



## Adjust Regions

The Adjust Regions tool allows users to interactively manipulate regions. Users can rotate, translate, scale and deform objects. The adjust option provides users with the following region adjustment options:

### Adjust Regions Methods and Functions

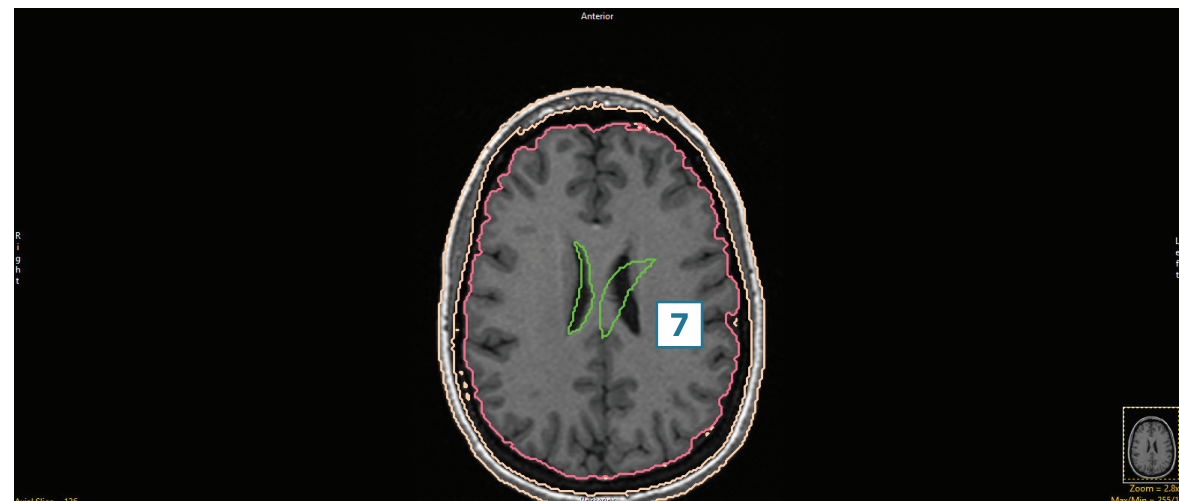
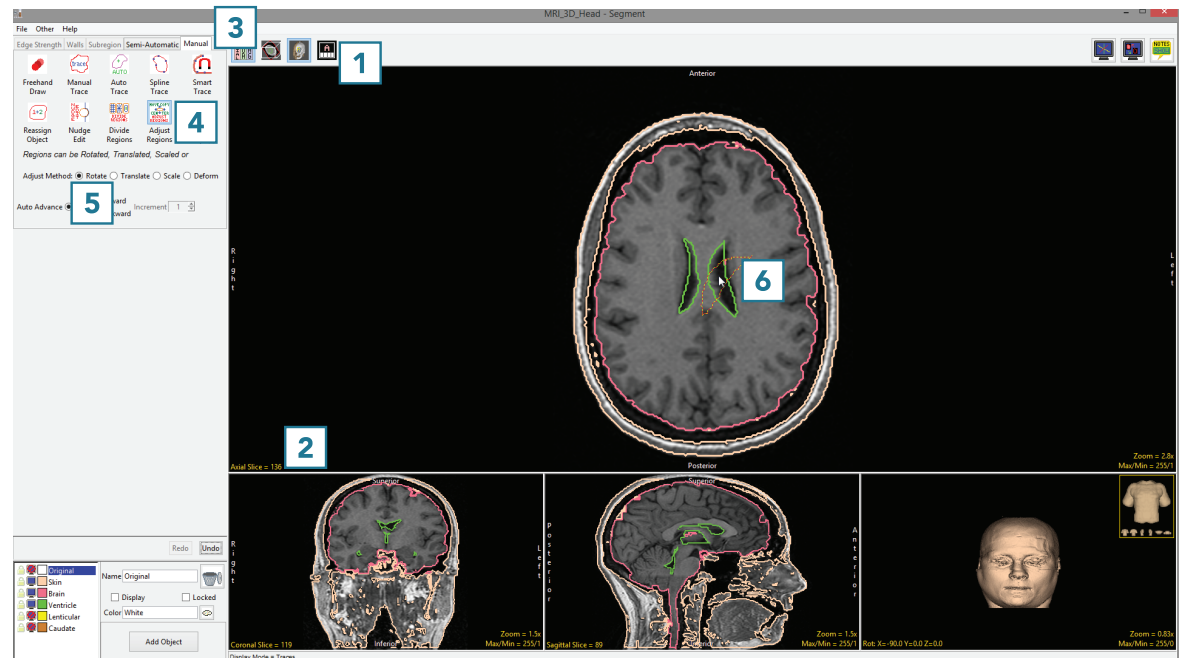
Method	Function
Rotate	The Rotate option allows users to rotate a region. To rotate a region, left click on the region to select it, the region will be outlined with a dashed yellow and red line. With the left mouse button still pressed move the mouse up to rotate the region clockwise and down to rotate counterclockwise.
Translate	<p>The Translate option allows users to translate a region left, right, up, or down. To translate a region, left click on the region to select it, the region will be outlined with a dashed yellow and red line. With the left mouse button still pressed move the mouse up, down, left, or right to move the region.</p> <p>The following options are also available for translate:</p> <p><b>With mouse movement:</b> This is the default option and will allow the user to translate the selected region.</p> <p><b>A copy of the region:</b> Allows users to translate a copy of the selected region. Choose from the following Copied Object options</p> <p><i>Same:</i> Copied object is assigned to the same object as the selected object.</p> <p><i>Current:</i> Copied object is assigned to the currently selected object from the object list.</p> <p><i>New:</i> Copied object is assigned to a new object.</p> <p><b>Region so that its centered on brightest point:</b> This option will shift the selected region so that the brightest pixel in the object is used as the new center point for the object.</p>
Scale	The Scale option allows users to adjust the regions scale by increasing and decreasing it both horizontally and vertically. To scale a region, left click on the region to select it, the region will be outlined with a dashed yellow and red line. With the left mouse button still pressed move the mouse up and down to adjust the scale vertically or move the mouse left or right to adjust the scale horizontally.
Deform	The Deform option allows users to interactively deform regions. To apply a free transform deformation on a region, left click on the region to select it, the region will be outlined with a dashed yellow and red line. With the left mouse button still pressed move the mouse up or down and left or right to deform.

## Using the Adjust Regions tool

Here we will rotate, translate, scale and deform objects using the Adjust Regions tool.

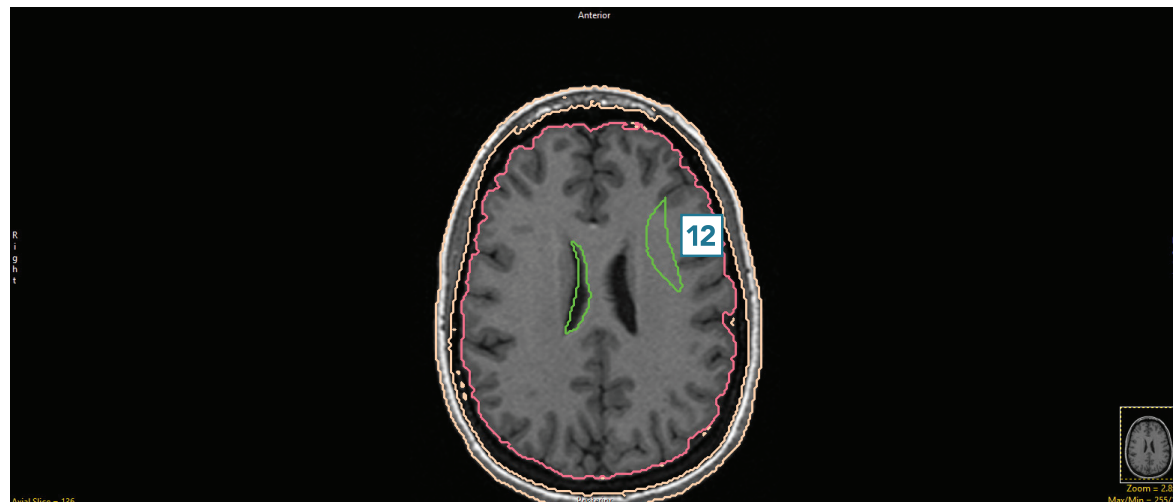
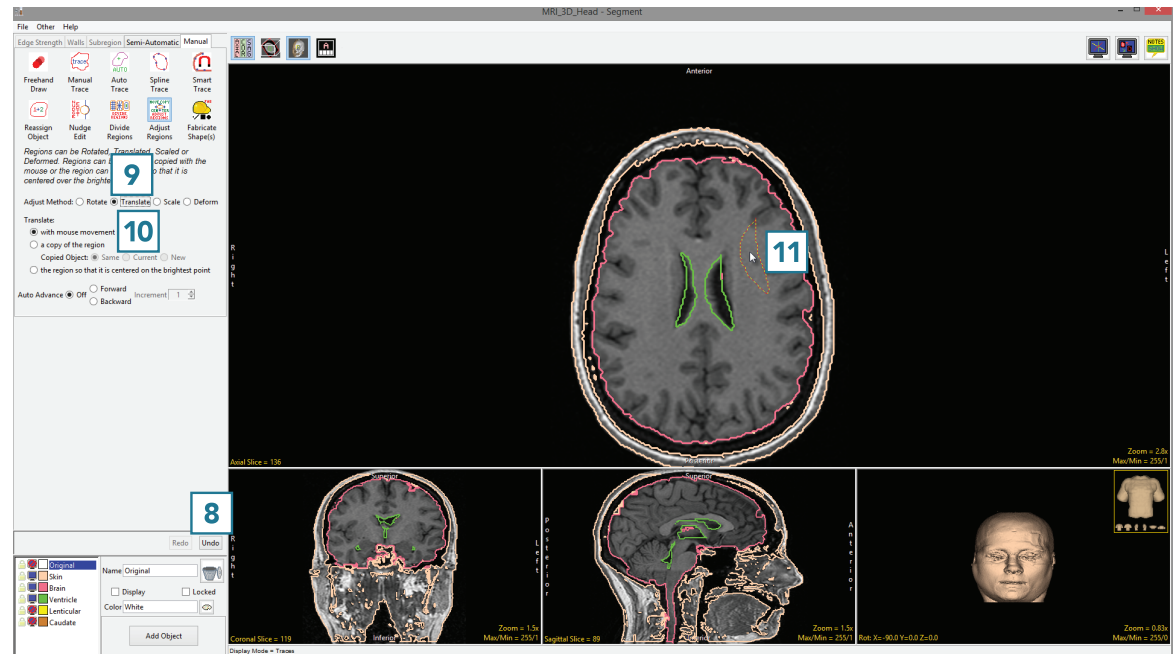
To follow along, download the data set MRI\_3D\_Head from [analyzedirect.com/data](http://analyzedirect.com/data) and load into Analyze using Input/Output.

- Select the dataset and open Segment.
- Select File > Load Object Maps and load MRI\_3D\_Head.obj.
- Set the primary display to Axial [1] and move to Axial slice 136 [2].
- Select Manual [3] and choose Adjust Regions [4].
- Set the Adjust Method to Rotate [5].
- Click in an object to select it and move the mouse up or down to rotate the object [6].
- Release the mouse button to end the rotation and commit the rotation to the object [7].



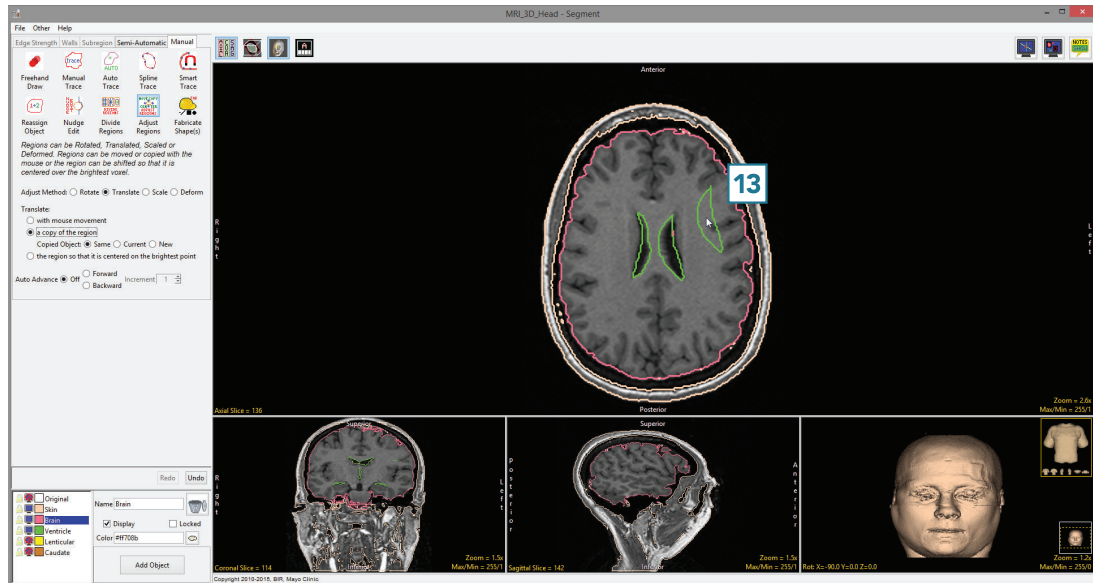
## Using the Adjust Regions tool (continued)

- Click Undo [8] and set the Adjust Method to Translate [9].
- With the Translate option set to with mouse movement [10], click in an object and drag to a new location [11].
- Release the mouse button to end the translation. The object will be moved to the new location [12].

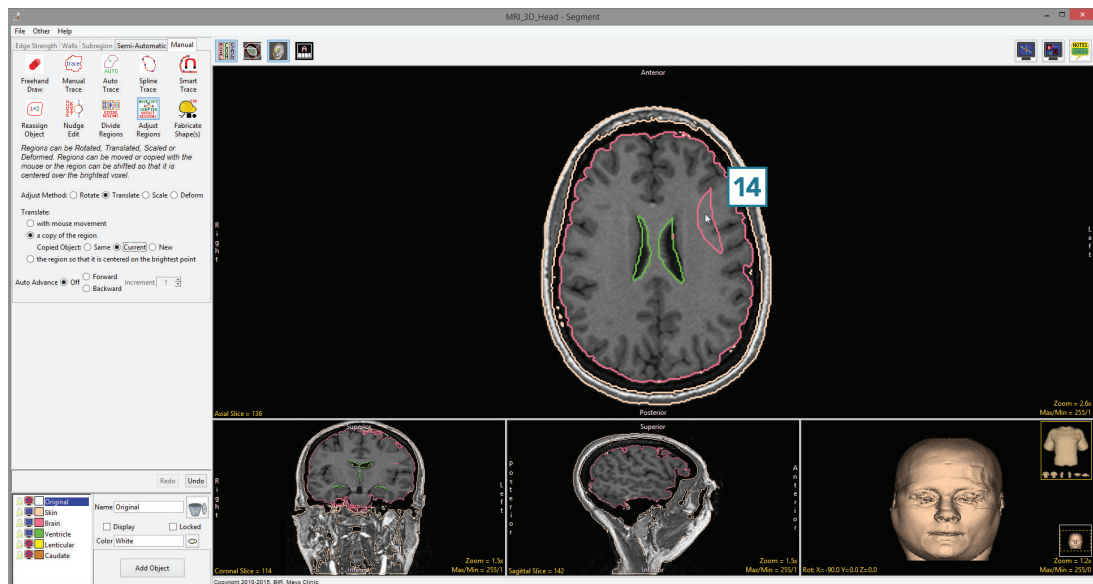


## Using the Adjust Regions tool (continued)

- Setting the Translate option to 'a copy of the region' will allow you to make a copy of the selected object and move to a new location.
- Setting Copied Object to Same assigns voxels in the new region to the same object as the parent region [13].

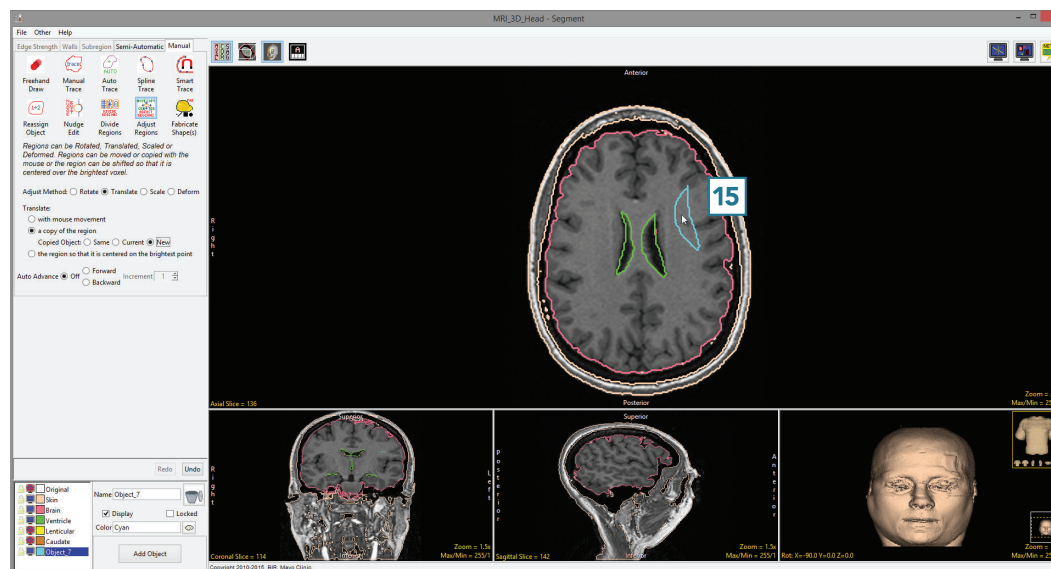


- Setting Copied Object to Current assigns voxels in the new region to the object currently selected in the Object Control window [14].



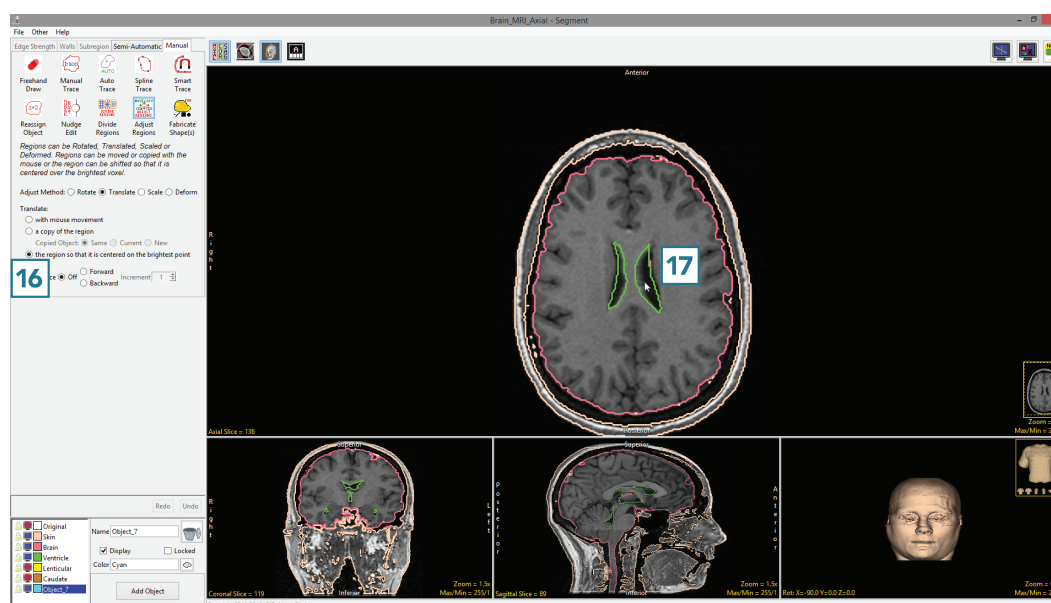
## Using the Adjust Regions tool (continued)

- Setting Copied Object to New assigns voxels in the new region to a new object [15].



The Translate Adjust Method also allows users to Translate the region so that it is centered on the brightest point. With this option, the tool calculates the brightest pixel in the object and sets that as the center of the object, translating the object appropriately.

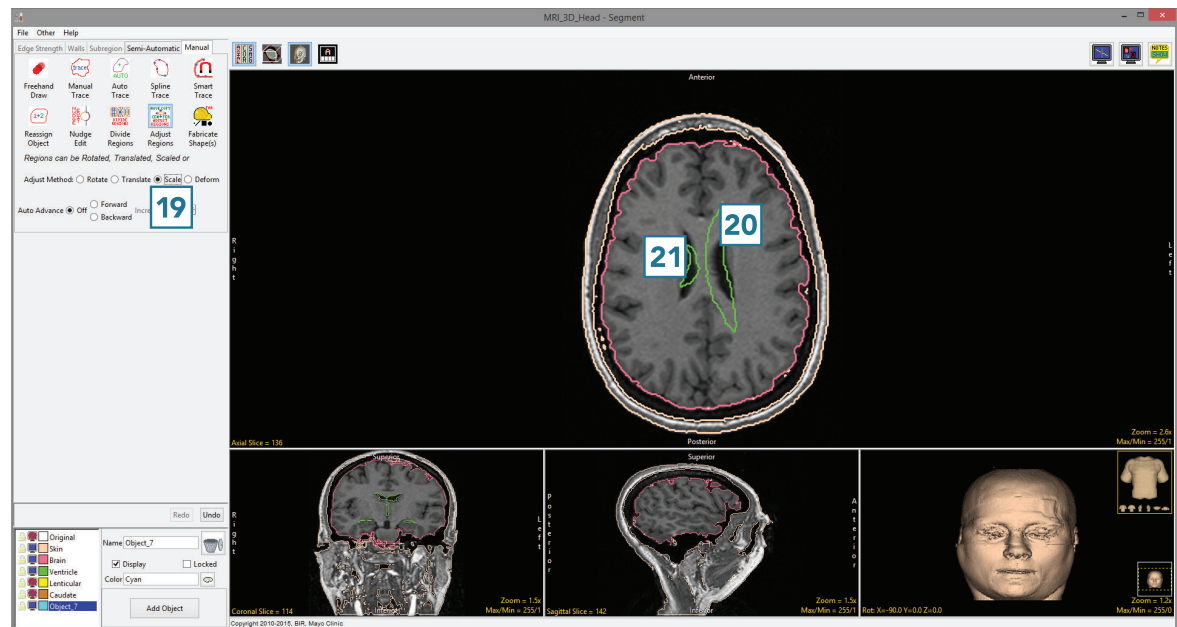
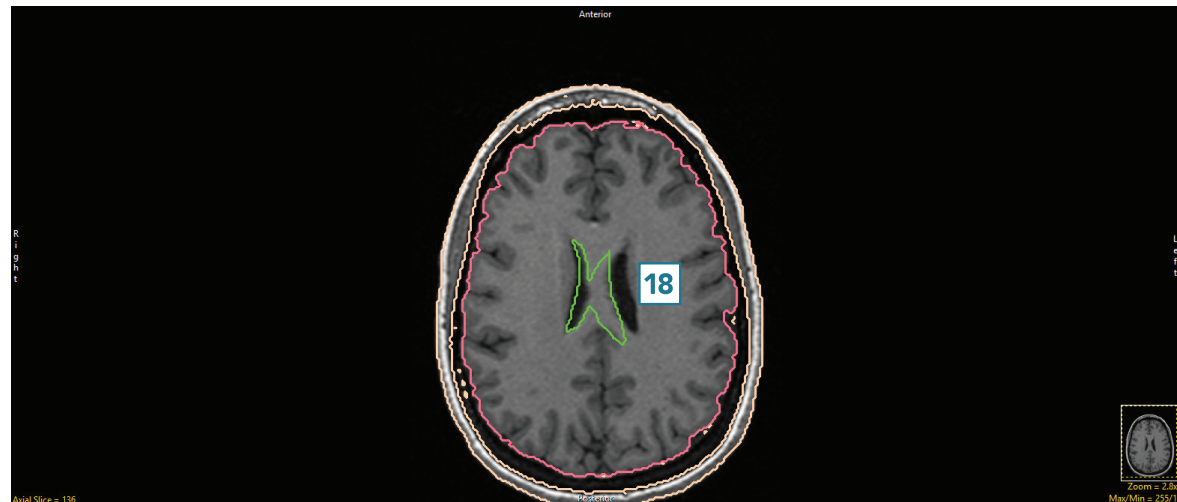
- Set the Translate method to the region so that it is centered on the brightest point [16].
- Click in an object [17].





## Using the Adjust Regions tool (continued)

- The region will instantly be recentered around the brightest point in the object [18].
- Click Undo.
- Set the Adjust Method to Scale [19].
- Click in an object and move your mouse to increase the scale of the selected object [21].
- Moving the mouse up and down adjusts the scale in the vertical direction. Moving the mouse left and right adjusts the scale in the horizontal direction. Moving the mouse diagonally adjusts the scale of the object while preserving the shape. Release the button to commit the scale manipulation to the object.
- Click in an object and then move your mouse to decrease the scale of the selected object [21].
- Release the button to commit the scale manipulation to the object.



## Using the Adjust Regions tool (continued)

- Undo the previous manipulations.
- Set the Adjust Method to Deform [22].
- Click in an object and move your mouse to experiment with the deformations available [23].  
In this example the user is deforming the border of the brain object.
- Releasing the mouse button will apply the deformation to the object.

