Disney Animation: The Illusion of Life
Thomas and Johnston

The Principles of Animation

Squash and Stretch
Anticipation
Staging
Pose to Pose
Follow Through
Slow in and Slow out

Arcs
Secondary Action
Timing
Exaggeration
Solid Drawing
Appeal

SQUASHED & STRETCHED & TWISTED

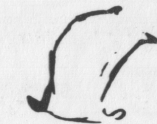DEJECTED JOY TANTRUM CURIOUS

COCKY LAUGHTER BELLIGERENT MORE LAUGHTER

CRYING

HAPPY

The famous half-filled flour sack, guide to maintaining volume in any animatable shape, and proof that attitudes can be achieved with the simplest of shapes.
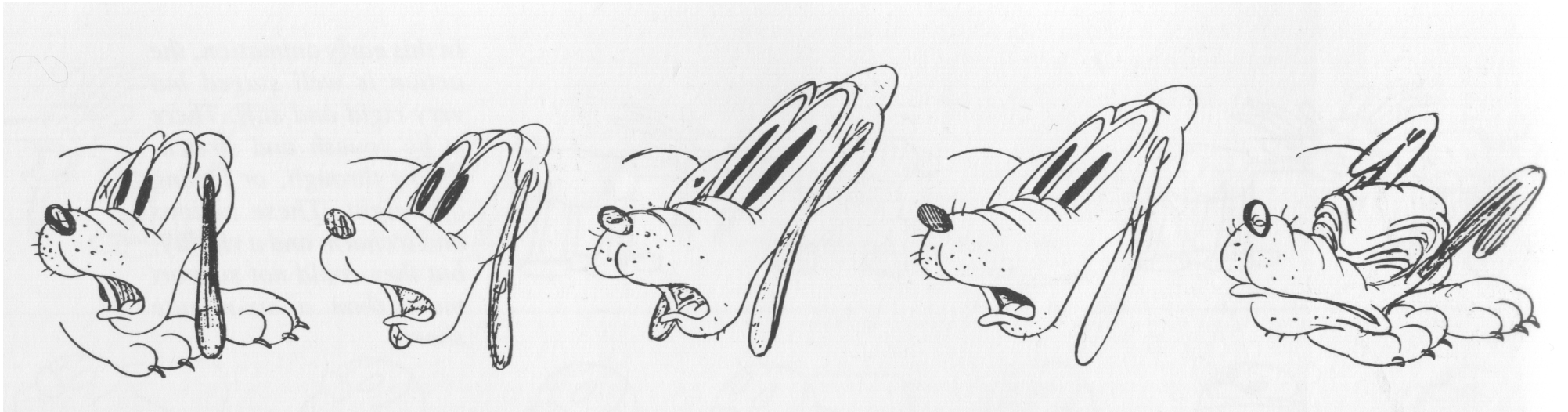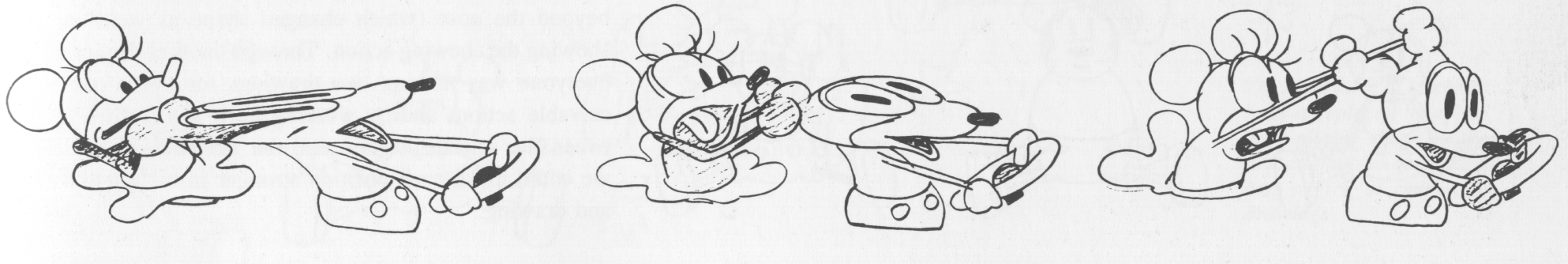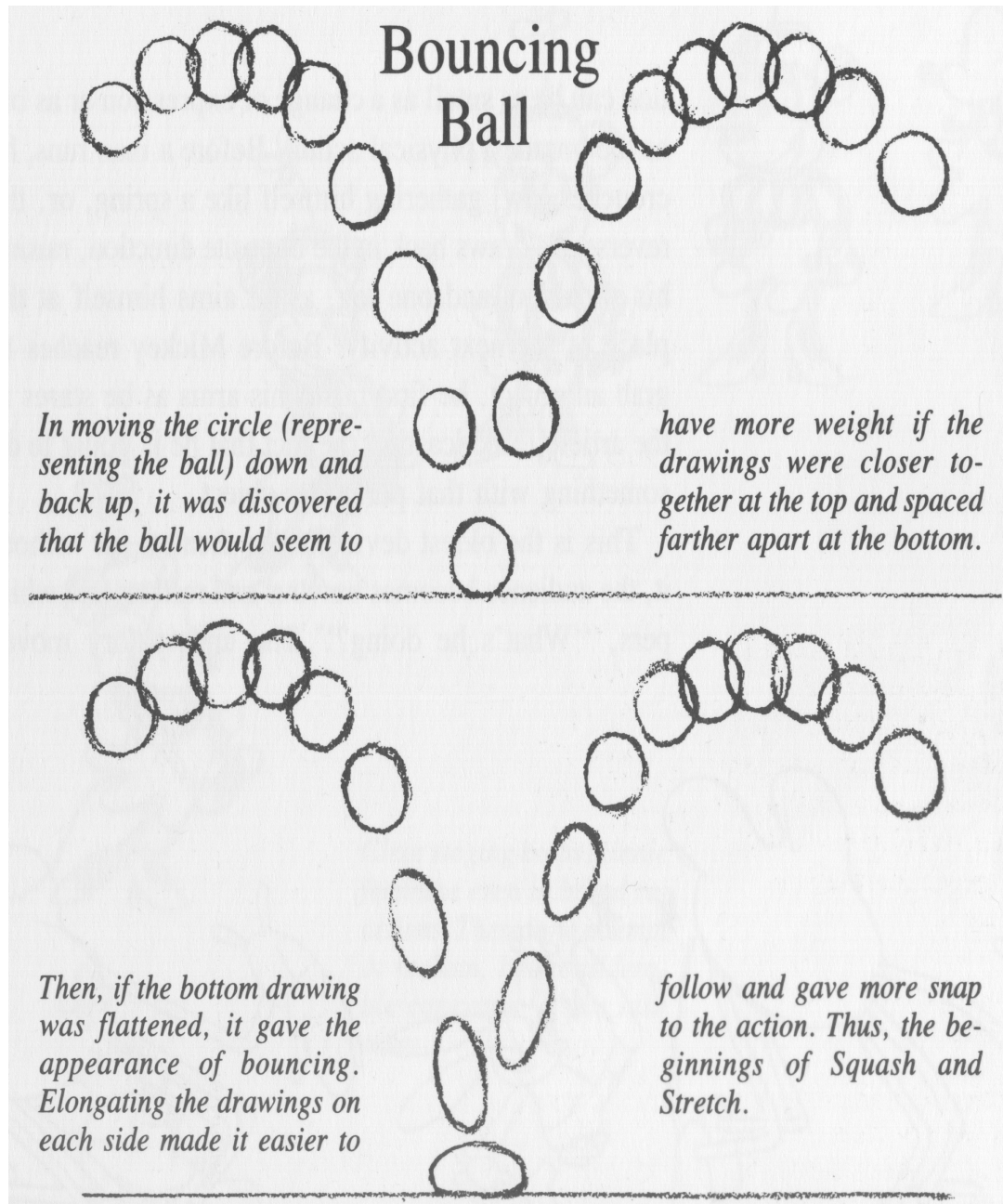
Has there been a computer animation analog to the flour sack?

Squash and Stretch

**generally maintain volume
but physical characteristics (compliance, springiness)
change over time**

Squash and Stretch

Bouncing Ball

In moving the circle (representing the ball) down and back up, it was discovered that the ball would seem to have more weight if the drawings were closer together at the top and spaced farther apart at the bottom.

Then, if the bottom drawing was flattened, it gave the appearance of bouncing. Elongating the drawings on each side made it easier to follow and gave more snap to the action. Thus, the beginnings of Squash and Stretch.

**motion blur or
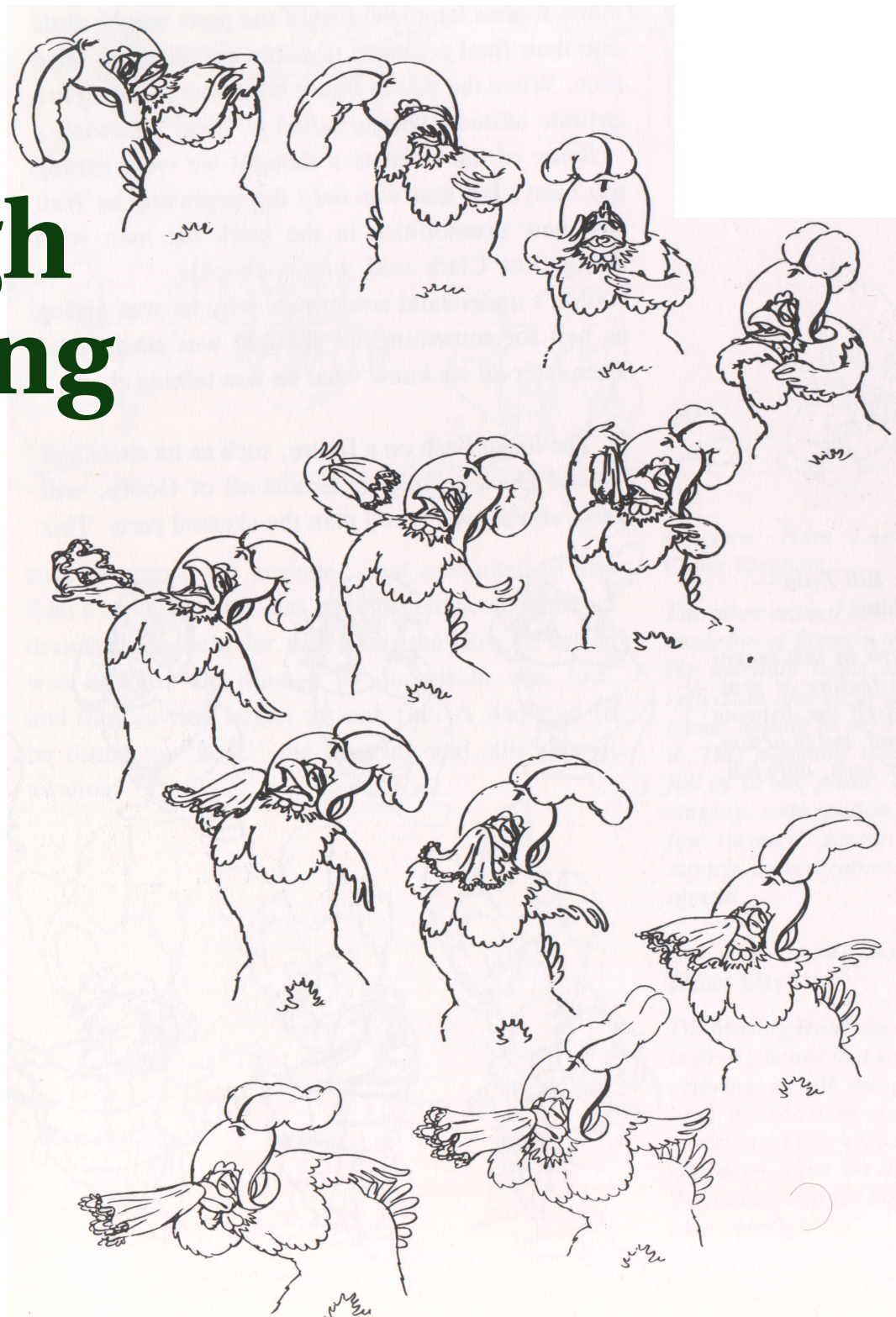life–like characteristics**

Anticipation and Staging

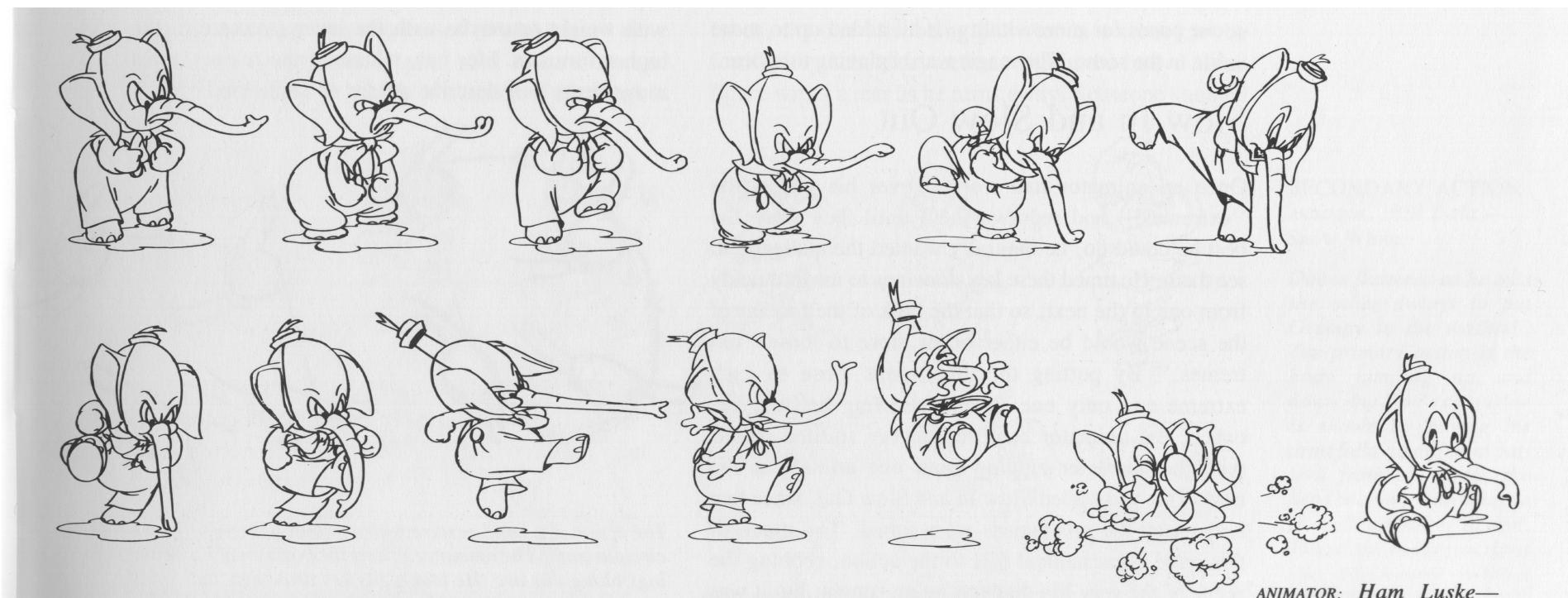**either broad actions or smaller actions such as facial expressions**

don't surprise your audience and direct their attention to what is important

Follow Through and Overlapping Action

body parts shouldn't start and stop moving together

Follow Through

ANIMATOR: *Ham Luske—*

Secondary Action

movement of elements in the scene other than the primary character