

I also want a reproducibility crisis

A perspective from the humanities

Singapore, 22 October 2018



REPRODUCIBILITY:
research integrity but much,
much more

Miguel Escobar Varela, Ph.D.

Assistant Professor
Department of English Language and Literature, NUS
Academic Advisor on Digital Scholarship, NUS Libraries
@miguelJogja

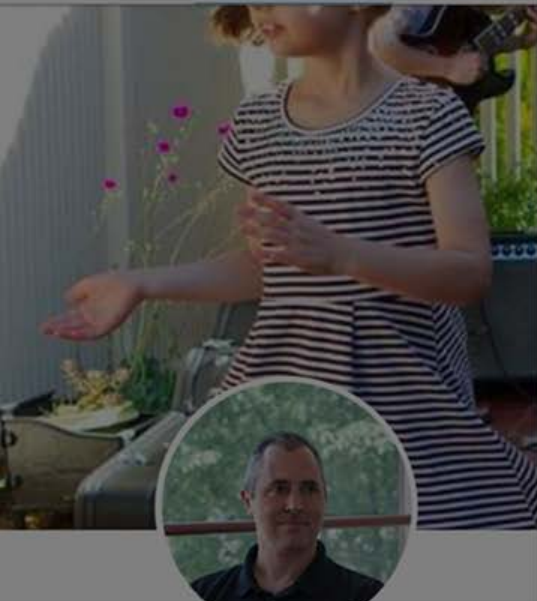
A lively debate

“We defend the view that replication is entirely possible in the humanities: it meets all the criteria that have been identified for biomedical, natural and social science research. The uniqueness of many research objects in the humanities does not present an obstacle to this.”

Rik Peels & Lex Bouter “The possibility and desirability of replication in the humanities” (2018)

“Quality criteria are crucially different in the humanities and the sciences [...] The coexistence of multiple valid answers and the value of their interaction disqualify replication as a viable quality criterion [...]”

Sarah de Rijcke & Bart Penders, “Resist calls for replicability in the humanities” (2018)



Brian Nosek

@BrianNosek

Executive Director @ Center for Open Science, Professor @ University of Virginia, and co-Founder of Project Implicit.

📍 Charlottesville, VA

🌐 briannosek.com



Brian Nosek @BrianNosek · Aug 5

For replication, I agree that two scholars can come to different interpretations w/out it necessarily meaning there is a problem. But, it "could" mean there is a problem. And, understanding is still advanced by conducting replication, identifying when differences emerge, and ->

💬 1 🔄 1 ❤️ 16



Brian Nosek @BrianNosek · Aug 5

then studying how the two scholars arrived at different conclusions. Insight gained from that exercise can help reveal the context, assumptions, and prior experience/insight they each bring to understanding the phenomenon. That is, replication in qual is theoretically generative

💬 1 🔄 1 ❤️ 14

4 more replies



Mante Nieuwland @mante_nieuwland · Aug 5

Replying to @BrianNosek

Disappointing coming from someone heading a group that "analyses the politics and practices of research evaluation in connection with contemporary forms of governance of research and scholarship"

💬 2 🔄 1 ❤️ 1



Daniël Lakens @lakens · Aug 5

Wonder if @sarahderijcke has something to say - I agree this sounds like an extremely questionable view on the humanities - in any case one I don't want to belong to as a psychologist.

💬 2 🔄 1 ❤️ 1



Daniël Lakens @lakens · Aug 5

Also @b_penders - It's pretty clear: If you are an empirical science, you can either reproduce something, or predict something (De Groot, 1961). There are non-empirical sciences in humanities - but please don't talk for the empirical ones.



Are the criteria for quality
different in the
humanities?

Where

~~Why~~ do we need reproducibility?

Three cultures: sciences, social sciences and the humanities

“Most intellectual efforts consist of three components: (1) a set of unquestioned premises that create preferences for particular questions and equally particular answers, (2) a favored collection of analytical tools for gathering evidence, and (3) a preferred set of concepts that are the core of explanations”

Kagan (2009)

Variations across 9 dimensions (Kagan, 2009)

- 1 The **primary questions** (and degree to which prediction, explanation, or description are important).
- 2 The **sources of evidence** (and the degree of control over conditions in which evidence is gathered.)
- 3 The **vocabulary used** to present observations, concepts, and conclusions.
- 4 The degree to which **social conditions / historical events** influence the questions
- 5 The degree to which ethical values penetrate the questions and conclusions
- 6 The degree of dependence on external financial support
- 7 The probability that the scholar works alone, with one or two others, or as a member of a large team
- 8 The contribution to the national economy
- 9 The criteria members of each group use when they judge a body of work as elegant or beautiful

Dimension	Natural Scientists	Social Scientists	Humanists
1 Primary interests	Prediction and explanation of all natural phenomena	Prediction and explanation of human behaviors and psychological states	Understanding of human reactions to events and the meanings humans impose on experience as a function of culture/history/life-history
2 Primary sources of evidence and control of conditions	Experimentally controlled observations of material entities	Behaviors, verbal statements, biological measures, gathered under conditions that cannot always be controlled	Written texts and human behaviors gathered under conditions of minimal control

Valuing contributions

All disciplines value contributions that are either *correct, valid, coherent* or *right*.

Four common referents:

- consensual observation
- logical/ mathematical consistency
- meaning coherence of semantic networks
- a compelling feeling

Most natural scientists trust only the first two, social scientists the first and third, while humanists rely on the last two (Kagan 2009, 40).

To each, its own crisis

- consensual observation
- logical/ mathematical consistency



Reproduction studies, widely available data and protocols

- meaning coherence of semantic networks
- a compelling feeling



Traingulation studies. More discussions on method. Better public communication.



Acknowledgment of value in different methods and approaches.

Data-driven, quantitative humanities



Figure 7.4. Usage of the word *beautiful* in British and American novels by decade

From Jockers
(2013),
Macroanalysis,
p 109.

A replication crisis is coming to the digital humanities

- Incentives
- Pressure to show digital methods are useful
- Human nature

Six trends that increase the likelihood that research is false

1. The smaller the studies
2. The smaller the effect sizes
3. The greater the number and the lesser the selection of tested relationships
4. The greater the flexibility in designs, definitions, outcomes, and analytical modes
5. The greater the financial and other interests and prejudices
6. The hotter a scientific field (with more scientific teams involved)

Ioannidis (2005)

The reproducibility opportunity

Better discussions on method, more nuanced vocabulary.

Better research.

Thank you.

@miguelJogja

Different kinds of humanities

Quantitative
and empirical

Interpretive
and situated

Not the only solution

“Uncritical pursuit of reproducibility as an overarching epistemic value is misleading and potentially damaging to scientific advancement” (Leonelli, 2018)

By contrast, in studies that are carried out in highly idiosyncratic environmental conditions and/or on perishable and rare samples which do not lend themselves to statistical analysis, it is the very uniqueness and irreproducibility of research conditions that makes the resulting data valuable as sources of evidence. In such cases, a focus on enhancing reproducibility turns out not to be the best way to foster high-quality, robust research outcomes. Rather, it is the well-informed analysis of how reliable and meaningful data are obtained through irreproducible research practices that increases the sophistication of research methods and of the ways in which they are documented and disseminated.

Singapore statement

Honesty in all aspects of
research

Accountability in the conduct
of research

Professional courtesy and
fairness in working with
others

Good stewardship of
research on behalf of others