

Some potential applications of

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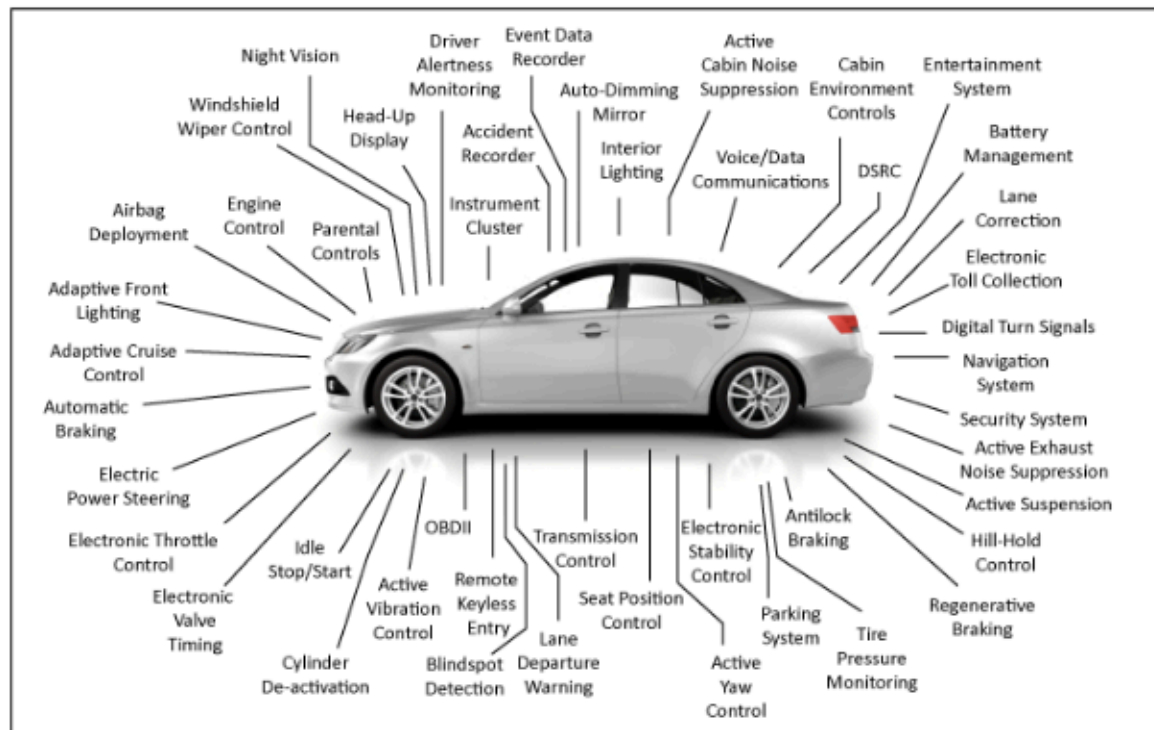
Smart meters

- (How) do energy prices affect usage?
- Characteristics of successful renewables coops



Travel data

- How are different types of people affected differently by travel restrictions?
- Cognitive psychology of attention in cars



Source: The Clemson University Vehicular Electronics Library



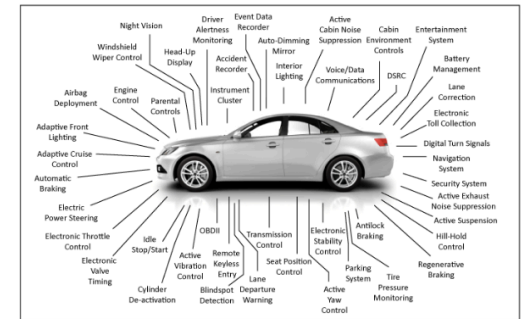
Device usage

- Effect of lockdown measures on different types of people
- Information flow of news through networks



Linked data!

- The real power of the approach is in **linking different traces & surveys together**
- Early behavioral symptoms of disease (e.g. ALS, dementia)
- Geospatial aspects of opinion formation
- Causes and effects of loneliness
- ...

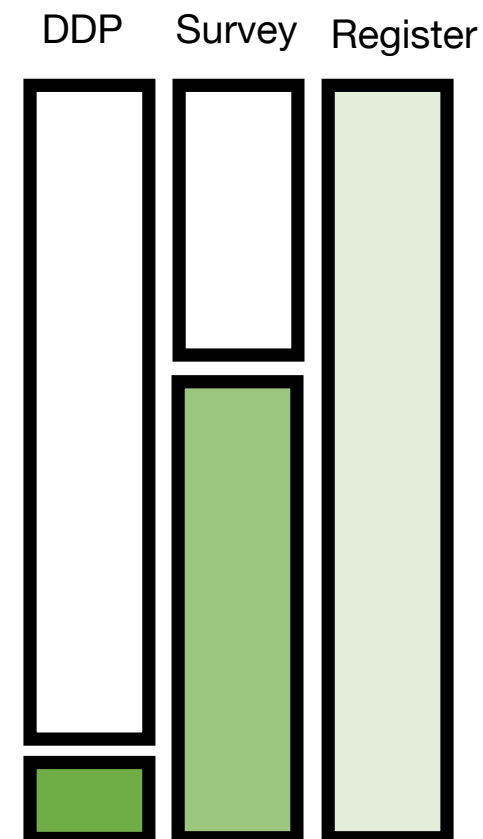


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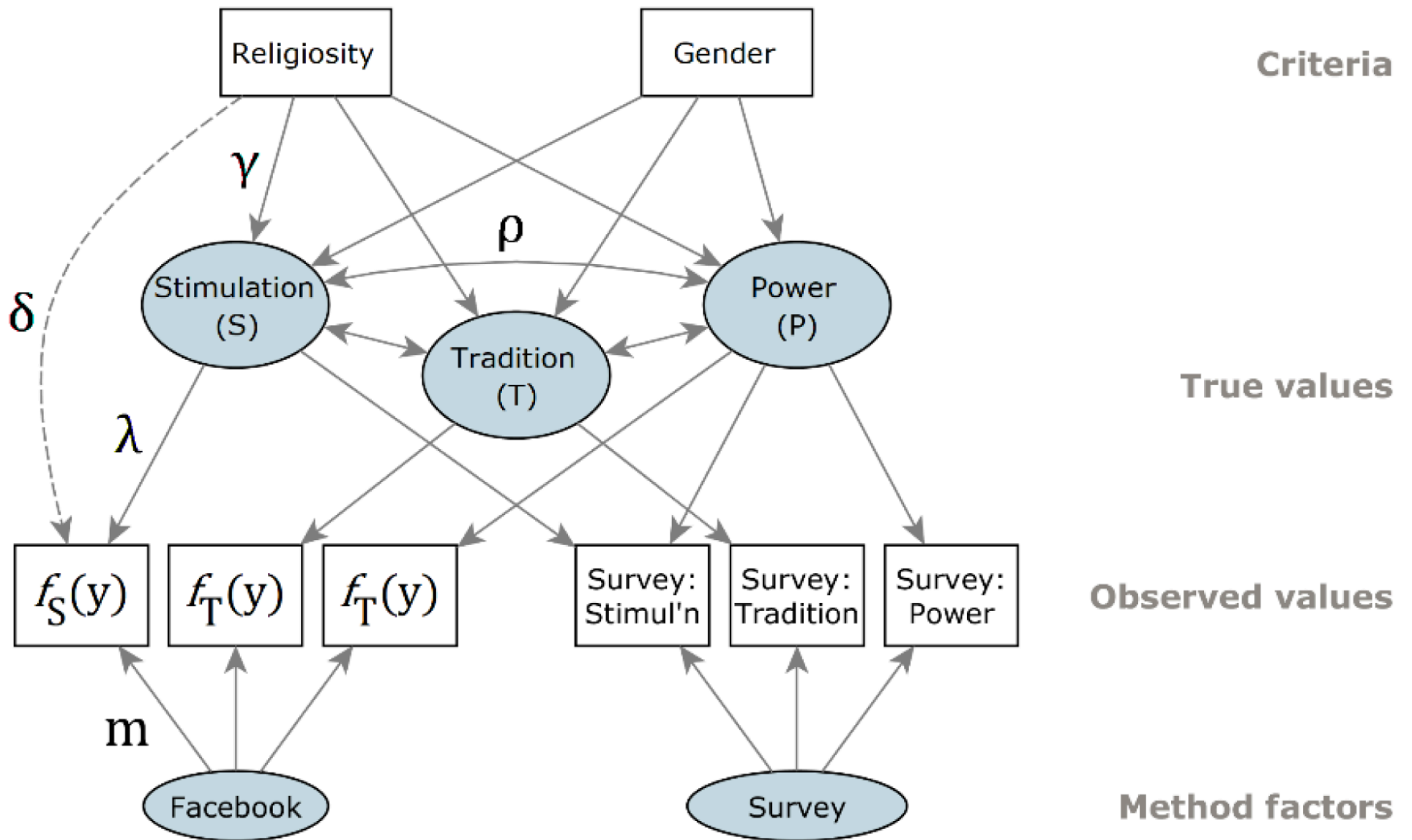
The nonresponse problem

- Expect about **10% *response***
- Usually a big problem, because no good auxiliary information to deal with bias
- Through linkage with survey, good auxiliary information



“The three key issues are: (1) data linking including informed consent for individual-level studies, (2) methodological and ethical issues impeding the scientific (re)analysis of linked survey and digital trace data sets, and (3) developing conceptual and theoretical frameworks tailored toward the multidimensionality of such data.”

Stier et al. 2019, “Integrating Survey Data and Digital Trace Data: Key Issues in Developing an Emerging Field”, *SSCR*, 38(5).



Promise of data donation approach

- Answer new questions that could not be answered otherwise:
 - Historical
 - Behavioral
 - Sensitive
- Linkage improves measurement
- Survey-based approach improves methodological quality