Outline

✦ the technology improves
✦ popularization of photography
✦ documenting the growth of America
✦ gigantic undertakings (around the world)
✦ the industrial aesthetic
✦ scientific uses of photography
✦ documenting the social scene
✦ the Great Depression and the Dust Bowl
✦ profile: photographers of the Farm Security Administration

✦ still to come: photojournalism, modern art photography...
The technology improves

- **1878**  
  dry-plate photography (Richard Maddox, Charles Bennett)  
  - gelatin-silver bromide  
  - exposure time under one second  
  - plates could be stored, separating shooting from processing

- **1885**  
  paper roll film (Arthur Melhuish, George Eastman)  
  - multiple pictures without fiddling

- **1880s**  
  shutters (many people)  
  - needed as films became more sensitive  
  - focal plane (roller blind), leaf (diaphragm)
1888 Kodak camera No. 1
- fixed-focus, single shutter speed (1/100 sec?)
- 100 shots per roll, then mail the camera back for reloading
- “You press the button, we do the rest”
- $25 for the camera, $10 per roll to process
- contribution was not a single invention, but a system
Edison’s lighting system

- 1880  patent for incandescent light bulb
- 1882  first lighting system, New York City

- system components
  - central generating station
  - underground conductors
  - usage meter
  - wiring and plugs
  - sockets and fixtures
  - fuses to prevent overloading

- misjudged one component
  - direct current versus alternating current
Related technologies

- **1870s** German chemistry / dye / drug industries, worldwide industrialization and standardization
- **1880** flash photography (using flash powder)
- **1890** platinum paper printing (deeper blacks, expensive)
- **1873** screen-based halftone printing for mass publication

(Wikipedia)

First photograph printed using halftone

(Tim Page)

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Later technologies

- 1850s  telephoto lenses (Petzval)
- 1890s  anastigmatic lenses (Zeiss)
- 1925   35mm camera (Leica I)
- 1932   photoelectric meter
- 1920s  zoom lenses for cinema
- 1960s  zoom lenses for still cameras
- 1981   autofocus SLR (Pentax ME-F)
Popularization of photography

✦ before George Eastman, photographers were skilled, photographs were posed, and images were “crafted”
✦ the Kodak camera was cheap, portable, and easy to use
✦ photography became casual, spontaneous, and popular
✦ concentrated on documenting everyday life
✦ word “snapshot” invented by Herschel
✦ privacy became an issue (it still is)
✦ women started taking pictures - so subjects changed
Documenting the growth of America

Dome of the U.S. capitol, photographer unknown, 1857

(Archives)

view in 1906
Documenting the growth of America

Washington Monument, photographer unknown, 1876

view in 1884
Industry and commerce

Waterfront at St. Louis, photographer unknown, 1909
The push west

Oklahoma, photographer unknown, 1893
The end of the frontier

Opening the Cherokee Strip, W.A. Flower, 1893
Gigantic undertakings

Brooklyn Bridge, 1881

after completion (mid-1880s)
Gigantic undertakings

Statue of Liberty in Bartholdi’s Parisian workshop, 1882?
Gigantic undertakings
Gigantic undertakings
Gigantic undertakings
Gigantic undertakings
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Gigantic undertakings

Gustave Eiffel, The Eiffel Tower, 1889
Some projects were almost too gigantic

Panama Canal, Miraflores Locks, photographed by Ernest Hallen, 1913
The ship Lord Templeton traverses the Panama Canal’s Culebra Cut, 1915
The bark Passat in heavy seas while rounding Cape Horn, photographed by Capt. H. Piening
Port Blakeley Mill Company Dock,
Puget Sound, photographed by Wilhelm Hester 1905
The industrial aesthetic in photography

(Gardner)

Charles Sheeler, The Upper Deck, 1929
The industrial aesthetic in photography

Charles Sheeler, Ford Plant, Detroit, 1927
Lewis Hine,
Powerhouse Mechanic, 1925
Margaret Bourke-White, Fort Peck Dam, 1936
Scientific uses of photography

- aerial photography
- freezing motion
- the birth of cinematography
- the effect on modern art
Aerial photography

- from balloons
- from tall buildings
- from airplanes
- from space

James Wallace Black, Boston from the Air, 1860

(Rosenblum)
Berenice Abbott, New York at Night, 1933
Tall buildings

Chrysler Building, 1930
William van Alen, architect

Margaret Bourke-White atop the Chrysler Building
In a galloping horse, are all four hooves in the air at once?

collaborative effort; Stanford suggested using trigger wires

experiments spanned 1872-1878, in Palo Alto & Sacramento, with an interruption in 1874 when Muybridge was tried for the murder of his wife’s lover
Public demonstration, June 19, 1878
Public demonstration, June 19, 1878
Thomas Eakins

History of a Jump, 1884

The Agnew Clinic, 1889
Etienne Jules Marey

Falling Cat, 1880s
The birth of cinematography

- Muybridge’s images could be viewed using a Zoopraxiscope (invented by him)
The birth of cinematography

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- first practical unlimited-duration recording technology was Edison’s 1893 Kinetograph (with William Dickson)
  - perforated 35mm-wide strip of celluloid film
  - intermittent pull-down at 30 frames per second

- looped, backlit filmstrip displayed to individual viewers using Edison’s Kinetoscope

Fred Ott’s sneeze

(wikipedia)
The birth of cinematography

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✦ concurrent work by Lumière brothers in France

(workers leaving the Lumière factory)
Marcel Duchamps, Nude Descending a Staircase No. 2, 1912
Documentating the social scene

- photography recognized early as a force for social change
- social conscience initially awakened by seeing inequity in Europe’s colonial possessions, e.g. Egypt, Cuba, North Africa
- government-funded projects undertaken to document ethnic groups and their living conditions, for lectures or pamphlets
- expanded to include the economic hardship in Europe and American brought about by industrialization
- given impetus by late 19th-century moral reform movements, many of them religious in origin
- before paper film, photographs were carefully posed, so they seldom represented real living or working conditions
- ability to influence public opinion needed the power of the printing press, not individual prints hanging in an art gallery
Recording non-European cultures

-Marie Cabannis,
Syrian Bedouin Women, 1870

(Rosenblum)
Showing the success of relief programs

(Rosenblum)

Raja Lala Deen Dayal, famine relief program in Aurangabad, 1899
Showing the success of relief programs

(Rosenblum)

Raja Lala Deen Dayal, famine relief program in Aurangabad, 1899
Advertising social programs at home

(Rosenblum)

unknown photographer, 1875
The Progressive era

- transition from religious charity to social agitation
- gradual realization that urban poverty arose from economic laws, not the moral inadequacy of slumdwellers
- seminal work was Jacob Riis’s 1890 book “How the Other Half Lives”, about the tenements of New York
Venturing into the slums

Jacob Riis,
Bandit’s Roost,
New York, 1888
Immigrant ghettos

(Rosenblum)

Jacob Riis,
Five Cents Lodging, 1889
Sarah and Jacob Chesler

S.S. Rijndam

<table>
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<th>No.</th>
<th>Name in Full</th>
<th>Age</th>
<th>Sex</th>
<th>Married</th>
<th>Married to</th>
<th>Last Resident</th>
<th>Final Destination</th>
<th>Whether going to join a relative or friend</th>
<th>Condition of Health, Mental and Physical</th>
<th>Whether one of the following: (1) Engaged in Agriculture at home; (2) Engaged in a Business; (3) to Work for Hire; (4) to Work on Government Plantation; (5) Student; (6) to Work on Home Farm; (7) Other; (8) Other</th>
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<td>52</td>
<td>M</td>
<td>Yes</td>
<td>Sarah</td>
<td>New York</td>
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<td>father</td>
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<tr>
<td>2</td>
<td>Sarah</td>
<td>51</td>
<td>F</td>
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<td>Jacob</td>
<td>New York</td>
<td>New York</td>
<td>father</td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**
- Sarah and Jacob Chesler are listed as passengers on the S.S. Rijndam.
- Sarah is 51 years old, male, married to Jacob, and last resident of New York.
- Jacob is 52 years old, male, married to Sarah, and last resident of New York.

**Sources:**
- Holland-America Line
- S.S. Rijndam

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Child labor

Lewis Hine, Breaker Boys, 1911
The Great Depression

- causes included uncontrolled stock market, unstable banking system, inequitable distribution of income, and agricultural collapse caused by excessive production and misuse of marginal farmland.

- milestone was the October 1929 stock market crash, but the market didn’t bottom out until 1933.

- marked by bank failures, high unemployment, labor unrest, and agricultural hardship, exacerbated by draught in the early 1930s.
Soup kitchens and breadlines
Rural poverty

Margaret Bourke-White,
Two Women, Lansdale,
Arkansas, 1936

(Rosenblum)
The Dust Bowl prequel: settlement on the High Plains

- 1870s - cattle drives from Texas to the transcontinental railroad along the Goodnight-Loving trail

a chuckwagon, S. Dakota, 1887
The Dust Bowl
prequel: settlement on the High Plains

✦ 1870s - cattle drives from Texas to the transcontinental railroad
✦ 1880s - American Bison (Buffalo) hunted nearly to extinction
The Dust Bowl
prequel: settlement on the High Plains

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✧ 1880s - American Bison (Buffalo) hunted nearly to extinction
✧ 1890s - Indian wars end, Commanches confined to reservations

Edward Curtis,
The Vanishing Race, 1904

range of the Commanches prior to 1850
(Rosenblum)
Comanche warriors, photographer unknown, 1874
The Dust Bowl prequel: settlement on the High Plains

- 1870s - cattle drives from Texas to the transcontinental railroad
- 1880s - American Bison (Buffalo) hunted nearly to extinction
- 1890s - Indian wars end, Commanches confined to reservations
- 1900s - settlers encouraged to plow and plant
  - “sodbusters”
  - “Rain will follow the plow”

average annual rainfall, 1961-1990

sod house, 1901
The Dust Bowl

- deep plowing by new, gasoline-powered tractors stripped the land of its protective, deep-rooted grasses
- nutrient-hungry cotton planted on draught-prone land

Dorothea Lange, Tractored Out, 1938
The Dust Bowl

Black Sunday,
April 14, 1935
The Dust Bowl

Dodge City, Kansas
April 14, 1935
The Great American Desert
Farm Security Administration

- created by Franklin Roosevelt in 1935 as the Resettlement Administration, to combat rural poverty
- under Roy Stryker, photographers were hired to record the agricultural disaster unfolding on the High Plains, to help justify multiple, expensive relief programs
  - Walker Evans
  - Arthur Rothstein
  - Dorothea Lange, and 8 others
- related effort
  - Margaret Bourke-White
FSA photographs

Walker Evans,
Wife of a Cotton Sharecropper,
1936

(Newhall)
Walker Evans, Garage in Atlanta, Georgia, 1936
Descendants of former slaves of the Pettway Plantation. They are still living under primitive conditions there. Meat in sacks hangs from tree limbs to be cured.
Arthur Rothstein,
Dust Storm, 1937
“Living in a trailer in an open field. No sanitation, no water. They came from Amarillo, Texas.”

Dorothea Lange, Migrant Family, 1940
Dorothea Lange, Migrant Family, 1936
Slide credits

✧ Fredo Durand