

The global context of drug trafficking:

A social network analysis of seizure data

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Transnational drug trafficking

- A current issue since... 1961 (Single Convention on Narcotic drugs)
- Two sides
 - Demand: consumption, drug-related crime
 - Supply: production, trafficking, retail
- What we know:
 - Relatively high levels of consumption, throughout the world (demand)
 - Estimates of potential production levels (cocaine and heroin)
 - Other drugs?
 - Trafficking routes and strategies
 - Evolution of many indicators
 - Most are available since the 1980s

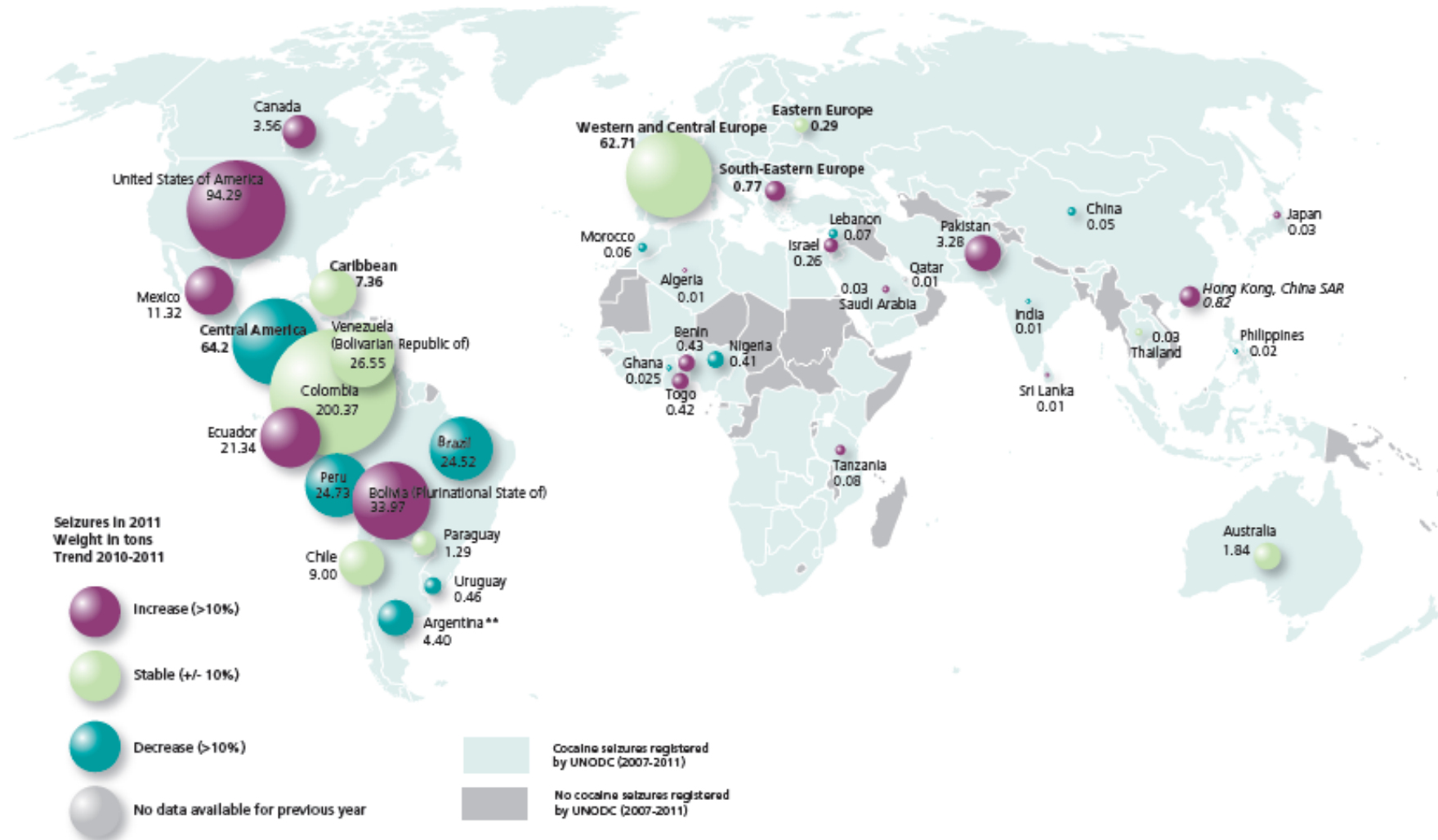
The leading data collection: *the Annual Reports Questionnaire*

- Extensive report
 - Part IV: Extent and patterns of and trends in drug crop cultivation and drug manufacture and trafficking
- Good coverage (if you add up several years...)
- Available data
 - Comprehensive *World Drug Report*
 - 'Raw' dataset (online)
- Example: Cocaine salts, Canada, 2011
 - Seizures: 3 tons
 - Prices: 81\$/g (retail), 35 502\$/kg (wholesale)
 - Purity: ?

World Drug Report 2011

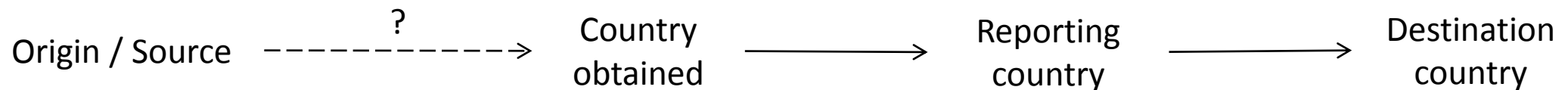
Seizures of cocaine, 2011

The present map includes data from countries and territories for which official seizure data are available and amount to more than 10 kgs.



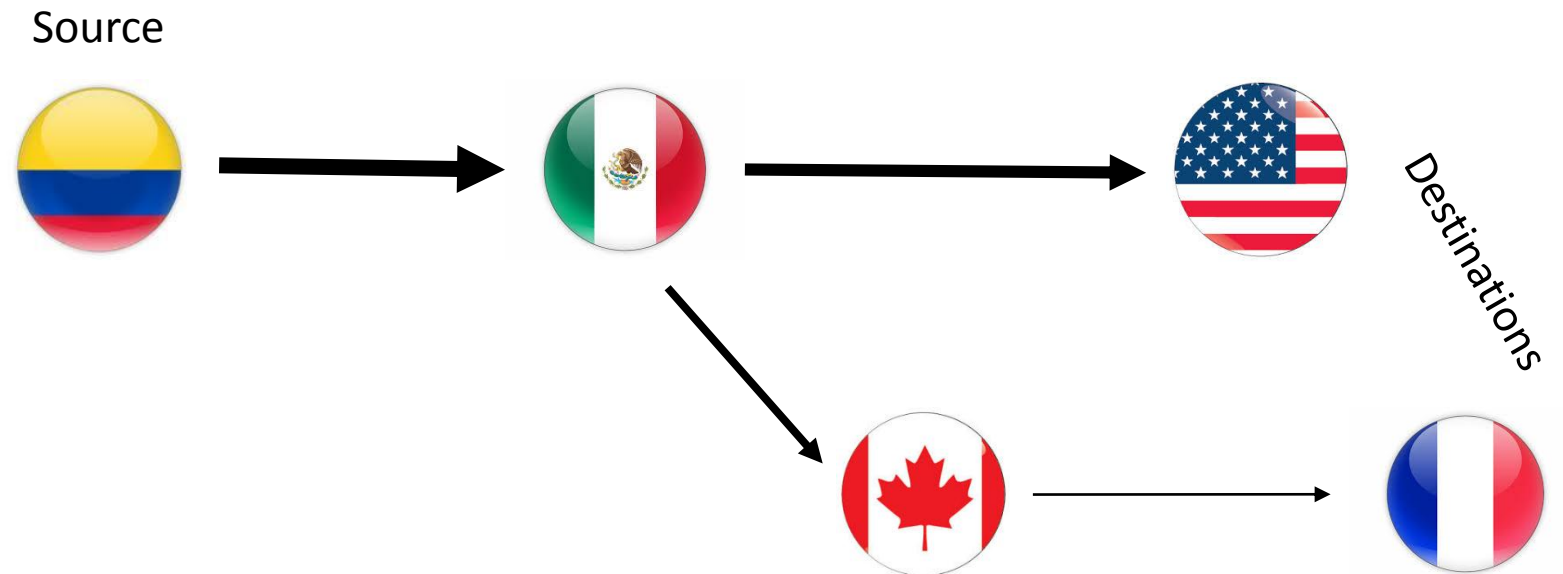
The neglected data collection: *Bi-annual seizure reports*

- Detailed information on seizure cases of significant quantities
 - Date
 - Transportation
 - Method of concealment
 - Countries involved
- 1998-2007: n = 85 265 seizures (n = 20 567 dyads/relations)
 - Now available online (until 2011)

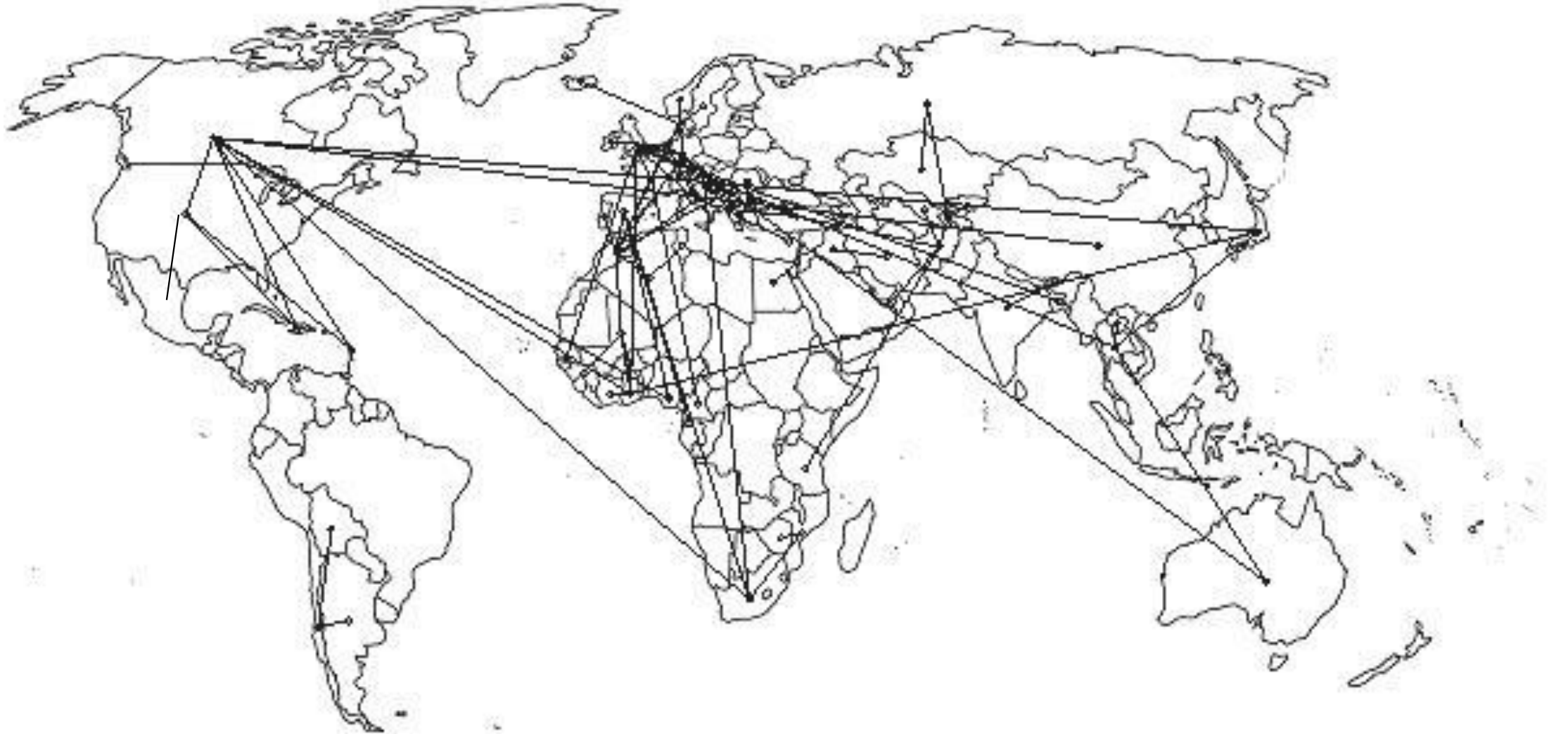


From dataset to network...

Sender	Receiver	Quantity
Colombia	Mexico	500 kg
Mexico	USA	100 kg
Mexico	Canada	5 kg
Canada	France	1 kg



The final result



Social Network Analysis

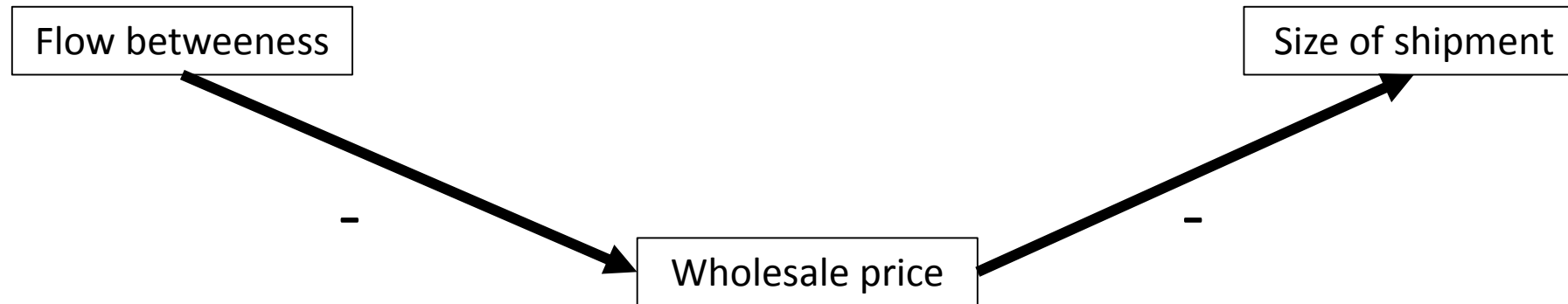
- Three levels of analysis:
 - Nodes (countries)
 - Networks
 - Relations
- Analysis:
 - Network: mostly descriptive
 - Network measure as explanations

Descriptive analysis (examples)

- Nodes:
 - Centrality: Indegree, Outdegree, Betweenness
- Networks:
 - Density:
 - Coffee: 21.8%
 - Cocaine: 3.2%
 - Heroin: 2.1%
 - Marijuana: 0.5%
- Relations: Estimates of flows between countries (valued relations)

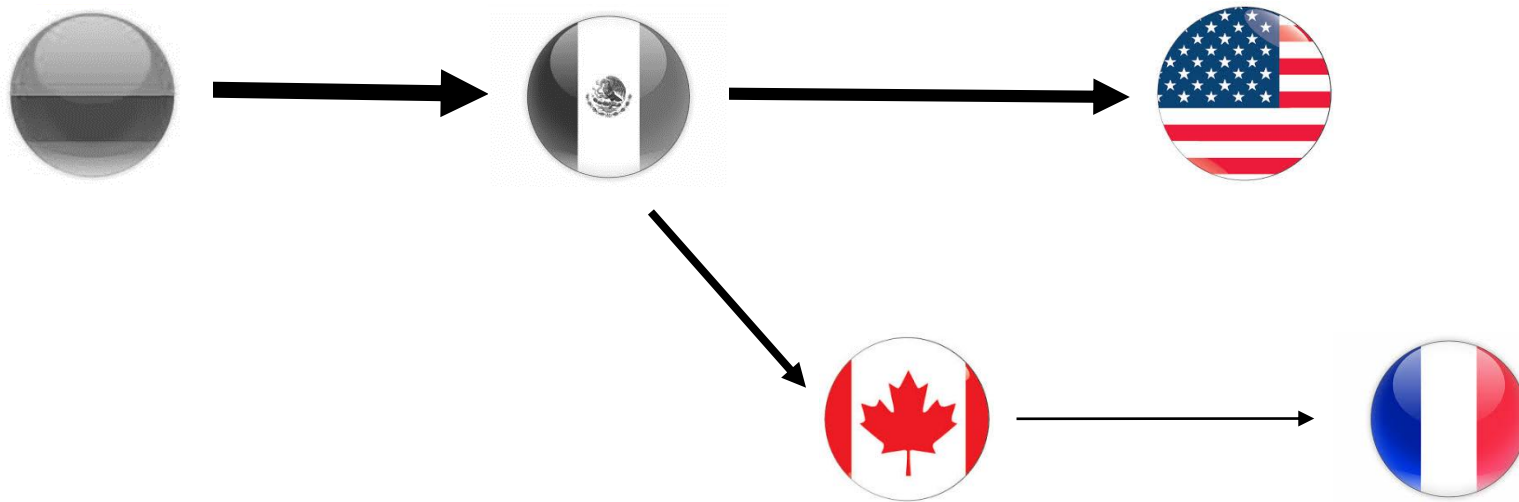
Networks as explanations (example)

- What is the relation between the position in the trafficking network, wholesale prices and the size of shipment? (cocaine and heroin)



Conclusion

- SNA adds to our knowledge of drug trafficking
 - A neglected dataset (Bi-annual seizure reports)
 - A different point of view (relations, not attributes)
 - A set of methodological tools
- Limitation: Seizures are reported on a voluntary basis
 - Complete network vs detailed reations



Thank you!

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