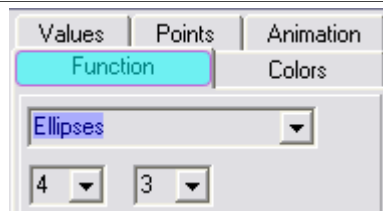2006-07-28
draft 004
kelvin tooth.

Agony150

The six control panes:

1) Function
2) Values
3) Points
4) Colors
5) Animation
6) Draw

The program creates pictures from drawing many curves and accumulating their combined shapes to give a path or solid looking structure. Each picture is made of up to a few thousand curves, each of which may contain a few thousand points.

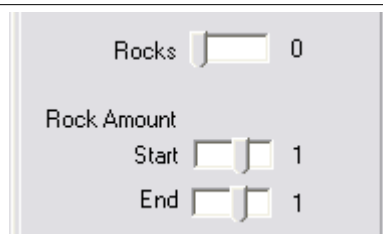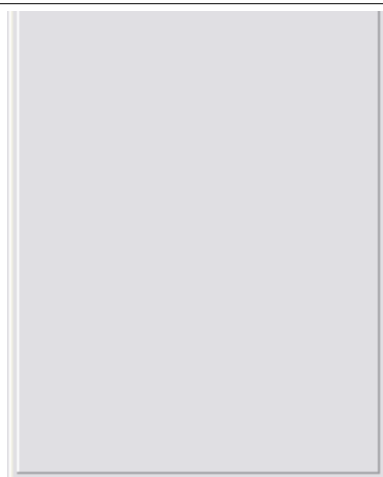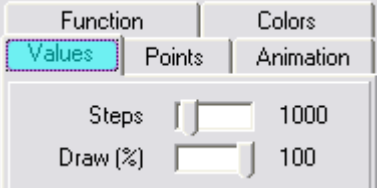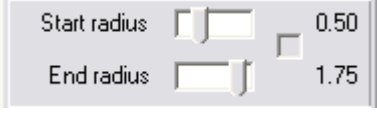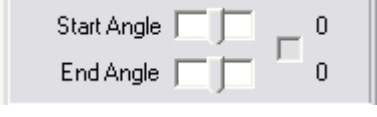|	
Values Points Animation Function Colors Ellipses ▼ 4 ▼ 3 ▼	***The Function Menu:*** The first drop down list contains the available functions that the program can draw. In "Sin Wobble" mode it draws circles centered on the origin (center of canvas) which have a wobbly circumference, the number of wobbles is the number of "bumps" below. In "Ellipses" mode, the program draws ellipses, also distorted by the number of "bumps" below, In "Lissajous" mode, the program draws Lissajous curves and the nature of the curves are defined by the other drop downs and slider.
☐ Use 031 style thing?	Don't worry about this.
Rocks ▢ 0 Rock Amount Start ▢ 1 End ▢ 1	Rocks: The number of "rocks" is the number of times the curve is "rocked" - rotated back and forth about a point (moving or stationary) on top of all the other things that may be happening to it. The "start" and "end" amounts are the amount in radians by which the curve will be rocked. This value interpolates smoothly from the start of a drawing to the end of the drawing.
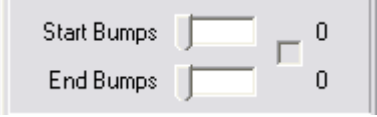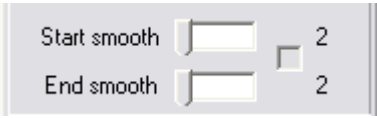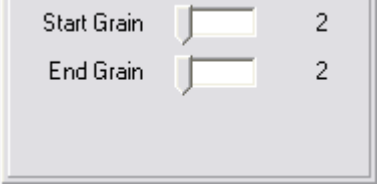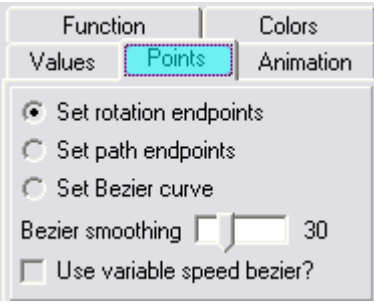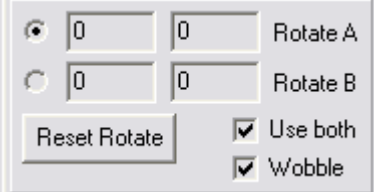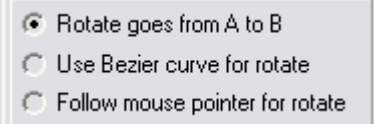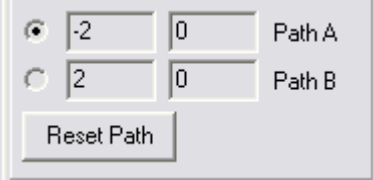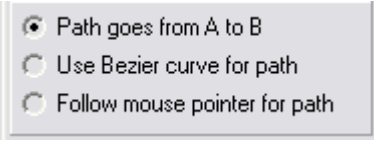
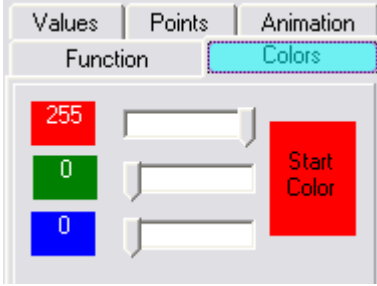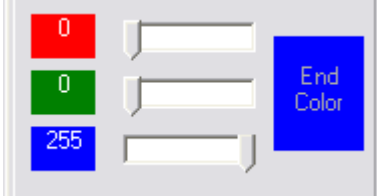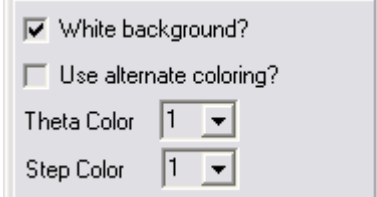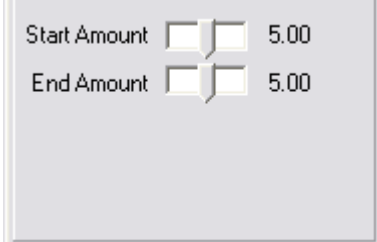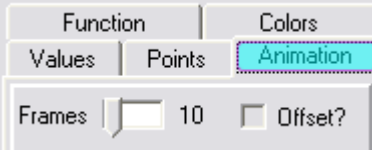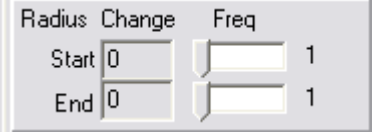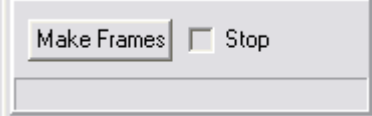|	
Function | Colors **Values** | Points | Animation Steps ▯▭ 1000 Draw (%) ▭ 100	**Steps:** This is the number of curves that will make up the whole journey, the second slider is the percentage of this number that the program will actually draw.
Start radius ▭▯ 0.50 ☐ End radius ▭▯ 1.75	**Start Radius/End Radius:** Simply the starting and ending radius of the curves.
Start Angle ▭▯ 0 ☐ End Angle ▭▯ 0	**Start Angle/End Angle:** The amount (in degrees) by which the curve is rotated about the current "center of rotation" (explained below). Positive numbers are counter-clockwise. As the curves are drawn they are rotated smoothly between the starting angle and the ending angle.
Start Bumps ▭ 0 ☐ End Bumps ▭ 0	**Start Bumps/End Bumps:** The number of "wobbles"/distortions along each curve as it is drawn. Again, this number is changed across the curves' journey.
Start smooth ▭ 2 ☐ End smooth ▭ 2	**Start Smooth/End Smooth:** This is how "deep" the "bumps" are, a low number is very deep (extreme distortion - bumpier), a high number is more shallow (less distorted – smoother).
Start Scale ▭▯ 2.00 ☐ End Scale ▭▯ 2.00	**Start Scale/End Scale:** The "scale" is proportionate to the side of the canvas. Scale = 2 means the canvas covers the area between the co-ordinates (-2,-2) and (2,2), Scale = 4 would mean the canvas extends to (-4,-4) to (4,4).
Start Grain ▭ 2 End Grain ▭ 2	**Start Grain/End Grain:** This affects the number of points that are calculated along every curve. If this number is low, and the curve is quite long, you will see that the curve is made of dots, the higher the grain the smoother the curve, but also the longer each curve will take to compute. This is a linear function, so a grain of 4 takes twice as long as a grain of 2

Function / **Colors** **Values** / **Points** / **Animation** ⦿ Set rotation endpoints ○ Set path endpoints ○ Set Bezier curve Bezier smoothing [ ] 30 ☐ Use variable speed bezier?	In Agony, a picture is made from many curves travelling from one point to another. Along the way the curve maybe rotated about another point, which also may be travelling from one point to another. We are able to set the start and end points for these two journeys. We are also able to set a hand-drawn path for the curves to travel along. This is done using a "bezier curve". To draw the path, make sure that "Set Bezier curve" is selected, and then, while Agony is idle – not drawing anything – draw on the canvas with the mouse while holding down the right mouse button. You should see some dots being drawn along the path you choose. Bezier smoothing: A higher number will give a more smooth bezier curve.
⦿ [0] [0] Rotate A ○ [0] [0] Rotate B [Reset Rotate] ☑ Use both ☑ Wobble	These are the co-ordinates of the start and end points about which the curves will be rotated. You can set them by either typing the numbers in directly, or making sure that "Set rotation endpoints" in the panel above is selected, and then click on points on the canvas the places you click at will alternately be set as the start and end points. (The starting point is the top pair of values, or Rotate A). "Use both" means that you want the center of rotation to travel from point A to point B during the process of drawing the successive curves. "Wobble"- undocumented at the moment.
⦿ Rotate goes from A to B ○ Use Bezier curve for rotate ○ Follow mouse pointer for rotate	"Rotate goes from A to B" - the default behaviour, the center of rotation will travel in a straight line from point A to point B. "Use Bezier curve for rotate" - if you have "set" a Bezier curve, then the center of rotation will travel along the hand drawn path while the picture is drawn. "Follow mouse pointer for rotate" - the center of rotation will be set (and continually re-set) to the position of the mouse while drawing the picture. This can lead to quite odd images.
⦿ [-2] [0] Path A ○ [2] [0] Path B [Reset Path]	These are the two sets of co-ordinates for the starting and ending points of the path that the center of each curve will travel along, while drawing the whole picture. "Reset Path" will set both Path A and B to (0,0).
⦿ Path goes from A to B ○ Use Bezier curve for path ○ Follow mouse pointer for path	The same as above (for rotate) but for the center of the individual curves.

	The two sets of sliders, and swatches, are used to set the colour that the curves will begin and end at. The program will move smoothly between the two colours as the curve moves about along its path.
	The two sets of sliders, and swatches, are used to set the colour that the curves will begin and end at. The program will move smoothly between the two colours as the curve moves about along its path.
	"White background": If this is ticked the background is set to white, otherwise, black. "Use alternate coloring": If this is ticked then the colouring method is different and gives more variable, pretty colours. If it is unticked the colours will just smoothly interpolate between the start and end colours above. Theta Color: Only used with alternate coloring method. In the alternate coloring method, the color of the curve not only changes between steps in the complete picture, but along each individual curve also. Theta Color is how many times the color will loop around each time. A high number will give stripes around each small curve Step Color: Also only for the alternate coloring method. This value says how many times the colors will cycle from start color to end color during the drawing of the whole picture.
	These values are the amount of ink deposited at the start and end. The amount smoothly changes along the drawing of the picture. The alternate coloring method typically requires a much lower value.

Function | **Colors** **Values** | **Points** | **Animation** Frames | [ ] 10 ☐ Offset?	The Animation tab gives you the opportunity to create image sequences from Agony pictures. The Frames slider is simply the number of frames to make. The Offset option, used in conjunction with a bezier curve, means that the start and end points of the picture loop along the bezier curve, giving the sense of the picture moving along a path (in addition to its other motions/transformations etc.)
Radius Change Freq Start [0] [___] 1 End [0] [___] 1	Change the radius of the start and end curves during the course of the animation. These changes happen the amount of times as specified with the Frequency slider.
Angle S [0] [___] 1 E [0] [___] 1	Change the angle of rotation of the start and end curves during the course of the animation. These changes happen the amount of times as specified with the Frequency slider.
Bump S [0] [___] 1 E [0] [___] 1	Change the number of bumps at the start and end curves during the course of the animation. These changes happen the amount of times as specified with the Frequency slider.
Smooth [0] [___] 1 E [0] [___] 1	Change the smoothness of the bumps at the start and end curves during the course of the animation. These changes happen the amount of times as specified with the Frequency slider.
Rocks [0] ▼ [___] 1 [☐] 0 [___] 1 W [0] ▼ [___] 1 H [0] ▼ [___] 1	Change i) the number of "rocks" during the course of the animation. ii) the angle of each rock, iii) W and H are specifically for the "ellipses" function, and change the number of times that the curves will contract and expand their height and width in each frame during the course of the animation These changes happen the amount of times as specified with the Frequency sliders.
Make Frames ☐ Stop [_____]	The Make Frames button will set the program off to produce the frames. A progress bar will show the distance through, and the frame number being worked on is displayed to the right of the "Stop" checkbox. If the "stop" checkbox is checked, then Agony will stop producing any more frames of animation upon completion of the current frame.
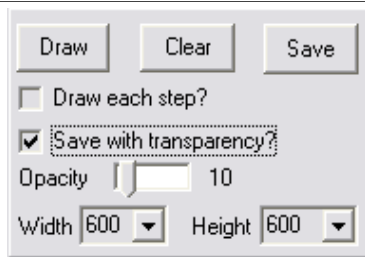
Draw **Clear** **Save** ☐ Draw each step? ☑ Save with transparency? Opacity |||___ 10 Width |600| ▼ Height |600| ▼	Draw: sets the program off to draw the picture, this will become the "stop" button whilst drawing. Click it to stop the current drawing. Clear: Clears the canvas between pictures, or whilst the picture is being drawn. Save: will save as a .png, the image currently being displayed. "Draw each step?": Will draw each curve of the picture as it is calculated, this slows things down. **Note: It slows things down a lot if there are many thousand steps, or if the image being calculated is not 600x600 as the image resizing seems quite slow.** "Save with transparency": If transparency is ticked, then you can choose the level of opacity. Opacity is calculated on a per pixel basis, with the opacity being proportionate to the difference between the color at the pixel and the background color. Width and Height: This sets the canvas size. You have to press the "Clear" button in order to actually make the canvas size change, if you don't do that, and you draw a picture having changed the size, you can run into problems.

Note: when you save an image, a .ini file and (possibly a .curve file) is saved with the same name as the image. If you want to allow someone else to draw the same picture as one you have created, you can send them the .ini and .curve file and as long as they name them, say we are using agony150...

name them: agony150.ini and agony150.curve,

then when the program starts, it will read in the curve file and the .ini file.

Then, after setting, "use bezier for rotate" and "use bezier for path" (if a bezier curve was used for both path and rotate – if it wasn't then don't set this) – pressing the draw button will produce the same picture as the one that was saved previously.

If no bezier curve was used, and no .curve file produced, then simply startin agony150.exe with the relevant agony150.exe will load the correct configuration to produce the picture.

If you have any suggestions, improvements, questions or complaints then please email me

kelvin@meblar.org

or post a message into the Agony group at

http://www.flickr.com/groups/agony/

The end.