

# gesis

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## Data sharing as rational choice in a Public Goods Game

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# Research question

Which economic factors can increase data sharing?

... based on the Public Goods Theory

# Rational behavior of researchers

Costs & benefits of data sharing (Moffitt, 2007; Borgman, 2012)

Competition for grants, jobs, publication (Borgman, 2012)

Lack of time and funding for sharing data (Tenopir et al., 2011)

Reputation economy, payoffs in form of recognition (Fecher et al., 2017)

Insufficient incentives (Mueller-Langer & Andreoli-Versbach, 2018)

Underinvestment and strategic delays when mandatory (Mueller-Langer & Andreoli-Versbach, 2018)

# Data Sharing as a Public Goods Game

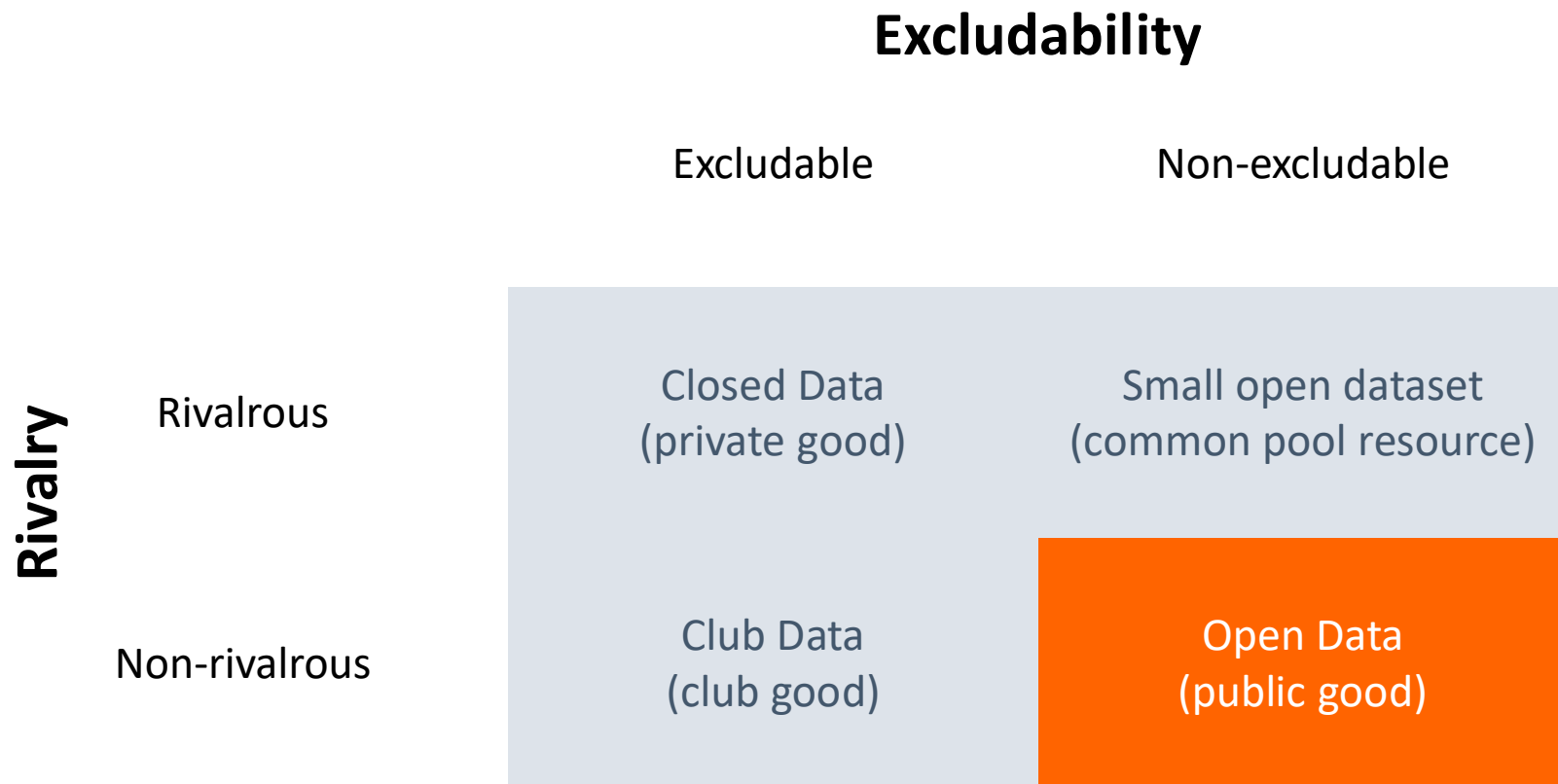
“Publicly funded research data are a public good, produced in the public interest, which should be made openly available with as few restrictions as possible in a timely and responsible manner.”

Source: <http://www.rcuk.ac.uk/research/datapolicy/>

“The value of data lies in their use. Full and open access to scientific data should be adopted as the international norm for the exchange of scientific data derived from publicly funded research”

Source: National Research Council (1997)

# What type of goods are research data?



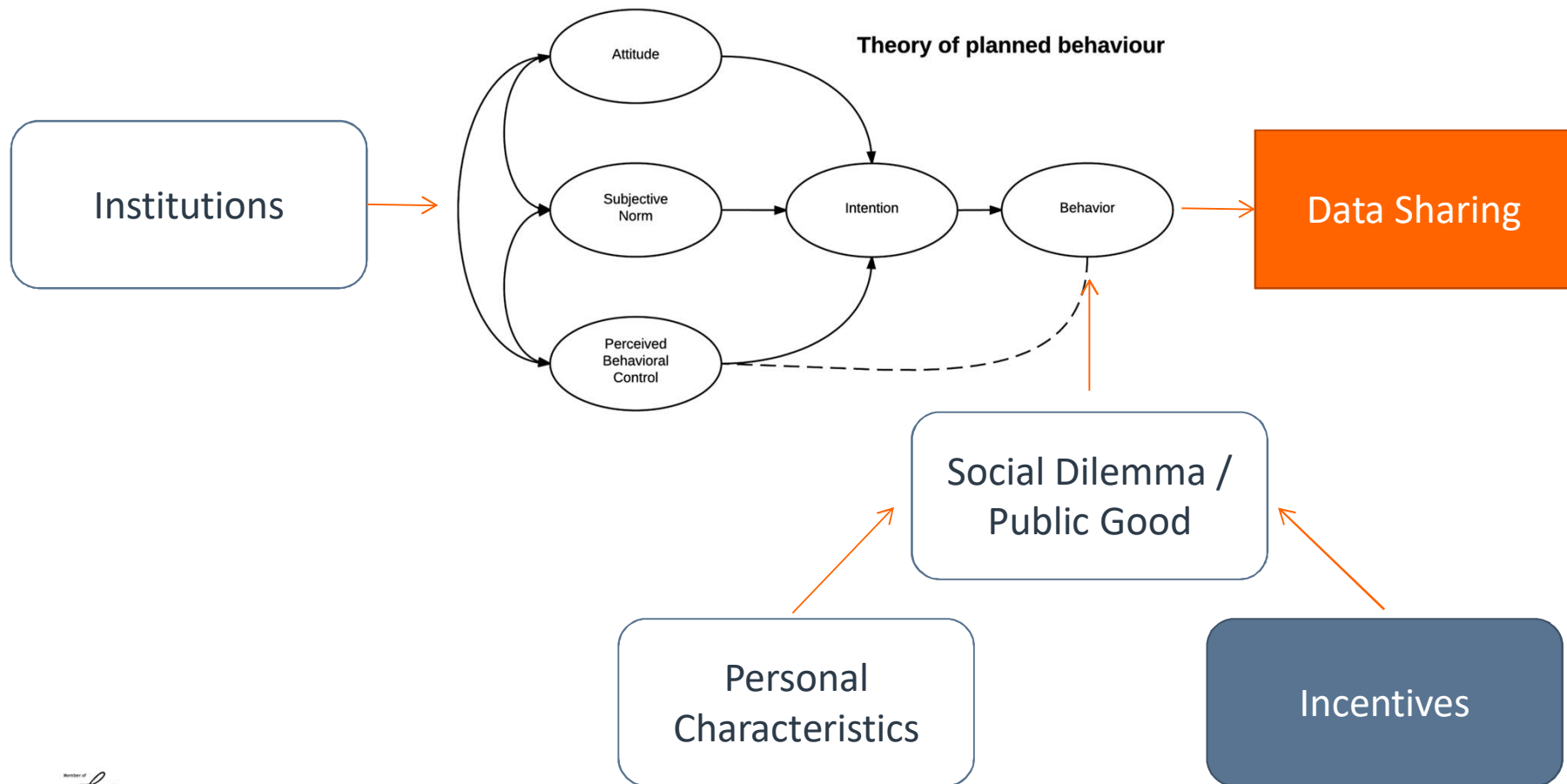
# What type of goods are research data?



## We expect data sharing to increase when...

- ... **benefits are high and costs low** (c.f., McGinty & Milam, 2013)
- ... **it is rewarded and non-sharing is punished** (c.f., Andreoni, Harbaugh, & Vesterlund, 2003)
- ... **players communicate** (Ostrom, Walker, & Gardner, 1992) and **trust each other** (Andreoni & Miller, 1993)
- ... **number of players is small** (Ledyard, 1995)
- ... **framed positively** (c.f., Willinger & Ziegelmeyer, 1999)

# Theories explaining data sharing





## Next steps

- Conjoint experiment on decision to share data
- Scenarios are presented that can vary in
  - ▶ Rewards for data sharing
  - ▶ Punishment for non-sharing
  - ▶ and more...
- Strongest factors and interactions can be identified
- Link to individual characteristics in background questionnaire
- With a sample such as used by Akdeniz/Zenk-Möltgen actual behavior could be observed

## Contributions so far...

- Focus on economic aspects
- Build a theory-driven framework of different incentives for data sharing and their mechanisms
- Set foundation for further (quasi-experimental) research on economic factors in data sharing

Thank you for your attention

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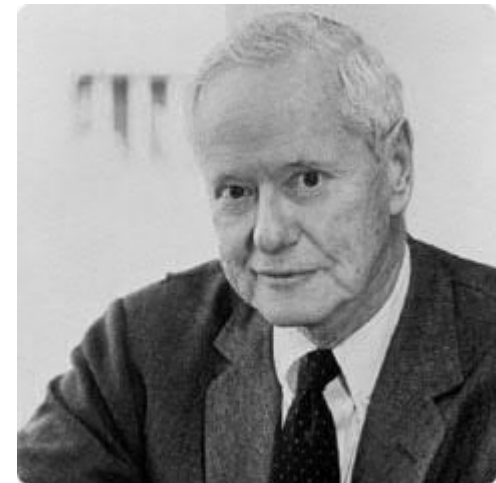
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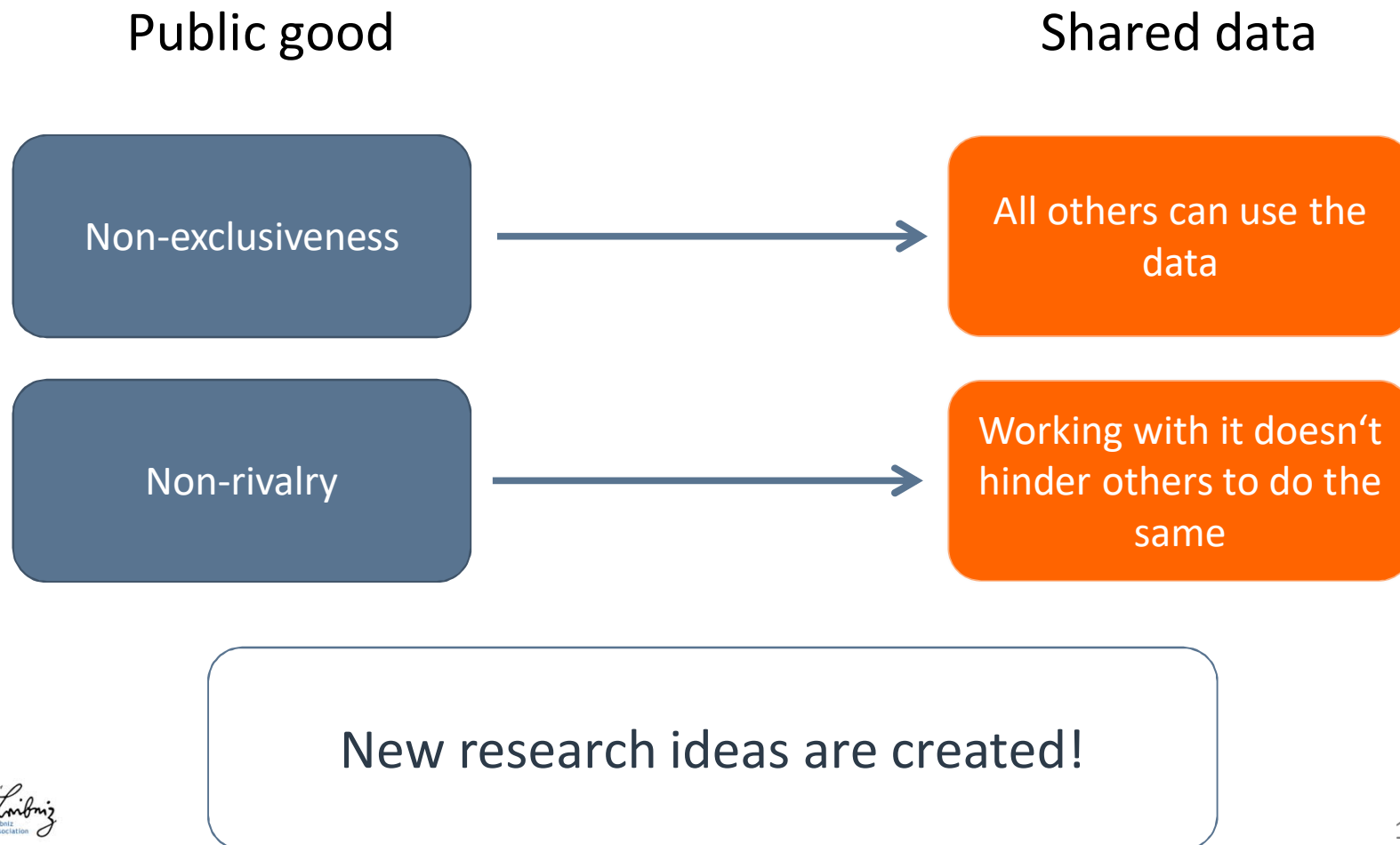
## Mertonian norm

**communalism:** all scientists should have common ownership of scientific goods (intellectual property), to promote collective collaboration; secrecy is the opposite of this norm (Merton, 1973).

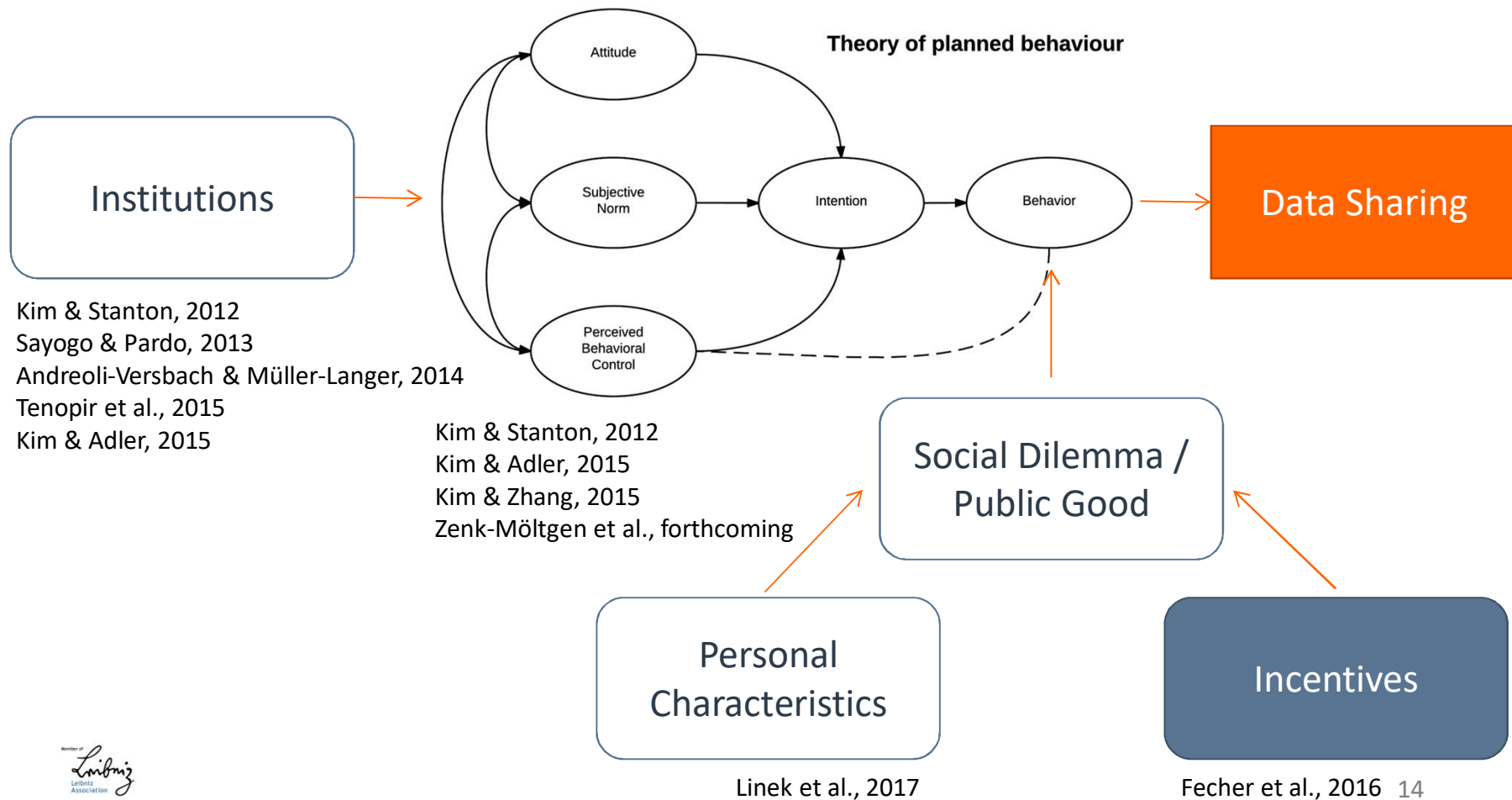


Robert K. Merton, 1910-2003

# Is Data Sharing a Public Goods Game?



# Theories explaining data sharing



## We expect data sharing to increase when...

**... benefits are high and costs low (c.f., McGinty & Milam, 2013)**

- Provide infrastructure
- Ensure sufficient grants for RDM
- Reward data sharing

## We expect data sharing to increase when...

**... it is rewarded and non-sharing is punished (c.f., Andreoni, Harbaugh, & Vesterlund, 2003)**

- Rewards for data sharing are widely discussed
- Non-sharing is punished in the UK
- Rewards and punishment work best in combination



## We expect data sharing to increase when...

... **players communicate** (Ostrom, Walker, & Gardner, 1992) and **trust each other** (Andreoni & Miller, 1993)

- Promote data sharing culture
- Get researchers to talk about sharing
- Data and data sharing should be more in focus of the scientific discussion

## We expect data sharing to increase when...

**... number of players is small (Ledyard, 1995)**

- Data sharing in relatively small research fields vs. large fields?
- Promoting data sharing in small research fields may have immediate positive effect

## We expect data sharing to increase when...

... **framed positively** (c.f., Willinger & Ziegelmeyer, 1999)

- Focus on the gains of data sharing, emphasize individual gain
- Do not focus on costs, ensure sufficient grants for RDM

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