

# Why We Need Open Policy Analysis

Fernando Hoces de la Guardia<sup>1</sup>

Sean Grant<sup>2</sup>

Edward Miguel<sup>1</sup>

<sup>1</sup>UC Berkeley:

Berkeley Initiative for Transparency in the Social Sciences

<sup>2</sup>RAND

Congressional Budget Office, March 2018

Slides at

<http://www.github.com/fhoces/CBO2018>

- 1 Policy Analysis And The Evidence-Based Policy Movement
- 2 Reproducibility Crisis In Empirical Research
- 3 The Open Science Movement
- 4 Credibility Crisis Of Policy Analysis
- 5 Open Science In Policy Analysis
- 6 Challenges And Suggestions
- 7 Conclusion And Next Steps



## Evidence-Based Movement is Growing.

- Haskins, (2017).
- credible causal evidence (Angrist & Pischke, 2010)
- transparency and reproducibility of research (Miguel et al. 2014).
- Commission on Evidence-Based Policymaking (CEBP)

Policy Analysis is fundamental link.

## Evidence-Based Movement is Growing.

- Haskins, (2017).
- credible causal evidence (Angrist & Pischke, 2010)
- transparency and reproducibility of research (Miguel et al. 2014).
- Commission on Evidence-Based Policymaking (CEBP)

## Policy Analysis is fundamental link.

- As many definitions as textbooks (Dunn, 2015; Weimer & Vining, 2017; Williams, 1971)
- Common denominator: client-oriented empirical analysis meant to inform a specific policy debate
- Aspires at scientific rigor. (Wildavsky 1979),

# An Ideal Evidence-Based Policy Link

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

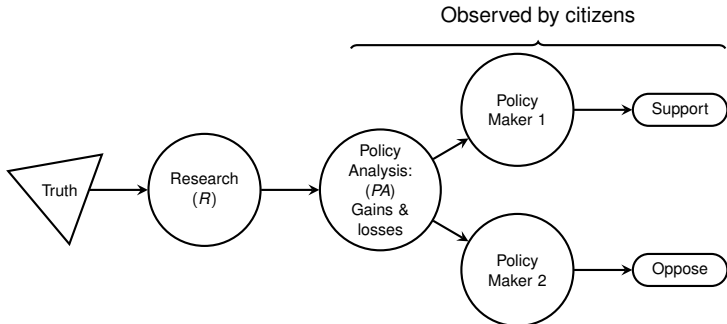
Open Science

Crisis in PA

Open PA

Challenges  
And  
Suggestions

Conclusion





Open Science

## Crisis in PA

Open PA

## Conclusion

- Researchers believe in good science but don't practices it (Anderson, Martinson, & De Vries 2007).
- The file drawer problem is big (Franco et al 2014).
- Evidence of extensive p-hacking across social science disciplines (Gerber et al 2008, Brodeur et al 2016).
- Replication rates are low (Collaboration et al, 2015 40-60%, Camerer et al, 2016 60%). Computational reproducibility is also low (Stodden et al 2016, Chang and Li 2015 45%, Gertler et al 2018 14%).



# Reproducibility Crisis In Empirical Research

## Open Policy Analysis

## Crisis in Research

Open Science

## Crisis in PA

Open PA

## Conclusion

- Researchers believe in good science but don't practices it (Anderson, Martinson, & De Vries 2007).
- The file drawer problem is big (Franco et al 2014).
- Evidence of extensive p-hacking across social science disciplines (Gerber et al 2008, Brodeur et al 2016).
- Replication rates are low (Collaboration et al, 2015 40-60%, Camerer et al, 2016 60%). Computational reproducibility is also low (Stodden et al 2016, Chang and Li 2015 45%, Gertler et al 2018 14%).

## Open Policy Analysis

## Crisis in Research

Open Science

## Crisis in PA

Open PA

## Conclusion

- Researchers believe in good science but don't practices it (Anderson, Martinson, & De Vries 2007).
- The file drawer problem is big (Franco et al 2014).
- Evidence of extensive p-hacking across social science disciplines (Gerber et al 2008, Brodeur et al 2016).
- Replication rates are low (Collaboration et al, 2015 40-60%, Camerer et al, 2016 60%). Computational reproducibility is also low (Stodden et al 2016, Chang and Li 2015 45%, Gertler et al 2018 14%).



- Researchers believe in good science but don't practices it (Anderson, Martinson, & De Vries 2007).
- The file drawer problem is big (Franco et al 2014).
- Evidence of extensive p-hacking across social science disciplines (Gerber et al 2008, Brodeur et al 2016).
- Replication rates are low (Collaboration et al, 2015 40-60%, Camerer et al, 2016 60%). Computational reproducibility is also low (Stodden et al 2016, Chang and Li 2015 45%, Gertler et al 2018 14%).

## Open Policy Analysis

Open Science

## Crisis in PA

Open PA

## Conclusion

- Definition of principles of Open Science/Research Transparency (Miguel et al 2014)
- Development of guidelines to operationalize principles of Open Science (Nosek et al 2015)
- Journals and funders are responding to this: Registries (AEA), Journals (Science + 5k), Funders (CITE FUNDERS)

## Open Policy Analysis

## Conclusion

- ◀ ◻ ▶ ◀ ◻ ▶ ◀ ≡ ▶ ◀ ≡ ▶ ≡ ↺ 🔍 ↻ 7/21

# How This Affects The Evidence Based Policy Link?

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

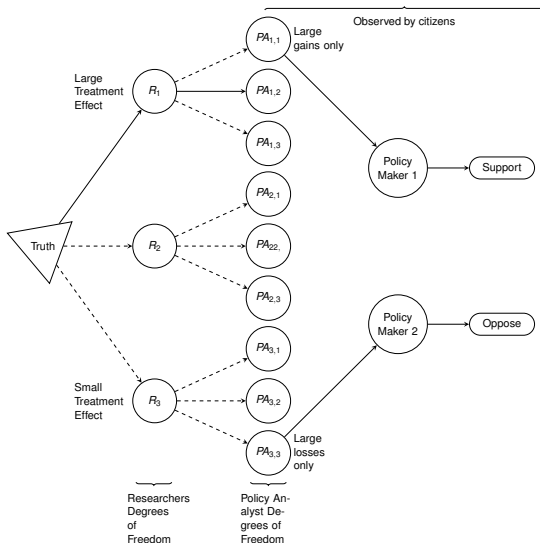
Open Science

Crisis in PA

Open PA

Challenges  
And  
Suggestions

Conclusion





## Relevance 1: Cherry Picking Evidence

## Open Policy Analysis

Open Science

## Crisis in PA

Open PA

## Conclusion

# Relevance 1: Cherry Picking Evidence

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

Open Science

Crisis in PA

Open PA

Challenges  
And  
Suggestions

Conclusion

“When I was director of the CBO, I was very frustrated when we would write a policy report [saying] a certain policy would have these two advantages and these two disadvantages, and the advocates would quote only the part about the advantages, and the opponents would quote only the part about the disadvantages. That encourages the view that there are simple answers. There aren’t generally simple answers. There are trade-offs.”

— Douglas Elmendorf (Director of CBO, 2009-2015)  
Harvard Magazine, 2016

# Relevance 2: Challenging to Automate and Improve Systematically Recurring Reports

Open Policy Analysis

Evidence Based

Crisis in Research

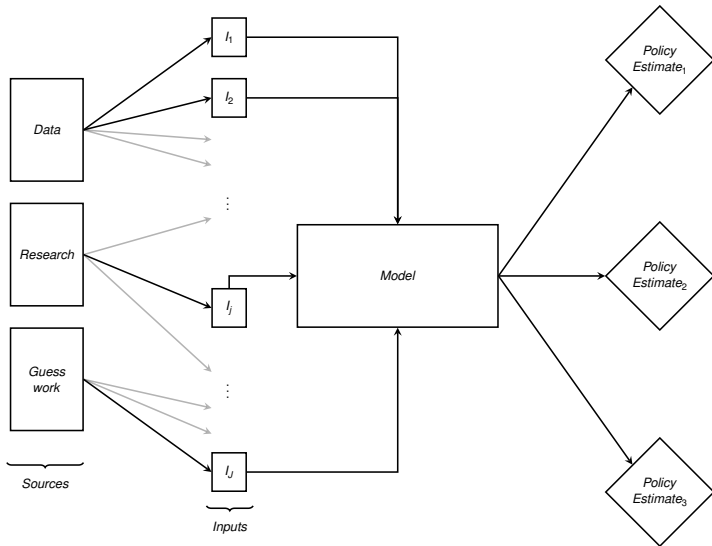
Open Science

Crisis in PA

Open PA

Challenges And Suggestions

Conclusion





# Relevance 3: Difficulty Understanding how Research Informs Policy Analysis

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

Open Science

Crisis in PA

Open PA

Challenges  
And  
Suggestions

Conclusion

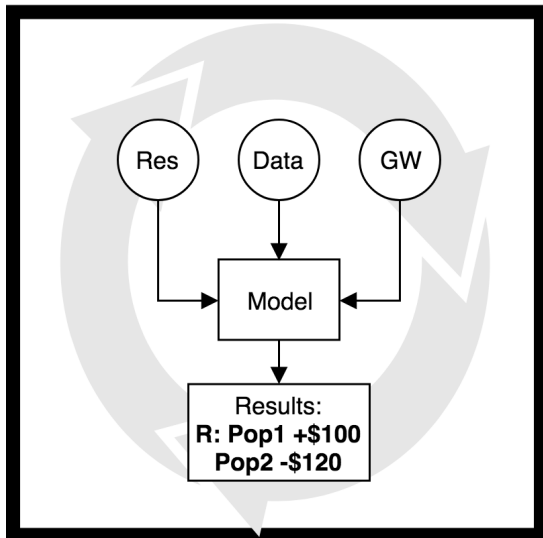
- What happens when new research emerges?
- Where are the largest unknowns in the policy analysis?
- Where is the marginal piece of research most informative for this analysis?



◀ ◻ ▶ ◀ ◻ ▶ ◀ ≡ ▶ ◀ ≡ ▶ ≡ ↺ 🔍 ↻ 12/21



## Computational Reproducibility



Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

Open Science

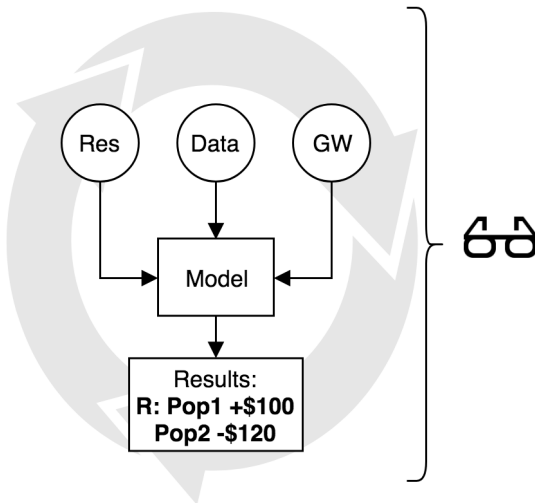
Crisis in PA

Open PA

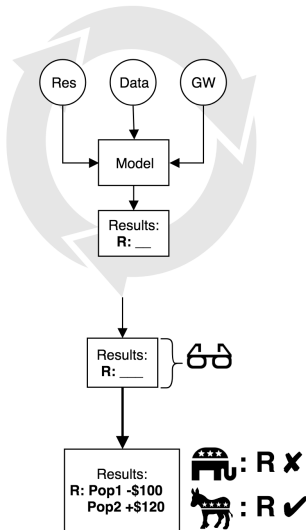
Challenges  
And  
Suggestions

Conclusion

## Analytic Transparency



## Output Transparency





## Open Policy Analysis

## Crisis in Research

Open Science

## Crisis in PA

Open PA

## Challenges And Suggestions

## Conclusion

- 1 Policy Analysts: Just Post It [MORE HERE]
- 2 Policy Analysis Organizations: Open by Default [MORE HERE]
- 3 Government Agencies and Funders: Support Open Science Practices [MORE HERE]



◀ ◻ ▶ ◀ ◻ ▶ ◀ ≡ ▶ ◀ ≡ ▶ ≡ ↺ 🔍 ↻ 18/21





## Open Policy Analysis

Open Science

## Crisis in PA

Open PA

## Challenges And Suggestions

## Conclusion

## Suggestions:

- 1 Policy Analysts: Just Post It [MORE HERE]
- 2 Policy Analysis Organizations: Open by Default [MORE HERE]
- 3 Government Agencies and Funders: Support Open Science Practices [MORE HERE]

# Summing Up: Where We Are

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

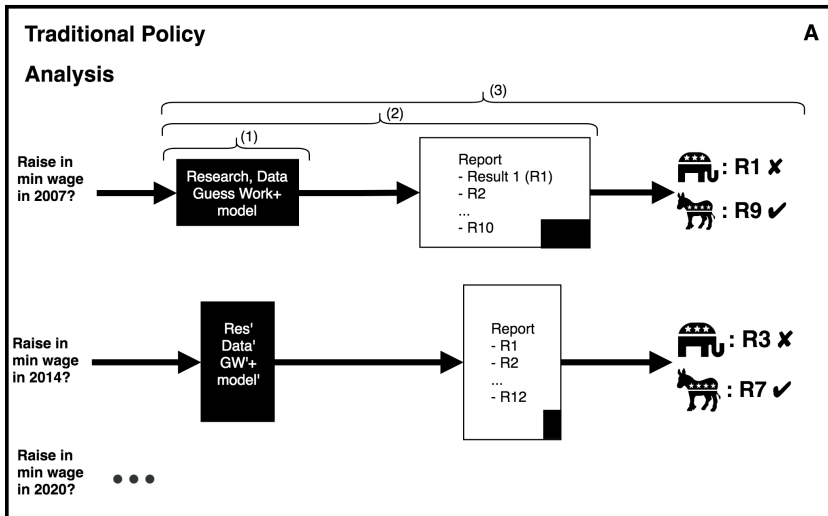
Open Science

Crisis in PA

Open PA

Challenges  
And  
Suggestions

Conclusion



# Summing Up: Where Should We Go

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

Open Science

Crisis in PA

Open PA

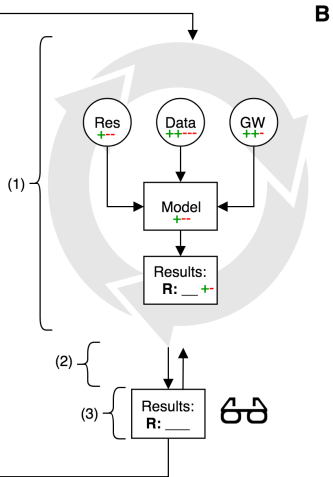
Challenges  
And  
Suggestions

Conclusion

## Open Policy Analysis

- Raise in min wage in 2007?
- 2014 (changes in + -)
- 2020, 2030, ...

Results:  
R: Pop1 -\$100  
Pop2 +\$120





- Draw a parallel between reproducibility crisis in empirical research and a credibility crisis in policy analysis.
- Suggested guiding principles for open policy analysis
- Identify challenges and provide actionable recommendations.

- TOP for PA [MORE HERE]
- Case Studies



BERKELEY INITIATIVE FOR TRANSPARENCY  
IN THE SOCIAL SCIENCES

Open Policy  
Analysis

Evidence  
Based

Crisis in  
Research

Open Science

Crisis in PA

Open PA

Challenges  
And  
Suggestions

Conclusion

Thank you.

Pre-print: [PP URL HERE]  
Contact: fhoces@berkeley.edu