



Creativity and Innovation Conference

Radboud University | 23-24 October, 2017



Radboud University



Radboud University Nijmegen

Behavioural Science Institute

About the conference

Creative thinking can be learned. It is not something reserved for a few genius minds, but it is inherent to normative cognitive functioning. Creativity is one of the key competences of the 21st century: it allows us to remain



flexible, and provides us with the capacity to deal with opportunities and challenges, in a world of rapid changes and increasing complexity. Research has provided sufficient evidence to warrant the consideration of its educational and organizational implications.

During the Creativity and Innovation Conference, excellent scientists and leading experts will give talks, and researchers from different disciplines worldwide, present their findings and recent insights in the domain of creativity and innovation. Moreover, in a plenary discussion session we will focus on (the improvement of) creativity measurement, and we aim to set first steps in developing an international creativity and innovation (research) network.

Organizers:

Dr. Simone Ritter, Yuxi Zhu, & Xiaojing Gu

Funding:



Radboud University



Program

Day 1

When	What	Who
9.00 - 9.30	Registration, Coffee	
9.30 - 9.45	Word of Welcome	Prof. Toon Cillessen, Director BSI
9.45 - 10.45	Keynote	Prof. Mark Runco, University of Georgia
10.45 - 11.20	Talk	Dr. Matthijs Baas, University of Amsterdam
11.20 - 11.55	Talk	Dr. Simone Ritter, Radboud University
12.00 - 12.45	Lunch	
12.45 - 13.45	Keynote	Prof. Bernhard Hommel, Leiden University
13.45 - 14.20	Talk	Dr. Eric Rietzschel, University of Groningen
14.20 - 14.55	Talk	Dr. Marieke Roskes, VU University Amsterdam
14.55- 15.15	Coffee	
15.15 - 16.00	Panel Discussion*	<i>Topic: 'Creativity Measurement'</i>
16.00 - 17.00	Keynote	Prof. Bernard Nijstad, University of Groningen



* If you have a **question for our experts** (prof. Runco, prof. Reiter-Palmon, dr Copley, prof. Nijstad) about the measurement of creativity, please share it with us via the provided 'question card'. If you have **ideas** about how we can measure/improve the measurement of creativity, please share it with us via the provided 'idea card'. Cards can be put in the "letter box" at the entrance of the room before 13.00. **Be creative!**

Day 2

When	What	Who
9.00 - 9.15	Coffee	
9.15 - 10.15	Keynote	Dr. David Copley, University of South Australia
10.15 - 10.50	Talk	Rebecca Marrone, University of South Australia
10.50 - 12.10	Short presentations	Dr. Tim Patston, Dr. Claire Stevenson, Dr. Elisa Kupers & Yuxi Zhu
12.10 - 12.50	Lunch	
12.50 - 14.10	Short presentations	Dr. Baptiste Barbot, Kiki M. M. De Jonge, Dr. Georgiana Balau & Prof. Carsten Deckert
14.15 - 14.50	Talk	Dr. Gosia Gocłowska, University of Bath
14.50 - 15.30	Coffee & Poster session	
15.30 - 16.30	Keynote	Prof. Roni Reiter-Palmon, University of Nebraska
16.30 - 17.00	Informal meeting & Drinks	<i>Topic: 'Creativity (research) network'</i>

Speakers

Monday, 23 October

9:45 – 10:45

Prof. Mark Runco



Mark Runco is Distinguished Research Fellow of the American Institute for Behavioral Research & Technology, and Professor at the University of Georgia. He is researching creativity for more than 30 years (e.g., assessment of creativity, creative cognition, social context for creativity). Mark Runco was past president of Division 10 (Psychology, Art, Creativity, and Aesthetics) of the American Psychological Association. Nearly 30 years ago, he founded the Creativity Research Journal, which he still edits, and in 2014, he founded the new journal Business Creativity and the Creative Economy. He co-edited the Encyclopaedia of Creativity in 1999 and 2011. Mark Runco has published well over 200 articles, chapters, and books on creativity, its measurement and enhancement.

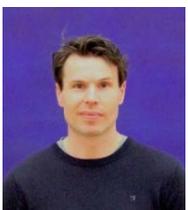
[Creativity and Innovation Dignity](#)

Creativity is a very valuable thing. It is related to innovation as well as health, problem solving, technological and cultural advance, problem solving, and adaptability. A bit of research also shows that creativity is associated with moral responsibility and the quality of life. (There is also the opposite, namely a bit of interest in the “dark side of creativity.”) This presentation focuses on a benefit of creativity that is virtually always overlooked, namely the dignity that it provides individuals. The bridge to dignity was mentioned by Jerome Bruner 40 years ago, but the emphasis in the creativity research and in studies of innovation since then have followed a pragmatic path and have ignored dignity. Instead they have attempted to justify creativity and have pointed to its impact or the returns resulting from investments in creative potential. The practical benefits of creativity are good to recognize, but life is more than business, not just a transaction. Creativity provides meaning in life and dignity as we move through the lifespan. This presentation fleshes out the role of creativity in dignity. It also touches on the other benefits of creativity, on the practical side of dignity, and on implications for innovation.

Monday, 23 October

10:45– 11:20

Dr. Matthijs Baas



Matthijs Baas works as an Assistant Professor at the department of Work and Organizational Psychology of the University of Amsterdam. His research is mainly about the cognitive, motivational and affective foundations of creativity.

[Conceiving Creativity](#)

People have strong beliefs about the processes, circumstances and personality characteristics that predict creativity. Unfortunately, these beliefs are often incomplete and not in line with current empirical evidence. For instance, a relaxed mood does not foster creativity. Nor does exchanging ideas with a close friend. A better understanding of the scientific evidence about the conception of creativity can help people select and shape the processes and circumstances that stimulate their creativity. In this talk, I hope to promote this understanding by sharing some recent findings from research on the psychology of creativity.

Monday, 23 October

11:20– 11:55

Dr. Simone Ritter



Simone Ritter is working as an Assistant Professor at the Department of Behaviour Change and Well-Being at Radboud University. She performs behavioural, virtual reality, and neuroscientific research to broaden our understanding of the creative process and to enhance idea generation and idea selection skills.

Moving from Creativity to Innovation

In the past decades, various techniques have been designed to maximize the generation of creative ideas. However, for actual implementation of creative ideas, the most creative ideas must be recognized and selected from a pool of ideas. Research has shown that idea evaluation and, to a greater extent, idea selection are far from optimal, and history is full of cases in which creative ideas were first unwisely rejected. This implies that, unless more attention is paid to idea evaluation and selection, creativity and innovation will remain at suboptimal levels. In the current talk, I will focus on the question why people tend to favour the selection of mainstream rather than creative ideas, and I will provide an overview of recent findings on creative idea evaluation and selection. Understanding and improving the idea evaluation and selection process provides important scientific insights, and will help practitioners in various domains to move from creativity to innovation.

Monday, 23 October

12:45– 13:45

Prof. Bernhard Hommel



Bernhard Hommel is professor and chair of the “General Psychology” program at Leiden University, and co-founder of the Leiden Institute for Brain & Cognition (LIBC). His research focuses on human attention and action control and, moreover, addresses the role of creativity in human cognition. He is chief editor of two journals and has (co-) authored more than 300 publications.

Creativity and the Yin and Yang of Cognitive Control

Human creativity is often understood as a unitary skill or ability, if not a personal trait. However, there is increasing evidence that creative acts consist of separable sub-components and -processes that are only weakly correlated at best. I will focus on convergent and divergent thinking, which have been considered the key components of creative performance, and review research on personal and environmental factors that improve or impair these components. The available findings suggest that performance in convergent- and divergent-thinking tasks relies on metacontrol states, that is, on the degree to which cognitive control is biased towards persistence (an emphasis on top-down control that promotes convergent thinking) or flexibility (an emphasis of bottom-up control that promotes divergent thinking). I will introduce a simple functional model (the Metacontrol State Model, MSM) that explains how these biases are created and how they impact information processing to generate persistence and flexibility.

Monday, 23 October

13:45– 14:20

Dr. Eric Rietzschel



Eric Rietzschel is an Assistant Professor in Organizational Psychology at the University of Groningen. His main research focus is on creativity, innovation in individuals and in teams. Two of his main research themes are (a) the difficult transition from idea generation to idea selection, and (b) the tension between autonomy and structure in the creative process.

[The Paradoxical Triangle of Freedom, Structure, and Creativity](#)

Creativity is commonly thought to depend on freedom and a lack of constraints. While this is true to a large extent, it neglects the creative potential of structure and constraints. In this presentation, I will address the relation between freedom, structure, and creativity, and show that freedom, while important for motivation and creativity, also implies complexity and cognitive load, and that this may, paradoxically, diminish creative performance. I will also address the role of individual differences, showing that some people react differently to freedom versus constraints than others do.

Monday, 23 October

14:20– 14:55

Dr. Marieke Roskes



Marieke Roskes is an Assistant Professor at Department of Organization Sciences of VU University Amsterdam.

Her research mainly focuses on the effects of motivation on cognition and performance, and on stimulating and evaluating creativity.

[Using Constraints to Facilitate Creativity](#)

Ironically, although the saying goes that necessity is the mother of invention, coming up with novel ideas is easier when striving for positive outcomes and improvement (approach motivation) than when striving to avoid negative outcomes and failure (avoidance motivation). Avoidance motivation is paired with anxiety and systematic thinking which makes it difficult to explore new, potentially risky, ideas. In other words, when creative ideas are most urgently needed, they are less likely to appear. Furthermore, people tend to think of creative processes as random and requiring the absence of external constraints. I present a framework describing how different types of constraints influence creativity when people are approach or avoidance motivated. I present experimental data demonstrating how constraints such as time limits and structured task instructions can be used to effectively facilitate creativity. Understanding the impact of different types of constraints is needed to reduce the negative consequences of avoidance motivation and develop strategies for maximizing creativity.

Monday, 23 October

16:00 – 17:00

Prof. Bernard Nijstad



Bernard Nijstad is a Full Professor at the Faculty of Economics and Business in University of Groningen. Since 2009, he began to chair in “Decision making and organizational behaviour in business and economics”.

His research mainly focuses on group processes, group decision making, creativity and innovation, and indecision and decision avoidance.

[Interdependence and Team Creativity](#)

One of the most important structural features of teams is interdependence. Research has distinguished task interdependence (members depend on each other to perform their tasks) from outcome interdependence (members depend on each other to obtain valued outcomes): task interdependence creates the need to collaborate, whereas outcome interdependence creates the motivation to cooperate. Because collaboration is important for team creativity, it stands to reason that interdependence will affect team creativity. I propose that interdependence is important because it helps transform team member input into (creative) team output. The viability of this idea is shown using experimental and field research that focuses on 1) the relation between individual and team creativity; 2) the effect of membership change on team creativity; and 3) on the influence of conflict on team creativity.

Tuesday, 24 October

9:15 – 10:15

Dr. David Cropley



David Cropley is Associate Professor in Engineering Innovation at the University of South Australia. His research examines a range of aspects of creativity and innovation, both in the field of engineering, and more broadly (e.g., measurement of organisational innovation capacity, expertise and creativity/innovation, measurement of product creativity). He is co-editor of the International Journal of Creativity and Problem Solving, and co-author and editor of six books on creativity and innovation. Cropley is academic partner to the Department of Education and Child Development, South Australia, supporting research in critical and creative thinking in the school curriculum, and consultant to the UK Ministry of Defence on the application of creativity in counter-terrorism.

[Measuring and Developing the Capacity for Innovation in Schools](#)

The ability to generate and exploit new and effective solutions to problems – creativity and innovation – is recognised as key 21st century competency. While these are vital skills, and in demand from organisations across the economic spectrum, their development begins with schools. Many countries are beginning to devote more attention to developing skills in creativity in their school systems and curricula; however, additional attention must be given to the range of factors and conditions that support the development of creativity and innovation more broadly. If schools are to develop creativity and innovation in their students, then it follows that schools themselves must be places where creativity and innovation can flourish. This presentation will use concepts from organisational innovation to explore schools as “places of innovation”. How can we assess the capacity of schools for innovation, and how can we strengthen that capacity so that students enter the workforce equipped with this key competency?

Tuesday, 24 October

10:15 – 10:50

Rebecca Marrone



Rebecca Marrone works as a PhD student at the University of South Australia. Her research is mainly about utilising creative processes to develop positive attitudes towards STEM subjects, and about creative based workshops that are aimed to increase specific companies’ innovation levels.

[How Creativity Can Help Student Experiences with Mathematics](#)

In this presentation two research studies will be discussed, both addressing how creativity can help student experiences with mathematics, with a special focus on female students. The first study presents the results of an investigation into the impact of high stakes, standardised tests on student creativity, particularly within a mathematics context. The results of this study suggest that issues such as maths anxiety and test anxiety may be alleviated through the implementation of creativity-based curricula. The second study is designed to investigate the impact of creativity-based interventions conducted with teachers as a mechanism for helping to minimise maths anxiety, in particular for female students. This study will also focus on an exploration of the impact of creativity-based interventions as a means for positively altering teacher attitudes towards teaching maths in elementary schools. The study will employ a mixed methods approach utilising both qualitative and quantitative data.

Tuesday, 24 October

14:15 – 14:50

Dr. Gosia Gocłowska



Gosia Gocłowska is an Assistant Professor of Social Psychology at the Department of Psychology at the University of Bath. She investigates creativity processes, knowledge emotions (e.g., awe, interest, surprise), and the nature of open-mindedness. She serves as an associate editor at the Journal of Applied Social Psychology.

Does Deviance Inspire Creativity? The Role of Schema-violations and Open-mindedness in Divergent Thinking

Is it always good to avoid things novel and unexpected, or could novelty and unexpectedness sometimes be beneficial? In this research we aim to understand whether and when schema-violations (targets or situations that disconfirm our schema- and stereotype- based expectancies) can foster greater creativity. In Study 1 & 2 we investigated what appraisal processes (surprise, interest) and personality antecedents (openness to experience, need for structure) regulate people's attraction (vs. aversion) to schema-violations. In Study 3 & 4 we looked at whether people's preference for schema-violating (over schema-consistent) stimuli associates with greater creativity (divergent thinking and lifelong creative achievements), and whether it explains the seminal association of openness to experience and creativity. Finally, in Studies 5-7 we demonstrate that exposure to schema-violations can increase creative performance – conditional on people's openness to schema-violating stimuli.

Tuesday, 24 October

15:30 – 16:30

Prof. Roni Reiter-Palmon



Roni Reiter-Palmon is the Varner Professor of Industrial/Organizational Psychology and the Director of the Industrial/Organizational Psychology Graduate Program at the University of Nebraska at Omaha. Her research focuses on creativity and innovation in the workplace, cognitive processes and individual difference variables that influence creative performance of individuals and teams, and leading creative individuals, team decision making, and organizational adoption of innovative processes. She is the Editor of The Psychology of Creativity, Aesthetics and the Arts, and the associate editor for the European Journal of Work and Organizational Psychology. Her applied experiences include consulting to and grants totalling over 6 million dollars from Fortune 500 companies as well as the government and military.

Team Creativity and Innovation: Team Processes and Leadership

For the past two decades, creativity and innovation have been viewed by researchers as critical to organizational success and survival. Understanding the factors that facilitate or inhibit creativity and innovation at the individual level has been the focus of much of the research in the area. In recent years, research in organizational psychology and management has focused on understanding creativity and innovation in teams. However, while earlier work on teams and creativity has focused on the team as a context variable, and individual creativity as the outcome, more recent research emphasizes creativity as the outcome. The more recent attention to teams has occurred because many of the problems facing organizations are complex, and cannot be solved by a single individual, and these problems require creative and innovative solutions. In this presentation I will discuss our current knowledge and future research needed in relation to three important factors that influence team creativity and innovation: social processes, cognitive processes, and leadership.

Short presentations

Session 1 Tuesday, 24 October 10:50-12:10

Dr. Tim Patston Geelong Grammar School, Australia 10:50-11:10

The RISE Framework of Creative Education – Teaching with and for Creativity

Creativity! We must have more creativity! Teachers around the world are being asked to include creativity in their teaching. Unfortunately national curricula are often unclear in their definitions of creativity, and teachers are not provided with enough training to develop their creative teaching skills. Consequently teachers often hold misconceptions of creativity.

In collaboration between Geelong Grammar School and the Universities of Melbourne, South Australia and Connecticut we have developed the RISE Framework of Creative Education. This evidence based framework draws together creativity research from disciplines such as engineering, psychology, business and education.

The RISE Framework offers teachers a clear understanding of Creative Education, and a supportive framework which can be readily used in classrooms. This presentation will include the supportive evidence for the framework, and offer teachers practical examples of how to teach both with and for creativity in their classrooms.

Dr. Claire Stevenson University of Amsterdam 11:10-11:30

Creative or Not: that is the question

Does schooling stagnate creativity? Are adolescents more creative than adults? These are important questions –especially given the emphasis on creativity in 21st century skills curricula. Creativity encompasses not only the ability to produce novel products, but these must also be useful. However, generally only the originality of ideas is used to measure creative potential, whereas their utility is often ignored. Perhaps people become more cautious, taking utility more into account, as they age? The aim of this paper is to investigate the originality-utility trade-off in people's performance on the Alternative Uses Test (AUT). First, we provide evidence of an originality-utility trade-off when performing the AUT. Second, we report on the 'Creative or Not' task, which shows how different people place different value on originality and utility when judging AUT responses. Finally, we show how individual differences in the 'definition' of creativity are related to people's performance on the AUT.

Dr. Elisa Kupers University of Groningen 11:30-11:50

Creativity from Moment to Moment: a Micro-level, Generic Measure of Creativity

There is a vast range of methods to assess creativity in many different contexts. While the majority of creativity assessments either focuses on the level of the person or the creative product, we aim to systematically assess the creative process. We will present a generic, micro-level measure of creativity. What is unique about this measure is that it can be applied to observations of creative processes in many different contexts, and for different kinds of creative tasks. With the instrument, we assess the two core components of creativity (novelty and appropriateness) in real time. We will demonstrate its utility by applying it to two very different creative tasks in an educational setting: a musical composition task (open-ended) and a scientific reasoning task (closed-ended).

Yuxi Zhu Radboud University 11:50-12:10

Creativity: Intuitive Processing Outperforms Deliberative Processing in Creative Idea Selection

People desire creativity but perform sub-optimally at selecting creative ideas—they tend to select mainstream ideas at the expense of creative ideas. So far, little has been known about creative idea selection and its enhancement. The current research investigates the role of processing mode in creative idea selection. In two experiments, participants were either instructed to intuitively or deliberately select the most creative ideas from a pool of 18 ideas that systematically vary on creativity and its sub-dimensions originality and usefulness. Participants in the intuitive condition selected ideas that were more creative, more original, and equally useful than the ideas selected by participants in the deliberative condition. Moreover, whereas selection performance of participants in the deliberative condition was not better than chance level, participants in the intuitive condition selected ideas that were more creative, more original, and more useful than the average of all available ideas.

Dr. Baptiste Barbot**Pace University / Yale University****12:50-13:10****The Dynamics of Creative Ideation: Development of a New Assessment Paradigm**

Since their inception, measures of creative ideation (CI) suffer from conceptual, design, and psychometric limitations that have greatly impeded the accurate study of creativity, and in particular, its development. This paper presents the challenges of longitudinal studies of CI (as operationalized with classic divergent thinking tasks), and introduce a new assessment approach addressing these challenges.

Four new touch-screen based tasks extending an emerging line of work in cognitive neuroscience of creativity were developed to decipher the “micro-processes” of CI. Using a trial-by-trial approach coupled with an innovative measurement model, these tasks are designed to capture individual trends during the CI process (e.g., progressive deceleration of idea generation speed over multiple idea generation “trials”), while controlling for stimulus-specific sources of variation. Multiple pilot studies and preliminary evidences of the promise of this new assessment paradigm will be presented and discussed in light of ongoing measurement issues in the creativity research field.

Kiki M. M. De Jonge**University of Groningen****13:10-13:30****Don't Bother me with Your Weird Ideas! Whether Novelty is Stimulating Depends on Psychological Needs and Perceived Creativity**

In the current research we aimed to address the inconsistent finding in the brainstorming literature that cognitive stimulation sometimes results from novel input, yet other times from non-novel input. We expected and found, in three experiments, that the strength and valence of this relationship is moderated by people's psychological needs for structure and autonomy. Specifically, the effect of novel input (vs. non-novel input), through perceived creativity, on cognitive stimulation was stronger for people who were either low in need for structure or high in need for autonomy. Also, when the input people received did not fit their needs, they experienced less psychological cognitive stimulation from this input (i.e., less task enjoyment and feeling more blocked) compared with when they did not receive any input. Hence, to create the ideal circumstances for people to achieve cognitive stimulation when brainstorming, input novelty should be aligned with their psychological needs.

Dr. Georgiana Balau**Leiden University****13:30-13:50****Team Experiential Cognitive Style and Team Performance: The Moderating Impact of Workplace Setting**

Team creativity research has only recently focused on deeper-level characteristics such as team members' cognitive styles, i.e., how people perceive, organize and process information. We experimentally tested how workplace settings (i.e., environmental cues) influence the relationship between teams' experiential cognitive style and their ability to conduct a creativity task. Based on the resource-matching theory, we argue that workplace settings are an important contingency factor because they influence: the cognitive resources required as well as the cognitive resources available to process information, for a given task. Results show that, when teams with an experiential cognitive style work in an environment where no cues (i.e., either experiential or rational cues) are introduced, teams' experiential cognitive style positively impacts team performance; when either experiential or rational cues are introduced, the relationship becomes weaker than in an environment where such cues are absent. We finally discuss the theoretical and practical implications of these findings.

Prof. Carsten Deckert**Hochschule Düsseldorf, Germany****13:50-14:10****Cultural Impacts on National Innovativeness**

The purpose of the presentation is to show the influence of cultural dimensions on the innovativeness of nations. The presentation mainly focusses on the differences of practice and value scales as proposed by the GLOBE study.

At present, existing research approaches either use Hofstede's cultural dimensions or offer no explanation for different results concerning the influence of practice and value scales of the GLOBE cultural dimensions on innovativeness. Our research proposes a model which distinguishes between three different types of cultural dimensions: political, social and individual dimensions.

The main finding is that the cultural dimensions have different types of influences on national innovativeness: The political dimensions' influence innovativeness via the practice scale, while the social dimensions have an influence via the practice scale. The individual dimensions have an impact via the gap between practice and value scale (i.e. the “cultural cognitive dissonance” between practices and values).

Poster Presentations

1. Branden Thornhill-Miller

University of Paris Descartes

Virtual Reality, Creativity and Emotion

Sixty-two adults participated in a study aimed at manipulating and potentially enhancing creativity through the use of virtual reality. Baseline measurements of divergent and convergent thinking were taken outside of VR in an experimental room, and then again after immersion in VR using Oculus Rift. Four different VR environments were constructed targeting different emotional valences, levels of arousal, and complexity in order to compare their effects on creativity. These were, a virtual copy of the same experimental room along with three copies of the same virtual island with its contents altered to be either 1) pleasant, simple and unarousing, or 2) pleasant, complex, and arousing, or 3) unpleasant, complex, and arousing. Participants' ratings of these virtual environments were also compared to their ratings of standardized photos on a novel combination of dimensions. Results will be discussed in light of the great potential for the manipulation and enhancement of creativity through the vast visual and emotional stimuli available in virtual reality.

2. Charlotte Tanis

University of Amsterdam

Automatic AUT scoring: How does it compare to traditional methods?

The Alternative Uses Task (AUT) is frequently used to assess divergent thinking and creative potential. Scoring the AUT is generally a time-consuming subjective process. This project aims to automate AUT-scoring – for now for Dutch language responses. Our algorithm 'learns' from the previously scored solutions, subjective scores provided by experts. In this poster we present the preliminary results of how our algorithm compares to traditional methods (uniqueness rating and mean score of two experts) in terms of reliability and validity. Which scoring method will win? We hope that this algorithm will make AUT-scoring more easy, objective and reliable. We also use this poster to attract attention to the development of a large-scale database of Dutch responses to the AUT, which we hope can be used to enhance research on creative potential.

3. Erik Jansen

HAN University of Applied Sciences

Creativity and the Arts as Capability

Creativity is often conceptualized as a means to an end, e.g. economic productivity or individual performance. This emphasizes the instrumental function of creativity and its extension, the arts, clouding the intrinsic value of creativity and the arts as an expression of humanity.

To accommodate this, we explore art and creativity from a perspective of the Capabilities Approach. This approach conceptualizes human wellbeing as how one is able to lead the life one has reason to value, and distinguishes functionings (how one actually fares) from capabilities (one's opportunities to function). Capabilities represent life aspects people have reason to value intrinsically, which may also contribute instrumentally to other life domains. By introducing an intermediary constructive function, we arrive at a tentative three-level capability model of creativity and the arts. The model conceptualizes creativity and the arts as integral to human flourishing rather than hinging on a narrow instrumental conception of creativity.

4. Eveline Schoevers

Utrecht University

Investigating Whole Class Dialogue for Promoting Creativity in the Primary School Classroom: A case study

Research indicates that creating opportunities to play with ideas and materials (e.g. open math lessons) and the dialogue between students and teacher are essential to stimulate creativity. It is expected that an open math lesson will also invoke a more creativity promoting dialogue than closed math lesson. To get more insight in how creativity can be enhanced, it was investigated (1) whether teaching for creativity indeed differs between different types of math lessons and why, and (2) whether the dialogue between students and teacher differs between these lessons. This was investigated in the context of the MACE project*. One fourth-grade teacher was interviewed after and observed with the TCOI during an open math lesson in an out-of-school setting, an open math lesson in an in-school setting and a regular math lesson. Furthermore, interactions between students and teacher in these lessons were analyzed on creativity promoting dialogue. Preliminary results will be presented at the conference.

5. Frank Loesche**Plymouth University****Understanding Problem Solving as a Multi-layered Process**

Usually people face several problems at the same time in their everyday life. Some of these problems are connected, for example by approaching the same question from a different angle or by solving a partial problem that contributes to an overall solution. Through interviews with architects, we traced how changing the focus between different problems facilitates finding a solution. Instead of primarily focusing on the temporal order, we suggest that studying the type of links between problems can be utilised to support the creative problem solving process. In addition to experiential accounts, we provide a theoretical multi-layered model of creative problem solving that builds on sequential staged models as well as iterative Design Thinking approaches. We propose that educators could study the links between problems more thoroughly to understand how awareness of currently unsolved problems as well as inherent connections between tasks supports their students in creative problem solving.

6. Ineke Haakma & Linda Hendriks**Hanze University of Applied Sciences & University of Groningen****Fostering Students' Creativity in Primary School Arts Education**

Primary school teachers often experience difficulties in nurturing the creative talents of their students. In our studies, we explore the ways in which teachers can create teacher-student interactions that positively influence student engagement in creative learning tasks. The Curious Minds framework will be used to study teacher-student interactions in the classroom. Previous Curious Minds research has provided an overview of effective teaching strategies that foster students' talents in the science domain. In this study we will explore whether Curious Minds is also applicable in primary school music and visual art education. In addition, the goal of our studies is to gain insights in effective teaching strategies that enhance students' creative talents. These strategies will be used to develop a talent-enhancing training for primary school teachers in order to enable them to promote creativity in their students. In this poster presentation we will present and discuss our ideas.

7. Julie Kendig**Centers for Research on Creativity, USA****A Step in the Right Direction: Early Lessons from a Longitudinal Study in Dance Education as a Developmental Catalyst**

This presentation reports on the development and implementation of a 10-year longitudinal study of an after-school organization featuring intensive dance education for youth aged 8 through 18. Called The Wooden Floor (TWF), the organization's mission is to use dance as a creative development catalyst in order to empower youth from diverse backgrounds to strengthen self-esteem, self-discipline, and their sense of accomplishment through dance, academic, and family programs. Data collection began in February of 2014 and was repeated in 2016, thus establishing the first and second of six planned data panels. This chapter describes the background of the study and its theoretical grounding and reports preliminary results of scale analyses for the 2014 cohort of 375 students through the first two data panels.

8. Kathryn Kelley**Texas Tech University****Visual Artists Writing & Shared Vulnerabilities—Creativity, Psychopathology & Expressive Writing**

Across time, medium, movements and often against conventions, artists tend to have robust writing practices—even a compulsion to write (Goddard, 2012). We consider the implications and explore potential motivations. Considering the shared vulnerabilities model of creativity and psychopathology (Carson, 2011) in conjunction with outcomes of expressive writing interventions (Pennebaker, 2008)—namely, research showing that high-risk populations, like artists, often benefit most from these interventions—we propose that highly creative visual artists often unknowingly engage in writing as a self-regulatory mechanism. Particular writing strategies theoretically result in enhanced cognitive flexibility and working memory, and modulate shared vulnerabilities, ultimately improving creative function while mitigating mental health risks. To pursue this line of inquiry, we analyzed eminent artists' writings with the Linguistic Inquiry and Word Count (2015). We also are developing experimental expressive writing manipulations to integrate in TTU college art courses, including measures to assess health and creative outcomes.

9. Kim van Broekhoven**Maastricht University****Training Impact on Students' Accuracy in Idea Evaluation**

It is commonly assumed that once creative ideas have been generated, people are naturally able to identify and select the most creative ideas for actual innovation. However, research by Rietzschel et al. (2010; 2014) demonstrates that people have a natural tendency to select the more feasible ideas, at the expense of original ideas. Although it has repeatedly been found that idea generation skills are trainable, less is known about the trainability of idea evaluation skills (Scott, Leritz & Mumford, 2004). The aim of this study is to investigate whether explicit training in creative problem-solving can enhance students' accuracy in idea evaluation. In a between-subject design, the individual performance on two idea evaluation tasks of 27 bachelor students of Maastricht University who received a 10 hour training in creative problem-solving skills will be compared with the performance of 50 students who did not participate in the training. The findings of this study will contribute to the ongoing debate regarding the trainability of creative problem-solving skills.

10. Marije Stolte**Utrecht University****Creativity and Inhibition: An Alternative Uses Task to Measure the Effect of Attention and Distraction on Creativity**

Executive functions are the necessary processes for goal-directed behavior, which can be divided into shifting, updating, and inhibition. What role executive functions play in the creative process is currently still unclear. Especially for inhibition both beneficial and detrimental effects of inhibition on creativity have been reported (Benedek, Franz, Heene, & Neubauer, 2012; Carson, Peterson, & Higgins, 2003). A distinction between early and late inhibition may explain these differences. To measure early inhibition we are developing an Alternative Uses Task that contains distracting stimuli. The child is instructed to ignore the distractors and focus on the main stimulus. By using eye-tracking measurements we will test whether children look at the distractors and if the generated alternative uses are related to the distractors. Typically developing children, highly creative children, and children with attentional problems will be compared. During the poster session, the task will be discussed to further refine it.

11. Marloes van Dijk**Utrecht University****Bilingualism and Creativity: Towards a Situated Cognition Perspective**

This study focuses on creativity among bilingual children. Various studies have shown that bilingualism is associated with creativity; researchers emphasize the role of executive functioning to explain this association. This approach fits the more traditional "psychological trait" theory, which states that cognitive skills should be seen as a personal, relatively stable characteristic. Recent findings suggest that cognitive processes are always situated, meaning that they are influenced by the environment. The environment affords behavior, upon which people can act. Affordances are relations between people's abilities and the features of the environment. A creative act can be seen as the combination of perceived affordances. The aim of the poster presentation is to discuss previous research and present our theoretical framework. We theorize that the environment may afford more, and different, behaviors to bilinguals than to monolinguals. Bilinguals might perceive more affordances upon which they could act and, therefore, be more creative than monolinguals.

12. Laurence Prevosto**INRA - Institut National de la Recherche Agronomique****ITE: a Fast Method to Reveal Similarities and Differences between Stakeholders**

Time is always the limiting factor to organise real collective thinking and actions. The method proposed allows to figure out within 1 to 3 hours how stakeholders view a topic area, and create new learning or working opportunities based on this understanding.

The ITE method relies on three basic levels to approach a topic: Individuals (points of view), the nature of the Topic (characteristics), and the Environment to consider (interactions). It can be combine in a matrix with other elements: time periods, "SWOT", kind of stakeholders...

Convergent thinking (from 3 to 6/7 collective analysis) uncovers the common knowledge, motivations, values and interests shared by the participants as well as what set them apart. The method prepares Ideation for it upraises meaningful elements to be dwelt with.

13. Saskia Jaarsveld**University of Kaiserslautern****Creating and Solving APM like Matrices: Differences from Think-aloud Protocols**

We present a process-model showing differences and similarities between thinking processes of a solving and a creating task. Participants (N=20) verbalized their thoughts solving Advanced Progressive Matrices (APM) -like matrices and creating an APM-like matrix in the Creative Reasoning Task (CRT). Verbalizations were encoded according synthetic protocols defined for both tasks containing hypothesized verbalizations of transitions between operations. Operations were kept as much as possible identical for both tasks. Results a) the synthetic protocols were confirmed; all verbalizations could be encoded b) observed transitions confirmed the hypothesized differences between solving and creating task; transitions in solving showed a linear pattern, those in creating a spiral pattern. Concluding, expectations of the process-model were confirmed by the observed differences of cognitive operations in solving and creating task.

14. Markus Sjøbstad Bensnes**Tinkr AS Norway****Risky Innovation - Barriers and Enablers to Creativity in the Humanitarian Sector**

The value of innovation in the humanitarian sector is intrinsically linked to human dignity, integrity and saving lives. Yet, there seems to be less innovation here than in the private sector. Is the private sector just better suited for creative thinking and innovative solutions?

Exploring the linkages between creativity, innovation and the need for compliance in the humanitarian sector - our project aims to identify how creative solutions come to life in the humanitarian field. New and creative solutions are being implemented by humanitarians every day, as a response to volatile and unpredictable needs. But it is difficult to fund larger innovation projects, because these funds would otherwise be invested in interventions with a proven track record of saving lives. How do you convince people that innovation and creativity is a sound investment? And how can you balance an apparent need for compliance in these innovation projects?

15. Marta Katarzyna Wronska**University of Groningen****Different or the Same? How Need for Closure and Situational Breadth of Attention Affect Performance in Different Creativity Tasks**

In the present study we compared the effect of Need for Closure (NFC) and attentional breadth on performance in three tasks: alternative uses, Remote Associate Test (RAT), and analytical puzzle in a between-subjects design. Additionally, we tested whether solving these tasks influences attentional breadth. Participants (N = 138) filled in NFC questionnaire online. On a different day they participated in the lab study. The task was displayed in the middle of the screen, while geometric shapes were located in the peripheries. Next, participants performed a delay task and proceeded to a recognition test including 25 peripheral and 20 filler stimuli. Participants indicated whether each symbol was present on the screen, which measured their attentional breadth. We found that both NFC and attentional breadth predict performance in alternative uses task, but only breadth of attention predicts performance in RAT. We also found that generating alternative uses (vs. analytical thinking) broadens attention.

16. Yvonne Koert**Avans University****Can Adding Explicit Critical Thinking Instruction to an Innovation Curriculum Improve the Quality of Problem-finding?**

The Advanced Business Creation educational program under scrutiny was developed to educate innovation skills in a business environment. To improve the outcome quality of student's problem finding in authentic innovation projects, explicit critical thinking was added to a curriculum that already included explicit creative thinking training. The design of the research was a quasi-experimental study, with a pretest-posttest non-equivalent control group design to investigate the effects of the independent variable (three different implementations of critical thinking instruction) on the dependent variables Quality of problem finding and Critical thinking scores, with 244 participating students. The three experimental conditions differed in attention to mind-set, self-regulation and interaction between critical and creative thinking. Findings showed significant differences between conditions in problem finding after the experiment and compared with an historical control group over a period of nine months.

17. Sameh Said-Metwaly**University of Leuven****Testing the Factor Structure of the Torrance Tests of Creative Thinking – Figural Form: A Meta-Confirmatory Factor Approach**

Despite the widespread use of the Torrance Tests of Creative Thinking - Figural (TTCT-Figural) in measuring creativity, considerable debate exists around its construct validity. Previous studies have yielded inconsistent results with regard to the factor structure of the TTCT-Figural. These inconsistencies might stem from the use of different samples, conditions, or statistical approaches. Given this heterogeneity in results, the present study aims to investigate the factor structure of the TTCT-Figural using a meta-confirmatory factor analysis (meta-CFA) in an attempt to examine the results of earlier studies and compare previously identified structure models. Data from 33 correlation matrices obtained from 26 studies ($N_{\text{individuals}} = 6,982$) are included in the meta-analysis. Four different factor models previously proposed in the literature are tested to determine which one fits the data best. The findings support a two-factor structure model, with an innovative factor (including the fluency and originality subscales) and an adaptive factor (including the elaboration, abstractness of titles, and resistance to premature closure subscales). The study provides an added value towards the creativity literature through informing the ongoing debate on the dimensionality of the TTCT. Moreover, the approach employed in this study (meta-CFA) provides a different angle to look at the factor structure of the TTCT through using data from multiple studies, which might be expected to improve the precision of the estimates and the power of the significance tests.

18. Hailee Ingleton**University of Salford****“Creating” Peace: Peaceful Conflict Resolution by facilitating “Flow” through the collaborative creating of art**

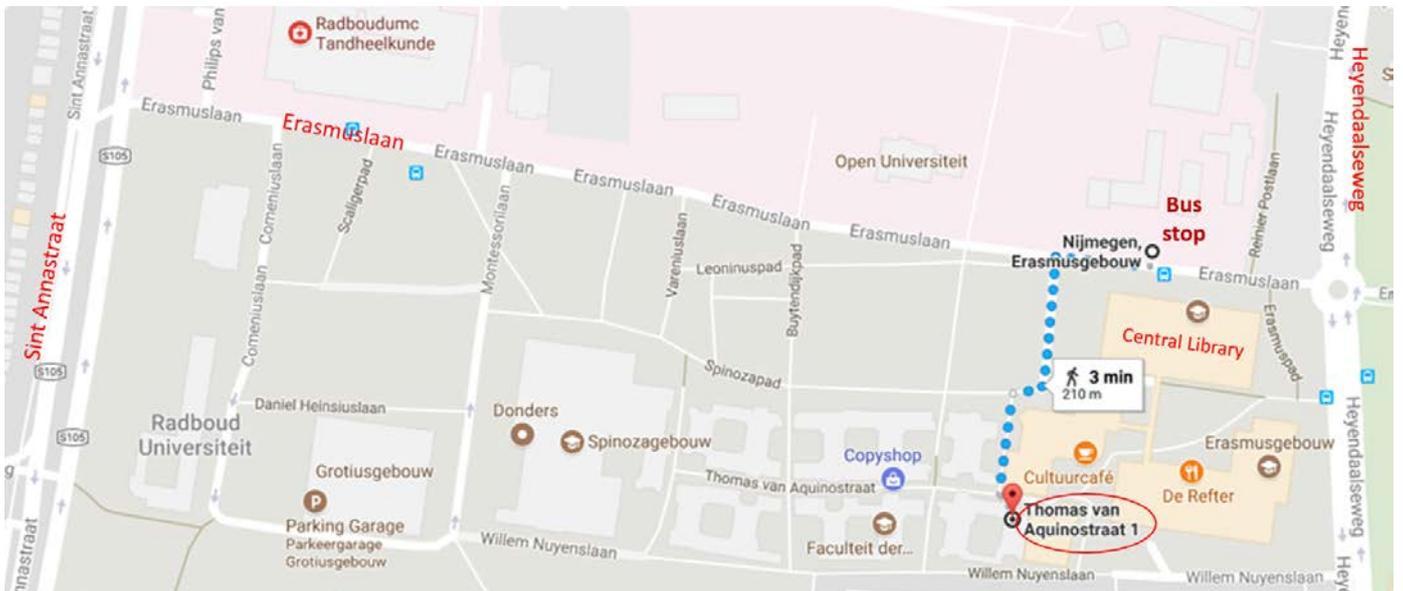
Researchers have highlighted and proposed that the arts have a vital role to play in conflict resolution. There are several applications of art in reconciling intrapersonal conflict through art therapy but only suggestions and recommendations of art being used to facilitate peace in intergroup conflict. Previous studies highlight that creating art facilitates the occurrence of Flow. One of the consequences of being in Flow, is loss of self-consciousness, which then promotes a loss of personal identity. The loss of personal identity then allows for a new social identity to be formed as a greater identity with other in-group members. This study explores the possibility of two conflicting groups falling under one unified identity resulting in peaceful reconciliation. A mixed methods approach is adapted. Quantitative instruments include the Interpersonal Peacefulness Scale and Flow State Scale. Qualitative methods include Participant Observation, Interpretive Phenomenological Analysis and Symbolic Analysis of Artwork.

19. Xiaojing Gu**Radboud University****Creativity and School Type**

Creativity is becoming increasingly important in our complex, fast changing world. Schools are very important environment where creativity can be cultivated. However, emphasis on students' creativity differs among school types and teaching styles. The current research aimed to investigate the relationship between school type and teaching style on students' creativity (divergent thinking and convergent thinking). A total of 281 participants who just graduated from Dutch high schools were recruited. Participants performed creativity tasks and answer questionnaires about their educational history. Results suggested that students from philosophical schools performed better in divergent thinking tasks, whereas no difference was found for convergent thinking tasks. Teaching style had no relationship with students' creativity.

Location

Conference building: Thomas van Aquinostraat (T.v.A) 1

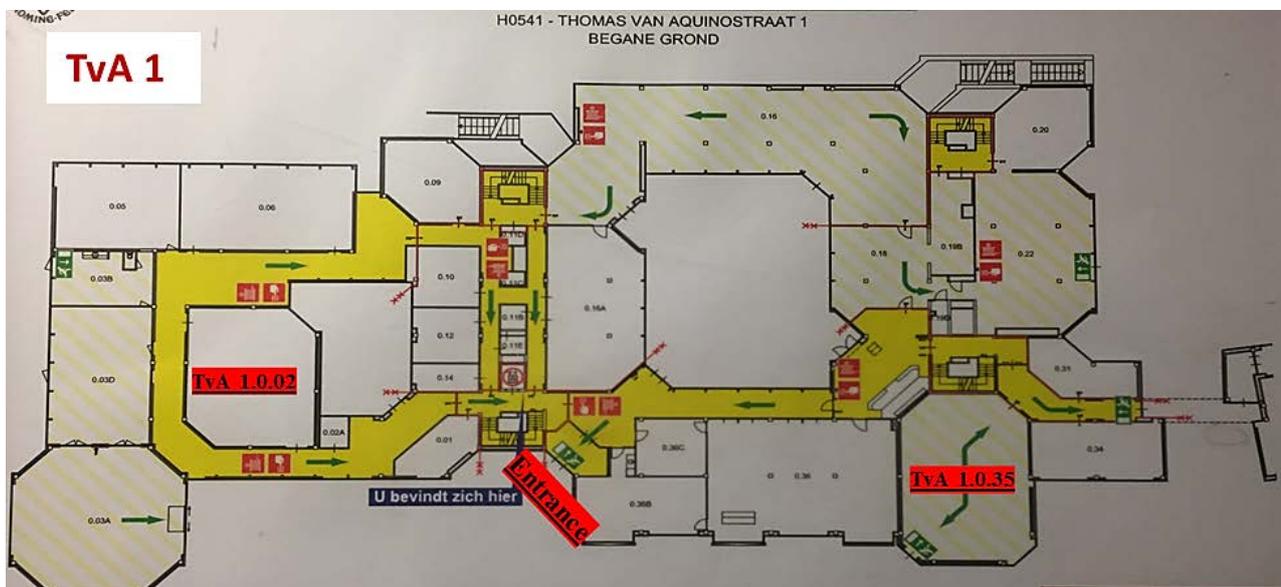


Transport:

- From central station: Take bus line 10 (direction: Nijmegen CS), 11 (direction: Beuningen Aalsterveld), 11 (direction: Druten Busstation), 14 (direction: Nijmegen Brakkenstein), or 300 (direction: Nijmegen Via Bommel). [Bus stop: Erasmusgebouw](#)
- From city center: Take a bus to “Erasmusgebouw”, or take a bus to central station and see above
- Taxi: 0031 (0)243660044 0031(0)243777400 0031(0)624848488

Conference rooms:

	Morning	Afternoon
Day 1 Monday, 23 October	Room TvA1.0.02 (ground floor)	Room TvA1.0.02 (ground floor)
Day 2 Tuesday, 24 October	Room TvA1.0.02 (ground floor)	Room TvA1.0.35 (ground floor)



Lunch and poster room: Brasserie, TvA 8, room A.00.09

How to get to Brasserie from the conference room:

1. Walk from TvA 1 to TvA 8 (about 200 meters, see the map below).
2. In TvA 8, follow instructions on the wall how to get to Brasserie.



The Creativity and Innovation Conference is part of the **Week of Creativity and Innovation**, see <http://www.ru.nl/bsi/news-events/bsi-events/week-creativity/>.

If you have any questions, please contact Dr. Simone Ritter (s.ritter@psych.ru.nl)



Creativity and Innovation Conference
23-24 October, 2017



Workshops 'Creative Thinking' for Schools
25-27 October, 2017