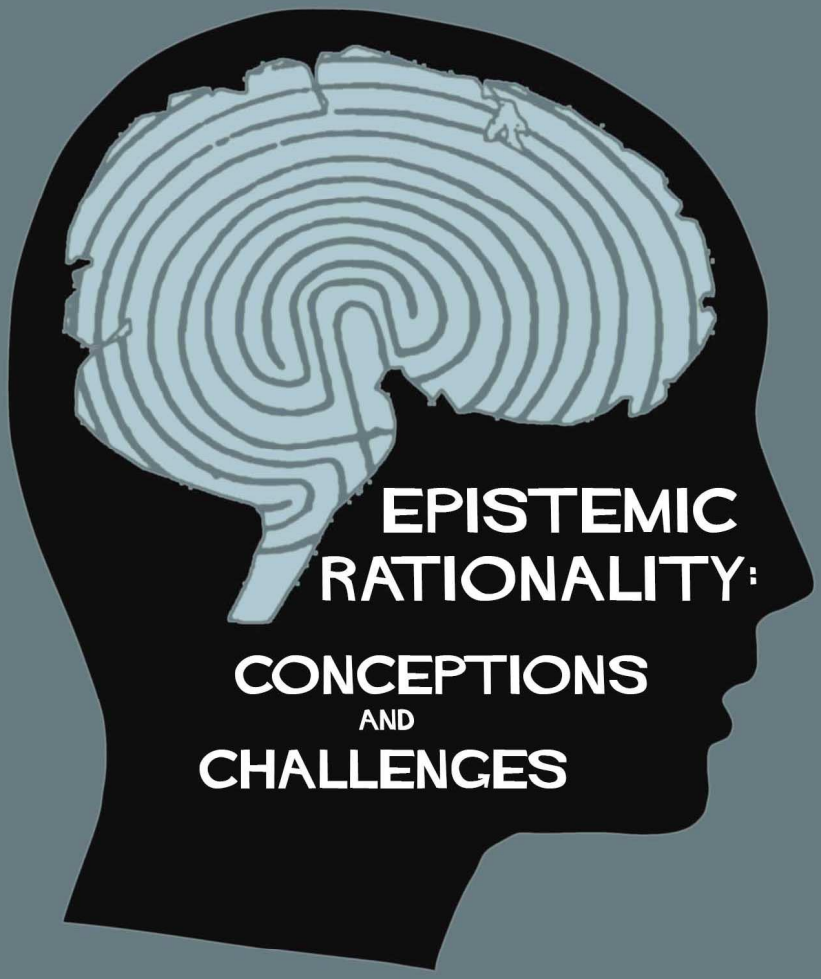

EPISTEMIC RATIONALITY: CONCEPTIONS AND CHALLENGES

Logos Research Group in Analytic Philosophy

Universitat de Barcelona

Gobierno de España · Ministerio de Economía y Competitividad

diaphora — Philosophical Problems, Resilience and Persistent Disagreement

UAB Universitat Autònoma de Barcelona

HPS@BCN — Barcelona History & Philosophy of Science Research Group

CONFERENCE, BARCELONA, 21-23 SEPTEMBER 2017

DAY 1 (THURSDAY 21): THE CHALLENGE OF FALLIBILITY

09:30–10:45 DAVID CHRISTENSEN: THE IMPORTANCE OF INDEPENDENCE
11:15–12:30 ALAN HÁJEK: STAYING REGULAR?
14:30–15:45 MIRIAM SCHOENFIELD: BELIEFS FORMED ARBITRARILY
16:00–17:15 TIMOTHY WILLIAMSON: AMBIGUOUS RATIONALITY
17:30–18:00 COMMENTARY: HANNES LEITGEB

DAY 2 (FRIDAY 22): THE CHALLENGE OF INTRACTABILITY

09:30–10:45 GERD GIGERENZER: INTRACTABILITY AND UNCERTAINTY: THE LIMITS OF AXIOMATIC RATIONALITY AND THE POTENTIAL OF SMART HEURISTICS
11:15–12:30 ANNIKA WALLIN: EPISTEMIC OBLIGATION AND 'THE (WO)MAN ON THE STREET'
14:30–15:45 IRIS VAN ROOIJ: CAN HEURISTICS MAKE HARD WORK LIGHT? ECOLOGICAL RATIONALITY AND INTRACTABILITY
16:00–17:15 STEPHAN HARTMANN: BAYESIAN ARGUMENTATION AND THE CHALLENGE OF INTRACTABILITY
17:30–18:00 COMMENTARY: ROBIN M. HOGARTH

DAY 3 (SATURDAY 23): THE CHALLENGE OF INSTRUMENTALISM

09:30–10:45 THOMAS P. KELLY: BELIEF, PRACTICAL RATIONALITY, AND THE VALUE OF TRUTH
11:15–12:30 ANNA-MARIA EDER: NO COMMITMENT TO THE TRUTH
14:30–15:45 DAVID PAPINEAU: THE STATUS OF EPISTEMIC EVALUATIONS
16:00–17:15 HARVEY SIEGEL: EPISTEMIC RATIONALITY: IF NOT INSTRUMENTAL, WHAT?
17:30–18:00 COMMENTARY: MICHAEL BISHOP

VENUE: RESIDENCIA D'INVESTIGADORS, CARRER HOSPITAL, 64, 08001, BARCELONA

ORGANISED BY CARL HOEFER (ICREA/UNIVERSITAT DE BARCELONA), CHIARA PANIZZA (UNIVERSITAT DE BARCELONA), SVEN ROSENKRANZ (ICREA/UNIVERSITAT DE BARCELONA) AND THOMAS STURM (ICREA/UNIVERSITAT AUTONOMA DE BARCELONA).

PARTICIPATION IS FREE, BUT SPACE IS LIMITED. PLEASE REGISTER WITH: HTTP://WWW.UB.EDU/EPISTEMIC-RATIONALITY/REGISTRATION/

Traditionally, epistemic rationality has been distinguished from practical rationality. In the view of many thinkers, to be epistemically rational, beliefs should approximate a number of ideals: coherence with the canons of logic, axioms of probability, and rules of evidential support. For, it is only then that beliefs are deserving of our trust. These ideals are often required to play a role in numerous applications: in our confidence in climate research, medical judgments based on randomized control trials, or in everyday risk-taking that accepts uncertainty but should differ from acting under ignorance. However, this conception of epistemic rationality has been critically discussed in many ways among both philosophers and scientists. The conference will address three central and related challenges.

(1) *The challenge of fallibility*

Our fallibility extends to the most deeply entrenched of our beliefs, such as logical beliefs. Acknowledgement of our fallibility seems to make it rational to be less than certain. Yet, on the standard Bayesian conception of it, probabilistic coherence requires that reasoners be certain about logical truths. How is this conflict of demands to be resolved? In one's attempt to be epistemically rational, one needs to properly gauge the force of one's evidence. What effects should fallibilism have for the assignment of levels of *credence* to propositions in the light of one's evidence? Should we never assign maximal credence? But if we only ever assign non-extremal credences, this might still mean over- or underrating the force of our evidence. Finally, it is far from clear whether there can always be evidence for the higher-order claim that one has properly assessed what force one's evidence has: at some point one may have to take it on trust that one has done so. But if so, where should that point be located? What is it that our credences should aim to match – objective chances (where these are defined), relevant actual frequencies, or objective evidential probabilities?

(2) *The challenge of intractability*

Many cognitive tasks – such as the traveling salesman problem, or distributing assets in the stock market optimally – are so intractable that the ideal of a reasoner with infinite resources who always follows canons of logic or probability looks as if it set the bar too high. This instills doubts about the centrality of these theories in accounts of epistemic rationality. If reasoning tasks are too demanding for optimal information search and precise assignments of credences, does that imply – as defenders of "bounded rationality" maintain – that we must resort to "fast and frugal" heuristics? But what makes such heuristics *epistemically* rational? How should we assess their rationality if not against e.g. success rates that are measured probabilistically? Also, what are the borders of tractability, and are they fixed once and for all?

(3) *The challenge of instrumentalism intractability*

It can be argued that truth is not the only goal of rational inquiry: belief systems should also satisfy other epistemic goals (e.g. simplicity, fruitfulness), and even practical needs. Making one's beliefs depend exclusively on evidential support, or demanding that we ought to follow the principle of total evidence, may impede achievement of these further goals. Thus, many claim that epistemic rationality is not *sui generis*, but reducible to instrumental or practical rationality. Can an adequate account of epistemic rationality integrate epistemic and non-epistemic goals? What would be the consequences for attitudes of trust and distrust concerning knowledge claims, e.g. in science and science-based policy making, if we accepted instrumentalism?
Can the traditional conception of epistemic rationality be rescued? What modifications are necessary, what alternatives must be considered? There are some answers to these questions in the recent literature. But there is no consensus about them, and more investigation is needed. The conference brings together leading philosophers and cognitive as well as social scientists to discuss anew the concept of epistemic rationality, while keeping in view its implications for science and society.

ABSTRACTS

Day 1 (Thursday 21): The challenge of fallibility

David Christensen (Brown University)
Preserving Independence

We often get evidence that casts doubt on the reliability of our own first-order reasoning. The rational response to such evidence would seem to depend on how reliable one should estimate that reasoning to be. Independence principles are intended to constrain that reliability-assessment,so as to prevent question-begging reliance on the very reasoning being assessed. But this has consequences some find disturbing: The bracketed reasoning may embody important logical/pro-babilistic or evidential relations, and so one's final credence may end up violating logical/probabilistic or evidential principles of rationality. Critics have offered several arguments against the very idea of Independence principles. (Recent examples are (Kelly 2013, Arsenault and Irving 2013, and Lord 2014.) This paper diagnoses where the anti-Independence arguments go wrong. It argues that looking closely at the arguments actually strengthens the case for the general idea and gives us some valuable guidance in trying to formulate an adequate Independence principle.

References:
Kelly, T. (2013), "Disagreement and the Burdens of Judgment", in D. Christensen and J. Lackey, eds., The Epistemology of Disagreement: New Essays (Oxford U. P.).
Arsenault, M. and Z. Irving (2013), "Aha! Trick Questions, Independence, and the Epistemology of Disagreement," Thought.
Lord, E. (2014), "From Independence to Conciliationism: An Obituary," Australasian Journal of Philosophy.

Alan Hájek (Australian National University)
Staying Regular?

'Regularity' conditions provide bridges between possibility and probability. They have the form:
If X is possible, then the probability of X is positive (or equivalents). Especially interesting are the conditions we get when we understand 'possible' doxastically, and 'probability' subjectively. I characterize these senses of 'regularity' in terms of a certain internal harmony of an agent's probability space <omega, F, P>. I review several arguments for regularity as a rationality norm. An agent could violate this norm in two ways: by assigning probability zero to some doxastic possibility, and by failing to assign probability altogether to some doxastic possibility. I argue for the rationality of each kind of violation. Both kinds of violations of regularity have serious consequences for traditional Bayesian epistemology. I consider their ramifications for:

– conditional probability
– conditionalization
– probabilistic independence
– decision theory

Miriam Schoenfield (Massachusetts Institute of Technology)
Beliefs Formed Arbitrarily

This paper is about whether we should abandon beliefs formed arbitrarily: for example, religious, political and moral beliefs that we realize we possess because of the social environments we grew up in. The paper motivates a set of criteria for when to abandon such beliefs.

Timothy Williamson (University of Oxford)
Ambiguous Rationality

The paper distinguishes a content-oriented conception of rational belief, which concerns support relations between the proposition believed and one's evidence, from a disposition-oriented conception of rational belief, which concerns whether someone generally disposed to conform their belief to their evidence would

believe the given proposition in the given circumstances. Neither type of rationality entails the other. It is argued that conflating the two ways of thinking about rational belief has had damaging effects in epistemology.

Day 2 (Friday 22): The challenge of intractability

Gerd Gigerenzer (Max Planck Institute for Human Development, Berlin)
Intractability and Uncertainty: The limits of axiomatic rationality and the potential of smart heuristics

When Savage formulated his axioms of rational decision making in 1954, he also specified the situations in which these have no normative force, namely under intractability and uncertainty, such as in his examples of playing chess or planning a picnic. Intractability means that no human being or machine can find the optimal solution to a problem, even if one exists. Most interesting problems are intractable. Uncertainty means that the set of options or outcomes or their probabilities cannot be fully known ahead; thus, no optimal solution exists. Consistent with these two limitations, there is little to no evidence that violations of coherence axioms actually incur real costs such as less health, wealth, or happiness. How then should reasonable people make decisions about problems that are intractable or characterized by uncertainty? In this talk, I introduce the study of fast-and-frugal heuristics and their ecological rationality,which can deal with both intractability and uncertainty.

Arkes, H. R., Gigerenzer, G., &Hertwig, R. (2016). How bad is incoherence? *Decision*, 3, 20–39.

Gigerenzer, G., Hertwig, R., &Pachur, T. (Eds.) (2011). *Heuristics: The foundations of adaptive behavior*. New York: Oxford University Press.

Annika Wallin (Lund University)
Epistemic obligation and 'the (wo)man on the street'

"Ought implies can" is an argument that usually centres on moral obligation. In my mind, it applies also to the notion of "rationality". What use do we have of a rationality concept if it cannot be applied to actual agents? However, how the rationality concept can or should be changed depends on three interrelated discussions: what an "actual agent" is, what the obstacles for the rationality concept under consideration are with respect to its implementability– that is its ability to go

from “ought” to “can” – and, of course, what sort of rationality concept we require to be implementable.

Iris van Rooij (Radboud University Nijmegen)
Can heuristics make hard work light? Ecological rationality and intractability

Classical accounts of rationality, based on logic and probability theory, have been criticized for assuming demonic computational powers far beyond the capacity of mortals and machines. According to these accounts, rational minds must have the capacity for solving intractable (NP-hard) problems, for which no tractable algorithms exist. On an alternative account, the mind’s adaptive toolbox consists of fast and frugal heuristics and rationality is to be understood as the fit between these heuristics and the environment, called ‘ecological rationality’. It has been tacitly assumed that ecological rationality is tractable. However, as I will demonstrate in this talk, ecological rationality presents minds (or nature) with the same kind of intractable problems as classical accounts of rationality. This wrinkle may be ironed out, but doing so seems to require an extension of the heuristics research program to understand the tractability of adapting toolboxes of heuristics.

Otworowska, M. Blokpoel, M., Sweers, M., Wareham, T. & van Rooij, I. (forthcoming). Demons of ecological rationality. Cognitive Science.

Van Rooij, I., Wright, C. & Wareham, H.T. (2012). Intractability and the use of heuristics in psychological explanations. Synthese, 187, 471-487.

Stephan Hartmann (Ludwig Maximilian University of Munich)
Bayesian Argumentation and the Challenge of Intractability

We often make arguments based on uncertain premises. In such cases, the conclusion of the argument does not follow with certainty, even if the underlying argument pattern is deductively valid. This raises the questions “what is so special about deductively valid arguments?”, and “what advantage do we gain by using them?”. We will provide a novel answer to these questions. In doing so, we will apply the distance-based approach to probabilistic updating to the study of argumentation in uncertain contexts. Unlike other updating rules that have been considered in the philosophical literature, this approach takes seriously the idea of updating on non-propositional evidence. We show that the distance-based approach is a probabilistic updating method that is able to provide a philosophically satisfactory account of arguments with uncertain premises. We will also show how our account can provide normative justifications for certain argumentative strategies and how the challenge of intractability can be met. The talk is based on joint work with Ben Eva (MCMP).

Day 3 (Saturday 23): The challenge of instrumentalism

Thomas P.Kelly (Princeton University)
Rational Belief, Practical Rationality, and the Value of Truth

According to one currently popular account, the fact that we have reasons to believe some propositions as opposed to others ultimately depends on the fact that we have certain goals or aims. On this picture, rational believing is a manifestation of *instrumental* or means-ends rationality. According to an alternative account, the fact that we have reasons to believe some propositions as opposed to others ultimately depends, not on our having certain goals or aims, but rather on the fact that certain outcomes are objectively valuable or worth achieving. I argue against both of these accounts and sketch an alternative picture.

Anna-Maria A. Eder (Northeastern University, Boston)
No Commitment to the Truth

Epistemic rationality is commonly considered to be normative and most epistemologists endorse one of the following two specifications of the normativity of epistemic rationality:
Ought: If it is rational to believe a proposition *p* for an agent *s*, then *s* ought to believe *p*.
Permissibility: If it is rational to believe a proposition *p* for an agent *s*, then *s* is permitted to believe *p*.
The question arises: which of these two position is to be preferred? I argue that we can answer this question by concentrating on the question of why rationality is normative at all. It is often assumed that rationality is normative because rationally believing a proposition adequately serves an appropriate epistemic end, which is considered to be epistemically valuable. Accordingly, the normativity is based on the conduciveness to the appropriate, valuable epistemic end and is explained by reference to a teleological position. Let us assume that some such epistemic teleological position is correct and the following holds:
Epistemic Teleology: It is rational to believe a proposition *p* for an agent *s* if and only if *s*'s believing *p* adequately serves (or would serve) the appropriate epistemic end.
In this presentation, I criticize popular epistemic teleological positions and argue that there is only one such position that is tenable from a purely epistemic perspective. According to this radical position, the appropriate end referred to by *Epistemic Teleology* is the end of not *believing a proposition if it is false*. In contrast, from a purely epistemic perspective, the more demanding end of *believing a proposition if and only if it is true* is not an appropriate end referred to by *Epistemic Teleology*. A teleological position that takes such an end into account is only tenable from a semi-epistemic perspective that also considers practical matters. Finally, after showing that my teleological position favors *Permissibility* over *Ought*, I conclude by reviewing my results and by defending my position against objections that have been raised.

David Papineau (King's College London and City University of New York Graduate Center)

The Status of Epistemic Evaluations

Epistemic evaluations are distinctive, both because they focus on a specific goal, the avoidance of falsity, and because beliefs are not products of voluntary action. Both these features raise questions about the nature of epistemic evaluations and their relation to other normative facts. My paper will aim to clarify these matters.

Harvey Siegel (University of Miami)

Epistemic Rationality: If Not Instrumental, What?

Most (if not all) epistemologists and philosophers of science with 'naturalist' inclinations argue that if there is to be any such thing as normativity or rationality in these domains, it must be *instrumental* – roughly, a matter of goal satisfaction – rather than something involving normative 'oughts' that are independent of the satisfaction of our epistemic or other ends. I will argue, first, that while such an instrumental conception of rationality is perfectly respectable, at least as it concerns specifically epistemic ends, it cannot be the whole story about such normativity. Rather, it must be accompanied by a 'categorical', goal-independent sort of normativity that cannot be reduced to instrumental rationality. I will next explore the contours of such a categorical conception, and argue that it need not and should not be understood to involve *a priority*, certainty, infallibilism, or any other philosophical sin. I will then offer a self-reflexive justification of that conception, and argue that that justification is superior to one conceived in terms of reflective equilibrium. Finally, I will utilize the view defended to answer two questions posed in the conference announcement: while an adequate account of epistemic rationality not only can, but should, integrate categorical and instrumental considerations, the former cannot be reduced to the latter; and while epistemic rationality is sometimes a matter of the satisfaction of epistemic ends, it does not involve the satisfaction of non-epistemic, practical ends, because the satisfaction of the latter sort of ends provides no reason for thinking the satisfier is either justified or true.