

Multi-study investigations and the identification of theoretical mechanisms in experimental research

OLIVER SCHILKE

Associate Professor of Management and Organizations Associate Professor of Sociology (by courtesy) Director, Center for Trust Studies

Multi-study investigations and the identification of theoretical mechanisms in experimental research

- My "data" Forthcoming *Org Sci* SI on Experiments in OT for this talk: 10 experimental papers I have co-authored
 - 3 reviews of experimental research
 - My "reading" of the experimental literature

Multi-study investigations

>1 study in a single paper

But what's a common number?

- My "data" Forthcoming Org Sci SI on Experiments in OT
 for this talk: 10 experimental papers I have co-authored
 3 reviews of experimental research
 - My "reading" of the experimental literature 3

Forthcoming Org Sci SI on Experiments in OT

Authors	Title	# studies			
Carsten Bergenholtz, Oana Vuculescu, Ali Amidi	Microfoundations of Adaptive Search in Complex Tasks: The Role of Cognitive Abilities and Styles	3			
J. Cameron Verhaal, Oliver Hahl, Kevin J. Fandl	Authenticity-Based Connection as Organizational Constraints and the Paradox of Authenticity in the Mark	e 2			
Kevin J. Boudreau, Nilam Kaushik	Gender Differences in Responses to Competitive Organization? A Field Experiment on Differences Betwee	ei 1			
Ethan S. Bernstein, Jesse C. Shore, Alice J. Jang	Network Centralization and Collective Adaptability to a Shifting Environment	1			
Giada Di Stefano, Maria Rita Micheli	To Stem the Tide: Organizational Climate and the Locus of Knowledge Transfer	2			
Tijs van den Broek, David J. Langley, Michel L. Ehrenhard, Aard Groen	When Do Evaluators Publicly Express Their Legitimacy Judgments? An Inquiry into the Role of Peer Ende	o 4			
John R. Hamman, Miguel A. Martínez-Carrasco	Managing Uncertainty: An Experiment on Delegation and Team Selection	1			
Vontrese Deeds Pamphile, Rachel Lise Ruttan	The (Bounded) Role of Stated-Lived Value Congruence and Authenticity in Employee Evaluations of Orga	a 3			
Andreea Gorbatai, Peter Younkin, Gordon Burtch	Collateral Damage: The Relationship Between High-Salience Events and Variation in Racial Discriminati	ic 4			
Jérôme Hergueux, Emeric Henry, Yochai Benkler, Yann Algan	Social Exchange and the Reciprocity Roller Coaster: Evidence from the Life and Death of Virtual Teams	1			
Marlon Fernandes Rodrigues Alves, Vincenzo Vastola, Simone Vasconcelos Ril	b When Reflection Hurts: The Effect of Cognitive Processing Types on Organizational Adaptation to Discon	ti 1			
Viktoria Boss, Linus Dahlander, Christoph Ihl, Rajshri Jayaraman	Organizing Entrepreneurial Teams: A Field Experiment on Autonomy over Choosing Teams and Ideas	1			
Sabine Pittnauer, Martin Hohnisch, Andreas Ostermaier, Andreas Pfingsten	Effects of Social Information on Risk Taking and Performance: Understanding Others' Decisions vs. Comp	p. 1			
Mario Molina, Victor Nee, Hakan Holm	Cooperation with Strangers: Spillover of Community Norms	1			
Sourobh Ghosh, Andy Wu	Iterative Coordination and Innovation: Prioritizing Value over Novelty	2			
Robert Gibbons, Manuel Grieder, Holger Herz, Christian Zehnder	Building an Equilibrium: Rules vs. Principles in Relational Contracts	1			
Hazhir Rahmandad, Michael Shayne Gary	Delays Impair Learning and Can Drive Convergence to Inefficient Strategies	2			
Nevena Radoynovska, Rachel Ruttan	A Matter of Transition: Authenticity Judgments and Attracting Employees to Hybridized Organizations	2			
Michael Christensen, Christian M. Dahl, Thorbjørn Knudsen, Massimo Warglien	Context and Aggregation: An Experimental Study of Bias and Discrimination in Organizational Decisions	1			
Xirong (Subrina) Shen, Huisi (Jessica) Li, Pamela S. Tolbert	Converging Tides Lift All Boats: Consensus in Evaluation Criteria Boosts Investments in Firms in Nascent	1 3			
Cynthia S. Wang, Jennifer A. Whitson, Brayden G King, Rachel L. Ramirez Social Movements, Collective Identity, and Workplace Allies: The Labeling of Gender Equity Pole					
	Average	: 2.0			
	Range	: 1-5			



Forthcoming Org Sci SI on Experiments in OT

https://eller.arizona.edu/second-special-issue-conference

Second Organization Science Special Issue Conference on "Experiments in Organization Theory"

Please find the recordings of the conference presentations here ****.

Session A Abstracts

Title: When Do Evaluators Publicly Express Their Legitimacy Judgments? An Inquiry into the Role of Peer Endorsement and Evaluative Mode

Authors: Tijs van den Broek, David J. Langley, Michel L. Ehrenhard, Aard Groen

Abstract: Legitimacy theory describes how individuals evaluate an organization's behavior, form propriety evaluations, and subsequently decide whether to publicly express their legitimacy judgments. These individual judgments are influenced by sources of collective validity, for example, from recognized authority or from peer endorsement. Whereas most research on this topic has focused on the effects of authority, we study the influence of peer endorsement on the public expression of legitimacy judgments. Additionally, we assess evaluators' preparedness to expend cognitive effort, that is, their evaluative mode, as an important condition under which judgment expressions are made. We present a set of three vignette experiments and one field study, all situated in social media that are quickly becoming the dominant setting for the expression of legitimacy judgments. This research provides new evidence that peer endorsement stimulates evaluators to express their judgments, particularly for evaluators who expend limited cognitive effort. Additionally, we find that evaluators in the active and passive evaluatiors modes act differently when their propriety evaluations are based on instrumental, moral, or relational considerations. These findings extend current legitimacy theory about how peer endorsement functions as a source of validity and when individual evaluators decide to publicly express their legitimacy judgments. This is important because individuals' public expressions can bring about a cascade of judgments that change the consensus on an organization's legitimacy, potentially contributing to institutional change.

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When Do Evaluators Publicly Express Their Legitimacy Judgments? An Inquiry into the Role of Peer Endorsement and Evaluative Mode

Tijs van den Broek 😑, David J. Langley 🤤, Michel L. Ehrenhard 😕, Aard Groen 🧐

Published Online: 14 Jun 2022 | https://doi.org/10.1287/orsc.2022.1604

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Abstract

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Abstract

Legitimacy theory describes how individuals evaluate an organization's behavior, form propriety evaluations, and subsequently decide whether to publicly express their legitimacy judgments. These individual judgments are influenced by sources of collective validity, for example, from recognized authority or from peer endorsement. Whereas most research on this topic has focused on the effects of authority, we study the influence of peer endorsement on the public expression of legitimacy judgments. Additionally, we assess evaluators' preparedness to expend cognitive effort, that is, their evaluative mode, as an important condition under which judgment expressions are made. We present a set of three vignette experiments and one field study, all situated in social media that are quickly becoming the dominant setting for the expression of legitimacy judgments. This research provides new evidence that peer endorsement stimulates evaluators to express their judgments, particularly for evaluators who expend limited cognitive effort. Additionally, we find that evaluators in the active and passive evaluative modes act differently when their propriety evaluations are based on instrumental, moral, or relational considerations. These findings extend current legitimacy theory about how peer endorsement functions as a source of validity and when individual evaluators decide to publicly express their legitimacy judgments. This is important because individuals' public expressions can bring about a cascade of judgments that change the consensus on an organization's legitimacy, potentially contributing to institutional change.

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Tit

10 experimental papers I have co-authored

Paper #	# studies		
Schilke, Oliver, & Gabriel Rossman. "Honor among crooks: the role of trust in obfuscated disreputable exchange." Invited for resubmission.	4		
Evans, Jon, & Oliver Schilke. "Power framing and the exploration-exploitation dilemma." Under 3rd round of review.	2		
Piezunka, Henning, & Oliver Schilke. 2023. "The dual function of organizational structure: aggregating and shaping individuals' votes." Organization Science. Forthcoming.	10		
Reimann, Martin Christoph Hüller, Oliver Schilke, & Karen S. Cook. 2022. "Impression management attenuates the effect of ability on trust in economic exchange ." Proceedings of the National Academy of Sciences, 119(30), e2118548119.	7		
Schilke, Oliver, & Gabriel Rossman. 2018. "It's only wrong if it's transactional: moral perceptions of obfuscated exchange." American Sociological Review, 83(6), 1079-1107.			
Schilke, Oliver, & Laura Huang. 2018. "Worthy of swift trust? How brief interpersonal contact affects trust accuracy." Journal of Applied Psychology, 103(11), 1181-1197.			
Schilke, Oliver. 2018. "A micro-institutional inquiry into resistance to environmental pressures." Academy of Management Journal, 61(4), 1431-1466.			
Schilke, Oliver, Martin Reimann, & Karen S. Cook. 2015. "Power decreases trust in social exchange." Proceedings of the National Academy of Sciences, 112(42), 12950-12955.			
Schilke, Oliver, Martin Reimann, & Karen S. Cook. 2013. "Effect of relationship experience on trust recovery following a breach." Proceedings of the National Academy of Sciences, 110(38), 15236-15241.	2		
Reimann, Martin, Oliver Schilke, Bernd Weber, Carolin Neuhaus, & Judy Zaichkowsky. 2011. "Functional magnetic resonance imaging in consumer research: a review and application." <i>Psychology and Marketing</i> , 28(6): 608-637.	1		
Average:	4.0		

My "reading" of the experimental literature

Multi-study investigations

- More common in psych than soc than econ
- More common in recent times than in the past
- More common in top-ranked than in lower-ranked journals

Multi-study investigations





= generalizability of results to other contexts

Taken-for-granted criticism: "Experiments are low in external validity"

= generalizability of results to other contexts

⇒ The more studies, the greater the demonstrated empirical generalizability

Designing multi-study investigations for greater external validity: "constructive replication"

Extreme form:Completely avoid imitation of the first
study's methods.

More moderate form: Vary one or two methodological choices at a time (greater tractability). Examples:

Lab experiment \rightarrow Survey

Students \rightarrow General pop

Task 1 \rightarrow Task 2

Lykken 1968

"The first study is an **experiment** (...). The experimental method provides strong evidence of causality and allowed us to test our proposed mechanism (...). The second study replicated the findings from Study 1 (...) with a **field data set** of **organizational decision makers**. The results from Study 2 complement those of Study 1 (...)."



"Study 1 presents a **political bribery** vignette in which a defense contractor requests a favor from a congressman. Study 2's vignette describes a **commercial bribery** scenario in which a car dealer requests that corporate ship more high-demand cars to his dealership. Study 3's vignette describes a couple seeking to **adopt a baby** from a new mother.

Notably, our hypothesis held across several substantive areas: political bribery, commercial bribery, and compensated adoption. As such, our four experiments provide strong **convergent evidence** in support of the proposed main effect."

Task 1 \rightarrow Task 2

(...)

Best practice: Conducting a within-paper meta analysis

"Three experiments and an internal meta-analysis confirmed the core prediction of the (...) model. (...) (...) Internal meta-analyses are particularly useful in **discovering small effects that can be difficult to detect in individual studies** (Cumming, 2014; Goh, Hall, & Rosenthal, 2016). We used a fixed effect approach to conduct the mini meta-analysis, following the procedure of Goh et al. (2016)."

Drive home generalizability

Explore heterogeneity/ moderators

Best practice: Conducting a within-paper meta analysis



Volume 43, Issue 6 April 2017

JOURNAL ARTICLE

Single-Paper Meta-Analysis: Benefits for Study Summary, Theory Testing, and Replicability

Get access >

Blakeley B McShane 🖾, Ulf Böckenholt

Journal of Consumer Research, Volume 43, Issue 6, April 2017, Pages 1048–1063, https://doi.org/10.1093/jcr/ucw085



Construct validity

= degree to which inferences can legitimately be made from empirical operationalizations to theoretical constructs

⇒ The more operationalizations, the greater the ability to demonstrate construct validity

Construct validity

Designing multi-study investigations for greater construct validity: Vary the measurement of your independent and/or dependent variable(s)

Power

Construct validity

Trust

- Perceptual trust (attitudinal survey scale) DV Study 1:
- Behavioral trust (\$ sent in exchange game) DV Study 2:
- Behavioral intention to trust (self-reported DV Study 3/4: willingness to behave in a certain way)
- IV Study 1: Power manipulated via counterpart's first offer
- Power manipulated via preferential "power IV Study 2: player" role
- Power manipulated via economic importance of IV Study 3/4: exchange and # exchange partners Schilke, Reimann, and Cook 2015 21

Competence Construct validity

DV Study 1A/4: Perceptual trust scale 1 (attitudinal survey scale)

- DV Study 1B: Perceptual trust scale 2 (attitudinal survey scale)
- DV Study 2: Behavioral intention to trust (self-reported willingness to behave in a certain way)

DV Study 3: Behavioral trust (click on a hyperlink to unknown website)

IV Study 1A: Competence via customer reviews (stars & #)IV Study 1B: Competence via # years of experience

Trust

Construct validity

Best practice: Decomposing multi-faceted constructs to enhance precision

 IV Study 1/2: Interpersonal contact (no/yes)
 IV Study 3: Type of interpersonal contact (no/visual/verbal/ both visual and verbal contact)





McClelland Hall 405JJ 1130 E. Helen St. P.O. Box 210108 Tucson, Arizona 85721-0108

520-621-7461 podsakof@arizona.edu 🖾

Mechanisms

Nathan Podsakoff

Department Head, Management and Organizations

Eller Professor

Nathan Podsakoff joined the Eller College of Management in 2007 after earning his PhD in Organizational Behavior and Human Resources from the University of Florida. He serves as the Head of the Department of Management and Organizations. His areas of expertise include employee citizenship and prosocial behavior, organizational stress, influence and leadership, scholarly impact in the field of management, and research methods in organizational research. He is a member of the Academy of Management, the American Psychological Association, and is a Fellow in the Society for Industrial and Organizational Psychology.

Courses

- MGMT 575 The Science and Practice of Influence
- MGMT 601 Experimental Research Methods I
- MGMT 602 Experimental Research Methods II

Mechanisms

= the reasons why an IV affects a DV

"Underlying processes"

"Intervening variables"

"Causal explanations"

Mechanisms

Why do (should) we care so much about mechanisms?

Q

0

"In absence of a concern for such mediating or intervening mechanisms, one ends up with facts, but with incomplete understanding"

(Rosenberg 1968)

APA Dictionary of Psychology

Search and select a Dictionary term

dustbowl empiricism

an approach to science and the social sciences that consists primarily of making empirical observations and collecting data rather than establishing a theoretical framework. The "dustbowl" refers to certain campuses in the center of the United States, where this approach was once considered to be widespread.

"...developing an understanding of the underlying mechanisms or mediators, through which X predicts Y, ... is what moves organizational research beyond dust-bowl empiricism and toward a true science" (Mathieu, DeShon, and Bergh 2008)

Measurement of mediation

Experimental causal chain

Moderation of process

Podsakoff and Podsakoff 2019, Spencer, Zanna, and Fong, 2005



→ Evidence for an indirect effect (product of a*b) establishes mediation

Hayes 2022, Schilke and Rossman 2018 (Online Supplement D)





→ Evidence for both an IV-mediator effect and a mediator-DV effect from two sequential experiments suggests mediation

Stone-Romero and Rosopa 2008



- Facilitates strong casual inference regarding mediation
 - "The only way that one can make credible inferences about mediation is to perform two or more experiments." (Stone-Romero and Rosopa 2004, p. 283)
- Requires that the mediator is both measurable and manipulatable
- Does not allow for a statistical test of the "indirect effect," nor for an effect size for the mediating effect
- Difficult to accommodate multiple mechanisms



→ Evidence for an interaction term suggests mediation, if there is a strong theoretical argument that moderator can turn on/off the mechanism



Podsakoff and Podsakoff 2019, Spencer, Zanna, and Fong, 2005

May require large sample size





Study 3: Moderation of
processConceptual argument:Decision makers will invest fewer cognitive
resources in information inference to the
degree that they are already well informed





Best practice: Ruling out alternative explanations



If you decide to report multiple studies within a single paper:

Start your Methods section with a study overview

METHODS

Study Overview

This article uses three experimental studies to test the four hypotheses (see Table 1 for an overview). The first two studies build on a well-established experimental task (introduced by Berger & Fisek, 1970). In each of several trials, participants have the opportunity to adjust their initial choice after learning about responses from competing participants. Focusing on those trials in which self and alter disagree, self staying with his/her previous choice is used as a measure of resistance to environmental pressures, the dependent variable in this research. The third study mirrors the structure of the first two but uses a slightly different task that introduces normative (rather than mimetic) pressures.

Methodological Considerations

Schilke 2018

As noted above, this article uses a set of experiments. Notwithstanding their limitations, experi-

If you decide to report multiple studies within a single paper:

Start your Methods section with a study overview

Study no.	Hypothesis/-es addressed H1, H2, H3	Experimental conditions	Focal type of environmental pressures	Mediators	Key findings Organizational identification increases resistance to environmental pressures, and this effect can be explained by subjective certainty and attention to environmental stimuli.
		 Weak organizational identification Strong organizational identification 	Mimetic	Certainty; attention	
2	H4	 Utilitarian identity Normative identity 	Mimetic	Attention	Resistance to environmental pressures is stronger when the organizational identity is normative versus utilitarian, and this effect can be explained by attention to environmental stimuli.
3	H4	 Utilitarian identity Normative identity Control 	Normative	Attention	Results of Study 2 generalize to normative pressures and a nonstudent sample.

TABLE 1 Study Overview

	Study	Hypothesis addressed	Type of effect	Specific purpose	Experimental manipulation(s)	Sample	Key finding
lf you decide t	1A	1	Main effect	Show that voting threshold affects voting behavior	Voting threshold (1 vs. 2 yes votes)	140 MBA students	A higher voting threshold increases people's tendency to vote yes on a project
	1B	1	Main effect	Demonstrate robustness to other thresholds	Voting threshold (1 vs. 2 vs. 3 yes votes)	351 online seminar participants	Results of Study 1A generalize to a threshold of 3
Start your Me	1C	1	Main effect	Demonstrate robustness to possibility to abstain	Voting threshold (1 vs. 2 yes votes)	328 online seminar participants	Results of Study 1A generalize to situations in which voters may abstain
	1D	1	Main effect	Demonstrate robustness to no vote framing	Voting threshold (1 vs. 3 no votes)	232 online seminar participants	Results of Study 1A generalize to situations in which the threshold is framed in terms of no votes
	1E	1	Main effect	Demonstrate robustness to other group sizes	Voting threshold (1 vs. 2 yes votes) × Group size (3 vs. 6 members)	520 online seminar participants	Results of Study 1A generalize to groups of 3 and 6 members
	1F	1	Main effect	Demonstrate robustness of mediation effect in a causal-chain design	Voting threshold (1 vs. 3 yes votes) × Deliberation (absent vs. present)	623 online seminar participants	Prevote group deliberation attenuates the threshold effect
	2A	2	Mediating effect	Show evidence for mediation	Voting threshold (1 vs. 3 yes votes)	410 online seminar participants	Inferred information mediates the threshold effect
	2B	2	Mediating effect	Show evidence for mediation	Priming (information inference vs. control)	401 online seminar participants	Inferred information affects people's tendency to vote yes on a project
	2C	2	Mediating effect	Explore alternative mediating mechanism	Voting threshold (1 vs. 2 yes votes)	355 online seminar participants	Perceived pivotality does not appear to mediate the threshold effect
iezunka and Schilke forthcoming	3	3	Moderating effect	Show evidence for boundary condition	Voting threshold (1 vs. 2 yes votes) × Level of information (low vs. high)	99 Executive MBA students	The threshold effect goes away when people are highly informed about a project, but is amplified when they are poorly informed

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If you decide to report multiple studies within a single paper:

Start your Methods section with a study overview

Use the Discussion section of each study to explain the motivation of the next (e.g., robustness, mechanism,...)

If you decide to report multiple studies within a single paper:

External validity

Construct validity

Mechanism

Evans and Schilke under review

support for our first two hypotheses. A strength of the first study is its internal validity because participants were randomly assigned to one of two experimental conditions and exploration was measured as a behavioral outcome. However, one important limitation is an ad hoc relationship with an unknown supervisor. This approach allowed us to cleanly isolate and compare conditions that only differed in how power was framed, but additional evidence was needed to evaluate the influence of power framing within longer-term organizational relationships. Another important limitation is the simplification of power framing into a bipolar variable, which allowed us to directly compare the effects of reward vs. power framing. But it is reasonable to expect that managers may independently vary emphasizing reward and punishment power. Thus, we needed to evaluate the effects of a bivariate operationalization by including separate reward and punishment power framing variables in the analysis. To address these limitations while also extending our investigation into testing H3, we conducted a second study that employed a field survey among a sample of organizational decision makers.

If you decide to report multiple studies within a single paper:

Start your Methods section with a study overview

Use the Discussion section of each study to explain the motivation of the next (e.g., robustness, mechanism,...)

Don't go overboard and try not to overwhelm the review team with too many studies in the initial submission

First, we agree with reviewers (see especially comments by reviewers 1 and 4) that there is just too much going on in the paper. As you can see, multiple readers comment on this issue, and are pointing to the fact that less could be more here. Note that if you were to decide to follow this advice

If you decide to report multiple studies within a single paper:

Start your Methods section with a study overview

Use the Discussion section of each study to explain the motivation of the next (e.g., robustness, mechanism,...)

Don't go overboard and try not to overwhelm the review team with too many studies in the initial submission

Have separate pre-registrations for each study

Conclusions

- Reporting > 1 study in a paper can be useful to:
 - enhance **external validity** across different populations, experimental designs, points in time, countries, etc.,
 - demonstrate **construct validity** across different operationalizations,
 - examine **mechanisms** that explain the 'why' of the focal effect.
- There are three different ways to examine mechanisms in experimental research, each with its own pros and cons:
 - measurement of mediation
 - experimental causal chain
 - moderation of process



Multi-study investigations and the identification of theoretical mechanisms in experimental research

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