introduction to processing
working with the eps lens library – part II

Uta Hinrichs, CPSC 583, 2010
distorting the position of squares

- focal shape: circle
- focal size: 50
- magnification factor: 1.5
- drop off function: gaussian
- drop-off width: 200
- distance metric: L1
distorting squares
distorting squares

- corner points of each square defined by
  - position of square
  - width and height of square
- calculate each corner point for each square

```java
import java.awt.geom.Point2D;
Vector<Point2D.Float> cornerPoints = new Vector();
```

- draw each square
  ```java
  quad(x1, y1, x2, y2, x3, y3, x4, y4);
  ```

- distort the corner points instead of the position of each square
solution – calculating corner points

Vector<Point2D.Float> getBoundingBox()
{
  cornerPoints.clear(); //Vector<Point2D.Float> that stores 4 corner points
  float BL_x = currXPos - sWidth/2; // bottom left
  float BL_y = currYPos + sHeight/2;
  cornerPoints.add(new Point2D.Float(BL_x, BL_y));

  float BR_x = currXPos + sWidth/2; // bottom right
  float BR_y = currYPos + sHeight/2;
  cornerPoints.add(new Point2D.Float(BR_x, BR_y));

  float TR_x = currXPos + sWidth/2; // top right
  float TR_y = currYPos - sHeight/2;
  cornerPoints.add(new Point2D.Float(TR_x, TR_y));

  float TL_x = currXPos - sWidth/2; // top left
  float TL_y = currYPos - sHeight/2;
  cornerPoints.add(new Point2D.Float(TL_x, TL_y));

  return cornerPoints;
}
solution – distorting corner points

```java
for(int i = 0; i<shapeVector.size(); i++)
{
    Shape s = (Shape)(shapeVector.elementAt(i));
    Vector<Point2D.Float> corners = s.getBoundingBox();

    for(int j = 0; j<corners.size(); j++)
    {
        in[0] = corners.elementAt(j).x;
        in[1] = corners.elementAt(j).y;

        epsMag = lens.magnify2D(in, out);

        s.setCornerPoints(j, out[0], out[1]);
    }
    s.drawShape();
}
```
distorting the position of squares

- focal shape: circle
- focal size: 50
- magnification factor: 3.0
- drop off function: gaussian
- drop-off width: 200
- distance metric: L1
some artefacts...

- focal shape: rectangle
- focal size: 200x200
- magnification factor: 1.5
- drop off function: hemispheric
- drop-off width: 100
- distance metric: L₃

→ draw squares in a different order
lenses are good for...

- magnifying shapes or text
- bring in more information
  - labels
  - different representations
- other stuff?
interaction without buttons

Carly's French style was in fact at odds with her avowed task of recording the totem poles in their native settings. The intent, her paintings reveal, had been transformed into a primarily artistic one.

Doris Shadbolt, The Art of Emily Carr, 1979
interaction without buttons
further reading

- info about the eps lens library
- discrete vs. continuous lenses; info about the eps library