



# SRanipal Unity SDK Guide

Release version: 1.3.6.7

©2017-2022 HTC Corporation. All Rights Reserved. HTC, the HTC logo, Vive, the Vive logo, and all other HTC product and services names are the trademarks or registered trademarks of HTC Corporation and its affiliates in the U.S. and other countries.

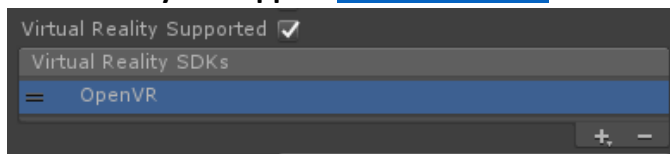
All other trademarks and service marks mentioned herein, including company names, product names, service names and logos, are the property of their respective owners and their use herein does not indicate an affiliation with, association with, or endorsement of or by HTC Corporation.

## Prerequisites

The SRanipal SDK for Unity can be implemented only when the SRanipal SDK has been setup. If not, follow the guideline below to setup the SRanipal SDK —  
SRanipal\_version\SRanipal\_SDK\_Guide.pdf.

## Create a new project and import the SDK

1. Open Unity and create a new **3D** project.
2. Select **Asset > Import Package > Custom Package**.
3. Find the SRanipal Unity package at SRanipal\_version\02\_Unity\Vive-SRanipal-Unity-Plugin.unitypackage
4. In the **Importing Package** dialog, ensure that all files are selected and click **Import**.
5. Accept any API upgrades if prompted.
6. Enable **Unity VR support** ([official manual](#)).



## Play the sample scene

1. In the Unity Project window, find the scene Sample.unity in:  
**Asset > ViveSR > Scenes**.
2. Ensure that all Requirements in SRanipal\_SDK\_Guide.docx are met and then click on **Play**.

## Build the sample app

1. Select **File > Build Settings**.
2. In the Unity **Build Settings** window, adjust the **Architecture** on x86\_64, and click on **Build and Run**.

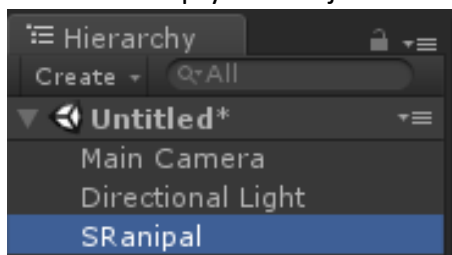
## Next Steps

- Learn how to Enable SRanipal in your app.

# Enable SRanipal in your Unity project

## Enable the SRanipal Framework

1. Create an empty GameObject. We name it “SRanipal” here.

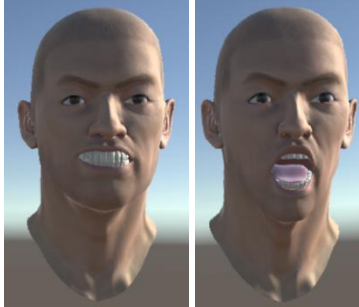


2. Add the component “SRanipal\_Framework” to the Gameobject SRanipal.
3. Toggle on “Enable Lip” for the lip-tracking feature.
4. Explore the Lip features.

## Lip relative features

### Control Avatar's lip

To reflect the player's lip movement on an avatar, refer to the script ViveSR\Script\Sample\Sranipal\_AvatarLipSample.cs.



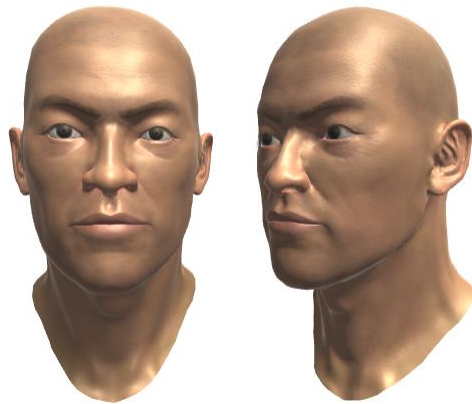
# SRanipal Compatible Avatar

## Overview

Through SRanipal's lip-tracking features, an avatar's blendShape values can be animated with the player's lip movement. A compatible avatar for SRanipal has 26 blendshapes in version 1 and 38 blendshapes (37 + 1 no detect) in version 2 for lip tracking. Demonstrated in this section.

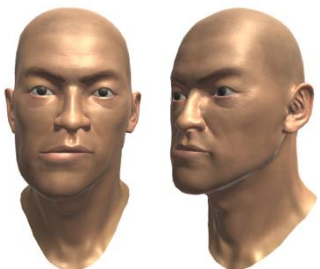
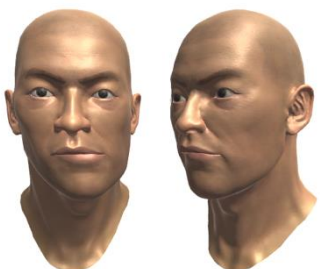
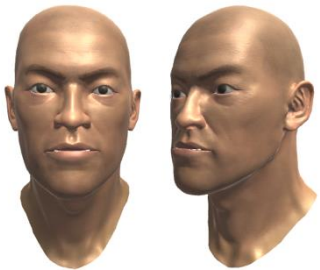

(Note that the development will focus on version 2, version 1 will still support the system but will not be updated in the future.)

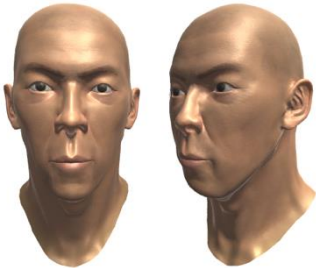
**Note:** Blendshape name with prefix annotation "\*" means that it is composed of multiple blendshapes.




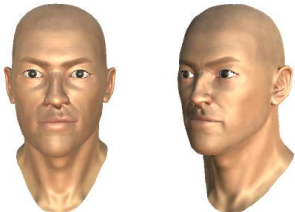
Sample Avatar

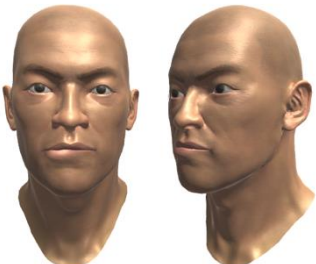
## Jaw, Mouth and Cheek BlendShapes – version 2

Jaw_Right	
	Description
	This blendShape moves the jaw further rightward with a higher value.
Jaw_Left	
	Description
	This blendShape moves the jaw further leftward with a higher value.
Jaw_Forward	
	Description
	This blendShape moves the jaw further forward with a higher value.
Jaw_Open	
	Description
	This blendShape opens the mouth further with the higher value.

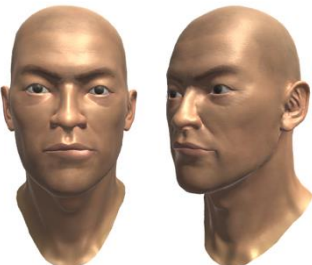
Mouth_Ape_Shape	
	Description
	This blendShape stretches the jaw further with a higher value.



Mouth_Upper_Right	
	Description
	This blendShape move your upper lip rightward.



Mouth_Upper_Left	
	Description
	This blendShape move your upper lip leftward.

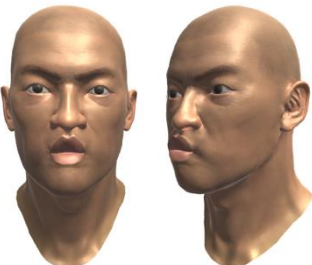
Mouth_Lower_Right	
	Description
	This blendShape moves the lower lip further rightward with a higher value.

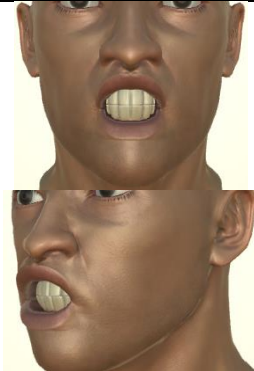



Mouth_Lower_Left	
	Description
	This blendShape moves the lower lip further leftward with a higher value.

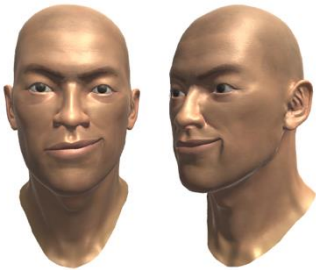
*Mouth_Upper_Overturn	
	Description
	<p>This blendShape pout your upper lip.</p> <p>Must be used with <b>UpperRight_Up</b> and <b>UpperLeft_Up</b> to complete Upper <b>O</b> mouth.</p> 

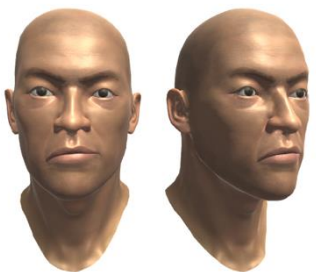
*Mouth_Lower_Overturn	
	Description
	<p>This blendShape pout your lower lip</p> <p>Must be used with <b>LowerRight_Down</b> and <b>UpperLeft_Up</b> to complete Lower <b>O</b> mouth.</p> 

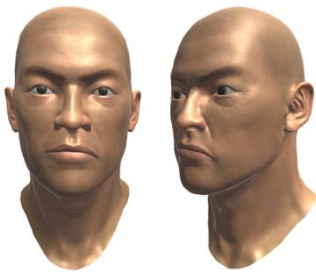
Mouth_Pout	
	Description
	This blendShape allows the lips to pout more with a higher value.

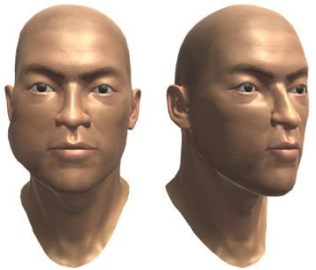
Mouth_Upper_Overturn + Mouth_Lower_Overturn + Lip Up and down (Note that we did not provide this as independent blendShape)	
	Description
	The entire O-shaped mouth is formed by the combination of 6 blendshapes: <b>Mouth_Upper_Overturn</b> <b>Mouth_Lower_Overturn</b> <b>Mouth_UpperLeft_Up</b> <b>Mouth_UpperRight_Up</b> <b>Mouth_LowerLeft_Down</b> <b>Mouth_LowerRight_Down</b>

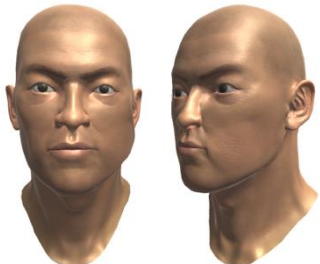
Mouth_Smile_Right	
	Description
	This blendShape raises the right side of the mouth further with a higher value.

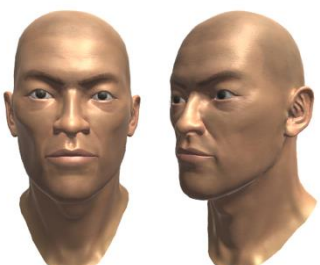
Mouth_Smile_Left	
	Description
	This blendShape raises the left side of the mouth further with a higher value.

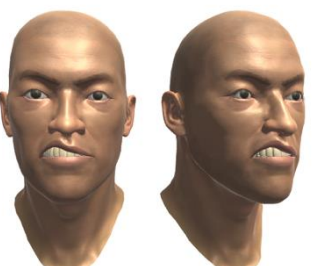
Mouth_Sad_Right	
	Description
	This blendShape lowers the right side of the mouth further with a higher value.

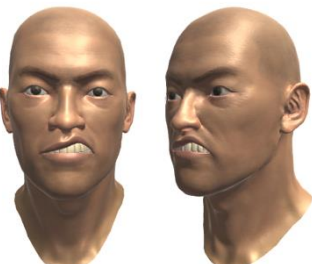
Mouth_Sad_Left	
	Description
	This blendShape lowers the left side of the mouth further with a higher value.

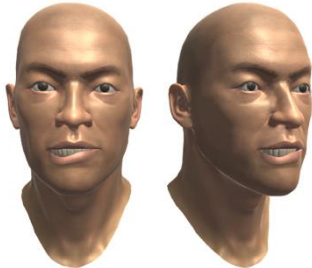
Cheek_Puff_Right	
	Description
	This blendShape puffs up the right side of the cheek further with a higher value.

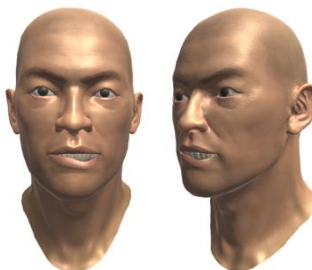
Cheek_Puff_Left	
	Description
	This blendShape puffs up the left side of the cheek further with a higher value.

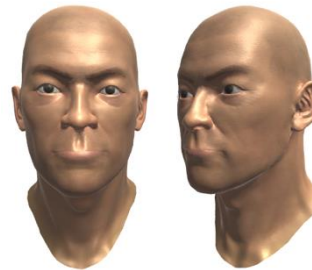
Cheek_Suck	
	Description
	This blendShape sucks in the cheeks on both sides further with a higher value.

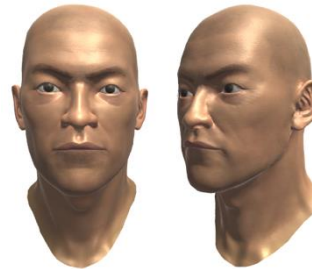
Mouth_Upper_UpRight	
	Description
	This blendShape raises the right upper lip further with a higher value.

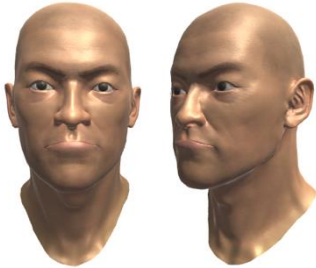
Mouth_Upper_UpLeft	
	Description
	This blendShape lowers the left upper lip further with a higher value.


Mouth_Lower_DownRight	
	Description
	This blendShape lowers the right lower lip further with a higher value.


Mouth_Lower_DownLeft	
	Description
	This blendShape lowers the left lower lip further with a higher value.

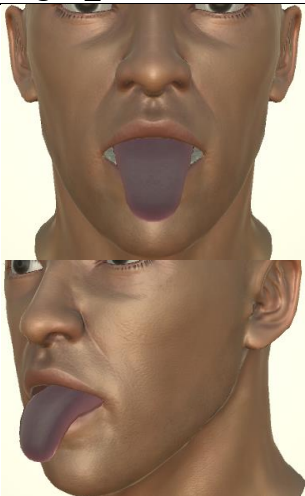
Mouth_Upper_Inside	
	Description
	This blendShape rolls in the upper lip further with a higher value.

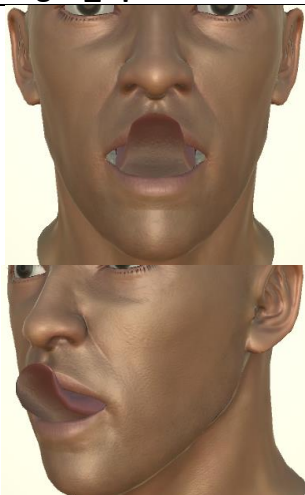
Mouth_Lower_Inside	
	Description
	This blendShape rolls in the lower lip further with a higher value.

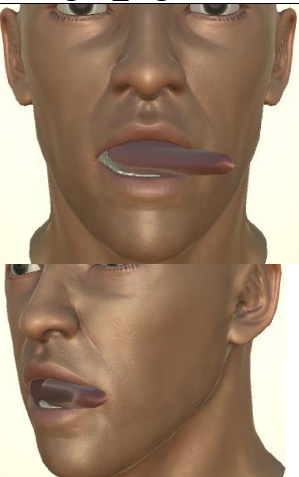
Mouth_Lower_Overlay	
	Description
	This blendShape stretches the lower lip further and lays it on the upper lip further with a higher value.

Tongue_LongStep1	
	Description
	<p>This blendShape stick the tongue out slightly.</p> <p>In step1 of extending the tongue, the main action of the tongue is to lift up, and the elongated length only extends to a little bit beyond the teeth.</p>

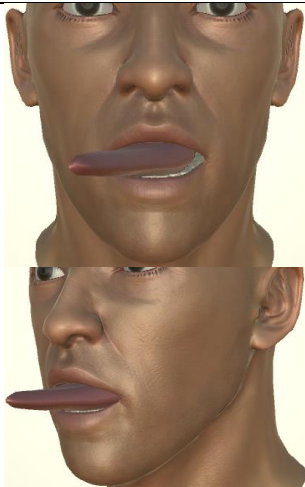
Tongue_LongStep2	
	Description
	<p>This blendShape stick the tongue out extremely.</p> <p>Continuing the step1, extend the tongue to the longest.</p>

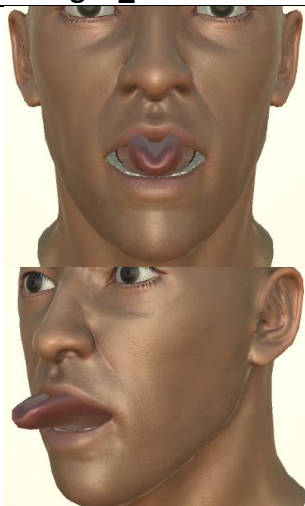
<b>*Tongue_Down</b>	
	<b>Description</b>
	<p>This blendShape stick the tongue out and down extremely.</p> <p>This example contains (<b>Tongue_Down</b> + <b>Tongue_LongStep2</b> + <b>Tongue_LongStep1</b>)</p>

<b>*Tongue_Up</b>	
	<b>Description</b>
	<p>This blendShape stick the tongue out and up extremely.</p> <p>This example contains (<b>Tongue_Up</b> + <b>Tongue_LongStep2</b> + <b>Tongue_LongStep1</b>)</p>

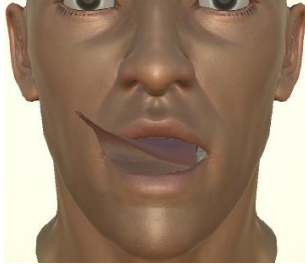

<b>*Tongue_Right</b>	
	<b>Description</b>
	<p>This blendShape stick the tongue out and right extremely.</p> <p>This example contains (<b>Tongue_Right</b> + <b>Tongue_LongStep2</b> + <b>Tongue_LongStep1</b>)</p>

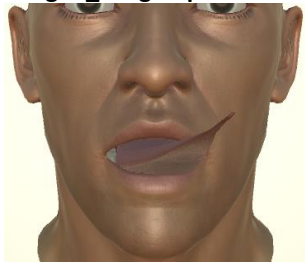
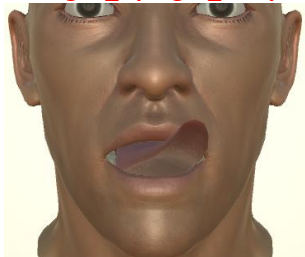


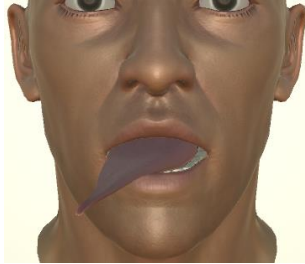
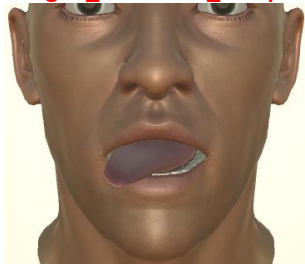
<b>*Tongue_Left</b>	
	<b>Description</b>
	<p>This blendShape stick the tongue out and left extremely.</p> <p>This example contains (<b>Tongue_Left</b> + <b>Tongue_LongStep2</b> + <b>Tongue_LongStep1</b>)</p>

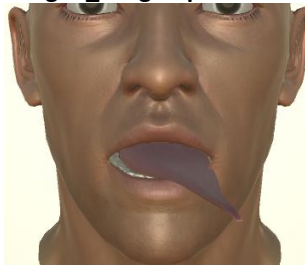

<b>*Tongue_Roll</b>	
	<b>Description</b>
	<p>This blendShape stick the tongue out and Roll.</p> <p>This example contains (<b>Tongue_Roll</b> + <b>Tongue_LongStep2</b> + <b>Tongue_LongStep1</b>)</p>



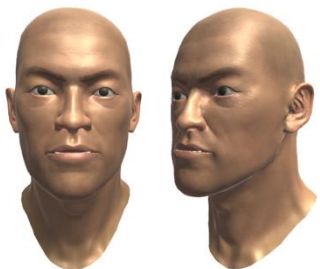
<b>*Tongue_UpLeft_Morph</b>	
<p><b>Tongue_Left+Tongue_Up+ Tongue_LongStep2 + Tongue_LongStep1:</b></p>  <p><b>Tongue_Left+Tongue_Up+ Tongue_LongStep2 + Tongue_LongStep1 + Tongue_UpLeft_Morph:</b></p> 	<p><b>Description</b></p> <p>This blendShape has no effect when it exist alone, it is used as a component of other blendShapes.</p> <p>When both the Left and Up (<b>Tongue_Left+ Tongue_Up+ Tongue_LongStep2 + Tongue_LongStep1</b>) Blendershape appear at the same time, the tongue will be deformed, add this blendShape to fix it.</p>

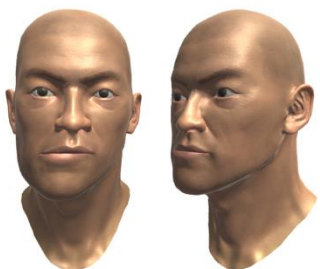
<b>*Tongue_UpRight_Morph</b>	
<p><b>Tongue_Right + Tongue_Up+ Tongue_LongStep2 + Tongue_LongStep1:</b></p>  <p><b>Tongue_Right + Tongue_Up+ Tongue_LongStep2 + Tongue_LongStep1 + Tongue_UpRight_Morph:</b></p> 	<p><b>Description</b></p> <p>This blendShape has no effect when it exist alone, it is used as a component of other blendShapes.</p> <p>When both the Right and Up (<b>Tongue_Right+ Tongue_Up+ Tongue_LongStep2 + Tongue_LongStep1</b>) Blendershape appear at the same time, the tongue will be deformed, add this blendShape to fix it.</p>

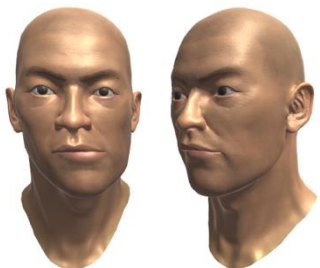
<b>*Tongue_DownLeft_Morph</b>	
<p><b>Tongue_Left+Tongue_Down+ Tongue_LongStep2 + Tongue_LongStep1:</b></p>  <p><b>Tongue_Left+Tongue_Down+ Tongue_LongStep2 + Tongue_LongStep1+ Tongue_DownLeft_Morph:</b></p> 	<p><b>Description</b></p> <p>This blendShape has no effect when it exist alone, it is used as a component of other blendShapes.</p> <p>When both the Left and Down (<b>Tongue_Left+ Tongue_Down+ Tongue_LongStep2 + Tongue_LongStep1</b>) Blendershape appear at the same time, the tongue will be deformed, add this blendShape to fix it.</p>


<b>*Tongue_DownRight_Morph</b>	
<p><b>Tongue_Right+Tongue_Down+ Tongue_LongStep2 + Tongue_LongStep1:</b></p>  <p><b>Tongue_Right+Tongue_Down + Tongue_LongStep2 + Tongue_LongStep1 + Tongue_DownRight_Morph:</b></p> 	<p><b>Description</b></p> <p>This blendShape has no effect when it exist alone, it is used as a component of other blendShapes.</p> <p>When both the Right and Down (<b>Tongue_Right+ Tongue_Down+ Tongue_LongStep2 + Tongue_LongStep1</b>) Blendershape appear at the same time, the tongue will be deformed, add this blendShape to fix it.</p>

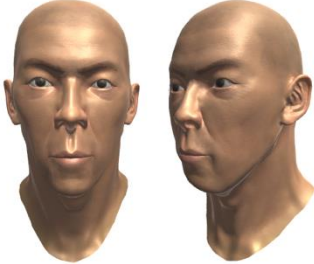
## Jaw, Mouth and Cheek BlendShapes – version 1

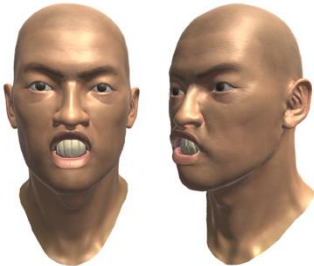
Jaw_Forward	
	Description
	This blendShape moves the jaw further forward with a higher value.

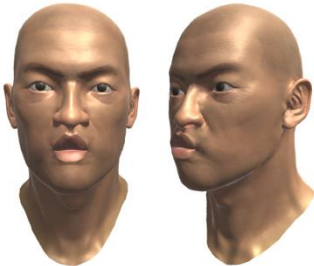
Jaw_Right	
	Description
	This blendShape moves the jaw further rightward with a higher value.

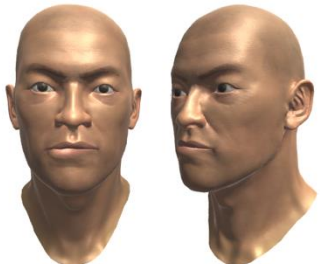
Jaw_Left	
	Description
	This blendShape moves the jaw further leftward with a higher value.

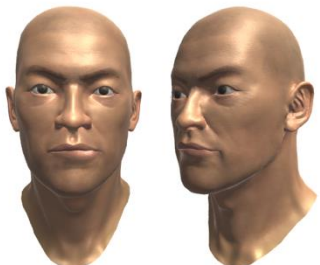
Jaw_Open	
	Description
	This blendShape opens the mouth further with the higher value.


Mouth_Ape_Shape	
	Description
	This blendShape stretches the jaw further with a higher value.

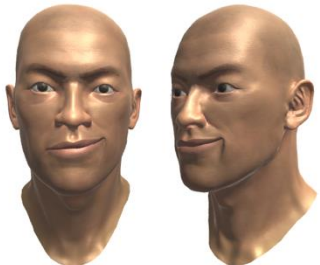
Mouth_O_Shape	
	Description
	This blendShape allows the lips to form an “O” shape with a higher value.

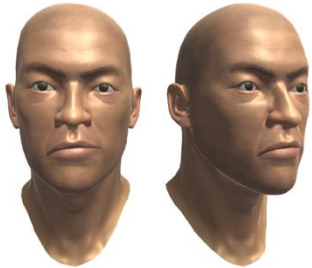
Mouth_Pout	
	Description
	This blendShape allows the lips to pout more with a higher value.

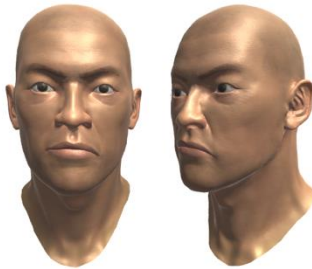
Mouth_Lower_Right	
	Description
	This blendShape moves the lower lip further rightward with a higher value.

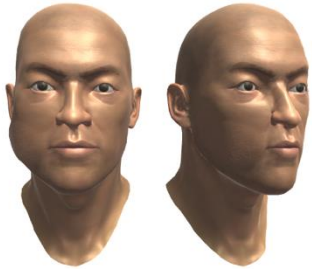
Mouth_Lower_Left	
	Description
	This blendShape moves the lower lip further leftward with a higher value.

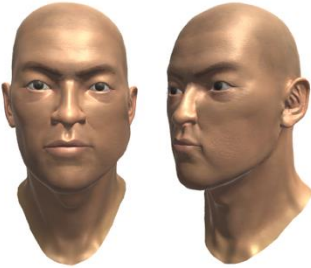
Mouth_Smile_Right	
	Description
	This blendShape raises the right side of the mouth further with a higher value.

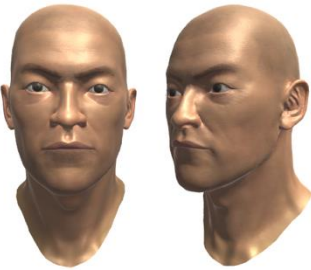
Mouth_Smile_Left	
	Description
	This blendShape raises the left side of the mouth further with a higher value.

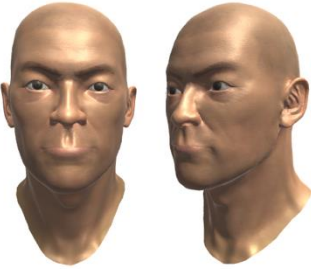
Mouth_Sad_Right	
	Description
	This blendShape lowers the right side of the mouth further with a higher value.

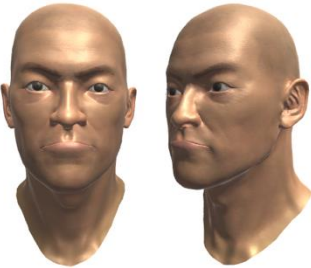
Mouth_Sad_Left	
	Description
	This blendShape lowers the left side of the mouth further with a higher value.

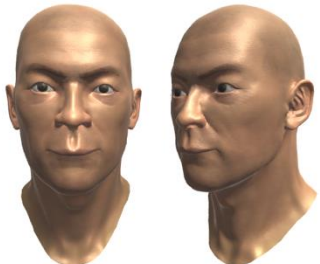
Cheek_Puff_Right	
	Description
	This blendShape puffs up the right side of the cheek further with a higher value.

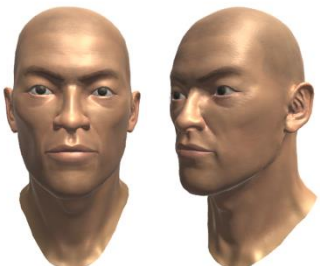
Cheek_Puff_Left	
	<b>Description</b>
	This blendShape puffs up the left side of the cheek further with a higher value.

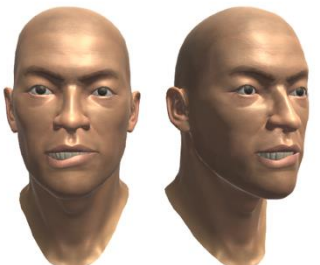
Mouth_Lower_Inside	
	<b>Description</b>
	This blendShape rolls in the lower lip further with a higher value.

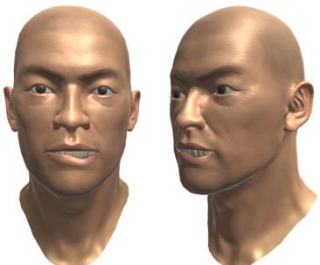
Mouth_Upper_Inside	
	<b>Description</b>
	This blendShape rolls in the upper lip further with a higher value.

Mouth_Lower_Overlay	
	<b>Description</b>
	This blendShape stretches the lower lip further and lays it on the upper lip further with a higher value.


Mouth_Upper_Overlay	
	Description
	This blendShape stretches the upper lip further and lays it on lower lip further with a higher value.

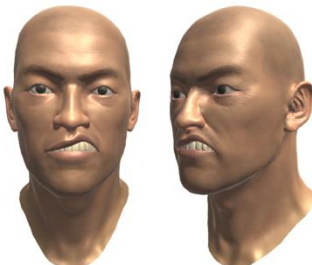
Cheek_Suck	
	Description
	This blendShape sucks in the cheeks on both sides further with a higher value.

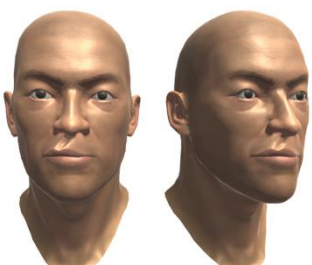
Mouth_LowerRight_Down	
	Description
	This blendShape lowers the right lower lip further with a higher value.

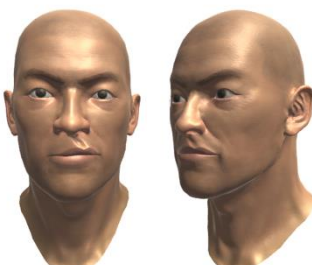
Mouth_LowerLeft_Down	
	Description
	This blendShape lowers the left lower lip further with a higher value.



Mouth_UpperRight_Up	
	Description
	This blendShape raises the right upper lip further with a higher value.

Mouth_UpperLeft_Up	
	Description
	This blendShape lowers the left upper lip further with a higher value.

Mouth_Philtrum_Right	
	Description
	This blendShape moves the philtrum further rightward with a higher value.

Mouth_Philtrum_Left	
	Description
	This blendShape moves the philtrum further leftward with a higher value.

