# The Replication Crisis
## Language Sciences and Beyond

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2024-04-12

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# rbbt::bbt_update_bib("replication_crisis.qmd")
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## Learning Objectives

Today we will learn...

- the replication crisis
- replication in language sciences
- requirements for replication

## Resources

- this lecture covers

(**sonning_replication_2021?**)

- introduction article of a special issue of the Journal *Linguistics*
  - *The replication crisis: Impications for linguistics*
- contains several articles on the topic, some of which we'll read later

# 1 Replication crisis

# 2 The current stat of quantitative linguistics

## 2.1 Kuhn's structure of scientific revoluations

- Thomas Kuhn's *The Theory of Scientifc Revoluations* (1962)
  - based on socio-historical observation
  - the evolution of scientificy theory is cyclical
  - crisis leads to revolution
- also applies to research methodology

### 2.1.1

Three recurrent phases:

1. **normal science**
   - little controversy over theoretical underpinnings
   - researchers work on small problems within a theory

2. **crisis**
   - contradictions between theory and evidence
   - questioning of conventionally accepted theory

3. **revolution**
   - overthrowing of previous norms in favour of a new paradigm
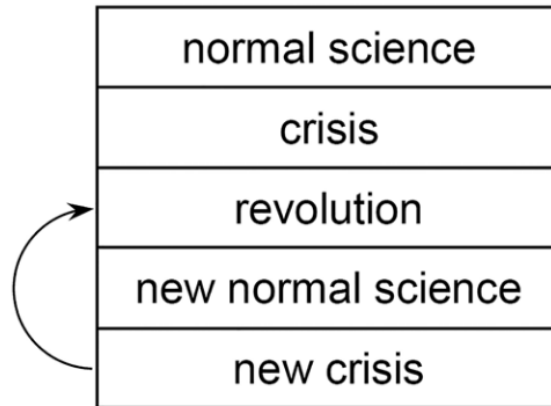   - leads to new normal science

Figure 1: Download GitHub repositiory

## 2.2 Previous cycles of statiscal analyses

- proprietary, point-and-click software (e.g., SPSS)
    - move to open source programming languages (e.g., R, Python, Julia)
- ANOVAs
- Linear regression
- Linear mixed models
    - random-intercepts only models
    - maximal models
    - parsimonious models
- Bayesian

## 2.3 Previous cycles stages: methodology

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**Important terms**

**References**