Variable Section Sweeps

Question: Why create a (complex) variable section sweep when it appears that a simple parallel blend will produce the same geometry?

Example of a parallel blend using a triangle that has three sections, each section using a different start point to produce a twisted section.
Encompass this part in a tube.
Note that the “tube” is solid geometry that has been made transparent.

Look at it from the open end. What do you notice?
What is going on and why?

Variable Section Sweep creation:

Create a Datum Curve from Equations (Cylindrical Coordinate System)

```plaintext
/* For cylindrical coordinate system, enter parametric equation */
/* in terms of t (which will vary from 0 to 1) for r, theta and z */
/* For example: for a circle in x-y plane, centered at origin */
/* and radius = 4, the parametric equations will be: */
/* */
/* r = 4 */
/* theta = t * 360 */
/* z = 0 */
/* */
x = 12 * cos (t*360)
y = 4 * sin (t*360)
r = 2
theta = t*360*2
z=30*t
```
Copy/Paste Special by rotating the original curve 120 and -120 degrees about the Z axis. Note in WF 5, the default option in Paste Special is to Hide Original Geometry (under the Options tab). Deselect this option.
Create a Variable Section Sweep using the three curves as Trajectories, Normal to the Horizontal datum plane.

Encompass this part in a tube.

Look at it from the end.

Note the difference.