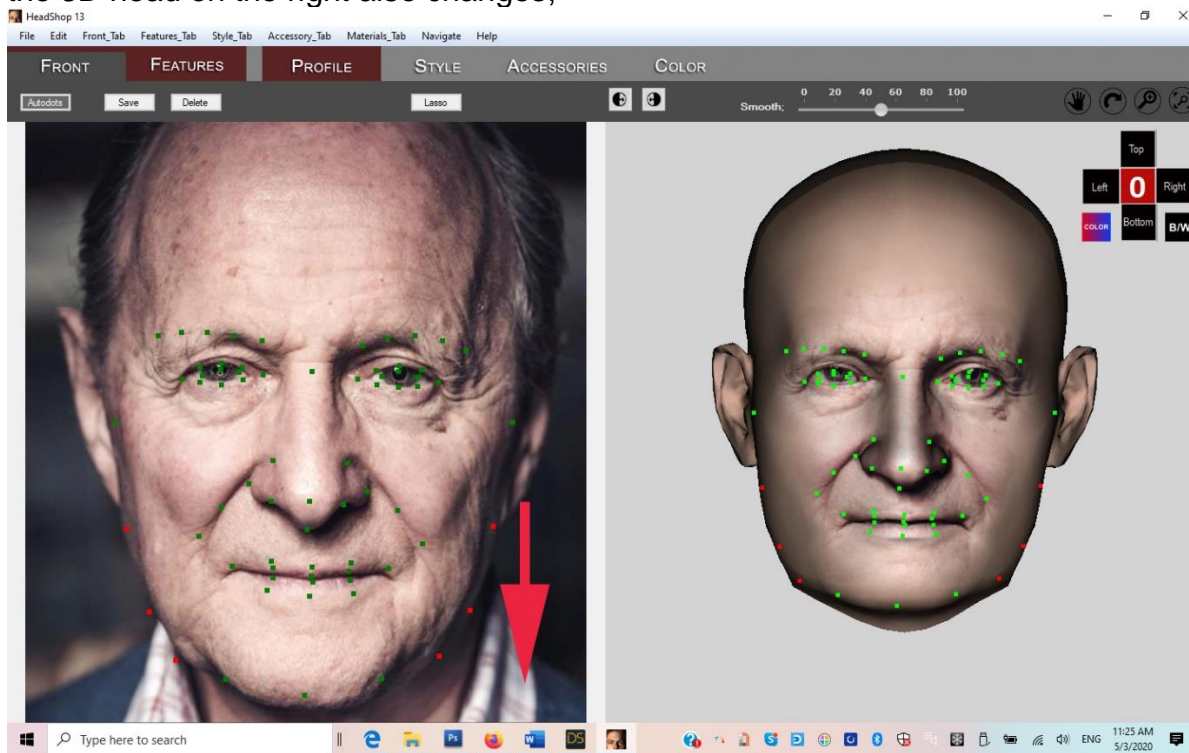
In general Autodots are difficult to use, so use them only if you don't mind some failures.

In this demo we show how to change the shape of the head to mimick sagging skin.

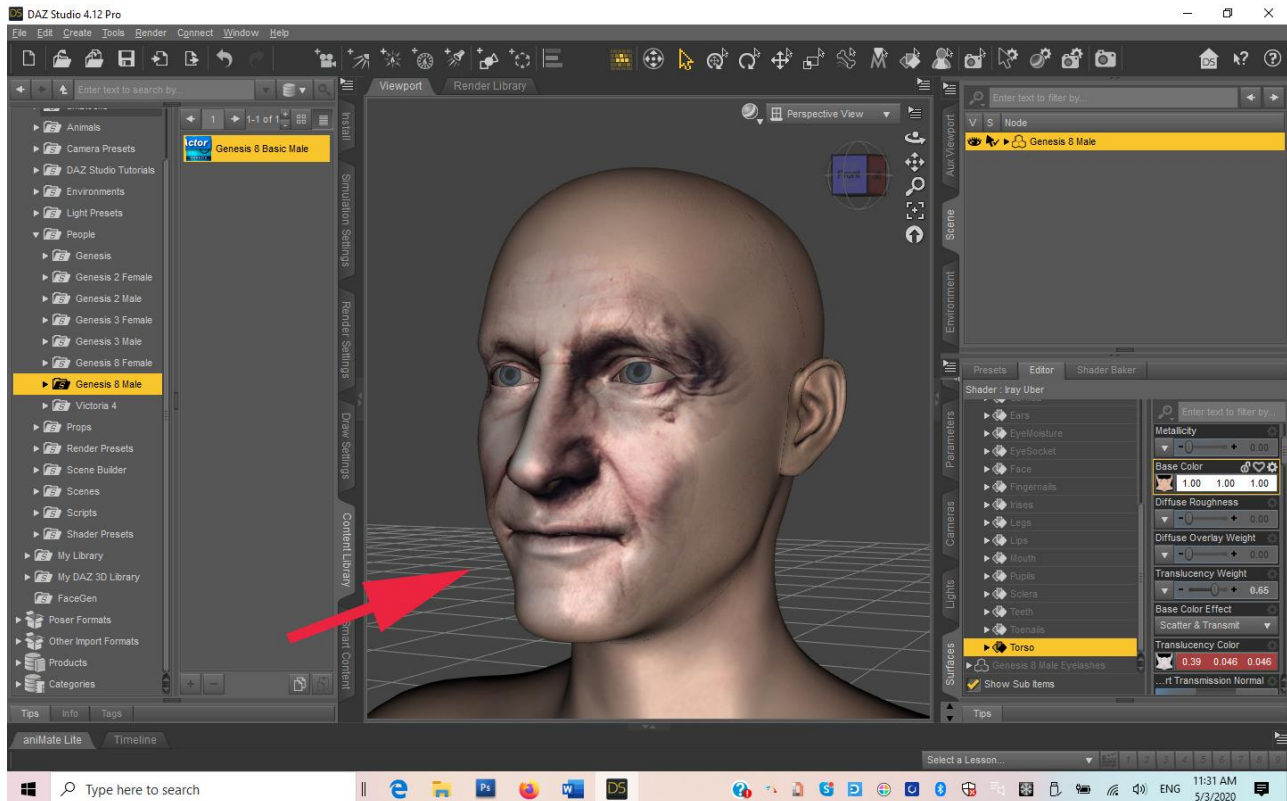
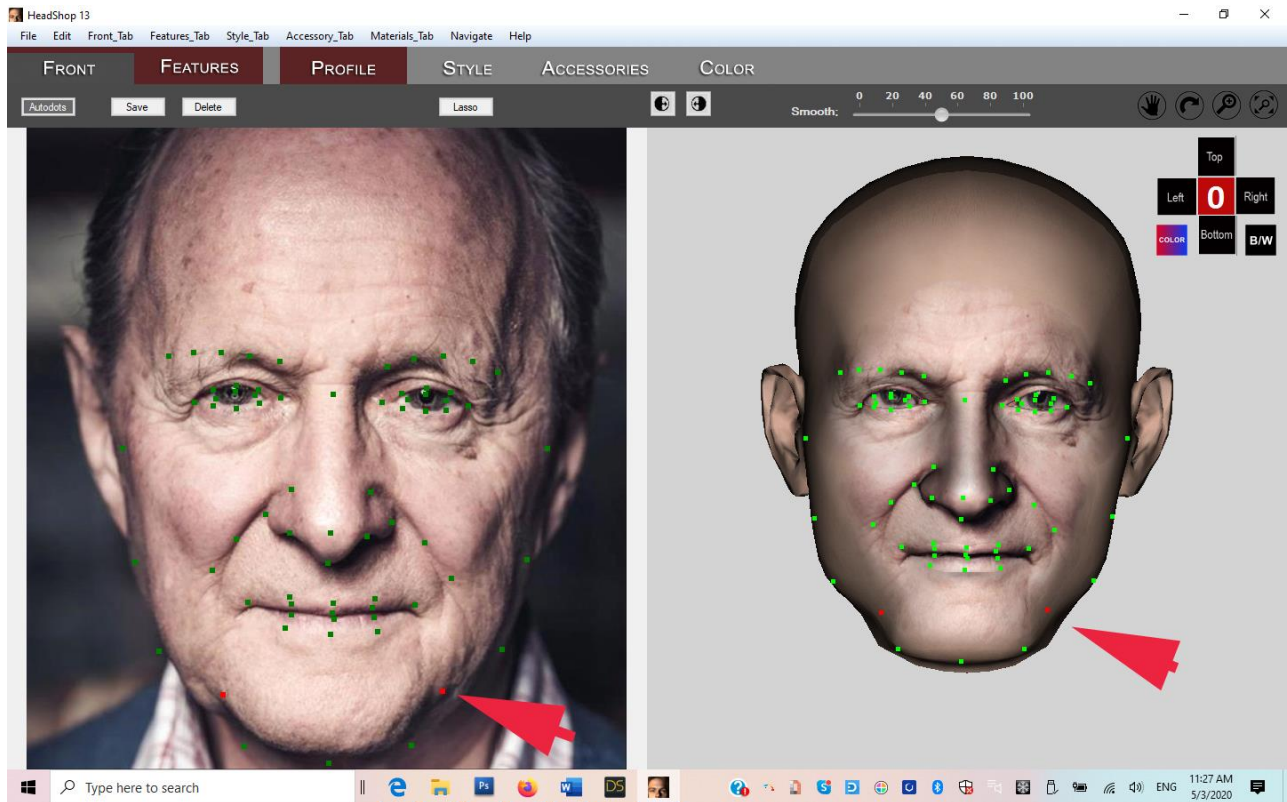
Step 1. Start by clicking on the Autodots button. This will place significant dots on both the photo (left screen) and the 3D head (right screen). Clicking on the „Lasso” button, you can draw around the dots you want to move „unison” to give the sagging look. The dots will be highlighted in red.



Step 2. Move down the dots together on the left screen to the desire position. Observe how the 3D head on the right also changes,



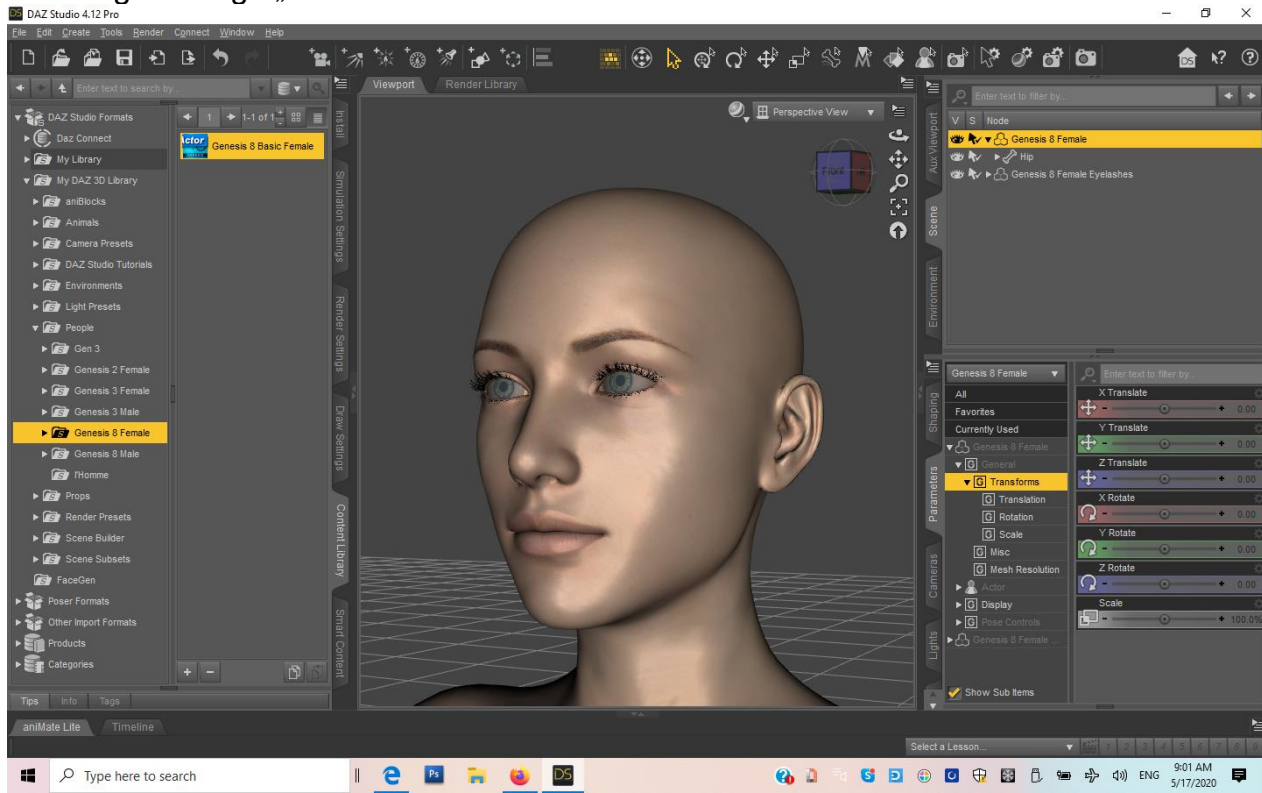
Step 3. Now select the 2 points of the indentation and move the inward. This way you get the desired shape with the sagging sides. Export.



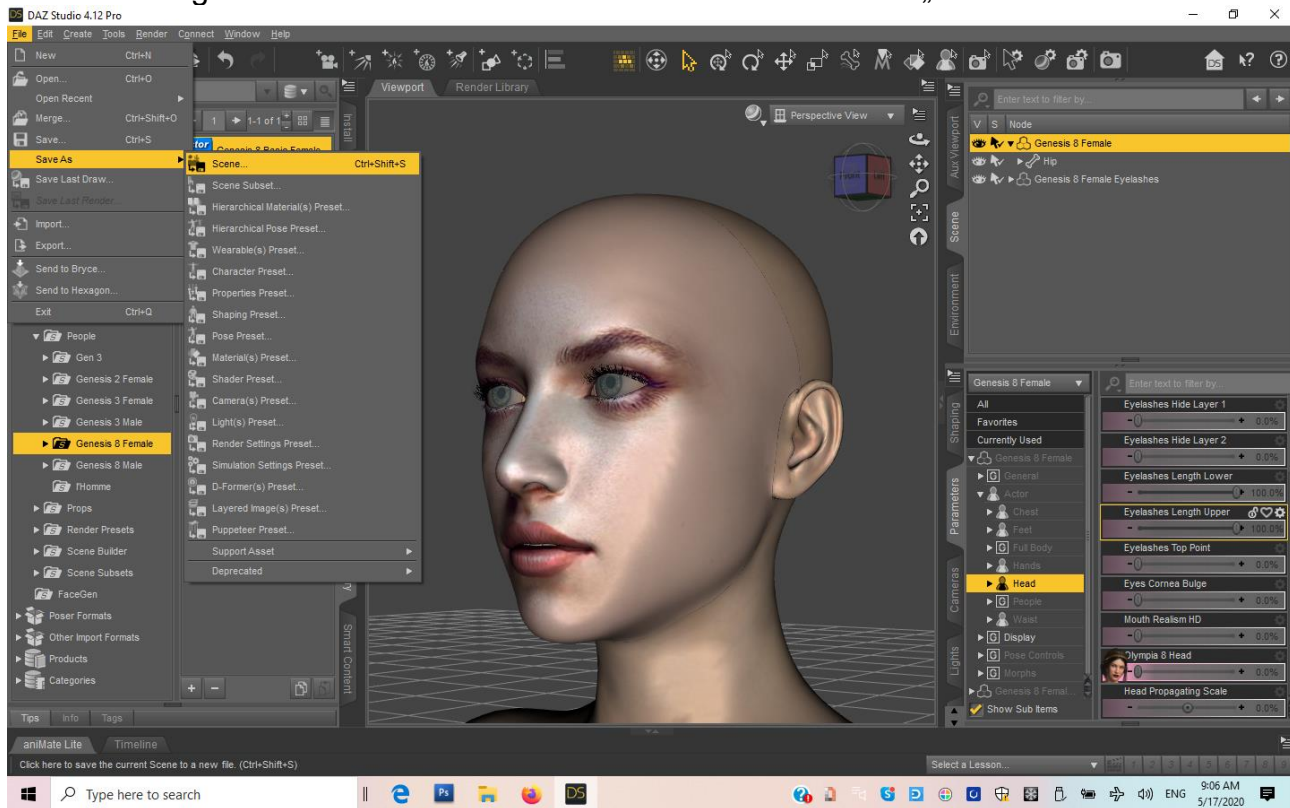
„Layering” Different Characters

This is a technique that we have experimented with; compounding characters in the same workflow. We are not sure if this will be useful in creating new charcters – but it is an option.

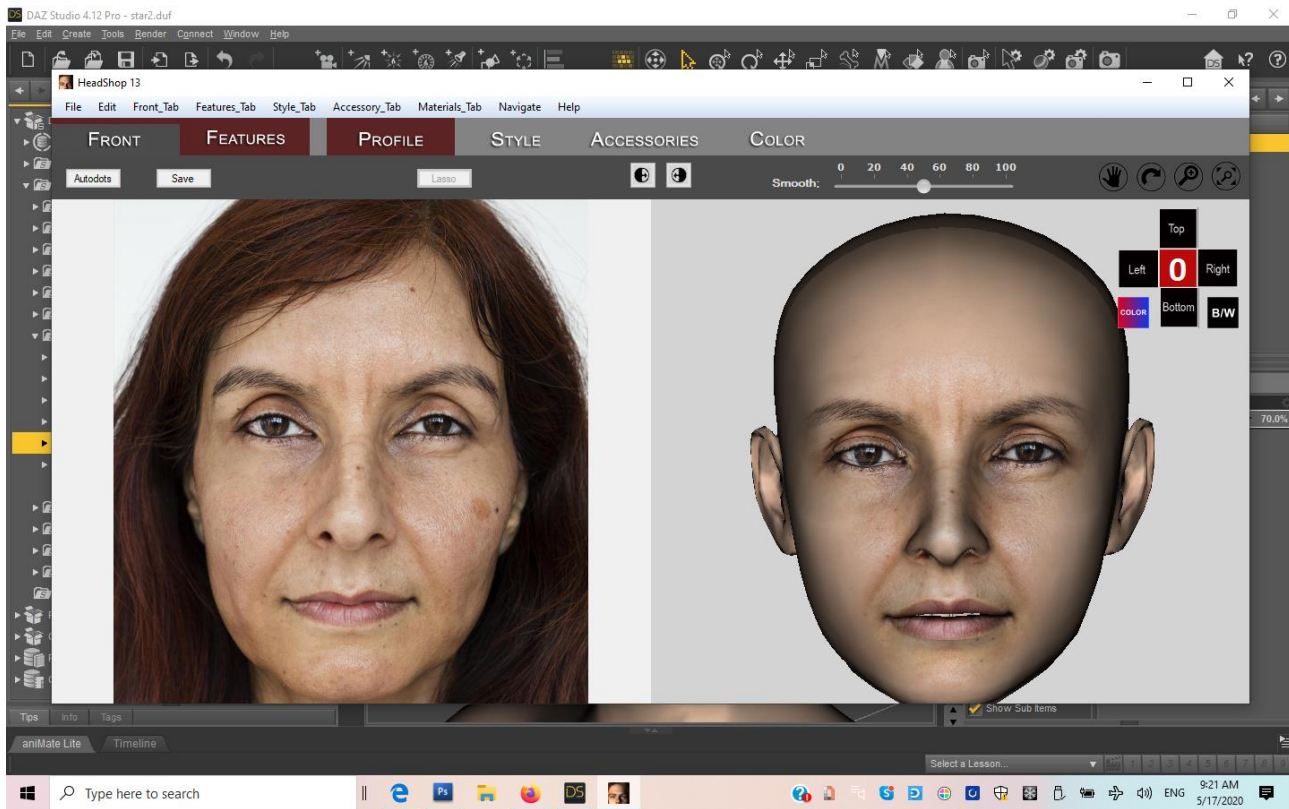
Step 1. We start as usual with a character (Gen 8 Base Female) on stage. Next we launch HeadShop 13 and go through „Round 1”



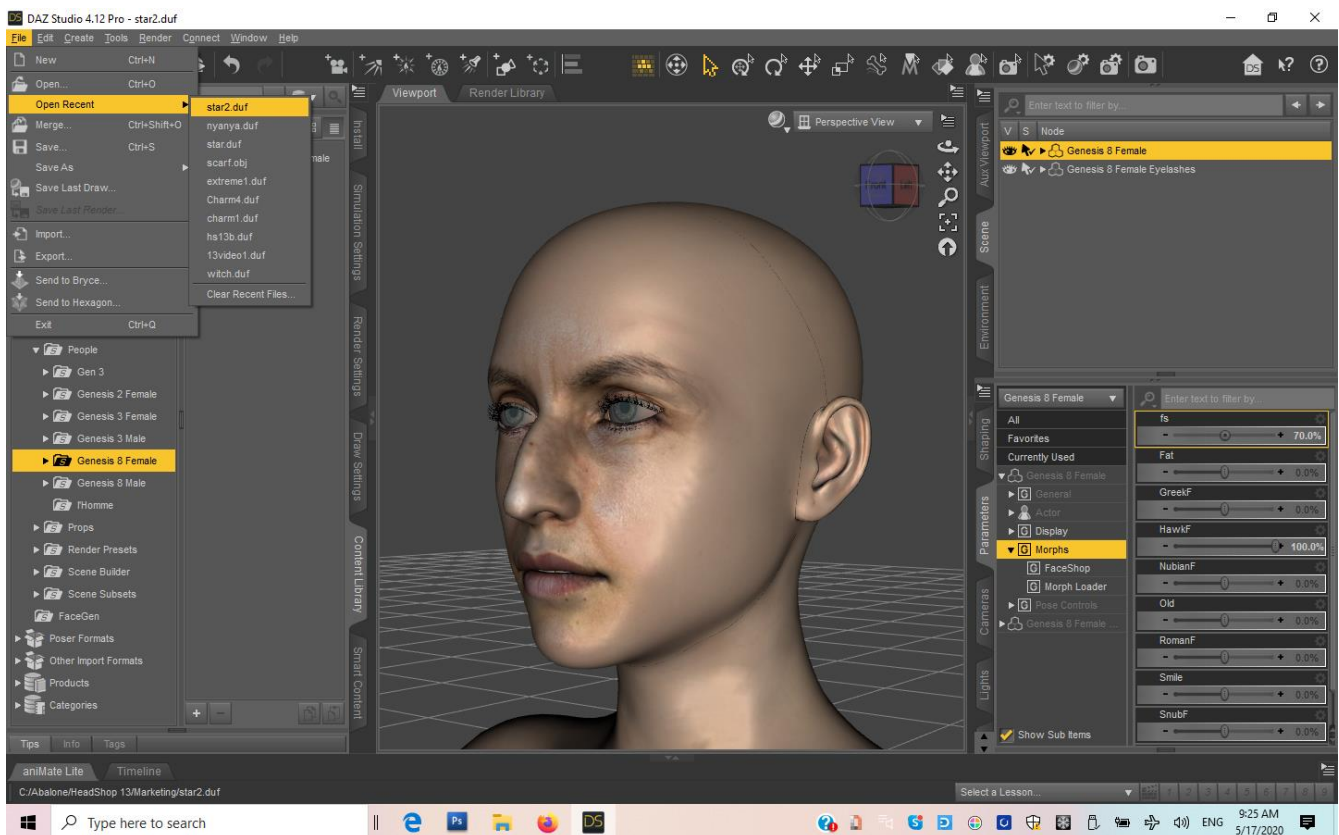
Step 2.After creating the new figure, we save this new figure as a „scene” for later use. Next we delete the original Gen 8 and load the saved scene. Now comes „Round 2” with a different photo.



Step 3. In „Round 2”: we find a different photo and load it with HeadShop. Create new figure and export it.



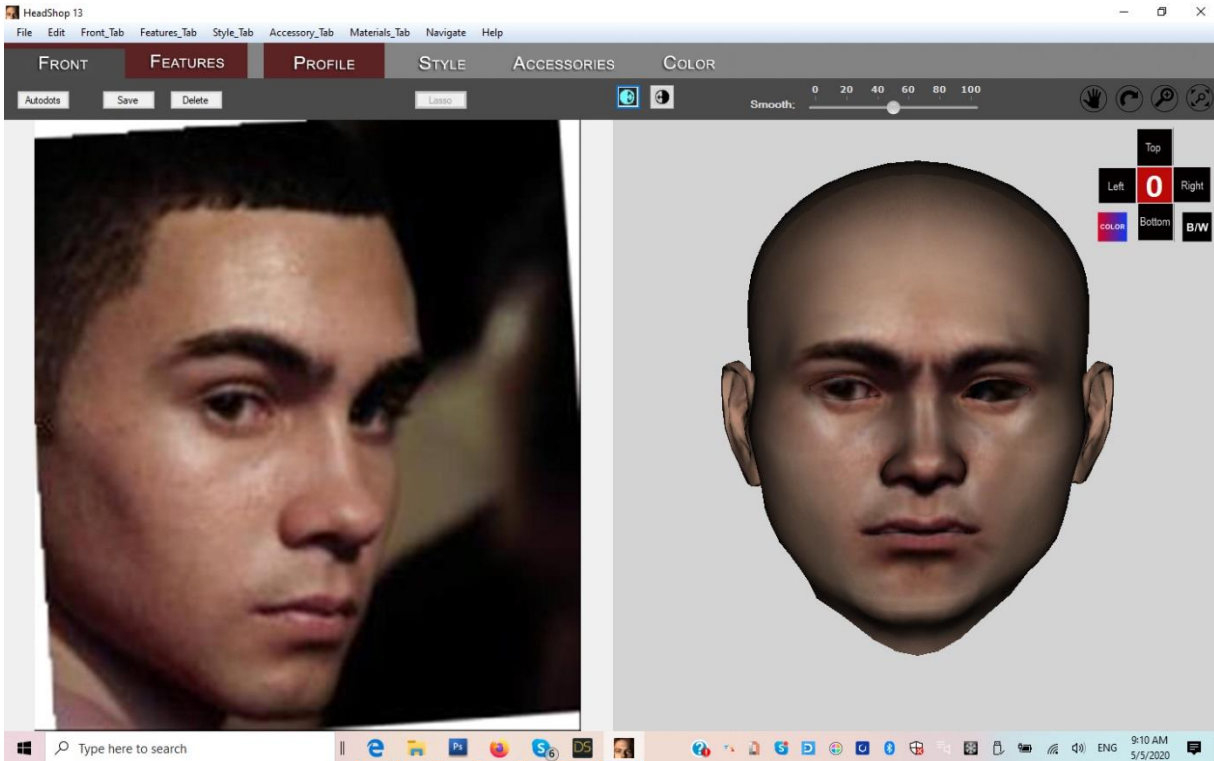
Step 4. Back in DAZ Studio the new head is not loading to the figure. We need to delete figure and reload the scene that we saved before. Low and behold, the new head is added to the saved scene and we now have an amalgam of the two different photos as expressed by shape but with the second photos texture.



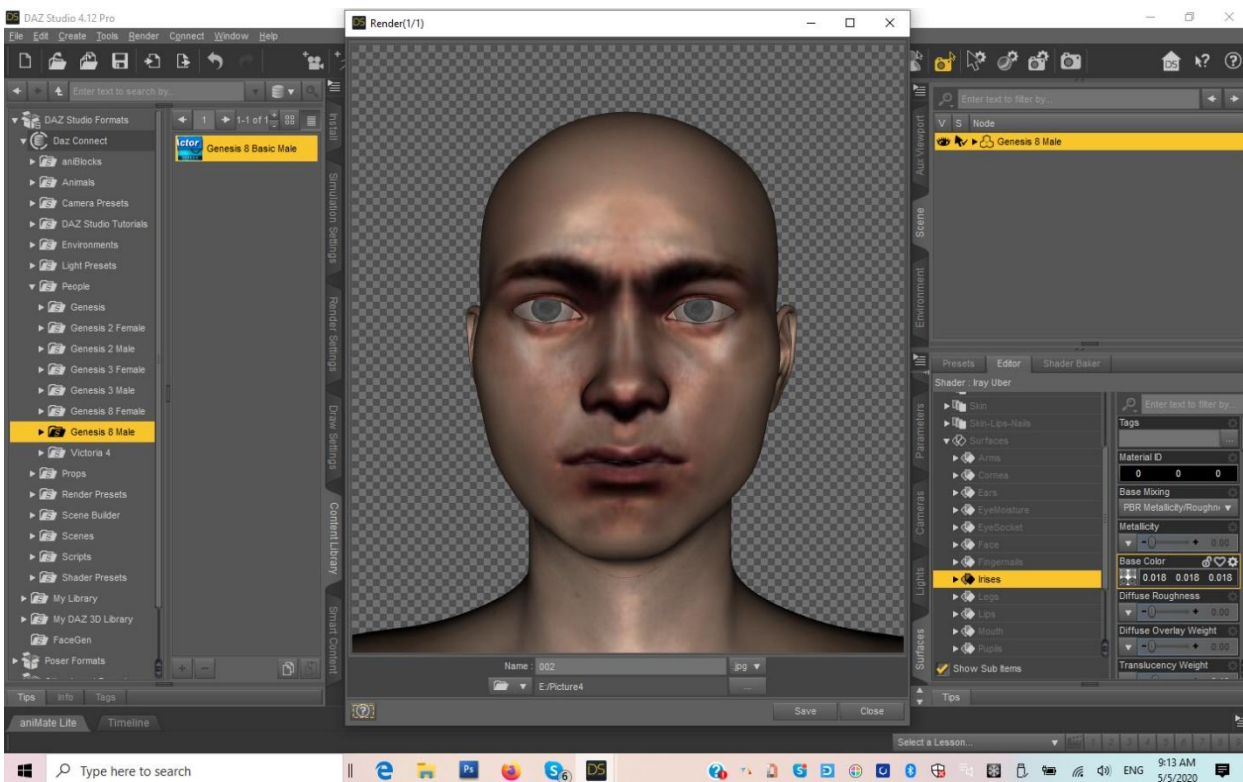
Extreme Sculpting with Autodots

In this example we will take advantage of HeadShop's unique capability to take an extremely rotated head and turn it straight frontal. A little cumbersome but works 😊

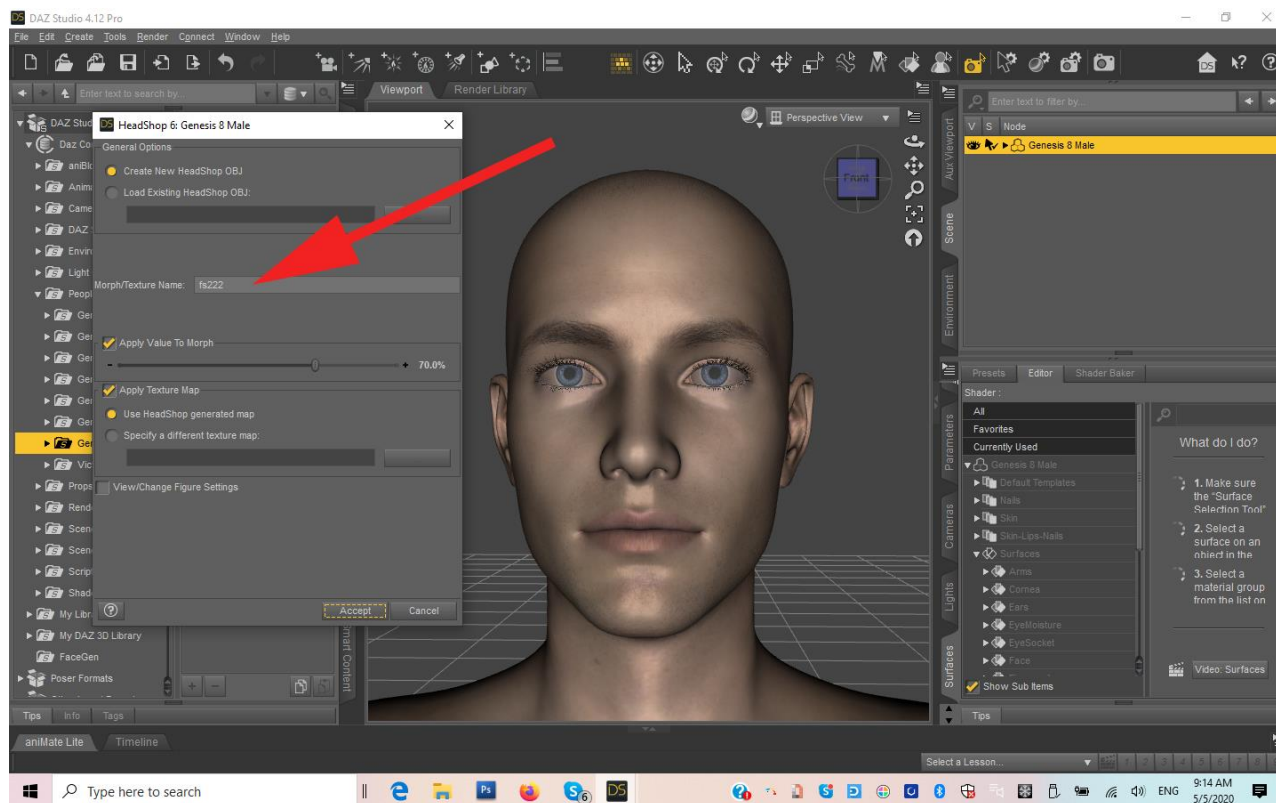
Step 1. Create a head of an extremely rotated photo as described in the previous chapter. Mirror good side's texture over to the missing right side. As you can see head shape needs work. Export back to DAZ Studio



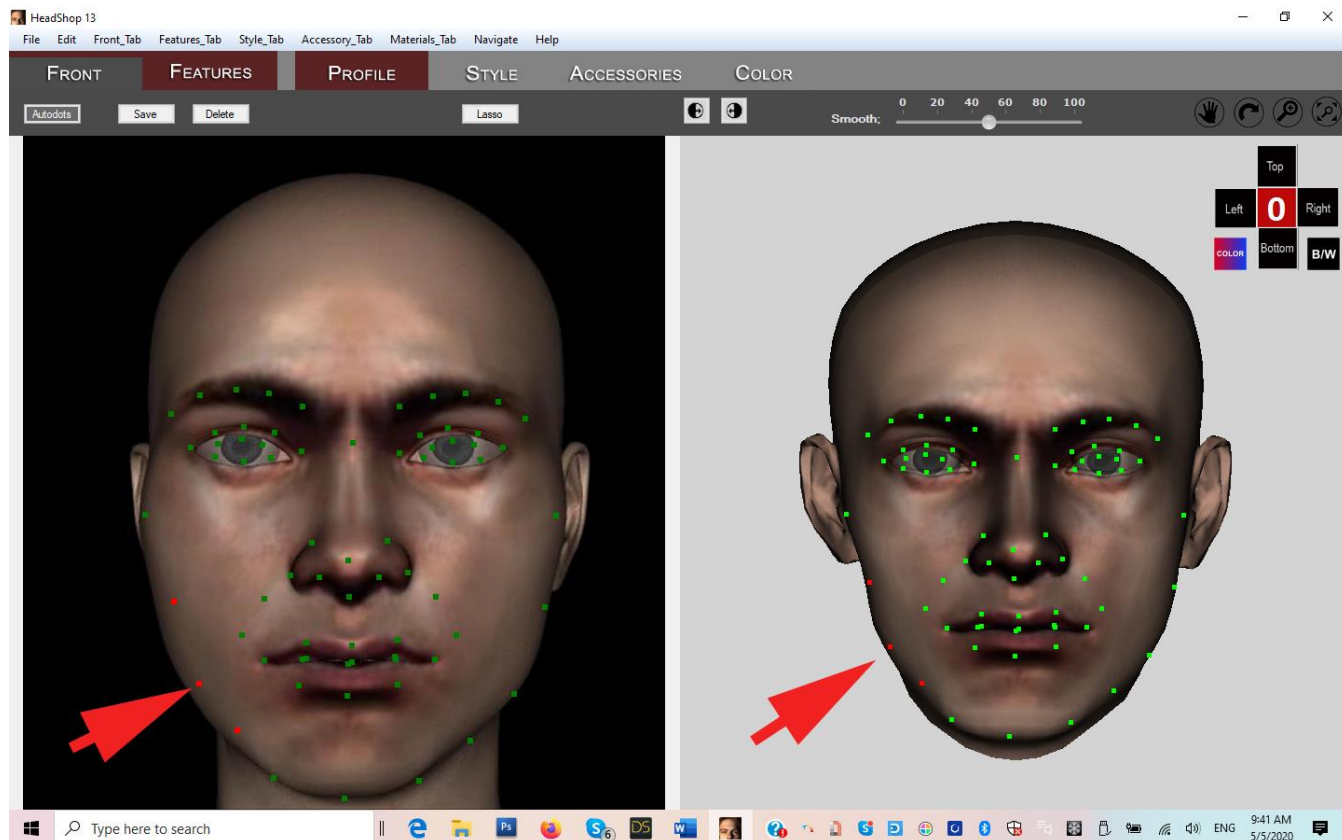
In DAZ Studio render a frontal image of the new head and save render as a JPG..



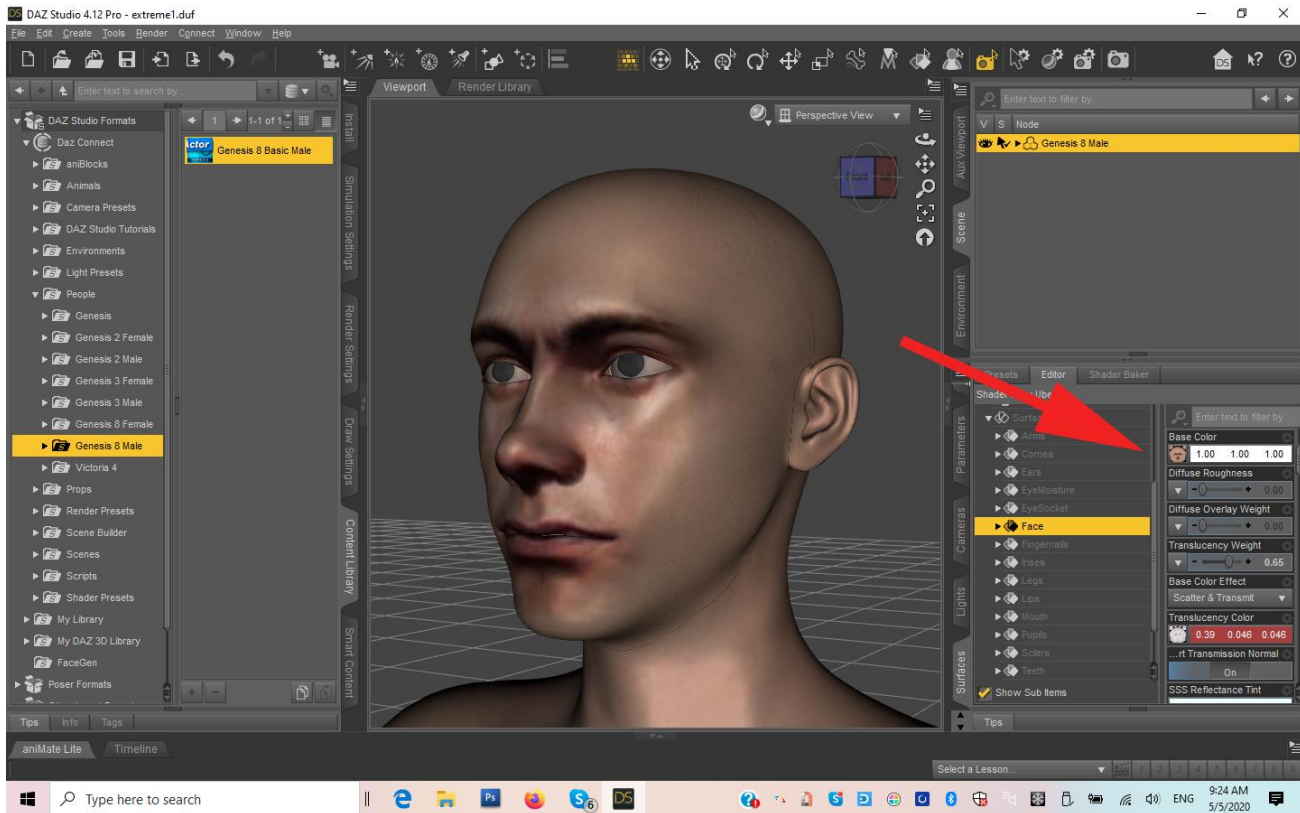
Step 2. Delete head and place new figure on stage. When starting HeadShop, make sure you name it differently than previous, so that Texture will not be overridden/replaced as it tends to deteriorate with each new iteration.



Load saved JPG as your photo. In HeadShop, now you have a frontal portrait where the Autodots coincide with you 3D head. Sculpt head by moving Autodots.



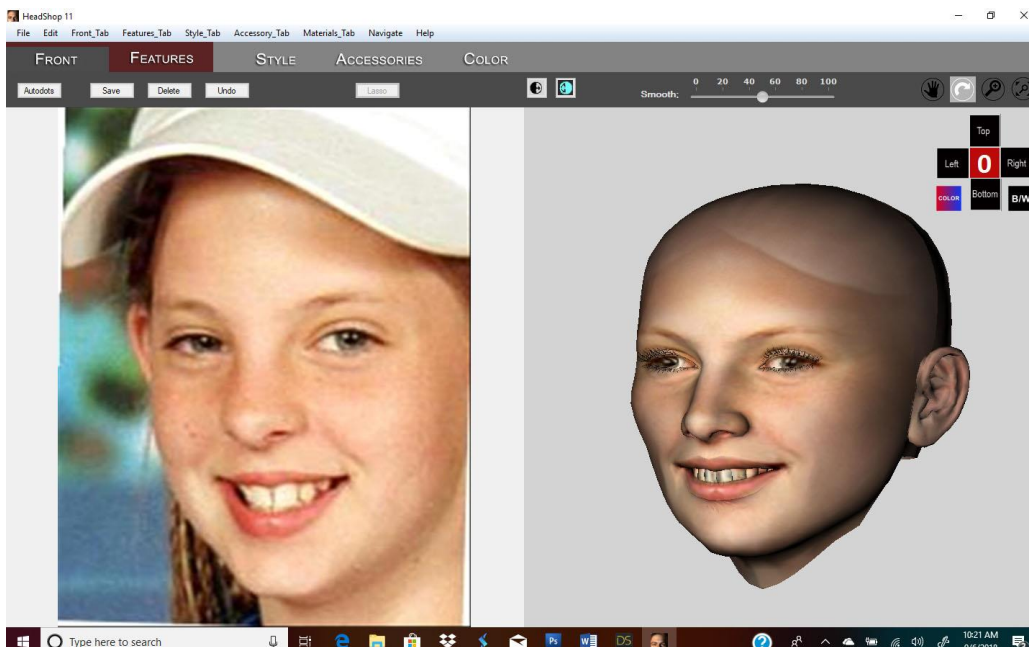
Step 3. When ready, Export back to DAZ Studio. Reload previous Face texture from User/Public/Documents/My DAZ 3D Library/Runtime/FaceShop/fs/SmoothedModelTextures



How to model a Child.

Step 1. Modeling children is relatively straightforward. You do need to have the Growing Up for Genesis Female installed in your DAZ Studio. It is available for both Gen 3 and Gen 8.

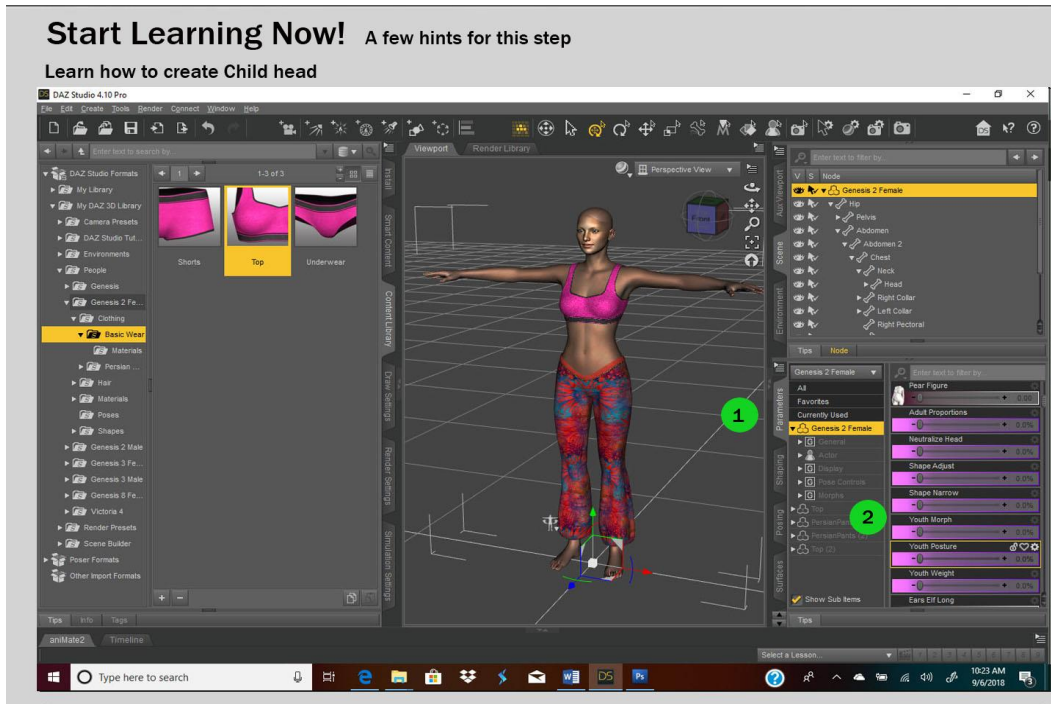
From here on you proceed as before, selecting either a Male (boy) or Female (girl) manually.



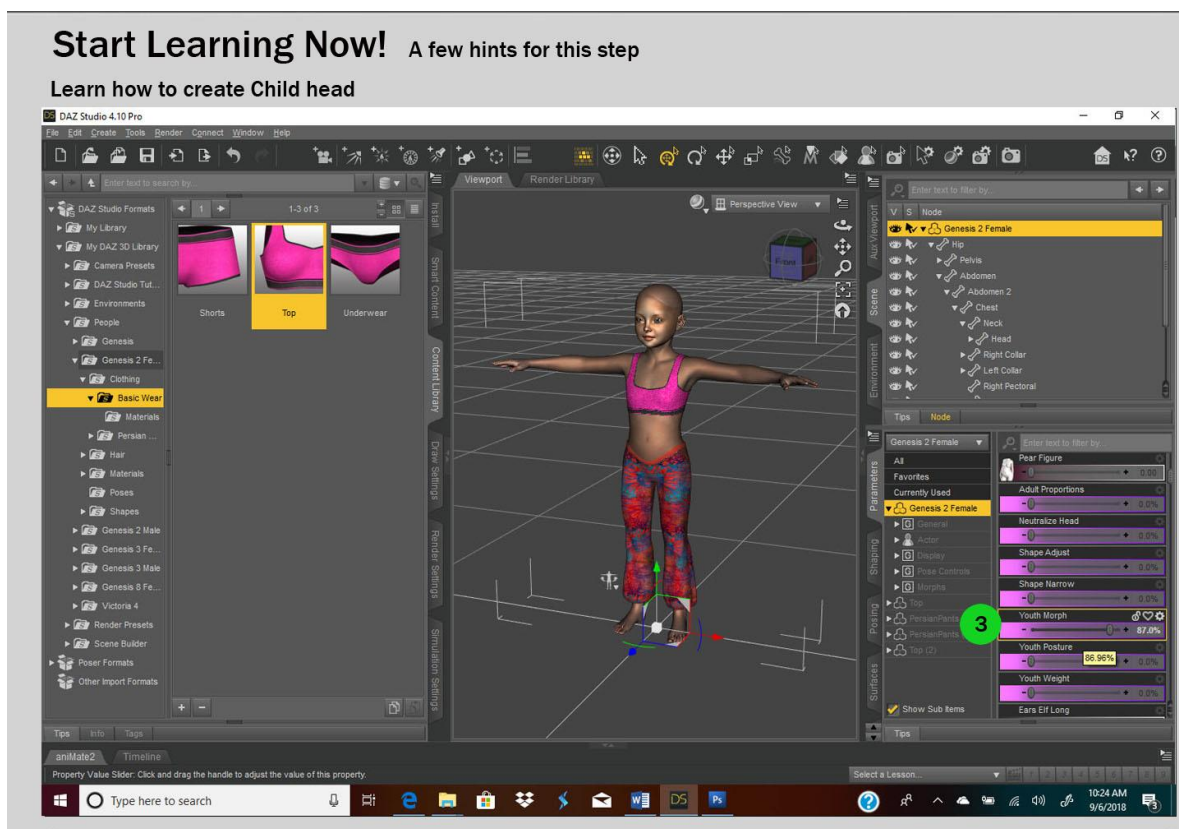
As you can see the head looks more like an adult head. That's OK, in the next two steps we will fix that.

Step 2. Export head via the Edit/Export button. Now it will map back onto your Genesis Female figure.

Select Parameters tab in Studio (1) and scroll to „Youth Morph” (2).



Step 3. Move the slider to the right to create a Child morph (3)



Chapter 4 : Troubleshooting

(Special Thanks for beta tester Catherine Faber for finding some issues)

Installation:

HeadShop does not come with a standard DIM (DAZ installer). It has its own installer. When installing, please choose the **DAZ 3D** folder as the destination folder.

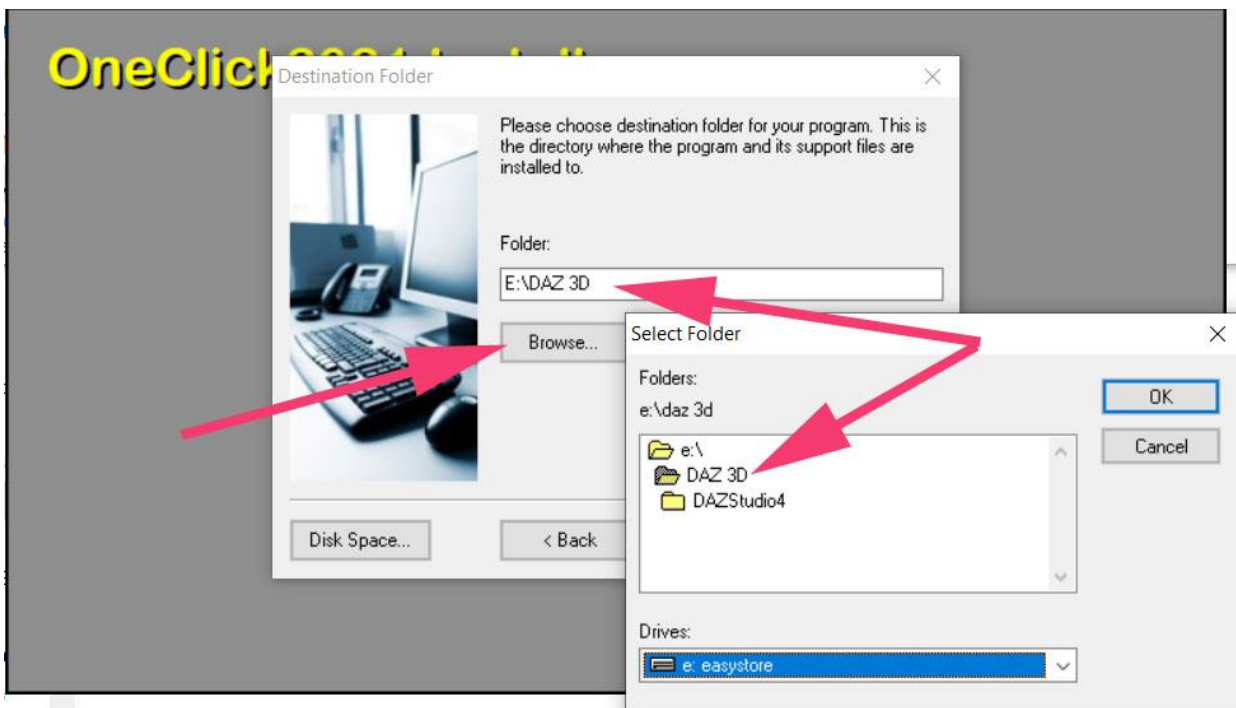
CAUTION: Make sure that DAZ 3D folder contains the full DAZ Studio software and not just parts of it.



HOW DO I KNOW WHICH LOCATION I NEED TO BROWSE TO INSTALL ONECLICK?

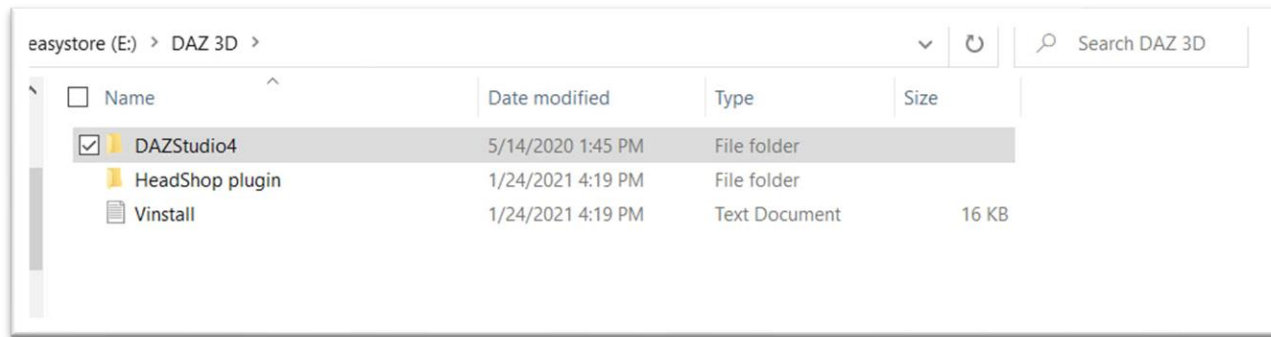
Read Chapter 1 of this manual (Installation) or watch video:

<https://youtu.be/5N-8KE4BCbo>

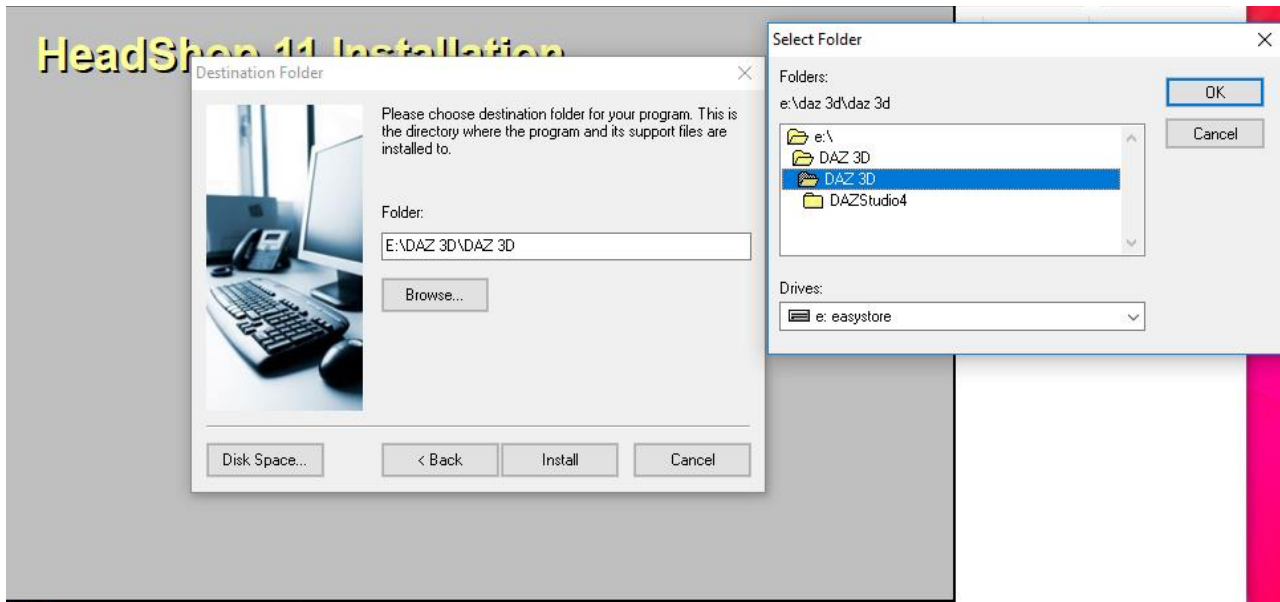


The main thing is that your location must end with “DAZ 3D”.

After installation your folder will look like this:



When running the installer, make sure you browse to the destination of your folder DAZ 3D. For instance, if it is on the E: drive, your installer should look like this:



At the end, check the installation to make sure you have everything in the right place

Program Files > DAZ 3D >

Name	Date modified	Type
11HeadShop plugin	10/17/2018 1:11 PM	File folder
DAZ3DIM1	10/11/2018 2:57 PM	File folder
DAZStudio4		
HeadShop plugin	11/27/2018 3:19 PM	File folder
Hexagon2	11/9/2018 10:24 AM	File folder
PostgreSQL CMS	9/7/2018 2:33 PM	File folder

m Files > DAZ 3D > DAZStudio4 >

Name	Date modified	Type	Size
bin	11/27/2018 3:19 PM	File folder	
displays	9/13/2018 2:57 PM	File folder	
docs	9/13/2018 2:57 PM	File folder	
imageformats	9/13/2018 2:57 PM	File folder	
libs	9/13/2018 2:57 PM	File folder	
phonon_backend	9/13/2018 2:57 PM	File folder	
plugins	11/27/2018 3:19 PM	File folder	
resources	11/27/2018 3:19 PM	File folder	
scripts	9/13/2018 2:57 PM	File folder	
shaders	9/13/2018 2:57 PM	File folder	
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boost_date_time-vc100-mt-1_50.dll	7/6/2012 3:15 PM	Application extension	47 KB
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boost_system-vc100-mt-1_50.dll	7/6/2012 3:15 PM	Application extension	17 KB
boost_thread-vc100-mt-1_50.dll	7/6/2012 3:15 PM	Application extension	78 KB
BugTrap-x64.dll	12/5/2017 12:04 AM	Application extension	317 KB
DAZ_3D_Content	12/5/2017 12:04 AM	Icon	103 KB
DazCollada.dll	12/5/2017 12:06 AM	Application extension	3,298 KB
DAZStudio	12/5/2017 1:19 AM	Application	99 KB
designer	7/20/2015 8:52 PM	Application	912 KB
dz3delight.dll	12/5/2017 12:05 AM	Application extension	6,612 KB
dzcmsconnector.dll	1/27/2016 2:11 PM	Application extension	1,274 KB
DzCore.dll	12/5/2017 12:59 AM	Application extension	61,883 KB
DzCoreUtil	12/5/2017 1:19 AM	Application	16 KB
DzOpenCL.dll	10/20/2016 5:33 PM	Application extension	55 KB
Half.dll	5/27/2014 3:07 PM	Application extension	338 KB

Program Files > DAZ 3D > HeadShop plugin >

Name	Date modified	Type	Size
bin	11/27/2018 3:19 PM	File folder	
Models	11/27/2018 3:19 PM	File folder	
Plugin	11/27/2018 3:19 PM	File folder	
Tutorials	11/27/2018 3:19 PM	File folder	
Assimp32.dll	11/18/2016 7:59 PM	Application extension	
Assimp64.dll	11/18/2016 7:59 PM	Application extension	
concr140.dll	8/21/2017 7:56 PM	Application extension	
cvextern.dll	10/30/2017 9:01 PM	Application extension	
Emgu.CV.dll	11/9/2016 9:10 PM	Application extension	
Emgu.CV.UI.dll	3/15/2018 10:53 PM	Application extension	
Emgu.CV.World.dll	5/26/2018 8:55 PM	Application extension	
Emgu.Util.dll	11/9/2016 9:10 PM	Application extension	
FaceSDK.NET.dll	11/9/2016 9:10 PM	Application extension	
ICSharpCode.SharpZipLib.dll	5/19/2017 9:34 PM	Application extension	
Ionic.Zip.dll	11/9/2016 9:10 PM	Application extension	
msvc140.dll	8/21/2017 7:56 PM	Application extension	
opencv_ffmpeg330.dll	10/30/2017 8:34 PM	Application extension	
opencv_ffmpeg330_64.dll	10/30/2017 9:40 PM	Application extension	
OpenTK.dll	11/9/2016 9:10 PM	Application extension	
OpenTK.GLControl.dll	11/9/2016 9:10 PM	Application extension	
RH.AssimpNet.dll	11/9/2016 9:10 PM	Application extension	
RH.Core.dll	10/22/2018 11:03 PM	Application extension	
RH.Core	10/22/2018 11:03 PM	PDB File	
Rh.HeadShop	10/22/2018 11:03 PM	Application	12 KB
Rh.HeadShop.exe	11/9/2016 9:11 PM	XML Configuration F...	1 KB
Rh.HeadShop	10/22/2018 11:03 PM	PDB File	16 KB
Rh.HeadShop.vshost	10/22/2018 11:04 PM	Application	23 KB

What goes where?

There needs to be a "DAZ 3D" folder. Inside the "DAZ 3D" folder there needs to be a "DAZStudio4" folder that contains all the files (see above) including the DAZStudio application.

There also needs to be a "HeadShop plugin" folder inside the "Daz 3D" folder.

Error message: HeadShop Can't Find fs figure or similar.

Pls. Make sure that your DAZ Studio Temp and DSON Preferences are set to Deafult As show:

Feedback :

☐ Participate in DAZ Studio Improvement Program

Temporary Files :

Folder : C:/Users/laslo/AppData/Roaming/DAZ 3D/Studio4/temp

Log Size : 1048576

DSON Cache Files :

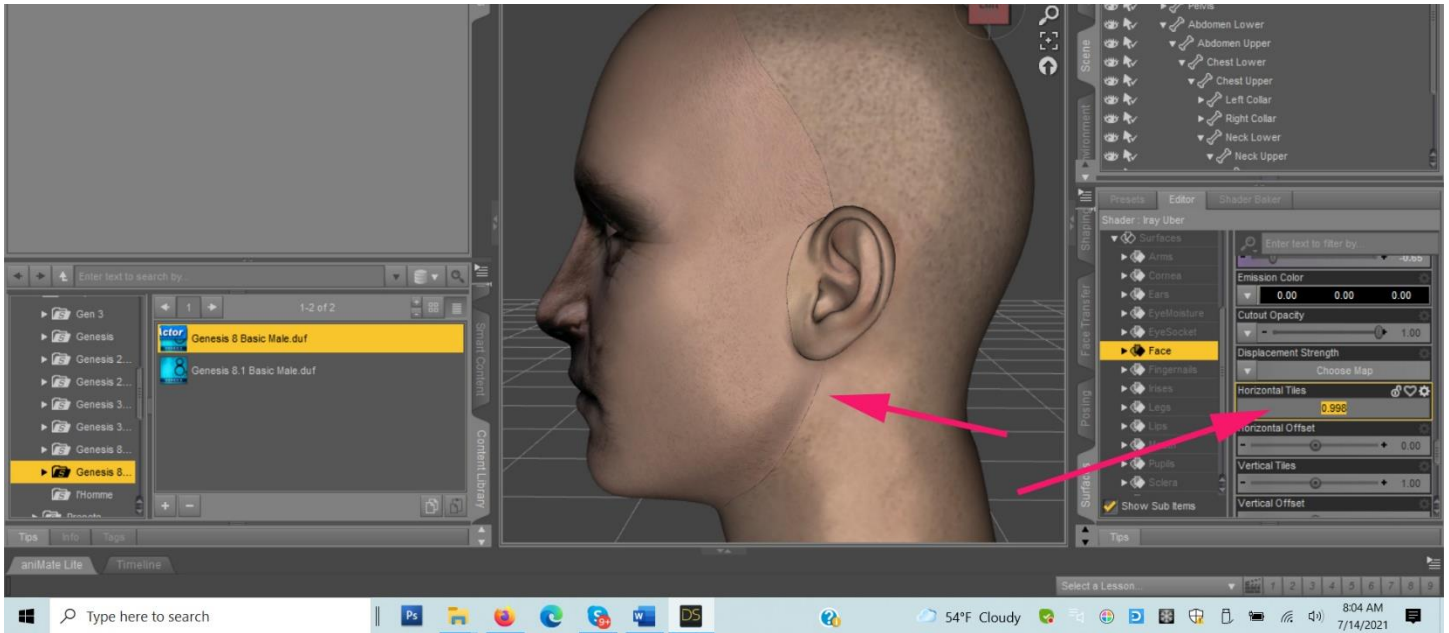
Folder : C:/Users/laslo/AppData/Roaming/DAZ 3D/dson/cache

DAZ Studio Updates :

Check : Weekly

Gap between Texture Patches

Sometime there maybe a slight gap/line between Face, Ear and Head/Torso textures. There is an easy fix for this: Select „Face” in Surfaces tab, change the Horizontal Tile value from 1.00 to 0.998.

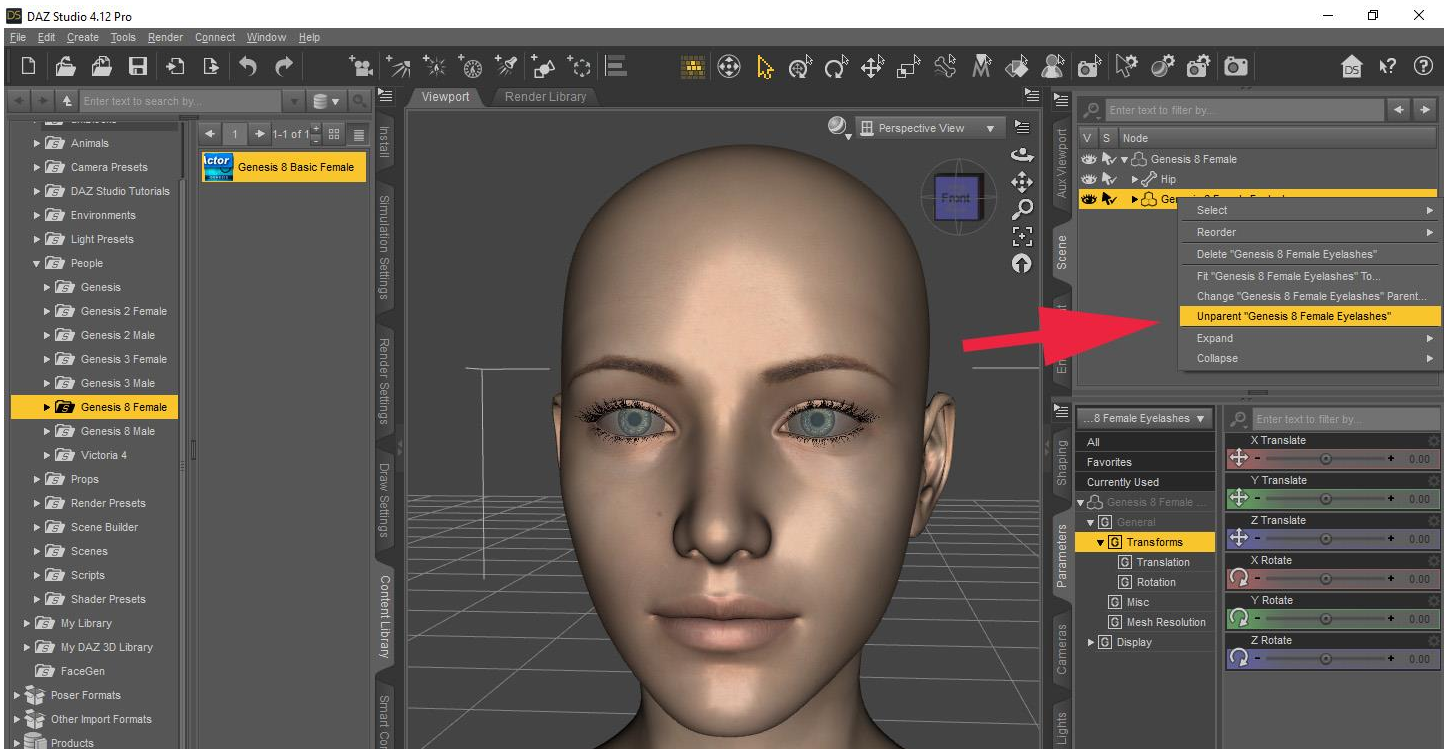


Missing Eyelashes in Genesis 8

As mentioned in Chapter 1, DAZ designed Genesis 8 with making eyelashes a separate figure placed inside the Genesis 8 figure. This causes problems for morphs.

Solution: Before launching HeadShop, unparent the Eyelashes as shown.

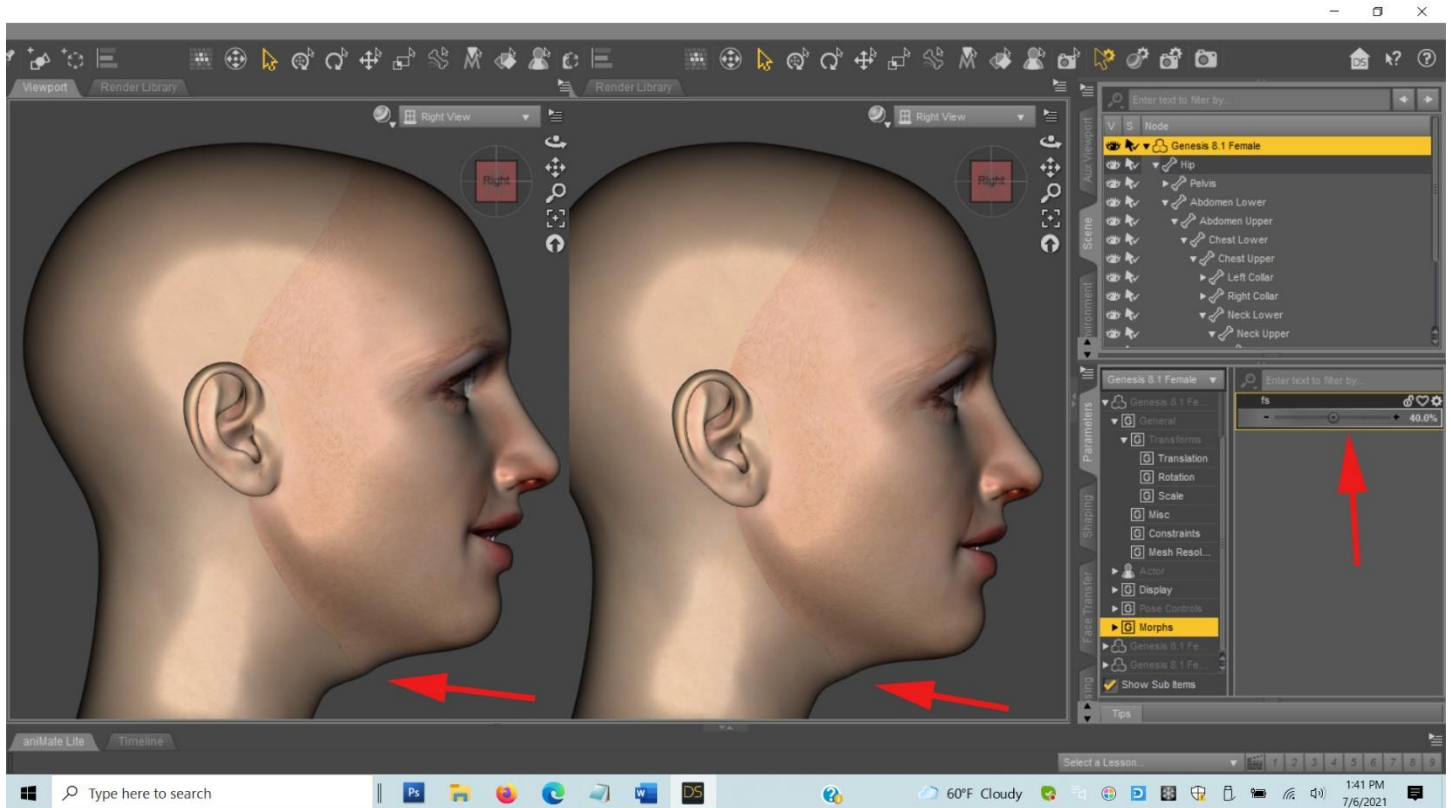
CAUTION! Before launching HeadShop, make sure that GENESIS 8 FEMALE IS SELECTED (not the eyelashes). Otherwise HeadShop will work on the eyelashes.



After HeadShop is closed, you can „re-parent” eyelashes to Genesis 8. Make sure you also select „Auto-follow” in Parameters.

Neck protrusion with Genesis 8.1 Female with open smile.

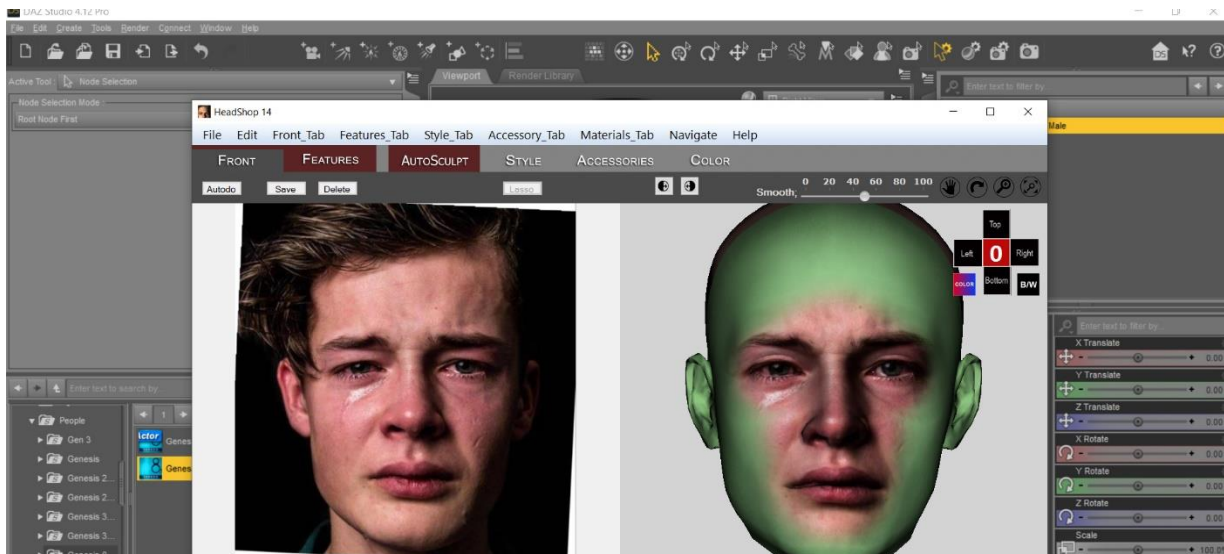
In a few photos with both open smile and rotated head there seem to be a slight neck protrusion. This seems to effect only Gen 8.1 Fem and can be countered by reducing the amount of Morph from 70% (default) to about 40% (see below).



Discolored face texture

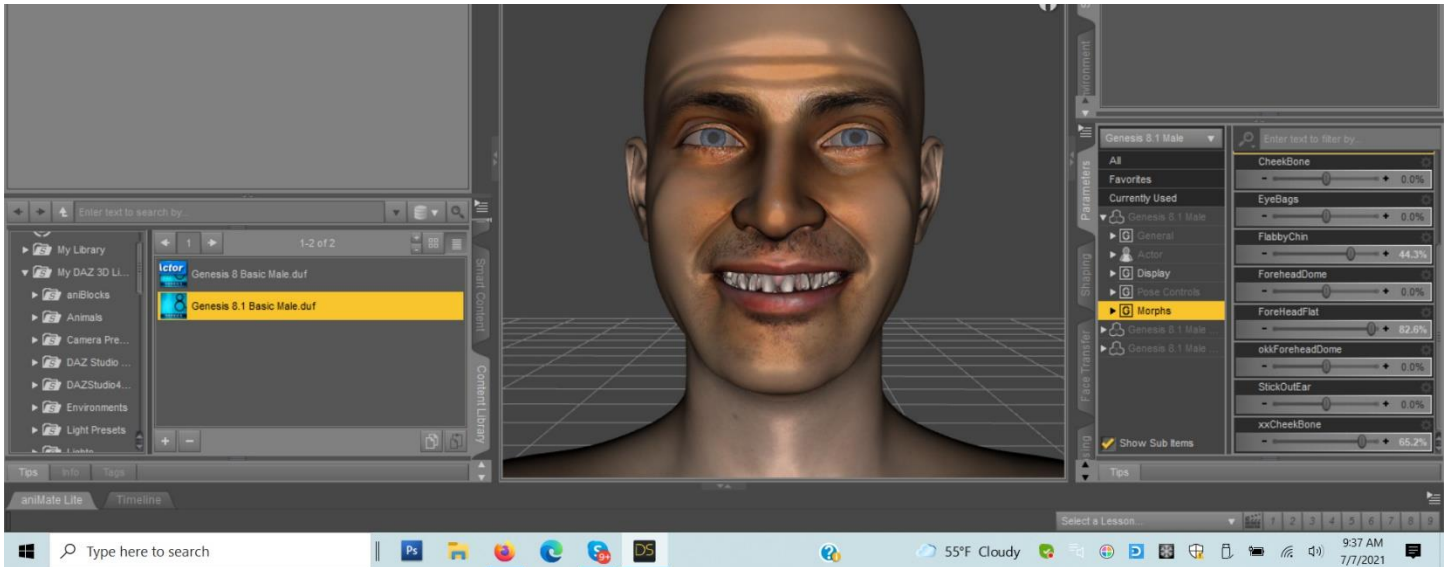
This also happens in a few instances (see below). The reason is that HeadShop 14 switched from a single point skin sampling to a better 3-point sampling, which in a few photos results in a funny skin color.

Solution: use different picture or slightly change the hue of the photo.

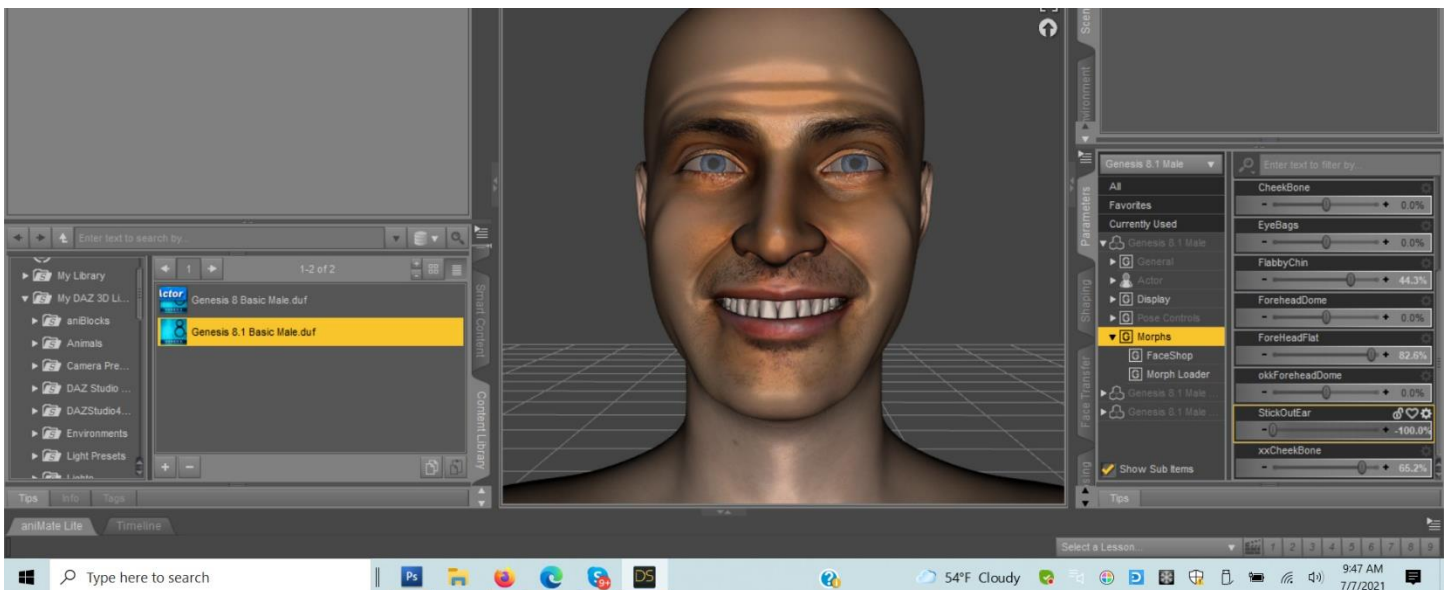


Change teeth shape/color

The new AutoSculpt feature lets you add nose shapes, facial shapes or creases. You can add more than one of these in HeadShop and it won't affect the teeth of the output. However, there's option to load these morphs in DAZ Studio via MorphLoader Pro. In this case, loading several morphs may create an artifact with the teeth (see below)

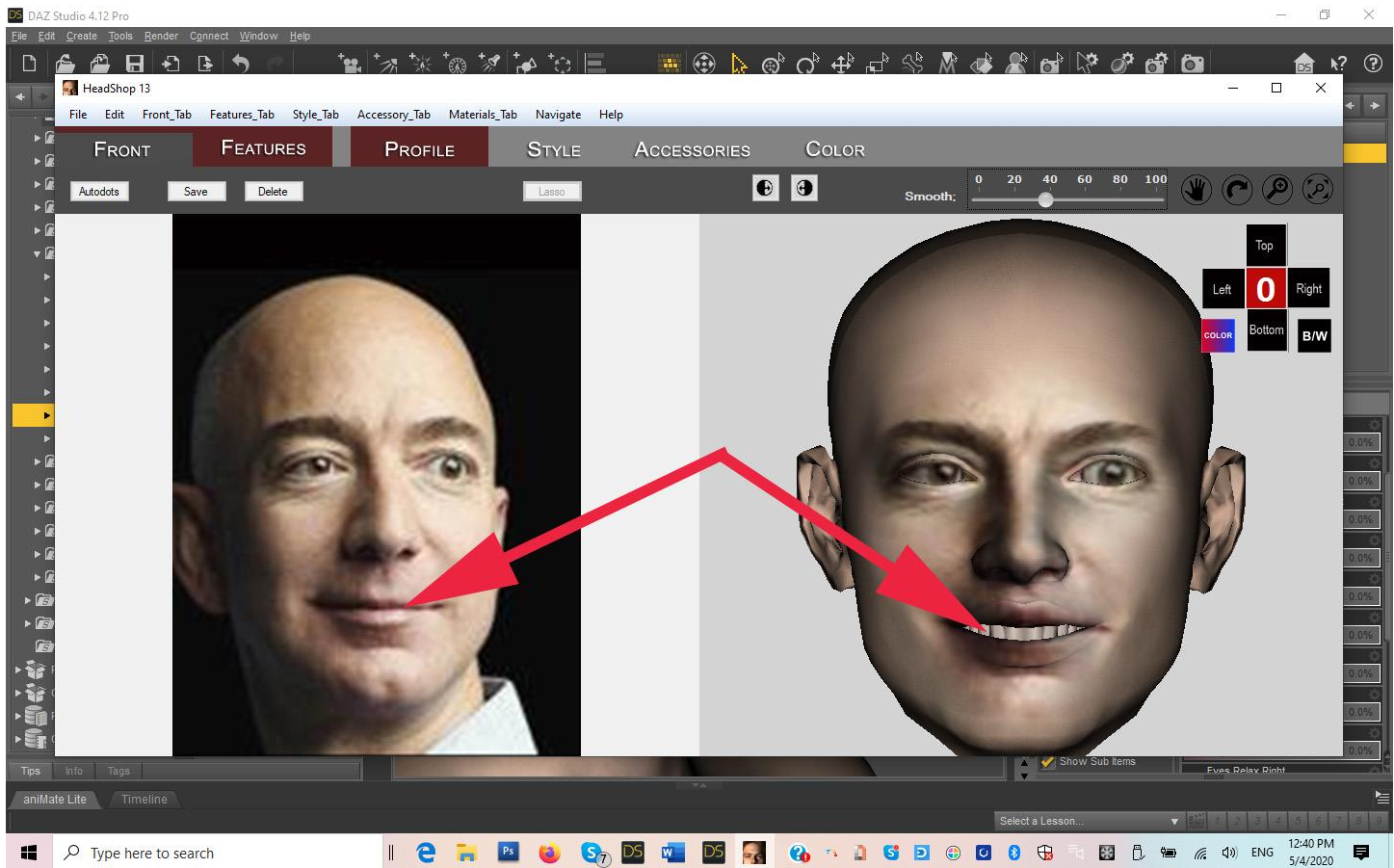


Solution: If you counter this deformation by moving another morph (for example the Stick-out ears) in the opposite direction into negative, this will restore the original teeth shape.



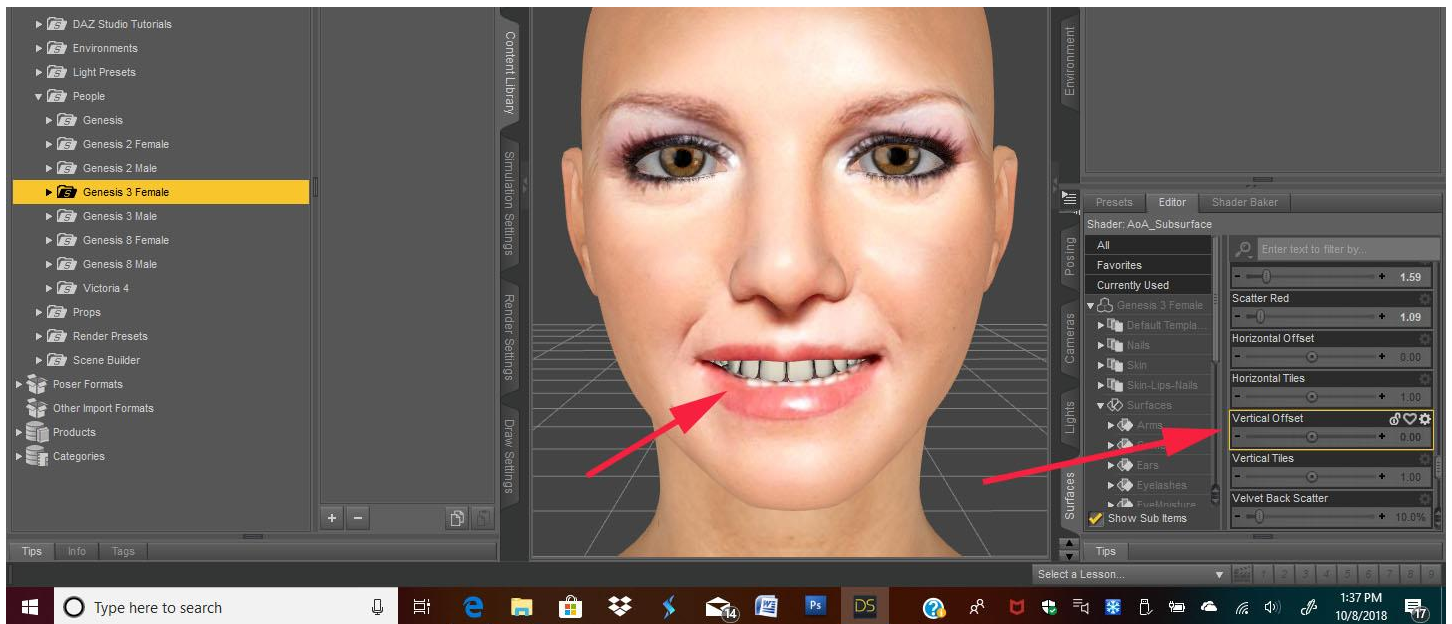
HeadShop Autodots mistake shiny lower lip for teeth.

In some photos Autodots may mistake highlights on the lower lip as teeth. Unfortunately, the only way to correct for this is to reduce the glare on the lip in Photoshop and try again.

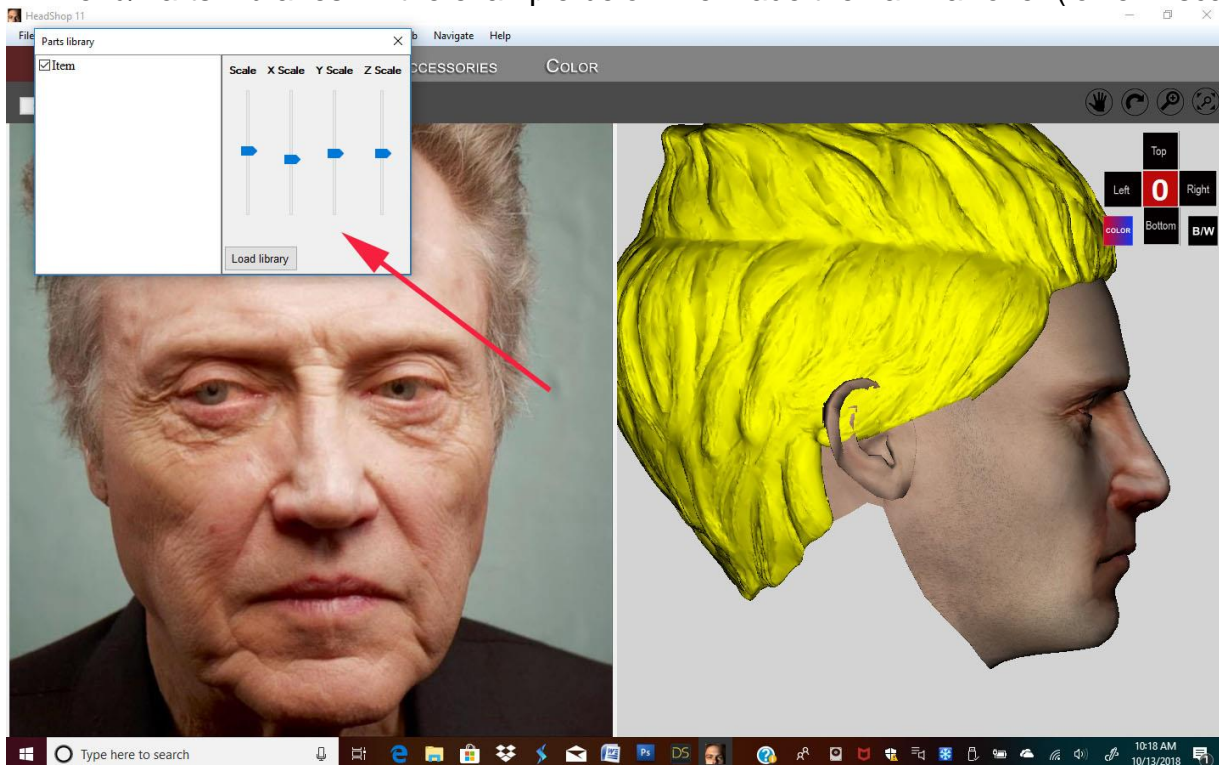


Here are some other tips if things go wrong:

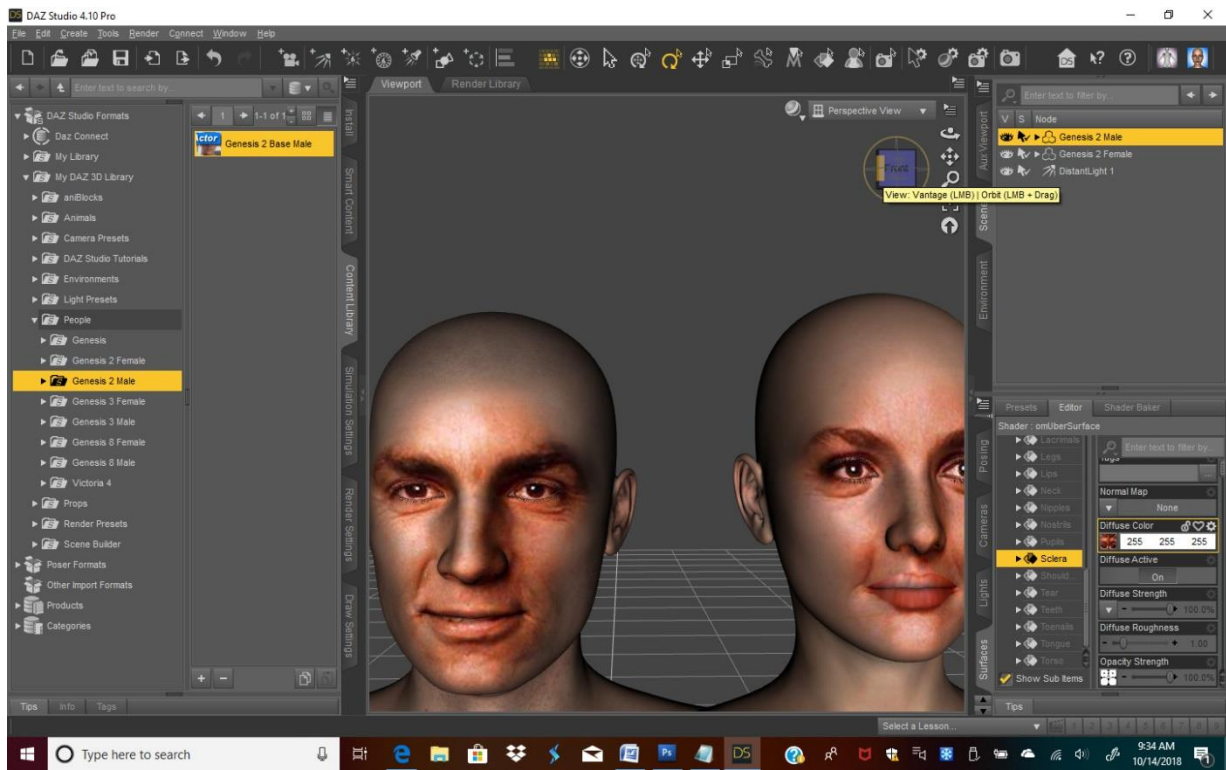
1. Can't install this 64-bit software on a 32-bit system.
2. Do not use „Pre-release“ characters because their naming convention is different from release figures.
3. When finished in HeadShop, files don't load back to DAZ Studio. Cause: either character files are not installed or Genesis Starter Essentials need to be installed.
4. Try to avoid having multiple objects on stage. It may confuse HeadShop when loading. When you have multiple characters or items on stage, please pay attention on choosing/highlighting the right item in the selection box. Otherwise HeadShop may give you the wrong dialog.
5. Not perfect fit with Lip texture due to imperfect dot detection? Can be fixed using „Vertical Tiling“ or „Vertical Offset“ in Surfaces. In this case, Vertical tile can be slightly adjusted to make a better fit.



6. HeadShop loads the previous/wrong face texture. Very seldom, due to memory (with 4096x4096 textures) issues this can happen. Solution: reload Face texture from Users/Documents/My DAZ Library/Runtime/Faceshop/fs/SmoothedModelTextures.
7. Fine tuning Library items (hair, accessories). You can change the dimensions on the x, y, z axes) under Menu/Parts Libraries. In the example below we made the hair narrower (lower x scale).



8. If you are using HeadShop on more than one figure on the same scene, HeadShop may load the wrong texture on the second figure. To avoid this, save the first figure as a Character (File/Save As/Character) and remove it from the scene, so that you have only one figure loaded. Once you perform the HeadShop transformation on the second figure, you can „Merge” (File/Merge) the previously saved character back into the scene.



White Paper: Working with Difficult Photos in DAZ Studio

There are now at least three software applications that turn a portrait photo into a 3D character in DAZ Studio. What these software applications have in common is that they apply the shape changes that a custom character causes to the base Genesis figures (morphing) and also apply texture from the photo to the 3D head (texture mapping).

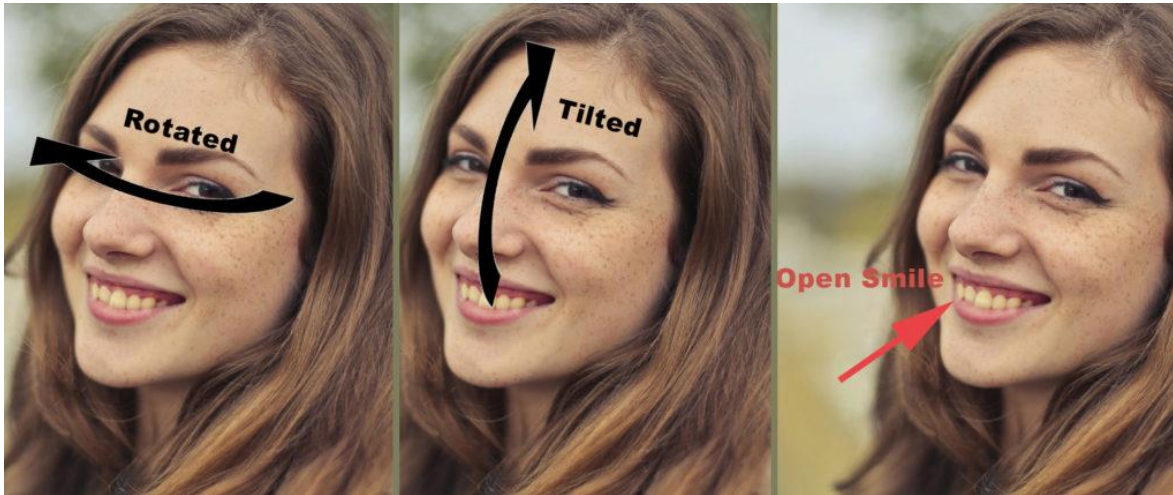
With that said, all three use different methods to achieve this goal and with various grades of success. This paper attempts to examine the challenges presented by “difficult” photos.

What is a “Difficult Photo”?

All three can handle frontal and unsmiling photos relatively easily. Unfortunately, the majority of photos are not straight-on “mugshots” but photos where the face is partially rotated at least in one axis. The majority of photos also tend to have an “open smile” with teeth showing. (see Picture 1 below).



Here is a schematic of these challenges (Picture 2):



Any “Photo-to-3D Head” software thus needs to perform a few additional tasks if it wants to succeed:

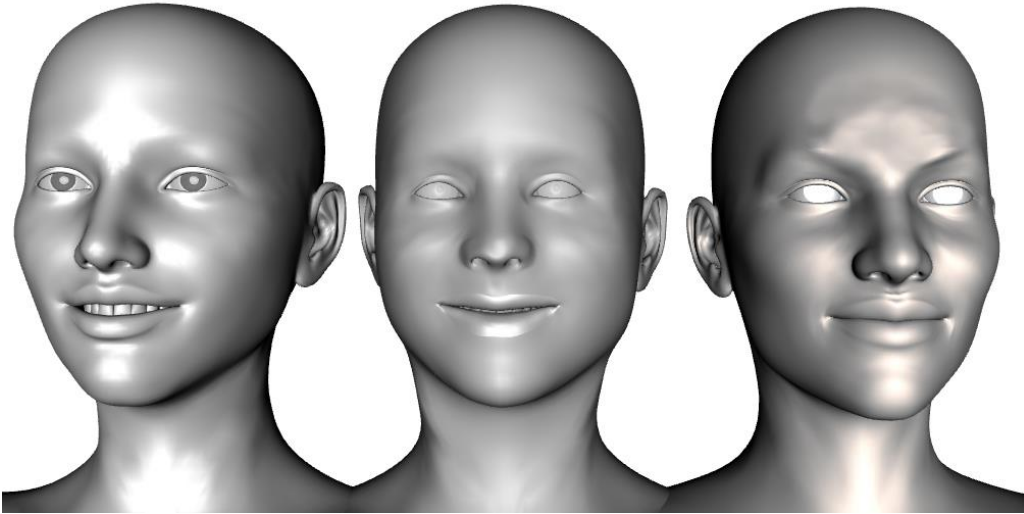
1. Establish rotation angle/degree and direction, create a new and uniform shape and then rotate the 3D mesh back to frontal.
2. Also detect if a photo represents close lips or an open smile. The method to do so is to deploy an automatic “facial feature detection” algorithm that find several dozen significant points in a photo that represent eyes, nose, mouth, etc. By comparing these point sets the software needs to “decide” if there is an open smile present or not.

Once the 3D head is rotated back to frontal with the corrected shape, the texture mapping can take place. This represents a further challenge; Since part of the texture is turned away and not visible, a method needs to be found to replace or repair missing texture.

Compare Results of Shaping Heads based on a Difficult Photo.

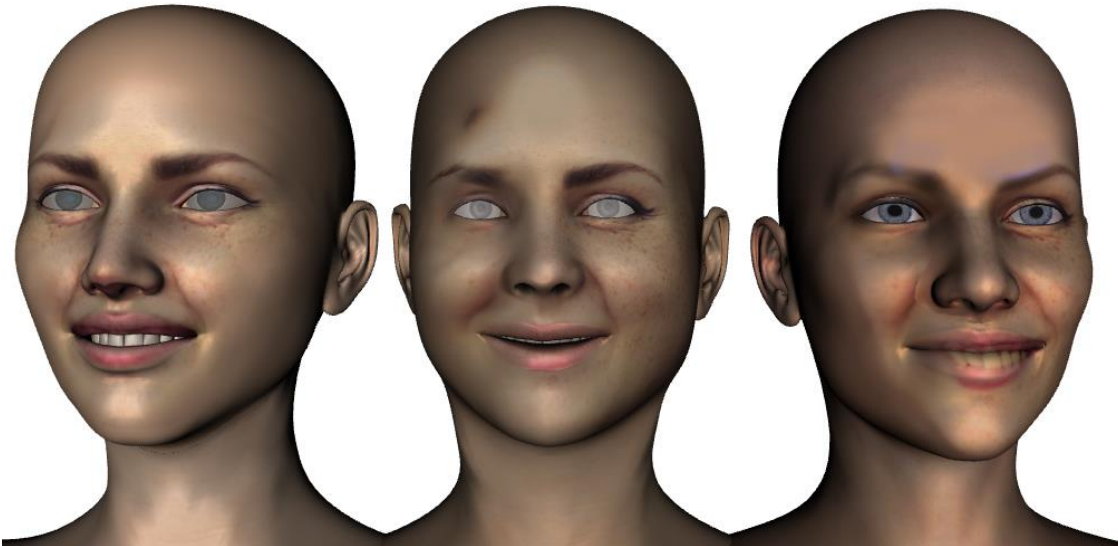
Below you can observe three samples on how the various software performed with the same photo. As is obvious, they achieved various degrees of success in capturing the shape of the head.

The first head on the left captured both the shape of the head and the open smile well. The head on the middle did a poor job in capturing the shape but recognized the open smile. The head on the right did a good job in re-creating the shape of the head but was not built to recognize or display an open smile with teeth showing (see Picture 3 below).



What About Texture Mapping?

Here the three compared software applications also showed differences.



The head on the left captured and applied texture correctly. The middle head also did a decent job of applying the texture but missed on the overall hue. It also captured some artifacts like the remnant of the hair. The head on the left did poorly, since it “painted” teeth on the lower closed lip. Otherwise it did capture texture and hue nicely albeit did poorly in filling in missing texture to the left of the nose.

Overall Conclusion

Our goal was not to judge performance, but rather to explain why different software processes produce different results. As we said above, with simple, straight and unsmiling photos at least two of the three software performed well, so anyone who can replace challenging (rotated+smiling) photos can do so and get good results.

Resource photo to run your own test:

