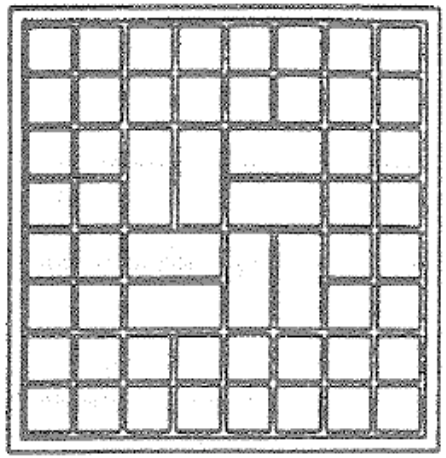
48-747 Shape Grammars

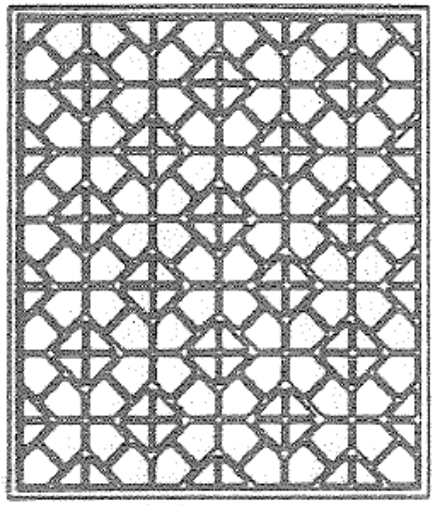
ICERRAY and HEPPLEWHITE CHAIRBACK DESIGNS

chinese lattice designs

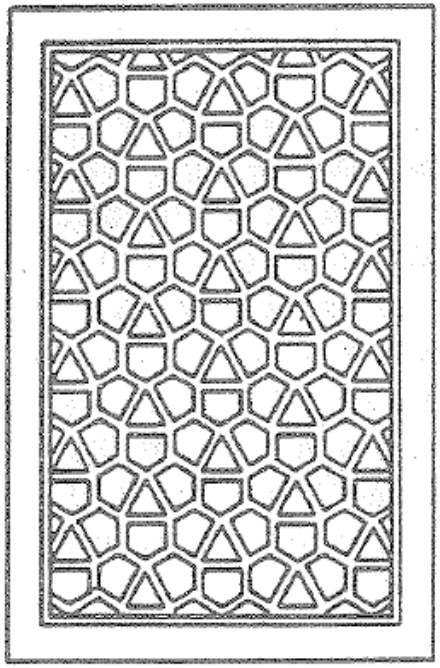
(a)



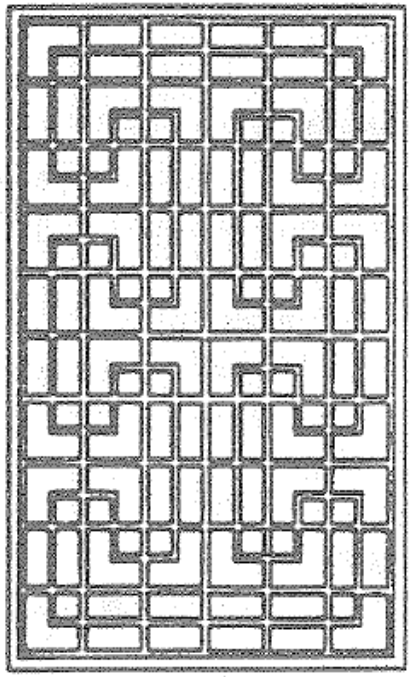
(b)



(c)



(d)

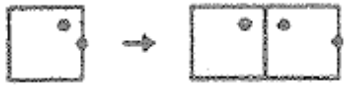


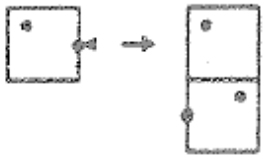
S: ——

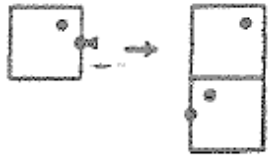
L: {(0, 0) : ●}, {(0, 0) : ▲}

R:

(1)

(2) 

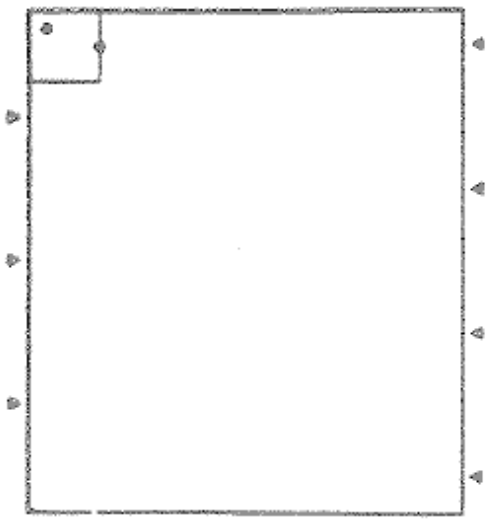
(3) 

(4) 

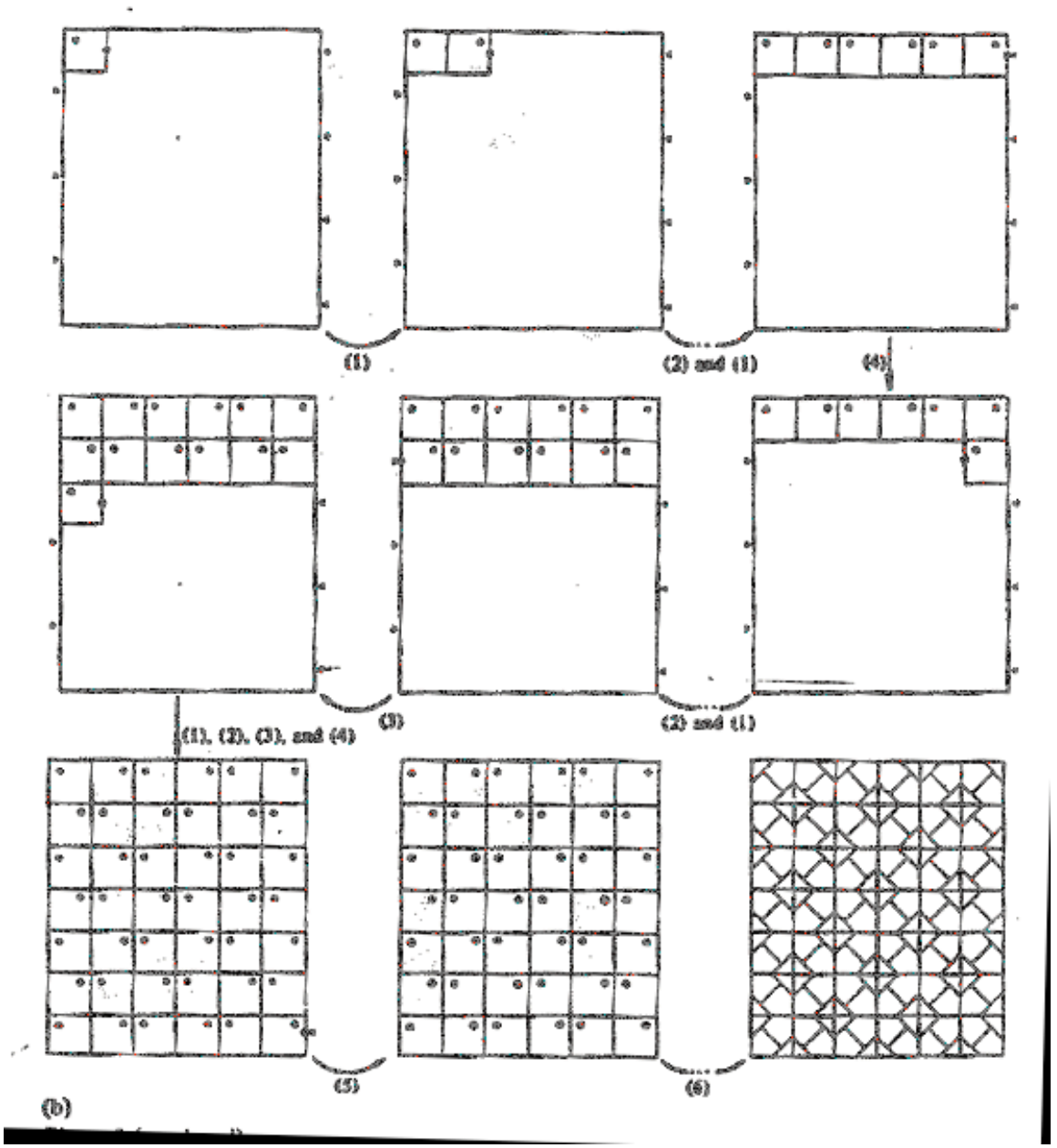
(5) $\langle s_{\bullet}, \{(0, 0) : \bullet, (0, 0) : \blacktriangle\}\rangle \rightarrow \langle s_{\bullet}, \emptyset\rangle$

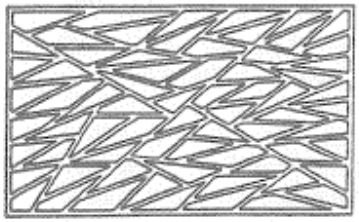
(6)

I:

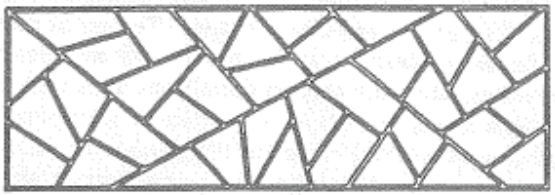


(a)

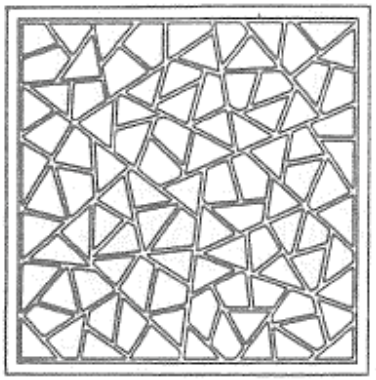

(1)
(2) and (1)
(4)
(3)
(2) and (1)
(1), (2), (3), and (4)
(5)
(6)
(b)



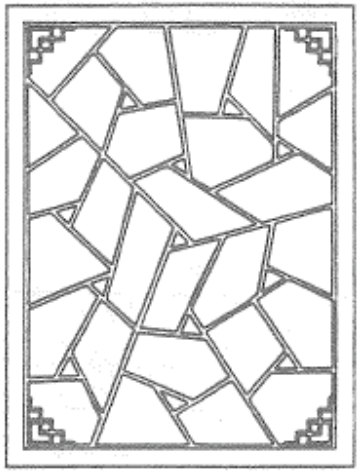
(a)



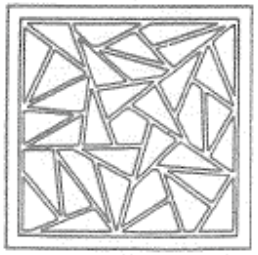
(b)



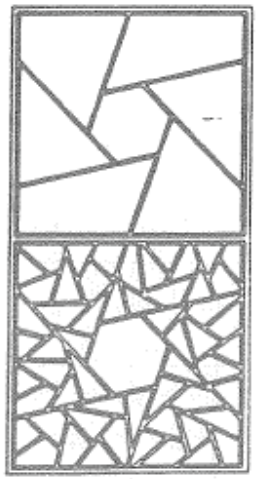
(c)



(d)



(e)



(f)

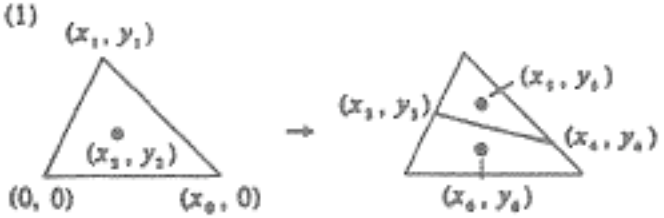
(g)

S: ——

L: $\{(0, 0) : \bullet\}$

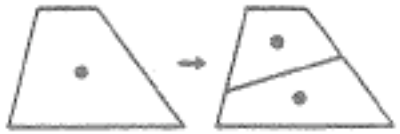
R:

(1)

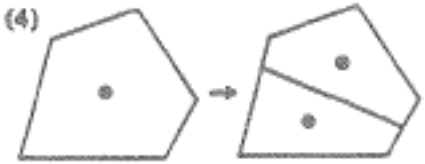


(2)

(3)



(4)

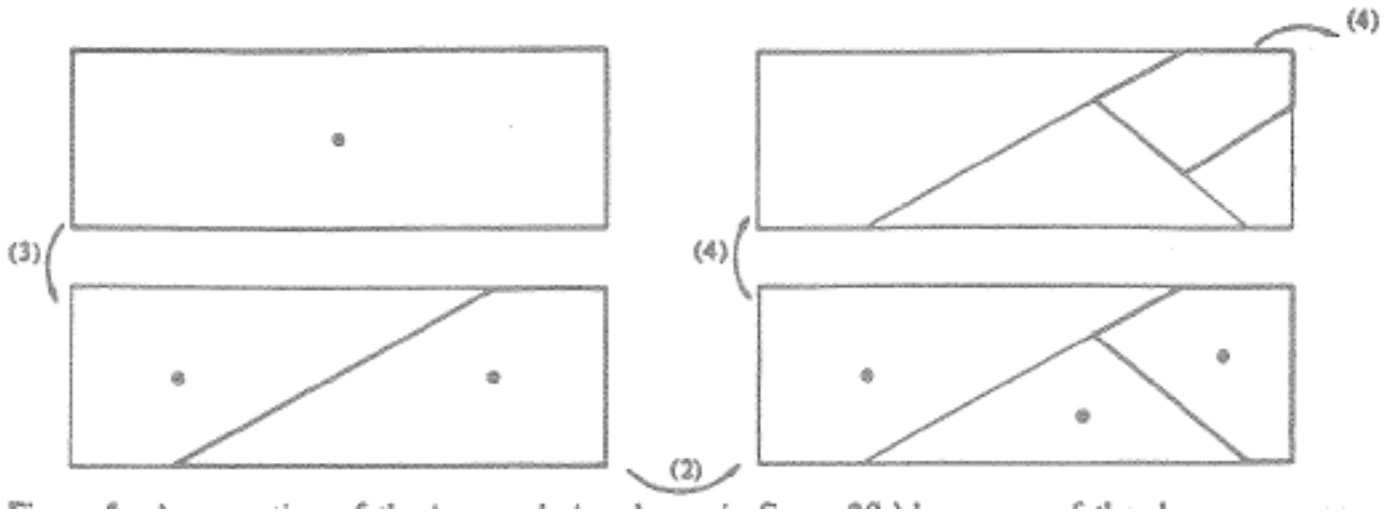


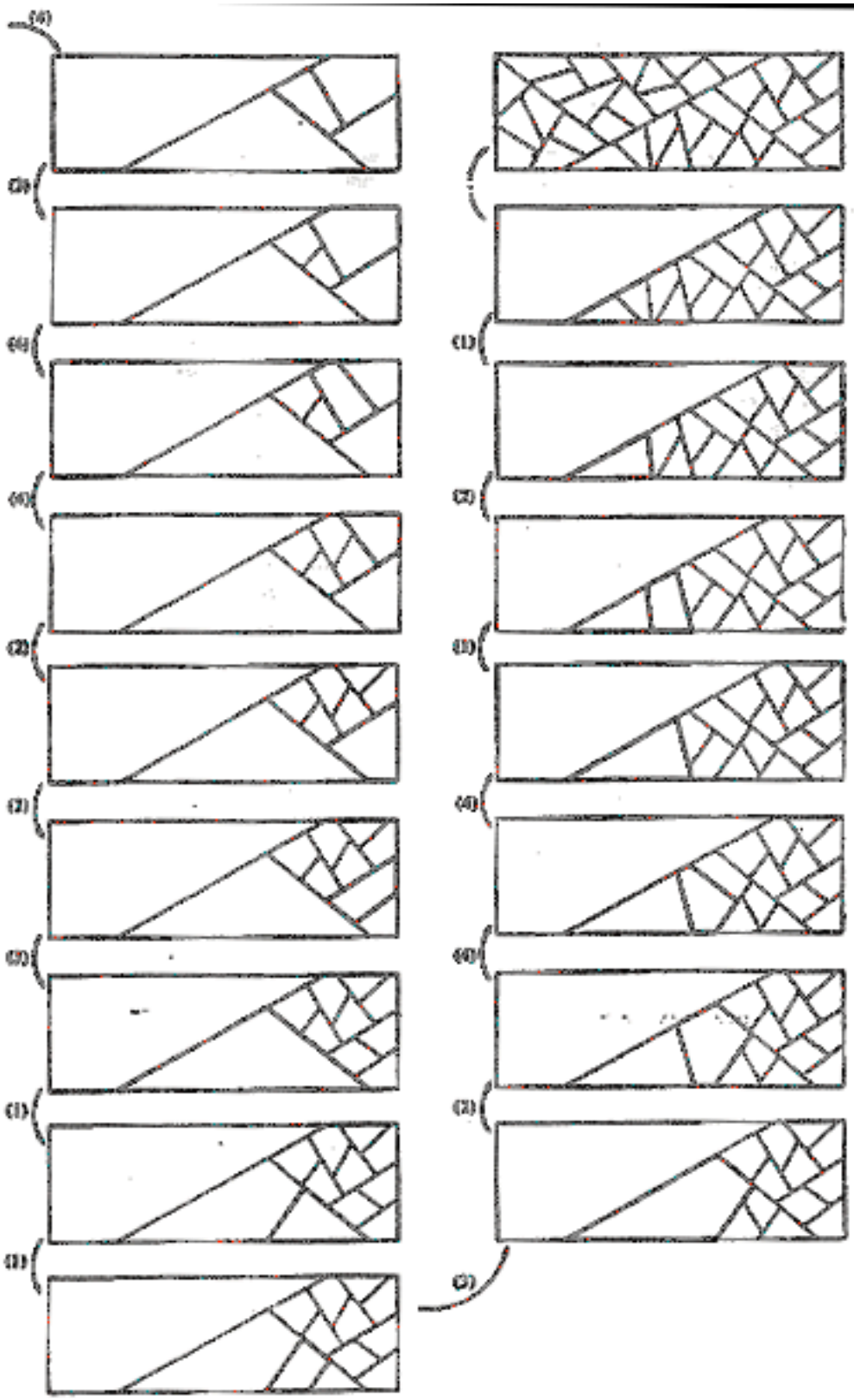
(5)

$(s_\emptyset, \{(0, 0) : \bullet\}) \rightarrow (s_\emptyset, \emptyset)$

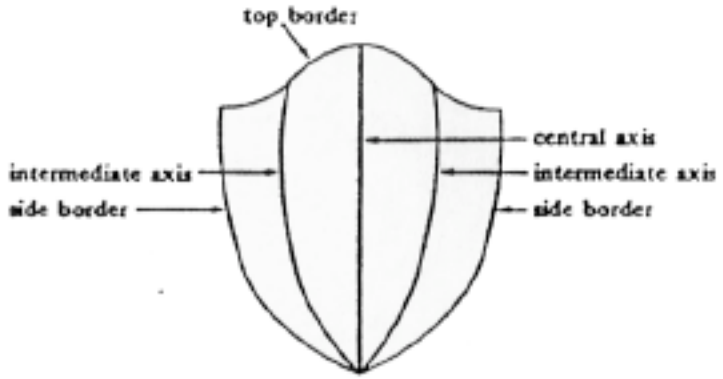
I:

T: translation, rotation, or finite compositions of these.

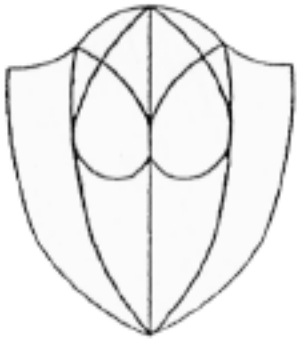

(4)
(3)
(4)
(2)



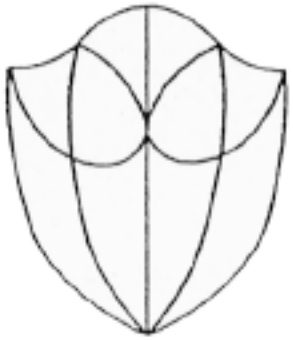
hepplewhite chairback designs



Basic curvilinear shape.

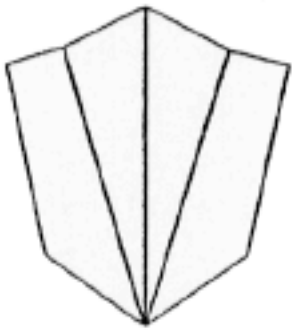


Three curves are added between the central and intermediate axes.

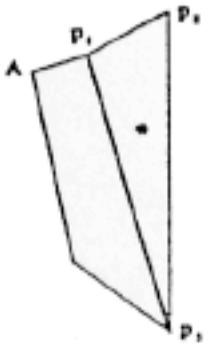


A curve is added between the intermediate axis and the side border.

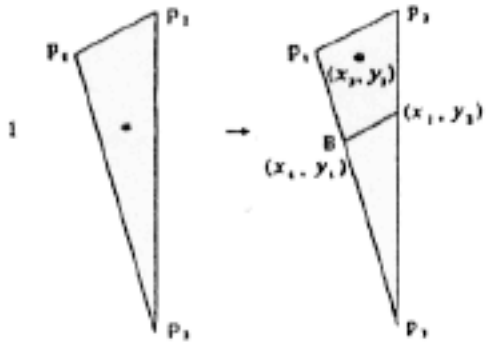
hepplewhite chairback designs - basic **forms**



Basic rectilinear shape.



Initial shape.



4a $(s_\Phi, \{(0, 0): A\}) \rightarrow (s_\Phi, \emptyset)$

4b $(s_\Phi, \{(0, 0): B\}) \rightarrow (s_\Phi, \emptyset)$

4c $(s_\Phi, \{(0, 0): \bullet\}) \rightarrow (s_\Phi, \emptyset)$

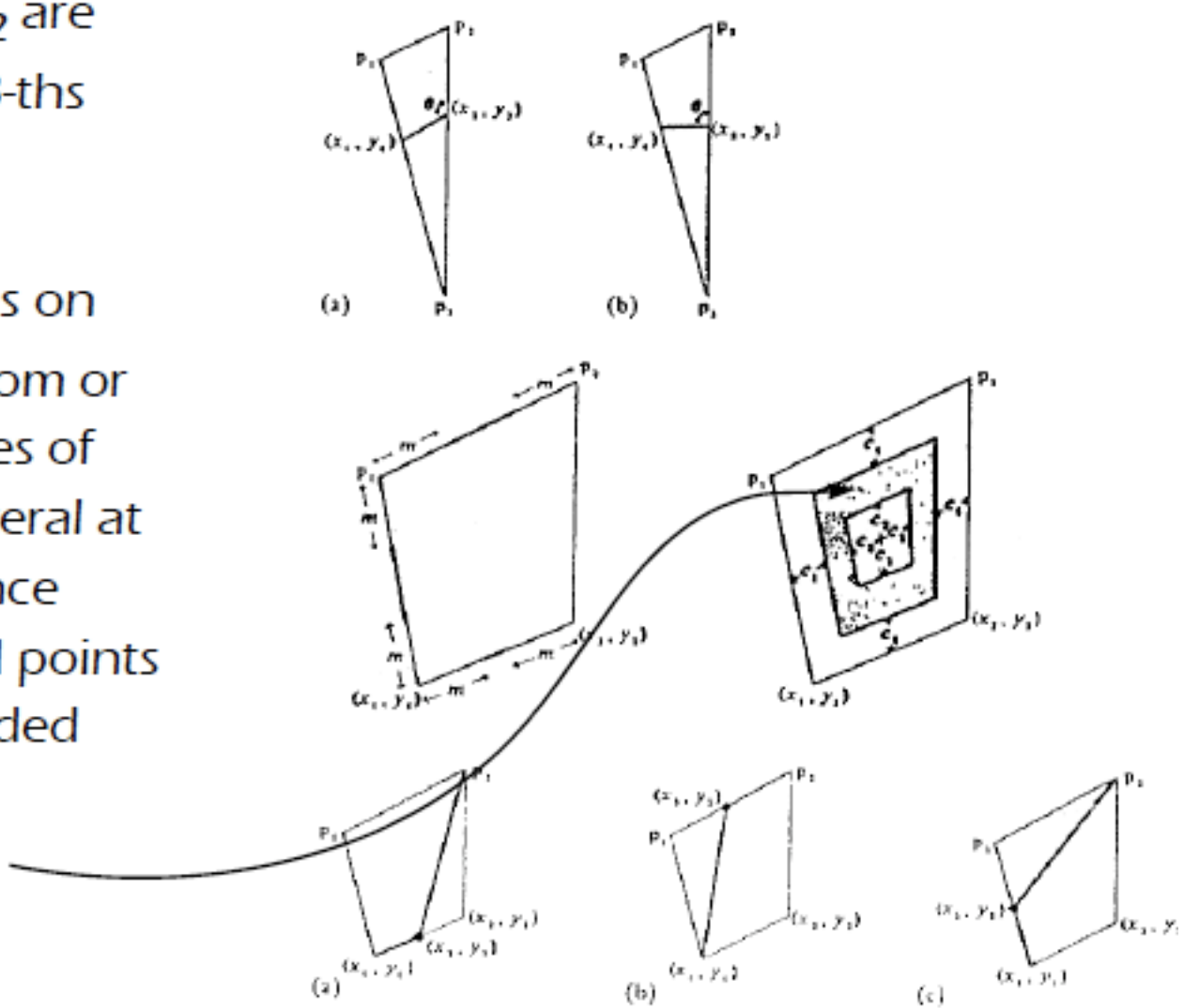
4d $(s_\Phi, \{(0, 0): \bullet\}) \rightarrow (s_\Phi, \emptyset)$

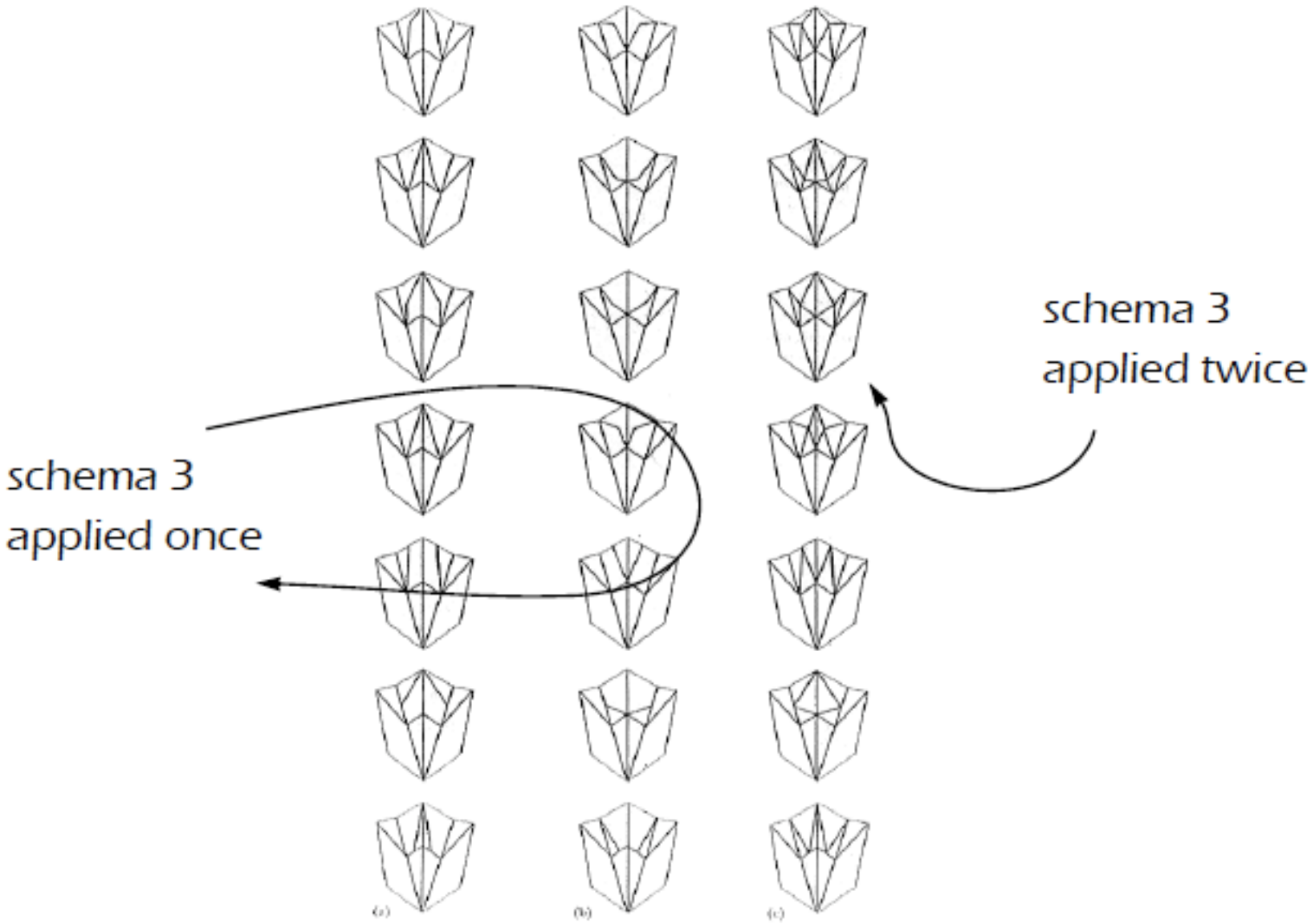
Shape rule schemata.

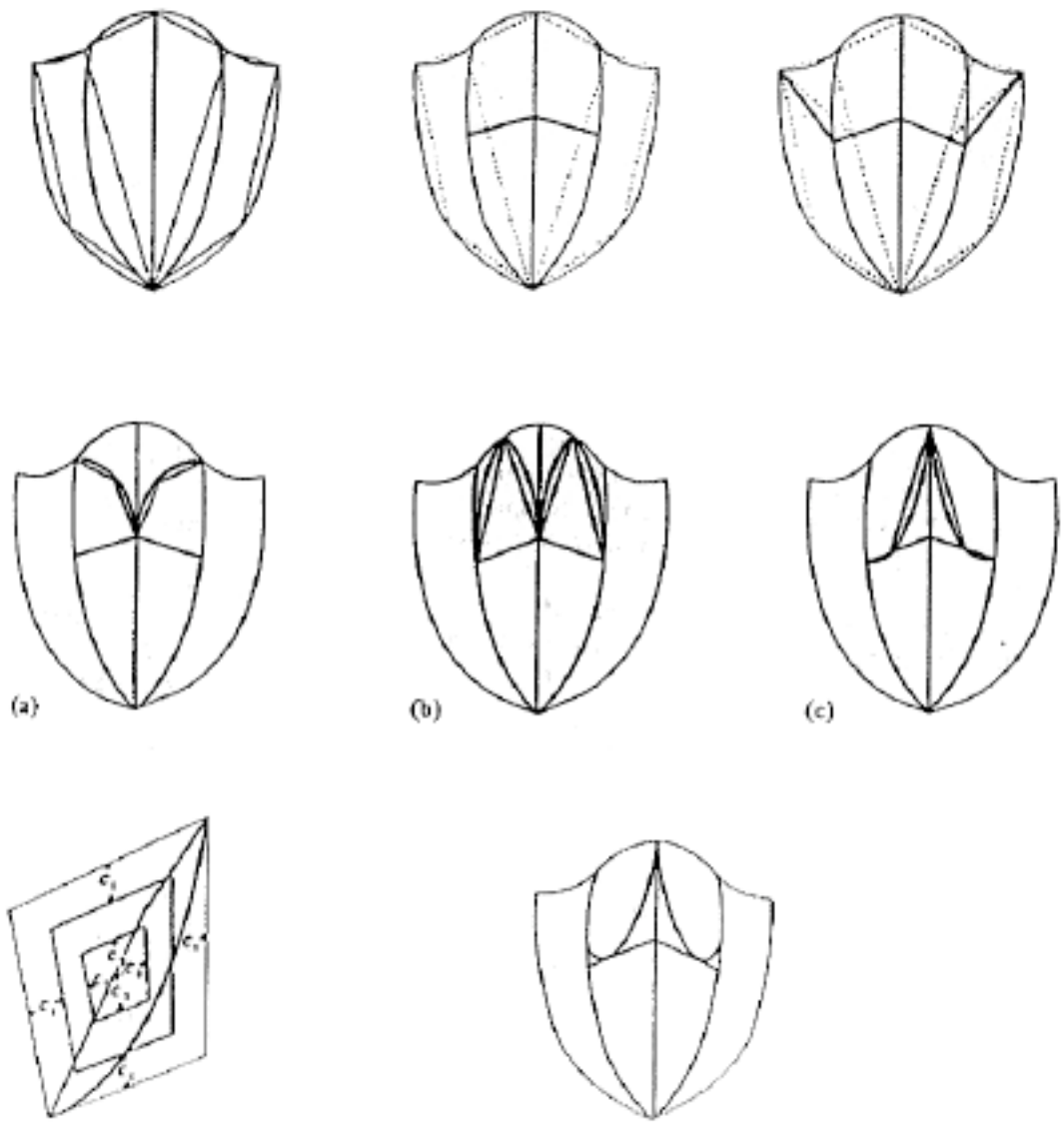
Points $(x,y)_{1,2}$ are between 5/8-ths and 3/4-ers

$\theta > 90$

Points $(x,y)_3$ is on the top, bottom or left hand sides of the quadrilateral at a fixed distance from the end points or in the shaded part shown




schema 3
applied twice
schema 3
applied once

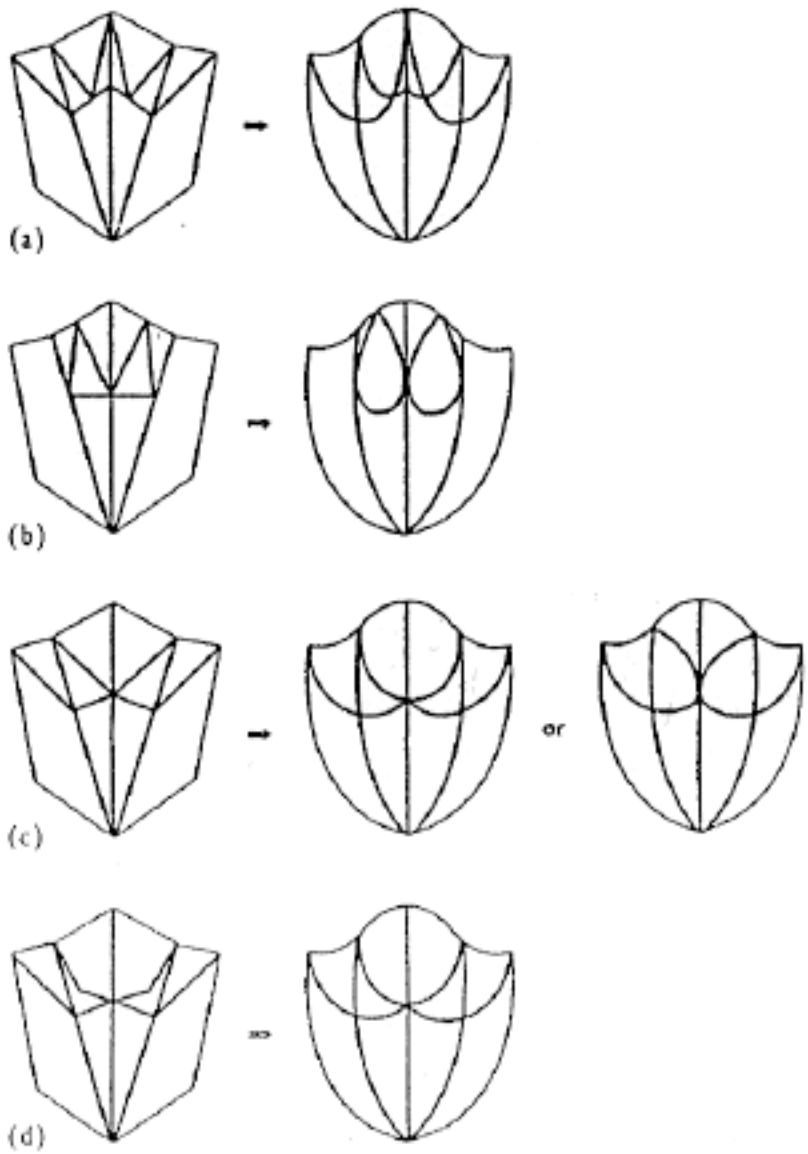

(a)
(b)
(c)

Basic shape converted into curves

Lines generated by rule 1 extended

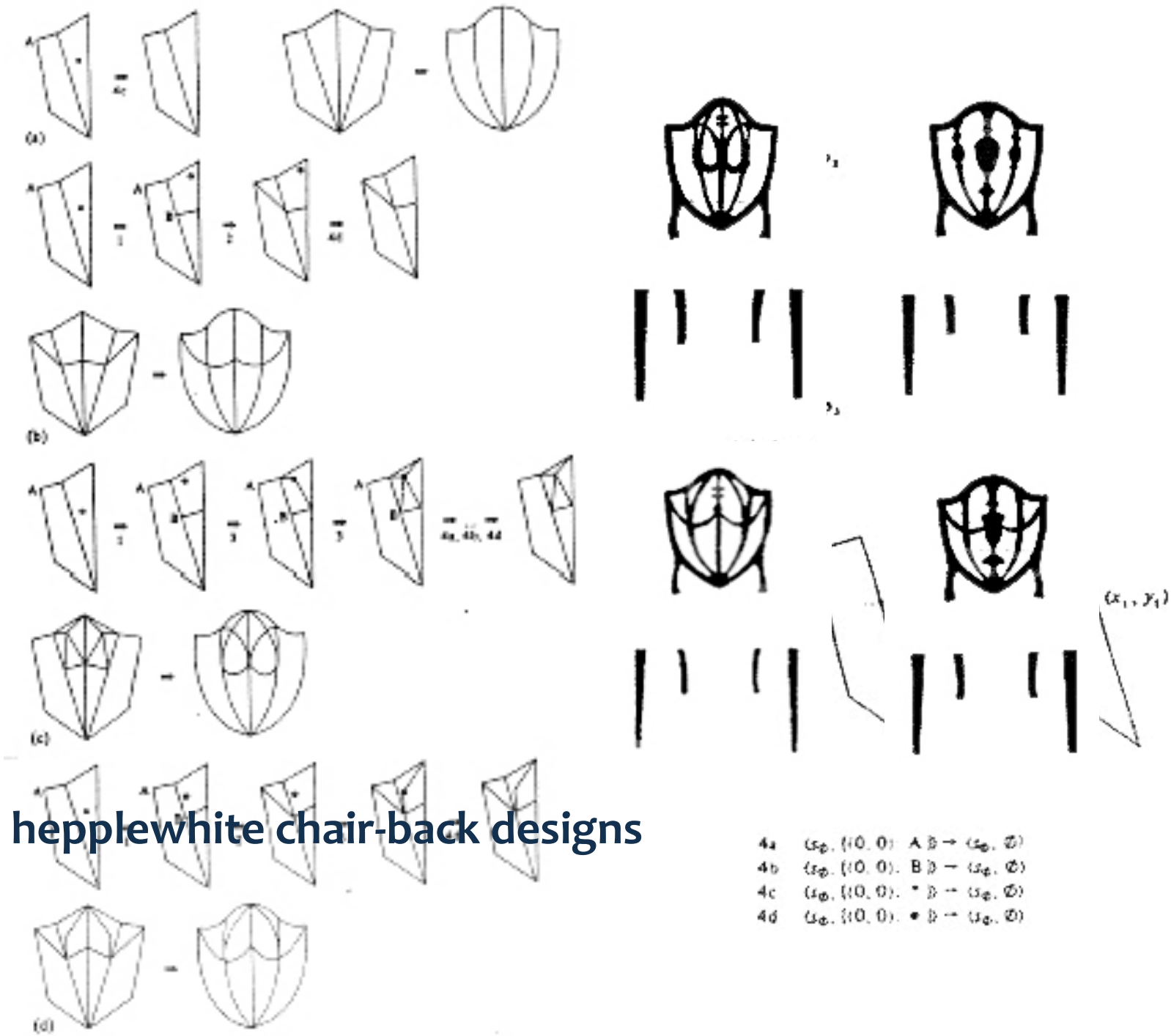
Lines generated by rule 2 repositioned

Lines generated by rule 3 replaced by curves



“… we designedly followed the latest or most prevailing fashion only, purposely omitting such articles, whose recommendation was mere novelty, and perhaps a violation of all established rule, the production of whim at instance of caprice, whose appetite must ever suffer disappointment if any familiar thing had been thought of; we say, having regularly avoided those fancies and steadily adhered to such articles only as are of general use and service, one principal hope for favour and encouragement will be, in having combined near three hundred different patterns for furniture in so small a space and at so small a price. In this instance we hope for reward; and though we lay no claim to extraordinary merit in our designs, we flatter ourselves they will be found serviceable to young workmen in general, and occasionally to more experienced ones.”

Hepplewhite, *The Cabinet-Maker and Upholsterer's Guide*



hepplewhite chair-back designs