

Psychology of Creativity: Creative Sides

#ukcreativity2018

The UK Creativity
Researchers' Conference
22nd May 2018



Canterbury
Christ Church
University



UNIVERSITY OF
SURREY

Welcome!

Welcome to the second UK Creativity Researchers' Conference! Today's event is held at Canterbury Christ Church University in their award winning Augustine House.

Our conference features Keynote speaker Todd Lubart and oral presentations from researchers around the globe as well as a speed research session and an interactive panel with Jonathan Plucker, Linden Ball, Janet McDonnell, and Todd Lubart. In addition we have sessions for poster presentations (with a prize for the best!), refreshments, a working lunch, wine reception, and – of course – networking opportunities throughout.

2018 Organising Committee:

Dr Ian Hocking, Canterbury Christ Church University

Dr Karl Jeffries, University of Central Lancashire

Professor Carolyn Mair PhD, Freelance Consultant

Dr Paul Sowden, University of Surrey



The aim of our event is to unite creativity researchers in order to share skills and ideas, build productive collaborations, and ultimately boost both the national and international impact of our work.

If you would like hold a similar conference or event at your institution, please speak to one of our organisers or email us: ukcreativityresearchers@gmail.com

You can also follow us on Twitter: @ukcreativity #ukcreativity2018

Standing Committee:

Dr Lindsey Carruthers, Edinburgh Napier University

Dr Shelly Kemp, University of Chester

Dr Gillian Hill, University of Buckingham



"Improving the visibility, impact, and strength of creativity research within the UK"

Overview of the Day

9.30am – 10am	Registration and refreshments
10am-10.30am	Welcome! Welcome from the Organising Committee and Professor Jan Burns MBE, Head of the School of Psychology, Politics and Sociology at Canterbury Christ Church University
10.30am-11.20am	Key Note Speaker , introduced by Paul Sowden (see page 4) Todd Lubart - "Homo Creativus: The creative side of mankind" <i>Professor of Psychology at the Université Paris Descartes</i>
11.30am – 12.30pm	Academic Speed Networking (see page 5 for details), chaired by Carolyn Mair
12.30pm – 1.15pm	Lunch and Posters , poster session chaired by David Vernon
1.15pm – 2.30pm	Presentations (see pages 7-9), chaired by Ian Hocking: Jonathan Plucker - Creative articulation: The missing link in our understanding of the creative process Jeb Puryear - Defining creativity: How far have we come since Plucker, Beghetto, and Dow? Enikő O. Bereczki - The relationship between teachers' beliefs about creativity and classroom practice: What we assume and what we know Emma Threadgold - Designing creative spaces: The impact of a nature poster on divergent thinking Mark Batey - Capturing the creative problem solving process with a divergent thinking test: Preliminary validity evidence of a new measure
2.30pm – 3pm	Refreshments and Posters
3pm – 4.15pm	Presentations (see pages 10-12), chaired by Carolyn Mair: Amory H. Daneke - Moment of truth: Can we trust our insights? Nicola K Shaughnessy - Creating differently: Imagining autism and the drama of neurodiversity Cathy J. Rogers - "I just got a popped up in my head": A qualitative analysis of how executive control processes contribute, positively and negatively, to children's creativity. Thomas R. Collin - A machine learning model of insight Frank Loesche - Your thought is no train: Using Eureka moments to trace creative processes
4.15pm – 5pm	Interactive Panel Discussion , chaired by Karl Jeffries (see page 12) Interactive Panel - Janet McDonnell, Linden Ball, Jonathan Plucker, and Todd Lubart
5pm – 6pm	Closing words and wine reception
6pm – 7pm	Please join us at The Three Tuns for a post-conference drink (see page 13)

Keynote Speaker – 10.30am



Professor Todd Lubart

Université Paris Descartes – Sorbonne Paris City University

Professor Lubart is a Professor of Psychology at Université Paris Descartes. His research focuses on creativity, developing it in children and adults, the creative process, emotion, and intercultural issues. He has authored and co-authored many books as well as research papers.

“Homo Creativus: the Creative Side of Mankind”

Todd Lubart

Université Paris Descartes – Sorbonne Paris City University

A 7 Cs perspective on creativity and its study will be presented. The 7 Cs refer to (1) the Creators (characteristics of those who create), (2) Creating, the process of making, (3) Collaboration, with close others during creation, (4) Context, the physical and social surrounding, (5) Creations, the characteristics of creative productions, (6) Consumption, the uptake and adoption of creativity, and (7) Curricula, learning and developing creativity.

Each “C” will be illustrated by empirical or theoretical work that provides some insights into the nature of *Homo creativus* –21st century humankind marked by its creative spirit. For example, work on the creative process shows that traces of artists’ activity allow differences between the more original and less original productions to be described. In terms of context, the effects of virtual environments on creative performance will be presented. Consumption will be illustrated by studies on the adoption of novel products or consumers’ behaviour. Finally, effects of curricula on the development of creativity will be presented through research on different pedagogies.

Academic Speed Networking (11.30am)

What is it?

This session will use a fairly low tech. speed dating format. There will be a series of speed (i.e. time-specified) opportunities to meet new people and chat about your research.

Who you are paired with each time is somewhat dependent on where you are sitting, so we encourage you to sit with people you've not met before today in order to maximize networking opportunities.

We hope you join in and that everyone will get into the spirit of this session and give it a try.

Why are we doing this?

Not everyone finds networking during conferences easy. In addition, there is a tendency for people to gravitate towards those they see as similar to themselves, which can result in only networking with people in similar research areas and at similar stages of their career, etc.

The aim of this session is to therefore take advantage of the diversity of those attending this event. We hope to elicit conversations between people in different stages of their career and between people from different disciplines and areas of study in order to increase future collaborations.

What are the summaries for?

At the end of each 'speed meeting' we will ask each person in their pair to complete a summary of their meeting. Not only because it would be great to hear about what you discussed but also because it will help us to evaluate the session.

After the conference we will then email you copies of both yours and your partner(s)'s summaries. This will give you a record of the impact of your attendance and also enable you to follow up on conversations.

If you do not wish for this to happen, just let one of the organisers know and they will give you an opt out form to sign.



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Lunch and Posters – 12.30pm

Poster Prize!

There will be a £50 prize for the winner of the Best Poster competition.

Please remember to cast your votes!

The winner will be announced during the closing words.

A special thank-you to the London and Home Counties (L&HC) Branch of the British Psychological Society for sponsoring the poster competition!

And an additional thanks to them for donating bookmarks, pens, and notepads as goodies for our conference bags.



The British
Psychological Society
London & Home Counties Branch

A pdf booklet containing the abstracts of each of the posters presented here today can be found on the conference website:

<https://ukcreativity2018.splashthat.com/>

Presentations – 1.15pm

Creative articulation: The missing link in our understanding of the creative process

Jonathan A. Plucker

Johns Hopkins University

Creativity is becoming an increasingly popular goal for education systems around the world, both as a student outcome in its own right and as part of broader models of 21st century skills and learning. At the same time, our conceptual models of creativity have become more complex, due to the acknowledgement of the role of social contexts and audience factors in judgments of creativity (e.g., Glăveanu, 2013; Plucker et al., 2016). Creative articulation is a concept designed to help explain how creators select potential audiences for their creative work and use communication and persuasion to maximize the value of their creative work in the eyes of those audiences (Plucker, 2016). Creative articulation can and should be taught in a variety of educational settings, and most strategies for fostering articulation are straightforward and can be worked into many existing programs and units. This presentation will describe how previous scholars have, primarily indirectly, addressed communication and persuasion in conceptions of creativity, presenting a model of creative articulation that seeks to fill the void in the literature, and suggest educational strategies for teaching students these skills.

Defining creativity: How far have we come since Plucker, Beghetto, and Dow?

Jeb S. Puryear

ACS International Schools/University of Connecticut

Defining creativity remains the Achilles' heel of creativity research. In 2004, Plucker, Beghetto, and Dow placed a call to action for more consistent, clearer conceptions of creativity to move research forward and support practitioners across fields. The present study replicated and expanded on their study by surveying articles from business, education, psychology, and creativity journals (n = 600). Results suggest small but notable improvements in the explicit reporting of definitions and a movement toward the consideration of "creativity for whom" and "creativity in what context" as suggested by Plucker, Beghetto, and Dow. While these findings were encouraging, there were also strong suggestions from the data that elements present in creativity conceptions are strongly field-specific. For example, business articles are more likely to focus primarily on a "novel and useful" conception than those in other fields (OR = 2.49 and OR = 1.98). Education articles are more likely stress the accessibility of creativity by everyone (OR = 3.30), an artistic nature (OR 3.71), and problem solving-finding (OR = 2.19). Ultimately, while we are doing a better job at making a point to define creativity in a multi-faceted manner, fields are choosing different elements of that constellation on which to focus. At a time when academic research is becoming more integrative, this lack of coherence will continue to hold back creativity research.

**The relationship between teachers' beliefs about creativity and classroom practice:
What we assume and what we know**

Enikő O. Bereczki and Andrea Kárpáti

Eötvös Loránd University, Faculty of Education and Psychology

Creativity has benefits both for the individual and the society, and thus fostering students' creative capacities has justifiably received significant policy, professional, and research attention in recent years (Craft, 2010; Heilman & Korte, 2010; Sternberg, 2015). The implementation of creativity in the classroom, however, has been slowed down by several factors. Crucial among these are teachers' own beliefs about creativity (Skiba, Tan, Sternberg, & Grigorenco, 2017). In our presentation, we share findings of the systematic literature review we conducted to synthesize recent empirical evidence on teachers' beliefs about creativity with particular focus on how these beliefs relate to teachers' everyday classroom practices. The review of the 19 studies identified to explore the direct link between creativity beliefs and practice in the literature between 2010-2015 showed that teachers' positive and adequate beliefs about creativity are rarely congruent with their enacted classroom practices, highlighting various possible and probable underlying reasons. Implications for research, policy and practice will also be discussed.

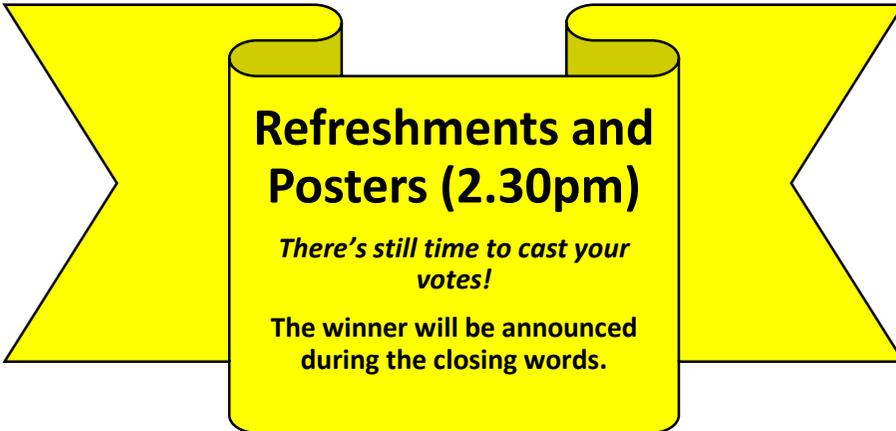
Designing creative spaces: The impact of a nature poster on divergent thinking
Emma Threadgold, Mark Batey, Lana Crick, and David Hughes
University of Central Lancashire

The interior design of offices is a strategic organisational resource with the potential to influence creativity (Amabile, 2012). Previous research has highlighted that the incorporation of nature into the physical office environment can have a positive impact on creativity (for example, Ceylan, Dul & Aytac, 2008). In this paper, we examine the influence of a nature poster on divergent thinking at both the individual and group level. The presence or absence of a large nature themed poster was implemented as a between participant factor in a corporate office and classroom environment. Participants completed a series of individual divergent thinking tasks including word fluency (Thurstone, 1938), unusual uses and consequences tasks in addition to a brainstorming style group divergent thinking task (Goncalo & Staw, 2006). Self-report measures were utilized to determine a level of self-rated creativity, creative self-efficacy and intrinsic motivation (Dul, Ceylan & Jaspers, 2011) the positive and negative affect schedule (Watson, Clark & Tellegen, 1998) and the mini international item personality pool were presented as measures of affect and personality (Donnellan, Oswald, Baird & Lucas, 2006). Findings revealed a significant positive effect of a large nature poster on both individual and group divergent thinking. This was exacerbated in individuals with high positive affect and also in groups with low self-rated creativity and creative self-efficacy. The findings are discussed in terms of relevant theories and implications for strategic interior design.

**Capturing the creative problem solving process with a divergent thinking test:
Preliminary validity evidence of a new measure**

**Mark Batey, David Hughes, Lucy Rowe, and Nelia Aguado-Penovic
Alliance Manchester Business School**

Creativity is a complex construct that has defied unequivocal definition or measurement (Batey, 2012). However, most researchers agree that creativity may be defined with regard to two primary features. First, a degree of novelty and utility (Mumford, 2003) and second the centrality of the 4 Ps of creativity: Person, Process, Press and Product (Rhodes, 1961, 1987; Runco, 2004). This presentation will suggest that measures of the creative Person, as operationalised by traditional Divergent Thinking (DT) assessments, do not accurately reflect the literature regarding the various stages of the creative Process, before presenting preliminary validity evidence for a new Creative Problem Solving Process Test. The new Creative Problem Solving Process Test adopted a four-stage approach to assessing the creative problem solving process: problem identification, solution generation, idea selection and implementation planning. The Creative Problem Solving Process Test incorporates elements from problem-finding and problem-construction measures (Okuda et al., 1991; Reiter-Palmon, et al., 1997), traditional idea generation focussed DT Tests (e.g. Torrance, 1998), combined with a stage of idea selection (Silvia, 2008) and a final stage of implementation planning. It is hoped that this approach will allow for a new style of creativity research assessment tool. One that brings together the creativity research paradigms of Person and Process, an area that has been highlighted for more detailed exploration (Batey & Hughes, 2017). In the presentation, validity data, exploring the nomological net of the new Creative Problem Solving Process Test will be presented including relations to Fluid Intelligence (Baddeley, 1968), Creative Self-Efficacy (CSE: Beghetto, 2006), Curiosity (Kashdan et al., 2009), self-reported creative process (Runco, Plucker & Lim, 2001), and self-reported creative achievement (Kaufman, Baer & Cole, 2009).



**Refreshments and
Posters (2.30pm)**

*There's still time to cast your
votes!*

**The winner will be announced
during the closing words.**

Presentations – 3pm

Moment of truth: Can we trust our insights?

Amory H. Danek and Jennifer Wiley

Experimental and Theoretical Psychology, Heidelberg University, Germany

The infallibility of insight has long been assumed (Wertheimer, 1925), but was never systematically investigated. In the context of human problem solving, recent findings converge on a peculiar effect: solutions with self-reported Aha! experiences are more likely to be correct than those where this feeling of epiphany is missing (Danek et al., 2014; Salvi et al., 2016). Thus, people seem to have an intuitive sense of success, although they are not given feedback about actual solution correctness. This is in accordance with the immediate feeling of certainty (Danek et al., 2014; Webb et al. 2016) that is often reported after insightful solutions. Against the background of these studies, we report a study using magic tricks as problem solving tasks. This task domain was used because it allows for false insights, as problem solvers can sometimes generate implausible, false solutions but still report the Aha! feeling. The differences between true and false insights were explored with regard to their time course, as well as on several self-reported dimensions. In the absence of feedback, correct solutions emerged faster, led to stronger Aha! experiences, and higher ratings of pleasure, suddenness and certainty than incorrect solutions. Further, they were more associated with relief, while incorrect solutions were more associated with surprise. These quantitative and qualitative differences in the experience of correct and incorrect solutions demonstrate that the Aha! experience is not a mere epiphenomenon, but functions as a signal that a correct solution has been found.

Creating differently: Imagining Autism and the drama of neurodiversity

Nicola K. Shaughnessy, Melissa F. Trimingham, Julie Beadle-Brown, and Ilona Roth

University of Kent

This presentation arises from an interdisciplinary collaboration between drama and psychology, "Imagining Autism" (AHRC, 2011-2014), working with autistic children (aged 7-12) in participatory theatre workshops (Beadle-Brown, et al., 2017). We begin with a series of definitions and demonstrations of creativity from our different disciplinary perspectives. In our collaboration it became evident that the arts researchers conceptualized creativity and its role in the research in a different way to the psychologists involved, specifically in relation to imaginative thinking and theory of mind. Whilst social imagination has been identified as an area of difficulty in the diagnostic criteria, there is increasing recognition of the creative imagination and of social creativity as areas of difference in relation to autism: "in the continuum that marks the different cognitive processes that produce 'art' we might begin to refine an understanding of the imagination in relation to autism...The nature of play- and its symbolic and imaginative dimensions- might vary in relation to the particular manner in which the "player" processes the world " (Mills, 2008, p. 131). Through analysis of documentation from the project, we demonstrate how a meeting of academic minds might be achieved, making reference to the children's attention, engagement and participation from our different disciplinary arts/science perspectives, bringing them to a shared focus. We aim to expose the complex processes involved in working towards consensus and the sought after 'third space' of transdisciplinary research as well as offering insights into creativity and neurodiversity whilst also questioning the dualisms which distinguish between the aesthetic and non-aesthetic.

“I just got a popped up in my head”. A qualitative analysis of how executive control processes contribute, positively and negatively, to children’s creativity.

Cathy J. Rogers, Michael S. C. Thomas, and Andy Tolmie

Department of Psychological Sciences, Birkbeck, University of London

There is continued debate about the role executive functions play in creativity, some evidence suggesting their primacy in creative processes and other evidence suggesting they are actively detrimental (Amer et al, 2016; Barr, 2017; Benedek et al, 2014; Radel et al, 2015). Most research to date has involved adult participants in quantitative, laboratory tests of creativity and executive functions, raising two problems. First, both concepts are highly multi-faceted and unlikely to reveal themselves fully in a lab setting (Plucker et al, 2014; Silvia, 2016). Second, do findings extrapolate to children? This study, part of a mixed methods research project, attempts to address some shortcomings in our current understanding of children’s creativity. It does so by assessing creativity in a naturalistic, more ecologically valid setting (Plucker et al, 2014). It takes a qualitative approach, taking children’s accounts of their creative process as indicators of the cognitive mechanisms involved and allowing exploration of temporal dynamics in the creativity-control relationship. And it investigates the role of executive functions in an age group where these are still developing (Diamond, 2013; Nigg, 2000; Zelazo, 2008). Fourteen children aged 6-10, selected from a larger sample who had completed quantitative tests of creativity and executive functions, were assessed in their own homes. The children chose to create a story or a picture, selected stimuli as ‘sparks’ for their creations and completed the activity without time constraint. The whole process was filmed. Immediately after completion of their creative work, video-stimulated recall (Lyle, 2003) and semi-structured interviews were used to elicit children’s accounts of their creative process, with a particular focus on aspects of executive control. Interviews were subsequently transcribed and analysed within a theoretical thematic analysis framework (Terry, 2017; Braun & Clarke, 2013). Results, which point to a nuanced and flexible involvement of executive functions in different stages of the creative process, will be set in the context of a broader discussion of the creativity-control relationship.

A machine learning model of insight

Thomas R. Colin and Tony Belpaeme

Plymouth University

In the phenomenon of insight, or “Aha!”-moments, the representation of a problem is restructured and the problem is solved. Insight occurs in a sudden flash of inspiration, making it a challenge to models of human problem-solving. We propose to model insight using a combination of Machine Learning techniques: Reinforcement Learning (RL), and deep Neural Networks (NNs). Whereas RL techniques search among possible solutions by trial-and-error, NNs seek to generalize by achieving good representations of the problem to solve. Together, these techniques may provide the adequate toolkit for modelling insight. We describe a novel Deep RL system, based on the Option-Critic architecture, in which temporally extended decisions allow for strategy switching. The model is capable of sudden “insights” which, in a single exploratory step, redistribute activation in the NN (changing the representation), and adopt a new and potentially successful strategy (solving the problem). This strategy change may generate a sudden, large, and surprising positive change in the expectation of success as tracked by the critic component of the model, which provides the learning signal for the system. This corresponds to the positive “Aha!” experience reported by humans. The properties of the model are confronted with the psychological study of insight in animals, in humans, and in the brain. In particular, we relate the model to the latest evidence in the neuroscientific study of “Aha!”-moments.

Your thought is no train: Using Eureka moments to trace creative processes

Frank Loesche and Guido Bugmann

CogNovo, Plymouth University

Graham Wallas (1926) famously described the creative process as a sequence of four stages, an explanation in line with another well known metaphor: the “train of thought”. Researchers have since added and removed stages from Wallas’ model (Lubart, 2001), or rerouted them in iterative circles (see Meinel, Leifer & Plattner, 2011), yet the “train line” remained. We invite you to leave this single track and instead think of problem solving as multi-layered processes. The validity of existing models is not questioned by this conceptually simple alteration; instead, they gain additional explanatory power for previously unaccounted observations in the creative process. We provide an argument for multi-layered models augmenting sequential creative models and Design Thinking. We support this with empirical evidence, discussing results from Dira, a novel experimental paradigm to study the generative process through Eureka moments, and from interviews with Architecture students. The presented case studies touch multidisciplinary research questions regarding theory, application, and education of creative thought.

Interactive panel – 4.15pm

Chair

Karl Jeffries

Interactive Panel Members

Todd Lubart

Jonathan Plucker

Linden Ball

Janet McDonnell

Interactive Panel Discussion:

“Creative sides”

Throughout the day, please use the discussion board provided to add your ideas, questions, and discussion points for the panel.

Live input is, as always, welcome and encouraged:

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Closing words and wine reception - 5pm



Please join us for the wine reception which marks the close of today's event.

As well as the closing words, this will also be where we are announcing the winner of today's Best Poster competition.



The British Psychological Society
London & Home Counties Branch

Post conference - 6pm

Everyone is welcome to join us for a post-conference drink in our historic city. We have space booked at a local Canterbury pub, **The Three Tuns:**

The Three Tuns,
Watling Street,
Canterbury,
Kent,
CT1 2UD



<https://www.greeneking-pubs.co.uk/pubs/kent/three-tuns/>



There will be the option of ordering food should you wish to do so.

**Thank-you for your attendance,
interest, and contribution. We
look forward to seeing you
next year!**



**If you would be interested in holding a
UK creativity researchers' event at your
institution then please contact us:
ukcreativityresearchers@gmail.com**

