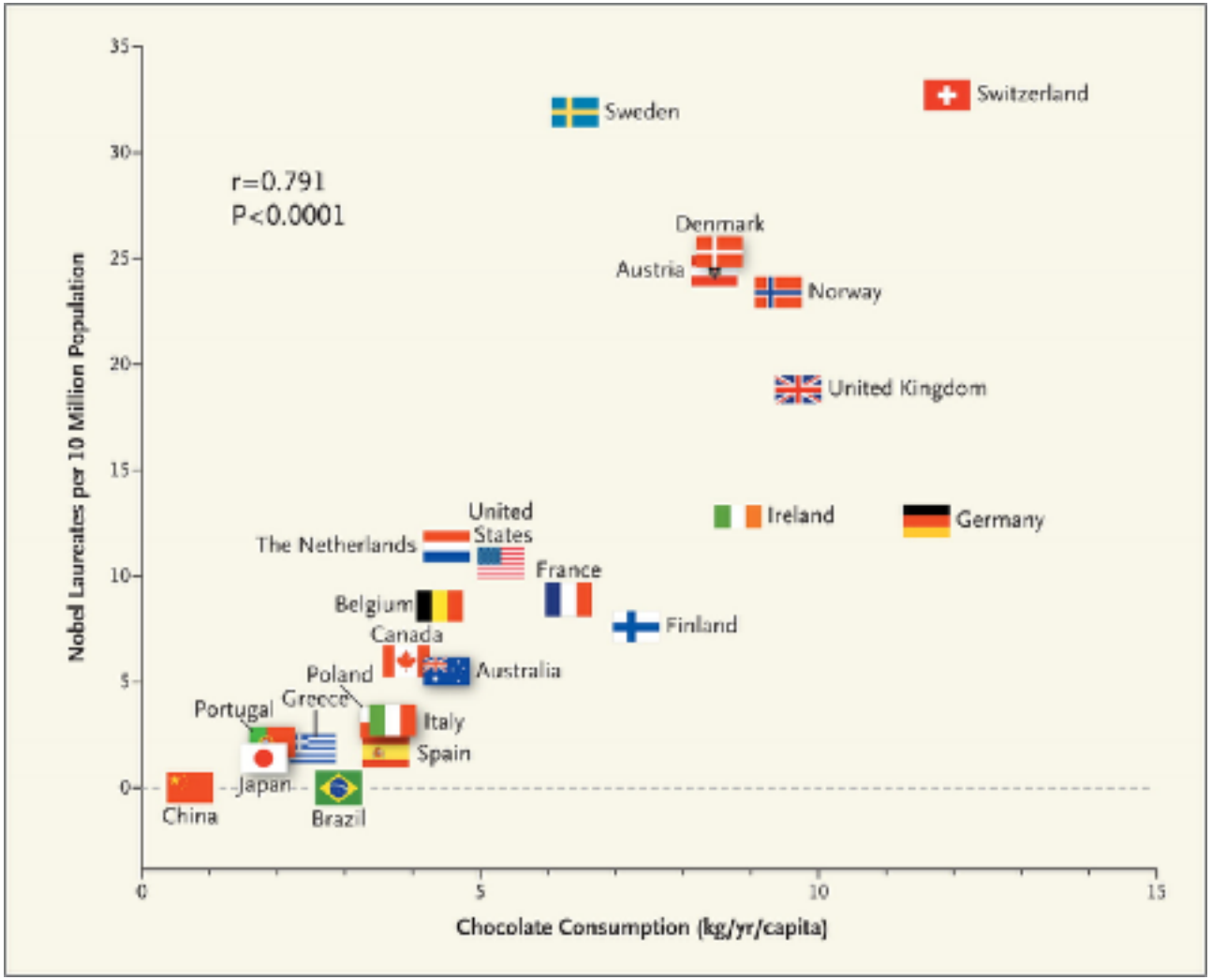
Correlation is *not* Causation

There is a high correlation (r = 0.791) between chocolate consumption in a country and the number of Nobel Prize winners in that country…Why do you think this is?


r=0.791
P<0.0001
Sweden
Switzerland
Denmark
Austria
Norway
United Kingdom
Ireland
Germany
United States
The Netherlands
France
Belgium
Finland
Canada
Australia
Poland
Greece
Portugal
Italy
Spain
Japan
China
Brazil
Nobel Laureates per 10 Million Population
Chocolate Consumption (kg/yr/capita)
0
5
10
15
20
25
30
35

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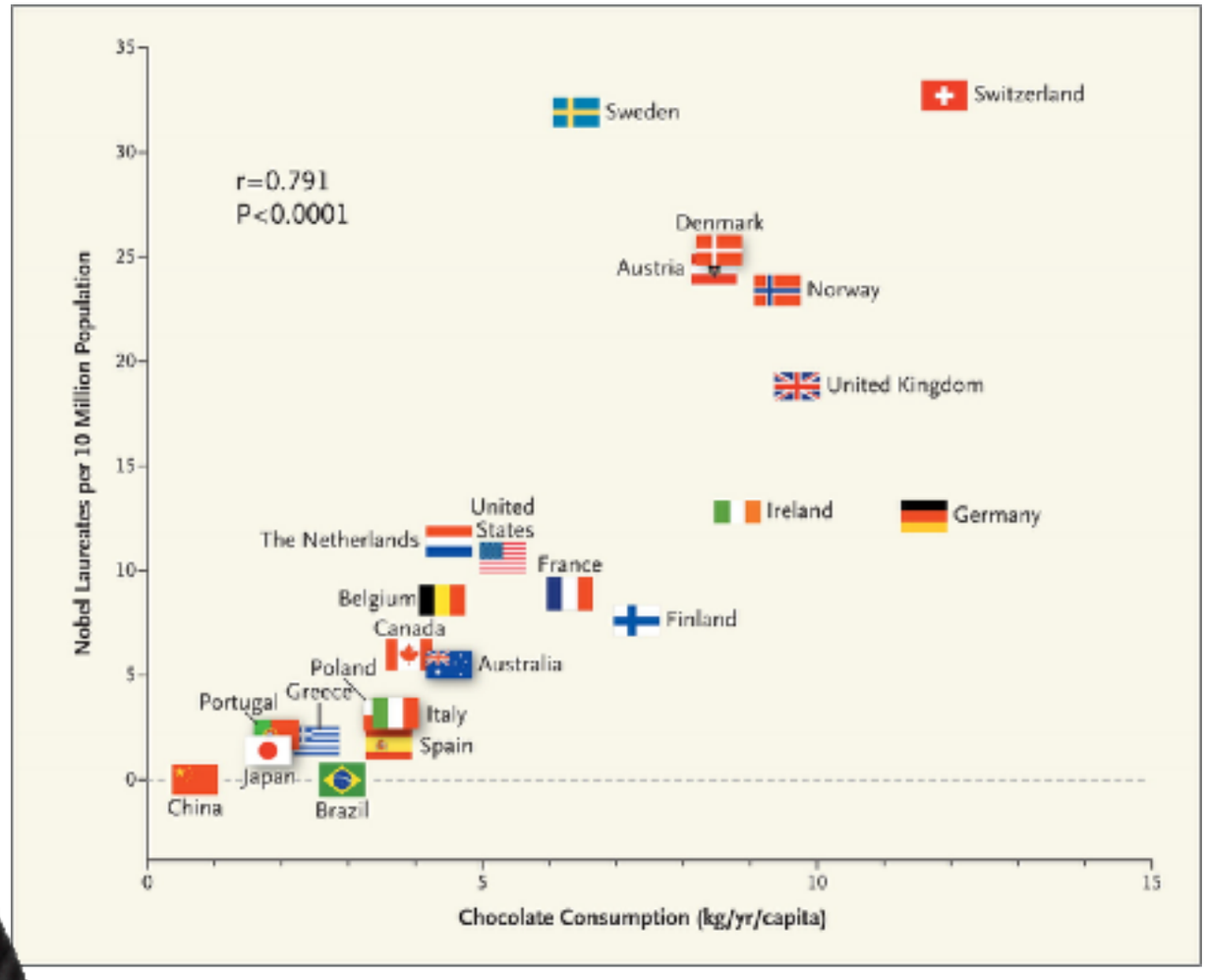

Correlation is *not* Causation

- When interpreting correlation data one common pitfall is to assume that the score on one variable *causes* a particular score on the other. This is wrong!

- Very often, common sense would suggest causation – e.g., time spent studying improves exam score. Again, you cannot make any claim about causation from correlation.

- There may be a third variable that we don't know about – in this case, maybe a positive attitude to studying.

- Additionally, spurious correlations can be found all over the place…