

MakeTarget 1.1 – A short introduction –

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MakeTarget (c) is a utility script for Blender (www.blender.org) developed to make custom morphings for MakeHuman.

Making a new target is very easy: modify ¹ the mesh you find in the .blend file and save it as a .target file. By moving it into one of MakeHuman's folders, on the next restart of the application you will be able to use the custom morphing as the default.

MakeTarget 1.1 allows you to use a new kind of file: .bs.

The .bs (body settings) file allow you to save the parameters used to make very complex models. For example, if a character has been modeled using 10 different kinds of morphing (.target files), the .bs will contain 10 parameters each with its own specific value. Initially, this file format was intended to only memorize the work session, but later, it proved to be so versatile that it has become the principal instrument for creating the main character libraries.

¹ Without ever add or subtract vertex, otherwise the target will don't work.

This is an example of bs file:

```
targets/neck/neck_old.target,1.000000
targets/torso/torso_flabby.target,1.000000
targets/r_lower_arm/r_lower_arm_scrawny.target,0.250000
targets/r_upper_arm/r_upper_arm_scrawny.target,0.360000
targets/l_upper_leg/l_upper_leg_scrawny.target,0.790000
targets/r_upper_leg/r_upper_leg_scrawny.target,0.790000
targets/l_upper_arm/l_upper_arm_scrawny.target,0.360000
targets/abdomen/belly_out.target,0.500000
targets/l_shoulder/l_deltoid_scrawny.target,0.580000
targets/r_shoulder/r_deltoid_scrawny.target,0.580000
targets/r_cheek/r_cheek_hollow.target,0.480000
targets/l_cheek/l_cheek_hollow.target,0.470000
targets/l_cheek/l_cheekbone_down.target,0.510000
targets/l_cheek/l_cheek_flabby.target,0.780000
targets/r_cheek/r_cheek_flabby.target,0.590000
targets/r_eye/r_eye_fold.target,0.610000
targets/l_eye/l_eye_fold.target,0.620000
targets/l_eye/l_eye_external_corner_down.target,0.770000
targets/r_eye/r_eye_external_corner_down.target,0.710000
```

However, an instrument was also necessary to touch-up the result of the .bs file because it sometimes lacks in detail and requires further morphings to be complete.

The new version of MakeTarget contains a fundamental feature to allow this: the possibility to import the mesh into Blender, with any value.

This provides two important features in the modelling phase:

- 1) To verify the behaviour of .bs with values variables between -1 and 1 (fig.1 and 2).
- 2) To apply the .bs, to make enhancements, and to then remove the .bs (with a negative value equal to the positive value applied), to obtain the enhancement's target.

The first feature allows you to test the real effectiveness of the chosen variable values. As an example we show the illustrations of a baby bs applied with values 1, 0.75, 0.5, 0.25, 0:

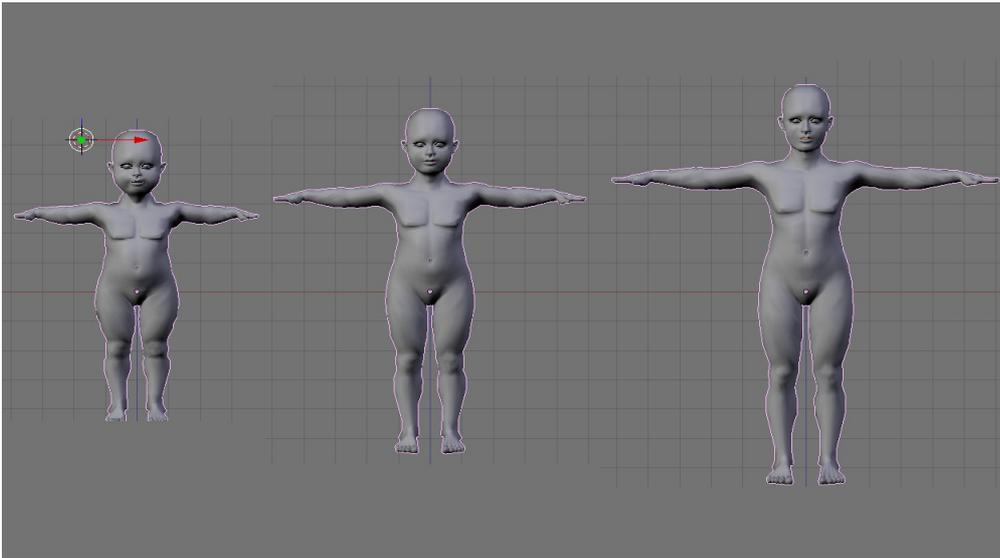


fig. 1: Bodysetting "baby" applied with value 1, 0.75, 0.5

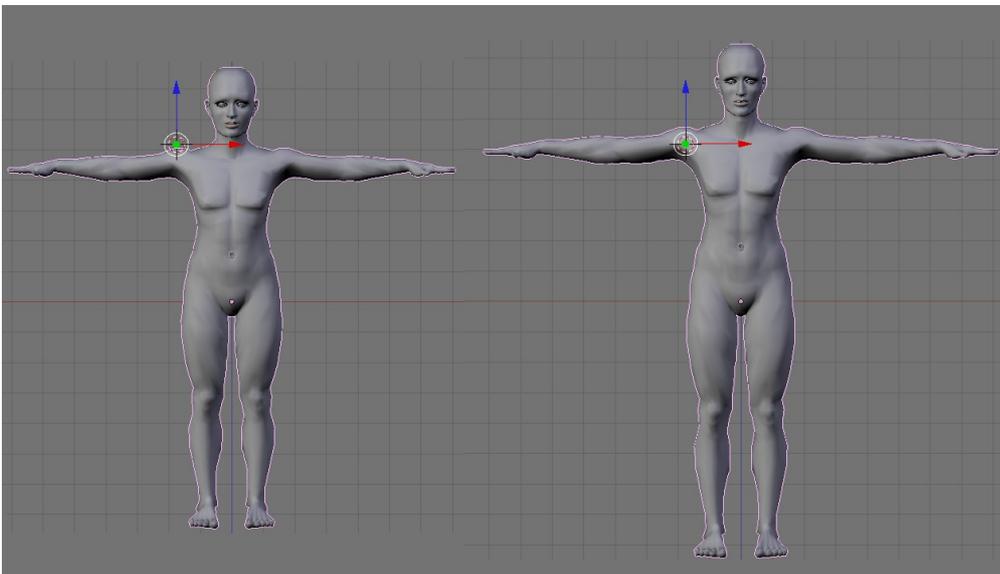


fig. 2: Bodysetting "baby" applied with value 0.25, 0

The results of this bs can definitely be improved with some target enhancement's, but the results are already satisfying and demonstrate the usability of the parameters to obtain different ages of the mesh.

The other new and interesting feature is the visualization of the deformation diagram.

After that the file .target is loaded, we can verify that it influences exactly the desired regions, and that there are no unwanted movements in vertexes not involved in the target. In order to see the diagram in Blender we

need to switch from *object Mode* to *Vertex Paint* (fig. 3).

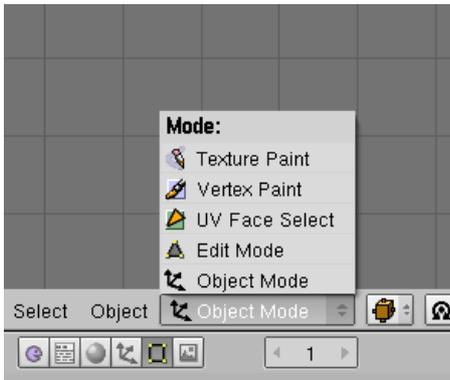


fig. 3: How to enable Vertex Paint in Blender

As an example we have loaded some expressions targets, and then we have drawn the diagram (fig. 4).

This allows you to verify:

- 1) that the target is optimized, as it works only on the desired vertices.
- 2) that the target is correctly symmetric.

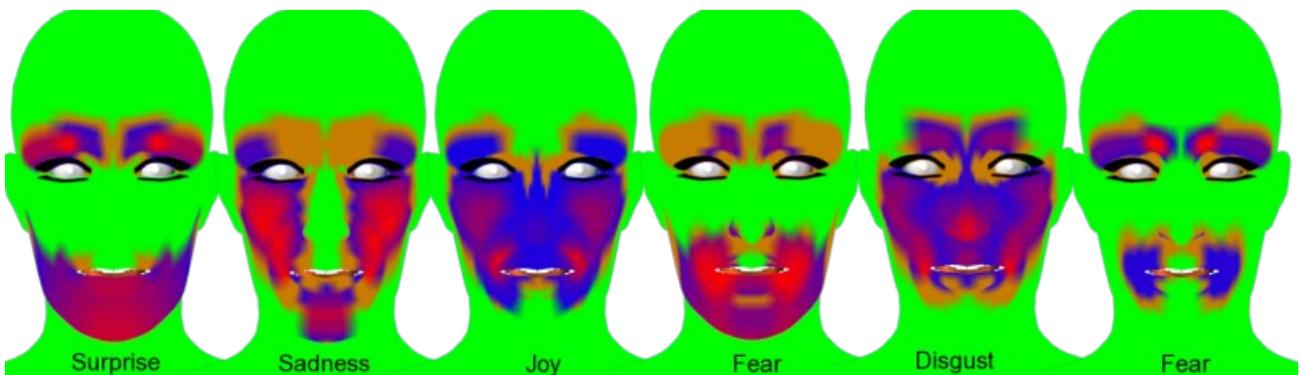
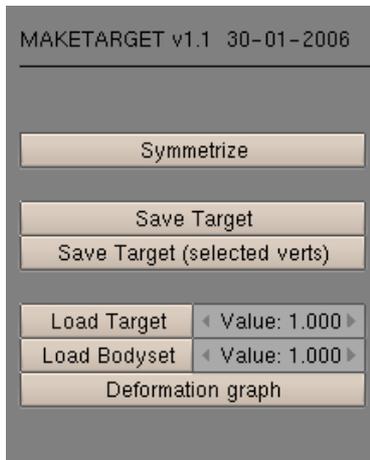


Fig. 4: Expressions targets

Installation/use of the script

The script requires Blender and MakeHuman. Its use is extremely simple. You have to unzip it within the directory containing the MakeHuman executable so as to be able to use all targets and body settings.

Once the file.blend has been opened, right click over the text window and select Execute Script. A simple GUI will appear:



The buttons are self-explanatory and, as you can see, a value can be set when you load either a target or a body setting. To remove a target or a body setting, you have to apply it again but with the opposite value e.g. -1 if the original value was +1. After having loaded a target you can press the button to draw the graph.