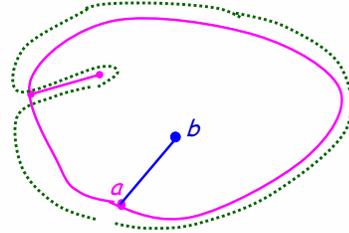


Adding an edge to an embedding

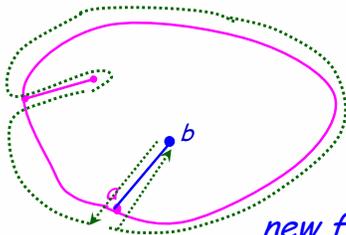
- Two constructor cases:
 - 1) Attach edge from vertex on a face to a new vertex.
 - 2) Attach edge between vertices on a face.

Face Creation Rules
1) choose *face*: path \vec{p} from a to a



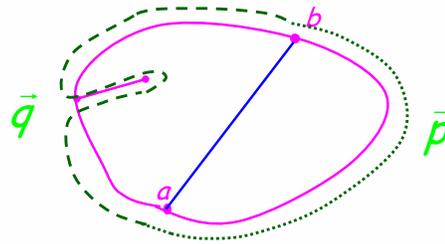
add *edge* to *new vertex* b

Face Creation Rules
1) choose *face* = path \vec{p} from a to a



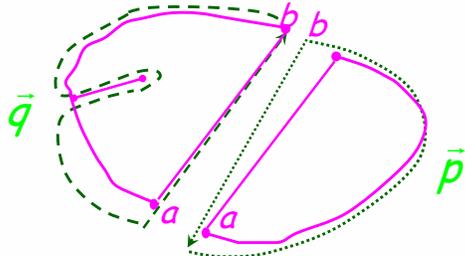
add *edge* to *new vertex* b
new face:
 $b\vec{p}b$

Face Creation Rules
2) choose *face* = path $a\vec{p}b\vec{q}a$



add *edge* across it

Face Creation Rules
2) choose *face* = path $a\vec{p}b\vec{q}a$



splits into 2 faces: $a\vec{p}ba, ab\vec{q}a$