The History of
Virtual Environments

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"Reality has always been too small
for human imagination"

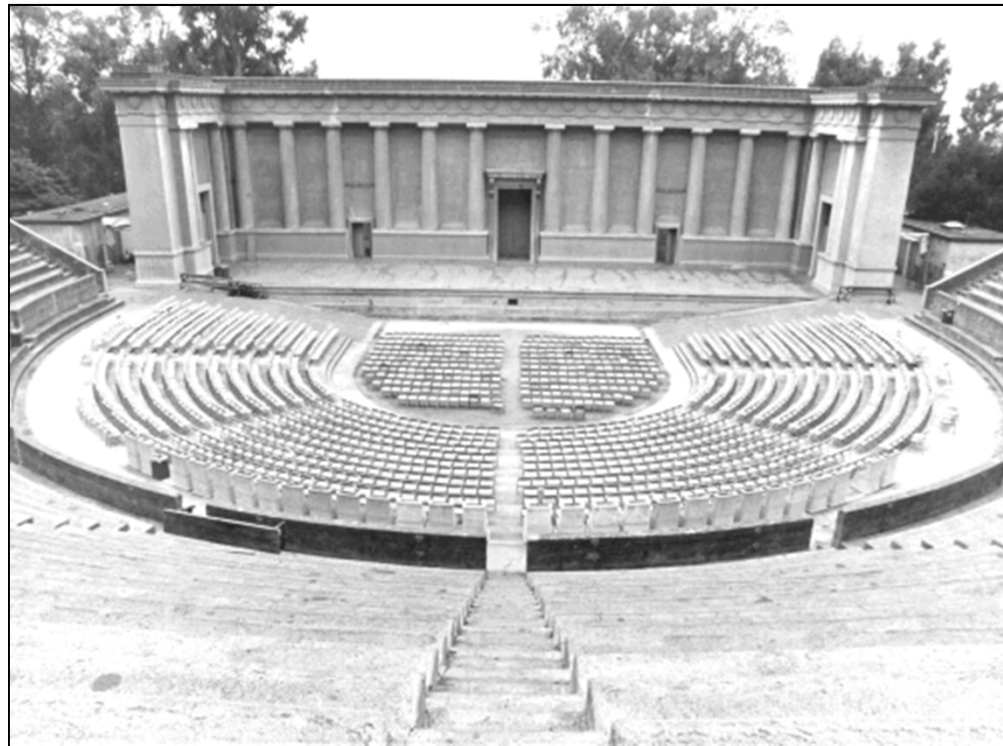Brenda Laurel, *Computers As Theatre*

Stoneage

early people: Cave painting
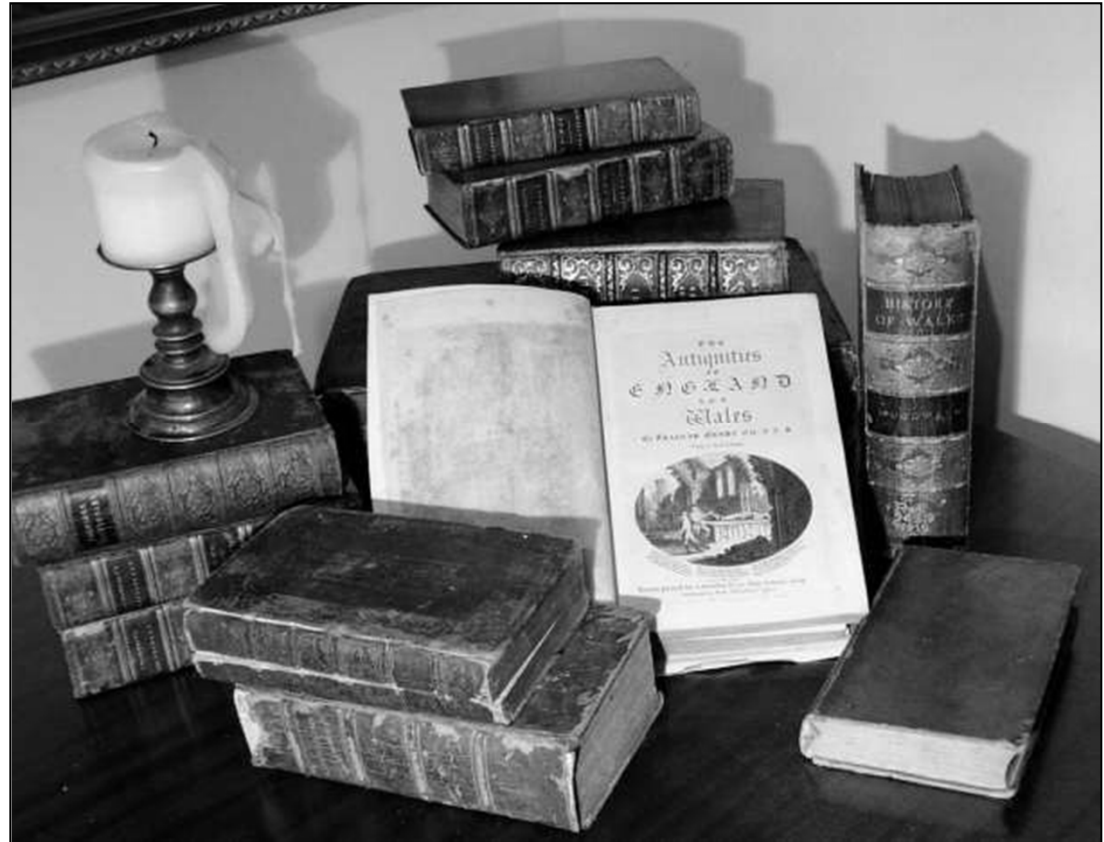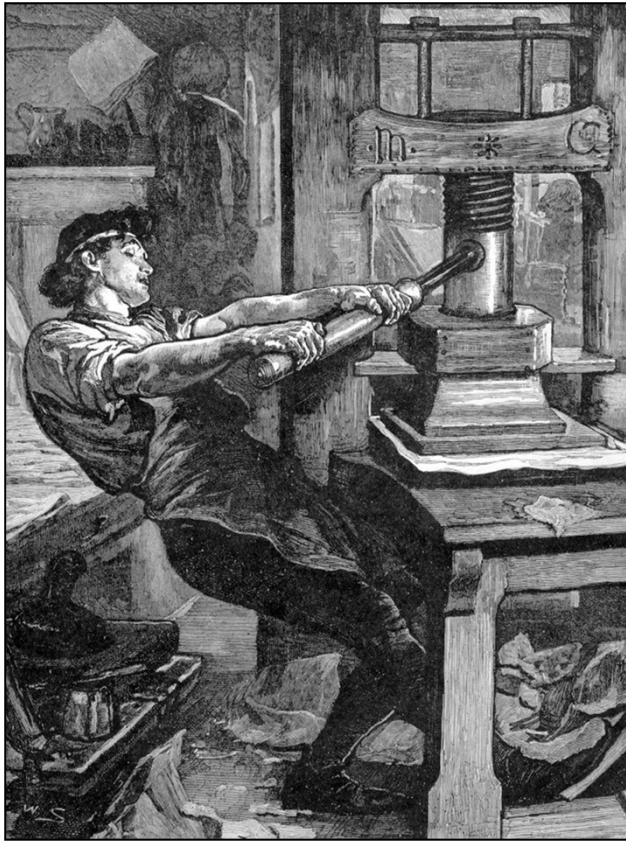
500 BC

the greeks: Theatre

1310

giotto: Painting Depth

1455

gutenberg: Printing Press

1455

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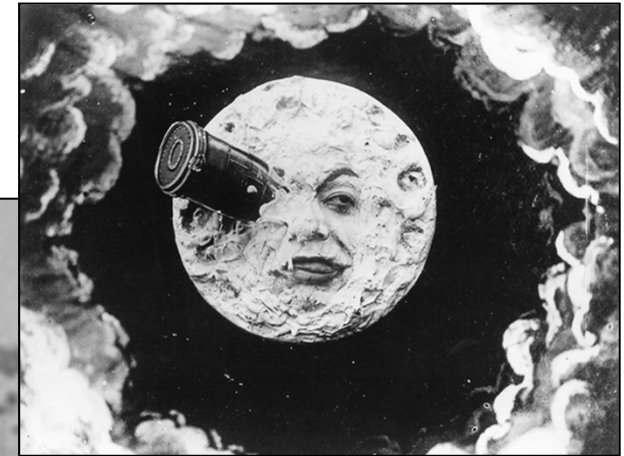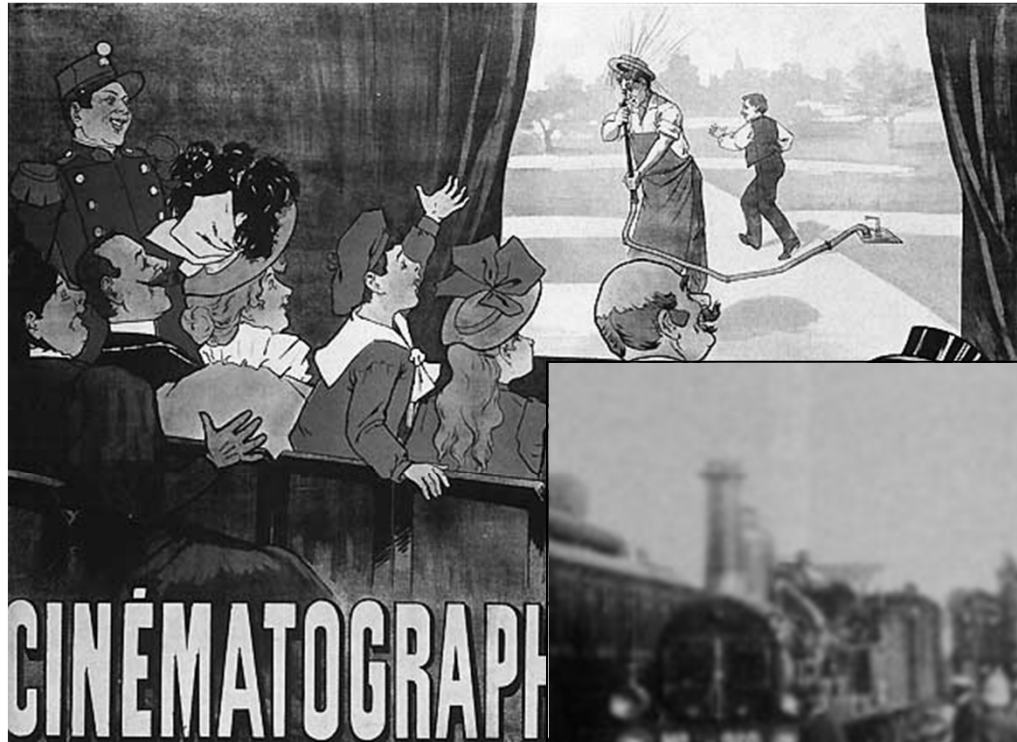
1838

wheatstone: Stereoscope

1884

paul philippoteaux: Cyclorama

1895

lumiere and melies: Cinematographe

1920

edwin link: Flight Simulators
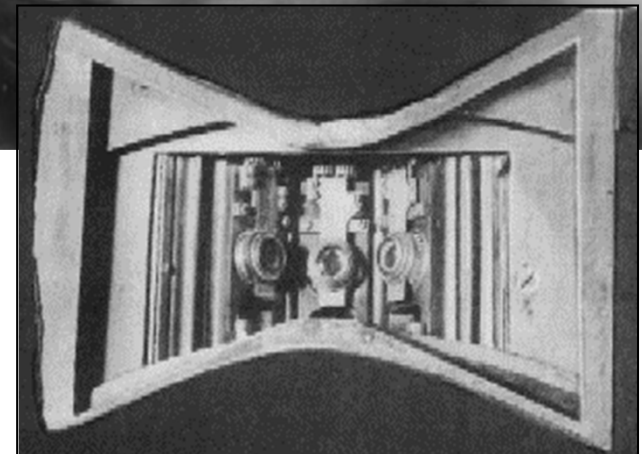

Link (WWII)

1941

NBC: Television

1952

fred waller: Cinerama

1960

morton heilig: Sensorama

1965

ivan sutherland: The Ultimate Display

- "We live in a physical world whose properties we have come to know well through long familiarity. We sense an involvement with this physical worlds which gives us the ability to predict its properties well. For example, we can predict where objects will fall, how well-known shapes look from other angles, and how much force is required to push objects against friction. We lack corresponding familiarity with the forces of charged particles, forces in non-uniform fields, the effects of nonprojective geometric transformations, and high-inertia, low-friction motion.
A display connected to a digital computer gives us a chance to gain familiarity with concepts not realizable in the physical world. **It is a looking glass into a mathematical wonderland.**"
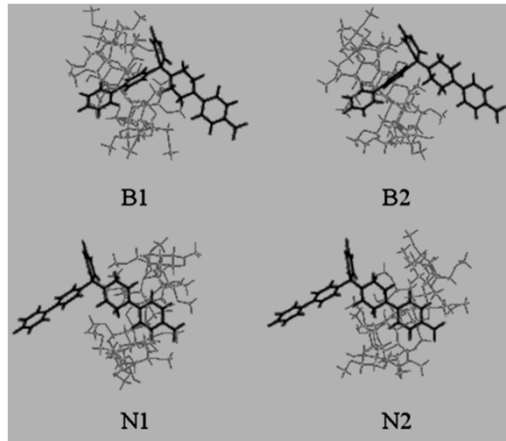
"The Ultimate Display", 1965

1965

ivan sutherland: The Ultimate Display

1967

fred brooks: Force Feedback

1972

atari: The Arcade

1980s
DARPA: SIMNET
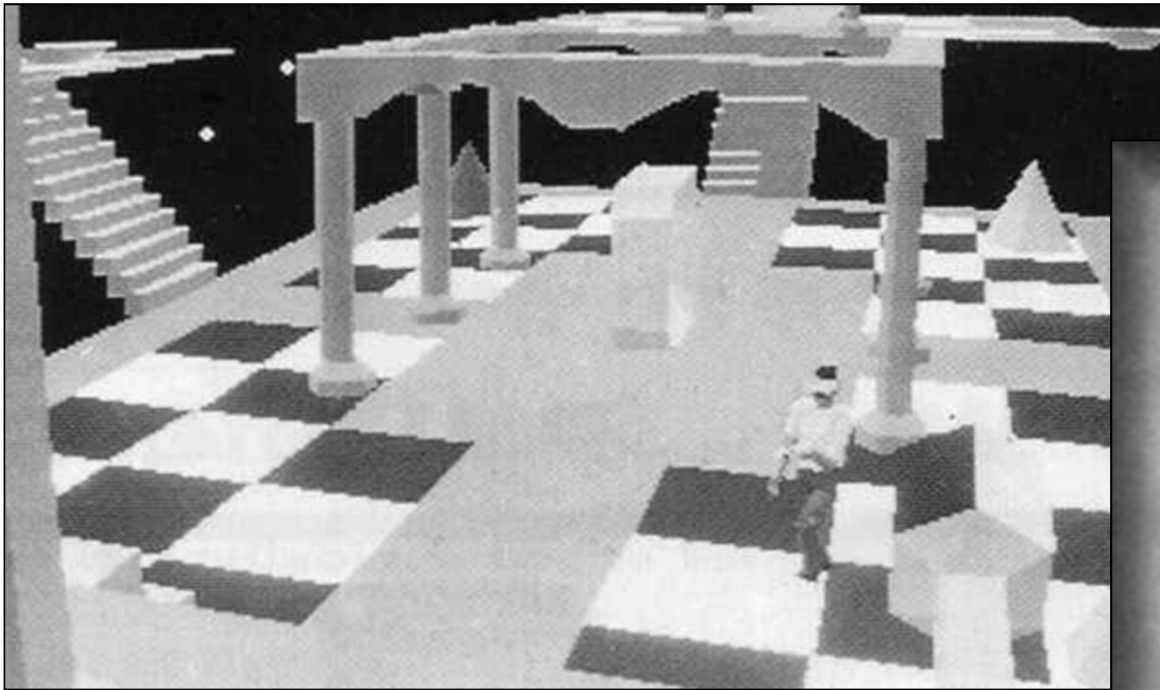
1985
UNC: Architectural Walkthrough

1986

NASA: VIVED

1991

w industries: Virtuality

1993

id and cyan: Popular 3D Games

Doom

Myst