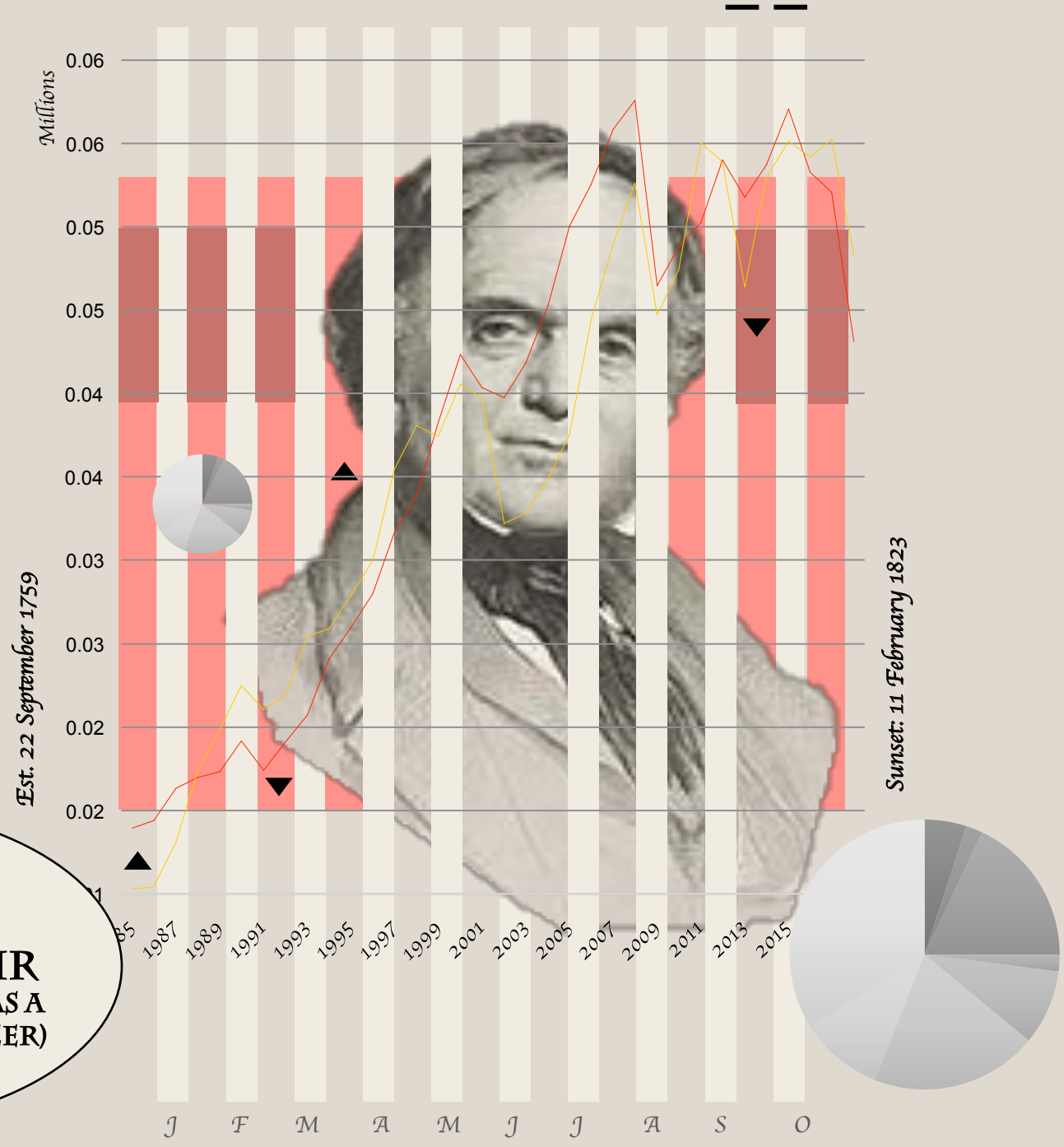
AN INQUIRY
INTO THE WORKS OF
WILLIAM PLAYFAIR
(SHEWING HIS PROWESS AS A PROTO-DATA VIZ ENGINEER)



A PRODUCT OF THE SCOTTISH ENLIGHTENMENT
(WITH A VIVID DARK SIDE)

Playfair is largely credited as the progenitor of modern Statistical Graphics. He helped to popularize the notion that data could be made more accessible to wider audiences through the use of graphs (an idea that was scorned during his time)

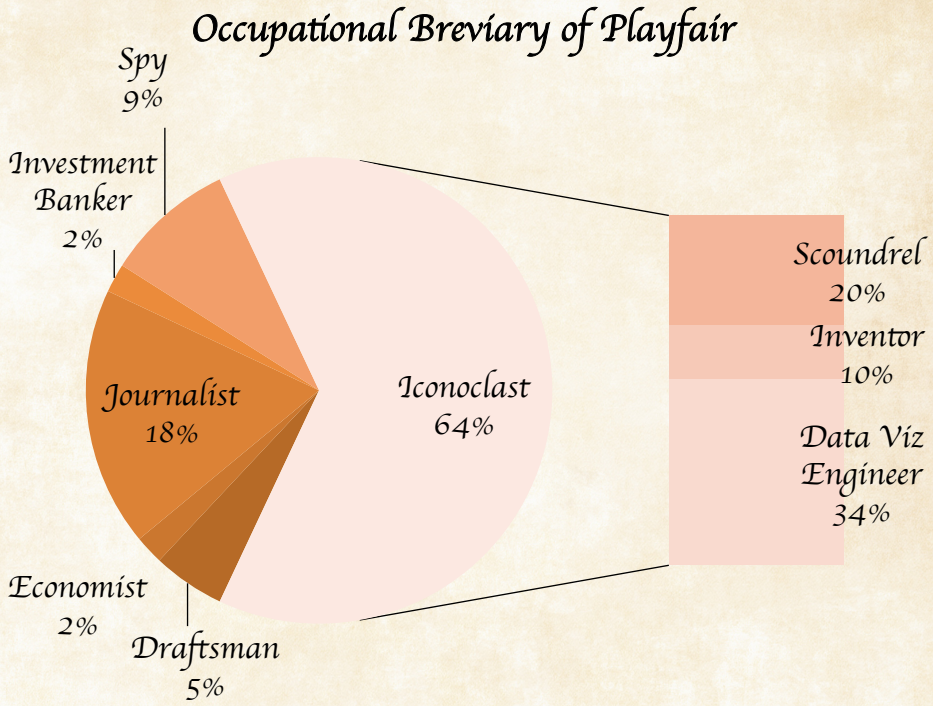
THE MANY CHARACTERS OF WILLIAM PLAYFAIR

Who is this man?

A Jack of All Trades:
Playfair held more than 12 careers during his lifetime and is what we would today refer to as a *"Serial Entrepreneur"* (Read: founder of a string of short-lived/ failed startups)

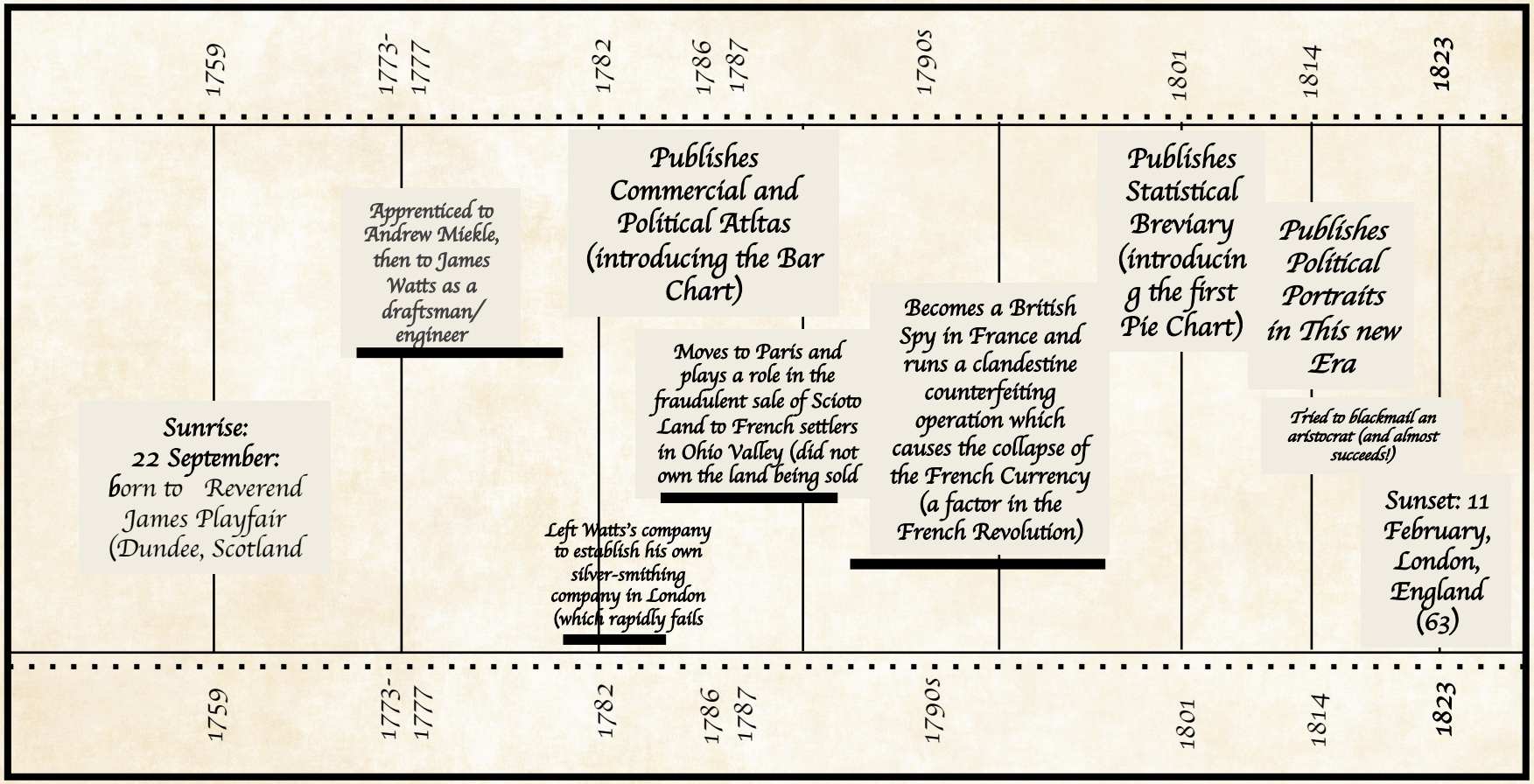
A Scoundrel:
He blackmailed aristocrats and was involved in a number of grifts all across Europe (including one that lead to the collapse of a currency)

An Iconoclast:
He displayed a searing lack of respect for traditions and limits- partly allowing him to become the inventor of data graphics at a time when they are widely frowned upon by academics and intellectuals



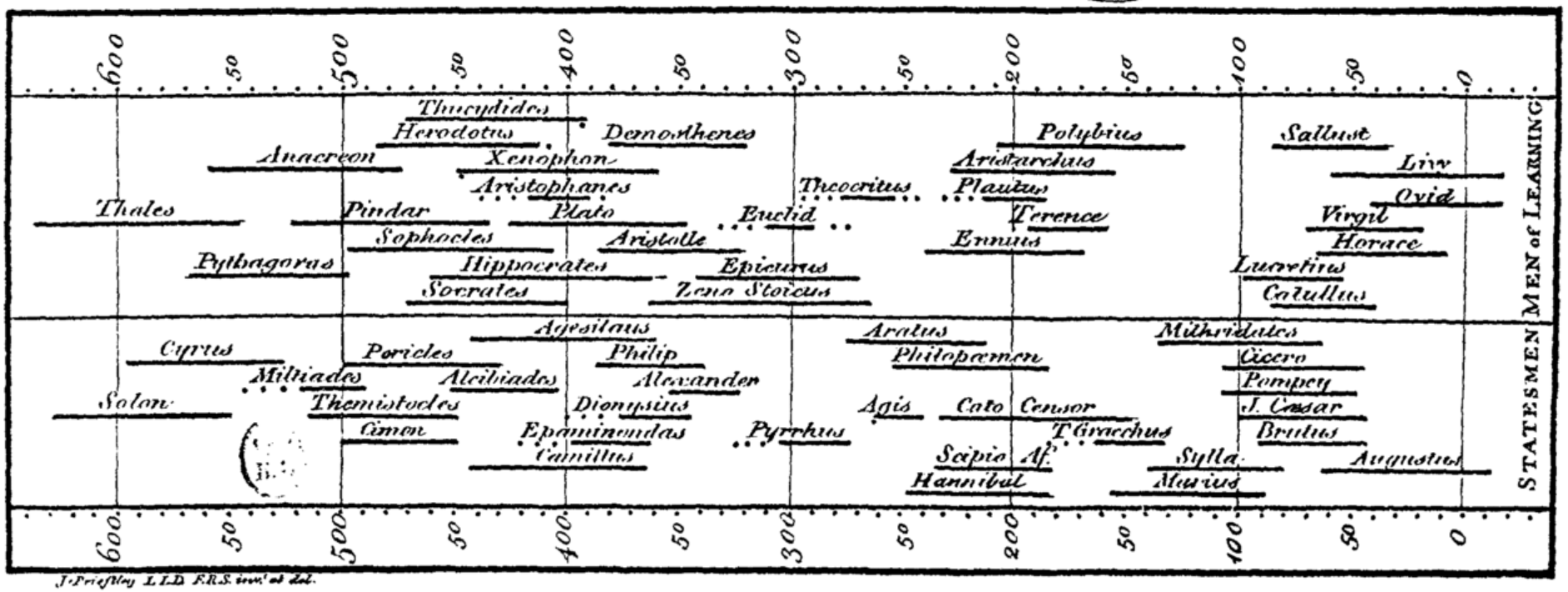
The First Data Visualization Engineer
Because of his multiple dalliances in different fields, he acquired the skills and knowledge necessary to produce charts and graphs- something which most academics and data-practitioners lacked during his time

A Specimen of a Chart of Playfair's Biography



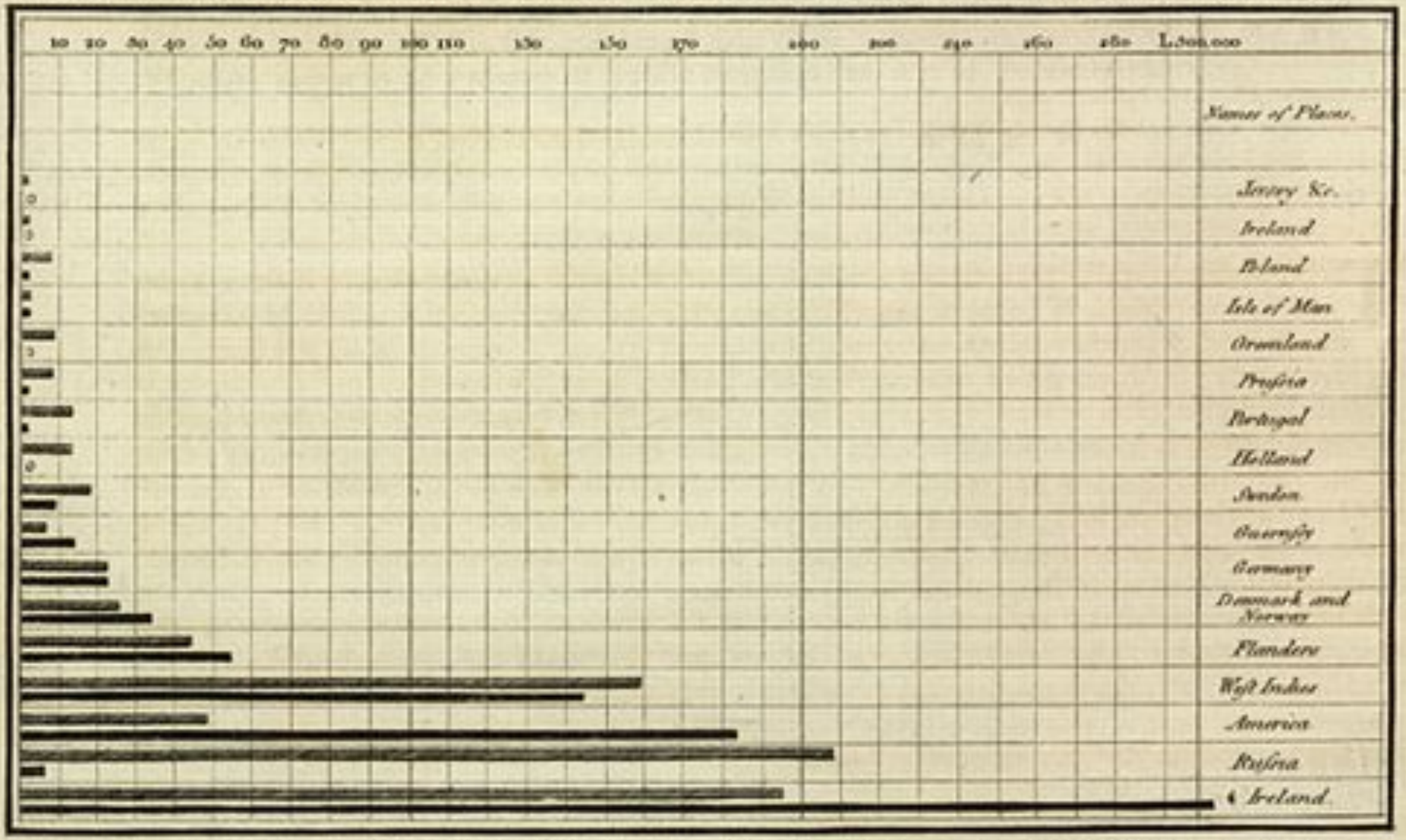
EARLY INFLUENCES AND PREDECESSORS

A Specimen of a Chart of Biography.



J. Priestley LL.D. F.R.S. inv.t et del.

Exports and Imports of SCOTLAND to and from different parts for one Year from Christmas 1780 to Christmas 1781.



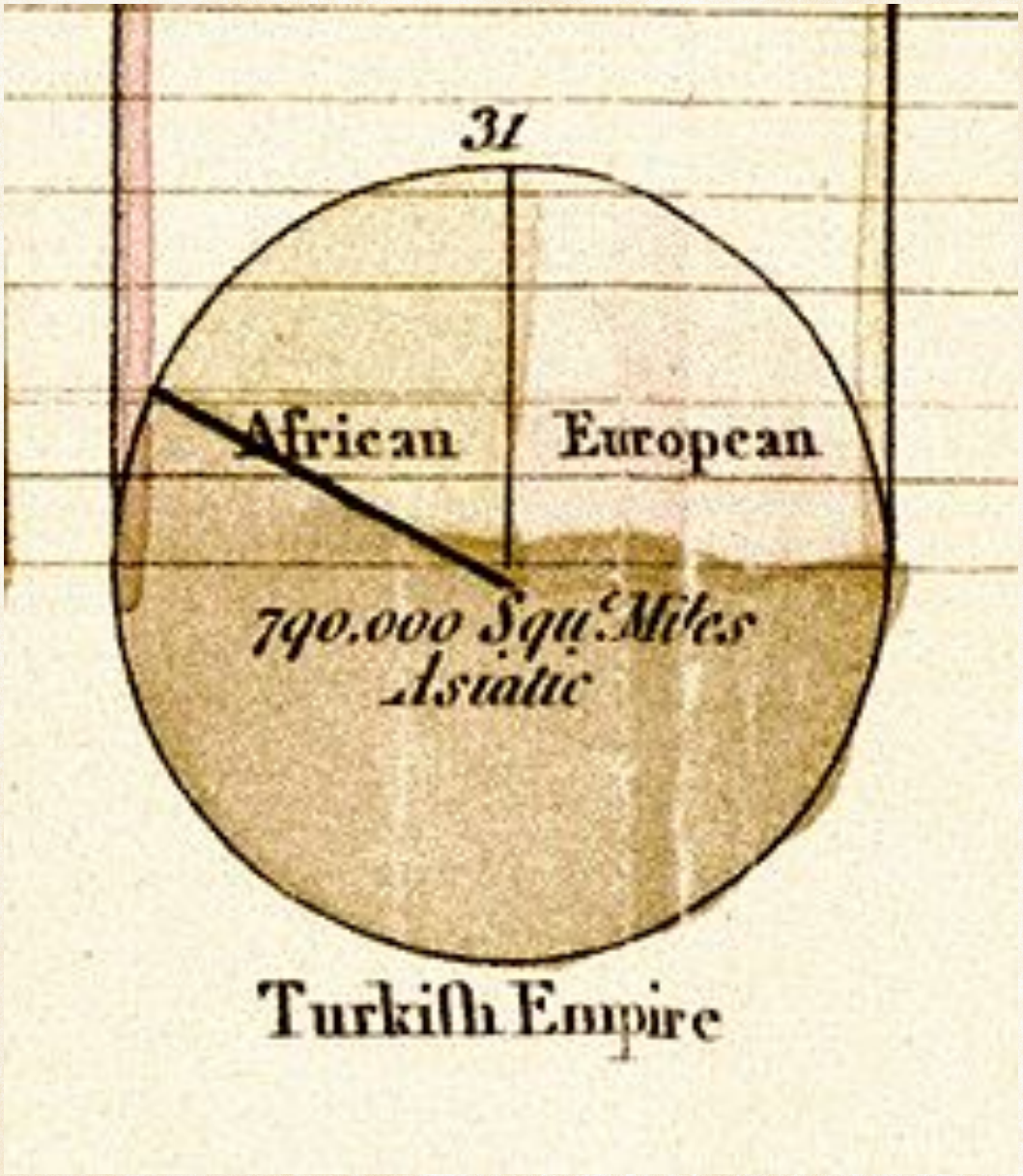
The Upright divisions are Ten Thousand Pounds each. The Black Lines are Exports the Ribbed lines Imports.

Like many of today's charts, Playfair's plots juxtaposed two sets of facts in order to tell a story; also like today's, they were designed to help busy people **understand complex issues at a glance**.

As the knowledge of mankind increases, and transactions multiply, it becomes more and more desirable to *abbreviate* and *facilitate* the modes of conveying information

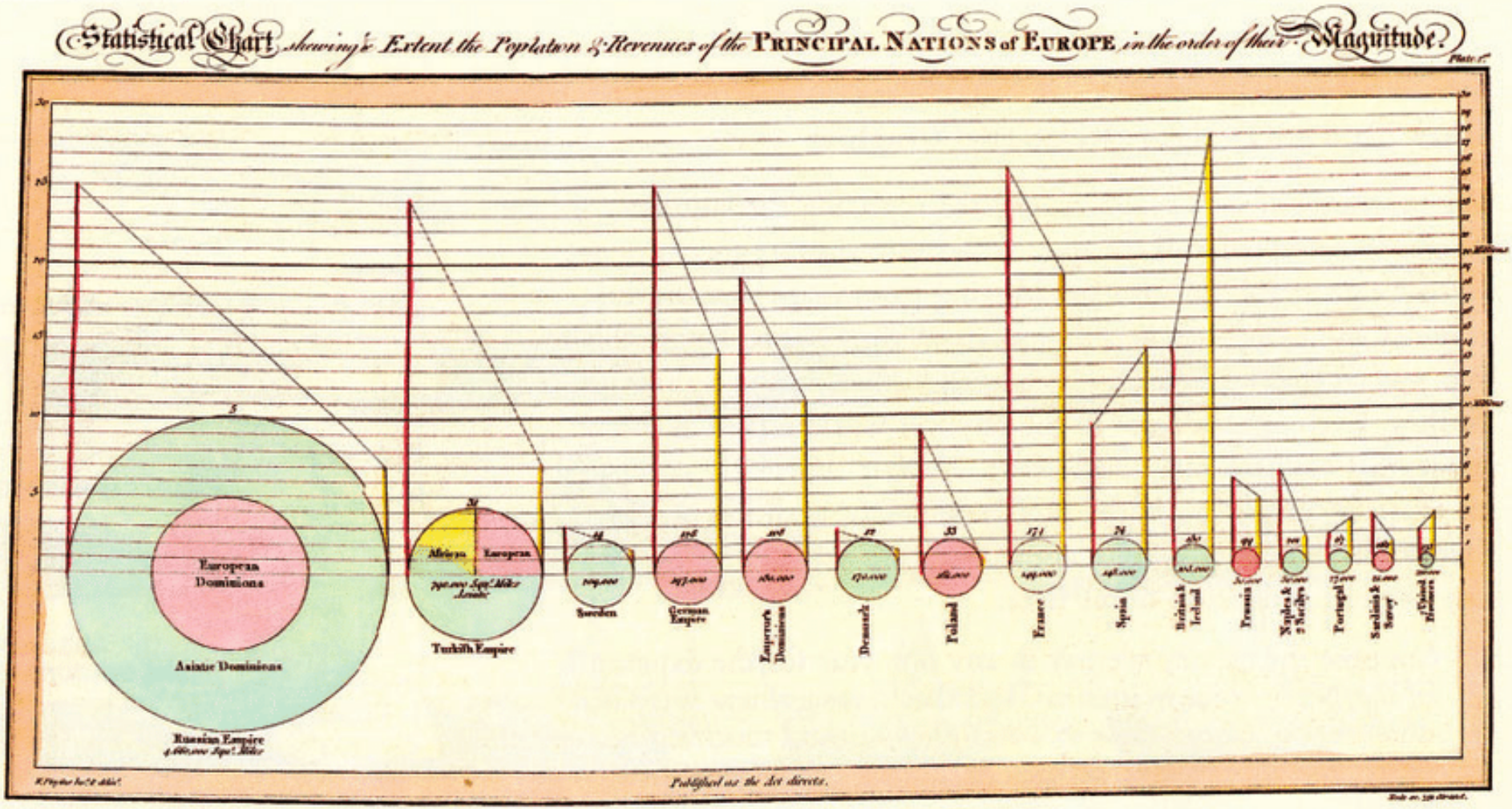
Men of high rank, or active business, can only pay attention to outlines... It is hoped that, with the assistance of these Charts, such information will be got without the fatigue and trouble of studying the particulars.

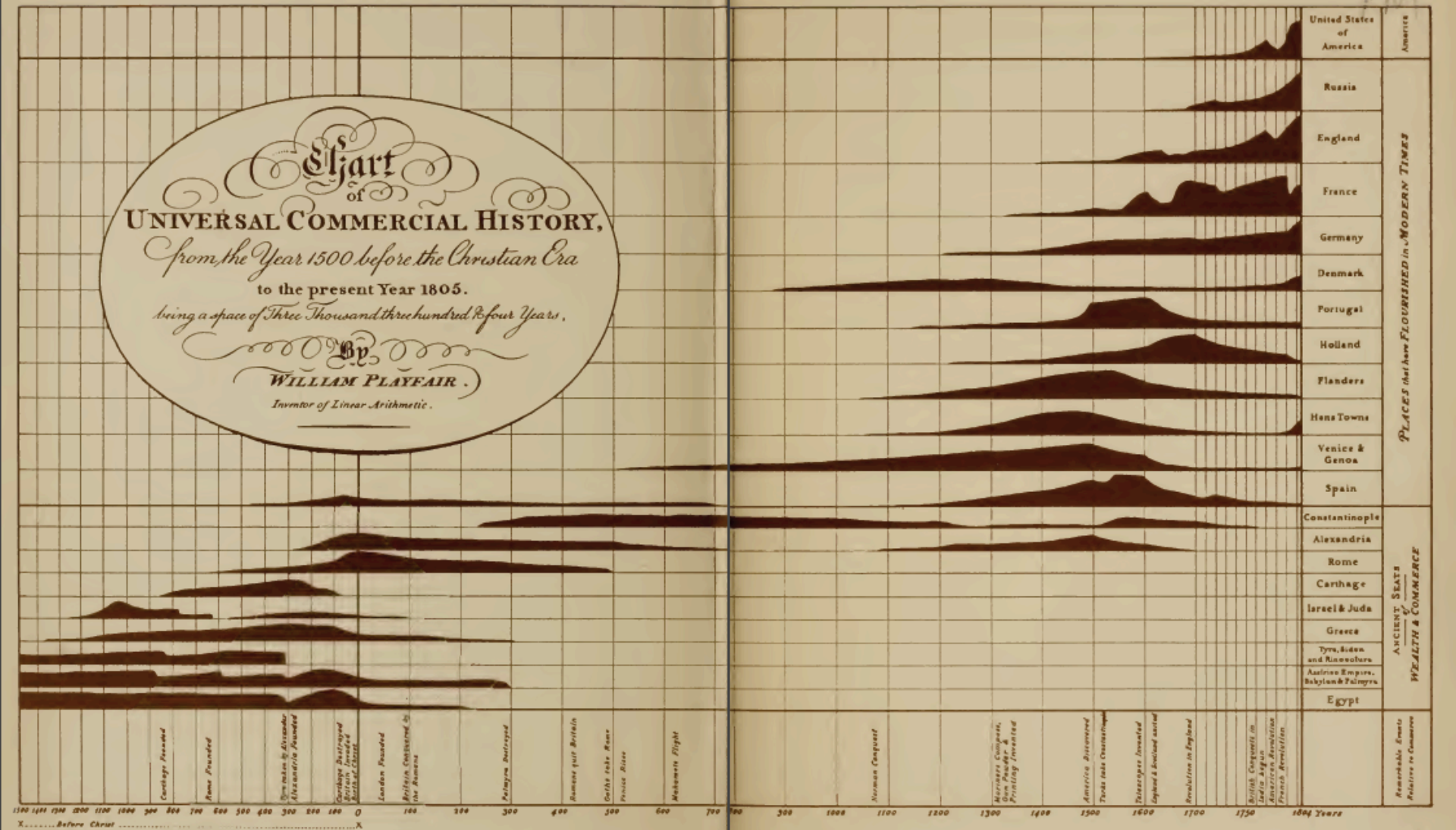
- William Playfair, *Lineal Arithmetic*, 1798



No study is less alluring or more dry and tedious than statistics, unless the mind and imagination are set to work

- William Playfair, *The Statistical Breviary, Shewing the Resources of Every State and Kingdom in Europe,* 1801

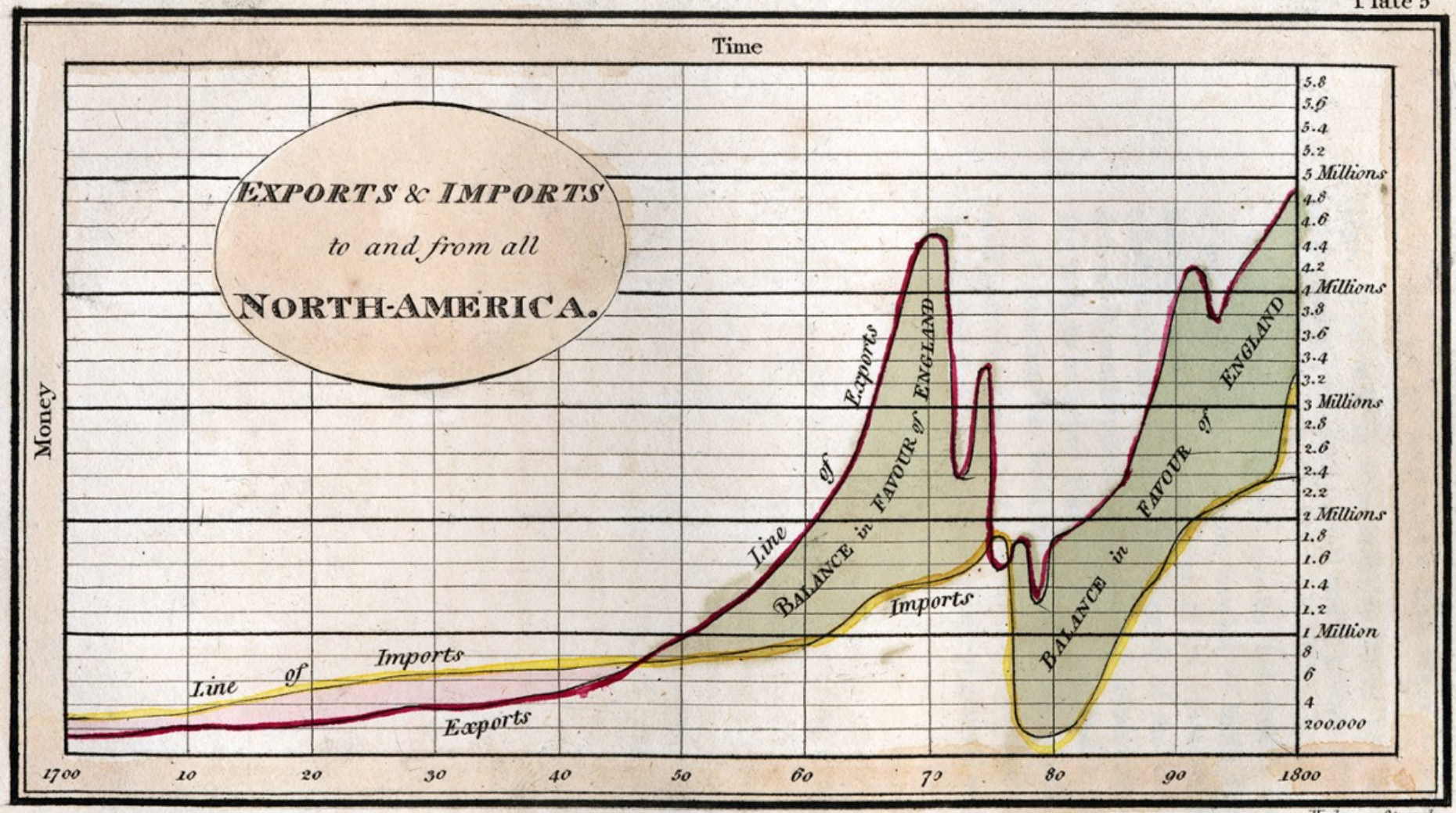

Statistical Chart shewing the Extent the Population & Revenues of the PRINCIPAL NATIONS of EUROPE in the order of their Magnitude.
Plate 6.
European Dominions
Asiatic Dominions
Russian Empire
Turkish Empire
Sweden
German Empire
Emperor's Dominions
Denmark
Poland
France
Spain
Britain & Ireland
Prussia
Naples & Two Sicilies
Portugal
Sardinia & Savoy
Published as the Act directs.



From Frontispiece of Book by WILLIAM PLAYFAIR, An Inquiry Into the Permanent Causes of the Decline and Fall of Powerful and Wealthy Nations, London, 1805.

Along with Playfair's desire to tell the story of history graphically was the desire to tell it **dramatically**

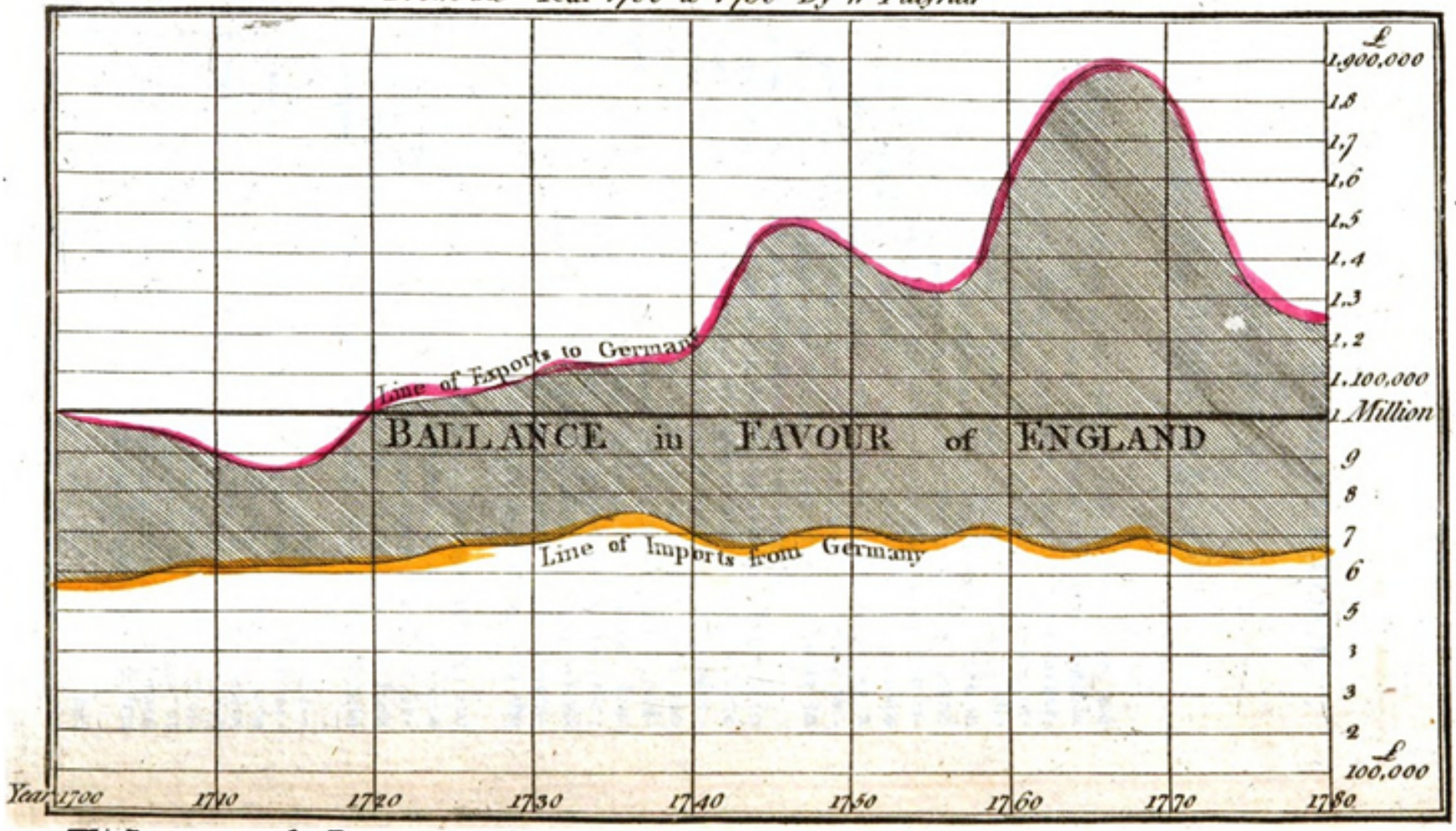
Playfair designed his curves in such a way that the reader is encouraged to **focus on the area between the designated curves**



Neele sc. Strand.

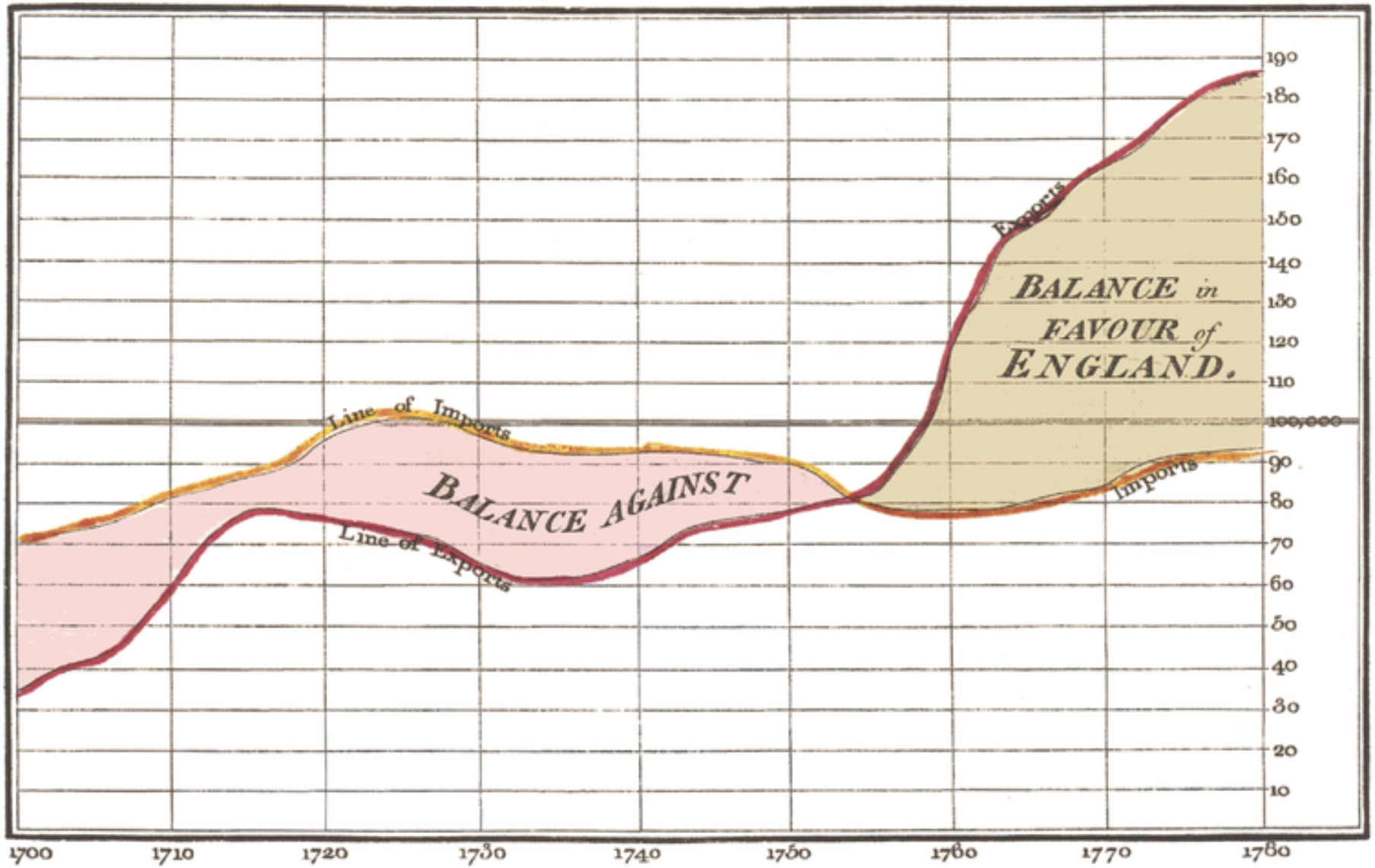
CHART of IMPORTS and EXPORTS of ENGLAND, to and from GERMANY

From the Year *1700 to 1780 By W Playfair*



The Divisions at the Bottom are 10 Years each those on the right hand into HUNDRED THOUSAND POUNDS *each*

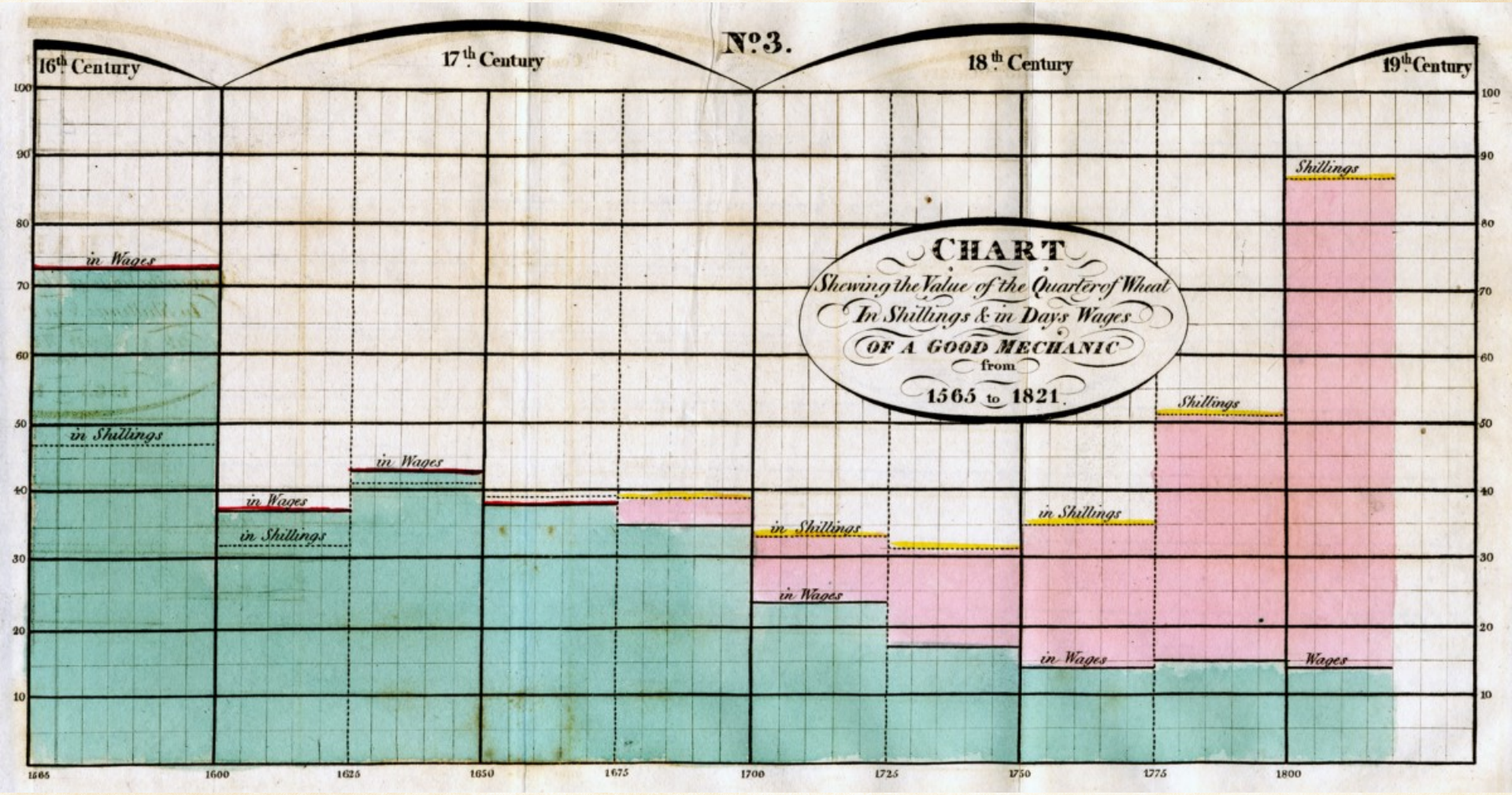
Exports and Imports to and from DENMARK & NORWAY from 1700 to 1780.

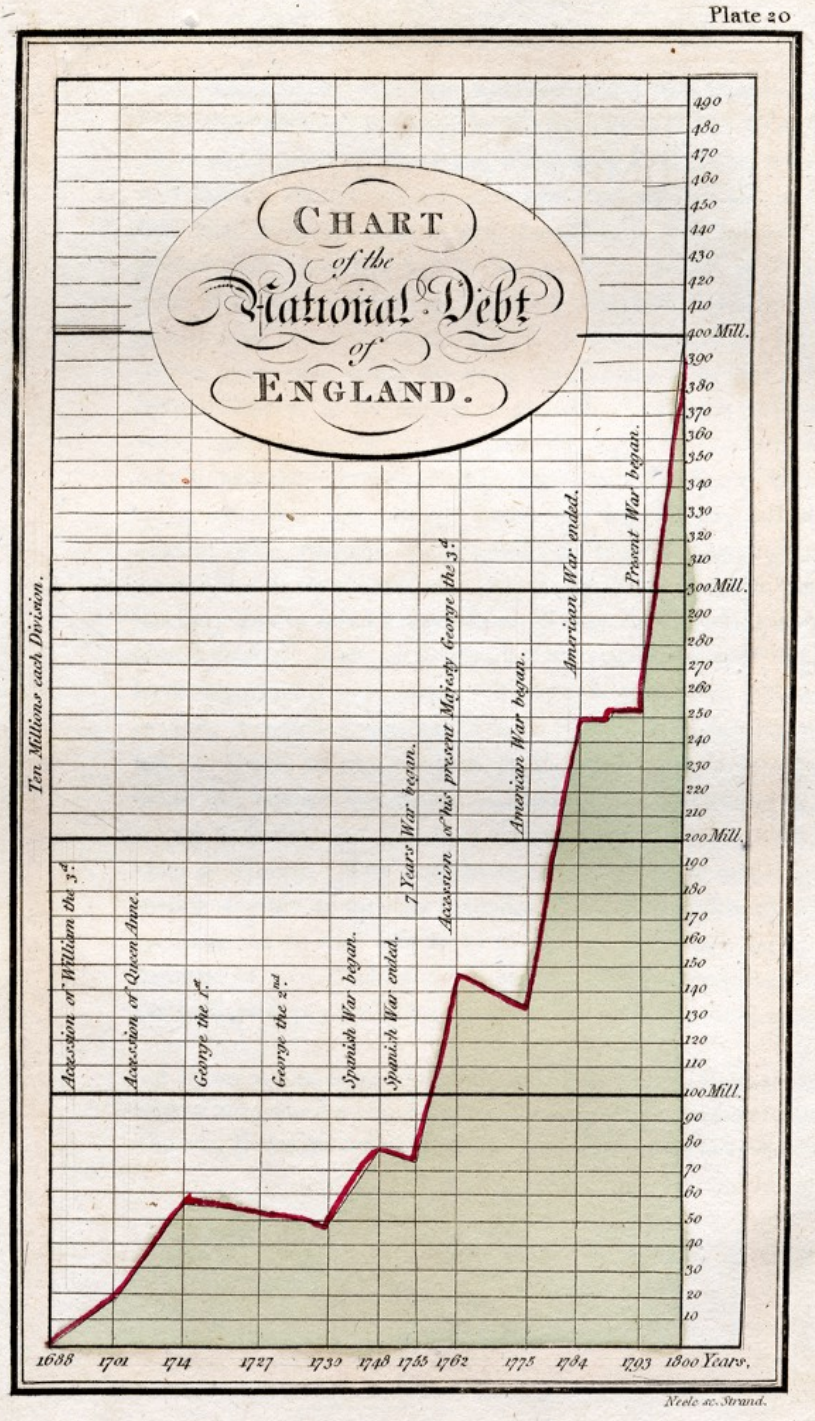


The Bottom line is divided into Years, the Right hand line into £10,000 each.

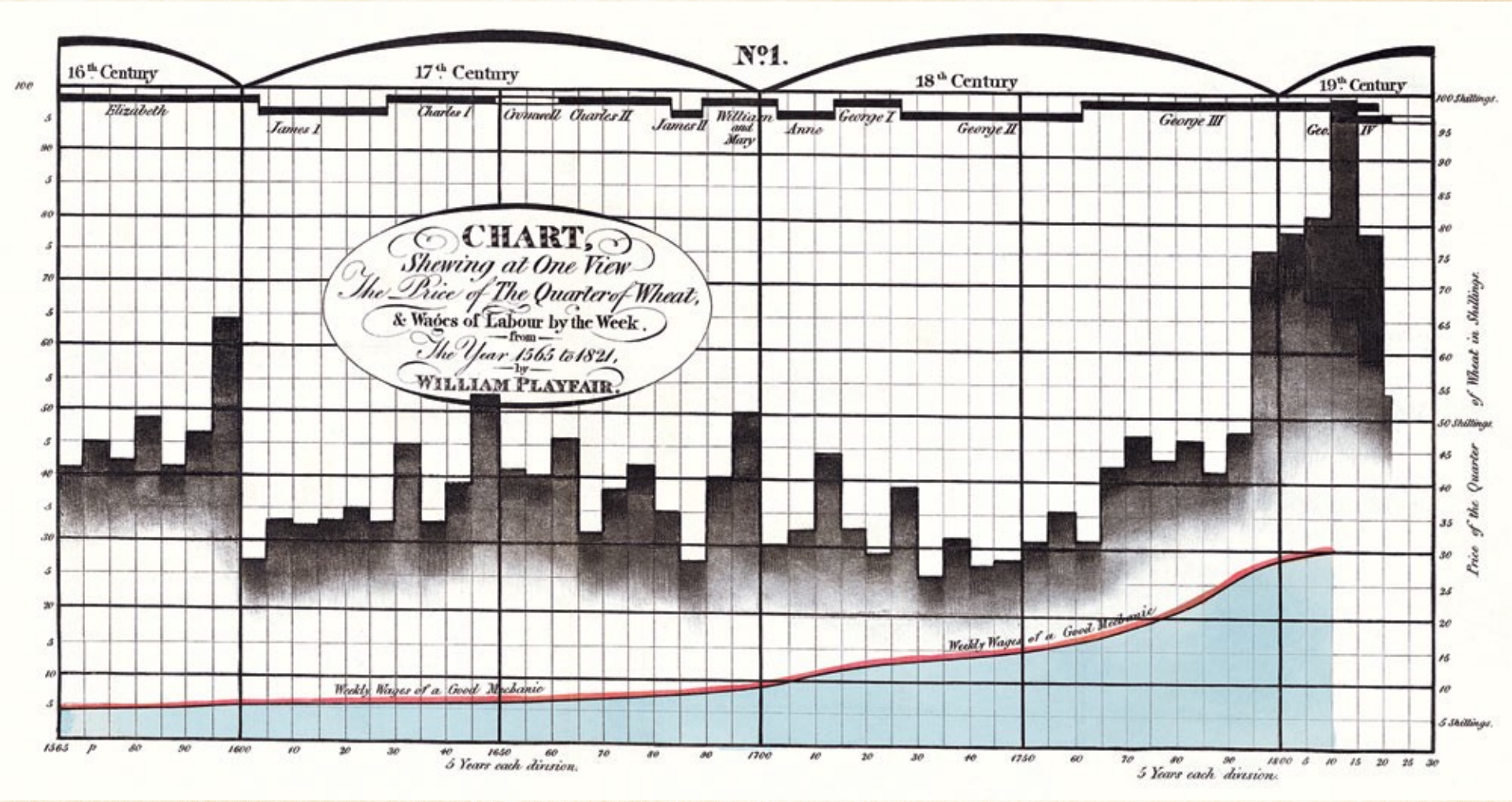
Published as the Act directs, 1st May 1786. by Wm. Playfair

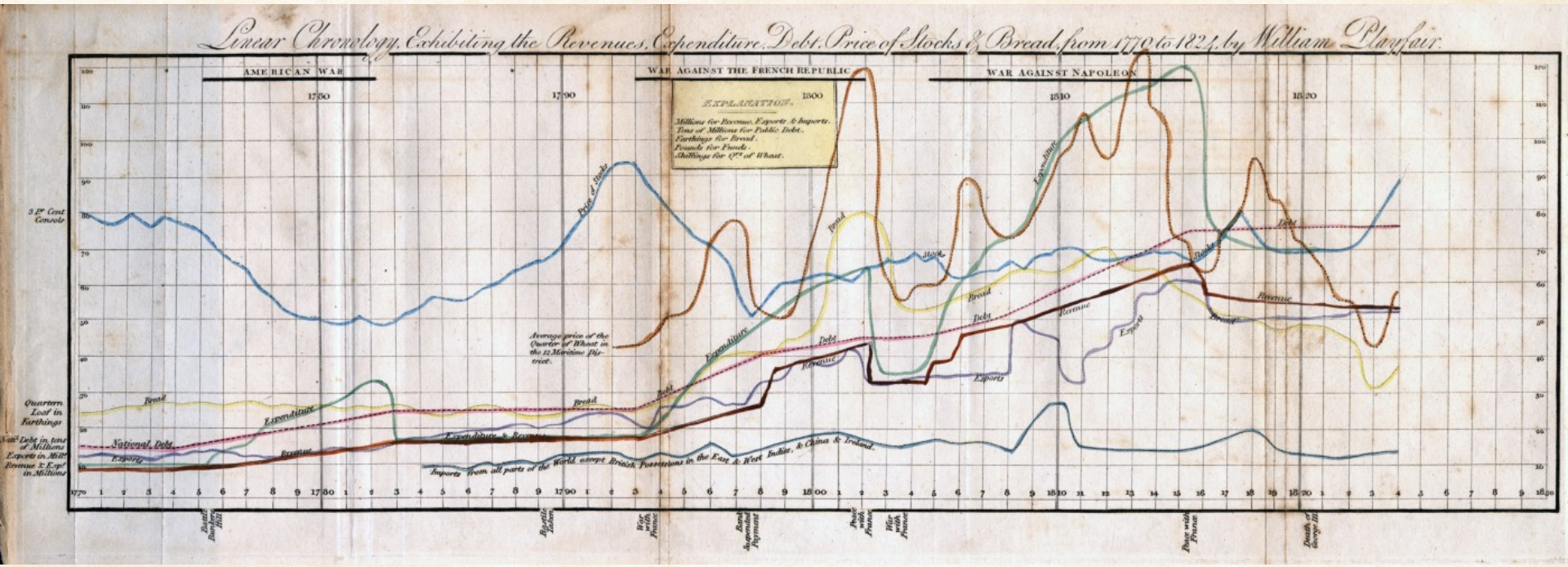
Neale sculpt 352, Strand, London.


No. 3.
16th. Century
17th. Century
18th. Century
19th. Century
CHART
Shewing the Value of the Quarter of Wheat
In Shillings & in Days Wages
OF A GOOD MECHANIC
from
1565 to 1821.
in Wages
in Shillings
in Wages
in Shillings
in Wages
in Shillings
in Shillings
in Wages
in Shillings
in Wages
Shillings
Wages
100
90
80
70
60
50
40
30
20
10
1565
1600
1625
1650
1675
1700
1725
1750
1775
1800



Neele sc. Strand.


No.1.
16th Century
17th Century
18th Century
19th Century
Elizabeth
James I
Charles I
Cromwell
Charles II
James II
William and Mary
Anne
George I
George II
George III
Geo. IV
CHART,
Shewing at One View
The Price of The Quarter of Wheat,
& Wages of Labour by the Week,
from
The Year 1565 to 1821,
by
WILLIAM PLAYFAIR.
Weekly Wages of a Good Mechanic
Weekly Wages of a Good Mechanic
100 Shillings.
50 Shillings.
5 Shillings.
Price of the Quarter of Wheat in Shillings.
1565
1600
1650
1700
1750
1800
5 Years each division.
5 Years each division.


Linear Chronology, Exhibiting the Revenues, Expenditure, Debt, Price of Stocks & Bread, from 1770 to 1824, by William Playfair.
AMERICAN WAR
WAR AGAINST THE FRENCH REPUBLIC
WAR AGAINST NAPOLEON
1780
1790
1800
1810
1820
EXPLANATION.
Millions for Revenue, Exports & Imports.
Tons of Millions for Public Debt.
Farthings for Bread.
Pounds for Funds.
Shillings for Qrs of Wheat.
3 P. Cent Consols
Quartern Loaf in Farthings
Nat. Debt in tons of Millions
Exports in Millions
Revenue & Exp. in Millions
Price of Stocks
Average price of the Quarter of Wheat in the 12 Maritime District.
Bread
Expenditure
National Debt
Revenue
Exports
Debt
Stocks
Expenditure & Revenue
Imports from all parts of the World except British Possessions in the East & West Indies, & China & Ireland.
Death of Dr. Franklin
Battle of Bunkers Hill
Battle of Yorktown
War with France
Bank Suspended Payment
Peace with France
War with France
Peace with France
Death of George III

CRITIQUES OF HIS WORK

The greatest value of a graph is when it forces us to see what we never expected.

- John Tukey, *Exploratory Data Analysis, Volume III, Page 26-3*
1971

Comparing with a curve -using a curve as a standard of comparison - is always poor graphics. We should do better.

- John Tukey, *Exploratory Data Analysis, Volume III, Page 26-3* 1971

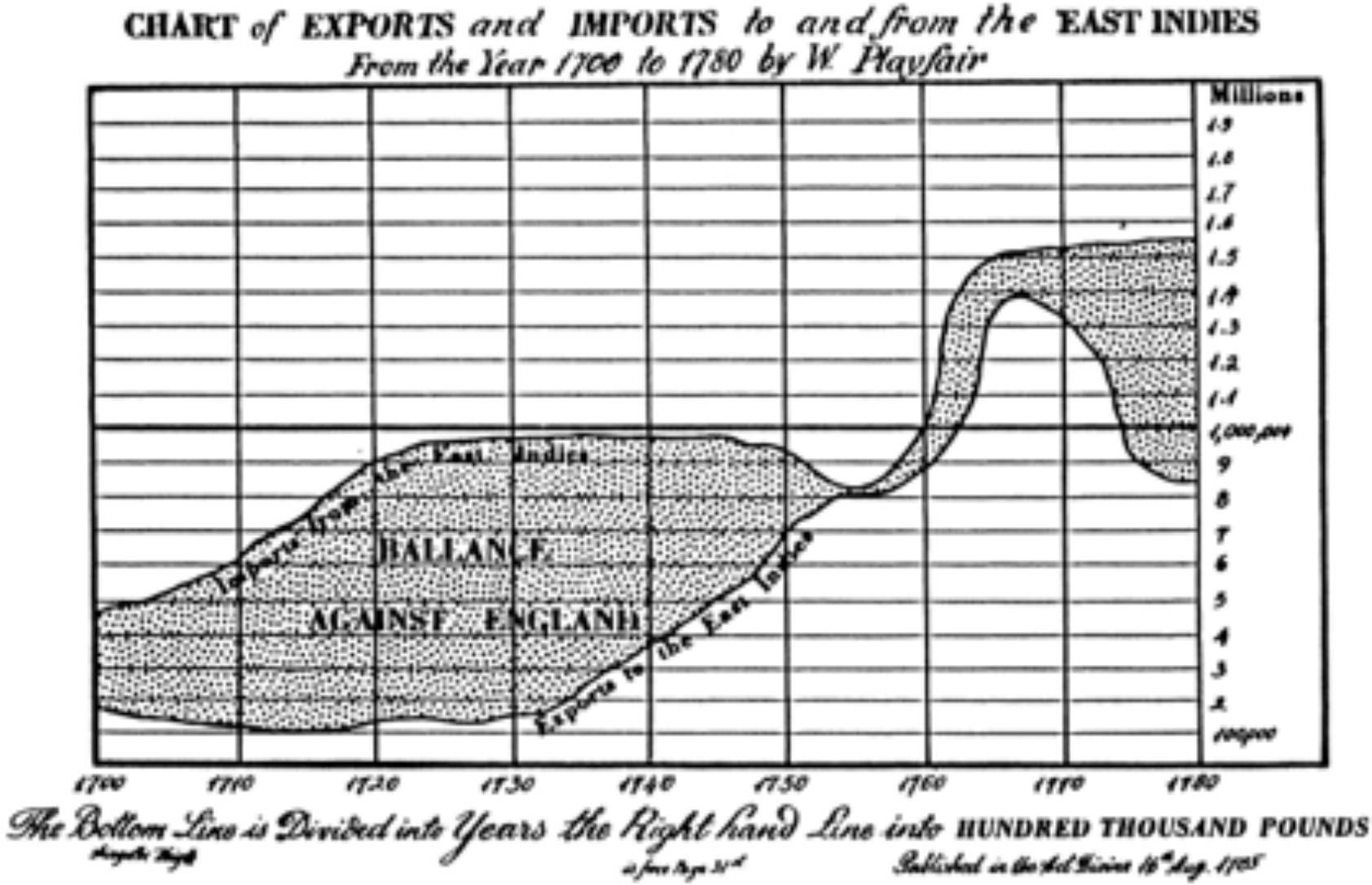


FIG. 6. *Curve-difference chart after Playfair.* (Source: Cleveland and McGill, 1984, *Figure 6.*)

EXPLICIT PLOT OF THE EXPORT DEFICIT (EXPORTS - IMPORTS)

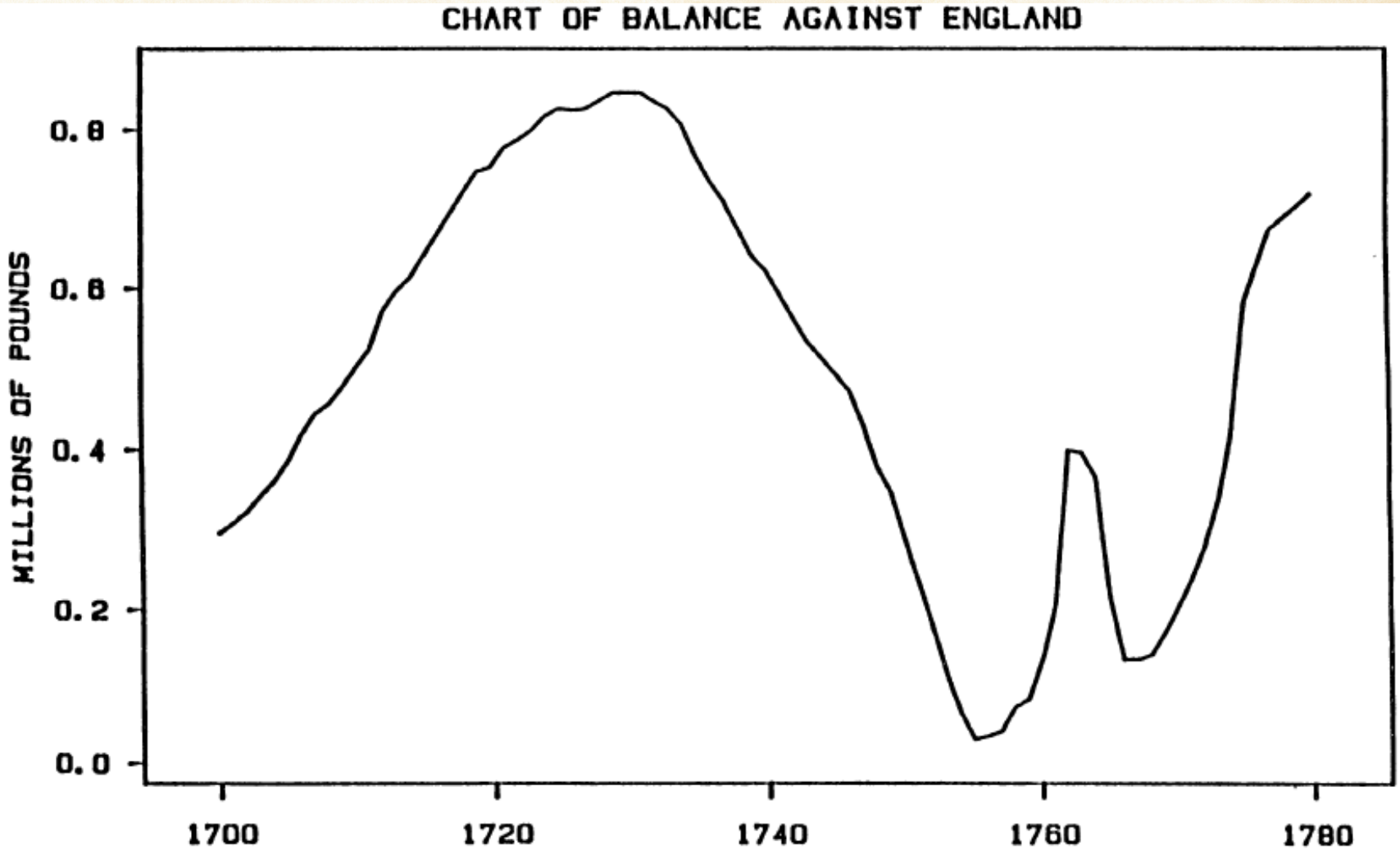
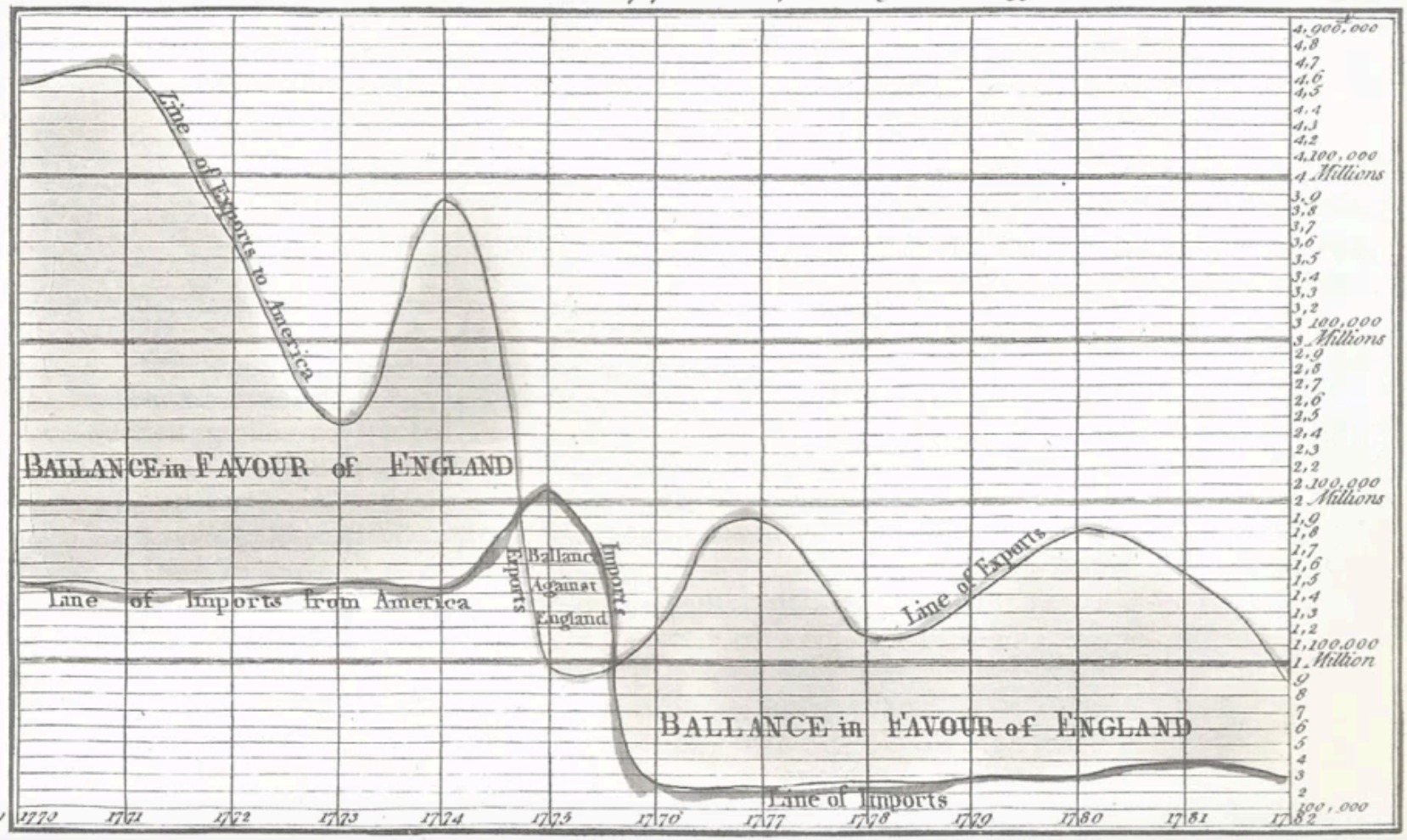


FIG. 7. *Playfair data.* (*Source*: *Cleveland and McGill*, 1984, *Figure* 28.)

CHART of IMPORTS and EXPORTS of ENGLAND to and from all NORTH AMERICA
From the Year 1770 to 1782 by W. Playfair



The Bottom Line is divided into Years the right-hand Line into HUNDRED THOUSAND POUNDS

J. Ainslie Sculp.t

Publish'd as the Act directs 20th Aug.t 1785.

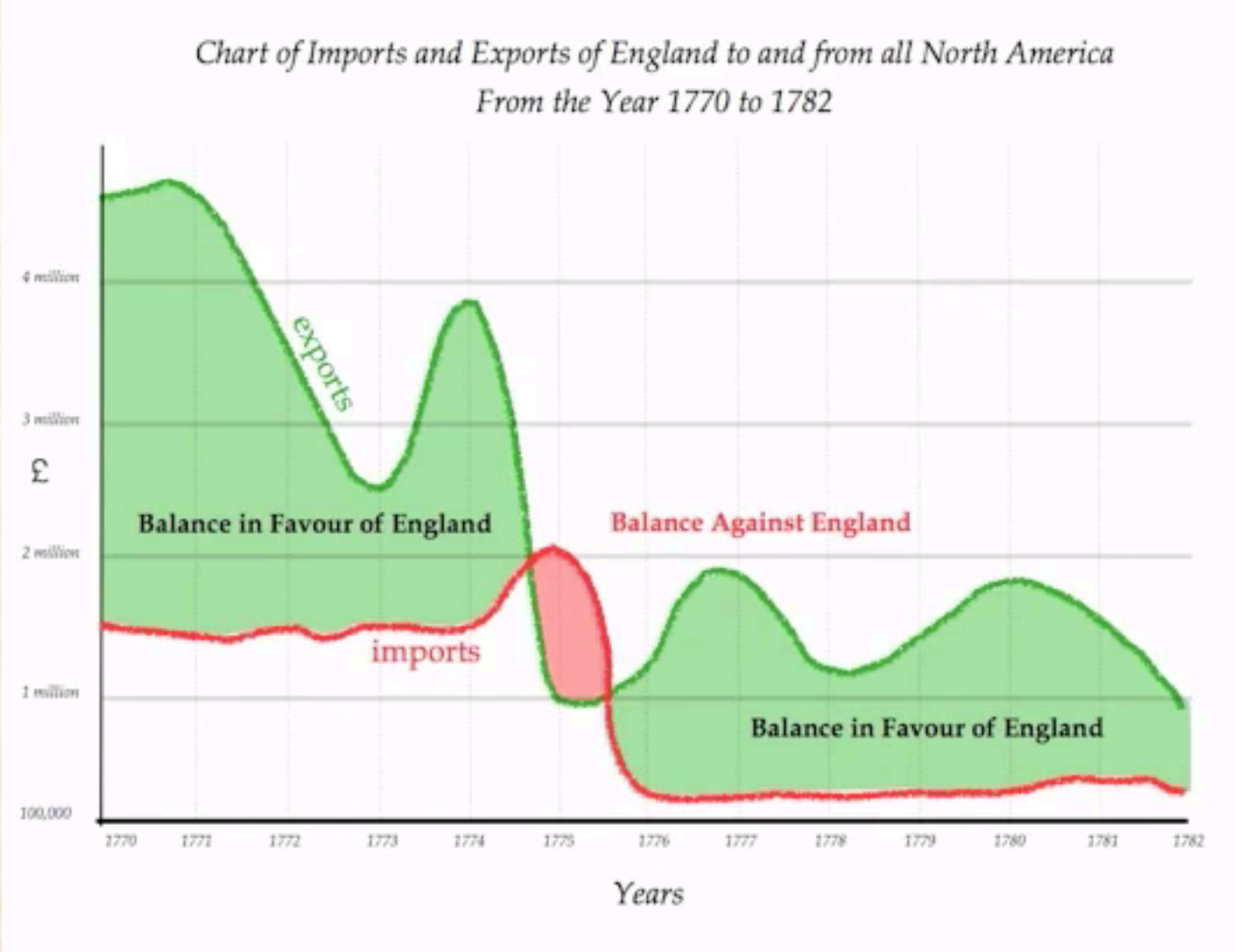


Chart of Imports and Exports of England to and from all North America
From the Year 1770 to 1782
4 million
3 million
£
2 million
1 million
100,000
exports
Balance in Favour of England
Balance Against England
imports
Balance in Favour of England
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
Years

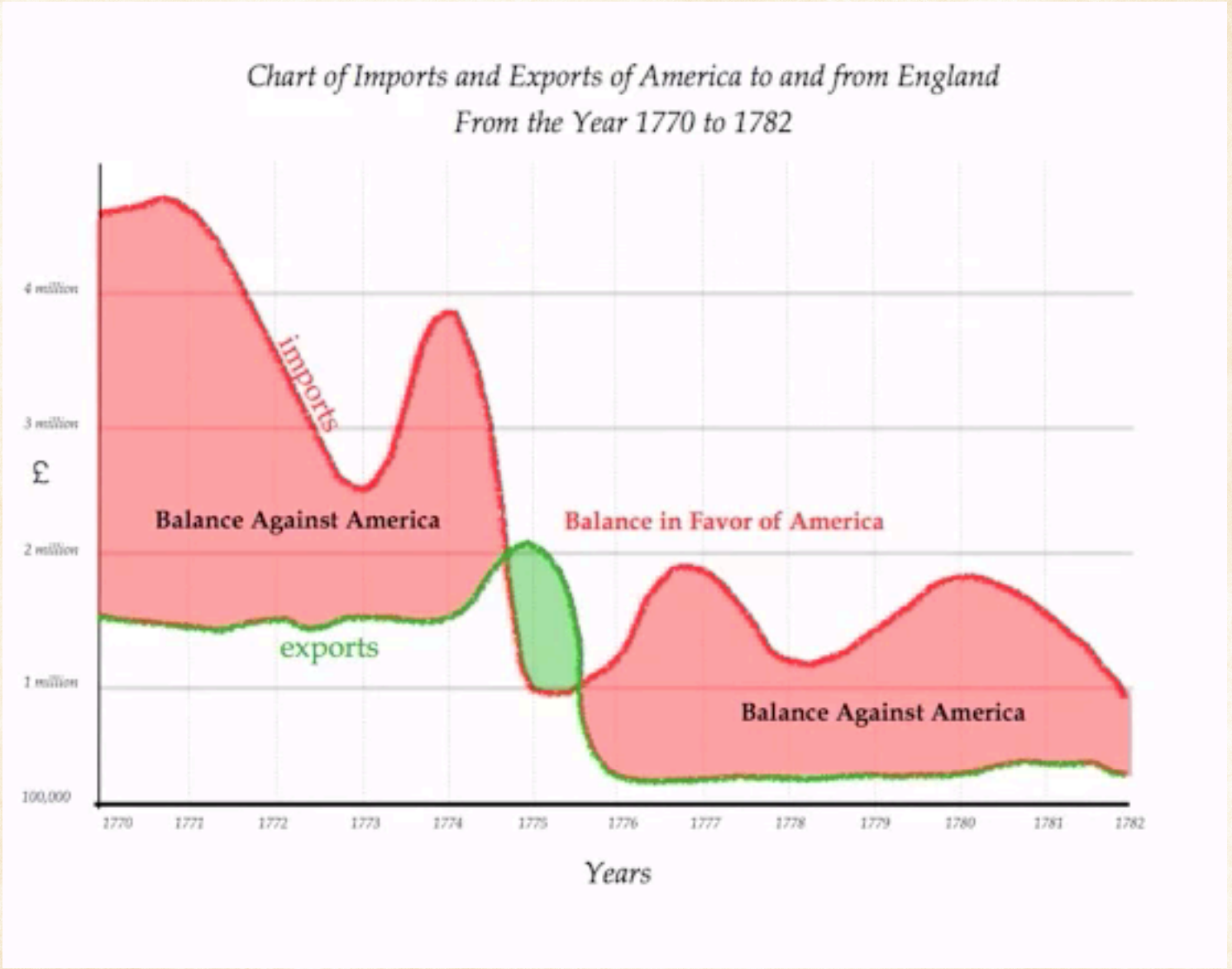


Chart of Imports and Exports of America to and from England
From the Year 1770 to 1782
4 million
3 million
£
2 million
1 million
100,000
imports
Balance Against America
Balance in Favor of America
exports
Balance Against America
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
Years

Reflections:

What is the style/use/purpose of your subject?

What does this subject do well?

What do they do poorly? What do you like/dislike?

How does this subject connect to other readings and discussions within the course?