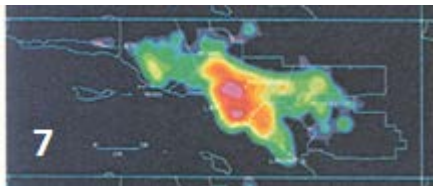# Small multiples are multivariate, comparative, high density, and tell a story.

Video frame
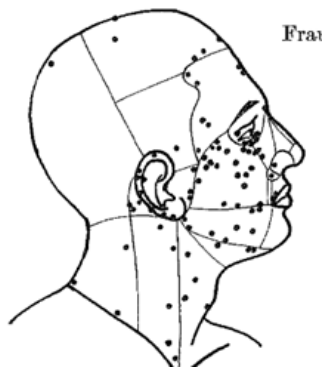
Pictorial
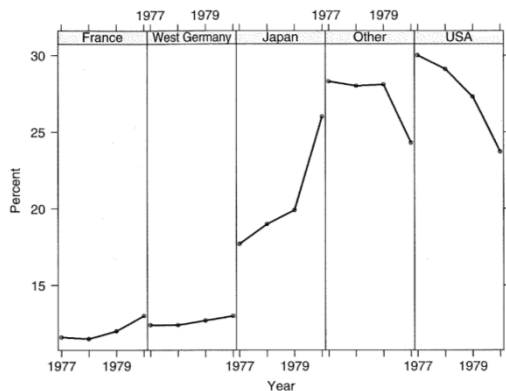
Time series

Tabular

Hourly average reactive hydrocarbons, Los Angeles, 1982.
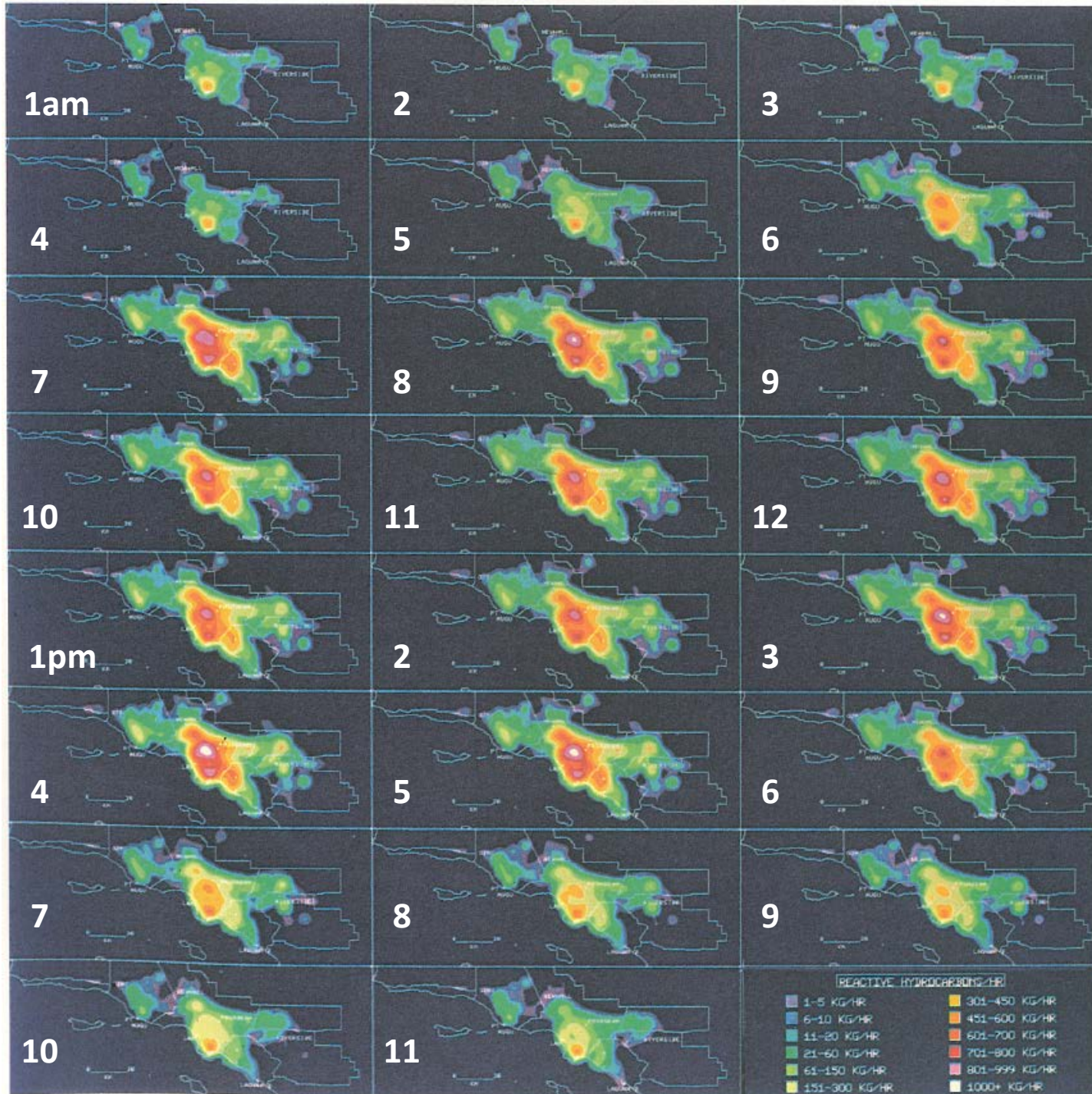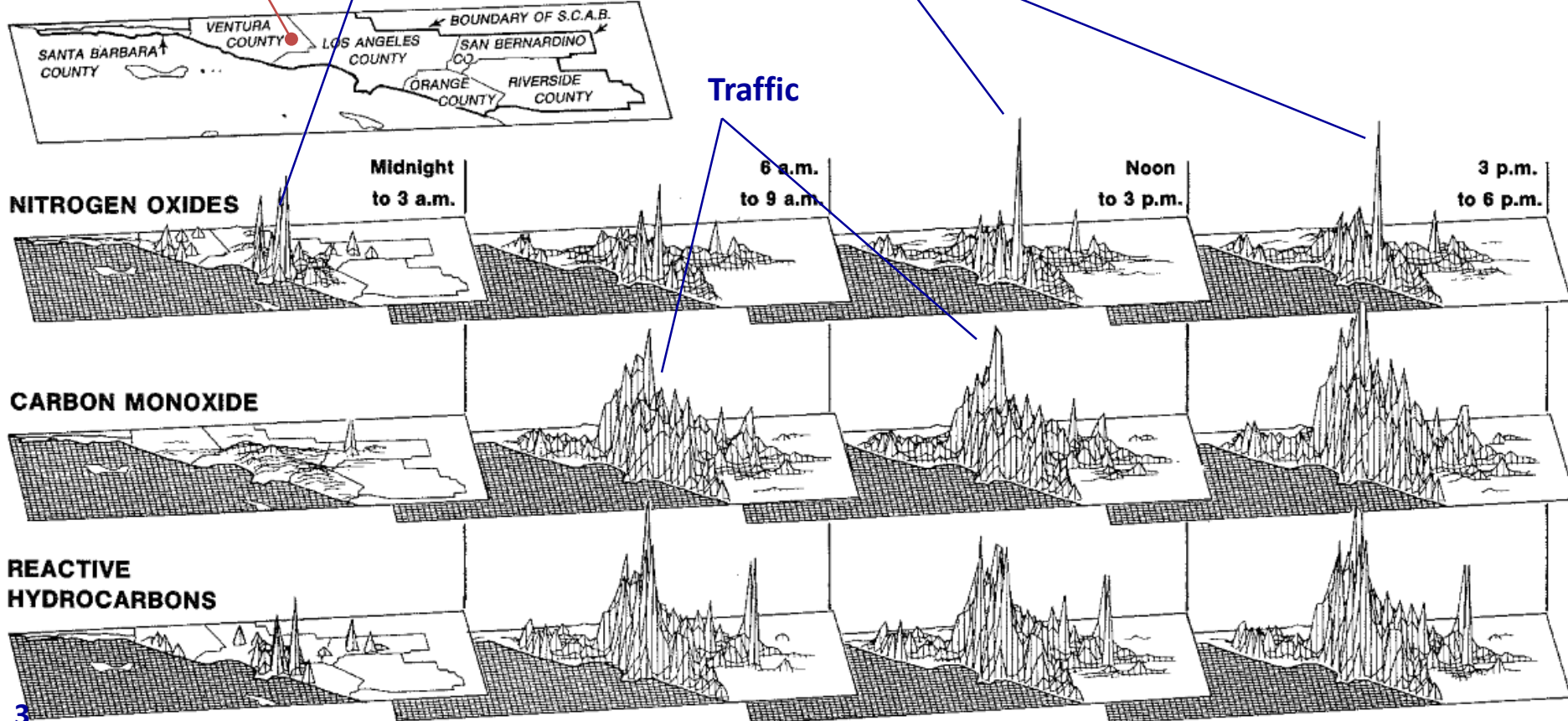
Levels of 3 air pollutants in 6 counties and how they change during the day.

I lived here for 10 years

Refineries and a steel plant

Traffic and power plants

Traffic

NITROGEN OXIDES

CARBON MONOXIDE

REACTIVE HYDROCARBONS

Midnight to 3 a.m.

6 a.m. to 9 a.m.

Noon to 3 p.m.

3 p.m. to 6 p.m.

BOUNDARY OF S.C.A.B.

VENTURA COUNTY

SANTA BARBARA COUNTY

LOS ANGELES COUNTY

SAN BERNARDINO CO.
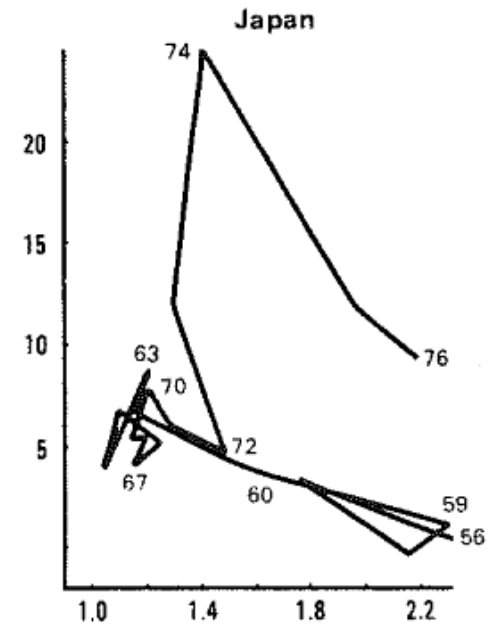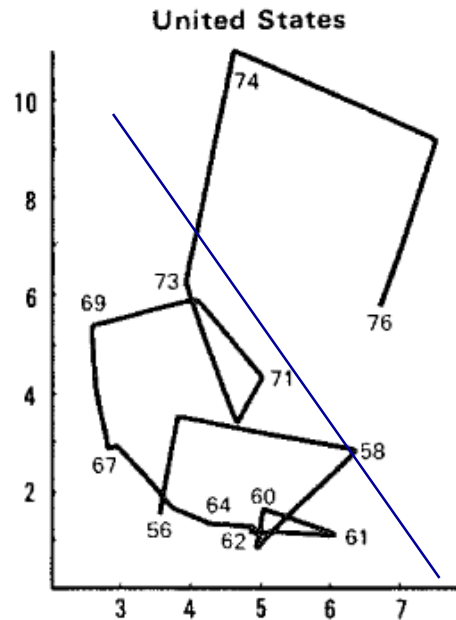
ORANGE COUNTY

RIVERSIDE COUNTY

3

A misconception: full employment increases inflation.

Or, unemployment and inflation are inversely proportional.

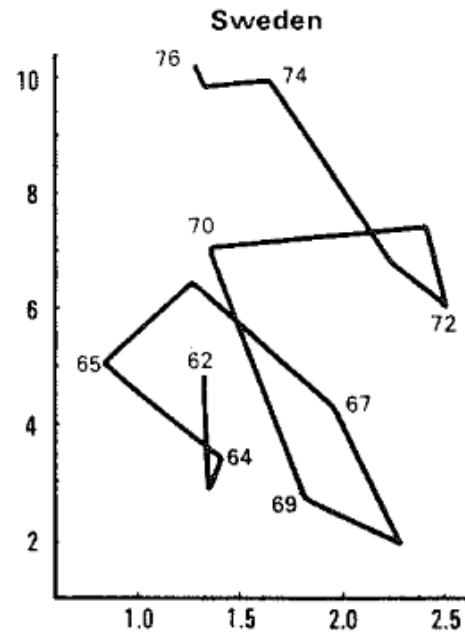**But over a 20-year span, no correlation.**

Do you see the violation of small-multiple principles?
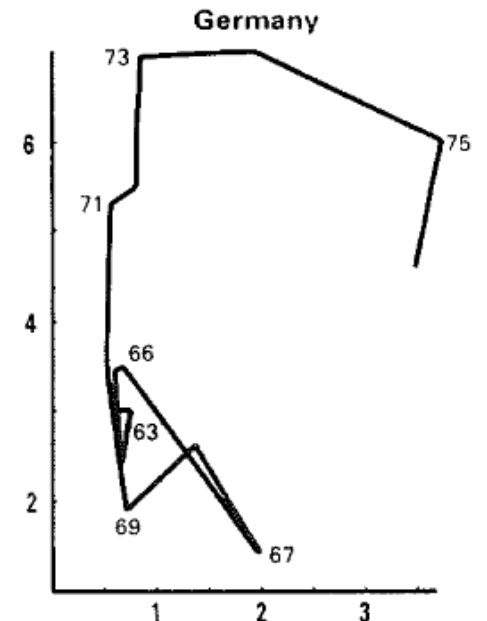

United States

Japan

Sweden

Germany

Inflation (%)

Inflation (%)

Unemployment (%)

4

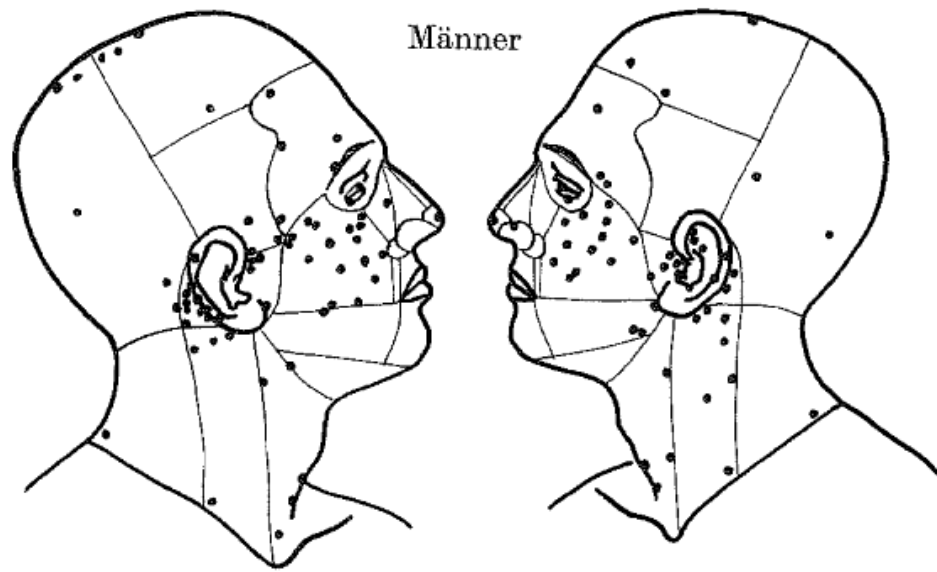**Comparing the occurrence of skin cancer in men and women (1974).**
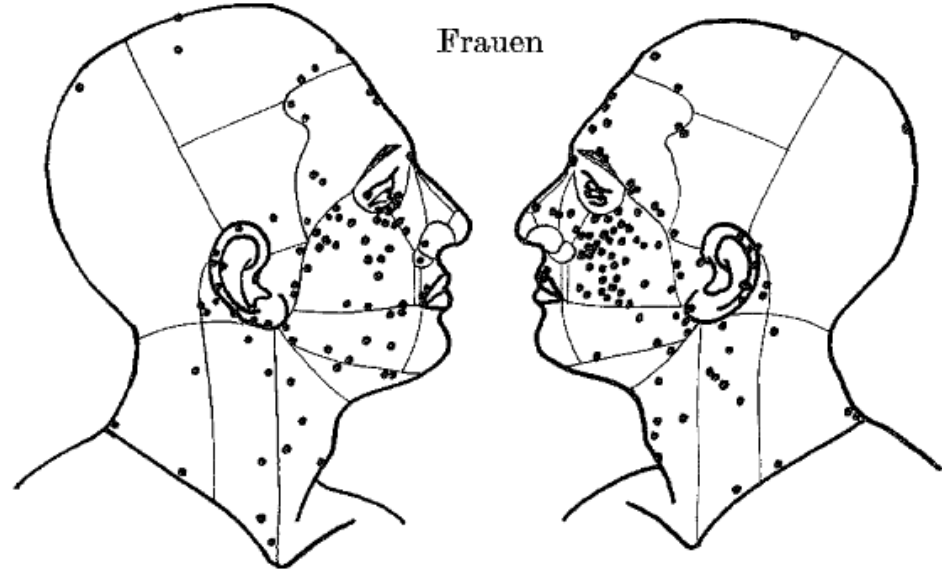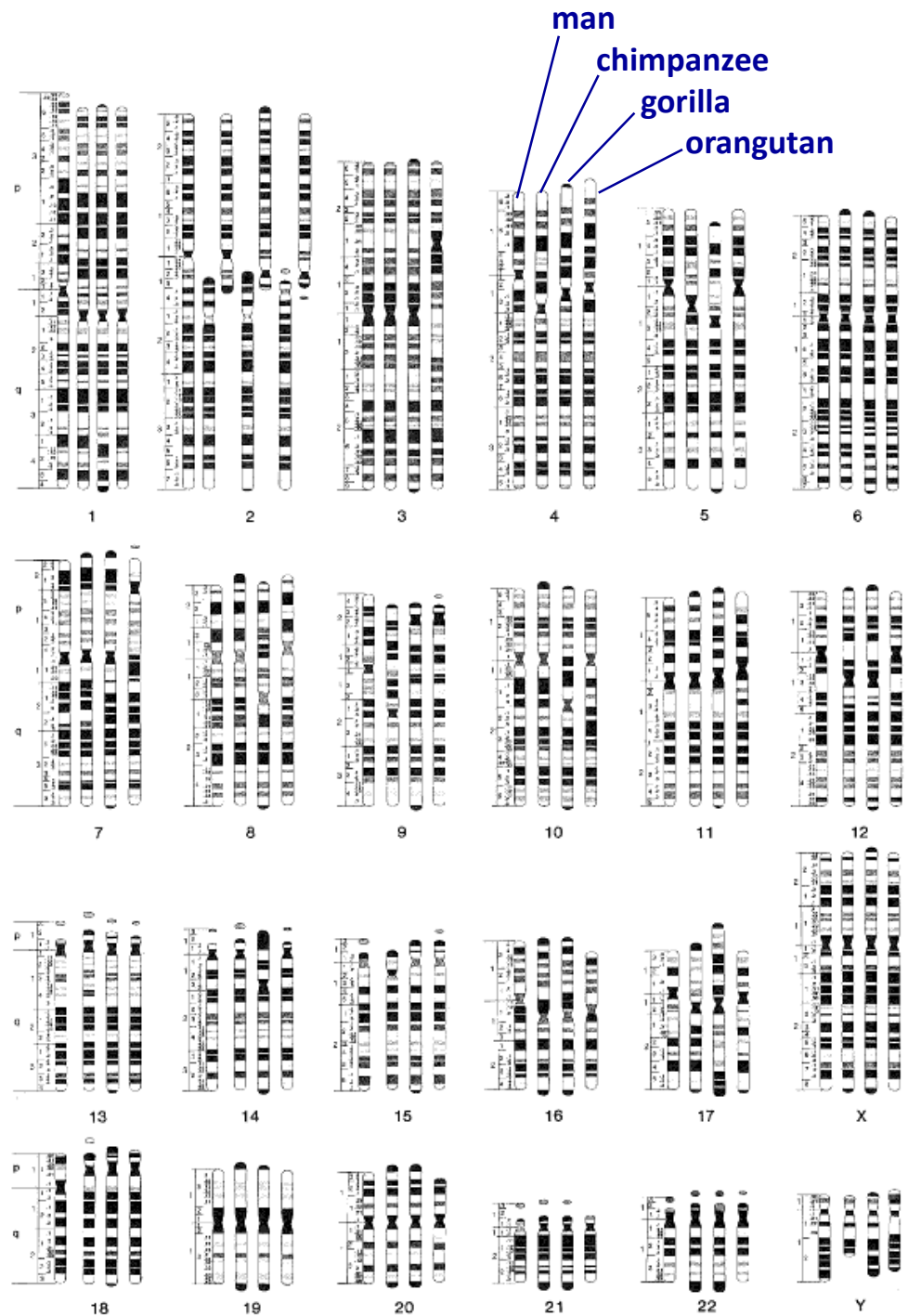

Männer

Abb. 2

Frauen

Abb. 3

Abb. 2 u. 3. Differenzierung der Melanomverteilung nach Geschlechtern

The 23 chromosomes of 4 primates are remarkably similar.

man
chimpanzee
gorilla
orangutan

1 2 3 4 5 6
7 8 9 10 11 12
13 14 15 16 17 X
18 19 20 21 22 Y

Consumer Reports ratings summary of portable generators is an ingenious mix of table and graphic.

Brand & Model	Price	Overall score (0–100)	Ease of use	Power delivery	Noise	Power quality	Run time range (hrs.)
Troy-Bilt XP7000 30477	$900	72	◒	◉	◓	○	12 - 18
Honda EM6500SXK2	$2800	70	◒	◉	○	◒	8 - 13
Briggs & Stratton 30470	$900	69	◒	◉	◓	◒	8 - 12
Honda EU6500iS	$4500	69	◉	○	◉	◉	5 - 11
Predator 68530 [3] [4]	$600	68	◒	◉	◓	◒	8 - 13
Generac GP5500 5939	$700	67	◒	◉	◓	◒	8 - 14
NorthStar 165603 [3]	$1500	66	◒	◉	○	○	8 - 12
Champion 41537	$1000	66	◒	◉	◓	◒	7 - 11
Troy-Bilt 6000 30475	$700	65	○	◉	○	◒	9 - 16

The orbits of Earth and Saturn plus views of Saturn from the Earth.

views of Saturn from Earth

Saturn's orbit

Earth's orbit
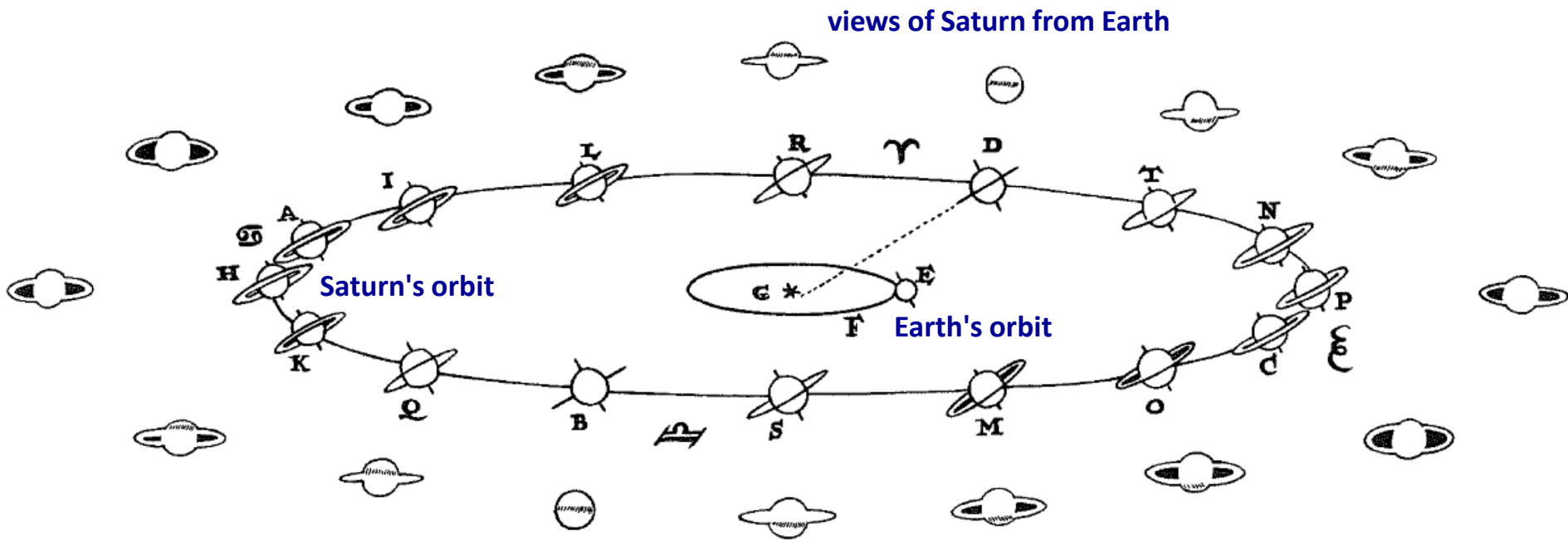
Christiaan Huygens, *Systema Saturnium* (The Hague, 1659), p. 55.
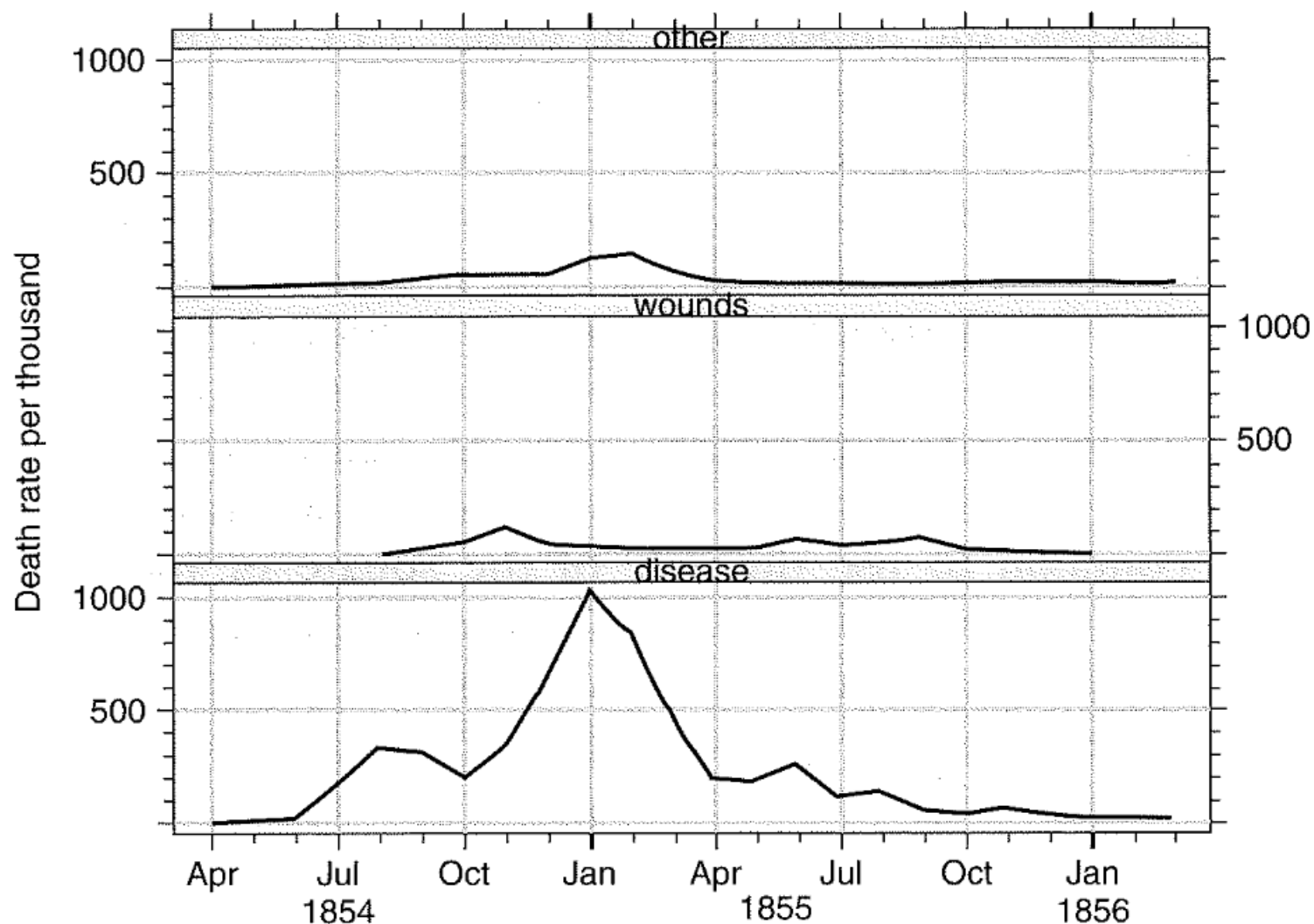
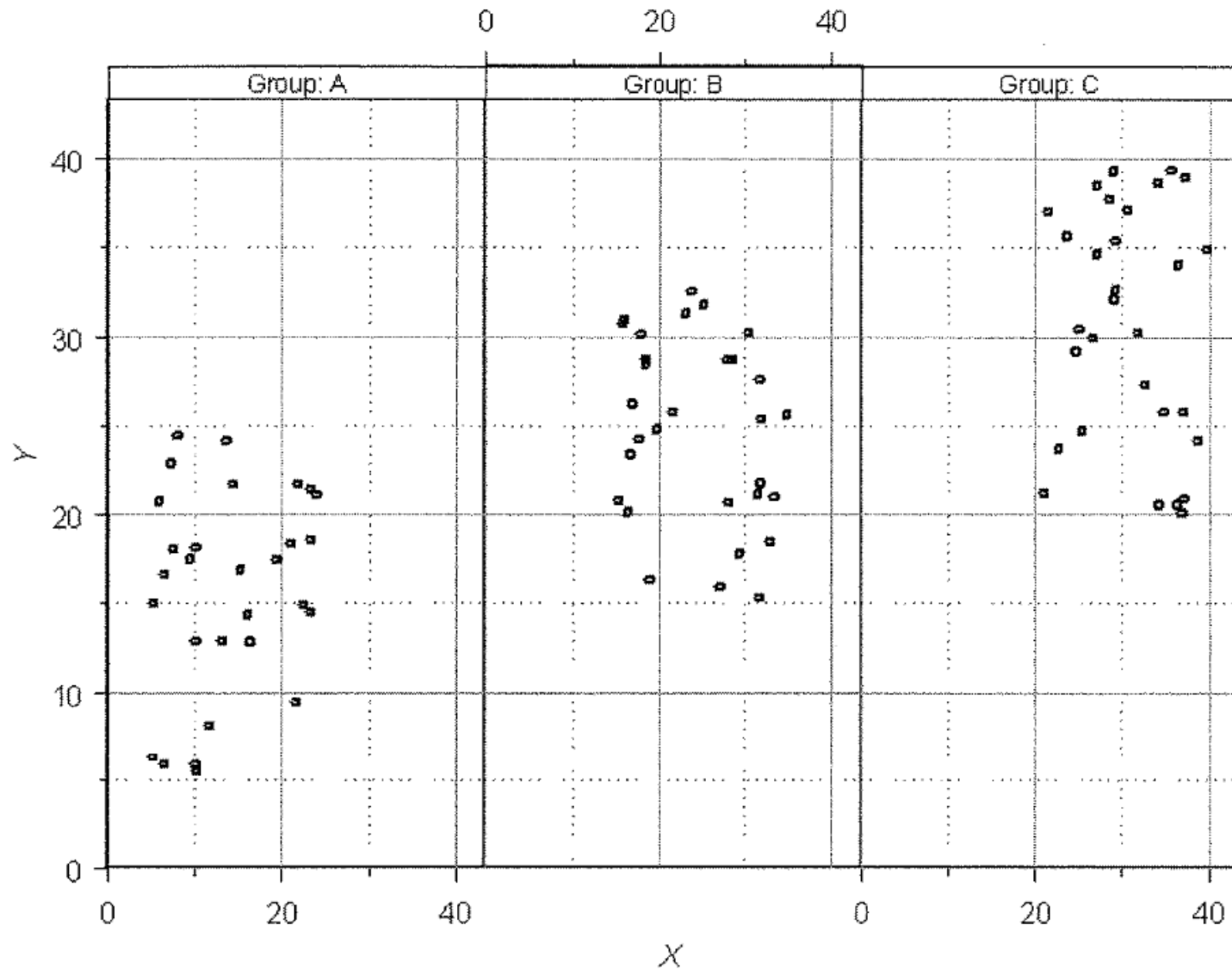Fig. 5.15 Nightingale Data: Trellis Plot

Fig. 6.8   Avoiding Superposed Data
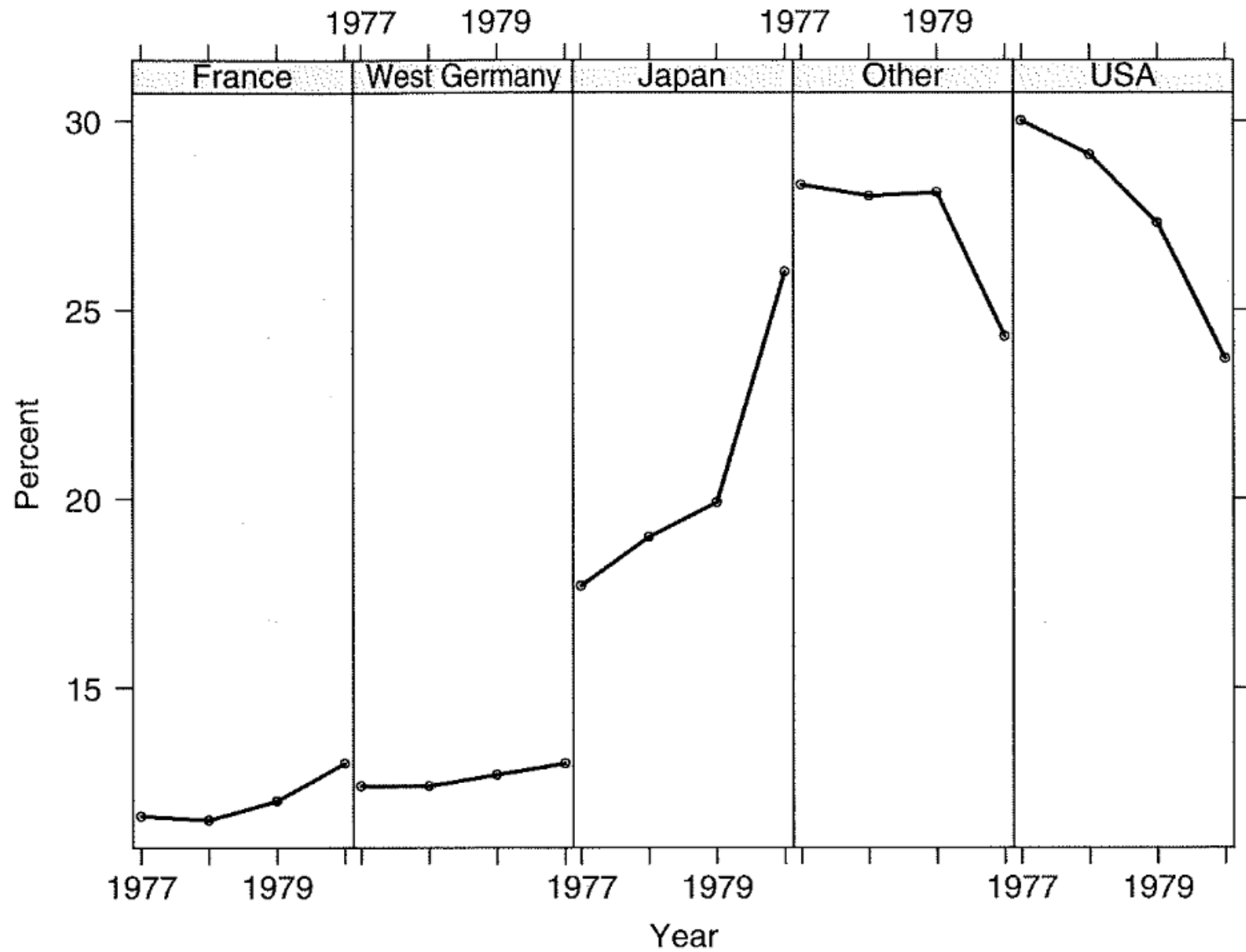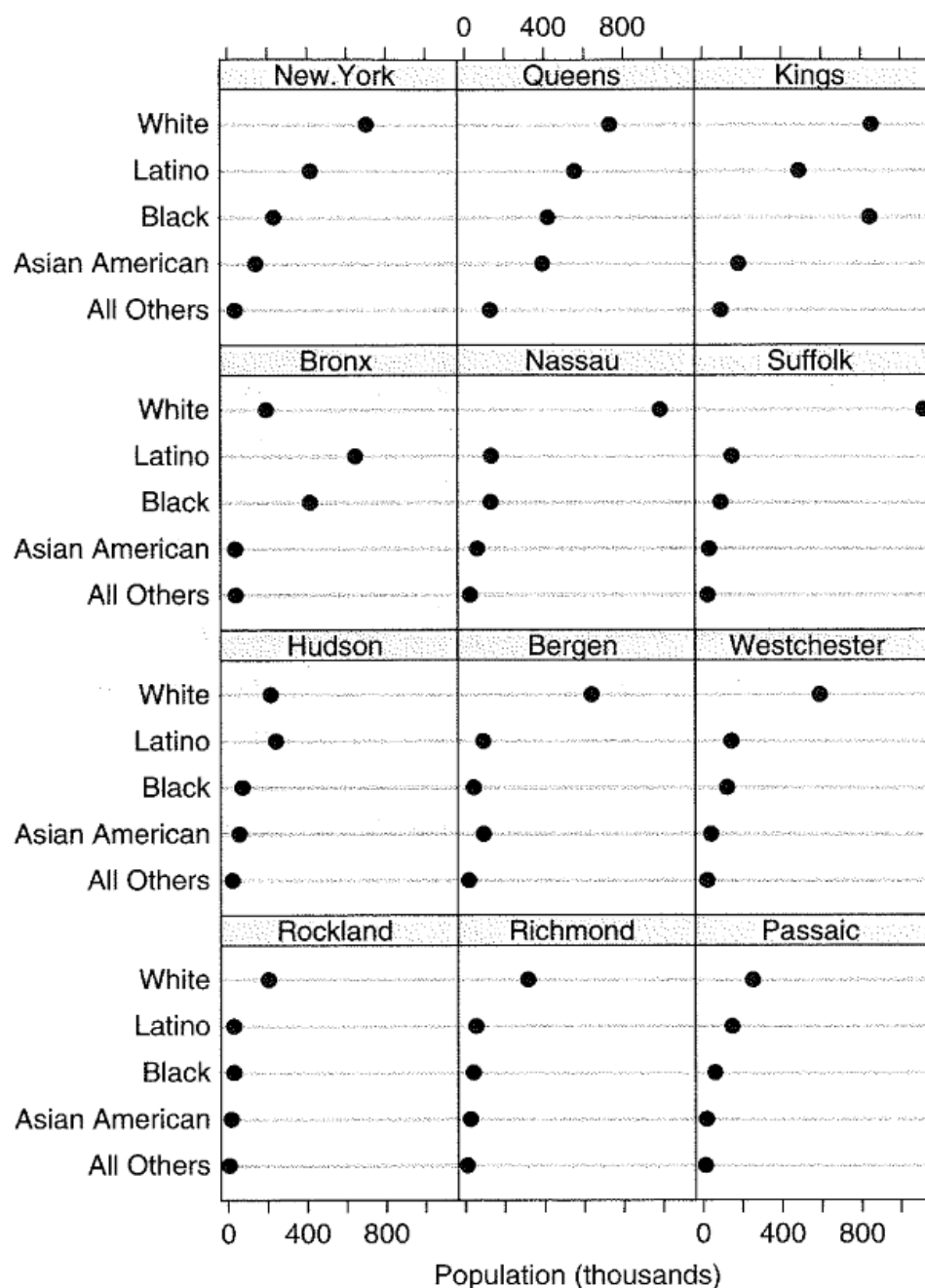
Fig. 8.13   Car Production: Trellis Panels

Fig. 8.15 Population Data by County

Well-designed small multiples are

- **inevitably comparative**

- **deftly multivariate**

- **shrunken, high-density graphics**

- **usually based on a large data matrix**

- **drawn almost entirely with data-ink**

- **efficient in interpretation**

- **often narrative in content, showing shifts in the relationship between variables as the index variable changes**

Tufte, VDQI, p.175