

TED SHEAR

CONTACT

Website: tedshear.com
E-mail: ebshear@ucdavis.edu
Phone: +1 (781) 248-1828
Skype: ted.shear

Address: Department of Philosophy
University of California, Davis
One Shields Avenue
Davis, CA 95616

EMPLOYMENT

Postdoctoral Research Fellow, [University of Queensland](#), 2017

[School of Economics](#)

Project: “Epistemically Feasible Choice: Implications for Sustainable Risk Management”

Principal Investigators: [John Quiggin](#) and [L.A. Paul](#)

EDUCATION

PhD, [University of California, Davis](#), 2016 (*expected*)

[Department of Philosophy](#)

Dissertation: ‘Belief Revision Beyond AGM’

Advisers: [G. Aldo Antonelli](#) and [Branden Fitelson](#)

Committee: [Bernard Molyneux](#), [Hanti Lin](#), [Richard Pettigrew](#), [Wesley H. Holliday](#)

Abstract: My dissertation explores rational belief change. I provide a new solution to the Surprise Examination Paradox using a model that represents the revisions that agents make to their beliefs. Previous attempts have failed to appreciate the a crucial role played by the agent’s revision in the paradox’s generation. This leads me to pose a new strengthened conceptual riddle that I call the *Revised Examination Paradox*, which involves an agent similar to the one in the older paradox, but with straightforwardly inconsistent beliefs. This new paradox demonstrates the surprising result that every logically possible resolution to the agent’s inconsistency requires her to give up some true beliefs. In the final part of my dissertation, I extend classical accounts of belief revision to accommodate credences—*viz.* numerical assignments of degrees of confidence—and define a new revision rule that respects those credences. I show that this new revision rule is more epistemically conservative than its rivals in that it makes fewer positive demands on the agent’s beliefs.

Visiting Fellow, [Carnegie Mellon University](#), 2013

[Center for Formal Epistemology](#)

BA, [University of British Columbia](#), 2008

[Philosophy \(Hons.\)](#), [Linguistics](#)

RESEARCH

Areas of Specialization: [Epistemology](#), [Decision Theory](#), [Philosophy of Mind](#)

Areas of Competence: [Logic](#), [Philosophy of Language](#), [Philosophy of Science](#), [Metaphysics](#)

Papers [* *Draft available*]

1. ‘Self-defeating Reasoning and Surprise Exams’ *
2. ‘Two Approaches to Belief Revision’ [*Co-authors:* [Branden Fitelson](#) and [Jonathan Weisberg](#)] *
3. ‘Identity Crisis: Logical considerations for physicalist solutions to the hard problem of consciousness’ [*Co-author:* [Bernard Molyneux](#)] *

4. 'The Cost of Consistency' [*Co-author*: Konstantin Genin] *
5. 'Higher-order Belief Change and a New Puzzle for Belief Revision' *
6. 'Epistemic norms and the norms of epistemics: A pluralist defense of accuracy-first epistemology'
7. 'Lockean Danger Zones for Lossy Inference Rules'

Selected Presentations [† *Invited*]

'Two Approaches to Belief Revision' [*Co-authors*: Branden Fitelson and Jonathan Weisberg]

1. FEW: Formal Epistemology Workshop, 2016 – Gröningen, Netherlands
2. Epistemic Utility Theory 2016 Conference – Bristol, United Kingdom
3. CSHPM: Canadian Society for the History and Philosophy of Mathematics, 2016 – Calgary, Canada
4. Philogica IV: Colombian Conference on Logic, Epistemology, and Philosophy of Science, 2016 – Bogota, Colombia
5. PROGIC: The Seventh Workshop on Combining Probability and Logic, 2015 – Canterbury, United Kingdom
6. UMD Philosophy of Probability Workshop, 2015 – University of Maryland, College Park †
7. Morris Colloquium on Cognitive Values, 2015 – University of Colorado, Boulder †
8. Full and Partial Belief Workshop, 2014 – Tilburg, Netherlands

'Identity Crisis: Logical considerations for physicalist solutions to the hard problem of consciousness' [*Co-author*: Bernard Molyneux]

9. NCC: Northern California Consciousness Conference, 2016 – University of California, Davis
10. Philogica IV: Colombian Conference on Logic, Epistemology, and Philosophy of Science, 2016 – Bogota, Colombia

'Lockean Danger Zones and Lossy Inferences'

11. European Summer Meeting of the Association for Symbolic Logic, the Logic Colloquium, 2015 – Helsinki, Finland

'The Cost of Consistency' [*Co-author*: Konstantin Genin]

12. ELISIEM: Epistemic Logic for Individual, Social, and Interactive Epistemology Workshop at ESS-LLI, 2014 – Tübingen, Germany
13. Berkeley-Stanford-Davis Philosophy Graduate Conference, 2014 – University of California, Davis
14. USC-UCLA Graduate Conference in Philosophy, 2014 – University of Southern California
15. University of Miami Graduate Epistemology Conference, 2014 – University of Miami

'Giving up on Theories'

16. INPC XVIII: Inland Northwest Philosophy Conference, 2014 – Philosophy of Science: Inside and Out – Washington State University †

'Self-defeating Reasoning and Surprise Exams'

17. Canadian Philosophical Association Annual Congress, 2013 – Victoria, British Columbia
18. Rutgers-Princeton Graduate Philosophy Conference, 2013 – Rutgers University
19. PhDs in Logic V, 2013 – Munich Center for Mathematical Philosophy
20. World Congress on Universal Logic, 2013 – Rio de Janeiro, Brazil
21. South Carolina Society for Philosophy, 2013 – College of Charleston

SERVICE AND PROFESSIONAL ACTIVITIES

Departmental Service

- 2014 Co-founder, Minorities and Philosophy (MAP) – UC Davis Chapter
- 2014 Organizer, Second Annual DEX Conference – Pre-Pacific APA Conference
- 2013 Organizing committee, First Annual DEX Conference – Pre-Pacific APA Conference

- 2013-2016 Organizer and speaker, L^AT_EX and Beamer for Philosophers Workshop
 2012-2015 Organizer, Training & Information in Pedagogical Salience – UC Davis
 2012 Founder, Weekly Philosophy Department Tea Time
 2011-2015 Organizing committee, Berkeley-Stanford-Davis Conference
 2011-2016 Graduate Student Mentor

Research Groups

UC Davis Logic, Language, Epistemology, Metaphysics, Mind, and Mathematics Working Group
 Berkeley-Stanford Circle in Logic and Philosophy
 Bay Area Philosophy of Science Working Group

Referee

Ergo, Erkenntnis, Philosophia, Review of Symbolic Logic, Res Philosophica, Synthese

Professional Affiliations

American Philosophical Association
 Association of Symbolic Logic
 Canadian Philosophical Association

TEACHING**Courses Taught**

- | | | | |
|------|------------------------------------|------|--|
| 2016 | PHI-128 Rationality | 2014 | PHI-012 Introduction to Symbolic Logic |
| 2015 | PHI-005 Critical Reasoning | 2013 | PHI-012 Introduction to Symbolic Logic |
| 2014 | PHI-001 Introduction to Philosophy | | |

TA Assignments

- | | | | |
|------|---|------|-------------------------------------|
| 2016 | PHI-001 Intro to Philosophy | 2014 | PHI-013 Minds, Brains and Computers |
| 2016 | PHI-101 Metaphysics | 2013 | PHI-101 Metaphysics |
| 2013 | PHI-001 Intro to Philosophy | 2012 | PHI-015 Bioethics |
| 2012 | PHI-016 Foundations of American Democracy | 2011 | PHI-005 Critical Reasoning |
| 2012 | PHI-101 Metaphysics | | |

AWARDS

- 2016 Formal Epistemology Workshop Student Travel Grant – University of Gröningen
 2016 Epistemic Utility Theory Conference Student Travel Grant – University of Bristol
 2015 Student Travel Grant (Logic Colloquium – Helsinki, Finland), Association of Symbolic Logic
 2015 Graduate Student Travel Award (PROGIC – Canterbury, UK), UC Davis Graduate Studies
 2014 Provost’s Dissertation Year Fellowship in the Arts, Humanities and Social Sciences, UC Davis
 2013 Visiting Scholar Fellowship Award, UC Davis Department of Philosophy
 2010 Fellowship Award Fall Quarter, UC Davis Department of Philosophy
 2010 Fellowship Award Winter Quarter, UC Davis Department of Philosophy
 2008 Outstanding Graduating Student Award, University of British Columbia

REFERENCES**Branden Fitelson**

Distinguished Professor
Department of Philosophy
Northeastern University
branden@fitelson.org

Richard Pettigrew

Professor
Department of Philosophy
University of Bristol
richard.pettigrew@bristol.ac.uk

Wesley H. Holliday

Assistant Professor
Department of Philosophy
University of California, Berkeley
wesholliday@berkeley.edu

Adam Sennet (Teaching Letter)

Associate Professor
Department of Philosophy
University of California, Davis
sennet@ucdavis.edu

⁰Due to the sudden passing of my dissertation adviser, Aldo Antonelli, his signed letter will be made available by the UC Davis Philosophy Department Chair, James Griesemer, who may be reached in this capacity at: philosophychair@ucdavis.edu.

EXTENDED DISSERTATION ABSTRACT

My dissertation explores rational belief change. More specifically, I investigate two largely under-appreciated topics in belief revision: (i) the interaction between higher-order beliefs, rational inference, and belief revision, and (ii) the joint rationality constraints on revisions of beliefs and updates on credences—*viz.* numerical assignments of degrees of confidence. Traditional models of belief revision have tended to consider agents who possess unrealistically simple epistemic attitudes. Developing these richer models is an important advance in our understanding of rational belief change for real agents who possess complex and diverse epistemic attitudes.

In my work on (i), I provide a new solution to the Surprise Examination Paradox using a model capable of representing higher-order beliefs and their revisions. In this especially recalcitrant paradox, a teacher announces to her students that they will receive a surprise examination at some point during the week. A clever student reasons from her belief in the announcement using a peculiar, but seemingly valid, backwards inductive line of reasoning apparently demonstrating the falsity of the announcement. Accordingly, she gives up belief in it only to be surprised when she receives an exam and discovers that the announcement was true after all. The challenge of the paradox is to explain what went wrong in the student's reasoning. Previous attempts at resolution have failed to appreciate that the student's revision plays a crucial role in the satisfaction of the announcement. However, her reasoning depends on the inference from her current belief in the announcement to her future belief in the announcement. Thus, according to my analysis, this inference is invalidated by her revision. This peculiarity is generated by the fact that the student's belief in the announcement is a higher-order belief about her future beliefs. As such, the announcement's truth depends on the evolution of the student's beliefs: the announcement will be satisfied when she fails to believe it immediately prior to the exam. The important lesson that I garner from the paradox is that the agent's belief revision procedure can affect the validity of an agent's system of inference. I show that Surprise Examination Paradox helps expose the complex interplay between rational inference and belief revision in the presence of this sort of especially rich belief.

This leads me to pose a new strengthened conceptual riddle that I call the *Revised Examination Paradox*, which further elucidates the features of higher-order beliefs. The difference in its setup from the original paradox is that the student begins with belief that she will not lose belief in the announcement, rather than inferring this. Her beliefs then form a straightforwardly inconsistent set. However, all of her beliefs are sensitive to the revisions that she performs. They are structured in a way that will force her to give up a true belief regardless of which way she attempts to resolve her inconsistency. This is the unexpected result. Certainly, upon discovering an inconsistency in her beliefs, a real agent typically does not know which of her beliefs are false. However, it seems there should be some logically possible way for her to perform epistemic surgery, so-to-speak, and remove only the tumorous false beliefs. That is, one might think that there will always be *some* way for her to reestablish consistency by giving up only false beliefs. But the truth of the agent's beliefs may be sensitive to the ways in which she revises them. In this case, the truth of the agent's beliefs is bound up with the way she revises them in such a way that any attempt to reestablish consistency necessarily forfeits a true belief.

Subsequently, I provide three additional cases that demonstrate this result. Each has distinctive features: the first involves a liar-like belief, the second involves an agent with a peculiar psychological profile, while the third involves an infinite set of beliefs with a peculiar structure. The first and second cases both involve beliefs that are true just in case they are not themselves believed. The first and third involve non-well founded sets of beliefs. Individually these features may have lead one to think that those features are the source of the oddity; however, the three cases jointly show that the forced loss of true beliefs results from the sensitivity of certain beliefs to the revisions on them.

In my work on (ii), I extend traditional accounts of belief revision to accommodate credences and investigate the joint constraints governing rational updates of beliefs and credences. The literature includes

extensive study of the *individual* constraints governing each of the attitudes; additionally, considerable attention has been paid to the joint *synchronic* constraints on the two attitudes. However, the investigation of the joint *diachronic* constraints is still in its early stages. I defend an account that has not previously appeared in print. My new constraint is a diachronic version of the thoroughly studied synchronic constraint known as the *Lockean Thesis*. The synchronic version requires that an agent believe a proposition, p , just in case she has credence in p above some threshold. This has intuitive plausibility since it would seem to be irrational for an agent to believe something that she thought was unlikely; similarly, it would seem irrational for her to fail to believe something that she thought was rather likely. The diachronic Lockean Thesis then demands that an agent who learns p changes her beliefs and credences so as to satisfy the synchronic Lockean Thesis after the revision. Assuming Bayesian norms on credences, my new procedure simply revises the agent's beliefs to include all and only propositions that are assigned a credence above some threshold after the credence function is updated by p .

This approach to qualitative belief revision has some surprising features. In particular, I prove that my rule satisfies all but one of the dominant theory's postulates for belief revision. The principle that my rule does not satisfy is the characteristic principle of the traditional account and requires the agent to maintain some additional beliefs beyond those required by my account. This is because the new rule is sensitive to non-definitive but nonetheless relevant counter-evidence. The traditional theory, which is insensitive to credences, only demands that an agent give up beliefs when she learns something logically inconsistent with them. However, we often learn things that provide compelling evidence against some of our beliefs even though they are not logically inconsistent with any of our beliefs. In these cases, my theory does not require the agent to maintain all of her beliefs in the face of such evidence. Accordingly, I argue that the new rule is more epistemically conservative than the traditional rule since it makes fewer positive demands on the agent's beliefs.

Although the Lockean Thesis is intuitive, it is only maintained by a minority of researchers in the literature. This is largely because it is inconsistent with the *prima facie* reasonable requirement that it is never rational to hold an inconsistent set of beliefs, as demonstrated by the Lottery and Preface Paradoxes. Contrary to the majority view, I reject consistency as a rational norm on belief and embrace the Lockean Thesis. As such, I consider the two paradoxes to simply be counterexamples to the consistency norm. I explore an independent motivation for this claim in terms of *epistemic decision theory*. The underlying idea behind epistemic decision theory is that we can apply the standard tools of decision theory to do epistemology by appealing to an assignment of epistemic value to certain beliefs. The view of epistemic value relied on is *veritistic* in the sense that it rewards agents for believing truths and penalizes them for believing falsehoods. According to such an assignment of epistemic value, it turns out that if an agent has coherent credences, then she will satisfy the Lockean Thesis just in case she maximizes expected epistemic value given her credences. This style of justification applies equally well to both the synchronic and diachronic versions of the thesis and is a novel contribution to the literature.

Unifying my work on (i) and (ii) is the concern for ensuring that our formal theories of belief revision generate insights that are applicable for real agents. In various ways, the traditional theories are so idealized that they are inapplicable to agents like us. Firstly, they only represent simplistic agents whose only epistemic attitudes are first-order beliefs. Moreover, they require agents to believe all of the consequences of their beliefs and to have consistent beliefs. In both types of revision that I develop, I weaken these idealizations. Obviously, I investigate epistemically richer agents; but, neither new theory has the staunch requirements of closure and consistency. This means that my investigations bring us closer to understanding the rational norms on belief revision for agents like us. The work outlined above primarily been largely developed in the form of four independent and mature papers. Further steps in these investigations are in progress and described in my research statement.