VRCFaceTracking-Templates

Face Tracking Template Setup

By Adjerry91

Introduction

This setup will go over how to set up the face tracking template animations to drive blendshapes and eye movements to Unity for VRChat.

Prerequisites

- Vive SRanipal Runtime
- VRCFaceTracking
- Avatar with SRanipal Blend Shapes - *Case Sensitive*

To make these animations work SRanipal needs to be installed, VRCFaceTracking OSC program must be running with Eye and Lips Green, and OSC must be enabled. *Reset Config*, toggling *OSC,* restarting VRCFacetracking to reinitialize avatars with OSC may be required to get tracking to work in VRChat.

Face Tracking Menu Controls

Face tracking template has menu controls to allow toggling of the following:

- Eye tracking (Bool) - If true enables all eye tracking animations (VRCFaceTracking) and disables VRChat eye tracking

- Lip tracking (Bool) - If true enables all lip tracking animations (VRCFaceTracking)
- Visemes (Bool) - If true enables Visemes
- Eye Dilation (Bool) - If true enables dilation

Setup Tools

VRLabs Avatars 3.0 Manager - Merge template animations to existing animations on avatar

Useful Tools

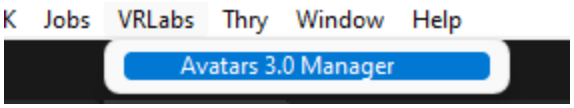
Lyuma Av3Emulator - Emulate avatar within unity.

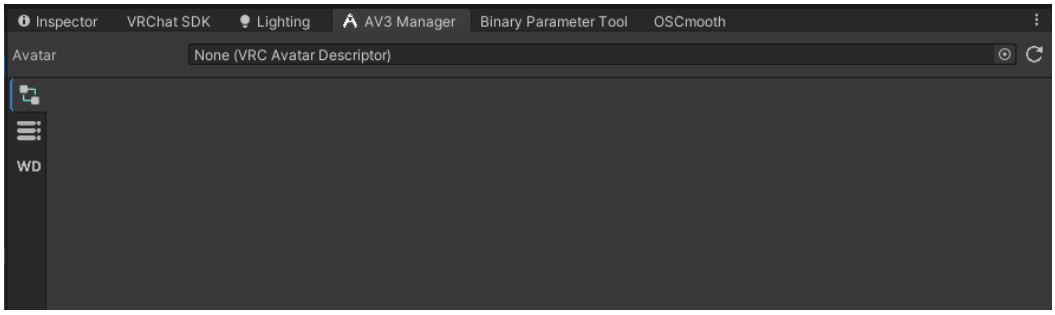
BinaryParameterTool - Creation of binary layers

OSCmooth - Creation of smoothing layers

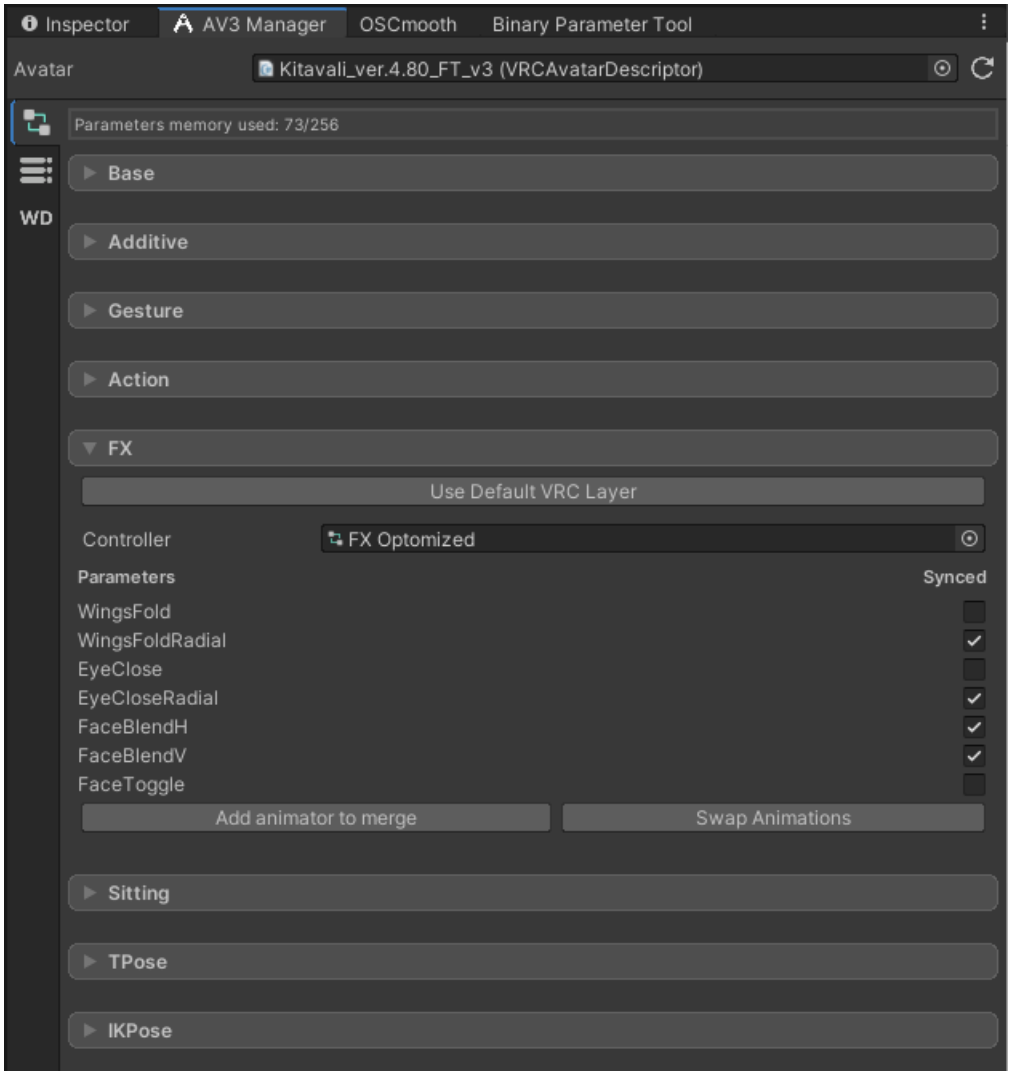
Main Setup

- [ ] Import VRCFaceTracking_Templates_vX.X.X.Unitypackage
- [ ] Import Avatars_3.0_Manager_X.X.XX.Unitypackage
- [ ] Show Avatar 3.0 Manager Window. *You can place the window wherever as desired*

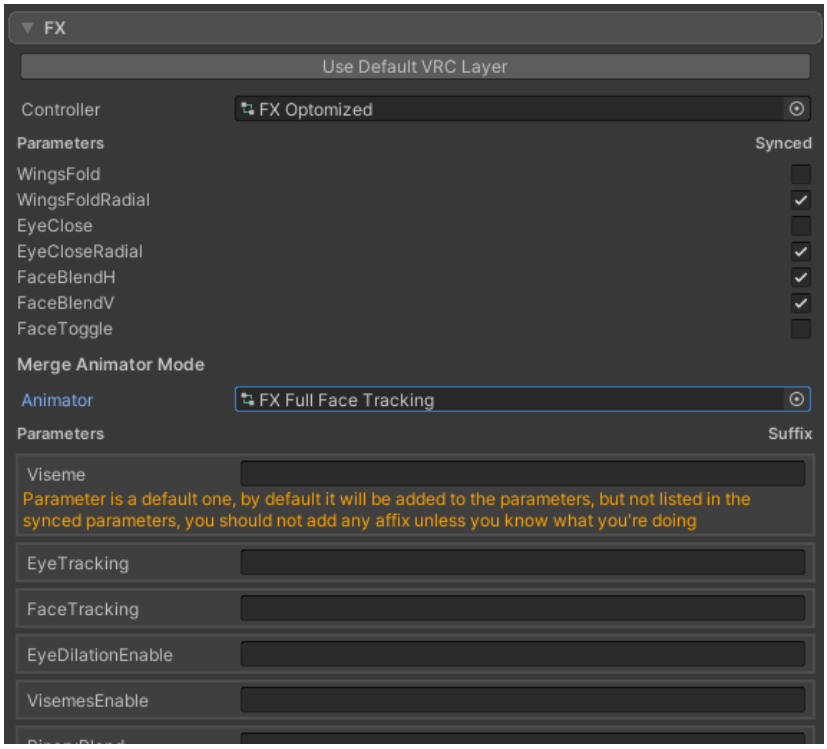




☐ Add avatar to AV3 Manager and go to FX section



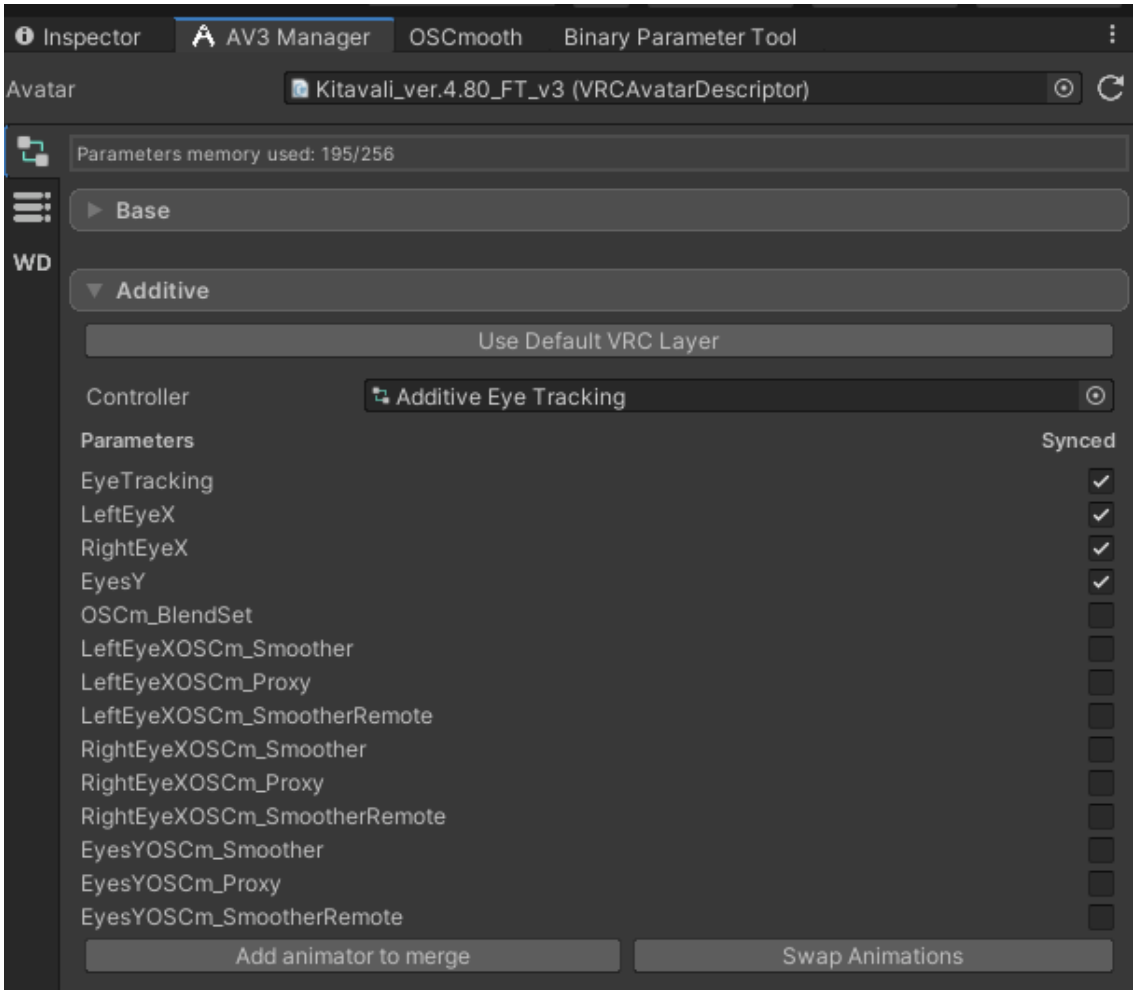
☐ Click Add animator to merge and add **FX Full Face Tracking**. Templates are located in **VRCFaceTracking > VRCFT Templates**



- [ ] Scroll down the parameter to be merged to make sure there aren't any duplicates. If it is orange and adds a suffix you don't want that as face tracking parameters are case sensitive.
- [ ] *Merge on current* to merge **FX Full Facetracking** animator

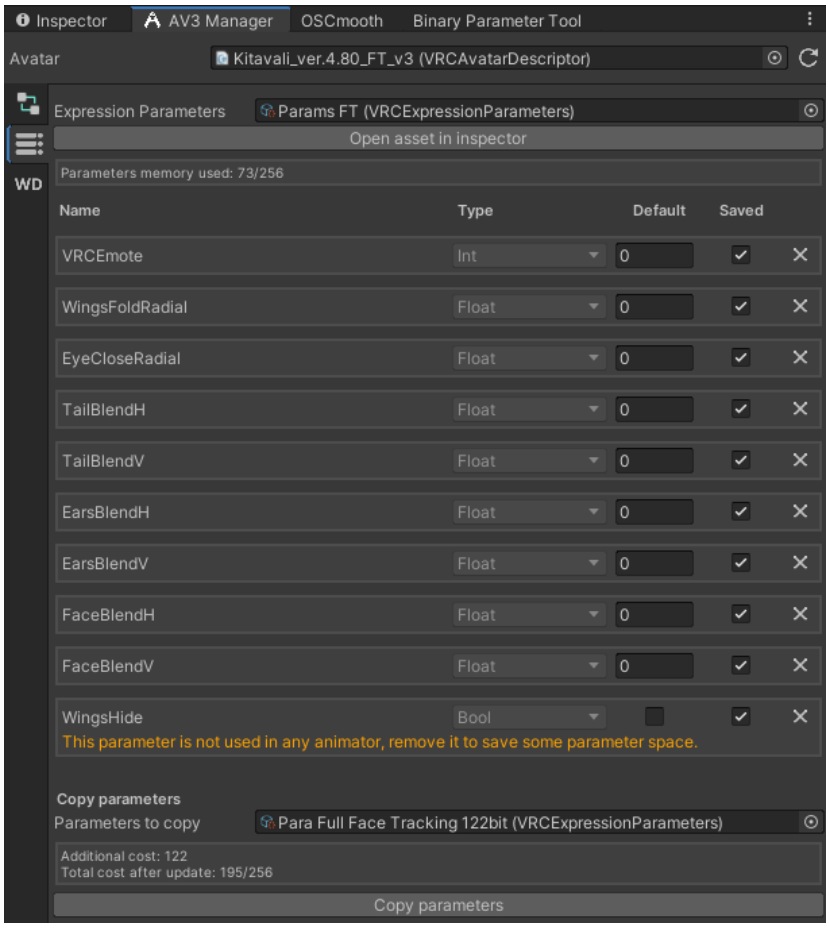
☐ *Add animator to merge* **Additive Eye Tracking** to additive layer.

Note - This layer drives the animator eye positions in the armature rig, if eyes are not moving when testing make sure eye bones are assigned

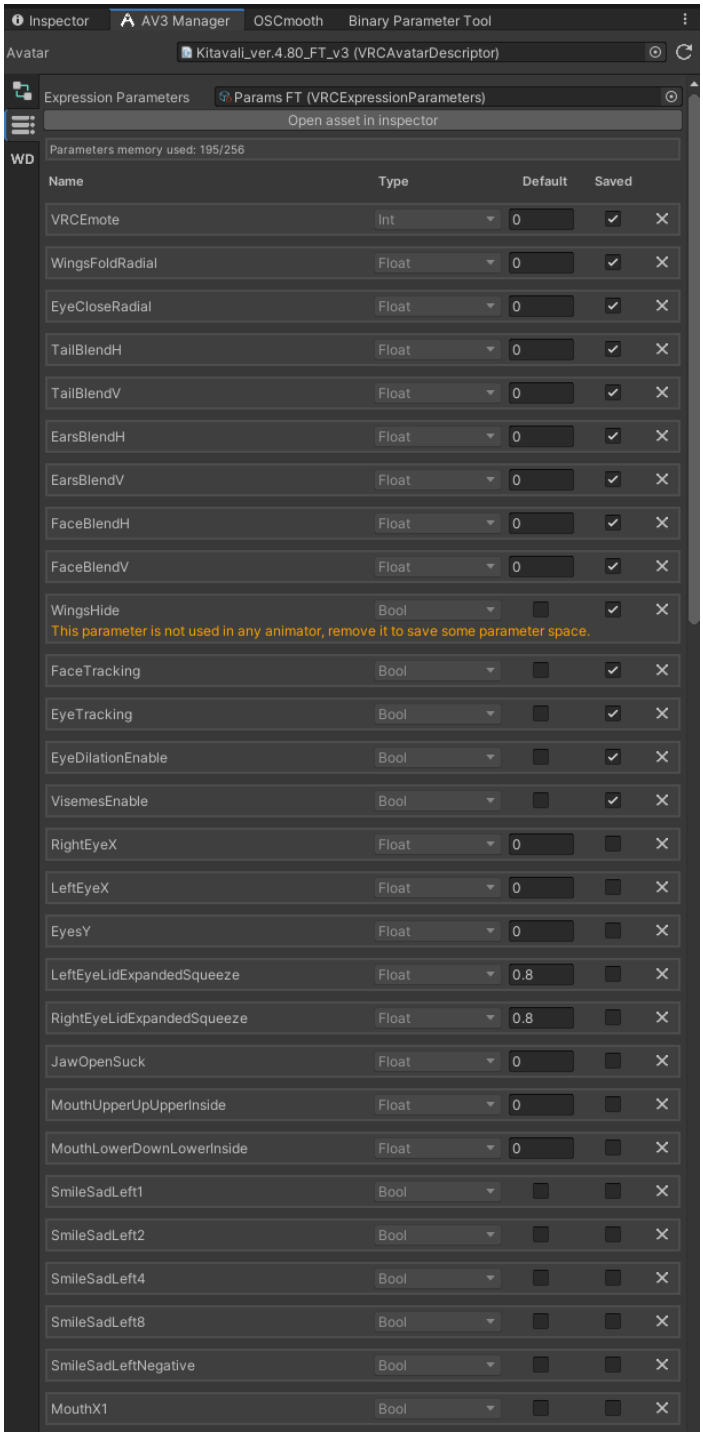


- [ ] The second tab of AV3 manager can be used to copy parameters from the template.

  Merge face tracking parameters

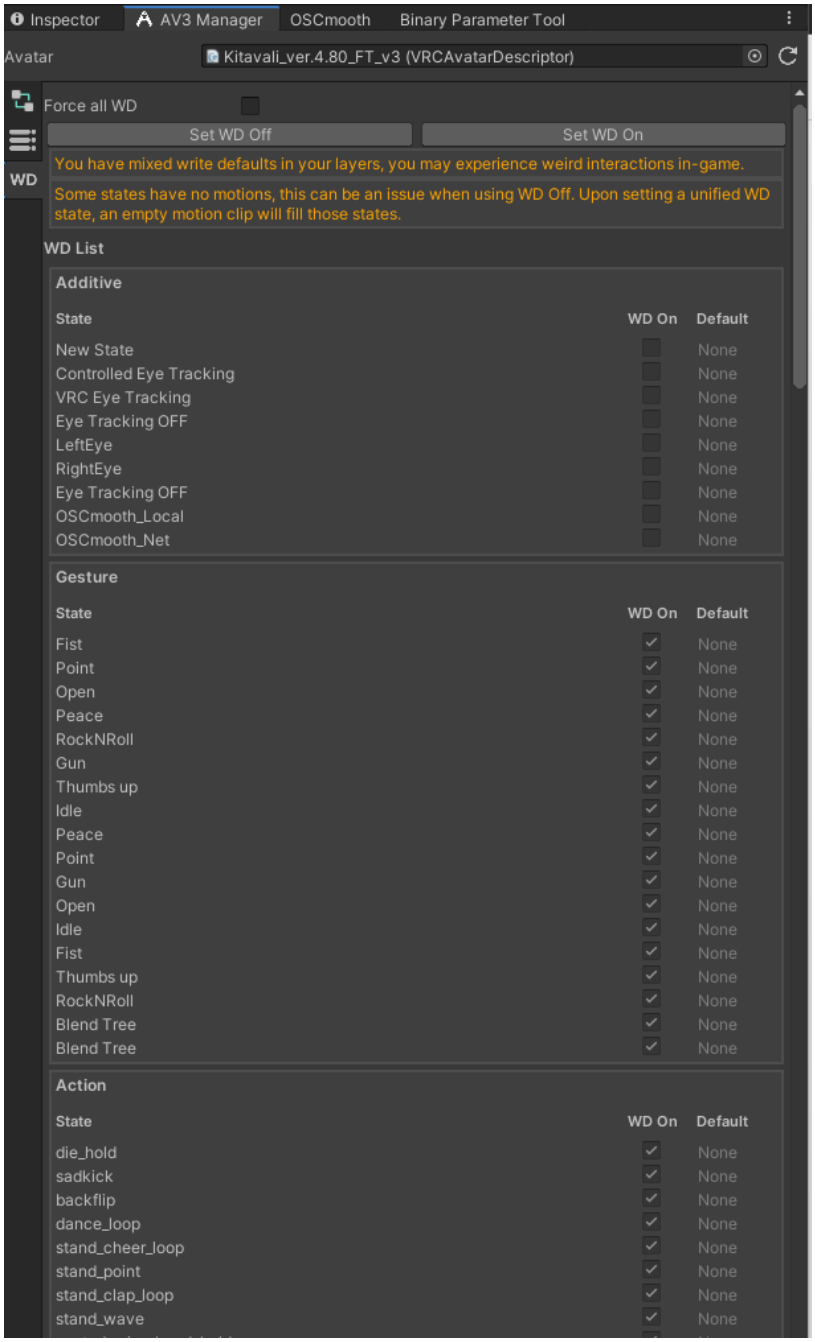


When copied you should see all the sync parameters

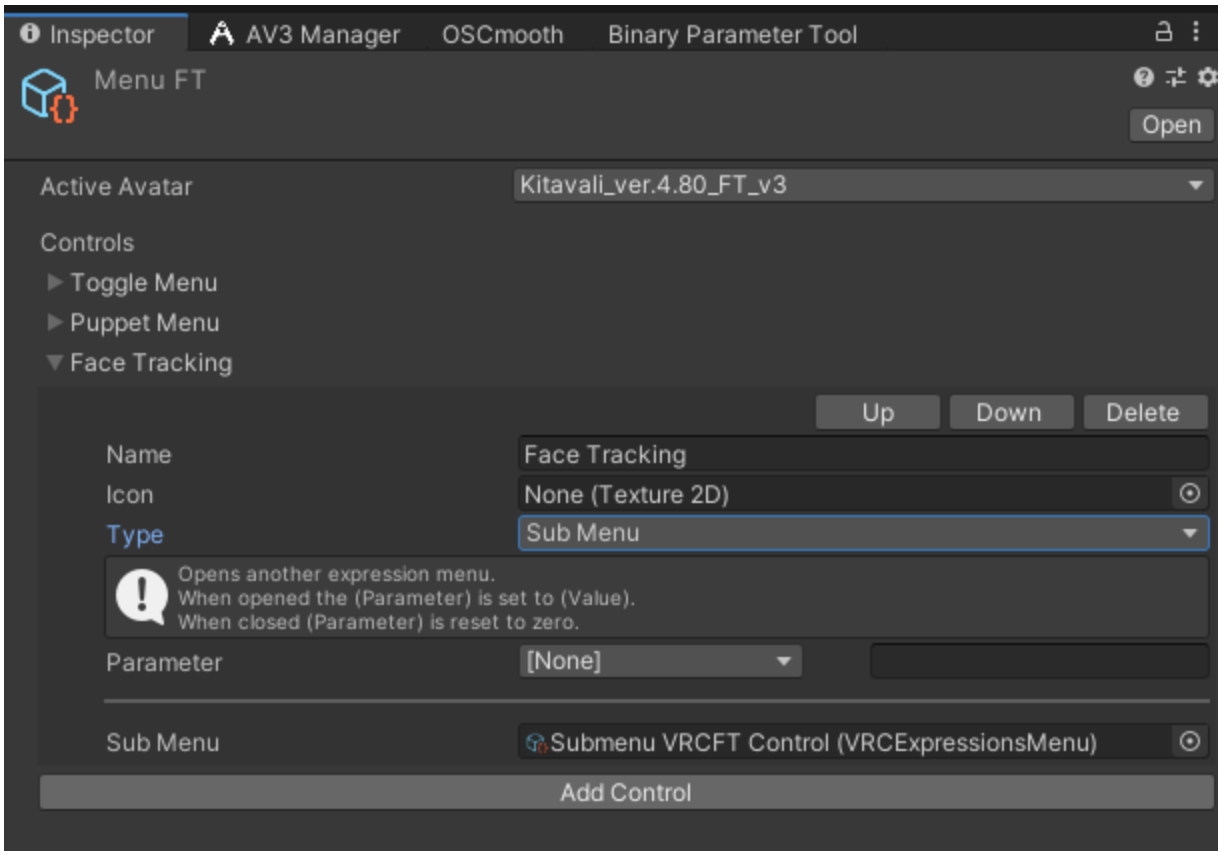


- [ ] Last tab of AV3 Manager shows the write default states. VRCFaceTracking template has write defaults off. It can be used with write defaults on or off. It is good practice to keep it the same as the existing avatar setup. In this example the existing avatar

is write defaults on so click **Set WD On**



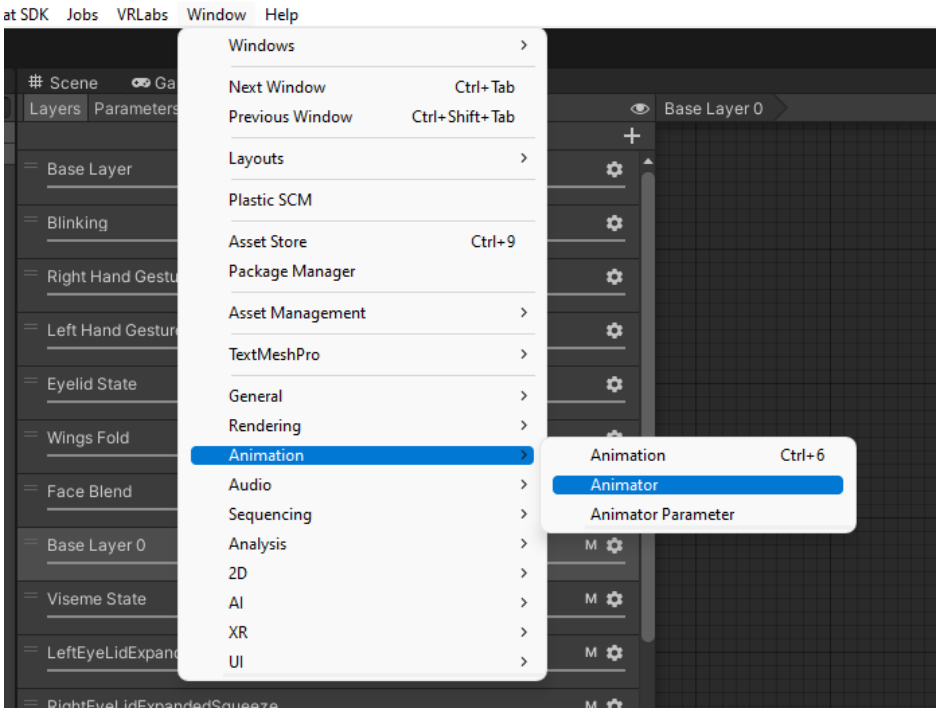
☐ Add Face Tracking control menu



Main setup is now complete; face tracking should be functional at this stage. Additional setup is needed for avatars with hand emotes and other face controls that may interfere with face tracking.

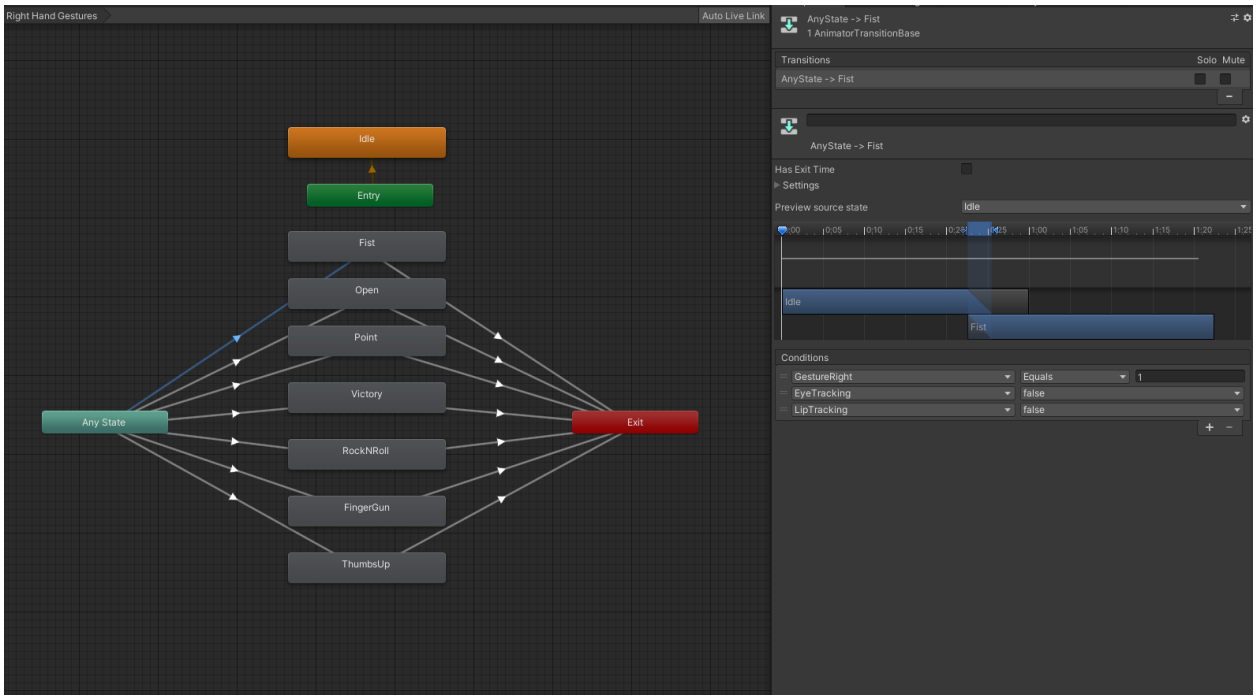
Additional Setup

- [ ] Show Animator and Animation Windows

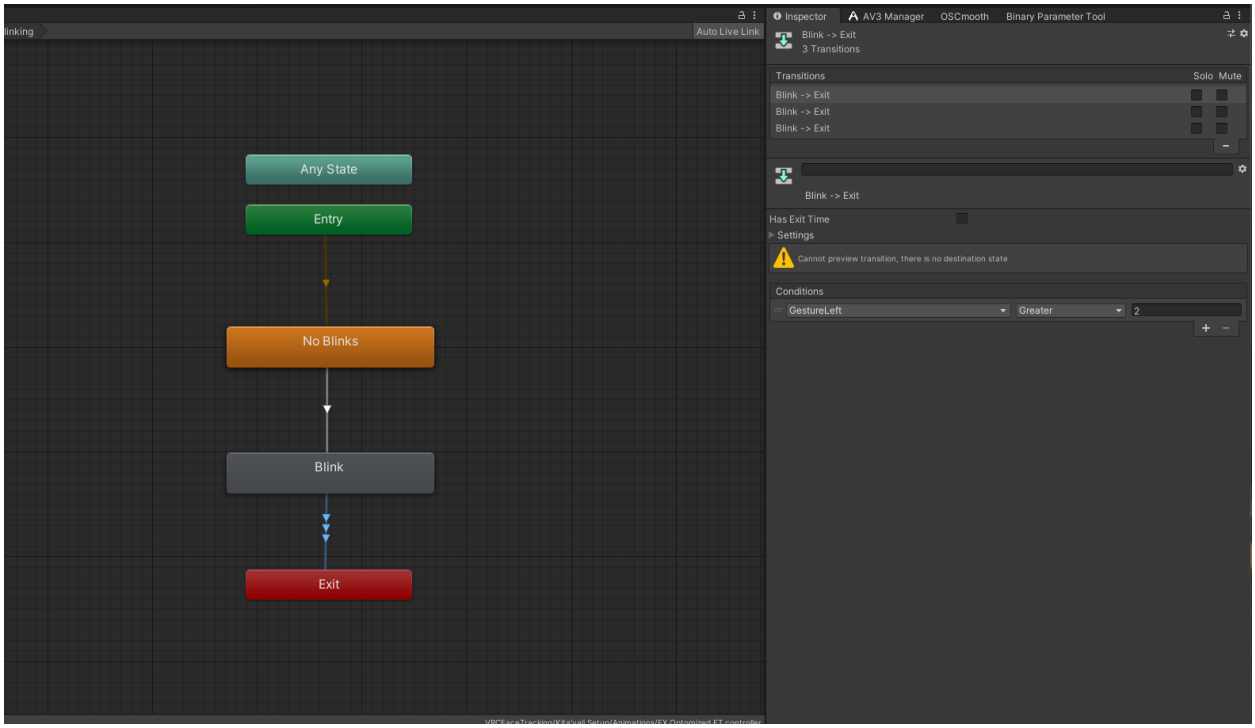


- [ ] Delete **Base Layer 0** - There is nothing in this layer from the animator merge

- [ ] Add conditional to not do hand emotes with eye tracking and lip tracking. Click plus icon and add Lip Tracking and Eye Tracking and set to **False**

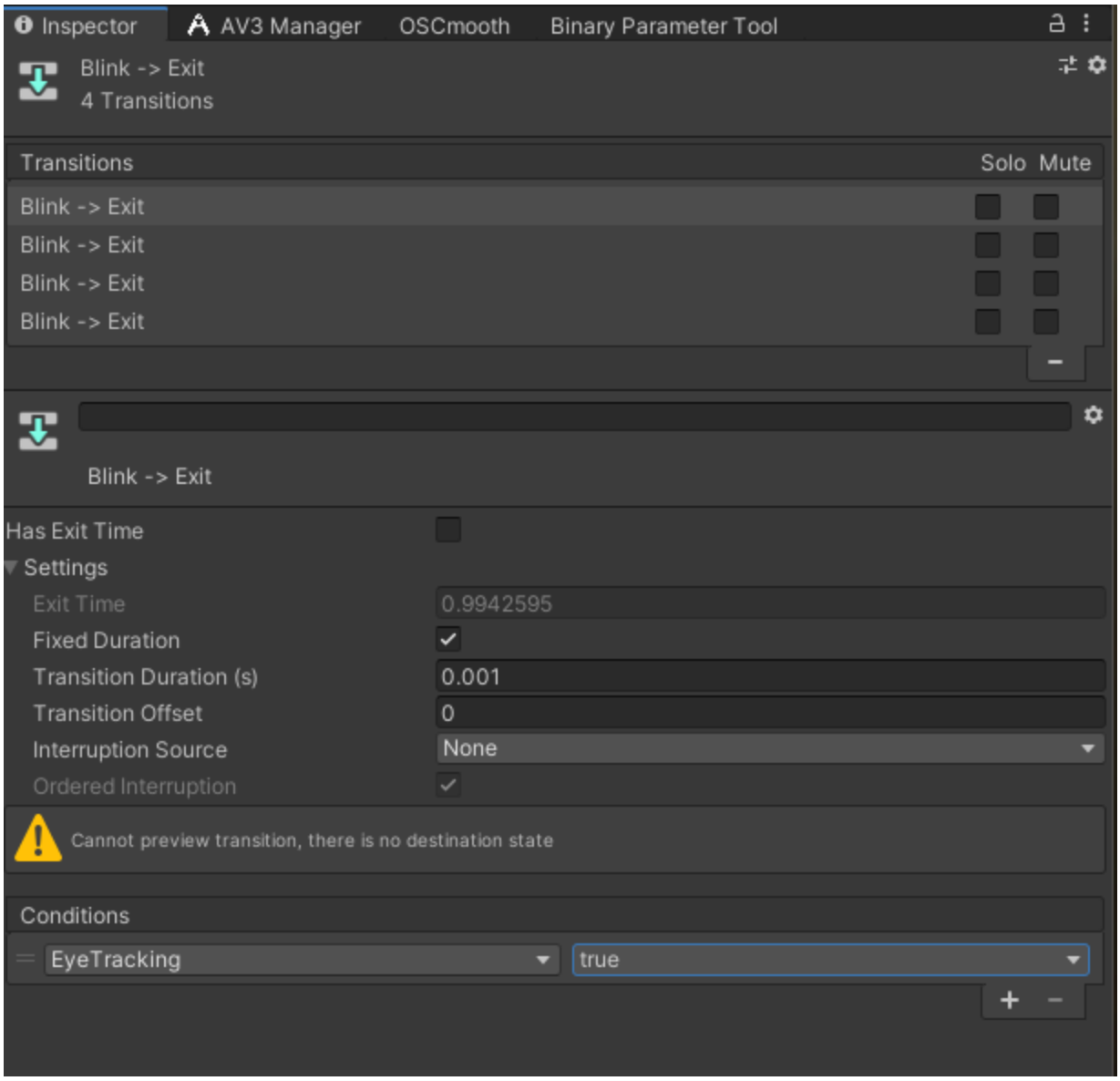


- [ ] Add disable to any idle blink with eye tracking.



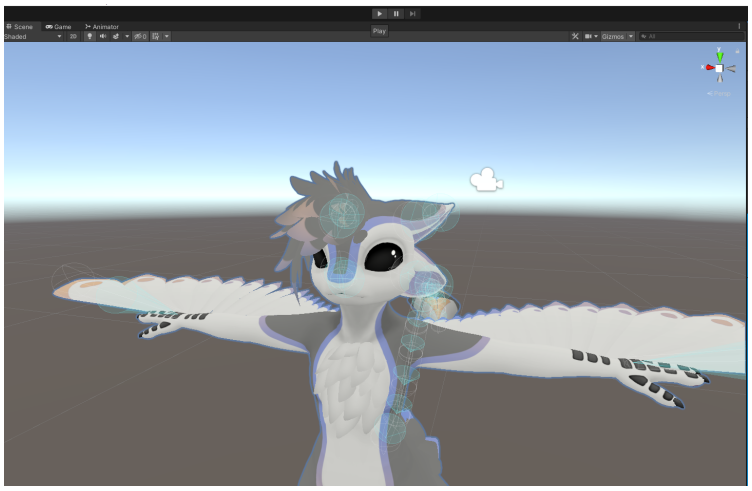
Note the multiple arrows on the exit transitions is equivalent to “OR” logic

statement. Right click transition from and select make transition then select exit as the destination. Click the exit transition arrows and you will see a new transition added to the list. Expand the settings, uncheck the exit time and change the transition duration desired, this is the time delay for the transition, add eyetracking is **True** to the conditions.

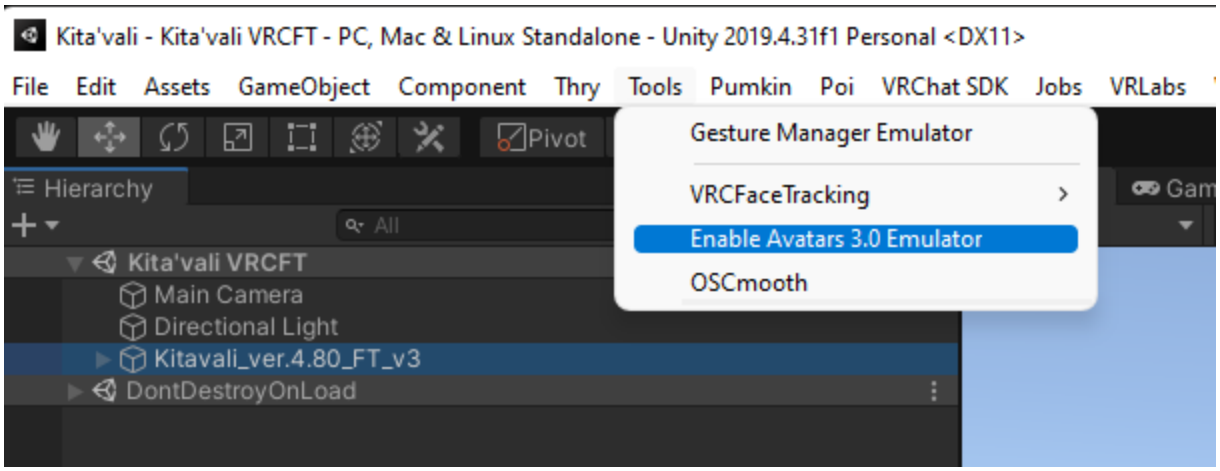


Testing in Unity

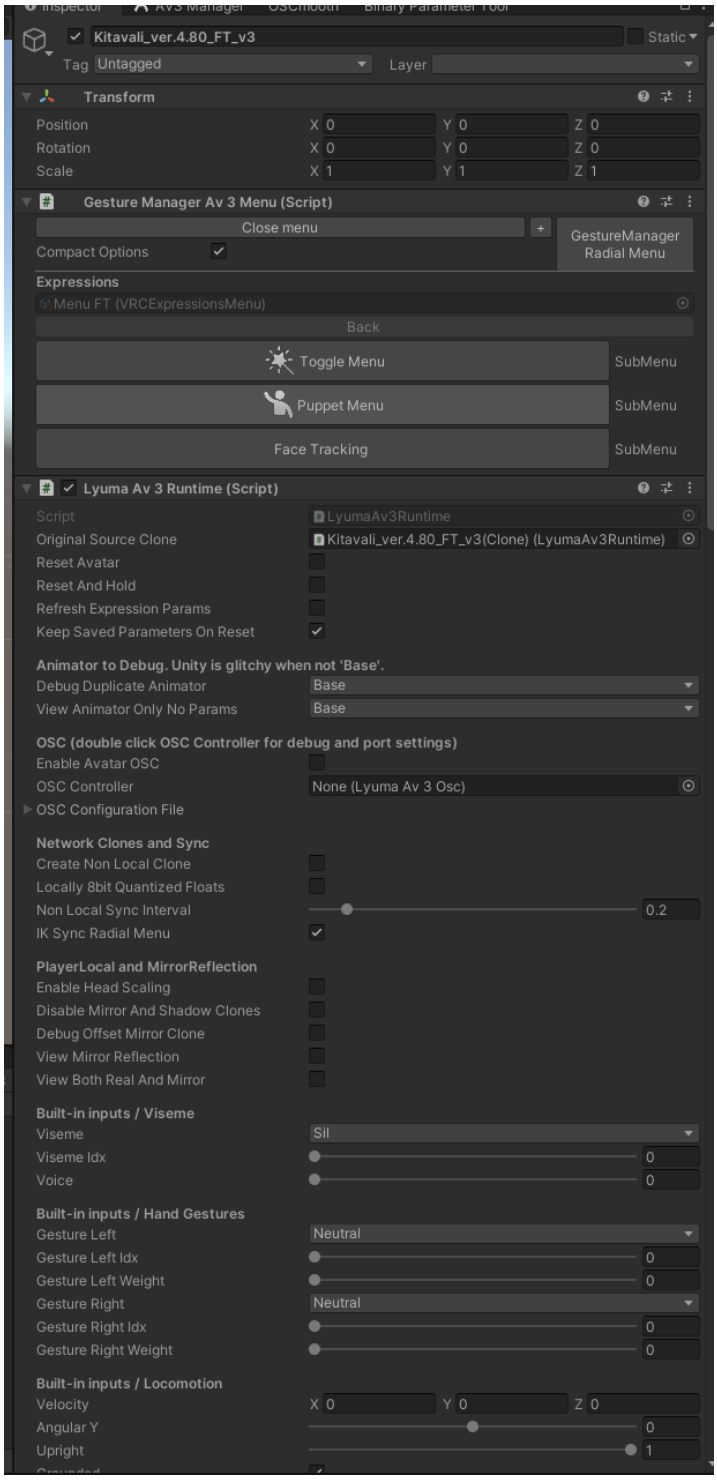
- [ ] Import [Lyuma Av3Emulator]
- [ ] Click on play mode in Unity



- [ ] Enable **Avatar 3.0 Emulator**

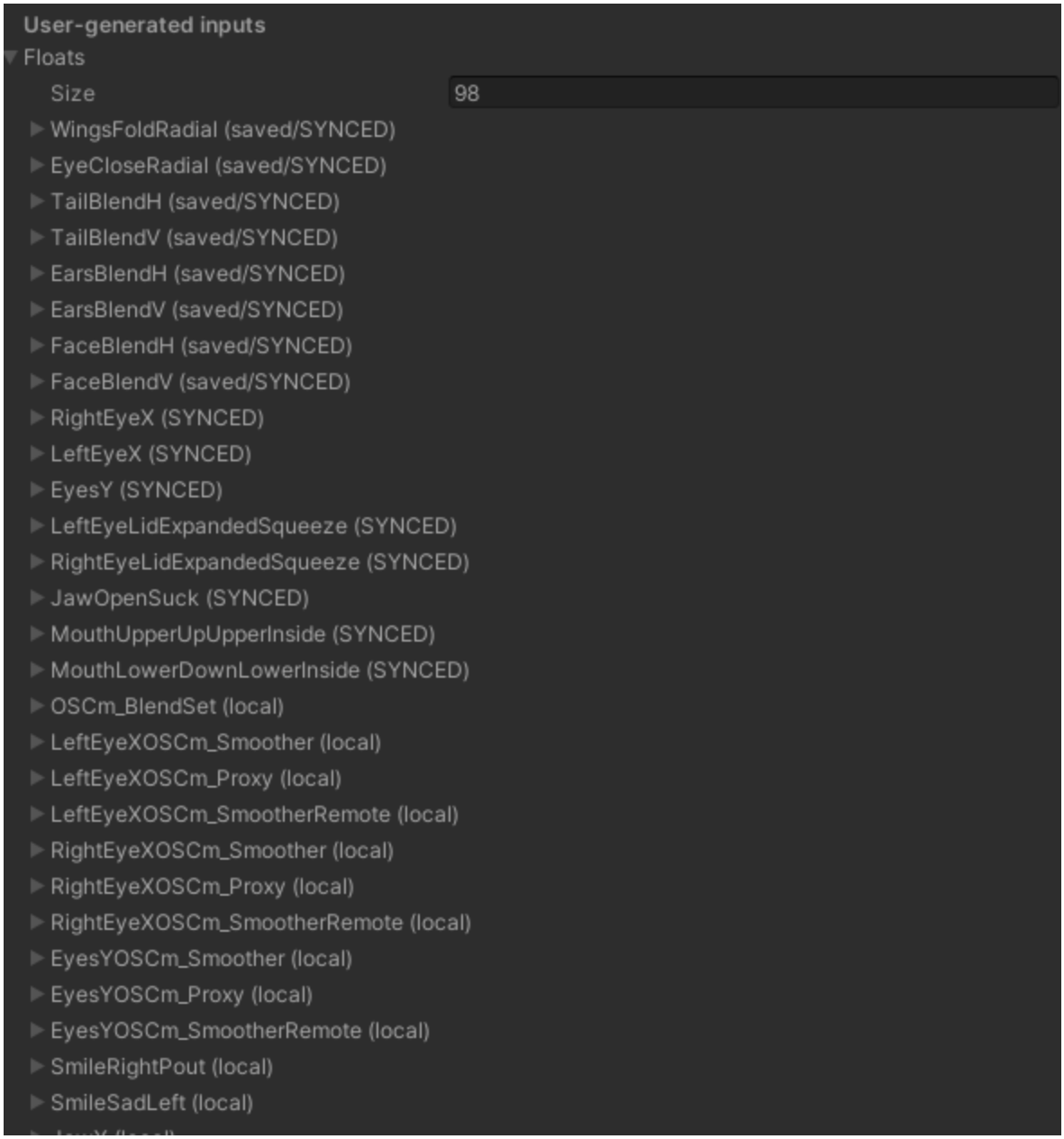


- [ ] Click on the avatar to test. You will see a Gesture Manager Av 3 Menu and Lyuma Av 3 Runtime on the avatar.

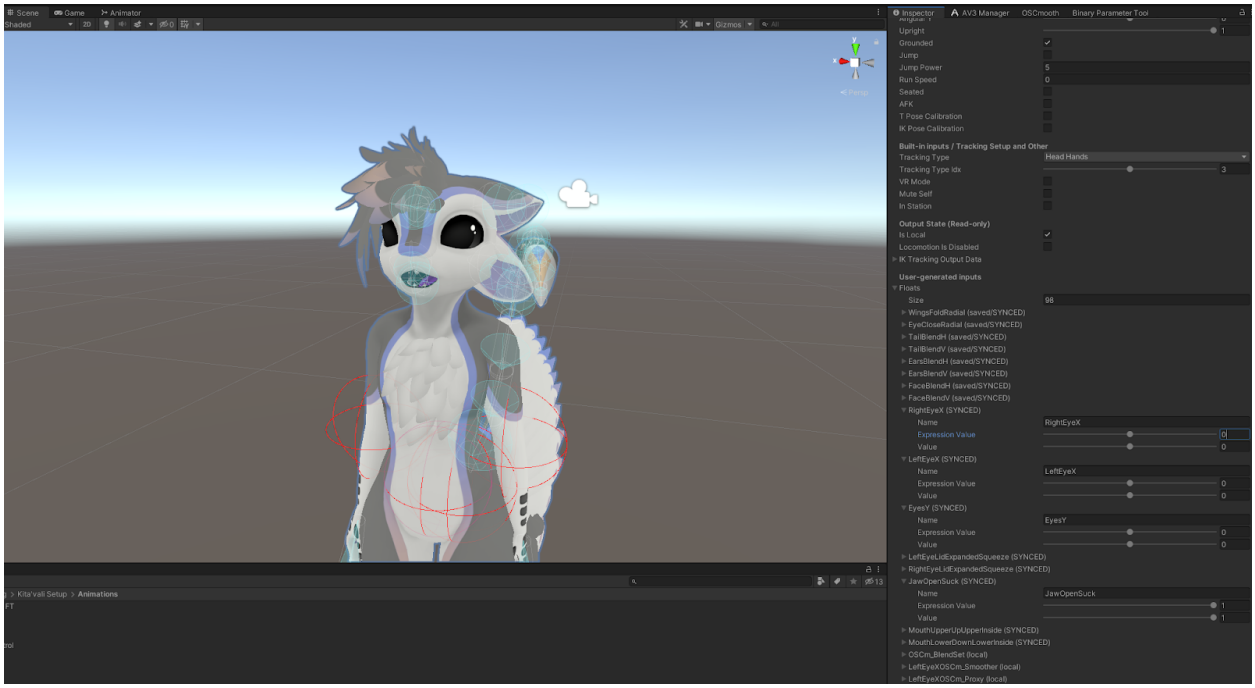


- [ ] Go in menu an enable eye and lip tracking

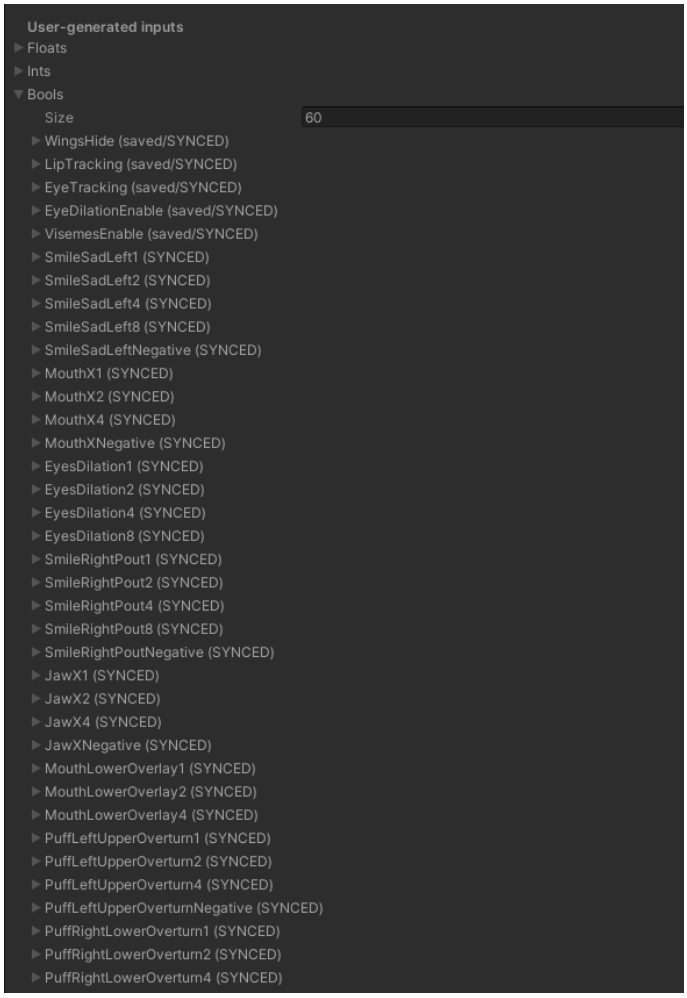
- [ ] Scroll down the inspect to the Use-generated input section and expand floats. Not that the eye tracking parameters state **SYNCED**, the parameters will be network synced in the game



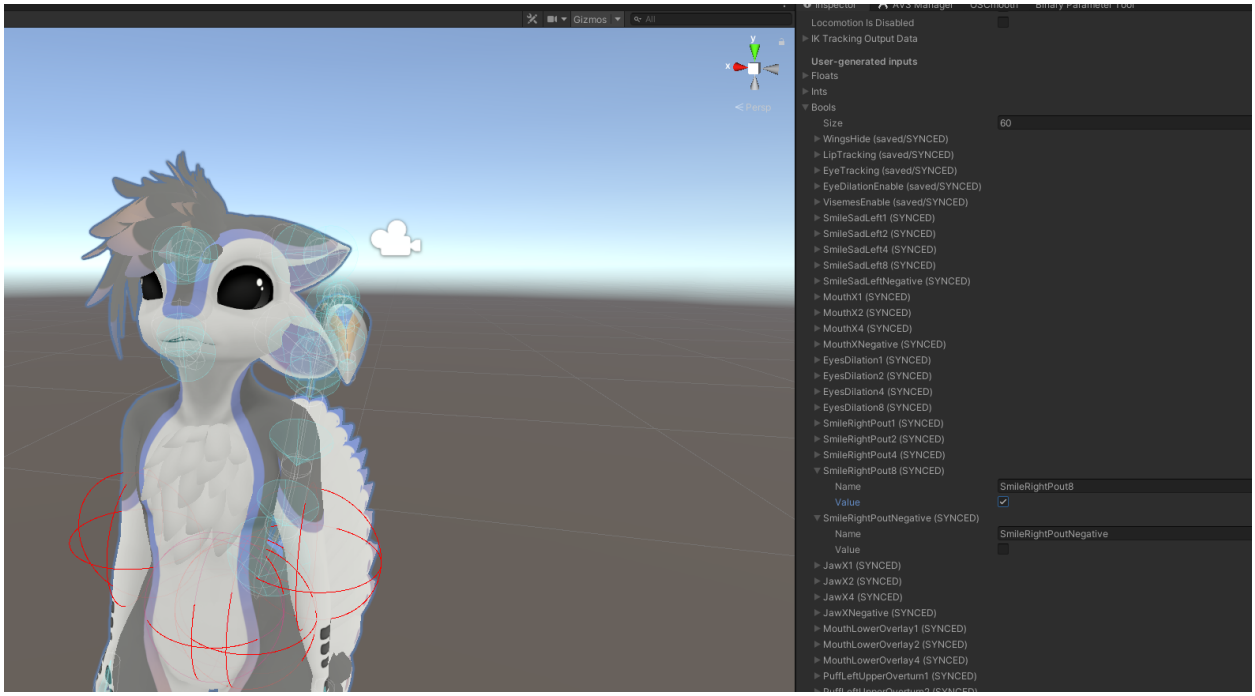
- [ ] Test each of the sync float parameters to see to test that they control the avatar.

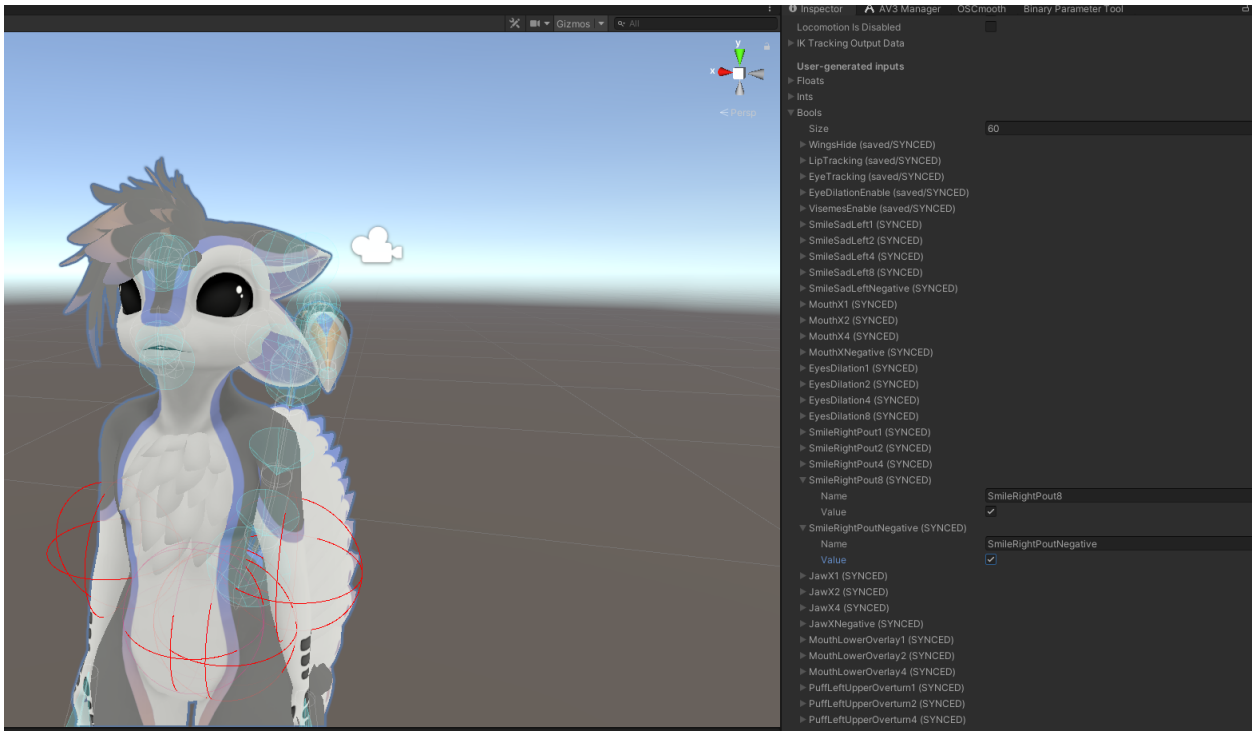


- [ ] When done with the float sync parameters now to test the binary parameters. Go to the Bools section.



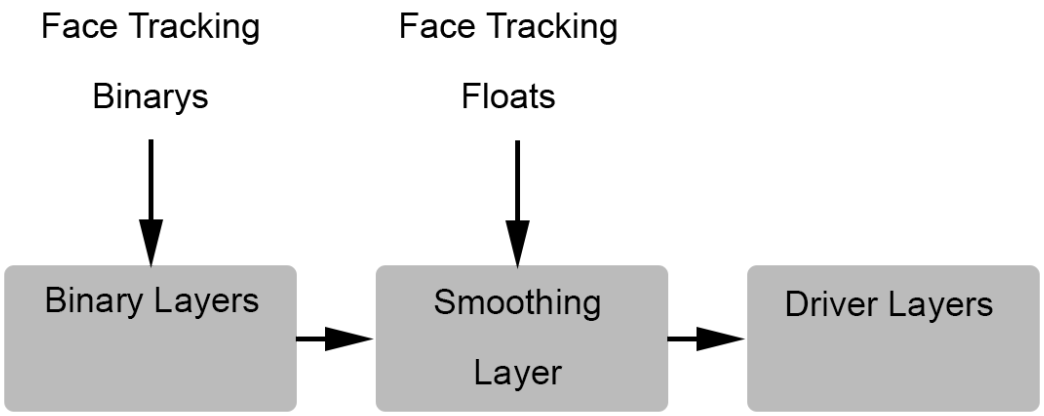
- [ ] Only need to really test the max values. Show the max bool and negative to test





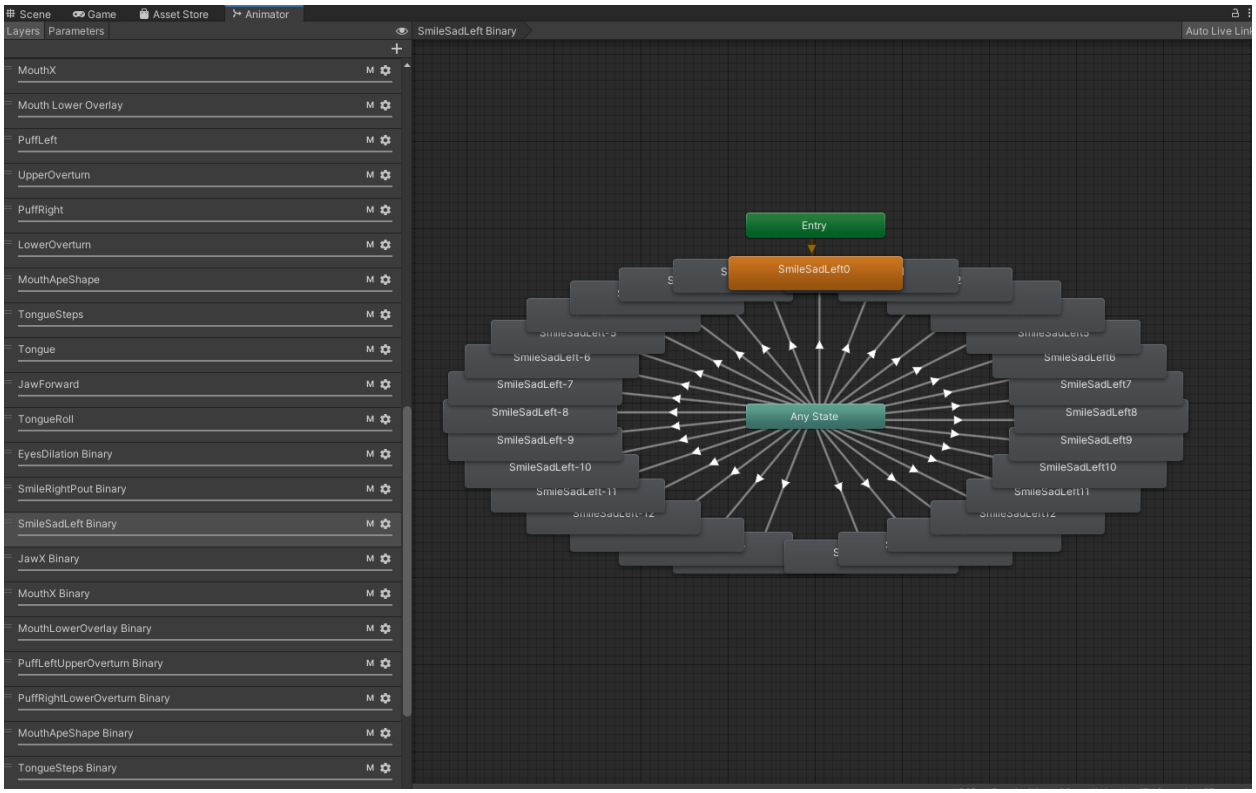
Types of Face Tracking Layers

There are three different animation layers with different functions for face tracking in the animator.



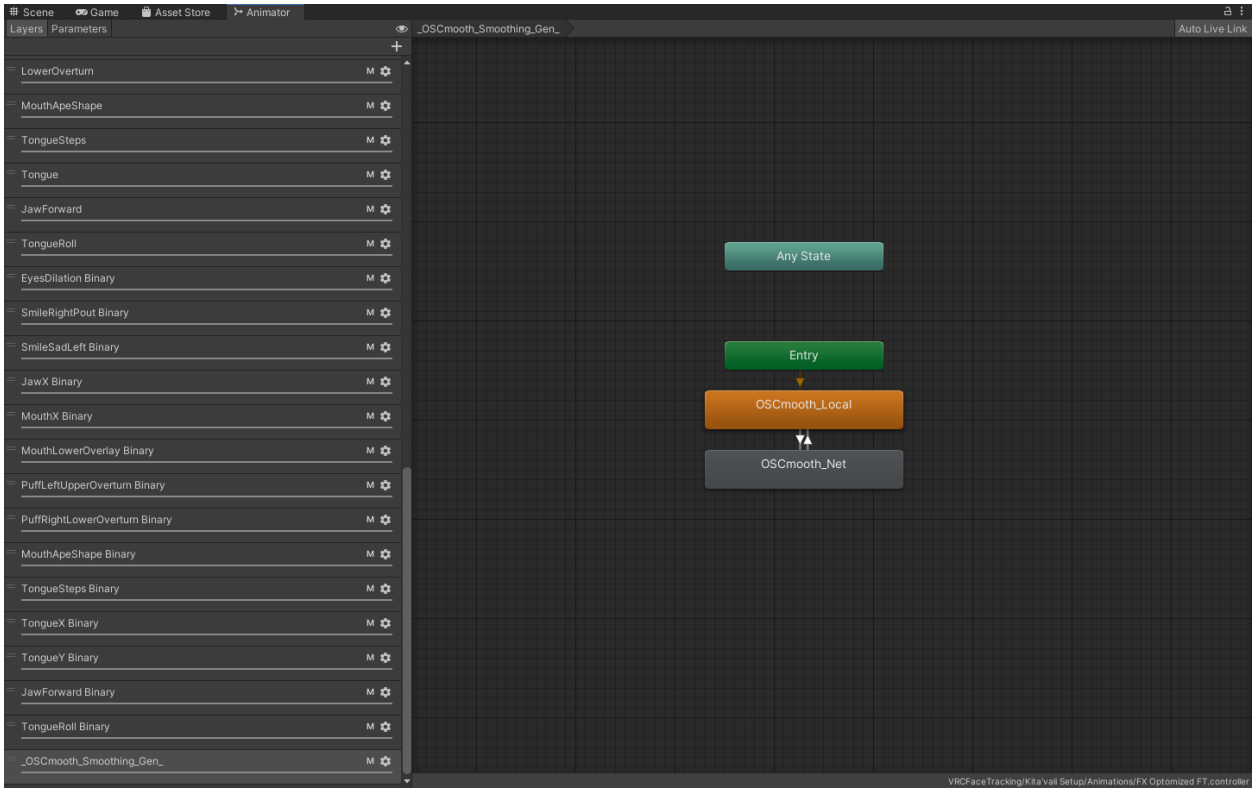
Binary Layers

These layers are generated by the Binary Parameter Tool. These layers take binary parameters to reduce the amount of parameters on the avatar at the cost of resolution. Output of the layer is face tracking parameter float.

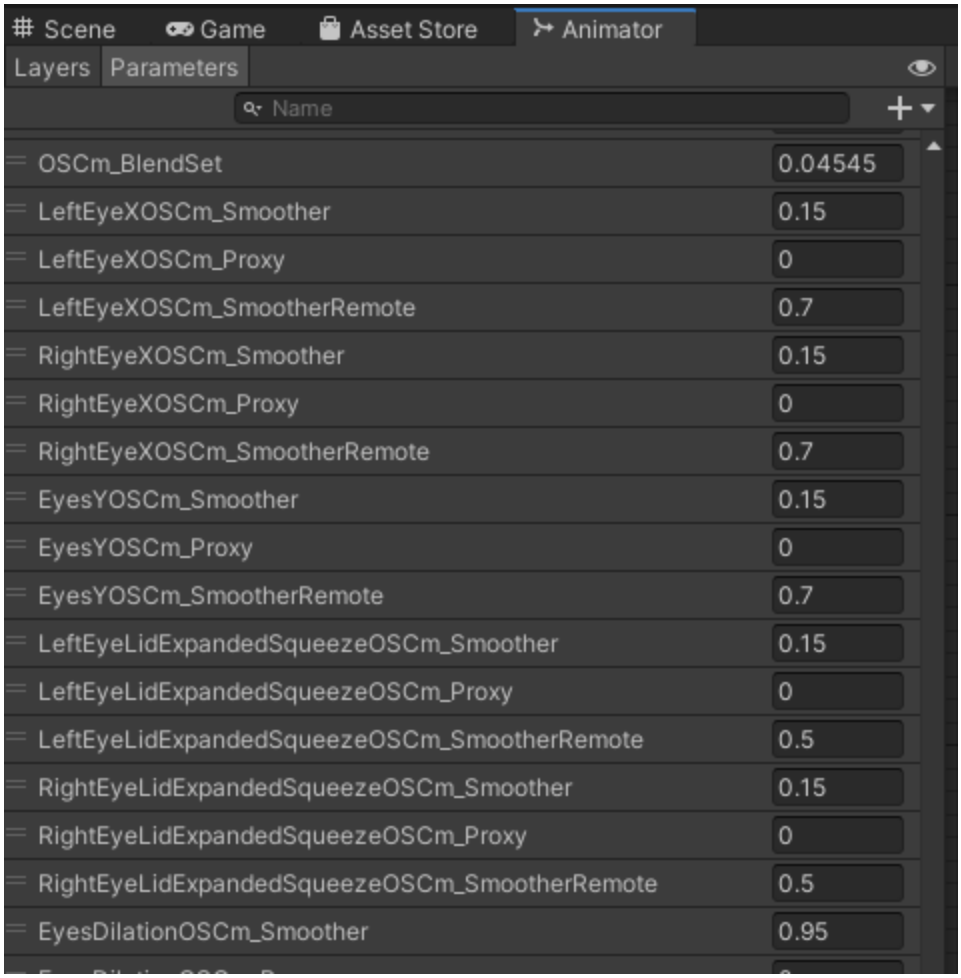


Smoothing Layer

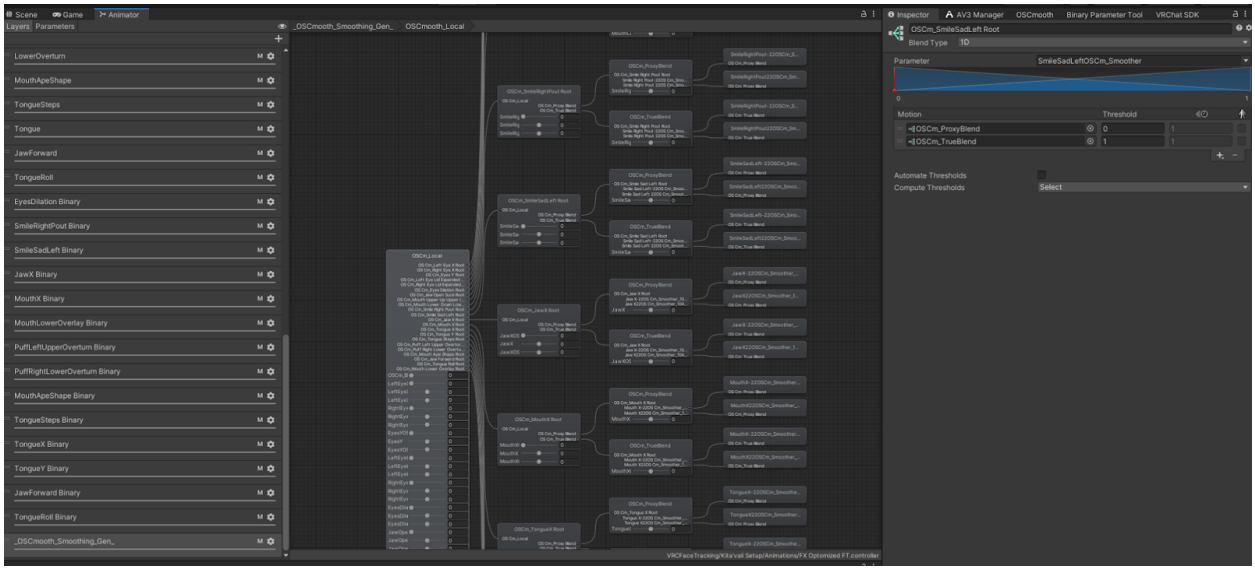
These layers are generated by OSCmooth tool. This has local and remote switch bases on the **isLocal** bool provided natively from VRChat.



Smooth parameters have the tags **OSCm_Smoother** and **OSCm_SmootherRemote.** These values can be changed as desired the higher the value more smooth lower the value less smooth. Do not set it exactly to 1 otherwise the smoothing is infinite so it freezes. This layer takes the face tracking float parameter and the output is float with the **OSCm_Proxy** tag. Local is lower smoothing as the OSC update rate is good for local view but is slow for remote users, so more smoothing is used for the remote users. All smoother values a static variable and do not change and do not need to be networked.

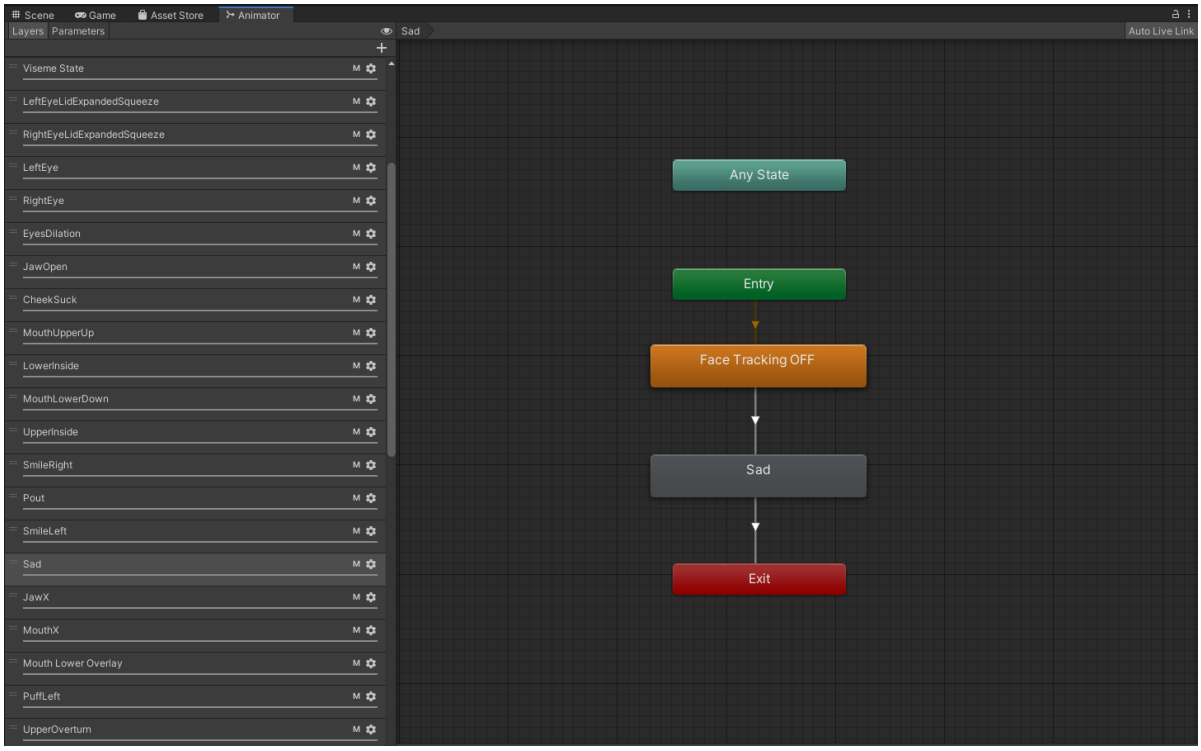


Smoother parameters are in the second blend trees in the OSCmooth_Local and OSCmooth_Remote.

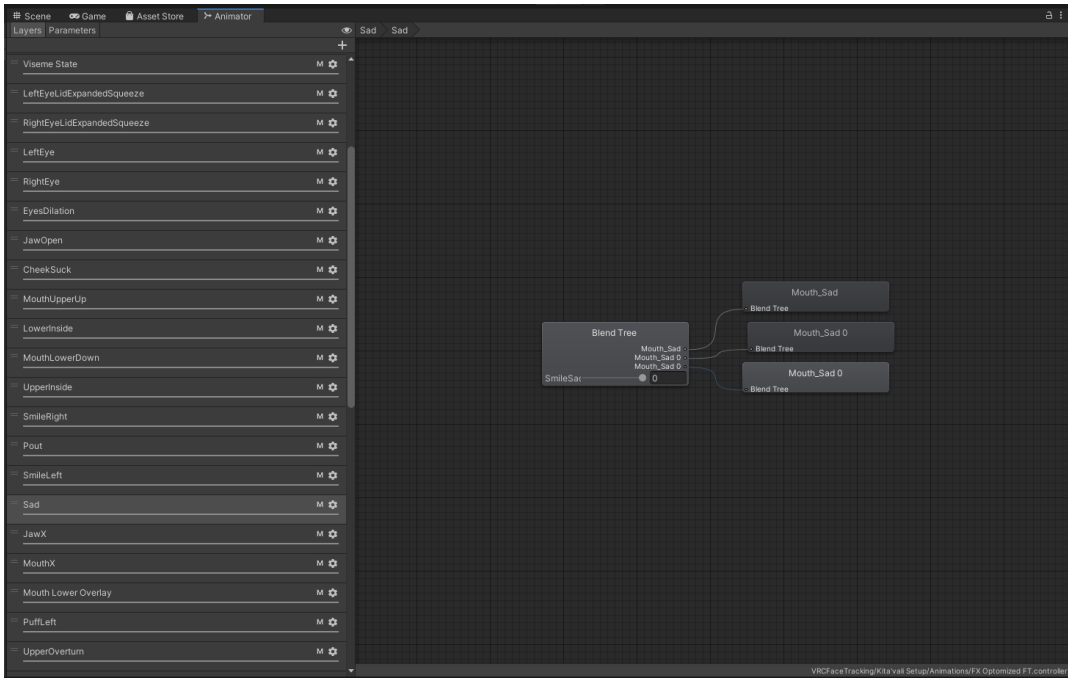


Driver Layers

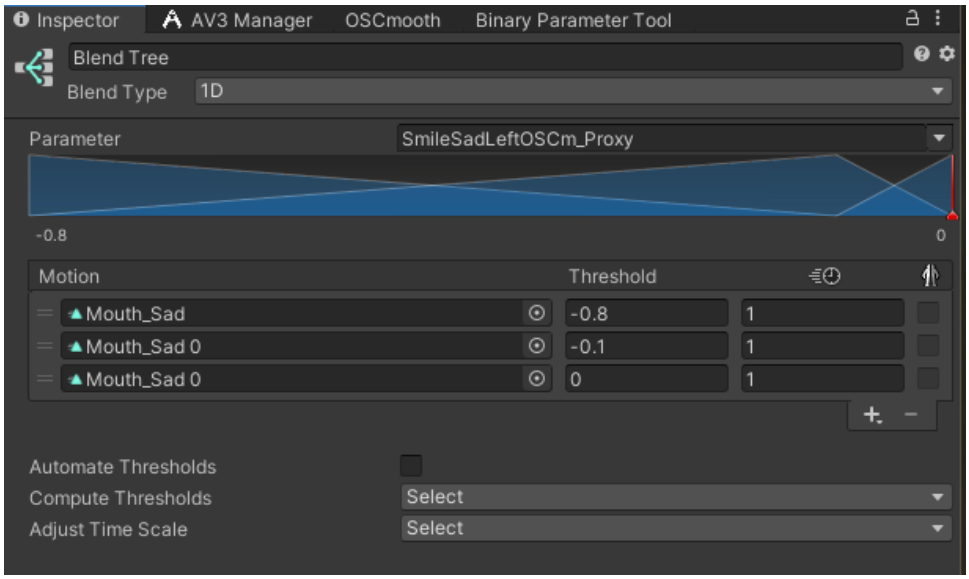
These layers are used to drive the animation for each of the face tracking parameters. Each layer has an off state and a blend state.



Double clicking the blend state will go into blend tree settings.

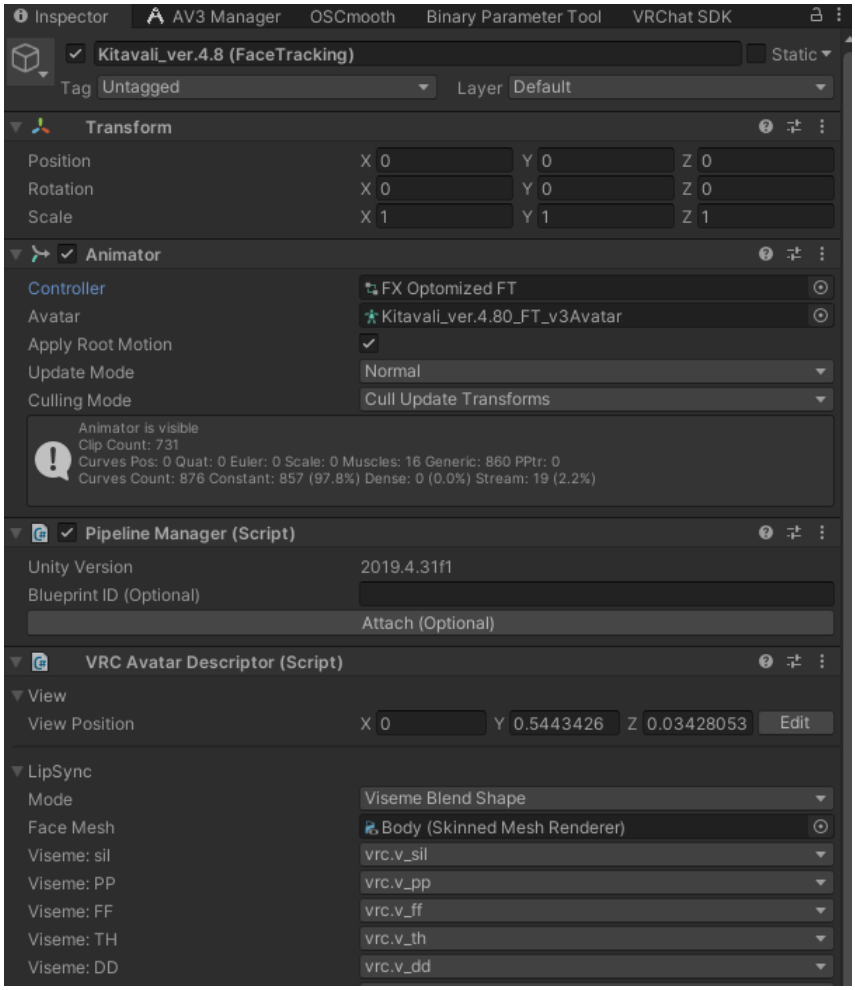


In the inspector for the blend tree you will see settings being used in the template. The **OSCm_Proxy** parameter is coming from the smoother layer. The thresholds can be changed as desired in these blend trees to change the sensitivity. Reducing the max threshold increases the sensitivity and adding dead zones decreases the sensitivity.

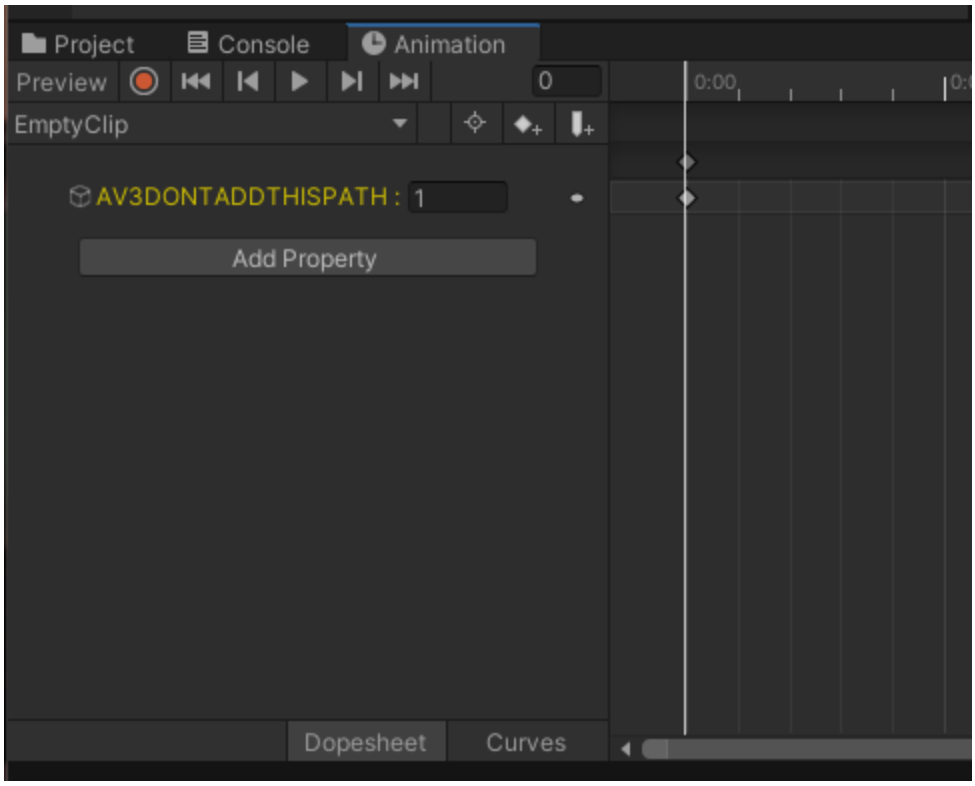


Customizing Animations

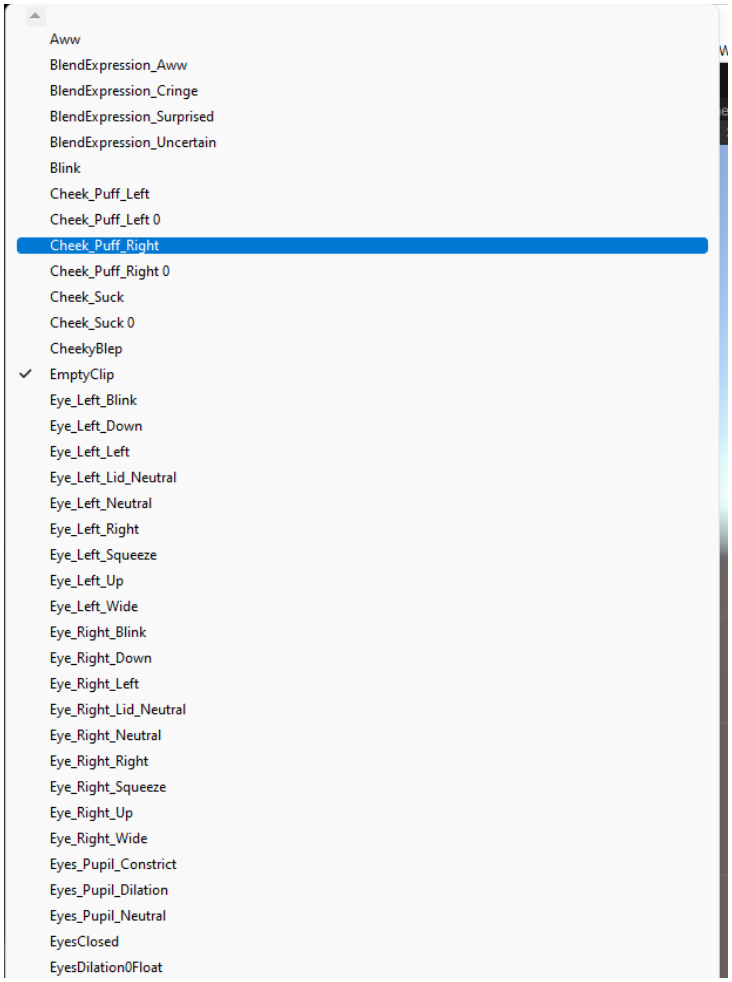
- [ ] To customize animations for the template in play mode apply the FX controller to the avatar.



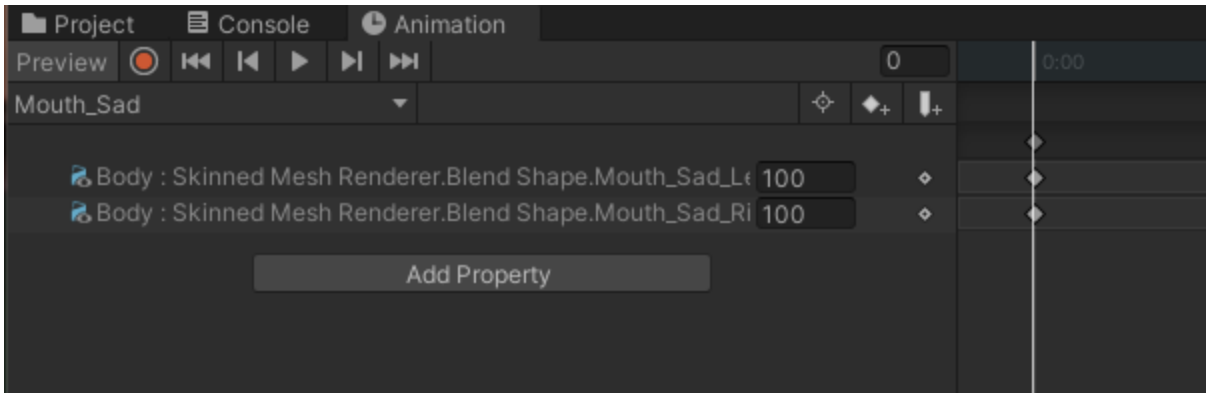
☐ With the avatar selected and animation window click the drop down box.



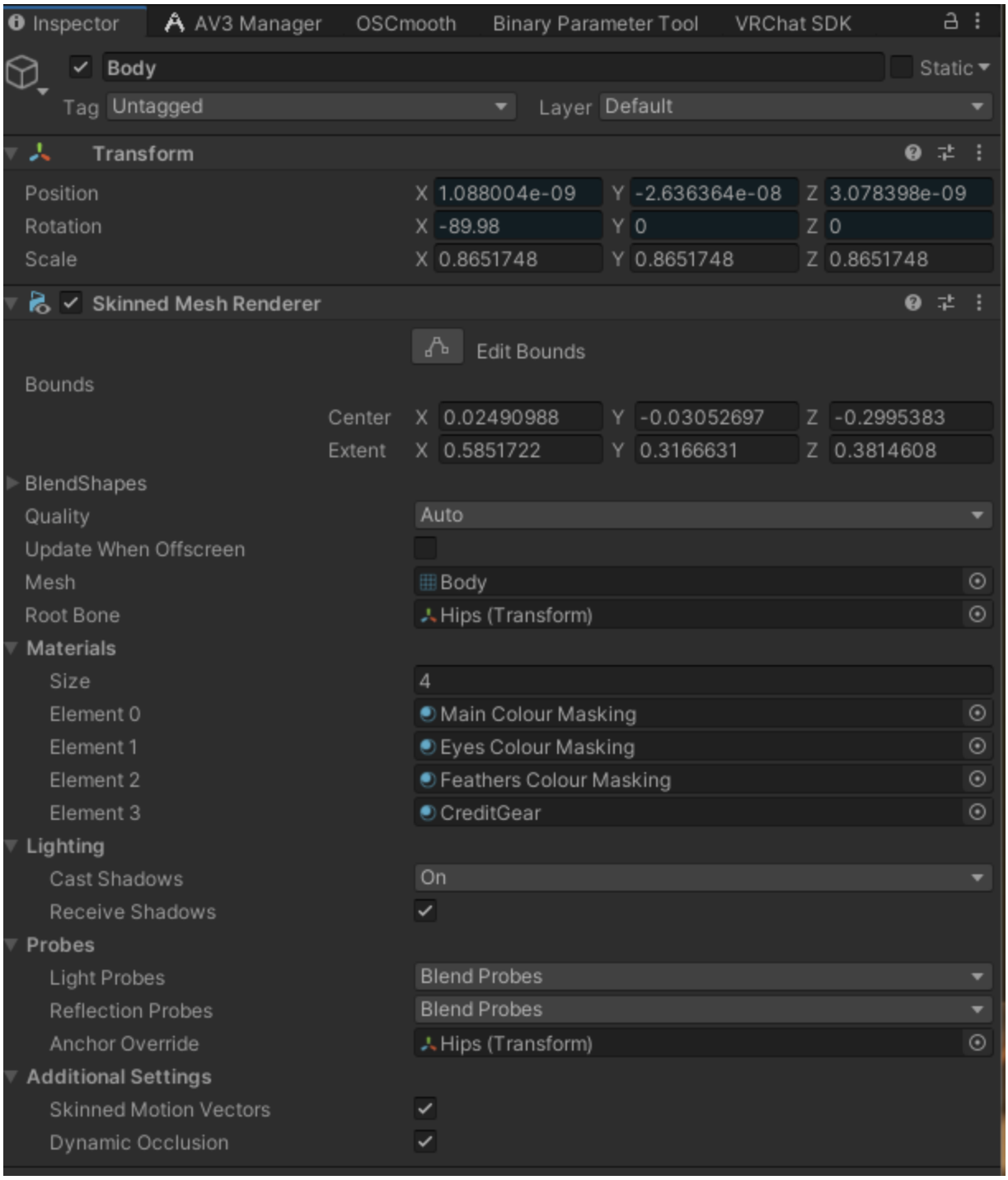
You will see all the animation in the FX controller listed.



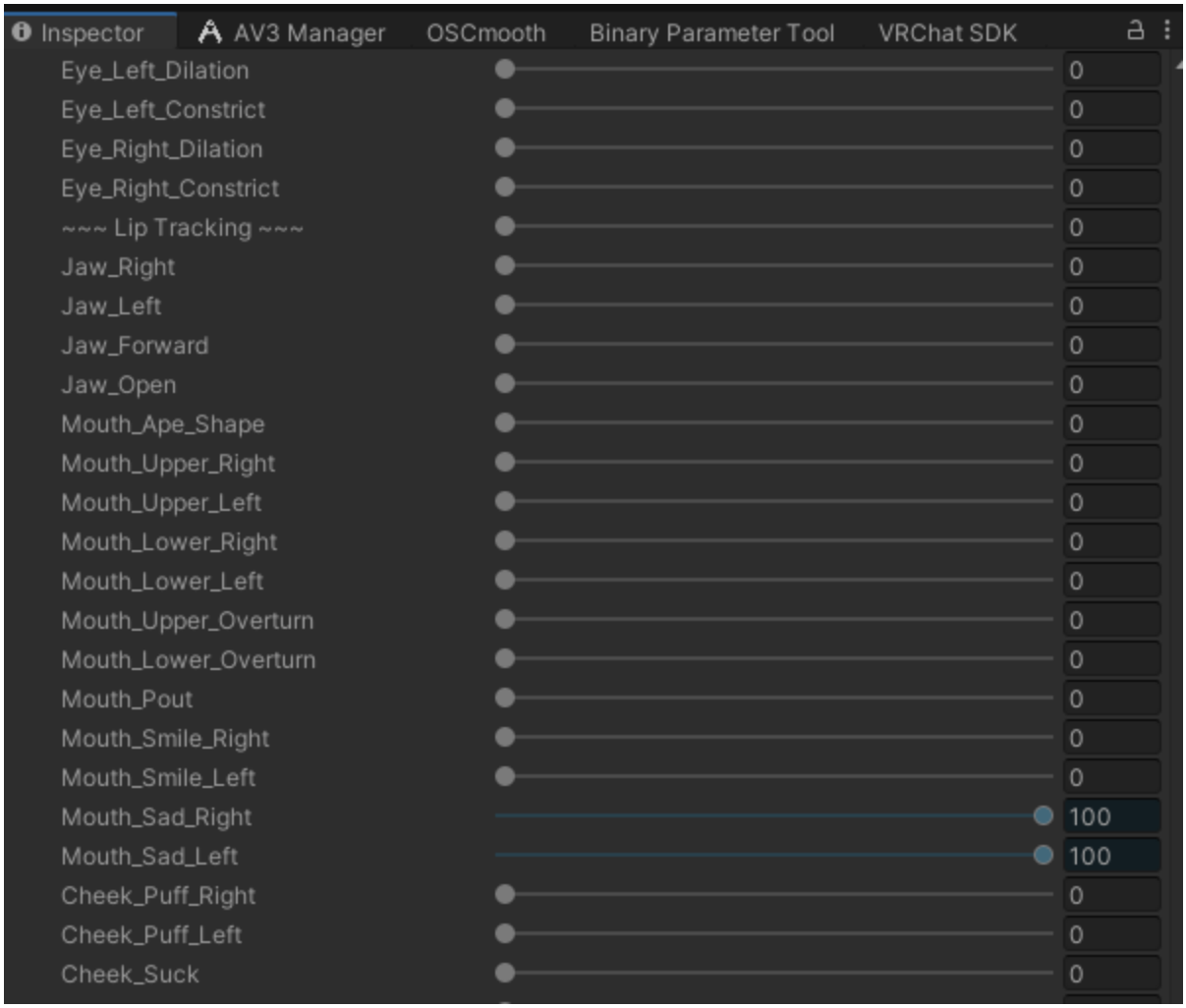
- [ ] Select the animation to edit and click preview. If the animations are yellow that mean the blendshape does not exist.



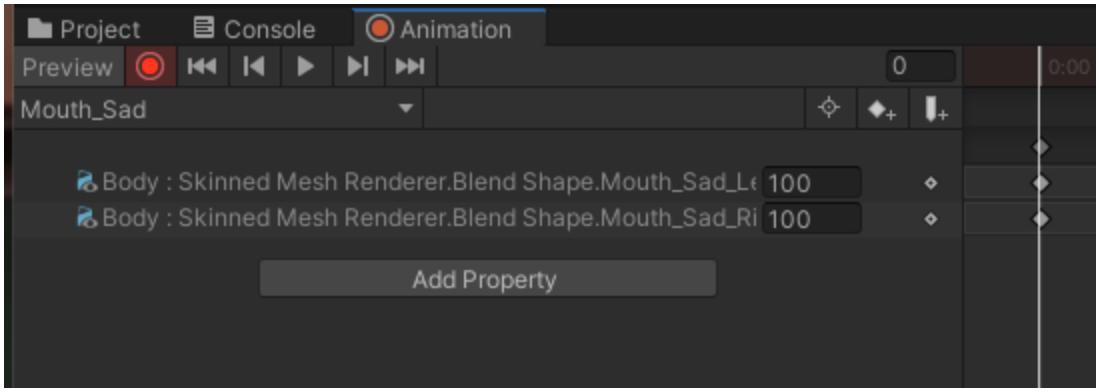
☐ Under the body mesh there is a section called **BlendShapes**, expand it.



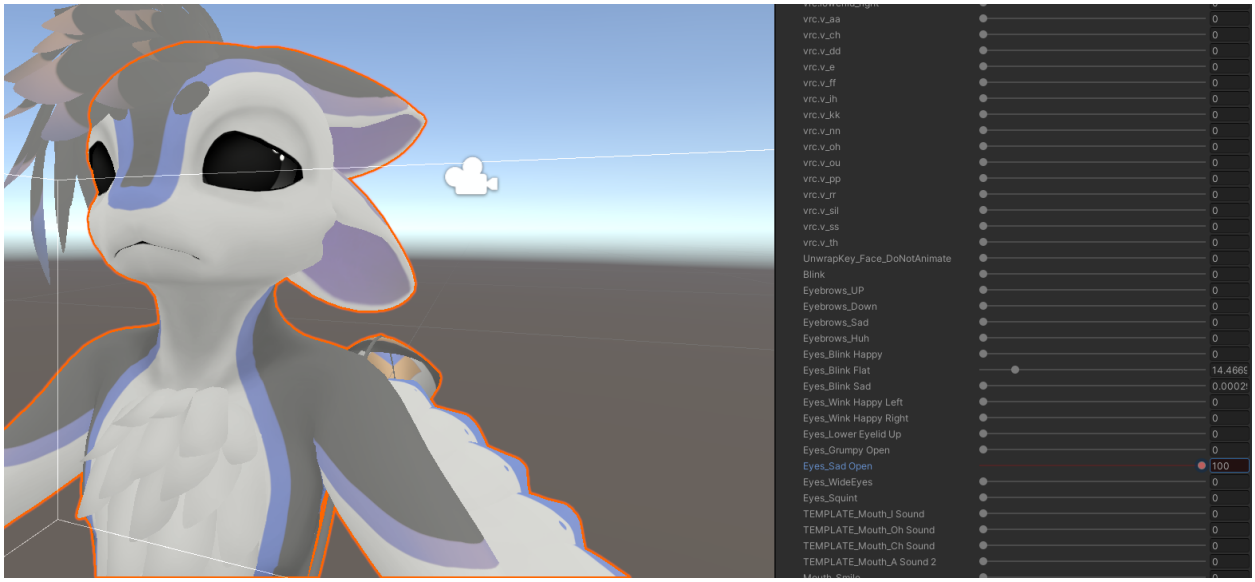
☐ Scroll down to face tracking blendshapes, you should see them blue.



☐ If you want to add additional movements to the animation click the record button in the animation window.



- [ ] You can now record other blendshapes to add to the face tracking controlled parameter. Good paring to the mouth is Sad to Sad Eyebrows and Mouth Lower Overlay to Angry eyebrows.



- [ ] Make sure to make zero state animation write defaults off. You can in record mode right click the blendshape and **Add Key** to add the zero state.