Creating a Shirt Using Silo 2.5

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(RGcincy on Daz Forums)

Key/Mouse Shortcuts:

1. Alt+LMB = Rotate view in selected viewport
2. Alt+RMB = Zoom in/out in selected viewport
3. Ctrl+A = Select all
4. Ctrl+F = Frame selection in selected viewport
5. Alt+E = Select loop (need to first select two faces or edges)
6. Shift+X: Split loop
7. Alt+U = Toggle UV seam

Detailed Steps

1. **Save base figure as obj file.**
   a. Open Daz Studio.
   b. Load a figure and leave it in default pose (e.g., Genesis 3 male).
   c. Select the figure in the Scene pane.
   d. Choose File/Export
   e. Choose Silo in the "To" drop-down box.

2. **Load figure into Silo.**
   a. Open Silo 2.5.
   b. From main menu, choose File/Load into Scene and select the .obj file you just created. Note Silo may appear paused while the file is being processed.
   c. After importing, each surface will be an individual object listed in the Scene Editor. To ease selection later in the process, convert the figure into a single object.
      i. Choose Selection/Select All from the main menu (or use Ctrl+A).
      ii. Next choose Create/Combine Objects.

3. **Create a starting cube.**
   a. Choose Create/Cube Opt from the main menu. This will open a pane on the right labeled Cube. (Note that the words Opt appear to the far right of the menu item labeled Cube.)
   b. In the pane Cube, you can adjust the height, width, depth and number of divisions per side. Set divisions to 3 for each side.
   c. The figure will load on the ground between the feet.

4. **Modify the cube.**
   a. Using the scale tool, grow the overall cube's size to be slightly wider than the legs.
   b. Select the cube and use the move tool to drag it up to the figure's neck.
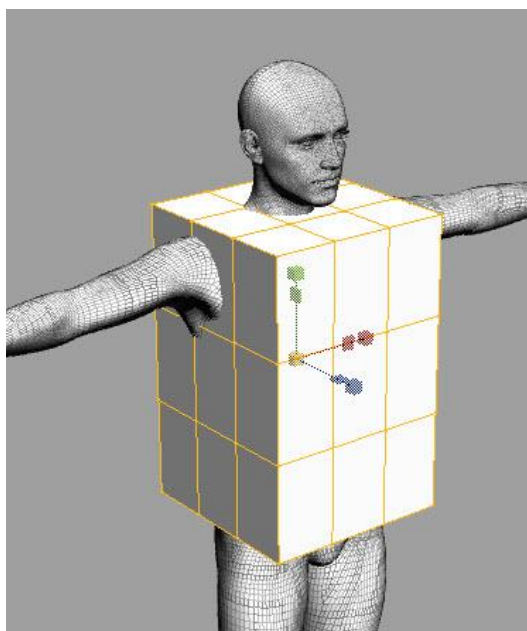
    c.   Scale the height of the cube so it fits between the top of the shoulders and the groin (this defines the shirt length).

    d.   Scale the depth of the cube so it just clears the shoulder blades (and if a female figure, the breasts as well).

    e.   Adjust the width and location as needed.

5. Setup Symmetry.

    a.   Symmetry lets changes made on one side of the mesh be repeated on the opposite side.

    b.   Choose Modify/Mirroring/Mirror Geometry Opt to open the Mirror Geometry pane.

    c.   In the MG pane, change the value in the Mirror from Axis drop-down box to World -X.

    d.   Select the cube object. Choose Modify/Mirroring/Mirror Geometry. Half the cube will turn black. That means changes to one half will be reflected on both sides of the cube.
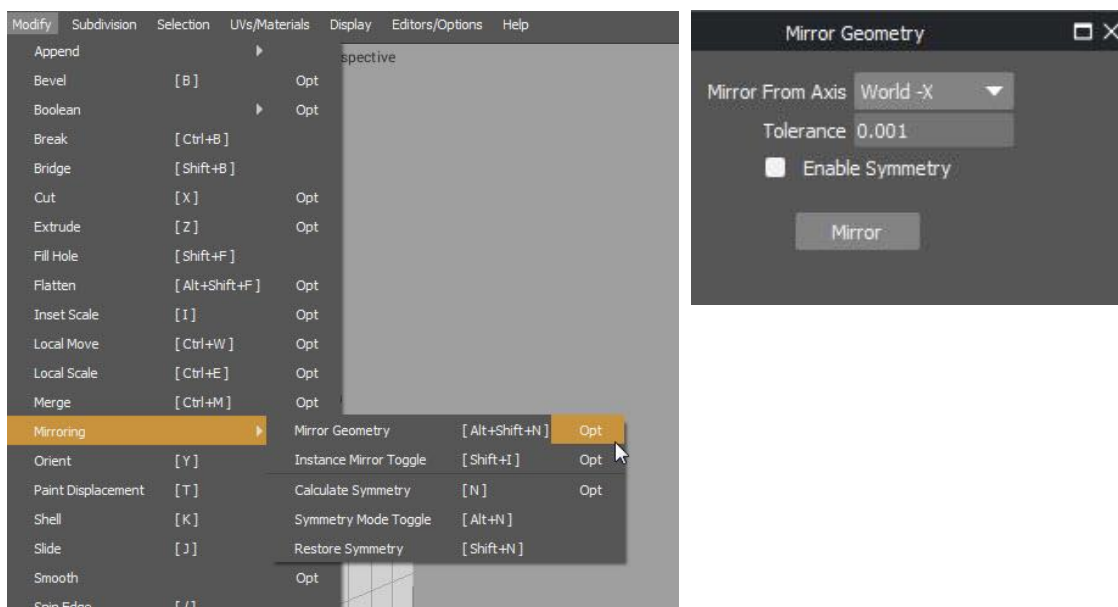

6. Create new loops.

    a.   Use the edge selector tool to choose a vertical edge in the top row of polygons.

    b.   Split the loop (which means every polygon in the loop will be split into two polygons). There are several ways to do this:

       i.   Type Shift+X. This is the easiest and will result in the polygons being split into two equal parts.

      ii.   Left-click on Split Loop in the left hand toolbox. This will also activate the Slide too which allows you to position the split. To keep it in the middle, hit return without moving the mouse.

     iii.   Choose Modify/Split Loop from main menu. Then hit return to split in half or move the mouse to reposition the loop.

   c.   The new loop is shown in yellow in the image at right.
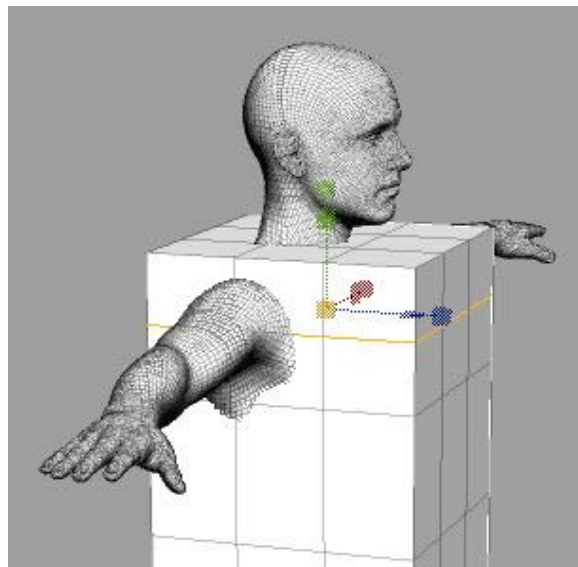
d. Use the edge selector tool to choose the horizontal edge in the middle of the top rim of the cube.
e. Split the loop by typing Shift+X. The new loop is shown in yellow in the image to the right.
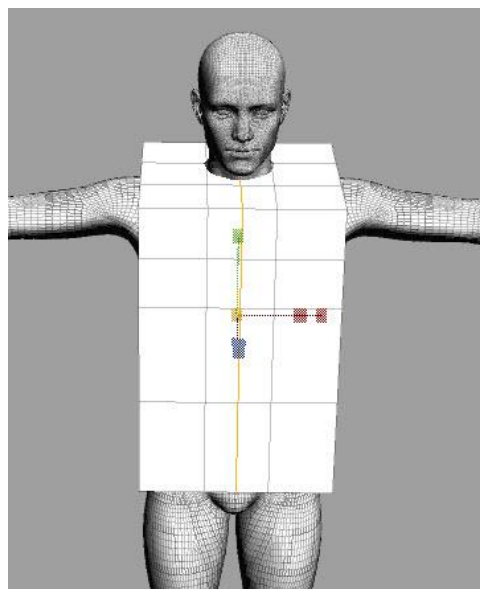
7. Round the chest and back.
   a. Use the vertex selection tool to choose the vertices along the vertical left front corner. (I use the Paint section style and just drag down and touch each vertex I want to adjust).
   b. Use the move tool to drag the vertices towards the back and to the right.
   c. Repeat for the vertical back corner.
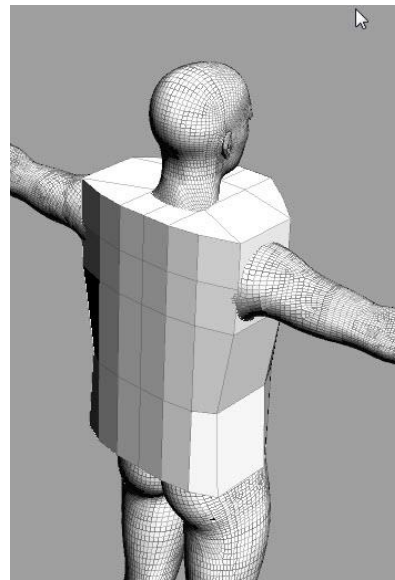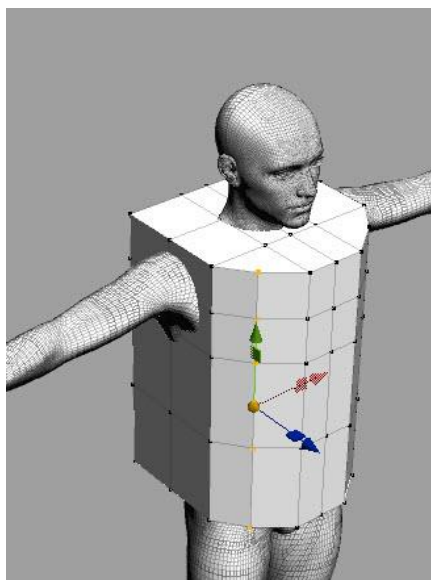
8. Create shoulder.
   a. Use the face selector to choose the top 2 faces near the back on the side of the box.
   b. Use the move tool to pull out the faces to create a shoulder. Position the face so the arm is centered in it.
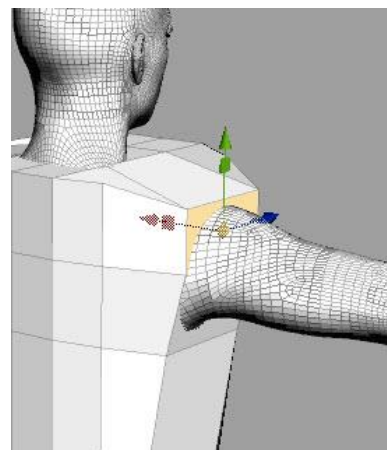
9. Extrude the arms.
   a. Use the face selector to choose the 4 faces around the arm.
   b. Choose Modify/Extrude from the menu (or Extrude from the tool box or type Z).
   c. Click on the orange ball and drag it so the sleeves extend to the wrist.
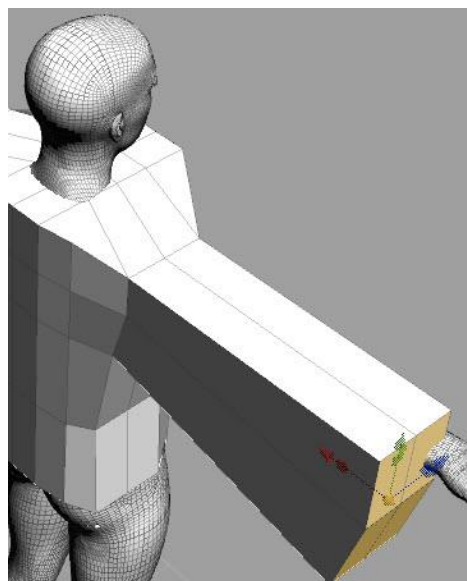
10. Adjust the wrist.
   a. Use the face selector to choose the faces at the end of the arm.
   b. Use the move tool to move the faces so the sleeves cover the arm.
   c. Use the rotate tool to angle the end faces so they are perpendicular to the arm.
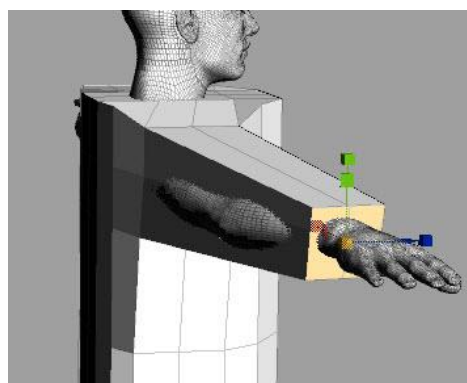

11. Add elbow loops
   a. Use the edge selector tool to choose one horizontal edge of the arm.
   b. Use the split loop command to create a new loop. Slide the new loop so it is at the elbow.
   c. Use the move tool to move the elbow loop backwards so there is a slight bend to the arm.
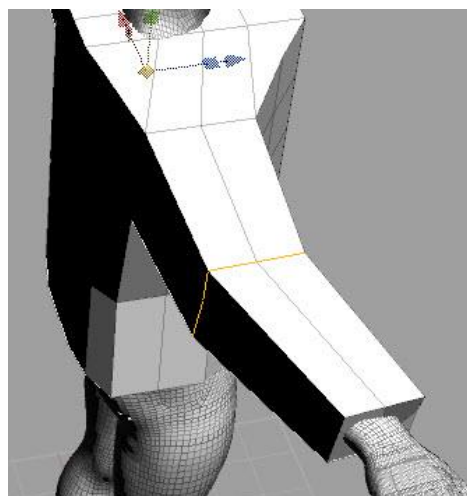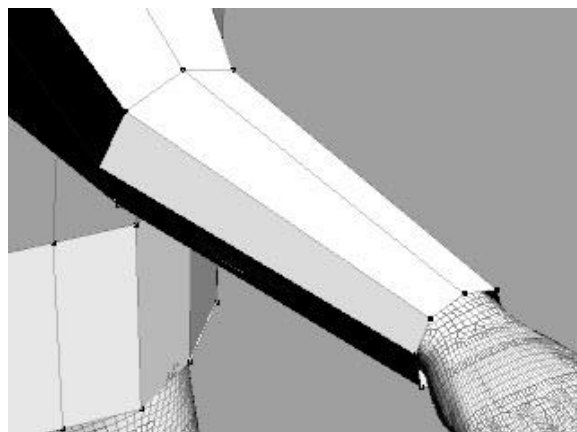

12. Create an octagon around the wrist.
   a. Use the vertex selector to choose a corner vertex at the end of the arm.
   b. Move it inward and downward.
   c. Repeat with the other 3 corner vertices. The end result is a rough octagon.
   d. The octagon will likely be too large. Use the edge selector tool and choose one edge on the octagon. Type Alt+E to select the loop. Use the scale tool to shrink the octagon to create a tighter fit.
   e. Use the vertex tool to adjust the fit as needed.
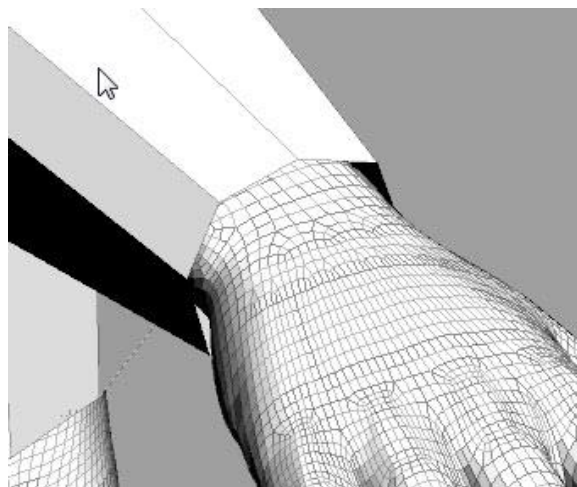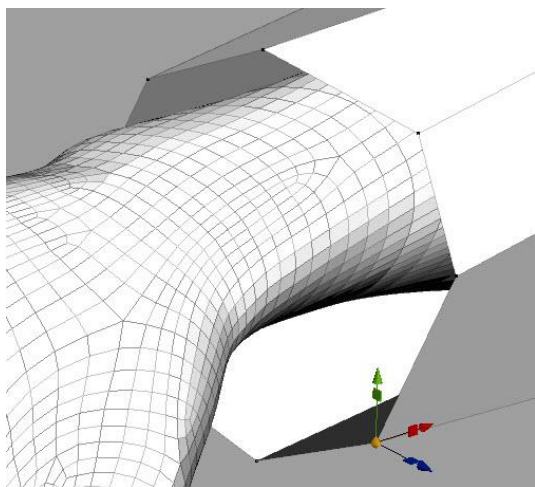
13. Create an octagon around the elbow.
   a. Use the vertex selector to choose a vertex at a corner of the elbow.
   b. Repeat steps 12 b-e.

14. Create an octagon around the shoulder.
   a. Use the vertex selector to choose a vertex at a corner of the shoulder.
   b. Repeat steps 12 b-e.
   c. Select the vertices at the upper back.
   d. Use the move tool to pull them down.
   e. Select the vertices at the upper front and move them down.
   f. Repeat step e until the shirt flows down the front of the chest.
   g. Some of the shirt loops may no longer be in a straight line across the chest and back. Select a loop by selecting an edge, type Alt+E (select loop command) and then use the move tool to drag the loop to a new position.
   h. Select edges and move them up or down as needed to make loops roughly horizontal.
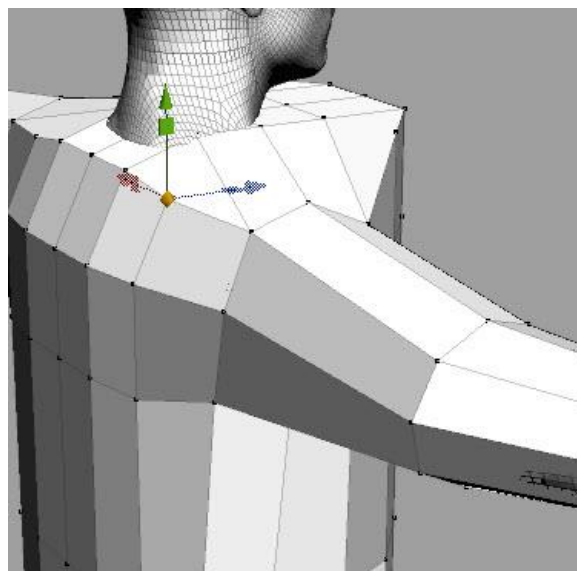
15. Add shirt loops
   a. After moving the upper chest vertices, part of the body pokes through the shirt. In addition, the lower shirt body has longer polygons than the other parts.
   b. Add extra loops in the middle and bottom of the shirt.
      i. Use the edge selector tool to choose one vertical edge of the shirt.
      ii. Use the split loop command (Shift+X) to create a new loop.
   c. Repeat steps b one to two more times.
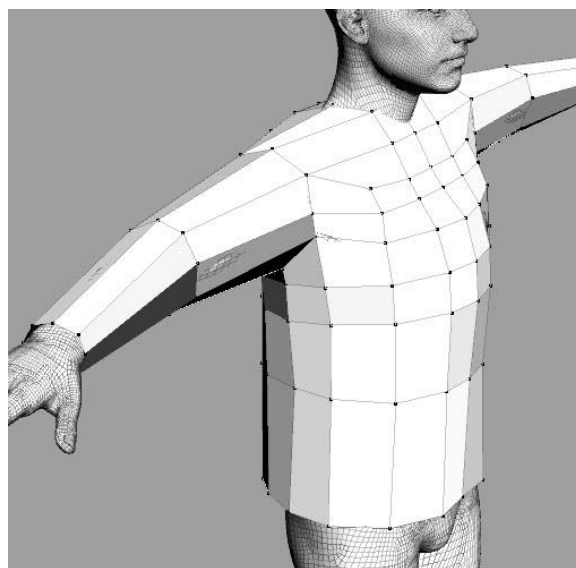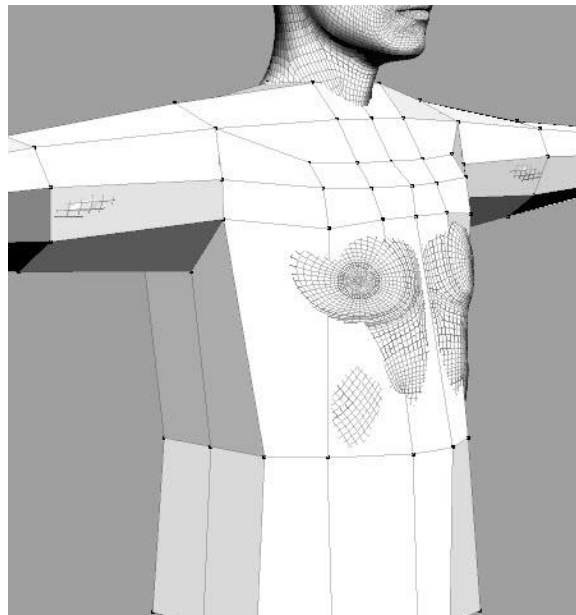
16. Create neck and waist hole.
   a. Move vertices to make an octagon around the neck.
   b. Some vertices may be blocked by the figure. Use the eye icon in the Scene Editor pane to hide the figure. Drag a blocked vertex up and away from the neck so it's clear of the figure when it's turned back on.
   c. After the neck octagon is complete, use the face selector tool to highlight the neck faces and hit the delete key.
   d. Look at the bottom of the shirt. Select all the faces at the bottom and hit delete.
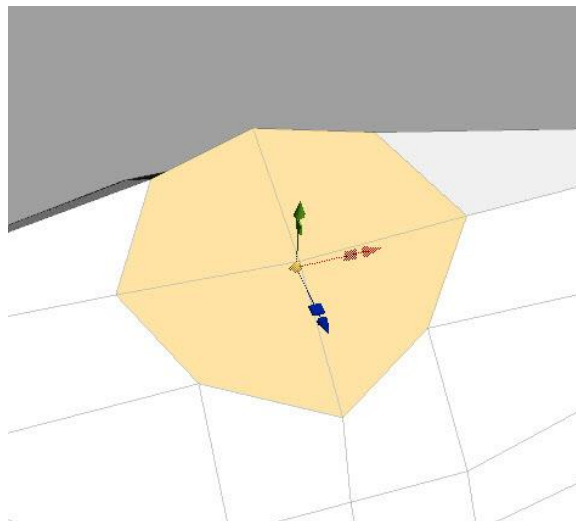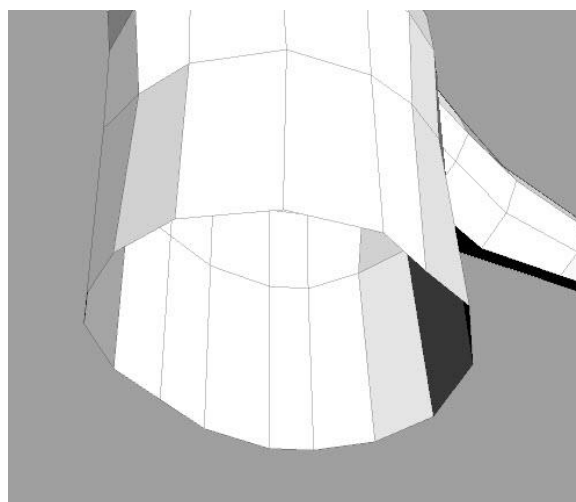
17. Add loop around the neck.
   a. The polygons on top of the shoulder are large compared to others.
   b. Use the edge selector and click on the vertical edge in the front middle of the neck.
   c. Choose the other edges around one half of the neck.
   d. Split the loop by typing Shift+X.
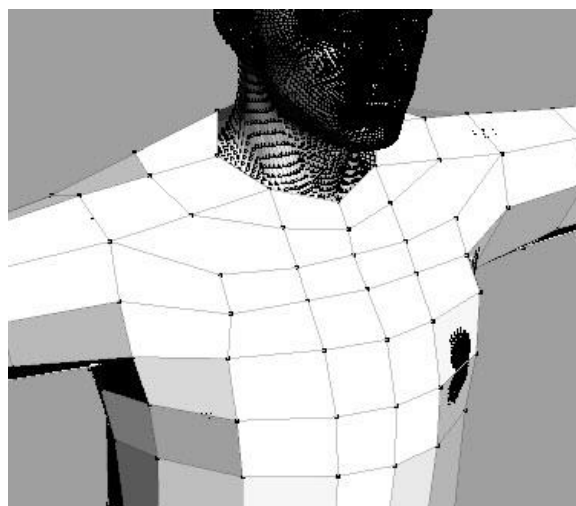
18. Adjust all over.
   a. At this point we have a basic shirt. You will likely see some parts of the body poking through, some vertices that stick out like a pyramid, and some loops that have a wave.
   b. Use the vertex selector to select one or more points and move them in/out/up/down as needed to make for a smooth looking shirt.
   c. Critical areas to look at are under the shoulders, around the neck, and the upper chest.
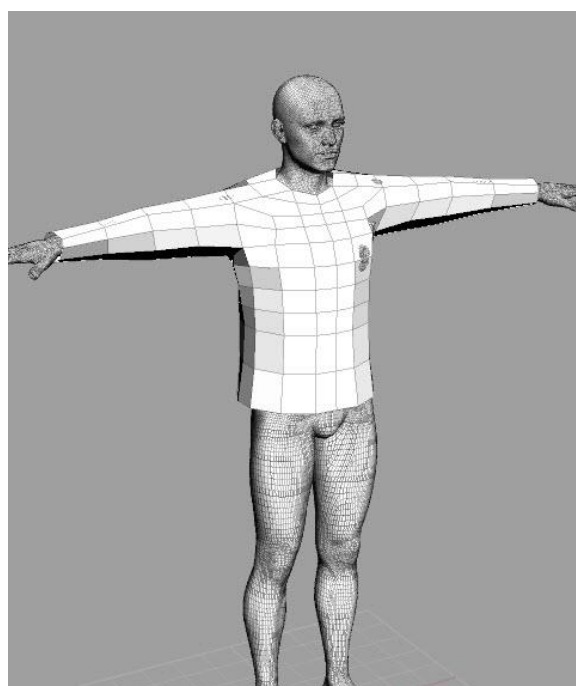
19. Add subdivision to check fit.
   a. Select the shirt in the scene.
   b. From the main menu, choose Subdivision/Subdivide or type C. Repeat.
   c. As the mesh gets subdivided, you may again see poke through (left image below).
   d. Choose vertices or edges and move them to eliminate poke through.
   e. Remove subdivision by typing V twice.
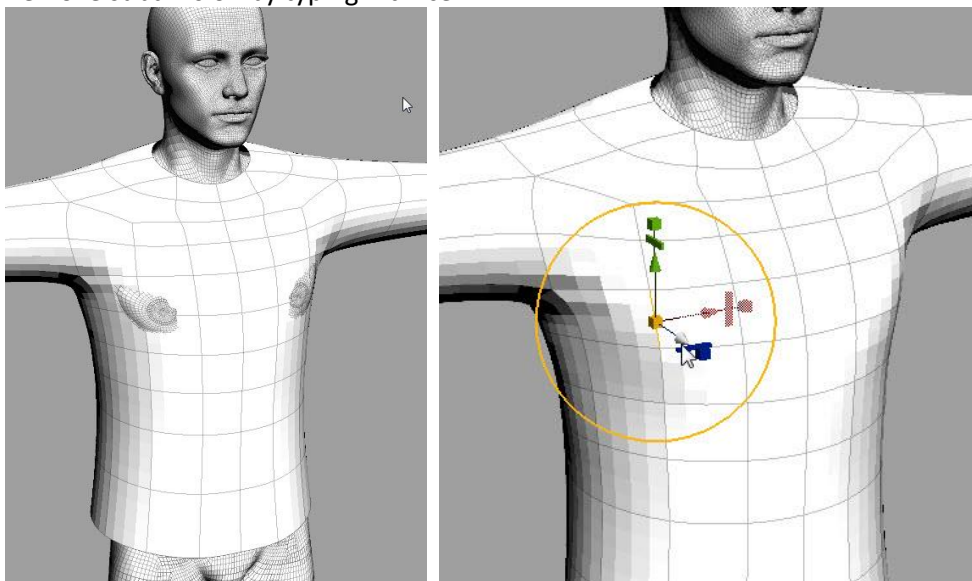

20. Flare waist and arms.
   a. The waist frequently has to fit over pants. If you plan to use dForce, it helps to add a flare.
   b. Use the edge tool to select one edge on the bottom hem.
   c. Type Alt+E to select the loop.
   d. Use the scale tool to slightly enlarge the waist.
   e. You may also want to flare the wrists if you plan to use dForce. Repeat steps b-d.

21. UV Map.
   a. Be sure the shirt object is selected.
   b. Select a viewport and change it to UV 2D view by typing 9.
   c. Silo creates a UV map for your model, but at this stage, it will give distorted textures in Daz Studio.
   d. Note you may also see a map of the imported figure. If so, save the scene, close and reopen Silo, and open the saved scene. You should then see only a map of the shirt when it is selected.
   e. To create a more useable map, we need to add new UV seams. UV seams show as blue edges in the model.

22. Modify UV Seams.
   a. Use the edge selector tool and click on an edge of the arm at the shoulder.
   b. Type Alt+E to select the loop.
   c. Type Alt+U to toggle the UV seam. This will create a seam all the way around the arm at the shoulder.
   d. Select an edge on the underside of the arm and type Alt+U.
   e. Repeat step d along the entire length of the arm. This will create a seam on the underside of the arm.
   f. Select an edge on the top of the shoulder. Type Alt+U and repeat along the line from shoulder to neck.
   g. Select a vertical edge along one side that matches up with the underarm seam. Type Alt+U and repeat all the way down the side. Steps f-g create seams that allow the shirt to unwrap in two pieces.
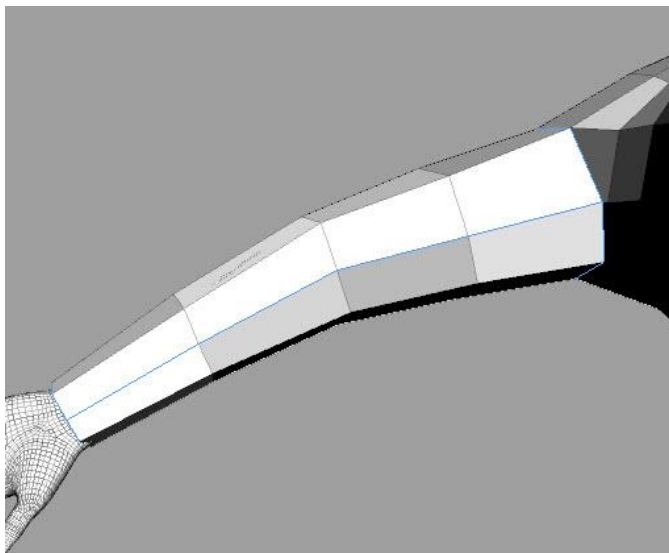
23. Remap UV
   a. Select the shirt in the scene.
   b. Select from the main menu UVs/Materials/Unwrap UVs using LSCM.
   c. The UV map will be updated to show the new regions.
   d. The map will likely look odd with overlapping parts and some items out of scale.
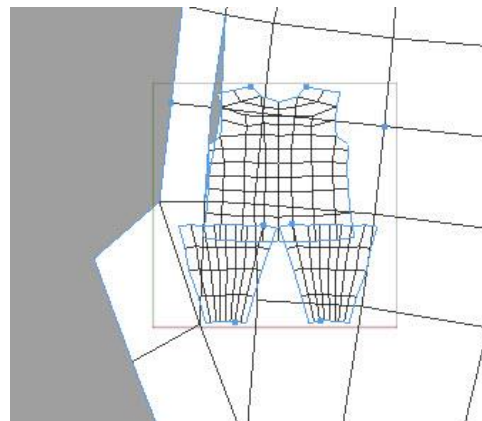
   e. Choose UVs/Materials/Arrange UVs in Bounds and UVs/Materials/Scale UVs Proportionally from the main menu. That will move everything around to fit the map.
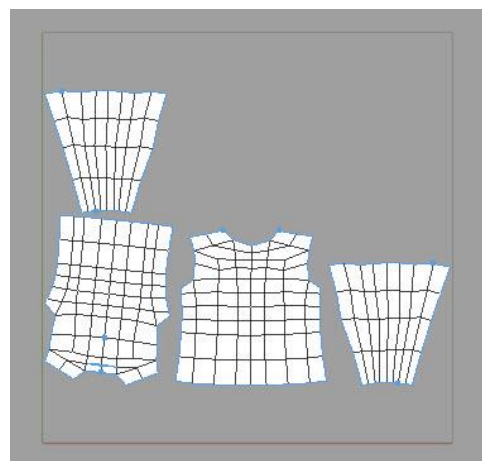
   f. With the map above, a striped texture will not match up correctly so we need to rotate and move the various sections.

g. Use the face selector tool and click on a face in one arm in the UV view. Type Alt+E to select all of the arm. Use the rotate and move tools as needed to adjust the arms so they are parallel and even with each other. I used the edges of the map as a guide to get rotation and positioning even.
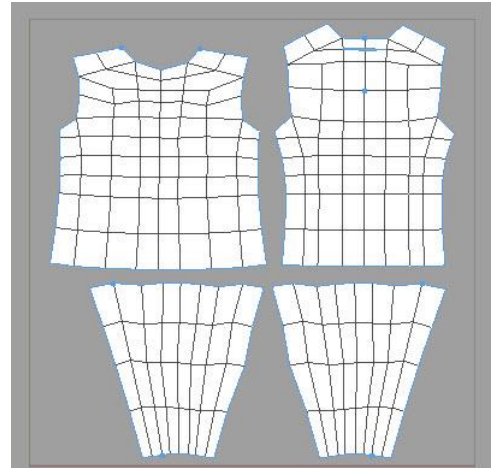

24. **Save scene.**
    a. Save the scene without any subdivision applied.
    b. This will allow you to go back and adjust the shirt after checking its fit in Daz Studio.

25. **Export Model.**
    a. Select the shirt object. Be sure figure is NOT selected.
    b. Subdivide again using Subdivision/Subdivide or typing C. Repeat.
    c. Choose Subdivision/Refine Control Mesh. This will cause the faint subdivided faces to become fully outlined. Now you can manipulate each of the smaller faces. Be sure to save your file before doing this step and DO NOT SAVE the refined mesh file over it. As far as I can tell, you cannot undo once you bake to the finer mesh.
    d. Choose File/Save Selected Objects…

26. **Import Model into Daz Studio.**
   a. Load the same figure (e.g., Genesis 3 male) you used to model the shirt. Choose Silo in the "From" drop-down box. Leave it in the default pose.
    b. Add pants or shorts to the figure.
    c. Check for fit. In this case, there was some poke through on the lower front. In Silo, go back to the saved scene before subdivision, adjust the shirt front, then repeat steps 24-25 and reload into DS.
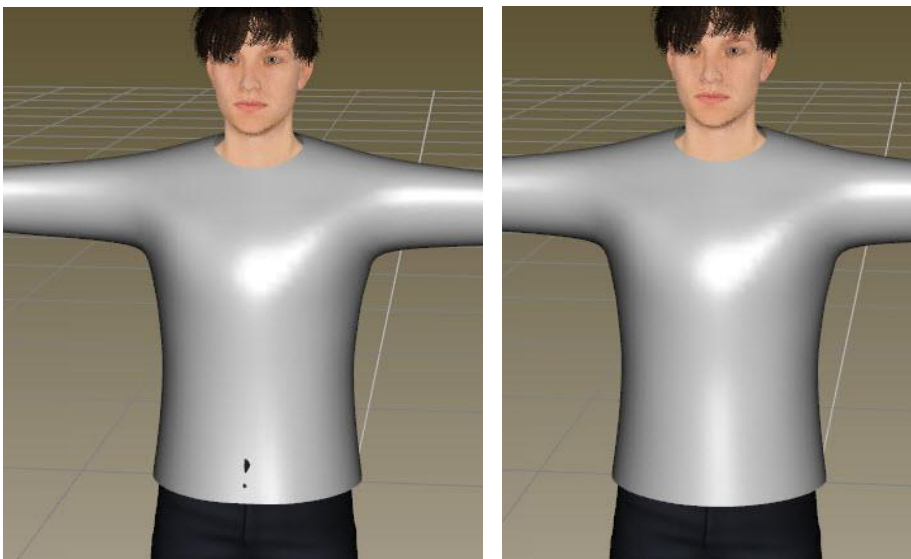
d. I like to add a horizontal stripe texture to check alignment of the UV map.
    i.   If the stripes do not quite match under the arms, return to Silo, load the saved scene before subdivision and adjust the rotation of the UV map as needed.
    ii. From the main menu, choose Editors/Options/Numerical Editor which will help with fine tuning. Use the edge of the maps as a guide. I found I needed to add about 0.5 Z-rotation to line up the shoulders and wrist edges to get them straight. Repeat steps 24-25 and reload into DS.

27. **Rig the Shirt.**
    a. As it is now, the shirt will not move, pose, or shape with the figure. You can use an animated dForce simulation at this stage on the base figure and the shirt will follow the pose.
    b. To rig the shirt, select the shirt in the DS Scene pane then from the pane's submenu choose Assets/Transfer Utility (image at right).
    c. In the Source Scene Item drop-down box choose the figure you modeled the shirt around (e.g., Genesis 3 Male).
    d. In the Target Scene Item drop-down box choose the shirt object you imported.
    e. In the Projection template drop-down box choose Shirt.
    f. Click on Show Options button.
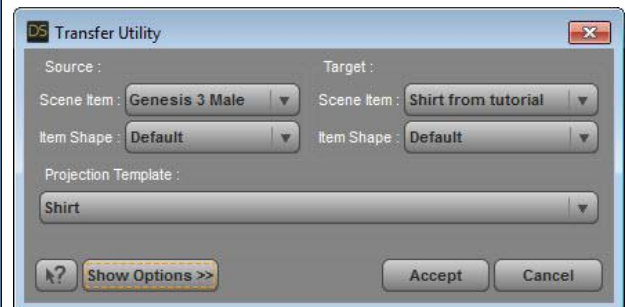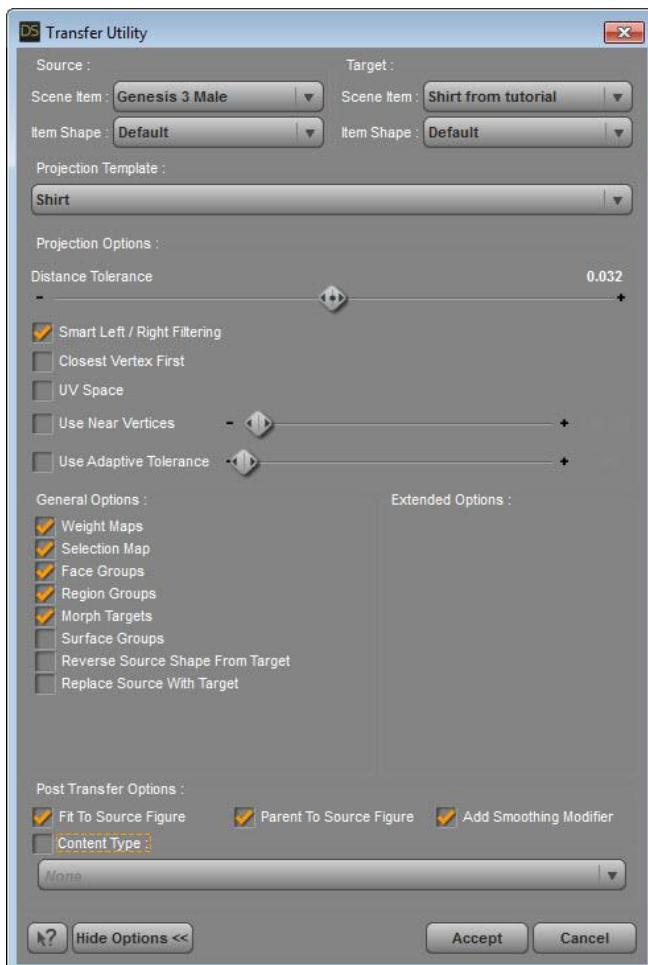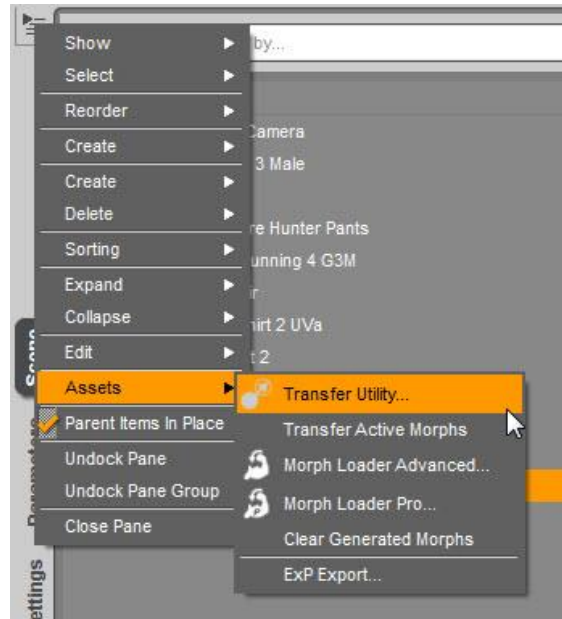
g. See image at left for other options that should be checked.
h. Now the shirt will follow shape changes (e.g., George) and extreme poses (e.g., crouching).

28. Run dForce Simulation.
   a. Choose the shirt in the Scene pane.
   b. From the main menu, choose Edit/Object/Geometry/Add dForce Modifier: Dynamic Surface.
   c. Set up an animated timeline with the default pose in Frame 0. At frame 10, add a pose. Run the simulation until frame 30.
   d. Below are renders of the conformed shirt with and without dForce simulation.

Rigged Only:

With dForce:

As you can see, there are more folds and movement in the shirt with dForce.