Q 2016
European Conference on Quality in Official Statistics

Big Data: from noise to evidence

Session 40

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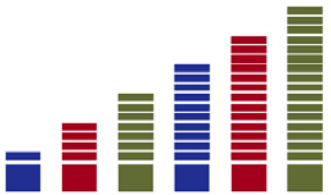
Key Points

- Big Data will require changes in the way official statistics are produced
- Implications for quality control and monitoring - relationships with data providers
- Modification to ES-CoP
- Adaption of role of ESGAB



Theory, operationalisation and empirical generalisation

Theory - Hypotheses

Operationalisation - Observations

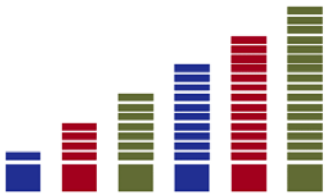
Empirical generalisation – ‘Reality’

Theory and Data

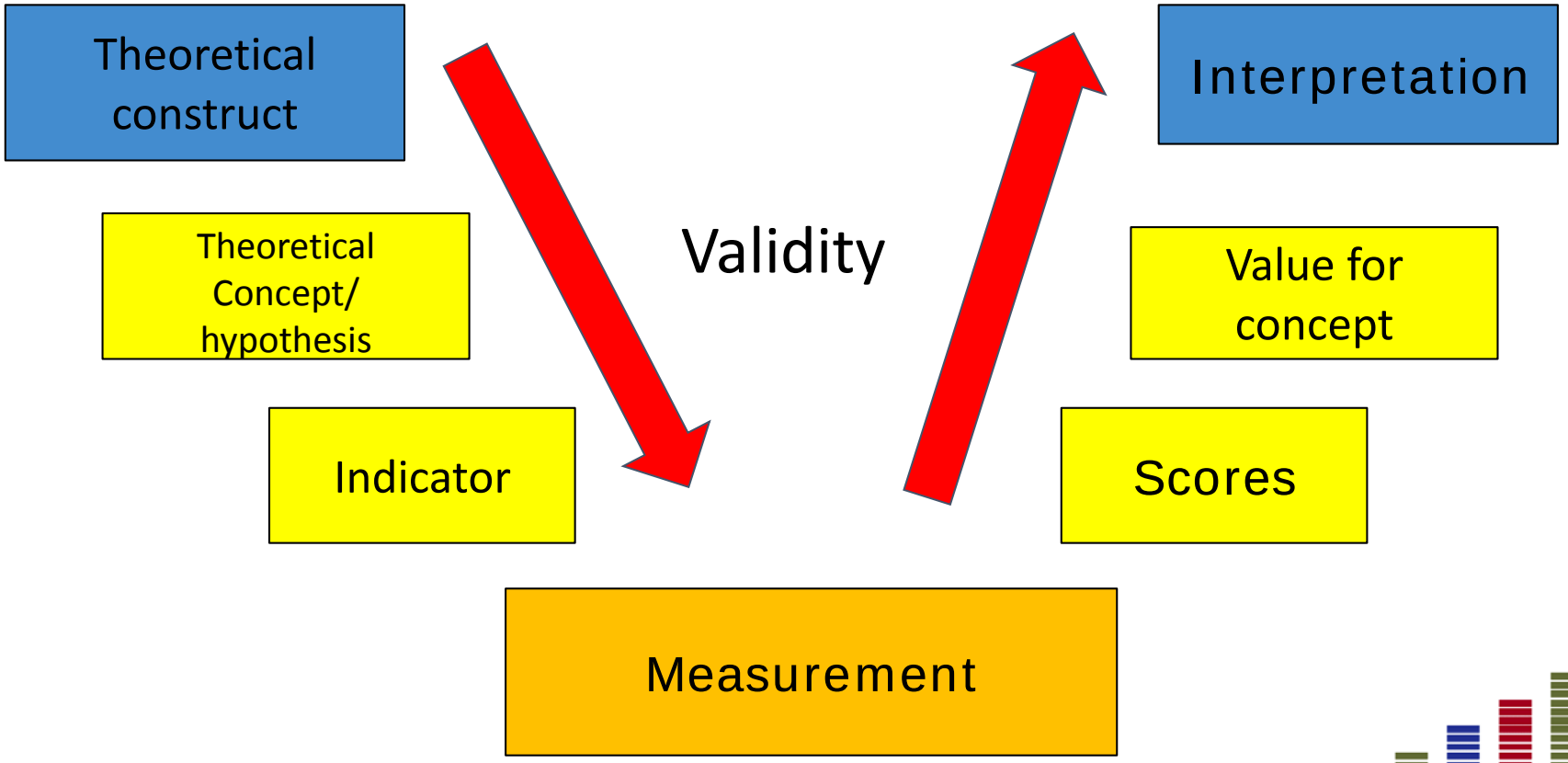
Theory: idea of reality involving concepts

How do we know that the data are **valid** i.e. a 'true/genuine' reflection of reality?

Data: reality as perceived and measured



Logic of traditional socio-economic/statistical research process



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From Big Data to concepts: from noise to valid statistics

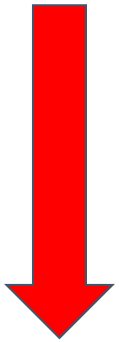
Big Dataset: Noise

Traditional dataset

Scores for specific items

Correlation

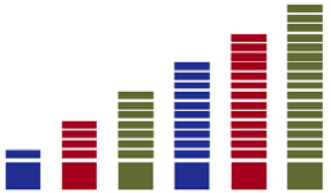
Scores for well known variables



Concept based on Big Data

Existing concept

Similar



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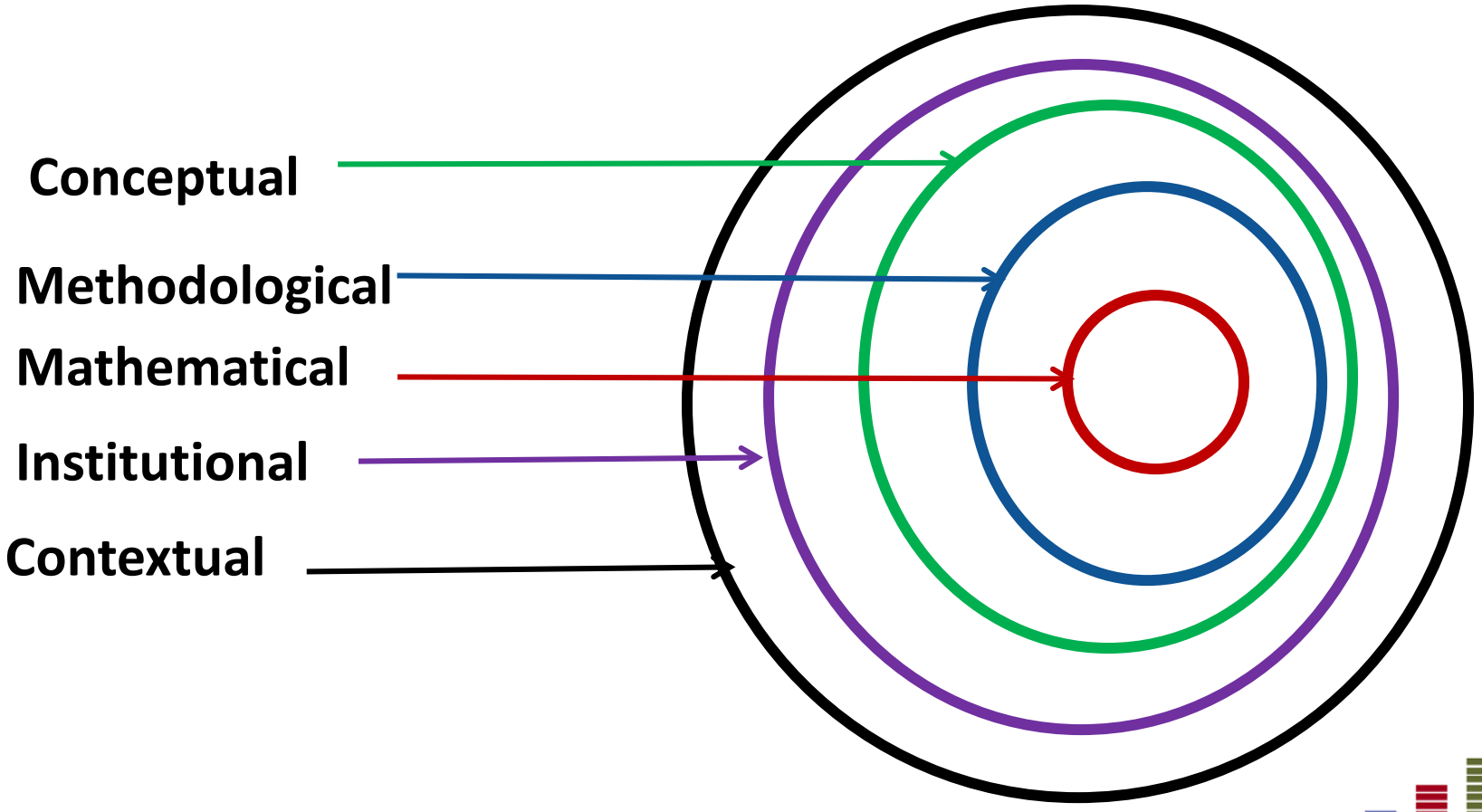
Quality levels in statistics



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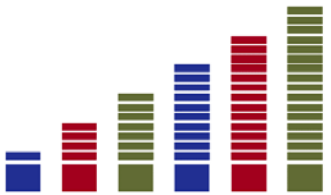
Big Data and compliance to ES Quality and CoP requirements

Conceptual quality – Need to prove that Big Data based variables are valid representations of agreed/accepted concepts

Institutional quality – Adequacy of governance structures of the institutions handling Big Data-based variables

Contextual quality – Compliance with CoP and acceptance by highest authorities



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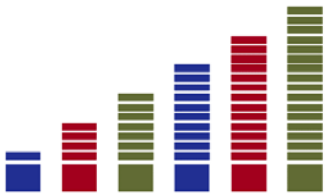
Implications for ES-CoP and ESGAB

Conceptual quality – analytical work needed to assure 'validity' of measures/data i.e. ex post validation

Institutional quality – expansion of ES-CoP principles for big data handlers particularly regarding cooperation with producers

Contextual quality- ESGAB to assess compliance with governance structures and revised/updated ES-CoP