

# Setting the Record Straight

The dynamics of  
public critique  
and rebuttal in  
scientific publication

Peter McMahan  
[peter.mcmahan@mcgill.ca](mailto:peter.mcmahan@mcgill.ca)  
Daniel A. McFarland  
[mcfarland@stanford.edu](mailto:mcfarland@stanford.edu)

# Introduction



## Journal publication

- ⋮ Part of the formal record of contemporary scientific discovery
- ⋮ Legitimizes scientific findings through institutionalized processes (peer review, editorial curation, distribution, ...)

## Communicative practice

- ⋮ The forms and institutions of journal publication structure scholarly knowledge
- ⋮ E.g. review articles, disciplinary norms/venues, special issues, etc.

# Introduction

## Critique and rebuttal

- ⋮ AKA *reply and response, comment and reply, ...*
- ⋮ Formalized institutional practice of contestation
- ⋮ Journals publish directed critique of an existing article simultaneously with a rebuttal from the original author(s)

*Comment on Ruiter and De Graaf, ASR, April 2006*

### Influential Cases in Multilevel Modeling: A Methodological Comment

**Tom Van der Meer,<sup>a</sup> Manfred Te Grotenhuis,<sup>b</sup> and Ben Pelzer<sup>b</sup>**

A large number of cross-national survey datasets have become available in recent decades. Consequently, scholars frequently apply mul-



American Sociological Review  
75(1) 173–178  
© American Sociological  
Association 2010  
DOI: 10.1177/0003122409359166  
<http://asr.sagepub.com>  
SAGE

**critique**

### National Context, Religiosity, and Volunteering: Results from 53 Countries

Stijn Ruiter  
*Radboud University Nijmegen*

Nan Dirk De Graaf  
*Radboud University Nijmegen*

*To what extent does the national religious context affect volunteering? Does a religious environment affect the relation between religiosity and volunteering? To answer these questions, this study specifies individual level, contextual level, and cross-level interaction hypotheses. The authors test the hypotheses by simultaneously studying the impact of religiosity of individuals, the national religious context, and their interplay on volunteering while controlling for possible confounding factors both at individual and contextual levels. Based on multilevel analyses on data from 53 countries, frequent churchgoers are more active in volunteer work and a devout national context has an additional positive effect. However, the difference between secular and religious people is substantially smaller in devout countries than in secular countries. Church attendance*

**original article**

*Reply to Van der Meer, Te Grotenhuis, and Pelzer*

### National Religious Context and Volunteering: More Rigorous Tests Supporting the Association

**Stijn Ruiter<sup>a</sup> and Nan Dirk De Graaf<sup>b</sup>**

When testing hypotheses, it is important to carefully scrutinize the data for the possibility of influential cases, especially in analyses

the original association. Second, and more importantly, after a more rigorous and less arbitrary method for dropping cases—by simul-



American Sociological Review  
75(1) 179–184  
© American Sociological  
Association 2010  
DOI: 10.1177/0003122409359168  
<http://asr.sagepub.com>  
SAGE

**rebuttal**

# Explaining critique

## Course correction?

- | C&R as a means to rectify the scientific record
- | E.g. catch errors that slipped past peer review
- | E.g. substantive intervention used to put a subfield back on a productive path

- | *Some evidence against this falsificationist account*  
(Banobi, Branch, and Hilborn 2011)

# Explaining critique

## Status struggle?

- ⋮ C&R may be the public face of scholarly status dynamics
- ⋮ E.g. “taking down” a big name or putting a rising star in their place
- ⋮ E.g. jockeying for position in an academic domain

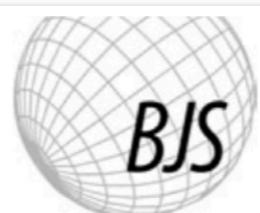


## Rhetorical interaction?

- ⋮ C&R may be the negotiation of knowledge and creation of consensus
- ⋮ Debate format emphasizes contrasts, bridges ideas, and presents a coherent *relational* picture of a scientific area

# Explaining critique

The British Journal of Sociology 2005 Volume 56 Issue 4



## The new gender essentialism – domestic and family ‘choices’ and their relation to attitudes<sup>1</sup>

Rosemary Crompton and Clare Lyonette

### Abstract

This paper critically examines two strands within contemporary gender essentialism – that is, the argument that men and women are fundamentally different and that it is this ‘difference’ that explains the continuing social and material differences between the sexes. The first strand we examine is Hakim’s ‘preference theory’, which has argued that persisting sex differences in employment patterns are an outcome of the ‘choices’ made by different ‘types’ of women. We next examine the claims of populist conservative feminism, that has argued that women (and men) in partnerships will be happier if they adopt a gender role traditionalism in the domestic sphere. Our empirical findings suggest that neither of these theoretical explanations are supported by our data, which is derived from the samples of six countries participating in the International Social Survey Programme Family 2002 module.

**Keywords:** Gender essentialism; gender roles; traditionalism; employment; choices

## original article

The British Journal of Sociology 2007 Volume 58 Issue 1



## Dancing with the Devil? Essentialism and other feminist heresies

Catherine Hakim

Crompton and Lyonette (2005) claim that preference theory (Hakim 2000) dances with the essentialist devil, and that their analyses of 2002 International Social Survey Programme (ISSP) data for Europe disprove preference theory. These claims are shown to be false, and we consider why feminism produces so many myths.

## critique

The British Journal of Sociology 2007 Volume 58 Issue 1



## Reply to Hakim

Rosemary Crompton and Clare Lyonette

In response to Hakim’s criticisms (Hakim 2007) of our article (Crompton and Lyonette 2005), we would like to briefly refer the reader to a small number of issues. First, Hakim’s critique does not engage with one of the major points of our article. This is the argument that theories informed by gender essentialism – that is, the claim that differences between men and women are a consequence of non-randomly distributed physical, physiological and/or spiritual factors – are often associated with voluntarist explanations that justify con-

## rebuttal

# Data

## Articles & Citations

Web of Science (WoS)

Articles published  
1991–2016

## Critique & Rebuttal “triads”

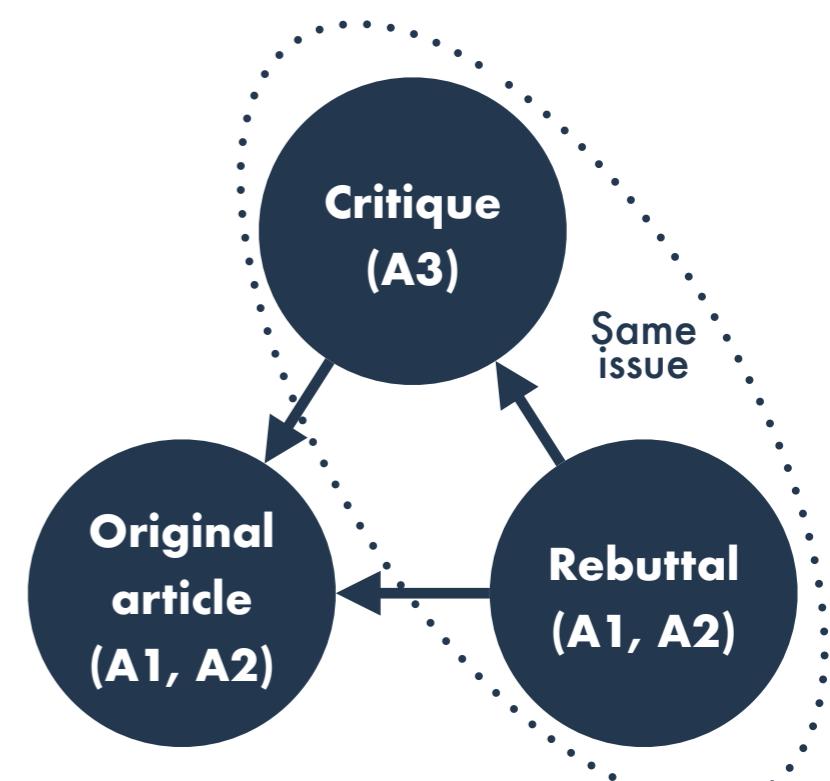
Identified using citation  
patterns, authorship, venue,  
and page numbers

Misses certain forms of C&R

## Subsample

21,854 articles across  
7,882 C&R triads

Representative across  
disciplines and years

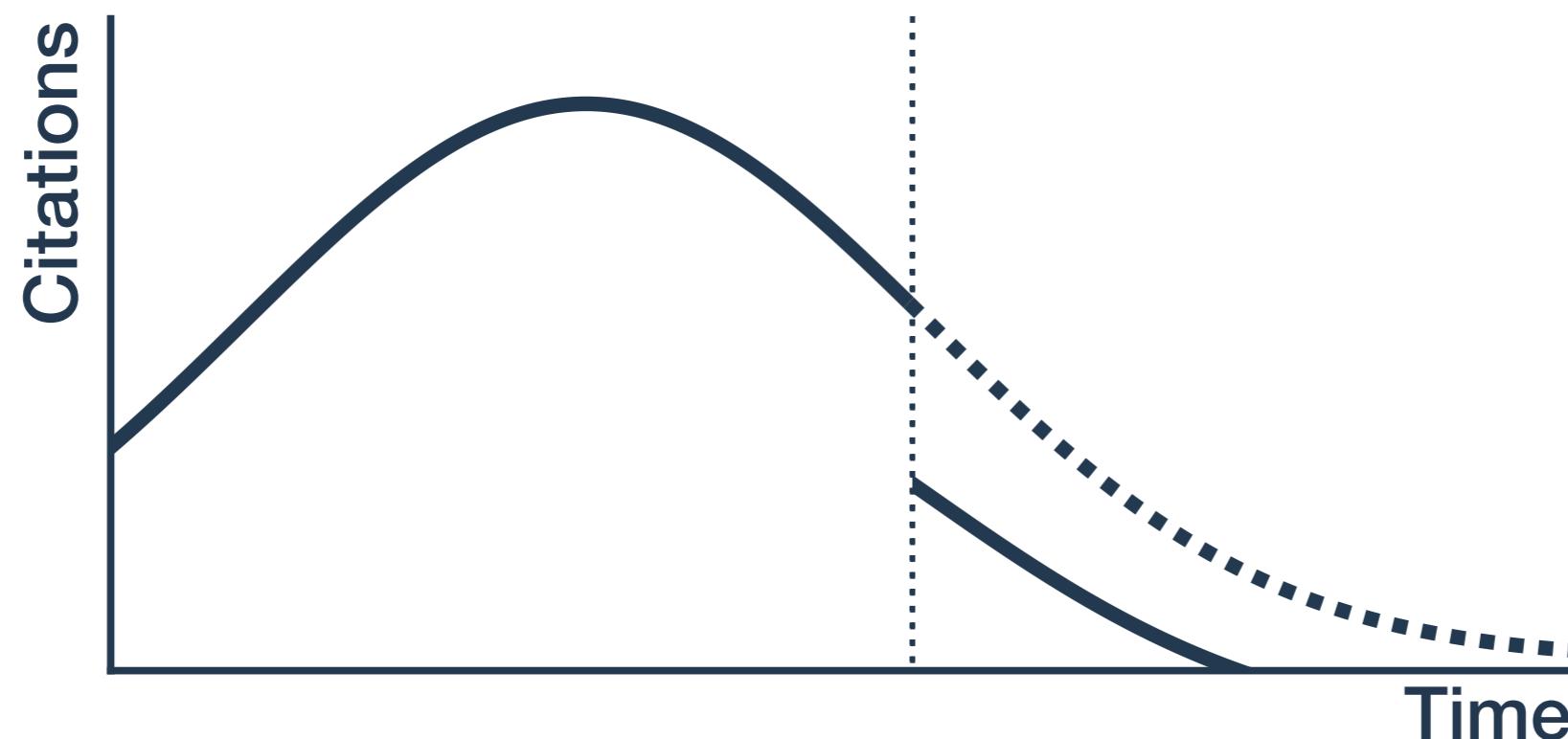


# Predicting citations

How do critiques affect  
the popularity of the  
**articles and authors**  
they target?

Predicting articles' and  
authors' “citation lifecycle”

| Look for discontinuities in citation  
curve associated with publication of  
critique and rebuttal



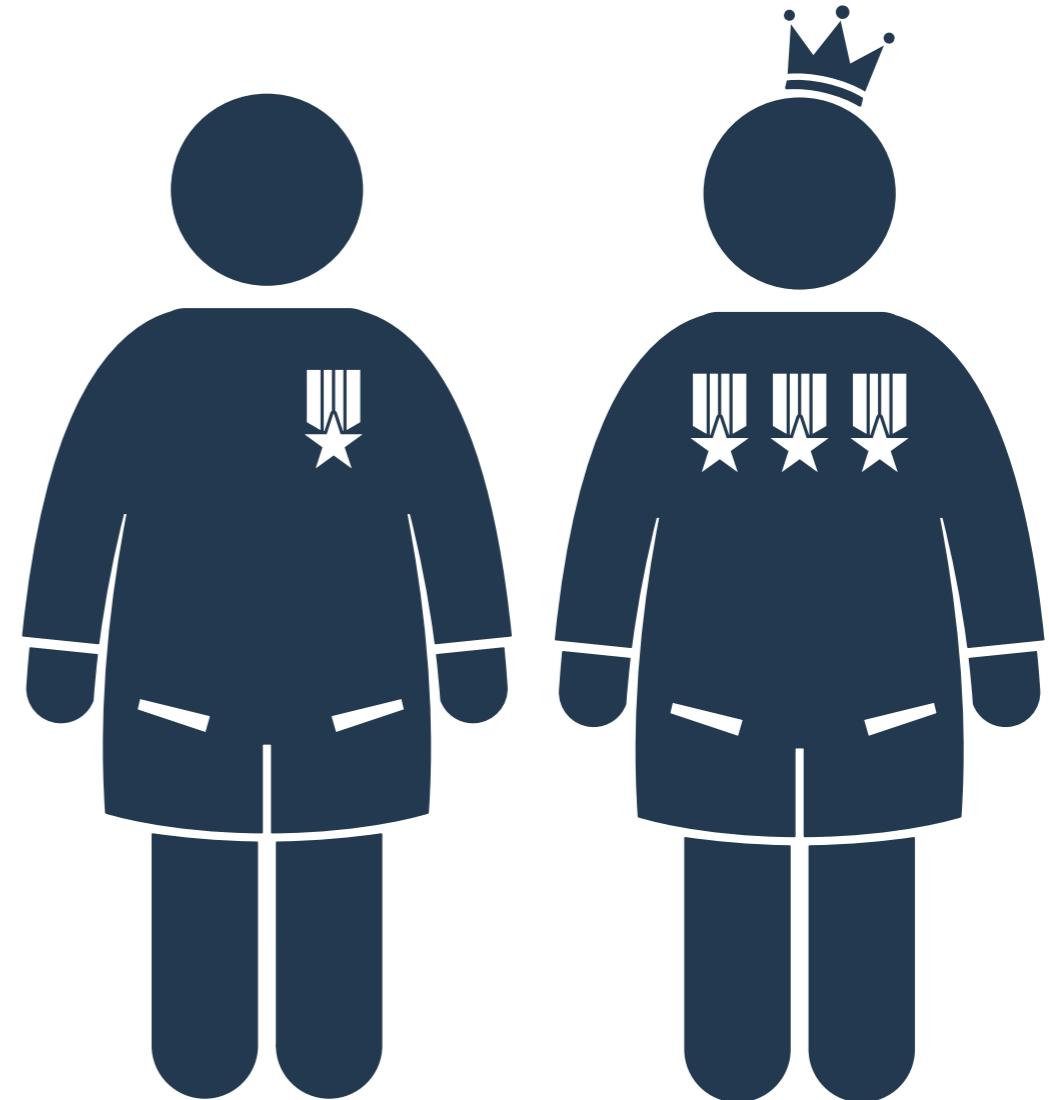
# Author status

## Power dynamics

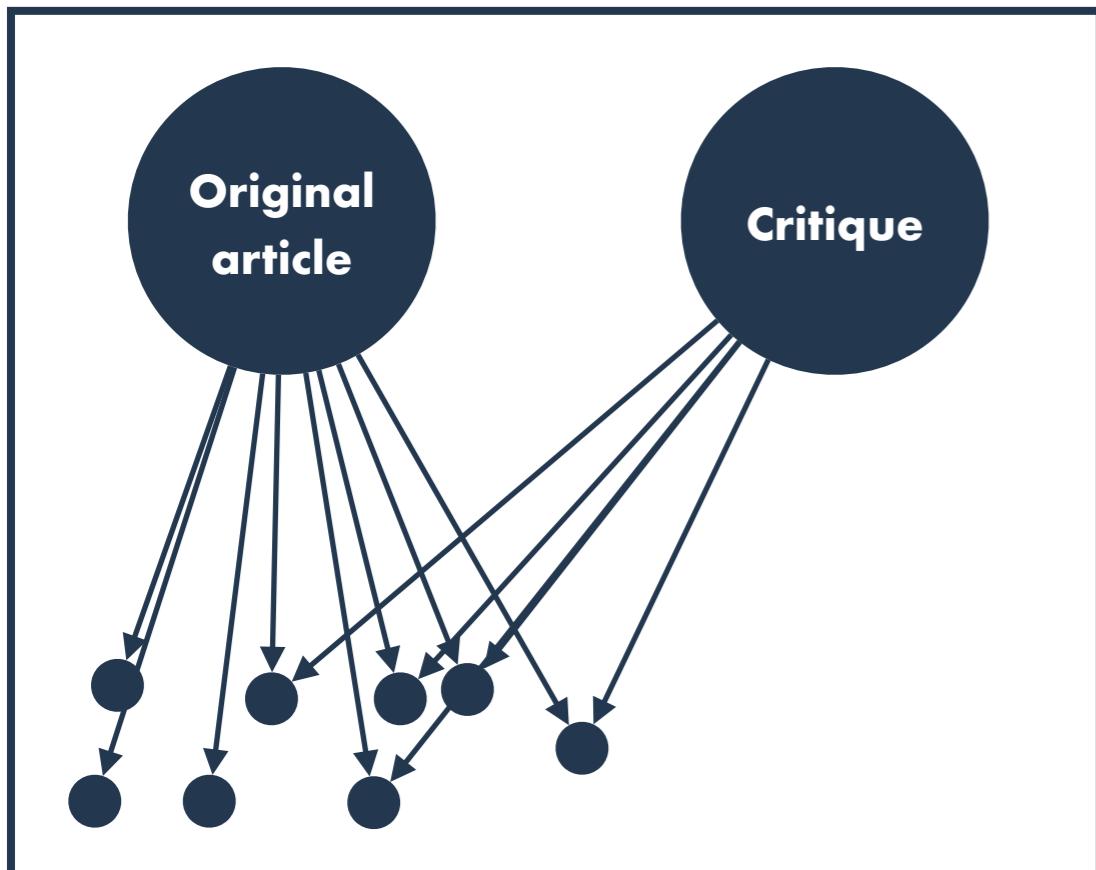
- ⋮ Certain scholars enjoy higher prestige within a given scientific domain
- ⋮ If C&R reflect power struggles, we can expect different outcomes based on status contrasts

## Measuring status

- ⋮ *Currently*: author H-index (measure of quantity and popularity of published works)
- ⋮ *Future*: Institutional affiliation, nation of residence, language, gender

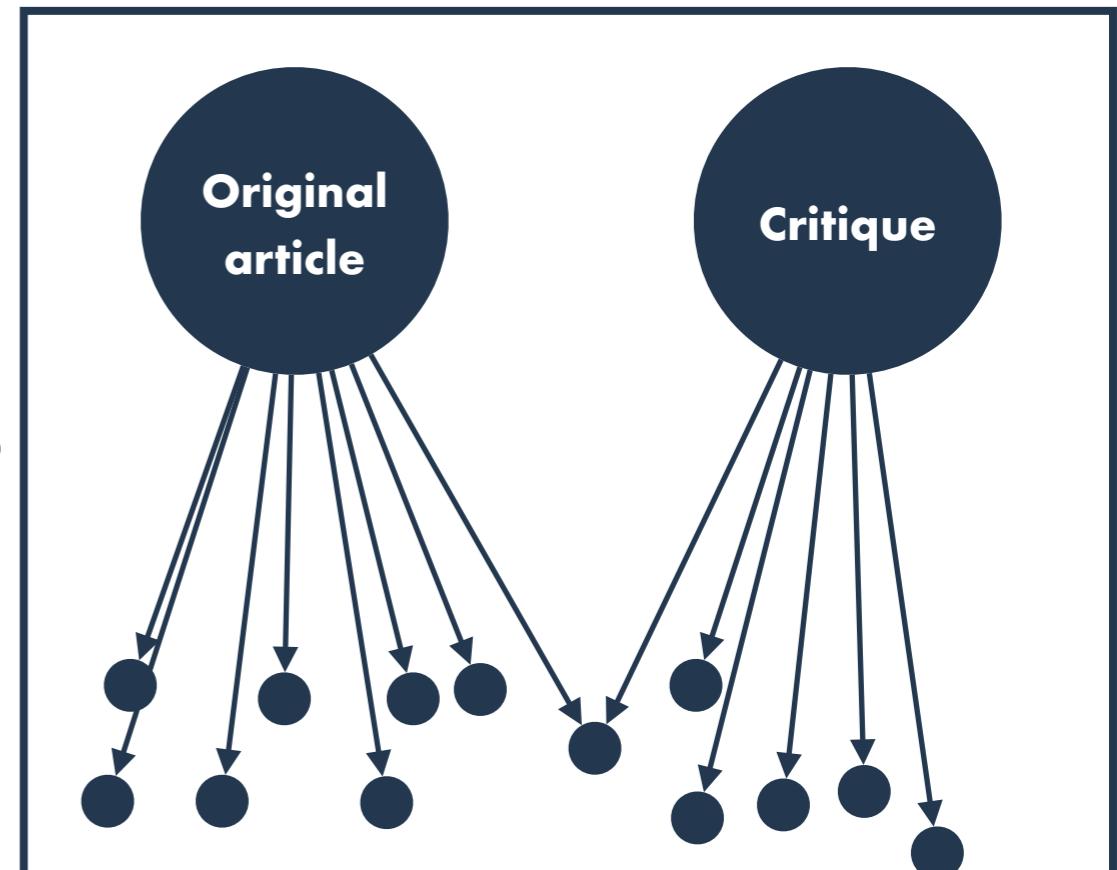


# Rhetorical patterns



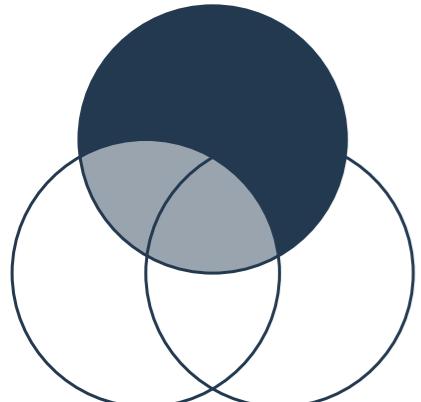
A pointed critique that attacks the core claims made in the original article

Versus



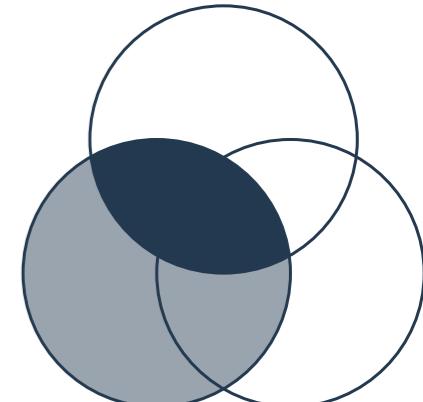
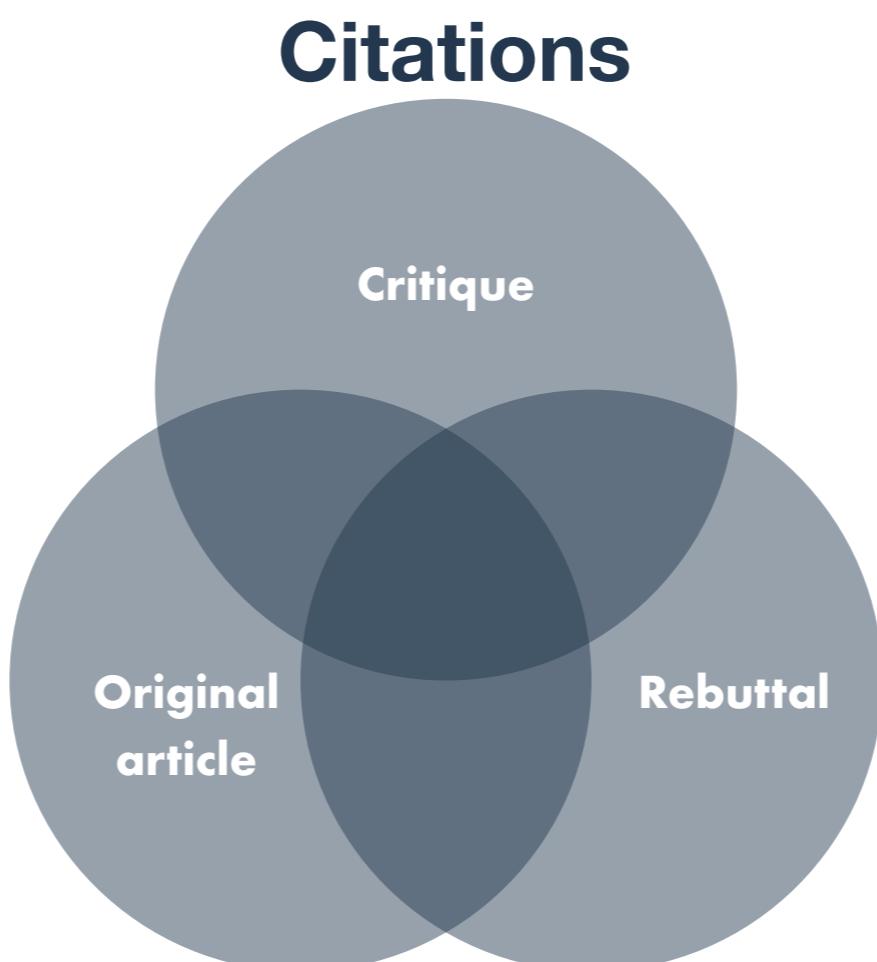
An amending critique pointing the original author(s) toward a new body of work

# Rhetorical patterns (measures)



## Extension

Proportion of critique's citations that are *not* included in the original article



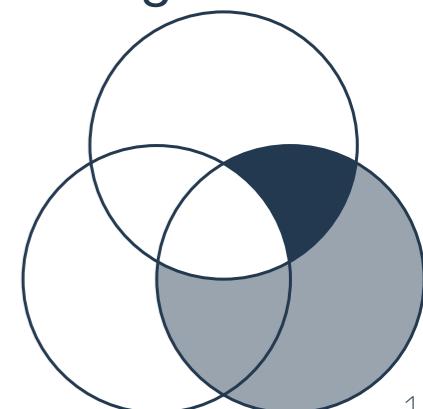
## Incision

Proportion of original article's citations included in the critique



## Engagement

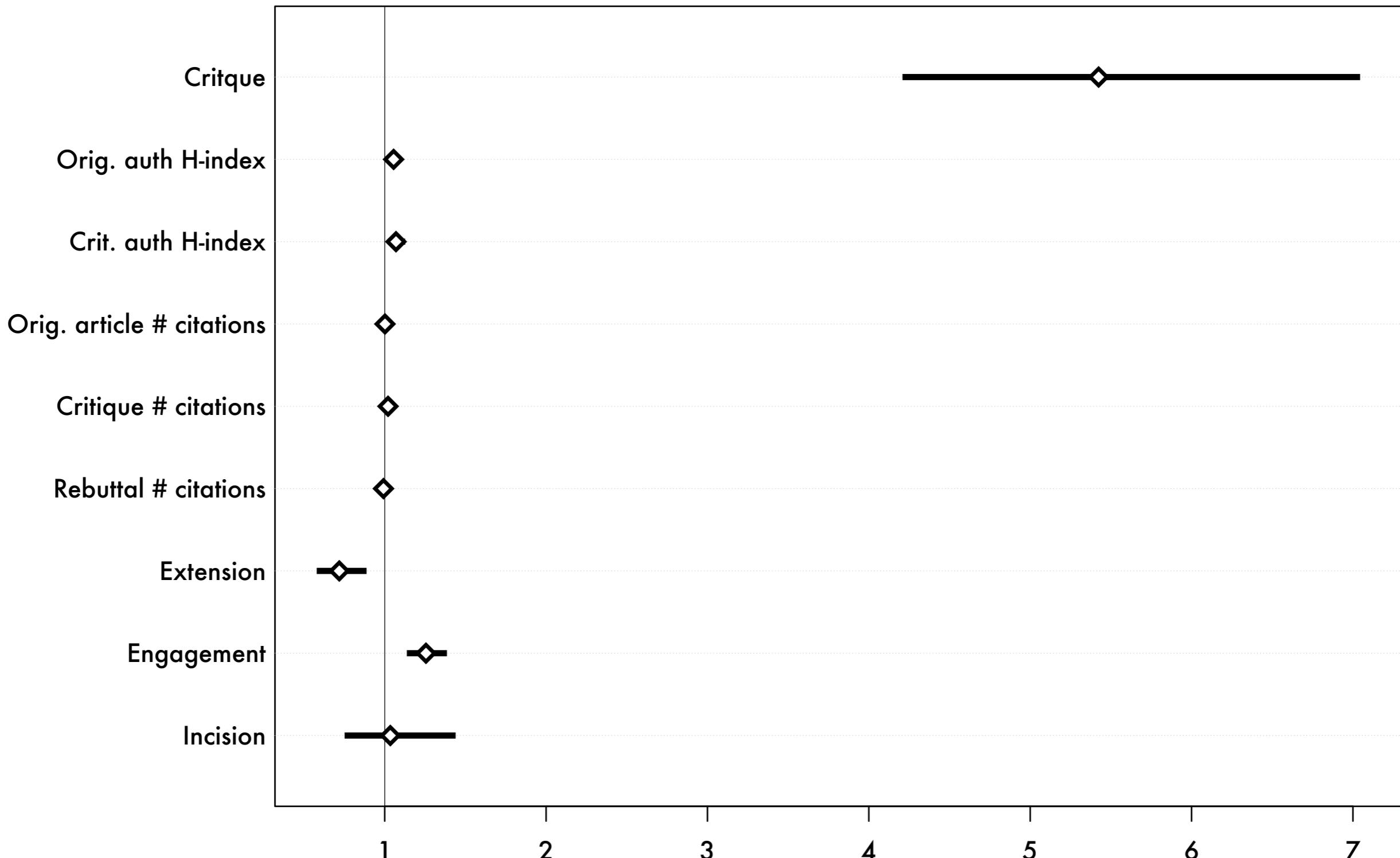
Proportion of rebuttal's citations that were included in the critique but *not* the original article



# Results

## Effect of critique on a published paper's future citations

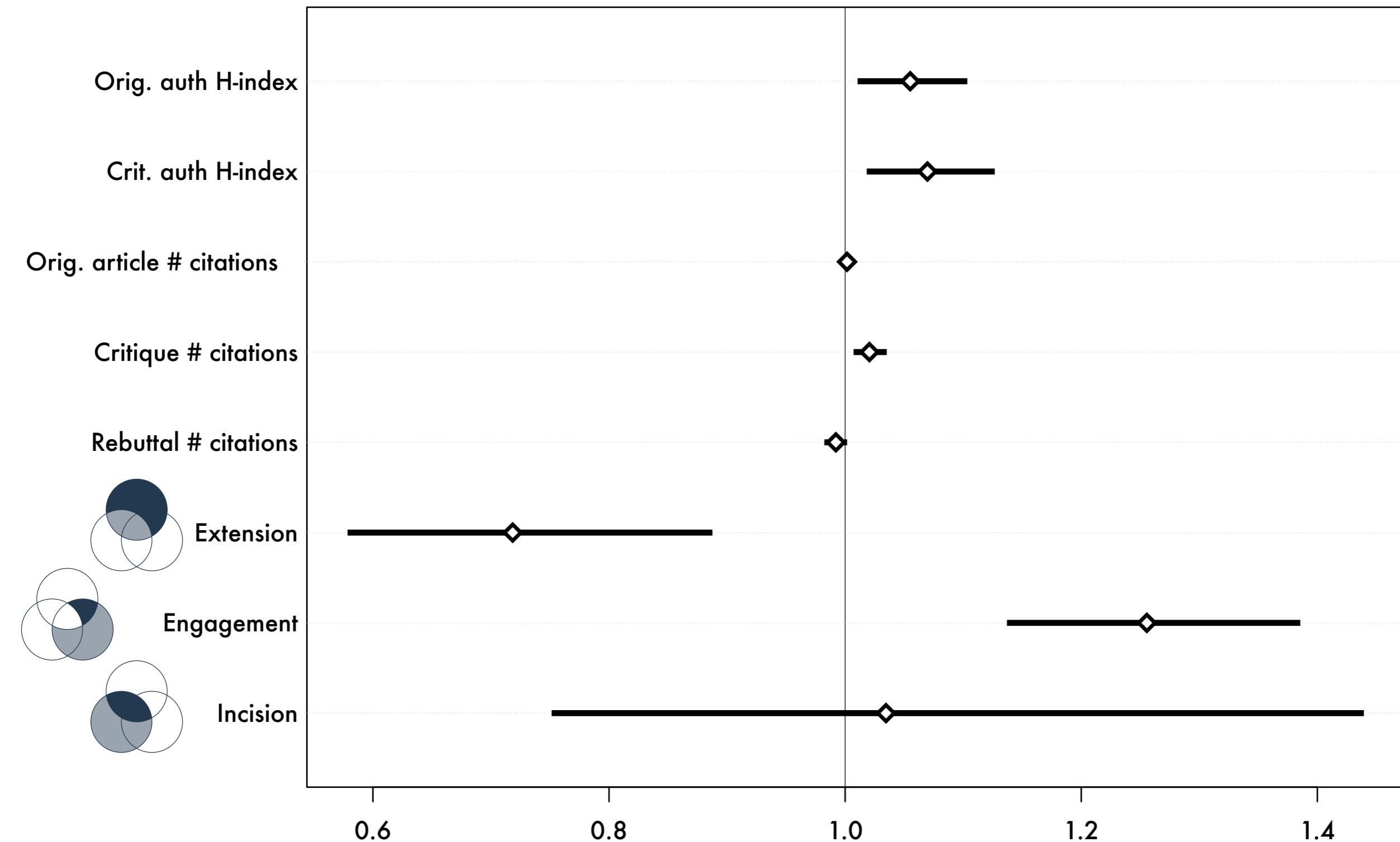
Being the target of critique is expected to increase an article's future citations by *more than 500%*



# Results

## Effect of critique on a published paper's future citations

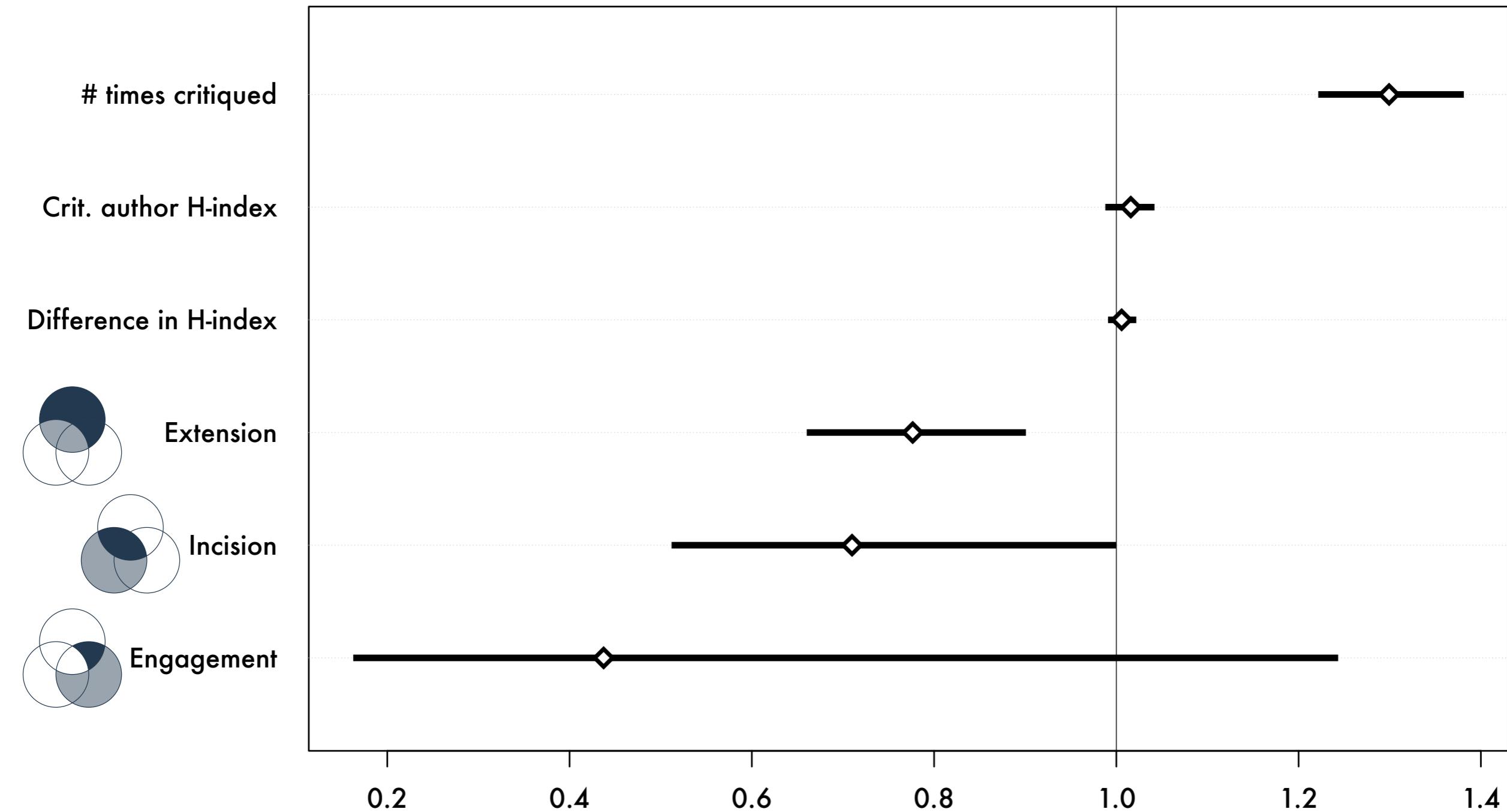
Prominence of original author and critiquing author further increases future citations. Rhetorical pattern affects outcome.



# Results

## Effect of critique on a author's future citations

Critique increases future citations for anything an author publishes by **about 25%**. This effect is **diminished entirely** if the critique brings considerably new citations to the conversation.



# Conclusions

## Any attention is good attention

- : Articles targeted for critique enjoy dramatic increase in future citation
- : Authors targeted for critique tend to receive considerably more citation on *all* future publications

## Argument structure matters

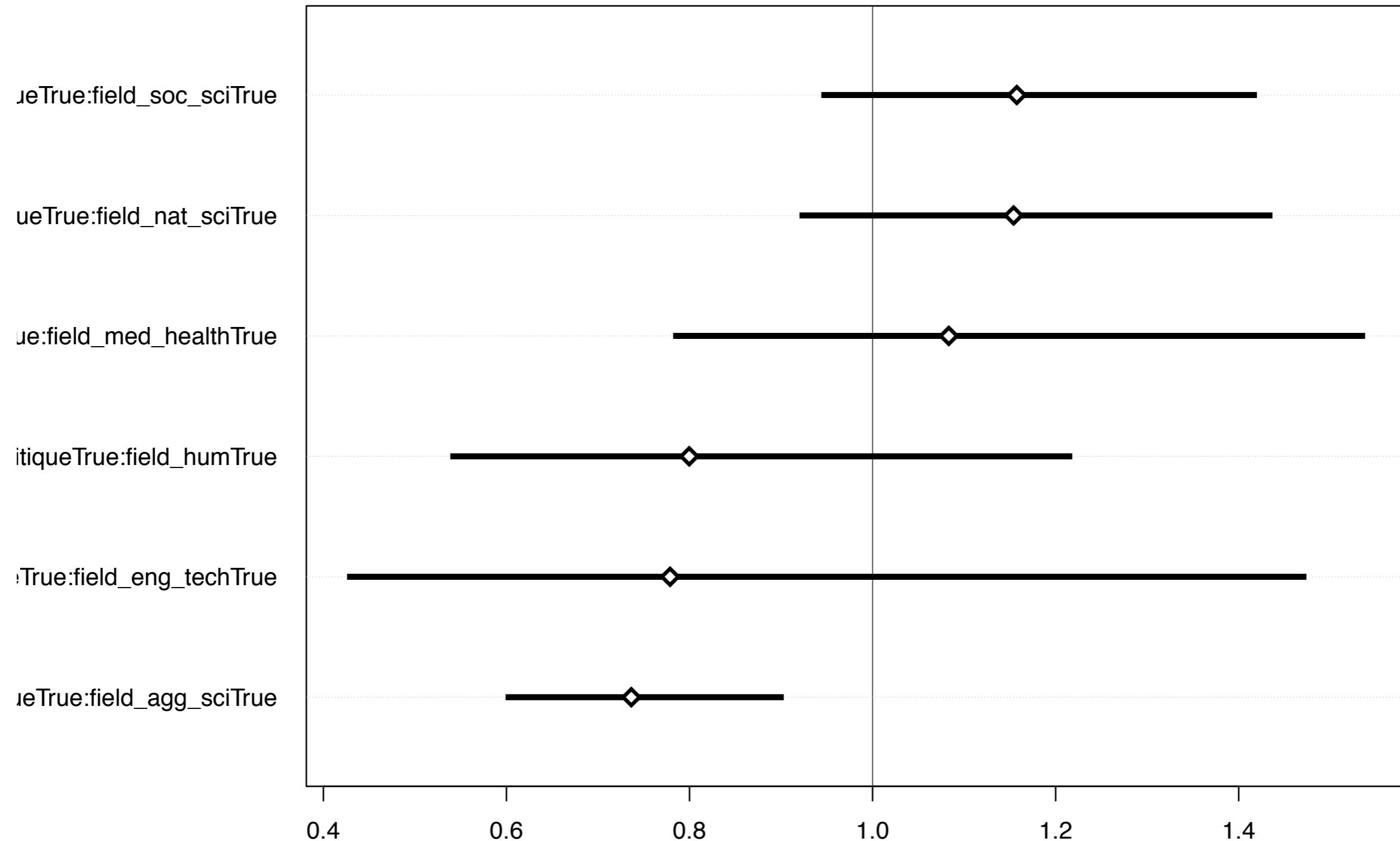
- : The patterns of citation for both the critique and the authors' response are associated with changes to future citations
- : Critiques that 'extend' the original authors' arguments (by citing new literatures) diminish future attention
- : Responses engage directly with the literature cited in a critique yield increased future citations for the original article

# Thank you!

Peter McMahan  
[peter.mcmahan@mcgill.ca](mailto:peter.mcmahan@mcgill.ca)  
Daniel A. McFarland  
[mcfarland@stanford.edu](mailto:mcfarland@stanford.edu)

# Results

## Effect by field



# Image credit

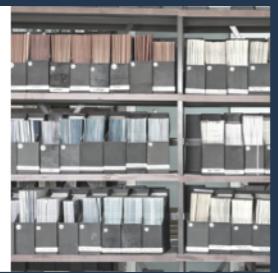


Photo by [Sergei25](#) on  
[shutterstock.com](#)

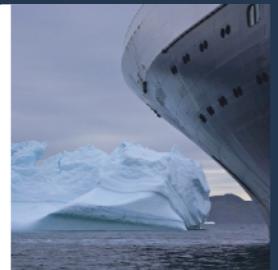


Photo by [sweetreilly0](#) on  
[pixabay.com](#)

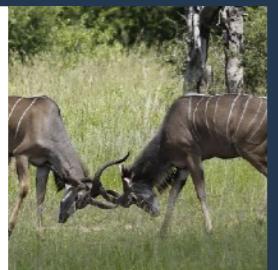
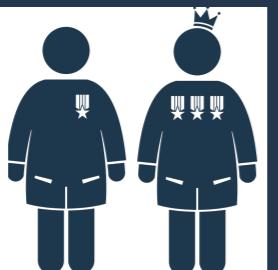


Photo by [Derek Keats](#) on  
[Wikimedia](#)



Photo by WWE via  
[hollywoodreporter.com](#)



Derived from work by [Gan](#)  
[Khoon Lay](#), [Koson](#)  
[Rattanaphan](#), and  
[Riduwan Molla](#)