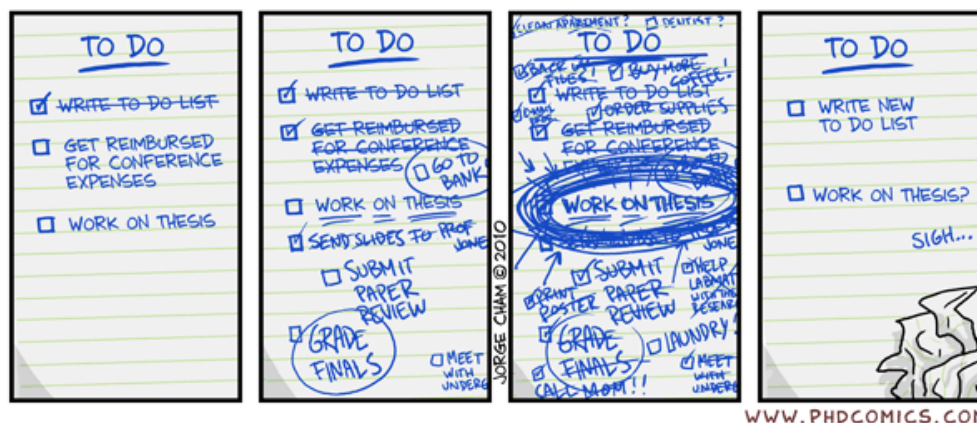


# Research Methods for Political Science

MT week 4, lecture 1

## Measurement error & The research plan

YOUR "TO DO" LIST



TRINITY COLLEGE DUBLIN  
COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH

THE  
UNIVERSITY  
OF DUBLIN

Dr. Thomas Chadeaux

Assistant Professor in Political Science

Thomas.chadeaux@tcd.ie

# Operationalization:

## From Abstract to Concrete

- “Democratic states tend to be more peaceful than non-democratic ones”
- Wars are increasingly frequent
- → operationalization: selecting observable phenomena to represent abstract concepts.

- Comparisons are accurate only to the extent that the indicators selected mirror the concept we intend them to measure.
- Operationalization almost always involves simplification
- What we compare are measures of indicators—not concepts. Hence choosing the right indicator is critical.
- Using multiple indicators

# Example (I)

Concept: *Parliamentary activity*



“The degree to which MPs make use of the instruments they have at their disposal.”

# Example (I)

- Variable: number of parliamentary questions asked
- Indicator: mean number of PQs per sitting day

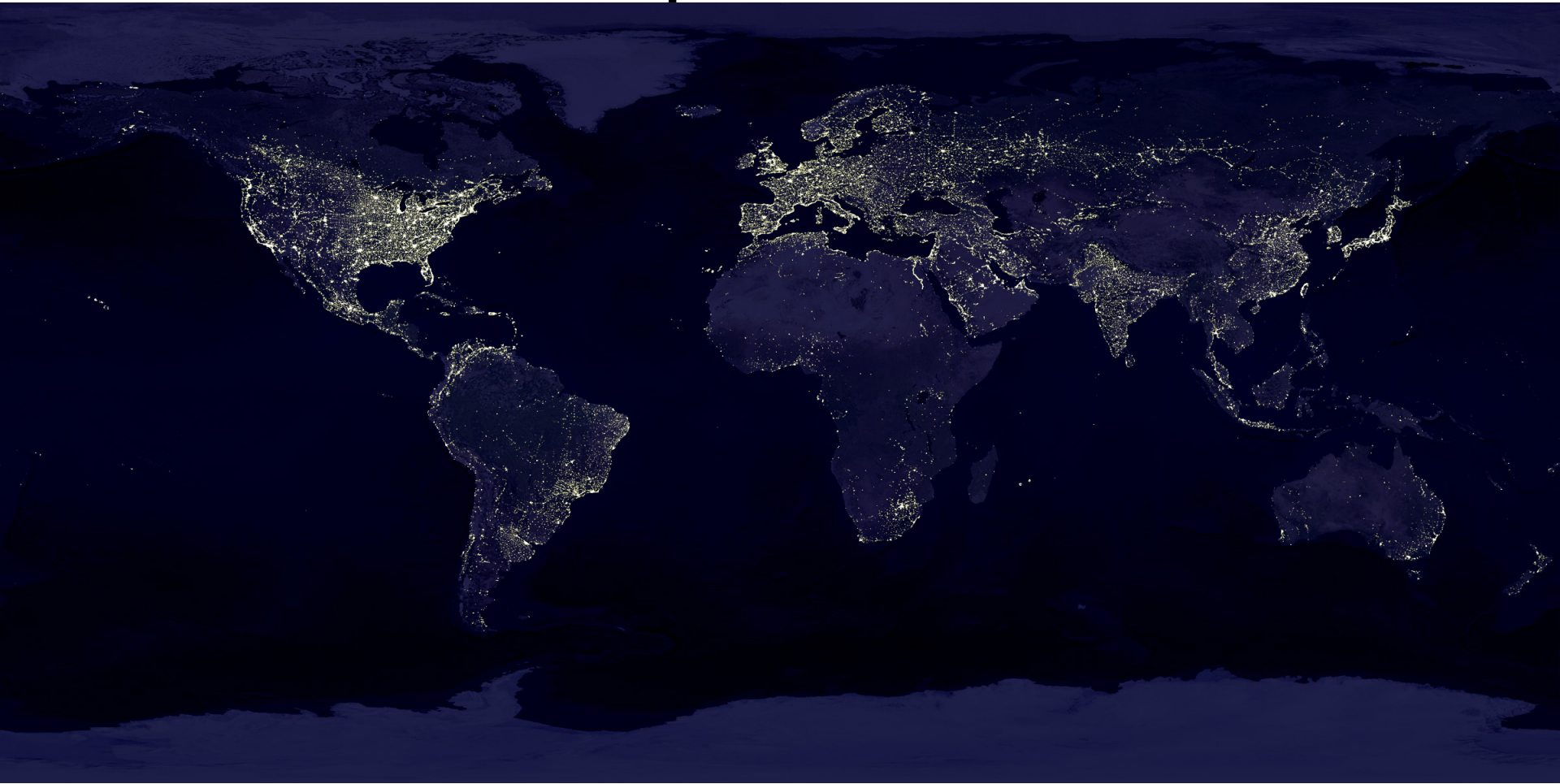
# Example (II)

- Freedom House *Freedom in the World 2010*
- Concept: 'freedom'
- Variables: political rights & political liberties
- Indicators: checklists of 10 & 15 indicators

# Be creative

- Often there is no pre-existing measure of your variable.
- E.g., GDP for quality of life/ standard of living
- E.g. birthplace for race
- Years of education for cognitive ability
- Environmental conditions and their effect on XYZ in year 1500 -> tree rings
- Etc.
- Be creative. E.g., wealth

# Example: Wealth





# E.g., displaced population

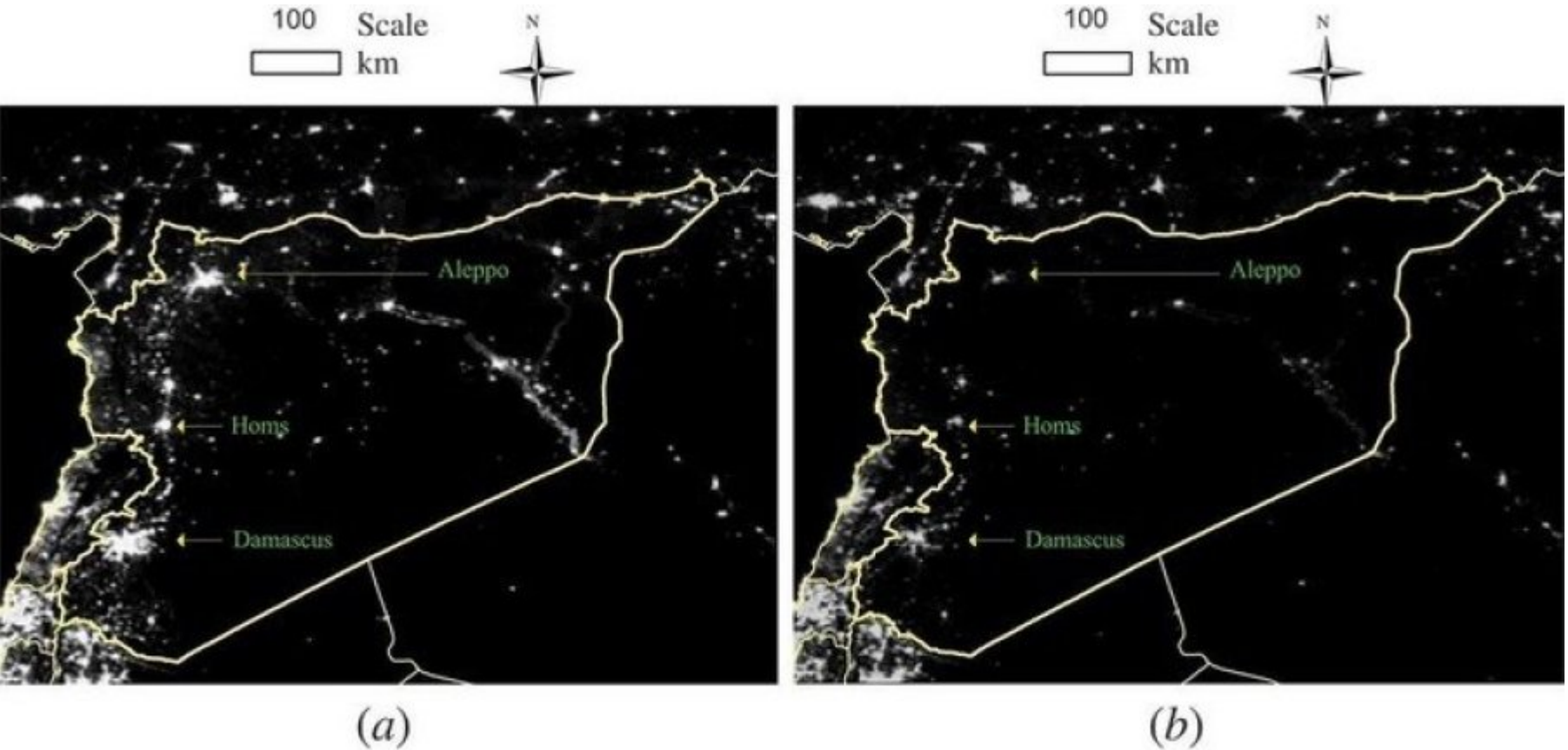


Fig.1 The night-time light monthly composites: (a) March 2011; and (b) February 2014.

# Conflict-related deaths per capita in pre-agrarian societies



# Anger

# Political Culture

- Surveys
- Indicators of migrational streams at time of initial settlements.

- Political interest
- Hegemony
- Bicameralism

# **THREATS TO OPERATIONALIZATION**

# Measurement error



# Measurement error

- E.g., historical casualties in war
- Shocks (uncontrolled for):
  - GDP changes suddenly
- Interpretation of question
  - E.g., are you happy
- Selection bias. E.g.,
  - Effect of Treaties
  - Unemployment / out of job market



# Two main types of measurement error

- Systematic -> affects validity
- Random -> affects reliability

# Validity



# Validity

- The extent to which our measures and/or cases correspond to the concepts they are intended to reflect
- *Do we really measure the concept or something else?*

# Validity

- Must be:
  - Appropriate: number of teachers in city schools is inappropriate to measure quality of public education
  - Complete: student/teacher ratio is appropriate, but incomplete: quality of education is also a function of libraries, facilities, etc.

# Internal vs external validity

- Internal validity: are we measuring what we think we are measuring?
- External validity: are our results generalizable?
  - Particularly a problem with experiments / surveys
  - Selection effects

# Reliability



# Testing reliability

- Inter-coder reliability
- Test-retest reliability
- Inter-method reliability
- Internal consistency reliability

# Valid but unreliable





# Reliable but not valid

