

## ADD LIP SYNCHED SPEECH AND GESTURES TO AN NPC AND IMPORT INTO A HALF LIFE 2 MAP

This technique can be used for cut scenes or machinima.

NOTE: THIS DOES NOT WORK IN DEATHMATCH.

Software used:

- Audacity (freeware audio editing program)
- Microsoft Speech SDK 5.1 (needed by Faceposer)
- Valve SDK Faceposer
- Valve SDK Hammer Editor

I will need to log on for you and install the Microsoft Speech SDK 5.1.

Sources:

I put this tutorial together using information from the following sources:

A. faceposer tutorial part 1

<http://www.youtube.com/watch?v=qzKmb0A8Fo0>

B. Creating your first Faceposer scene

[http://www.hl2world.com/wiki/index.php/Creating\\_your\\_first\\_Faceposer\\_scene](http://www.hl2world.com/wiki/index.php/Creating_your_first_Faceposer_scene)

C. Faceposer Tutorial 2: Choreography and Hammer (pt 1)

<http://www.youtube.com/watch?v=RuYf6mpo5bs&feature=related>

D. Faceposer Tutorial 2: Choreography and Hammer (pt 2)

[http://www.youtube.com/watch?v=boy\\_FD1VK0w&feature=related](http://www.youtube.com/watch?v=boy_FD1VK0w&feature=related)

E. Faceposer Choreography Scenes in your map

[http://www.hl2world.com/wiki/index.php/Faceposer\\_choreograph\\_scenes\\_in\\_your\\_map](http://www.hl2world.com/wiki/index.php/Faceposer_choreograph_scenes_in_your_map)

F. The Valve Developer Community – Choreography Creation

[http://developer.valvesoftware.com/wiki/Choreography\\_creation#Before\\_you\\_start](http://developer.valvesoftware.com/wiki/Choreography_creation#Before_you_start)

Thanks to the above for making their information available to the Half Life community.

### General Process

Record speech in audio software > Lip Synch in Faceposer > Create a Choreographed Scene in Face Poser > Add Expressions and Gestures in Face Poser > Import into Hammer

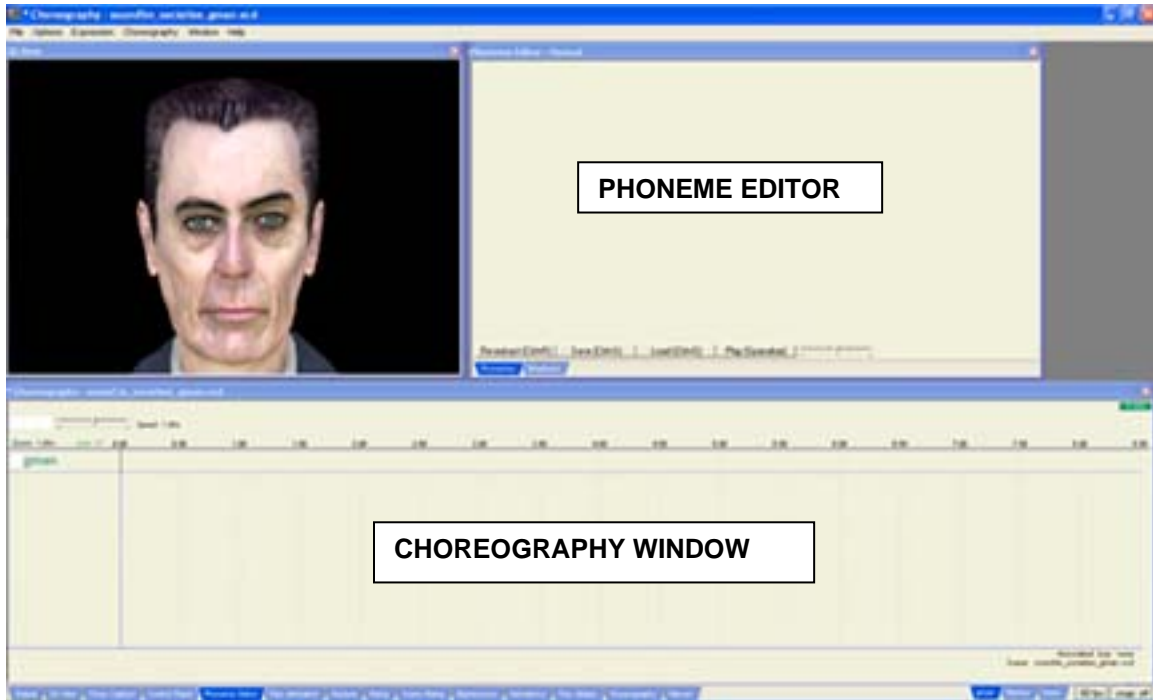
### Record Audio File

1. Make sure microphone is selected as the input device. Start > Control Panel > Sounds and Audio Devices > Voice > Voice Recording > Volume > check Microphone.
2. Open Audacity
3. Edit > Preferences
  - Audio I/O. Channels 1 (Mono)
  - Quality: Default sample rate: 44100 Hz; Default Sample Format 16-bit
  - File Formats. Uncompressed Export Format: WAV (Microsoft 4 bit MS ADPCM). (See Source F)
4. Record voice into Audacity. Use no more than one sentence at time. Faceposer works best with shorter audio files. Split long sentences into separate sound files.
5. Delete silences at the beginning and end of recording.
6. Select the audio track and apply Effect > Noise Removal
7. File > Export as WAV...

8. Make a copy of the file in **C:\Program Files\Valve\Steam\SteamApps\username\half-life 2\hl2\sound\**

### Lip Synch in Faceposer using the Phoneme Editor

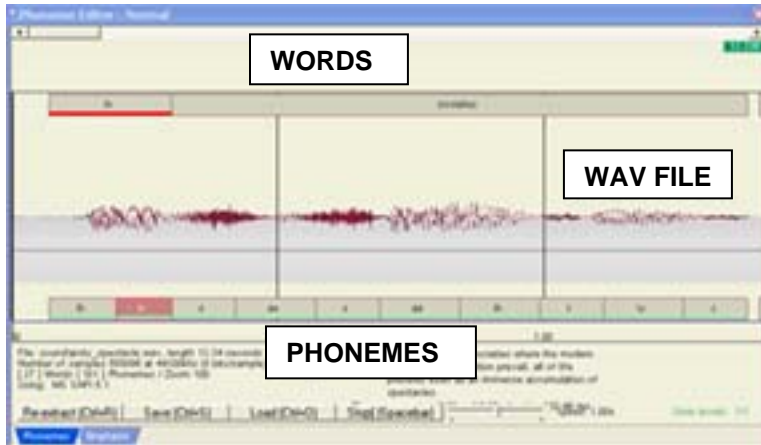
1. Launch the SDK and set Engine Version to Half-Life 2: Episode One and Current Game to Half-Life 2.
2. Launch Face Poser from the SDK.
3. Choreography > New. You will be prompted for a name for the new scene (.vcd = Valve Choreography Data file). Save the .vcd in the scenes folder, i.e. C:\Program Files\Valve\Steam\SteamApps\username\half-life 2\hl2\scenes\
4. You will also be prompted for an actor name. This is for your reference and does not need to be the actual name of the model you will use, but you will use this name in Hammer later.
5. File > Load Model and select a model with lip-synching capability, e.g. Alyx, Barney, Breen, or the G-man. If not centered – Options > Center on Face
6. Make sure the Choreography and Phoneme<sup>1</sup> Editor windows are open: Window > CChoreoView and PhonemeEditor



7. Right click in the Phoneme Editor and select Load. Select your .WAV file.
8. Right click on the WAV wave form and select Redo Extraction. If this is the first time you have used this file you will be prompted to enter the words. You can enter the words how they sound rather than how they are spelt. For example, for a relatively difficult word such as commission, it might be better to enter *komishun*.
9. Inspect the phonemes generated under the wave form. If they look about right, right click on the file and select Commit Extraction.
10. Press spacebar and your character should speak your sentence.
11. If it looks and sounds OK, you're done, otherwise you may need to edit individual phonemes by clicking on the individual phonemes and clicking an dragging or right clicking and editing them.

<sup>1</sup> A phoneme is the smallest distinguishable unit in the sound system of a language

- Once you are happy with the lip syncing, Click save at the bottom of the Phoneme Editor. This saves any changes you have made to the phonemes back to the original WAV file. This is why it is best to work with a copy of the original WAV file. (Note: if you created another scene with the same WAV but a different actor, you would not need to redo the extraction).

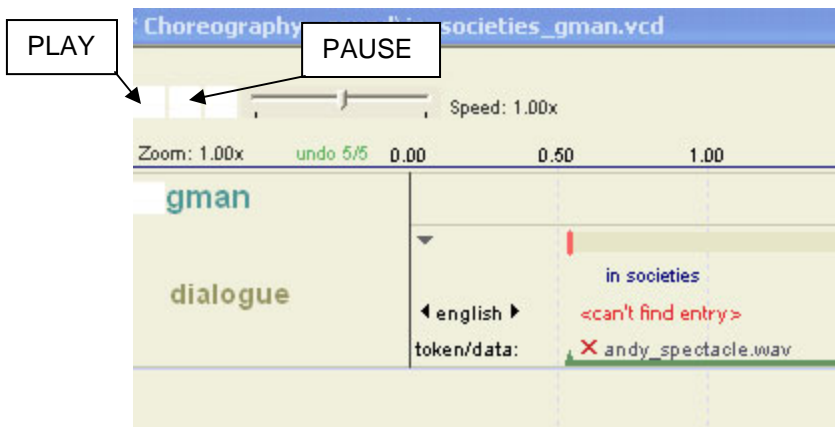


### Create a Choreographed Scene in Faceposer

The choreography scene is where the elements of faceposer such as sounds, expressions and gestures are assembled into a unified performance for use in the game. Different types of content, such as voices, are added to different channels in the timeline.

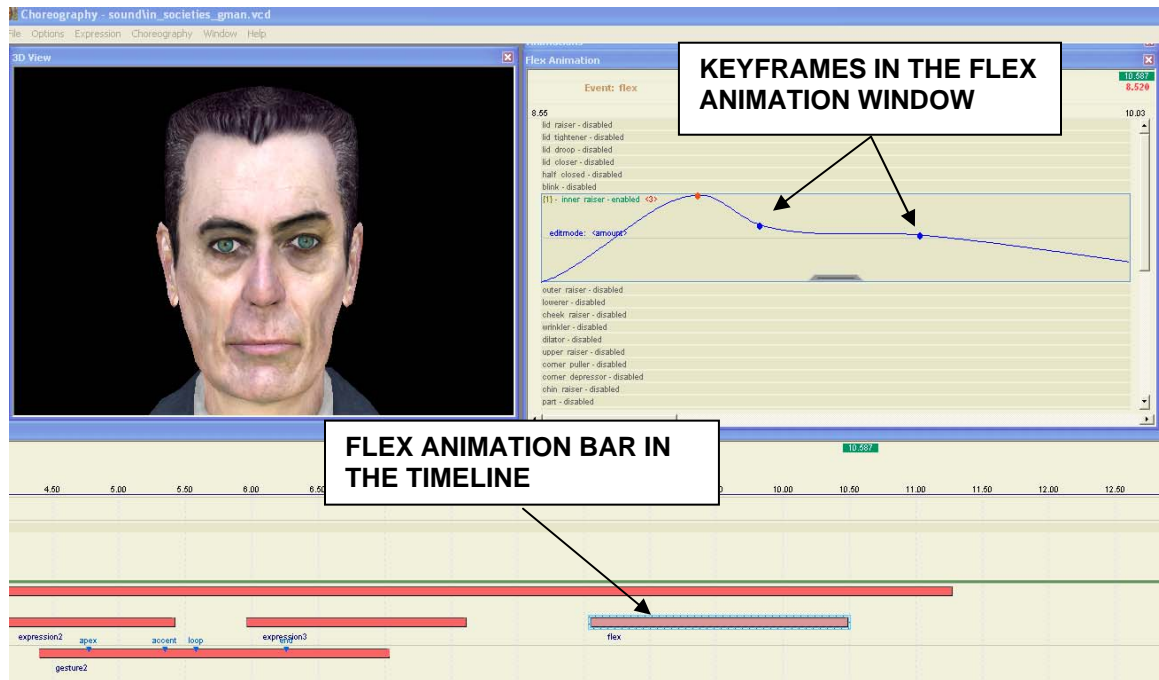
#### Add Sounds

- Right click in the timeline: New > Channel. Name the channel something relevant such as "voice".
- Right click in the new channel and select WAV File.... Type the name of the file in the Sound text box [note: this is a little clunky, you cannot browse for the file]. If the file is in the Sound folder (where we put it) just type the name of the file, otherwise you will need to add the path relative to the sound file. Name the sound event in the Name: text box. The Name can be anything but it's a good idea to use the first word or two of the sentence for ease of reference. Click OK
- Check the sound has been added by pressing play in the timeline. Note: the play controls sometimes appear as white boxes with no icons. The left is play, the middle is pause and the right is stop.



## Add Expressions with Flex Animations

1. Right click in the timeline: Add > Channel. Name the channel expressions (something similar).
2. Right click in the new channel: select Flex Animation..... and give the animation a name, for example "blink". Move and resize the animation bar until it is in the place you want it.
3. Right click on the Flex Animation bar and select "Edit even *yourepression* in expression tool... The Flex Animation tool should appear. If it does not: Window > Expression Tool.
4. Right click on the expression you want and expand it. [The width of the track to the blue line represents the length of the animation in the timeline.].
5. CTRL-click in the expression to create a key frame (as many as you want). Then move these up and down until you get the look you want
6. Add additional expressions throughout the sentence as needed.
7. Make the character look at the player. Right click in the expressions channel and select Look at Actor. Give it a name and tell it to Look at !player. This should last the whole length of the animation. [Probably better style to add a new channel for this action]



## Add Body Gestures

You can add canned gestures to your character.

1. To view the whole character: Options > Center View. Then right click in the 3D window and drag to zoom out.
2. Right click in the timeline and add a new channel and call it "gestures".
3. Open the Animation Browser. Window > Animation Browser.
4. Select an animation and drag it to the gestures channel. Move it to match the expression of the voice.

## Getting it into the Game

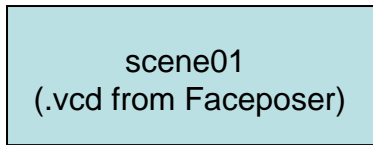
We will place the NPC into Hammer and have it do its thing when the player approaches.

1. Open a Half Life 2 level in Hammer. For this exercise use the Noesis map you used for the time bomb exercise and save the map to half life 2\hl2\maps. For this exercise use the Noesis map you used for the time bomb exercise and save the map to half life 2\hl2\maps. (Or you could make a simple Half Life 2 box.)
2. Click the entity tool. In the Categories drop down menu on the right hand side select Entity and under that select your character, e.g. npc\_gman. Click in the room where you want the model to be.
3. Select the npc and ALT+ENTER for the object properties. Name the object with the SAME name as you used in Faceposer, e.g. gman.
4. In the Keyvalues list select Sleep State and in the dropdown menu select Waiting for PVS. This holds the NPC in stasis until it is triggered. Click Apply.
5. Click on the entity tool again and select "logic\_choreographed\_scene" and place it near your npc.
6. Select the logic\_choreographed\_scene entity in Hammer and ALT+ENTER to bring up its properties window.
7. Click on Scene file in the Keyvalues list and browse for the scene file (this should be in the scenes folder). Name the scene scene01. Click Apply.
8. Click on Target 1 in Keyvalues and select your npc (e.g. gman) in the dropdown menu. Click Apply and close the properties window.
9. Add a Trigger texture for triggering the scene. Open the texture browser by clicking Browse on the right hand side. Filter for "trigger" and double-click on the Trigger texture.
10. Create a block in front of the npc, select the block, then hit ENTER to apply the Trigger to the block. Move and resize the block as required.
11. Select the trigger block and then on the top toolbar Tools > Tie to Entity.
12. The func\_detail properties window will open. In the Class dropdown menu select "trigger\_once". (It does not need to be named). Click Apply [important].
13. Click on the Outputs tab and click Add at the bottom. In the dropdown menus select as follows: My output named: OnTrigger / Targets entities named: Scene01 / Via this input: Start. You check "Fire once only" if you want it to happen only once and not be repeated if the player returns. Click apply and close this properties window.
14. Save and run the Map. File > Run. The npc should start its sequence when you run into the trigger block.

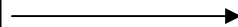


# TRIGGERING A FACEPOSER SCENE IN HALF LIFE 2

Logic\_choreographed\_scene entity



Target 1



NPC

output

When triggered by player  
start scene01



Collide with trigger block



PLAYER