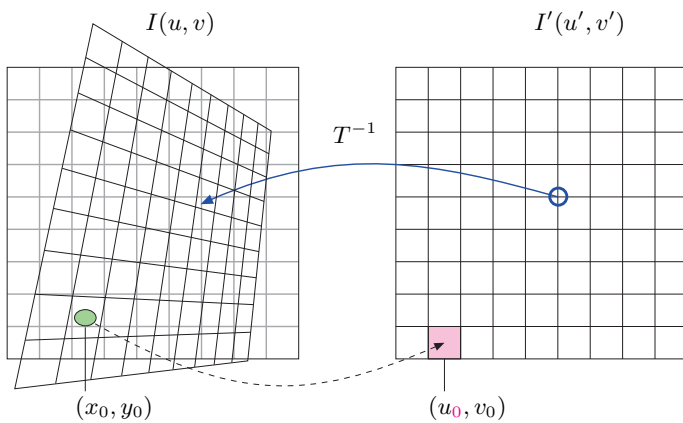
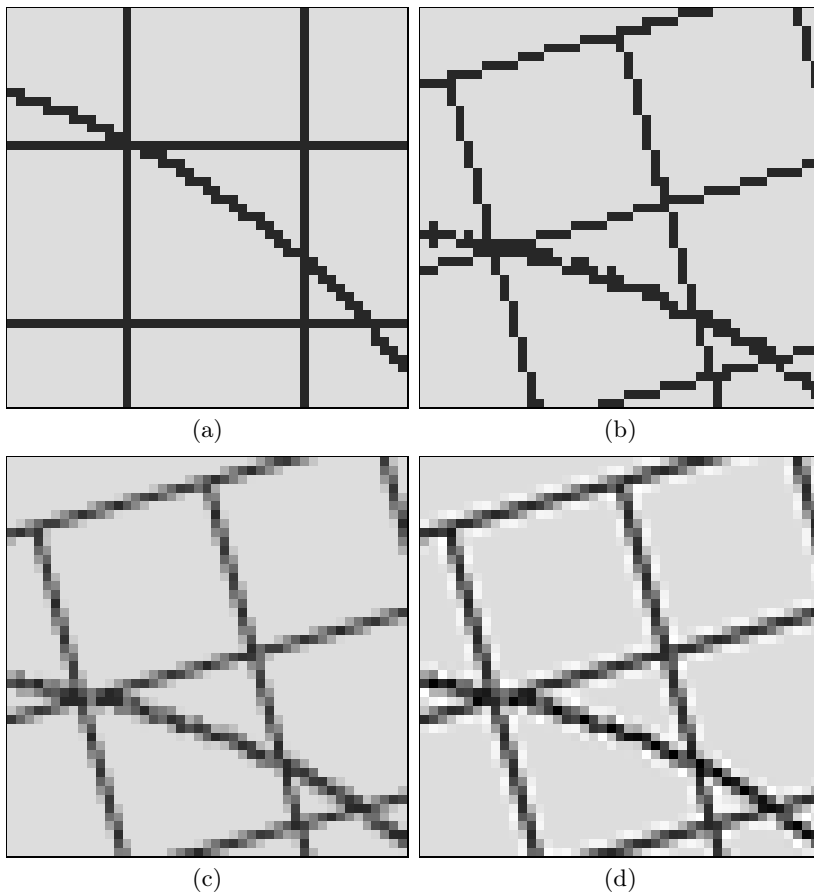


16.3 INTERPOLATION

**Fig. 16.31**

Image interpolation methods compared: part of the original image (a), which is subsequently rotated by  $15^\circ$ , nearest-neighbor interpolation (b), bilinear interpolation (c), and bicubic interpolation (d).



**Fig. 16.32**

Sampling errors in geometric operations. If the geometric transformation  $T$  leads to a local contraction of the image (which corresponds to a local enlargement by  $T^{-1}$ ), the distance between adjacent sample points in  $I$  is increased. This reduces the local sampling frequency and thus the maximum signal frequency allowed in the source image, which eventually leads to aliasing.