Location:
Birkbeck College, University of London
Malet Street, Bloomsbury
London WC1E 7HX

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The 11th London Reasoning Workshop: July 24 - 27, 2018, Rm. B20 (talks) Rm. 534 (Coffee)

Festschrift for Jonathan St. B. T. Evans (Rm. B20)
Tuesday 24th of July 2018

Programme: TBA

The 11th London Reasoning Workshop
Wednesday 25th of July 2017

09:00-09:20	**Tea & Coffee in room 534**
9:20	**Welcome by Mike Oaksford**
SYMPOSIUM 1: EMOTION AND REASONING **[n] = Abstract number in Appendix**	
9:30-10:00	**Isabelle Blanchette [12]** Dual processes in reasoning and emotional memory
10:00-10:30	**Valentina Cardella and Amelia Gangemi [4]** Emotions and reasoning in schizophrenic patients
10:30-11:00	**Tea & Coffee in room 534**
SYMPOSIUM 2: JUDGEMENT & DECISION MAKING	
11:00 -11:30	**Ian Newman and Valerie Thompson [9]** Base-rate neglect is a function of conflict resolution strategy
11:30-12:00	**Erin Beatty** Mindware vs problem recognition: Can we improve base rate performance
12:00-12:30	**Maya Bar-Hillel** Learning psychology from riddles: The case of stumpers
12:30-14:00	**Lunch**
SYMPOSIUM 3: LEGAL AND MORAL REASONING	

14:00-14:30	**Emma Dietz and Steffen Holldobler [7]** Obligation and factual conditionals: The suppression task revisited
14:30-15:00	**Cillian McHugh, Marek McGann, Eric R. Igou, & Elaine L. Kinsella [5]** Reasons or rationalisations: Inconsistency in articulating, endorsing, and applying moral principles
15:00-15:30	**Benjamin Sklarek, Lupita Estafania Gazzo Castañeda & Markus Knauff [10]** Legal reasoning: Balancing of basic right conflicts
15:30-16:00	**Tea & Coffee in room 534**
SYMPOSIUM 4: CONDITIONAL REASONING	
16:00-16:30	**Niki Pfeifer** Recent advances in mental probability logic
16:30-17:00	**Niels Skovgaard-Olsen [8]** Relevance and conditionals
17:00-17:30	**Phil Johnson-Laird, Ruth Byrne, Geoff Goodwin, Sunny Khemlani, Cristina Quelhas, and Marco Ragni [1]** The meaning of conditionals
17:30	**WINE RECEPTION** ROOM 534
19:00	**DINNER AT OLIVELLI'S RESTAURANT** 35 Store Street

The 11th London Reasoning Workshop
Thursday 26th of July 2017

BBK, University of London, Malet Street, Bloomsbury, London WC1E 7HX, Location: Room B20

SYMPOSIUM 5: METACOGNITION AND RATIONALITY	
09:00-09:20	**Tea & Coffee in room 534**
09:30-10:00	**Valerie Thompson** Feelings of rightness and error in a conditional reasoning task
10:00-10:30	**Rafefet Ackerman** The diminishing criterion model in the wild – How do people allocate time to reasoning tasks in real life?
10:30-11:00	**Tea & Coffee in room 534**
11:00-11:30	**Shira Elqayam, Rakefet Ackerman, Igor Douven [11]** Satisficing, meta-reasoning, and the rationality of further deliberation
11:30-12:00	**Jala Rizeq, David B. Flora, and Maggie E. Toplak [6]** Contaminated mindware, cognitive abilities, and rational thinking
12:00-14:00	**Lunch**
SYMPOSIUM 6: COUNTERFACTUALS AND EXPLANATION	
14:00-14:30	**Nicole Cruz, David Over, Mike Oaksford** Dynamic reasoning with counterfactuals

14:30-15:00	**Ruth Byrne & Orlando Espino [2]** Updating the epistemic status of models of counterfactuals
15:00-15:30	**Mark Keane [3]** Expectations about the unexpected: The constraints on explanatory possibilities
15:30-16:00	**Tea & Coffee in room 534**
SYMPOSIUM 7: NEUROSCIENCE OF REASONING	
16:00-16:30	**Lupita Estafania Gazzo Castañeda** People can flexibly activate or suppress background knowledge to reason probabilistically or deductively: An fMRI study with a dynamic response format
16:30-17:00	**Vinod Goel** TBA
CLOSE	

Fire instructions for students and visitors

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Alarm tests involve intermittent bursts of sound of only a few seconds duration.

The main fire alarm is a *continuous* ringing bell or *continuous* siren in all Birkbeck buildings. When a *continuous* alarm sounds you must leave the building immediately.

There will be no other warning messages!

If you hear a continuous fire alarm

1. Leave the building immediately by the nearest exit. Do not delay to collect your belongings.
2. Do not use the lifts or the phone.
3. Follow the instructions of your tutor, course leader and/or fire marshals.
4. Move well away (100 metres) from the exits once outside
5. Do not stand in the road/street.
6. Do not re-enter the building unless told it is safe to do so

If you discover a fire

1. Operate the nearest fire alarm (red "break-glass" boxes on walls)
2. The Duty Attendant at Malet Street will be automatically contacted in every case and will immediately call the Fire Brigade.
3. Do not try to fight a fire unless you have been trained to use fire extinguishers.
4. Leave the building by the nearest exit

Explore the College. Get to know all the fire exit routes available to you. In the event of a fire you may need to use more than one.

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Thank you,
Birkbeck Fire Officer

Appendix: Abstracts

1. Phil Johnson-Laird. Ruth Byrne, Geoff Goodwin, Sunny Khemlani, Cristina Quelhas, and Marco Ragni

Title: The meaning of conditionals

Abstract:
We begin with three long-standing phenomena: the listing of what's possible given a conditional, the evaluation of the truth or falsity of a conditional in the light of evidence, and the conclusion that individuals draw from an inference such as:
One of these assertions is true and one of them is false:

If there's a king in the hand then there's an ace in the hand.
If there's not a king in the hand then there's an ace in the hand.

What, if anything, follows?
Most people draw an invalid conclusion. Together the three phenomena rule out all the main theories of the meaning of conditionals. So, we present a new model-based theory that explains them. It postulates that compound assertions refer to conjunctions of possibilities and impossibilities. The presuppositions of subordinate *if*-clauses, however, ensure that cases in which the *if*-clause is false are possible whether a conditional is true or false. So, when a conditional, *If A then C*, is true, *A* and *C* is possible and *A* and *not-C* is impossible. The theory makes unique predictions concerning conditional inferences based on possibilities and necessities, the parallels between factual and counterfactual conditionals, and the probabilities of conditionals and their partitions. We report experiments corroborating these predictions.

2. Ruth Byrne and Orlando Espino

Title: Updating the epistemic status of models of counterfactuals

Abstract:
When people understand a counterfactual conditional, such as 'if it had been a good year there would have been roses in the national park', they construct a model of the conjecture 'it was a good year and there were roses' and a model of the presupposed facts, 'it was not a good year and there were no roses', and they keep track of the epistemic status of these models, as corresponding to the conjecture or facts. We report a series of experiments that aimed to examine how people update the epistemic status of models of counterfactuals. Participants read short stories that contained a counterfactual, and information designed to prime its presupposed facts or its conjecture. We measured their time to read a subsequent categorical assertion that corresponded to the presupposed facts or the conjecture. The first experiment had a 2 (prime: facts vs conjecture) x 2 (categorical assertion: facts vs conjecture) within-participants design. For example, in one condition, participants received a short story that contained the counterfactual and information designed to prime its presupposed facts, 'as expected, during the tour …' and a categorical that corresponded to its presupposed facts, '… they saw that flower was not there'. In another condition, they received information designed to prime its conjecture, 'unexpectedly, during the tour …' and a categorical that corresponded to its conjecture, '… they saw that flower was there'. The experiments showed that when participants received the facts prime, 'as expected…', they read the possibility corresponding to the facts, 'that flower was not there', more rapidly than the one corresponding to the conjecture, 'that flower was there'. In contrast, when they received the conjecture prime, 'unexpectedly…', they read the possibilities corresponding to the facts and the conjecture equally rapidly. The second and third experiments replicated the results, and experiment 2 compared the facts prime to no prime, and experiment 3 compared the conjecture prime to no prime. Overall, the results indicate that when participants are primed by the facts, they update their models to envisage only the facts, but when they are primed by the conjecture, they continue to envisage both the conjecture and the facts.

3. Mark Keane

Title: Expectations About the Unexpected: The Constraints on Explanatory Possibilities

Abstract:
When people are talking about or explaining the unexpected they gracefully avoid a chaos of possibilities. If you are told a story about Mary taking money from an ATM to go clothes-shopping are asked "imagine that something unexpected happens?", plausibly you might say "she lost her money", "the shop was shut" or "she did not go shopping for some reason". However, you could just as easily say "Mary sprouted wings and flew away to Baku, to buy squirrels"; but you probably didn't say this. In imagining the unexpected or explaining it, people appear to be very constrained and conservative in how they use their prior knowledge. Leake (Evaluating Explanations, 1992; see also Schank, Explanation Patterns, 1986) proposed that when people are dealing with the unexpected, they detect anomalies (i.e., failures in plan resources, actions or goals) and index their memories on these failures. Hence, in the shopping scenario, people cast the unexpected as failings within the "usual plan" (e.g., losing money, being delayed, not going shopping after all), rather than more bizzare possibilities. To test these proposals, we analyse people's responses in tasks where they are asked to either (i) describe unexpected outcomes in everyday scenarios or (ii) explain unexpected outcomes. The results show that people are highly constrained and conservative in their explanations: in (i) sticking closely to the given information, (ii) avoiding the introduction of new/inferred objects, (iii) inferring only a single, new action (not 2 or 3) and (iv) framing the unexpected as goal failure (e.g., as opposed to goal boosting, as in "Mary found some money and bought even more clothes"). The extent to which current psychological theories of explanation do not consider such patterns of responding is discussed.

4. Valentina Cardella & Amelia Gangemi

Title: Emotions and reasoning in schizophrenic patients

Abstract:
A number of studies on syllogistic reasoning in schizophrenia seem to show that schizophrenics don't present deficits in this area (Maher 1992, Kemp et al. 1997, Owens et al. 2007). Owens and coll. (2007) even showed that schizophrenics are less affected by the belief bias effect than controls, therefore they seem to reason better than normal people under certain circumstances. On the other hand, several research in the psychopatological area, demonstrate that individuals' performances improve, when the task content is relevant for the patients' disorder (e.g. Johnson-Laird, Mancini & Gangemi, 2006; Gangemi, Mancini & Johnson-Laird, 2013, Blanchette & Campbell, 2011). In line with these results we hypothesize a similar improving in schizophrenic patients' performances, depending on the tasks' emotive content. In this paper, we present a study where both schizophrenic patients and healthy controls are presented with both emotional-generic syllogisms and syllogisms with emotional contents that are linked to the disease's domain, that is the delusion. Since delusional beliefs are relevant to schizophrenic patients, and usually arise aberrant emotions, they're supposed to be the best candidate to investigate whether emotional and relevant contents affect syllogistic abilities in schizophrenics.

5. Cillian McHugh, Marek McGann, Eric R. Igou, & Elaine L. Kinsella
Title: Reasons or Rationalisations: Inconsistency in Articulating, Endorsing, and Applying Moral Principles

Abstract:
Moral dumbfounding occurs when people maintain a moral judgement even though they cannot provide reasons for it. It is seen as evidence for intuitionist theories of moral judgement over rationalist theories. In recent years questions have been raised about whether dumbfounding is a real or artefactual phenomenon. Royzman, Kim, and Leeman (2015) suggest that judgements may be grounded in beliefs of perceived harm (harm principle), or the application of specific norms (norm principle). They found that by excluding participants who endorsed either principle, dumbfounding effectively disappeared. However, the mere endorsing of principles, without accounting for (a) the ability to articulate them, or (b) the application of the principle across differing contexts, does not provide evidence the principle contributed to the making of the judgement. We develop stronger criteria for exclusion across two studies to account for both (a) and (b). Study 1 (N = 110) included an open-ended response option immediately after the presentation of a moral scenario. It was hypothesised that participants would not consistently articulate and endorse either principle.

Responses were coded for mention of either principle. Participants were excluded from analysis if they both articulated and endorsed a given principle. We found evidence for dumbfounding, as measured by an admission of not having reasons for a judgement. Study 2 (*N* = 111) resembled Study 1, with the inclusion of questions assessing the consistency with which people apply the harm principle. It was hypothesised that the harm principle would not be consistently applied across contexts. As predicted, few participants consistently applied, articulated, and endorsed the harm principle. Again, evidence for dumbfounding was found, suggesting, contrary to Royzman et al. (2015), that people's moral judgements cannot be attributed to principles based on their endorsing of these principles.

6. Jala Rizeq, David B. Flora, and Maggie E. Toplak

Title: Contaminated Mindware, Cognitive Abilities, and Rational Thinking

Abstract:
There has never been a time in our history that we have been bombarded with so much information, especially information that may be unsubstantiated. The accumulation of unsubstantiated knowledge and unwarranted beliefs, which has been referred to as *contaminated mindware* (Stanovich, West, & Toplak, 2016), can be harmful for the individual and for society. Contaminated mindware has evaluation-disabling properties that aid in its widespread public propagation, discouraging critical and deliberate thoughtful processing, and if relied upon, can hinder one's judgment and decision-making. This research focused on three aspects of contaminated mindware: paranormal, conspiracy, and antiscience beliefs. We examined the dimensional structure of contaminated mindware and the associations between contaminated mindware and individual differences in rational thinking and cognitive ability. We also assessed contaminated mindware's association with ontological confusions between core knowledge systems, which are mistakes regarding intentional and unintentional, mental and physical, and animate and inanimate phenomena (Lindeman & Aarnio, 2007; Svedholm & Lindeman, 2012). The current study used data from 327 undergraduate students with a mean age of 19.75 (SD = 3.88), who completed an online battery of questionnaires, including self-report measures of contaminated mindware, cognitive reflection, and actively open-minded thinking as well as verbal and nonverbal reasoning ability tasks. A three-factor model of the contaminated mindware measure fit the data well. Scores representing these paranormal, conspiracy, and antiscience belief factors were all associated with individual differences in cognitive reflection, actively open-minded thinking, and ontological confusions above and beyond verbal and nonverbal reasoning abilities. The findings are contextualized within the broader field on rational thinking and the implications for decision-making are discussed.

7. Emma Dietz and Steffen Holldobler

Title: Obligation and Factual Conditionals: The Suppression Task Revisited

Abstract:
Ruth Byrne has introduced obligation and factual conditionals in (Byrne, 2007). Obligation and factual conditionals were modeled under the weak completion semantics and several human reasoning tasks were solved adequately under this semantics. In this talk, we will revisit the suppression task and investigate whether the weak completion semantics models this task adequately if the conditionals are classified as obligation or factual conditionals.

8. Neils Skovgaard-Olsen

Title: Relevance and Conditionals

Abstract:
Recently several experimental studies have reporting relevance effects on the cognitive assessments of conditionals, which pose an explanatory challenge to the suppositional theory of conditionals that currently finds a wide endorsement in the psychology of reasoning (Skovgaard-Olsen, Singmann, and Klauer, 2016a, 2016b; Skovgaard-Olsen, Kellen, Krahl, and Klauer, in review). Some of them concern the "Equation" (P(if A, then C) = P(C|A)), others the de Finetti truth table, and yet others the uncertain and-to-inference task. The purpose of this talk is to present a series of experiments that have a bearing on whether to count these effects as belonging to pragmatics or semantics.
It is uncontroversial that some distinction between pragmatics and semantics must be drawn. Clearly linguistic expressions have some sort of content across contexts that we use to communicate, which can be modified by

knowledge that only pertains to specific contexts. But in philosophy and linguistics it is highly controversial exactly *how* it should be drawn (Bach, 1997; Carston, 2002; Birner, 2013). This theoretical dispute has repercussions for the psychology of reasoning insofar as it remains an open question how to operationalize the semantic/pragmatic distinction. To illustrate, in Skovgaard-Olsen *et al.* (2016a) it was found that "the Equation" (P(if A, then C) = P(C|A)) only holds under the condition of positive relevance (where P(C|A) – P(C|¬A) > 0). In the case of negative relevance (P(C|A) – P(C|¬A) < 0) or irrelevance (P(C|A) – P(C|¬A) = 0), the strong relationship between P(if A, then C) and P(C|A) is disrupted, because participants tend to view natural language indicative conditionals as defective under these conditions. One possible reaction to this finding in Skovgaard-Olsen *et al.*(2016a) is that it may nevertheless be compatible with "the Equation", if one assumes that it is an effect of pragmatics rather than semantics that ΔP (P(C|A) – P(C|¬A)) modulates the relationship between P(if A, then C) and P(C|A). However, as long as we lack a good way of operationalizing the semantics/pragmatics distinction, we have no way of telling whether the results in Skovgaard-Olsen et al.(2016a) support a reason relation reading of the conditional known as inferentialism (Ryle, 1950; Rott, 1986; Brandom, 1994; Spohn, 2013; Douven, 2015; Krzyzanowska, 2015; Skovgaard-Olsen, 2016), or whether it can be accounted for as a pragmatic component within the suppositional theory of conditionals, favored by the new paradigm in psychology of reasoning (Evans and Over, 2004; Oaksford and Chater, 2007; Pfeifer, 2013). Until we have a principled way of experimentally distinguishing between the different roles that linguistic content can play, we are stuck with an interpretational ambiguity that impedes the testability of semantic theories in the psychology of reasoning. More specifically, as long as inconsistent evidence for a semantic theory can be attributed to the influence of pragmatic factors, without clarity about which detailed predictions follow from this attribution, it is difficult to devise a decisive test for a given semantic theory. In this talk we seek to make progress on this topic by classifying relevance effects according to a series of diagnostic tests for distinguishing between conversational implicatures, presupposition failures, and conventional implicatures from the linguistic literature.

9. Ian Newman and Valerie Thompson

Title: Base-rate neglect is a function of conflict resolution strategy

Abstract:
Base-rate neglect is the tendency to undervalue statistical information, often studied using probability estimates of category membership. The base-rate reasoning problems contain personality descriptions and base-rate ratios that suggest either consistent or conflicting responses. On conflict items, reasoners give less accurate probability estimates and are less confident in those responses. The prevailing conflict-detection interpretation is that reasoners respond less confidently on conflict items because they implicitly detect the conflict, regardless of how they resolve the conflict and respond to the problem. In my talk, I will discuss evidence that 1) probability estimates, confidence, and visual attention on relevant task information are a function of the conflict-resolution strategy adopted by the reasoner and 2) reasoners can accurately self-report their conflict-resolution strategy despite poor explicit calibration to conflict.

10. Benjamin Sklarek, Lupita Estafania Gazzo Castañeda & Markus Knauff

Title: Legal Reasoning: Balancing of Basic Right Conflicts

Abstract:
The right to life, *the right to freedom of speech*, *the right to freedom of religion*, all these are few of many other commonly recognized basic rights that are considered as fundamental in many countries. In general terms, all basic rights are equally important and have to be granted. However, sometimes two basic rights are in conflict and have to be weighed against each other. For instance, if the *right to freedom of press* conflict with the *right to privacy* - can one right "defeat" the other? This decision falls normally in the scope of supreme courts and is called *balancing*. We are interested in how laypeople with no legal education balance different conflicting basic rights. We assume that *moral outrage* moderates this "naïve" balancing process. Our prediction was that participants choose to protect the basic right whose violations leads to the highest level of moral outrage. For this purpose, we designed two experiments. In Experiment 1, we created conditional statements containing two basic rights. The first basic right was presented as a conditional rule, which was followed by a categorical premise that triggered a legally (and logically) valid inference. As a third premise we presented the second basic right, which was also phrased as a conditional and conflicted with the first basic right. The conclusion asked participants' preference for maintaining the first or the second basic right. In half of the problems, the violation of the first right evoked a higher level of moral outrage than the violation of the second, and

in the other half it was the other way around. In Experiment 2, we used the same materials as in Experiment 1 but added an additional between subjects factor: we either phrased the conclusion as a question ("May the circumcision be performed?") or as a statement ("The circumcision may be performed."). In Experiment 1 and 2, participants consistently protected the basic right whose violation would cause a higher level of moral outrage. In Experiment 2, this effect was even more pronounced when the conclusion was phrased as a statement (rather than a question). We discuss the implications of our findings for law theory and psychology - especially, in light of underlying cognitive processes.

11. Shira Elqayam, Rakefet Ackerman, Igor Douven

Title: Satisficing, meta-reasoning, and the rationality of further deliberation

Abstract:
When is it rational to put a stop to one's search for alternatives? Prima facie, classical Bayesian decision theory faces a problem: its definition of rationality hinges on selecting the action which maximises utility *out of a given set*. However, little consideration is given to the question how this set is constructed (although cf. Baron, 2008, pp. 62-63). In any given situation, there might be myriad options for action. How the agent searches for further options and when she stops is of paramount significance for the psychology and philosophy of rationality alike. According to one theoretical proposal (Douven, 2002), when an initial option exists, the following factors should play a role in deciding when to search for further options and when to stop the search:

a. How satisfactory the agent finds the existing solution, where an inverse relation exists between how satisfactory the option is and the utility of further search;
b. The agent's confidence in the adequacy of the currently considered options
c. The agent's prediction of her chance of success in finding a better alternative;
d. The cost of further search, such that the lower the cost, the higher the value of further search

We reconsider Douven's theoretical proposal in light of recent developments in the psychology of meta-reasoning, the field dedicated to exploring the way that people monitor, regulate and invest cognitive effort. We will draw on Ackerman and Thompson's (2017) recently proposed model of meta-reasoning to identify the meta-reasoning processes involved. For example, initial feeling of rightness ("FOR"), one's fast intuitive judgment of how good their initial considered option is, can account for (a) above; and both FOR and intermediate confidence in later coming options, may account for (b). While there is no direct parallel for (c), we will argue that there is space to consider enriching the meta-reasoning framework with monitoring and control factors that directly measure the cost of deliberation. It is also possible to flesh out Douven's model with further research questions taken from the meta-reasoning framework, such as the way that people readjust their solution criterion downwards as time goes by (Ackerman, 2014). This integration can benefit both models of rationality and empirical research questions on the way that people search the alternatives space.

12. Isabelle Blanchette

Title: Dual processes in reasoning and emotional memory

Abstract:
Dual process theories of reasoning posit an important distinction between more concrete (semantic) and more abstract types of reasoning processes. There is a parallel distinction in theories of autobiographical memories, between concrete (perceptual) and abstract (symbolic) encoding. This distinction is particularly important in accounting for emotional memories. In three studies, we explored this parallel between reasoning and memory. In particular, we examined the hypothesis that abstract reasoning may reduce the impact of emotional stimuli on memory. In experimental studies, we observed that inducing a more abstract, symbolic mode of reasoning reduced the impact of emotional stimuli on both attention and memory. This was paralleled by results of correlational studies where we observed that trauma exposed individuals with greater symbolic processing abilities were less likely to suffer from intrusive emotional memories. Together these data suggest a new link between reasoning and autobiographical memory.