Nurturing the Imagination

Anna Abraham, PhD

✉ annaabr@gmail.com

💻 www.anna-abraham.com

LEEDS BECKETT UNIVERSITY
LEEDS SCHOOL
OF SOCIAL SCIENCES

The Importance of the Creative Imagination

Perspectives from Education (UK)

National Advisory Committee on Creative and Cultural Education

All Our Futures:

Creativity, Culture and Education

Report to

the Secretary of State for Education and Employment

the Secretary of State for Culture, Media and Sport

May 1999

Membership of the Committee

Professor Ken Robinson (Chairman), *University of Warwick*

Professor Lewis Minkin (Vice-chair), *Sheffield Hallam University*

Professor Eric Bolton CB, *Formerly Senior Chief Inspector*

Dawn French, *Actor/Comedian*

Lindsey Fryer, *Vice-chair, Engage The National Association of Gallery Education*

Professor Susan Greenfield, *University of Oxford*

Valerie Hannon, *Chief Education Officer, Derbyshire*

Lenny Henry CBE, *Actor/Comedian*

Dawn Holgate, *Director of Education, Phoenix Dance Company*

Dame Tamsyn Imison, *Head, Hampstead School, London*

Clive Jones, *Chief Executive, Carlton Television*

Judith Kelly OBE, *Artistic Director, West Yorkshire Playhouse*

Professor Sir Harold Kroto Kt., FRS, *University of Sussex*

Sir Claus Moser KCB, CBE, FBA, *Chairman, Basic Skills Agency*

Sir Simon Rattle Kt., CBE, *Conductor*

Lord Stone of Blackheath, *Managing Director, Marks & Spencer plc*

Professor Helen Storey, *Fashion Designer*

Carol Traynor, *Head, St Boniface RC Primary School, Salford*

Research Officer

Mathilda Joubert

Administrative Officer

Lynn Green

Perspectives from Education (UK)

Introduction and Summary

The Purpose of this Report

i. In 1997, the Government published its White Paper *Excellence in Schools*. It described education as a vital investment in 'human capital' for the twenty-first century. It argued that one of the problems in education is the low expectations of young people's abilities and that it is essential to raise morale, motivation and self esteem in schools. The main focus of the White Paper was on raising standards in literacy and numeracy. But this will not be enough to meet the challenges that face education, and the White Paper recognised this. It also said:

> *If we are to prepare successfully for the twenty-first century we will have to do more than just improve literacy and numeracy skills. We need a broad, flexible and motivating education that recognises the different talents of all children and delivers excellence for everyone.*

It emphasised the urgent need to unlock the potential of every young person and argued that Britain's economic prosperity and social cohesion depend on this.

Our aim must be to create a nation where the creative talents of all the people are used to build a true enterprise economy for the twenty-first century — where we compete on brains, not brawn.

The Prime Minister, the Rt. Hon Tony Blair MP

...we cannot rely on a small élite, no matter how highly educated or highly paid. Instead we need the creativity, enterprise and scholarship of all our people.

Rt. Hon David Blunkett MP, Secretary of State for Education and Employment

ii. This report argues that a national strategy for creative and cultural education is essential to that process. We put the case for developing creative and cultural education; we consider what is involved; we look at current provision and assess the opportunities and obstacles; and we set out a national strategy. By creative education we mean forms of education that develop young people's capacities for original ideas and action: by cultural education we mean forms of education that enable them to engage positively with the growing complexity and diversity of social values and ways of life. We argue that there are important relationships between creative and cultural education, and significant implications for methods of teaching and assessment, the balance of the school curriculum and for partnerships between schools and the wider world.

We must change the concept of creativity from being something that is 'added on' to education, skills, training and management and make sure it becomes intrinsic to all of these.

Rt. Hon Chris Smith MP, Secretary of State for Culture, Media and Sport

What is this Report About?

iii. Our report develops five main themes:

The Challenge for Education

Education faces challenges that are without precedent. Meeting these challenges calls for new priorities in education,

inclu
education and a new balance in teaching and in the curriculum.

Creative Potential

Creativity is possible in all areas of human activity, including the arts, sciences, at work at play and in all other areas of daily life. All people have creative abilities and we all have them differently. When individuals find their creative strengths, it can have an enormous impact on self-esteem and on overall achievement.

Freedom and Control

Creativity is not simply a matter of letting go. Serious creative achievement relies on knowledge, control of materials and command of ideas. Creative education involves a balance between teaching knowledge and skills, and encouraging innovation. In these ways, creative development is directly related to cultural education.

Cultural Understanding

Young people are living in times of rapid cultural change and of increasing cultural diversity. Education must enable them to understand and respect different cultural values and traditions and the processes of cultural change and development. The engine of cultural change is the human capacity for creative thought and action.

A Systemic Approach

Creative and cultural education are not subjects in the curriculum, they are general functions of education. Promoting them effectively calls for a systemic strategy: one that addresses the balance of the school curriculum, teaching methods and assessment, how schools connect with other people and resources and the training and development of teachers and others.

Who is this Report for?

iv. Formally, our report is addressed to the Secretaries of State, and many of our recommendations do call for Government action at various levels. But education concerns everybody: children and young people, parents, employers, those in

Perspectives from Education (UK)

cultural education are fundamental to meeting these objectives.

2. Creative Development

There are many misconceptions about creativity. Some people associate creative teaching with a lack of discipline in education. Others see creative ability as the preserve of a gifted few, rather than of the many; others associate it only with the arts. In our view, creativity is possible in all areas of human activity and all young people and adults have creative capacities. Developing these capacities involves a balance between teaching skills and understanding, and promoting the freedom to innovate, and take risks.

3. Cultural Development

Culture too is often associated with the arts. However, we relate the arts to a broader definition of social culture which includes the impact of science and technology on ways of life and the increasing interaction between cultures. Young people need to be helped to engage positively with cultural change and diversity. The dangers of cultural intolerance make this task a particular priority. We argue that creative and cultural education are dynamically related and that there are practical implications for the curriculum and for the classroom.

4. Meeting the Challenge

In this section, we draw together our arguments for creative and cultural education and show how in principle they contribute to meeting the challenges for education that we have identified. In Part Two we move from principles to practice.

Part Two: A New Balance

5. Developing the School Curriculum

There have been many benefits in the introduction of the National Curriculum. There are also difficulties for creative and cultural education in the existing rationale, structure and levels of prescription. These issues need to be tackled to allow more initiative to schools within a clear framework of public accountability. All schools should review their

provision for creative and cultural education within and beyond the National Curriculum.

6. Teaching and Learning

Creativity can be 'taught'. Teachers can be creative in their own teaching; they can also promote the creative abilities of their pupils. The roles of teachers are to recognise young people's creative capacities; and to provide the particular conditions in which they can be realised. Developing creativity involves, amongst other things, deepening young people's cultural knowledge and understanding. This is essential both in itself and to promote forms of education which are inclusive and sensitive to cultural diversity and change.

7. Raising Standards

Assessment and inspection have vital roles in raising standards of achievement in schools. But they must support and not inhibit creative and cultural education. There is a need for a new balance between different types of attainment target in the National Curriculum, and between the different forms and criteria of assessment and inspection. Raising standards should not mean standardisation, or the objectives of creative and cultural education will be frustrated.

Part Three: Beyond the School

8. Developing Partnerships

Schools are now able to work in partnership with a wide range of individuals and organisations to enrich provision for creative and cultural education. The benefits of successful partnerships, and the roles of various partners in creative and cultural education are different, but complementary. There is a great deal of good practice, but there is an urgent need to establish better systems of funding, training and quality assurance of the effectiveness of partnerships.

9. Funding and Resources

Local management of schools has reduced many services and facilities that were once provided by local education authorities to support creative and cultural education. Co-ordinated action is needed to provide these services in new

Perspectives from Education (UK)

people's creative abilities and cultural understanding.

c. To promote the development of partnerships between schools and outside agencies which are now essential to provide the kinds of creative and cultural education that young people need and deserve.

If these objectives were achieved the benefits would be felt by all young people, the education sector and by society as a whole.

How important is this?

ix. There is intense concern with raising standards in education, and schools and the education sector in general are already deluged with reports. How important is this one? For some people, the very theme of this report may seem a distraction from the main business of raising standards. We do not think so. Our concerns are the same as everyone else's. How can education enable our children to make the most of themselves and take the best advantage of the opportunities and uncertainties that they face in a fast changing world? Let us anticipate some of the legitimate questions that might be asked of this report.

1. Isn't an emphasis on creativity and culture a distraction from the core concerns with literacy and numeracy?

We are not advocating creative and cultural education as alternatives to literacy and numeracy, but as equally relevant to the needs of this and of future generations. We support the need for high standards of literacy and numeracy. These are important in themselves. They can also enhance creative abilities: equally creative teaching and learning can enhance literacy and numeracy. These are complementary abilities, not opposing objectives. The Government and the vast majority of people in education recognise this.

2. How are creative and cultural education relevant to raising academic standards?

Ability comes in many forms and should not be defined only by traditional academic criteria. Academic ability alone will no longer guarantee success or personal achievement. Every

child has capabilities beyond the traditionally academic. Children with high academic ability may have other strengths that are often neglected. Children who struggle with academic work can have outstanding abilities in other areas. Equally, creative and cultural education of the sort we propose can also help to raise academic standards. The key is to find what children are good at. Self confidence and self esteem then tend to rise and overall performance improve. High standards in creative achievement require just as much rigour as traditional academic work.

3. What has this got to do with helping young people get jobs?

We live in a fast moving world. While employers continue to demand high academic standards, they also now want more. They want people who can adapt, see connections, innovate, communicate and work with others. This is true in many areas of work. The new knowledge-based economies in particular will increasingly depend on these abilities. Many businesses are paying for courses to promote creative abilities, to teach the skills and attitudes that are now essential for economic success but which our education system is not designed to promote.

4. Is this committee a lobby group for the arts?

This report does not represent a particular lobby. It expresses concerns across a wide range of public and professional interests about the balance and priorities of education as we move into the twenty-first century. Our members come from different professions and backgrounds: including science, the arts, education and business. Creative achievement is obvious in the arts but it is essential to achievement in all other fields including the sciences and business.

5. Is this a return to the progressive teaching ideas of the 1960s?

No. We are advocating a new balance between learning knowledge and skills and having the freedom to innovate and experiment — a system of education that fosters and channels the diverse abilities of young people and which gives everyone the opportunity to achieve on their own merits.

Perspectives from Education (UK)

This is why we link creative education with cultural education.

6. Teachers are already under enormous pressures. Are these recommendations going to add to the burden?

Good teachers and many high performing schools are already doing what we are recommending. We want to emphasise the importance of their work and to establish national priorities for creative and cultural education in all schools. The curriculum is already over-full and we think it should be thinned out. We want teachers to have more freedom to use their own creative and professional skills. Greater freedom for teachers in the classroom will help to promote creative teaching and this is essential to promote creative learning.

Looking Forward

x. The issues we are dealing with in this report are essential to the overall quality and standards of education. They are also difficult in terms of definition, policy and practice. We have found our own debates as a group exciting and enlightening. We have had an opportunity which is all too rare to meet across specialisms and to talk from a wide range of different backgrounds. We continually found that ideas and values that we thought particular to our own fields are common to us all. Too often, our own education had taught us otherwise. In what follows, we have tried to say as directly and clearly as we can what we are concerned with and what we are concerned about. We have tried to balance a discussion of definitions and principles with recommendations that are practical and feasible. We have not dealt in detail with all of the issues we raise: we have not done justice to every subtlety of argument on the way. Our task has been to balance depth with breadth, theory with practice and detail with brevity. In publishing this report we believe with even more strength than we did at the outset, that the tasks we identify are urgent and the arguments compelling; that the benefits of success are enormous and the costs of inaction profound.

xi. In his introduction to *Excellence in Schools* (DfEE 1997), the Secretary of State for Education and Employment relates the Government's aims for education to five priorities:

- the need to overcome economic and social disadvantages;
- the creation of greater fairness within the education system;
- the encouragement of aspiration;
- economic competitiveness;
- unlocking the potential of each individual.

xii. We believe that these are the right priorities for education; and that they are all related. Our aims are to show how these priorities can be realised through a systematic approach to creative and cultural education; to promote higher standards in creative and cultural education in all disciplines; to promote parity of provision between the arts, humanities, sciences and other major areas of education; and to stimulate a broad base of partnerships between schools and outside agencies. We see all of these as essential to realising the potential of young people; and to promoting the quality of national life and of individual achievement that are the ultimate purposes of education.

xiii. The foundations of the present education system were laid at the end of the nineteenth century. They were designed to meet the needs of a world that was being transformed by industrialisation. We are publishing this report at the dawn of a new century. The challenges we face now are of the same magnitude, but they are of a different character. The task is not to do better now what we set out to do then: it is to rethink the purposes, methods and scale of education in our new circumstances. This report argues that no education system can be world-class without valuing and integrating creativity in teaching and learning, in the curriculum, in management and leadership and without linking this to promoting knowledge and understanding of cultural change and diversity. The arguments and proposals that follow are to help set a course for the next century while addressing the urgent demands of the present.

Professor Ken Robinson; Chairman

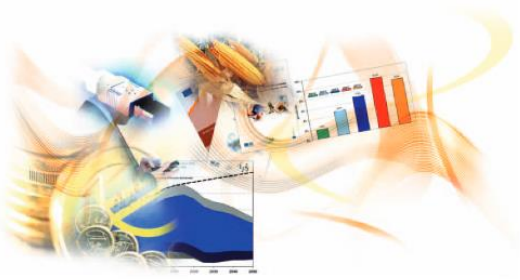
Perspectives from Education (EU)

JRC Scientific and Technical Reports

Creative Learning and Innovative Teaching

Final Report on the Study on Creativity and Innovation in Education in the EU Member States

Authors: Romina Cachia, Anusca Ferrari, Kirsti Ala-Mutka and Yves Punie



EUR 24675 EN - 2010

JRC EUROPEAN COMMISSION

ipts Institute for Prospective Technological Studies

Executive Summary

The importance of creativity and innovation in addressing the economic, environmental and social crises has been recognized in policy discussion in Europe. Recent policies call for the strengthening of Europe's innovative capacity and the development of a creative and knowledge-intensive economy and society through reinforcing the role of education and training in the knowledge triangle and focusing school curricula on creativity, innovation and entrepreneurship. It has been recognized that schools and initial education play a key role in fostering and developing people's creative and innovative capacities for further learning and their working lives.

Notwithstanding the intensive policy discourse in this area, there is little research or evidence on the status, barriers and enablers for creativity and innovation in compulsory schooling at a European level. This report aims to fill this gap by collecting evidence on creativity and innovation in education in schools in the EU27. Evidence comes from a literature review, a survey with teachers, an analysis of curricula and of good practices, stakeholder and expert interviews, and experts workshops. This report elaborates and synthesises the data and results gathered from each phase of the study.

It is argued that creativity, in the educational context, should be conceptualized as a transversal and cross-curricular skill, which everyone can develop. Therefore it can be fostered but also inhibited. This report proposes five major areas where effort and improvement is needed to enable more creative learning and innovative teaching: namely, curricula, pedagogies and assessment, teacher training, ICT and digital media, and educational culture and leadership.

Curricula: The study shows that the terms 'creativity', and 'innovation' and their synonyms are mentioned relatively often in the EU27 curricula. Many teachers and education experts however, feel that the curricula in their countries do not, as yet, sufficiently encourage creativity and innovation, mainly because they are not clear how creativity should be defined and how it should be treated in learning and assessment. Furthermore, curricula are often overloaded with content, which reduces the possibilities of creative and innovative learning approaches in practice. This study highlights the need for the revision of curricula, so as to provide a consistent definition of creativity, and better guidance on how teachers should develop creativity and innovation in practice and encourage development of cross-curricular competences. Consultation and dialogue with all educational stakeholders, including parents or their representatives, in revising curricula may be a benign and participatory form of promoting debate and reflection on a shared understanding of quality and vision in education where creativity and innovation are encouraged.

Pedagogy and assessment: In terms of pedagogical practices, the teachers who participated in this study have highly positive views about the importance of creativity and innovation in education. They claim to encourage learning activities which are likely to allow students to be creative and also aim to foster skills and abilities that enable creativity and innovation. Despite such claims, it has been observed that conventional ways of teaching related to teacher-centred methods, frontal teaching and chalk and talk prevail in a good majority of schools in the EU27. Primary level teachers were more likely than secondary teachers to promote creative learning skills and abilities and active learner-

Perspectives from Education (EU)

centred learning approaches in class. While teachers' lack of skills and confidence is one of the main reasons for creative practices, other factors - namely, tight timetables, overloaded curricula, lack of support in the class, too many pupils per teacher and a school culture that does not support new methods - were also highlighted. Teachers tend to be isolated and lack support and hence seem to prefer to encourage convergence and discipline instead of divergence because it is easier to handle in class.

The process of assessment comes up throughout the study as a major issue which affects school practice and culture, as it is both an enabler and a barrier for creative learning and innovative teaching. In most countries, grades and summative assessment are the main type of assessment, especially in secondary schools. However, examples of more versatile ways of assessing students, such as assessment through presentations, group work, peer feedback and portfolios, were also noted. There is resistance to changing the traditional assessment practices, as parents, teachers, and even students often consider grades as the most significant way of giving feedback about learning. This highlights the importance of dialogue and networking with all the educational stakeholders in order to support children's learning in creative and innovative ways. Furthermore, the study stresses the importance of accompanying curricula reforms with the revision of national exams and the principles of quality assessment for schools. Changes in learning objectives cannot be implemented in practice if assessment for pupils and schools remain the same.

Teacher training: In order to develop creative learning approaches, it is crucial that teacher training prepares new teachers to become reflective practitioners able to discern how a teaching method or activity can stifle or trigger creativity in their students. Results from this study show that teachers who were trained on creativity held more positive views about its relation to education. Similarly, teachers who had received training in ICT were more likely to sustain that new technologies are important for learning. This study also shows that teachers with most interest for innovation and changing pedagogic methods were those who have already some years of experience of teaching practice after the initial training. This suggests that while major improvement in Initial Teacher Training (ITT) is needed in the EU27, as only a quarter of the teachers surveyed considered that they had learnt how to teach during ITT, it is also important that more effort is dedicated at understanding teachers' life histories and trajectories. Teacher training programmes must be reviewed and revised to ensure that they promote diverse and innovative teaching methods, digital competence and teaching cross-curricular competences with plenty of hands-on classroom practice and efficient guidance. In addition, facilitating professional development of confidence and capabilities in enabling teachers to take creative risks within traditional and cautious systems is also important. The potential of the internet as a space where peer learning and interaction with outside experts could take place should be further exploited and existing European networking activities such as eTwinning should be more effectively promoted among all schools and teachers.

ICT and digital media: This study highlights the potential of Information Communications Technology (ICT) in enabling innovative and creative school environments. Technologies play a crucial role in learners' lives and can act as a platform to foster creative learning and innovative teaching. However, for ICT's potential for change to be realised, a policy drive is needed. Teachers who responded to the survey mostly use the Internet for retrieving information and for downloading or preparing resources. Only half of them used the Internet for collaboration and networking. Technologies are far from exploited for creative and innovative purposes in the classroom. Furthermore, despite the increase in the numbers of computers in schools, our survey results show that hands-on access for pupils remains very low. Allowing students to play with the tools could enhance pupils' motivation to think, understand and learn in innovative ways. There is a need for personal and pedagogical digital competence for both teachers and students.

More research should be undertaken on how technologies are appropriated by teachers, in order to support them in developing more efficient pedagogical and innovative usage of the technologies for learning. Results from this study also demonstrate that the potential of new technologies for creative learning and innovative teaching cannot be exploited unless teachers' proficiency in using ICT and the quality of ICT in schools is improved, software in different languages is provided and more space for interaction between teachers and students is allowed. There is a strong need for pedagogic training which empowers teachers with the required ICT skills to help their students become digitally competent on the one hand, and for guiding students towards more exploratory and creative interaction with ICT tools on the other hand. Results from the best practice examples also show that enabling interaction between teachers and outside experts could be highly beneficial in terms of learning in innovative and creative way.

Educational culture and leadership: It becomes clear from the study that major changes are needed in the overall educational culture towards more creative learning and innovative teaching. People outside the classroom, such as school leaders, national policymakers and pupils' parents should also be involved in this change. Creativity and innovation are often perceived to be present in the school culture, however, they are often not a priority. Therefore, innovative teachers' personal classroom practice is not necessarily aligned with the culture they experience as their working context, nor is it rewarded or appreciated by school leaders. This highlights the importance of school leadership in supporting and appreciating teachers' efforts in implementing innovative pedagogic practices and experimenting with them. There is a need for a holistic strategy for implementing change towards more creative learning and teaching, taking into account curricula, assessment, teacher training, and funding, with joint dialogue between all stakeholders. The European Year 2009 of Creativity and Innovation had visible effects in most of the countries studied and similar European and national awareness raising events should be organised.

Throughout this report, it has been argued that educational actors have the power to unlock the creative and innovative potential of the young. However, they require substantial support, especially in terms of training, revision of curricula and assessment, and institutional change. There is a growing need for action at both national and European level to bring about the necessary changes required for an open and innovative European educational culture based on the creative and innovative potential of its future generations.

Perspectives from Education

(ongoing efforts)

Durham University

Study | Colleges & student experience | Research & business | Alumni | Global Durham

Durham Commission on Creativity in Education

You are in: Durham University ‹› Durham Commission on Creativity in Education

Durham Commission on Creativity and Education

- Meet the team
- News and Events
- Subscribe
- Video

Durham Commission on Creativity and Education

Jump to: What is the Commission | Background | How will it work | Key research questions and themes | Timescales

What is the Commission?

The Durham Commission on Creativity and Education is a collaboration between Arts Council England and Durham University that aims to identify ways in which creativity, and specifically creative thinking, can play a larger part in the lives of young people from birth to the age of 25, both within and beyond the current education system.

Crucially, the Commission hopes to find out what already works well and where there might be gaps that can be addressed.

Background

There is a general appreciation of the importance of creativity to society and it is an exciting time for the country with a huge amount already achieved across the education sector and beyond. But the Commission believes there is further untapped potential that can be unlocked.

The increasing recognition of the economic and social value of creativity and creative thinking has brought a fresh urgency to the development of entrepreneurship and the skills of the future workforce. In response to this, the

Perspectives from the Economy

WORLD ECONOMIC FORUM Agenda Platforms Reports Events About English TopLink

Global Agenda | Davos 2016 | Fourth Industrial Revolution | Workforce and Employment

The 10 skills you need to thrive in the Fourth Industrial Revolution

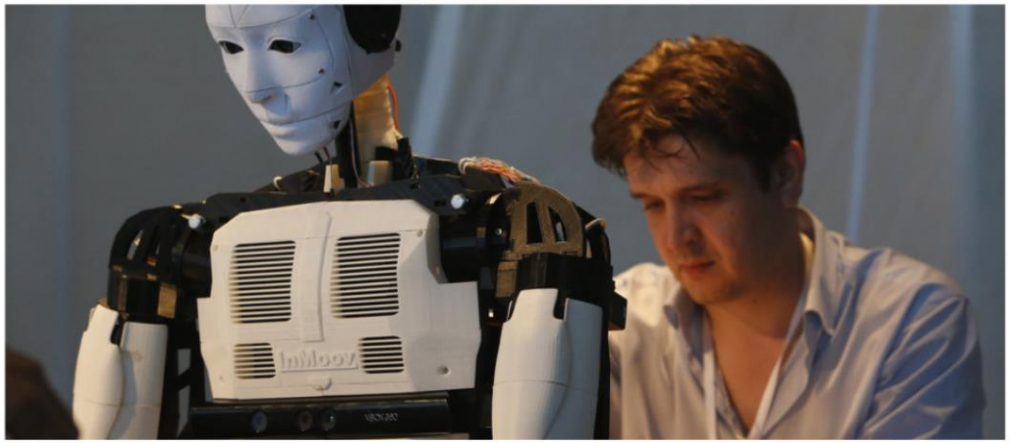


Image: REUTERS/Sergei Karpukhin

19 Jan 2016

Five years from now, over one-third of skills (35%) that are considered important in today's workforce will have changed.

Top 10 skills

in 2020	in 2015
1. Complex Problem Solving	1. Complex Problem Solving
2. Critical Thinking	2. Coordinating with Others
3. Creativity	3. People Management
4. People Management	4. Critical Thinking
5. Coordinating with Others	5. Negotiation
6. Emotional Intelligence	6. Quality Control
7. Judgment and Decision Making	7. Service Orientation
8. Service Orientation	8. Judgment and Decision Makin
9. Negotiation	9. Active Listening
10. Cognitive Flexibility	10. Creativity

Source: Future of Jobs Report, World Economic Forum

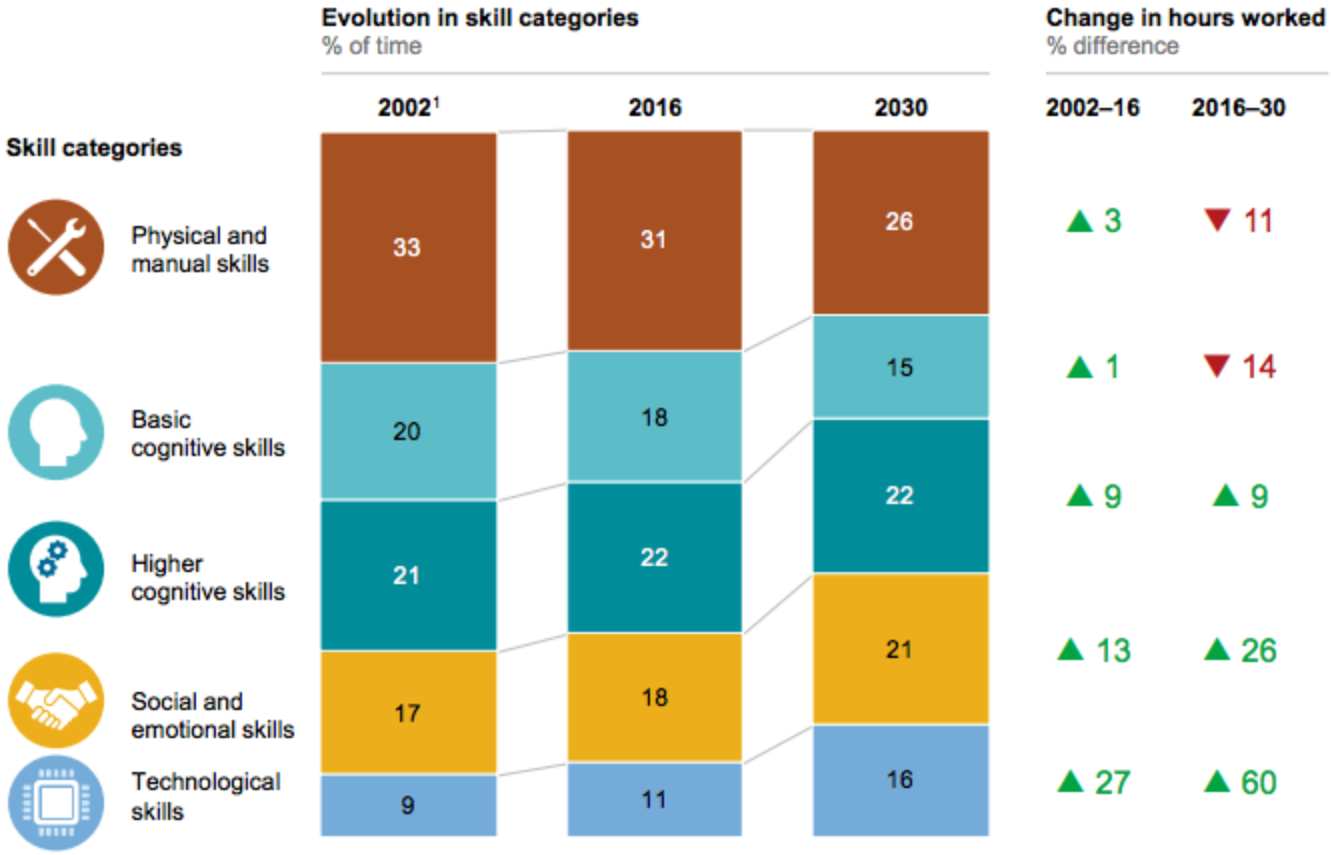
What skills will change most?

Creativity will become one of the top three skills workers will need.

Perspectives from the Economy

Automation and AI will accelerate skill shifts.

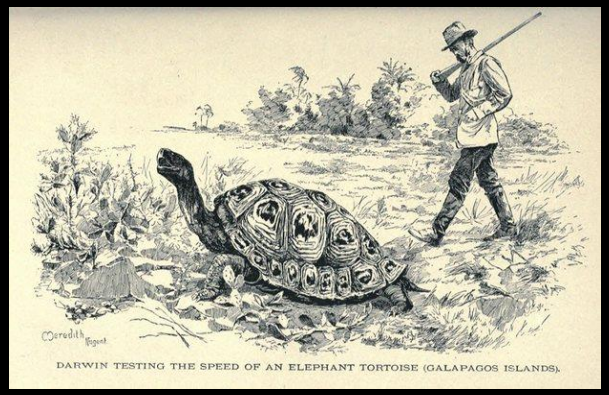
Based on McKinsey Global Institute workforce skills model
United States, all sectors, 2002–30



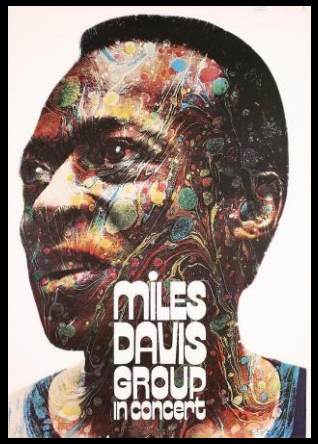
1 Calculated using the 2004 to 2016 CAGR extrapolated to a 14-year period.
NOTE: Based on difference between hours worked per skill in 2016 and modeled hours worked in 2030. Numbers may not sum due to rounding.

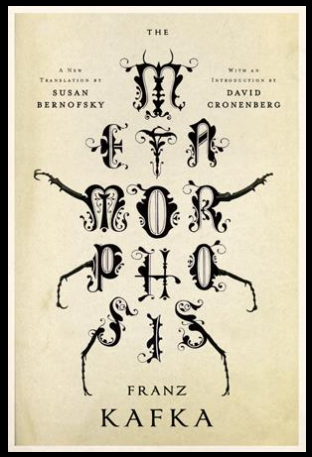
SOURCE: U.S. Bureau of Labor statistics; McKinsey Global Institute workforce skills model; McKinsey Global Institute analysis

The Importance of the Creative Imagination

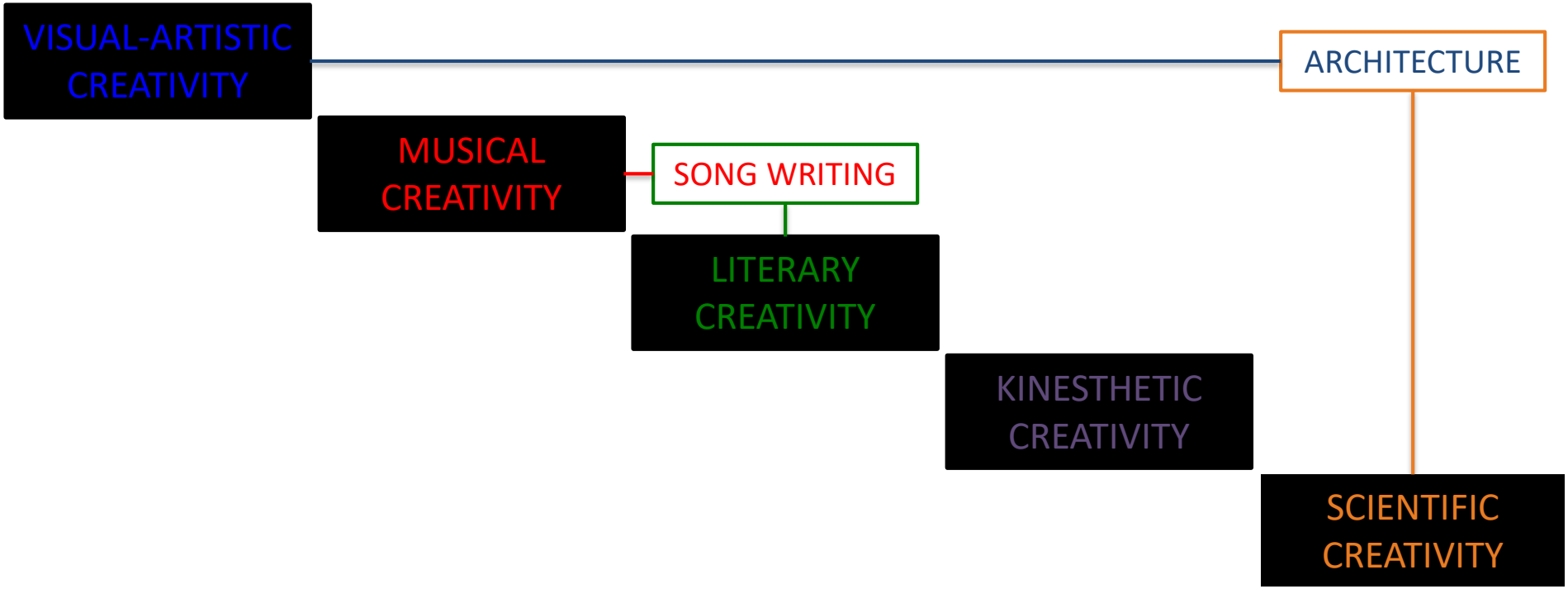


The Challenge of Creativity



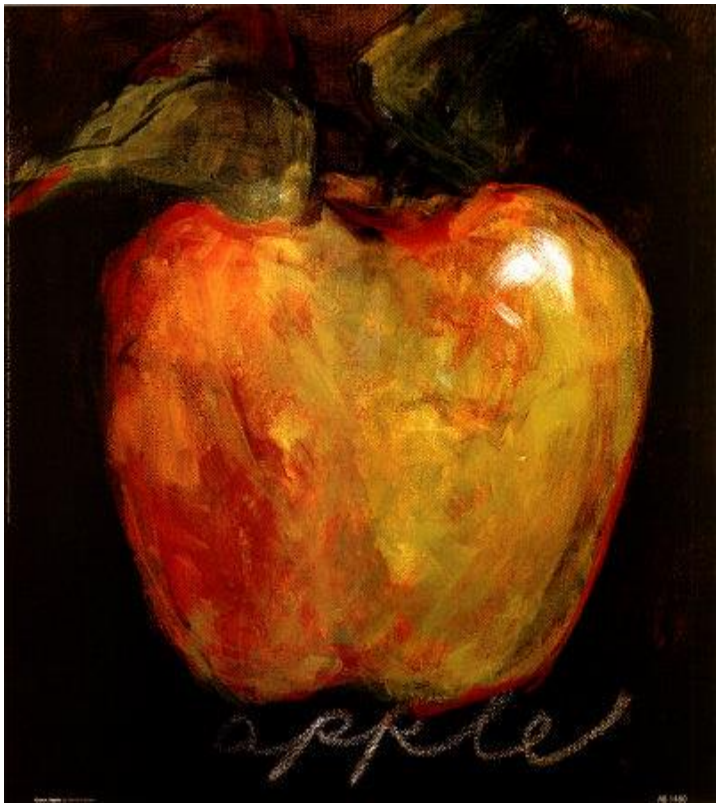


Types of Creativity



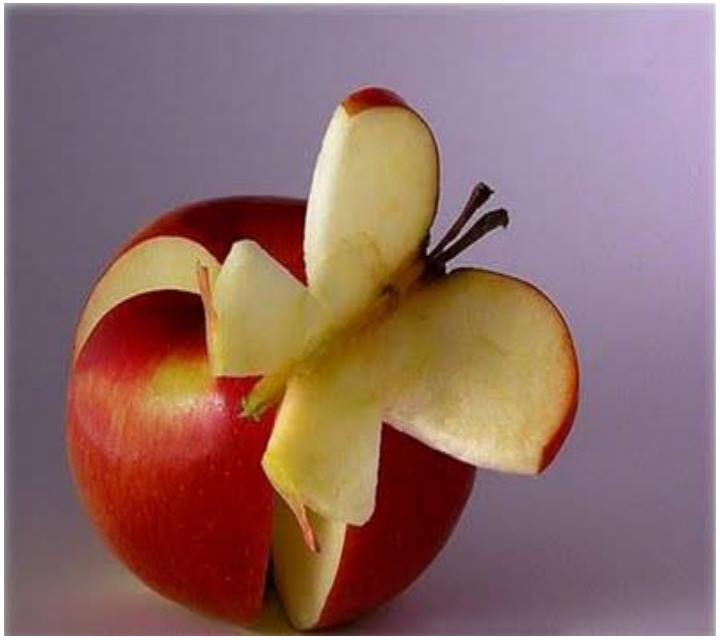
What is Creativity?

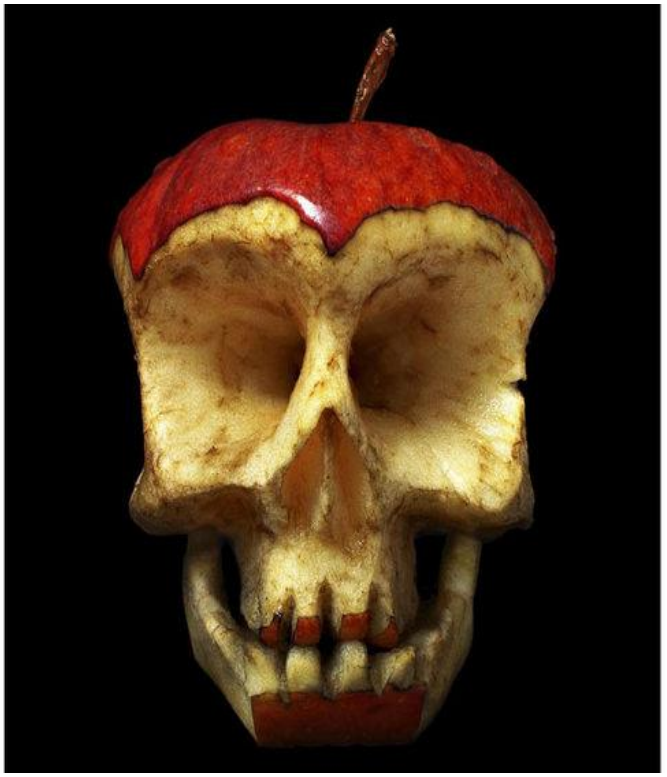
Creativity =



Skill?

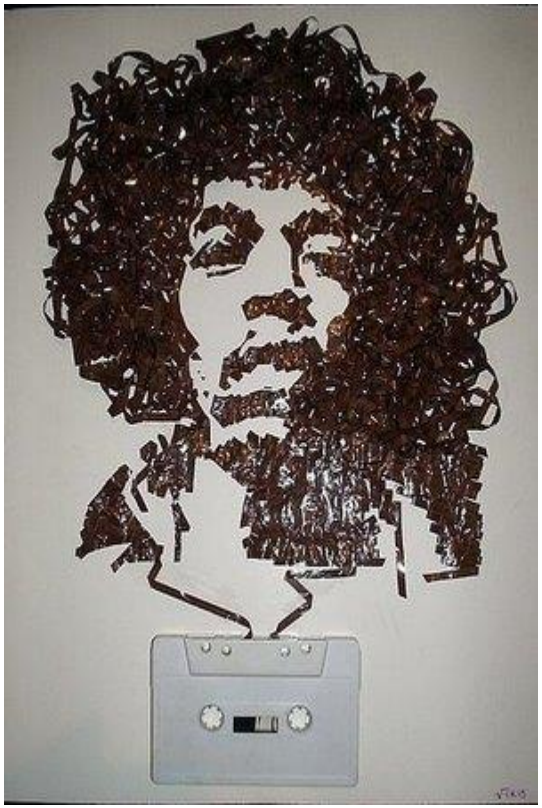
Creativity =





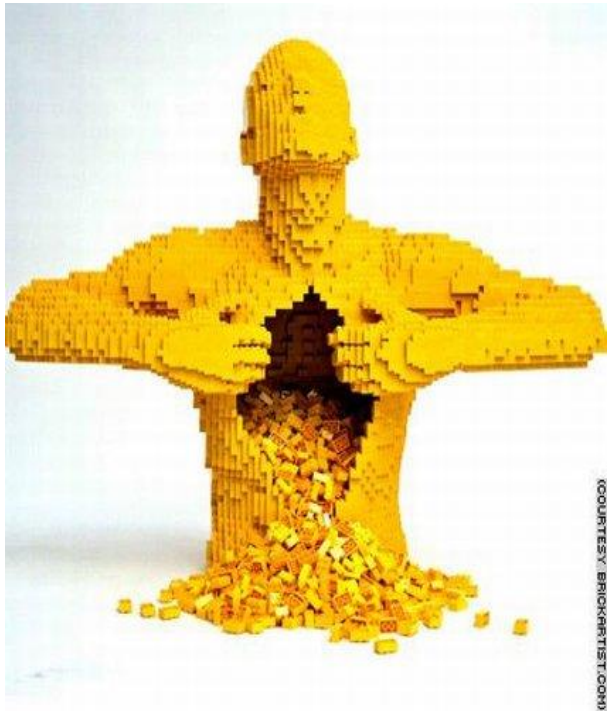
Something new with something known?

Creativity =



Something old with something new?

Creativity =



Creating something entirely new?

Creativity =

Double Entendre?

Creativity =

Humour?

Creativity =

Humour?

Creativity =

Standing out?

Creativity =

Oddity?

What is Creativity?

Creativity: Definition

CREATIVITY RESEARCH JOURNAL, *24*(1), 92–96, 2012
Copyright © Taylor & Francis Group, LLC
ISSN: 1040-0419 print/1532-6934 online
DOI: 10.1080/10400419.2012.650092

Routledge
Taylor & Francis Group

COMMENTS AND CORRECTIONS

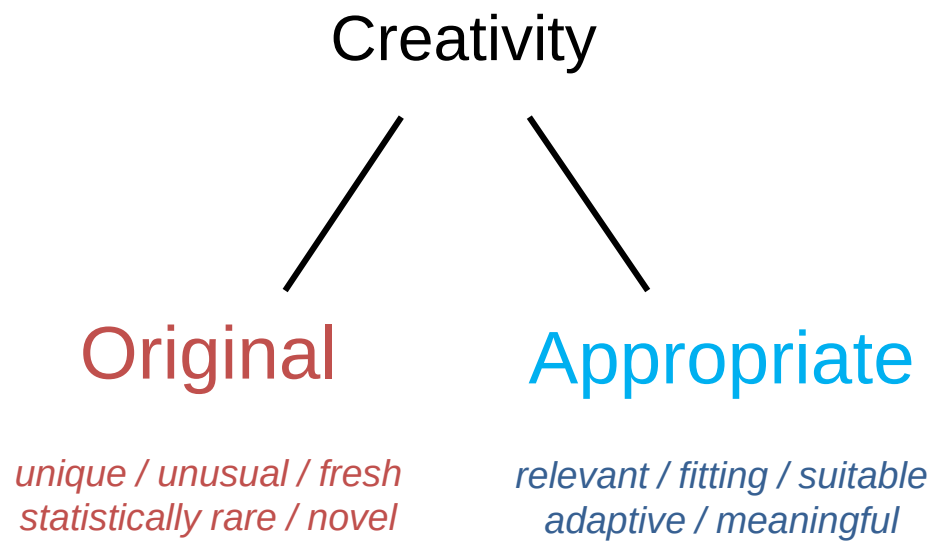
The Standard Definition of Creativity

Mark A. Runco and Garrett J. Jaeger
Torrance Creativity Center, University of Georgia, Athens

Let us start with a definition. The creative work is a novel work that is accepted as tenable or useful or satisfying by a group in some point in time . . . . By "novel" I mean that the creative product did not exist previously in precisely the same form . . . . The extent to which a work is novel depends on the extent to which it deviates from the traditional or the status quo. This may well depend on the

Source: Stein (1953)

Creativity: Definition



Source: Stein (1953)

Creativity: Definition

Task: Generate as many uses as possible for common objects

Kill an insect

- NOT Original
- Appropriate

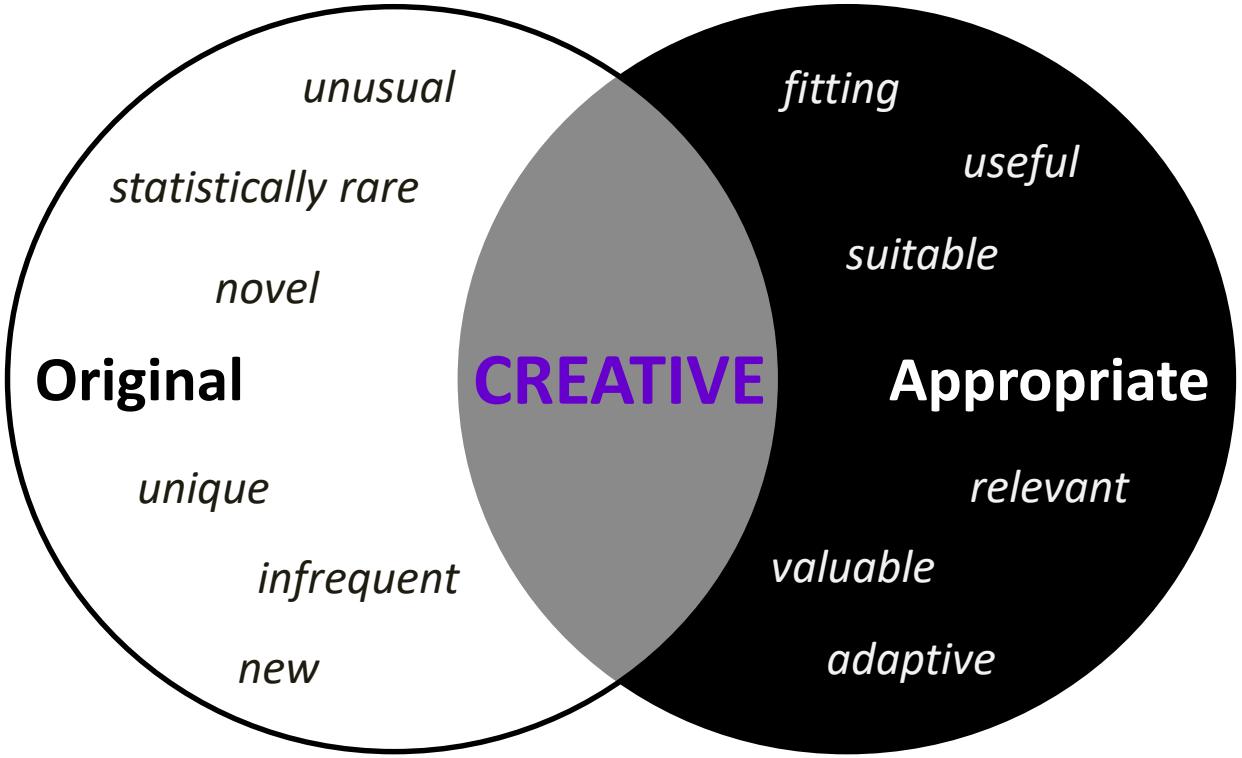
Wash clothes

- Original
- NOT Appropriate

Plant pot

- Original
- Appropriate

Source: Guilford (1960); Wallach & Kogan (1964)

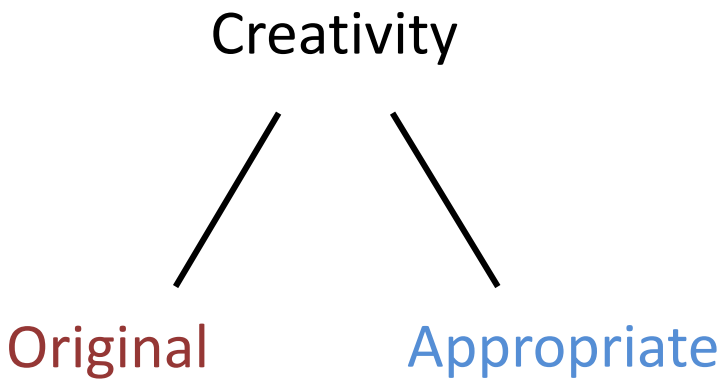

unusual
statistically rare
novel
Original
unique
infrequent
new
CREATIVE
fitting
useful
suitable
Appropriate
relevant
valuable
adaptive

Creativity: Definition

EXPRESSION

PROBLEM SOLVING

Creativity: Definition



"uncommon responses which are merely random, or which proceed from ignorance or delusion" are not "adaptive to reality"

(Frank Barron, 1955)

"… it must serve to solve a problem, fit the needs of a given situation, accomplish some recognizable goal. And this is as true for the expressive arts as for scientific and technological enterprises; in painting, the artist's problem is to find a more appropriate expression of his own experience; in dancing, to convey more adequately a particular mood or theme, etc."

(Donald MacKinnon, 1978)

Creativity: Magnitude

Big C

(eminent)

Little c

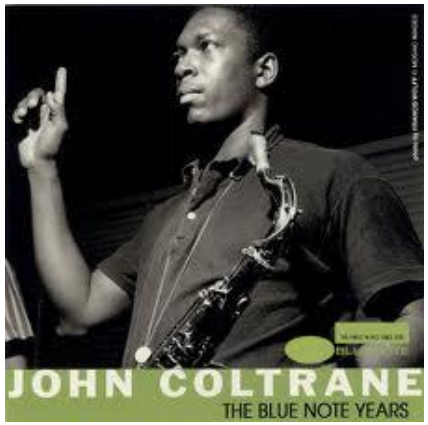
(everyday)

H-creativity

(historical)
(eminence)

P-creativity

(psychological)
(personal)

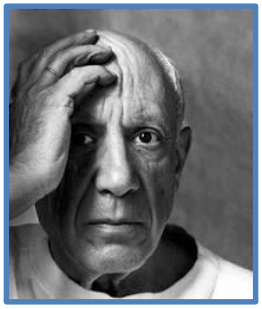


Source: Boden (2004); Csikszentmihalyi (1996); Kozbelt, Beghetto & Runco (2010)

Creativity: Magnitude

Big C

(eminent)



Pro c

(professional)

Little c

(everyday-objective)

Mini c

(everyday-subjective)

Source: Kaufman & Beghetto (2009)

TALENT?

OPPORTUNITY?

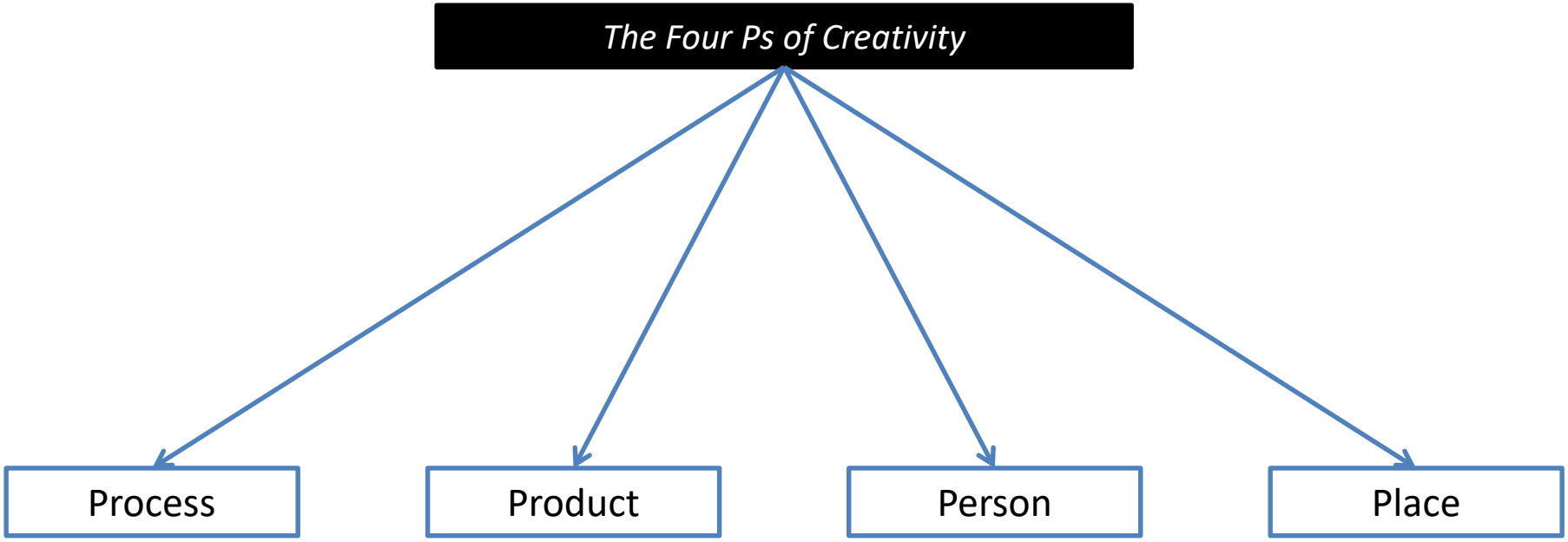
ALL HUMANS POSSESS
THE DRIVE TO CREATE

- Some pursue this drive more than others -

MORE DRIVEN?
GREATER
PERSEVERANCE?

INHERENTLY
REWARDING?

Creativity: Approaches



Source: Rhodes (1961), Kozbelt, Beghetto & Runco (2010)

Creativity: Approaches

Process

Nature of mental mechanisms that occur when a person is engaged in creative thought

1. Stages of processing

2. Components of creative thought

Source: Rhodes (1961), Kozbelt, Beghetto & Runco (2010)

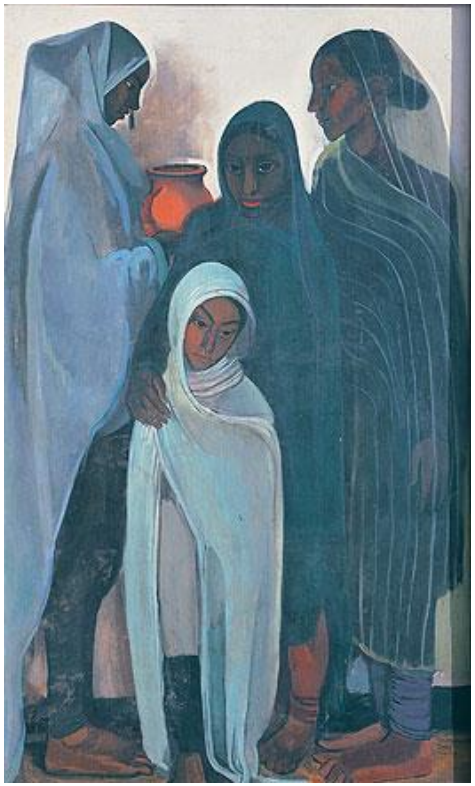
Creativity: Definition

Product

Creative output such as works of art, inventions, publications, musical compositions, etc.

1. Output can be quantified (fluency)

2. Output can be rated for creativity



Source: Rhodes (1961), Kozbelt, Beghetto & Runco (2010)

Creativity: Definition

Place

Environmental (setting/climate) press factors ("press" from pressures).

1. Opportunities for exploration

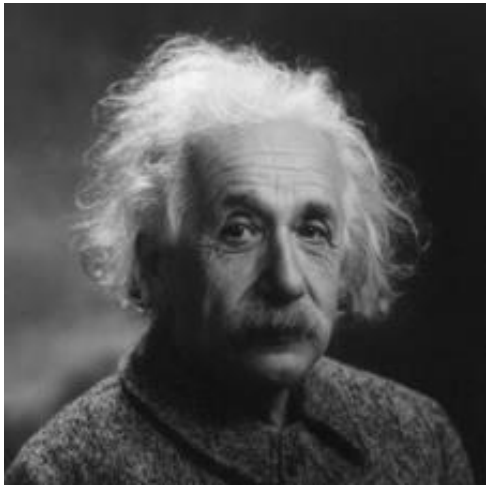
1. Opportunities for independent work

1. Originality – is it valued & supported

Source: Rhodes (1961), Kozbelt, Beghetto & Runco (2010)

Creativity: Definition

Person



Personality traits of highly creative individuals (mathematicians, writers, painters, etc.)

1. Intrinsic motivation
2. Wide interests
3. Openness to experience
4. Autonomy
5. Unconventional, risk taking

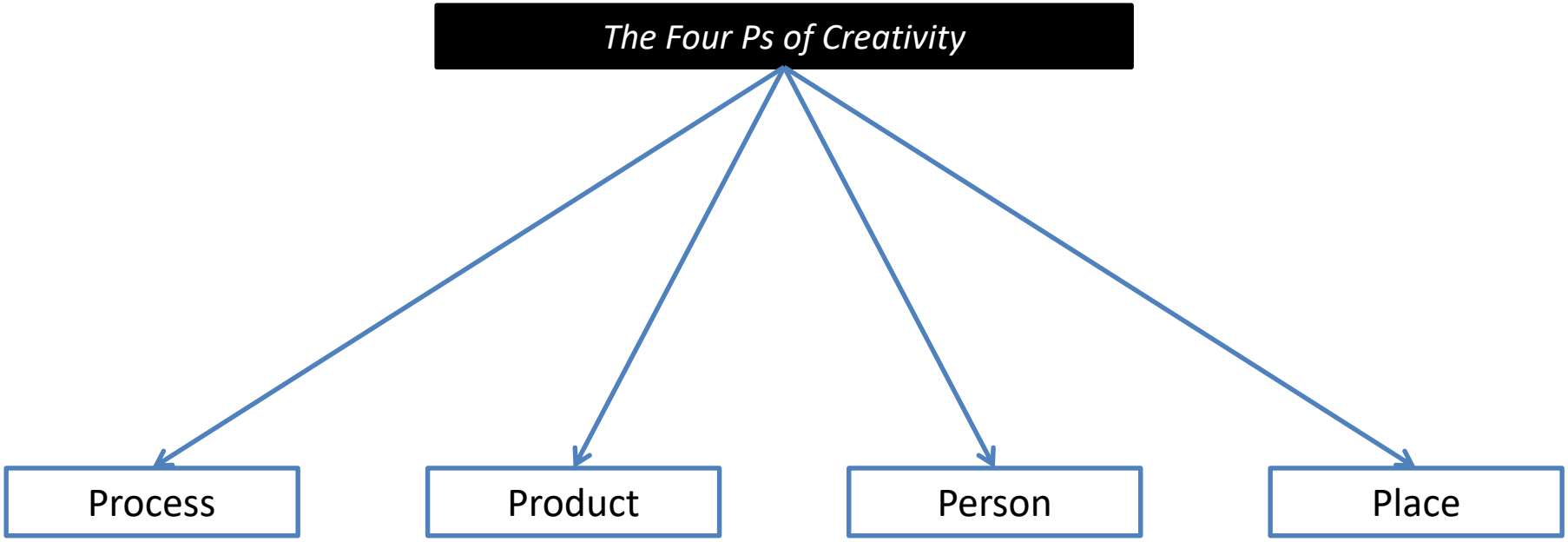
Source: Rhodes (1961), Kozbelt, Beghetto & Runco (2010)

MOTIVATION

Extrinsic Motivation:
Engaging in activities that
reduce biological needs
or help obtain incentives
or external rewards

Intrinsic Motivation:
Engaging in activities because
they are rewarding in themselves
or because doing so fulfills
our beliefs & expectations

Creativity: Approaches



Source: Rhodes (1961), Kozbelt, Beghetto & Runco (2010)

"Creativity must be defined in a way that

- permits objective observation and measurement and
- is compatible with common and historical usage."

"On the basis of

- an analysis of the diverse ways of defining creativity and
- what I consider the requirements of a definition for keeping a **program of research** on factors affecting creative growth in context,

I define creativity as the process of

- becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on;
- identifying the difficulty;
- searching for solutions, making guesses, or formulating hypotheses about the deficiencies;
- testing and retesting these hypotheses and possibly modifying and retesting them; and finally
- communicating the results."

- Torrance (1965: 663-664)

Creativity: Process (Cognitive) Approach

Problem Solving

Searching for a solution, strategy or plan when faced with a question or problem that needs to be solved

INITIAL STATE

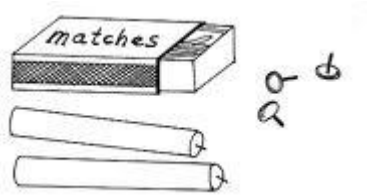
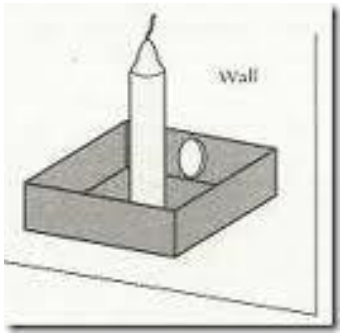
OPERATIONS STATE

GOAL STATE

Creativity: Process (Cognitive) Approach

Problem Solving

Searching for a solution, strategy or plan when faced with a question or problem that needs to be solved

INITIAL STATE	OPERATIONS STATE	GOAL STATE
		
Forming Subgoals	Using Analogies	Changing Mental Set
Breaking down problem into smaller parts	Similarity between old and new problem	Overcoming Functional Fixedness

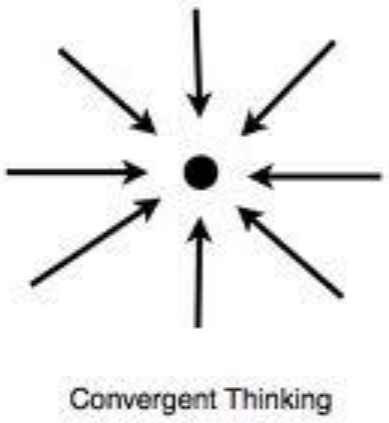
Creativity: Process (Cognitive) Approach

Creative Problem Solving

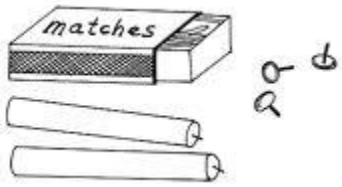
Solution is novel and appropriate

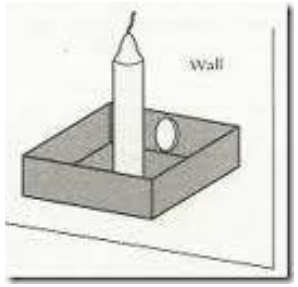
CONVERGENT THINKING

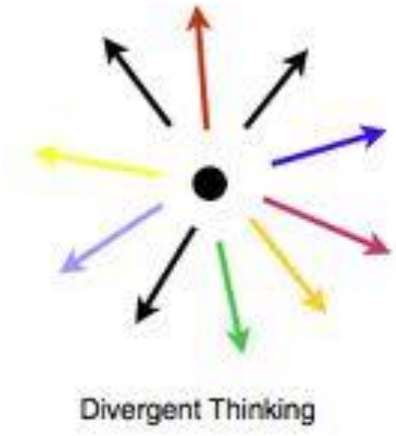
DIVERGENT THINKING



Convergent Thinking

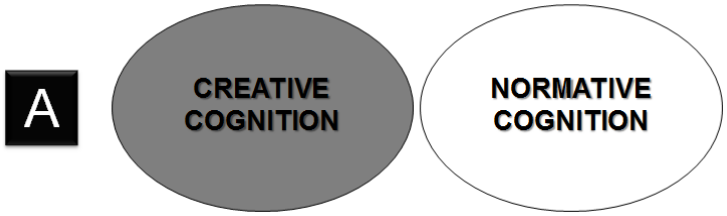






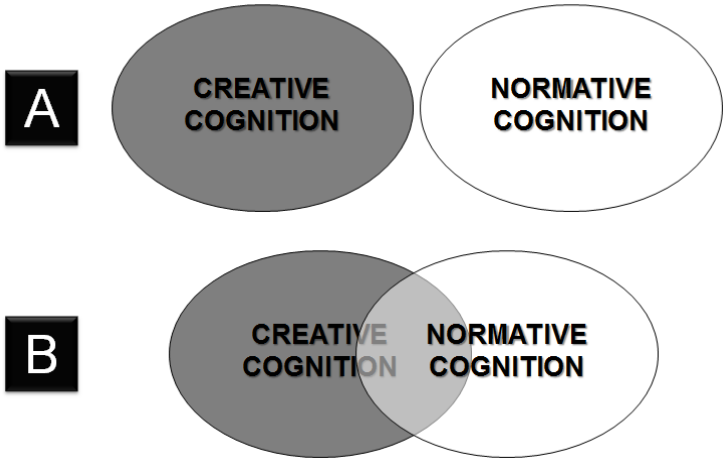
Divergent Thinking

Creative Cognition: Relevant Issues to Consider



Source: Abraham (2013)

Creative Cognition: Relevant Issues to Consider

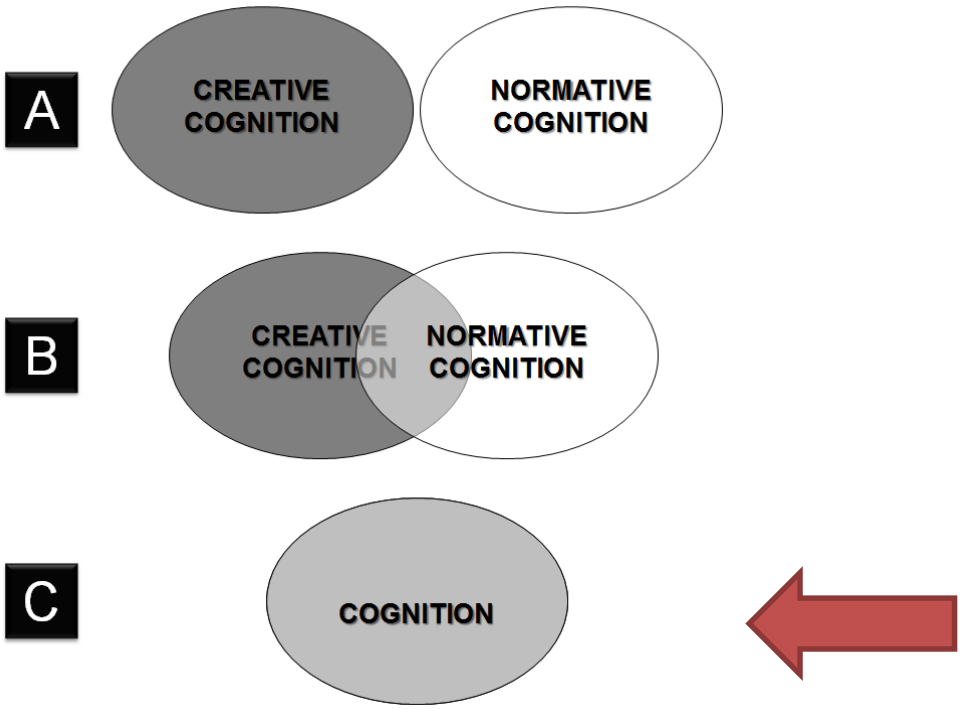


Source: Abraham (2013)

NO BRAIN REGION(S)
NO BRAIN NETWORK(S)
NO NEURAL ACTIVITY PATTERN(S)

… ARE EXCLUSIVELY IN PLACE FOR CREATIVITY

Relevant Issues to Consider



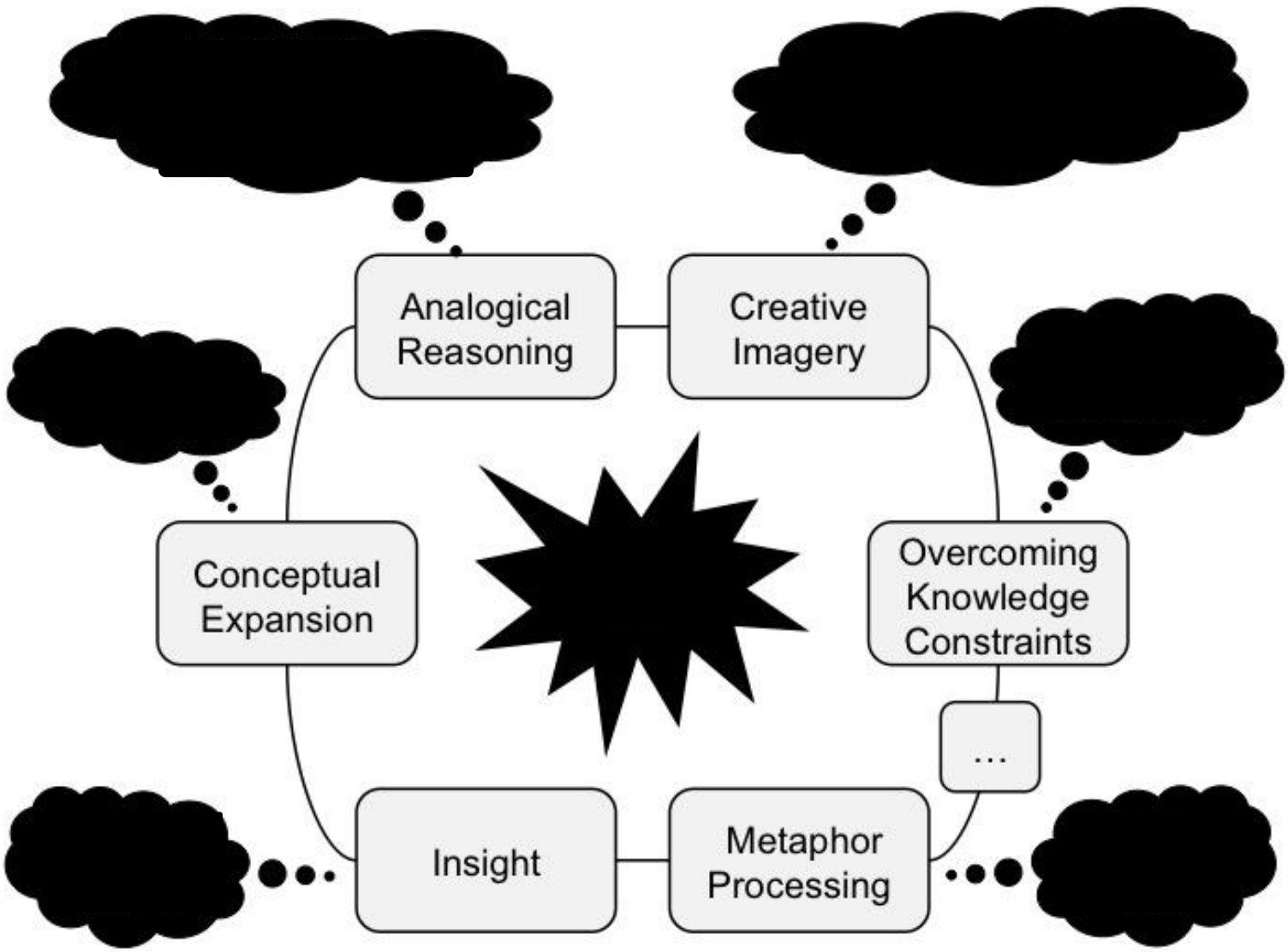
Difference: Situation or Contextual Factors
(vague, unknown, non-linear, open-ended)

Source: Abraham (2013)

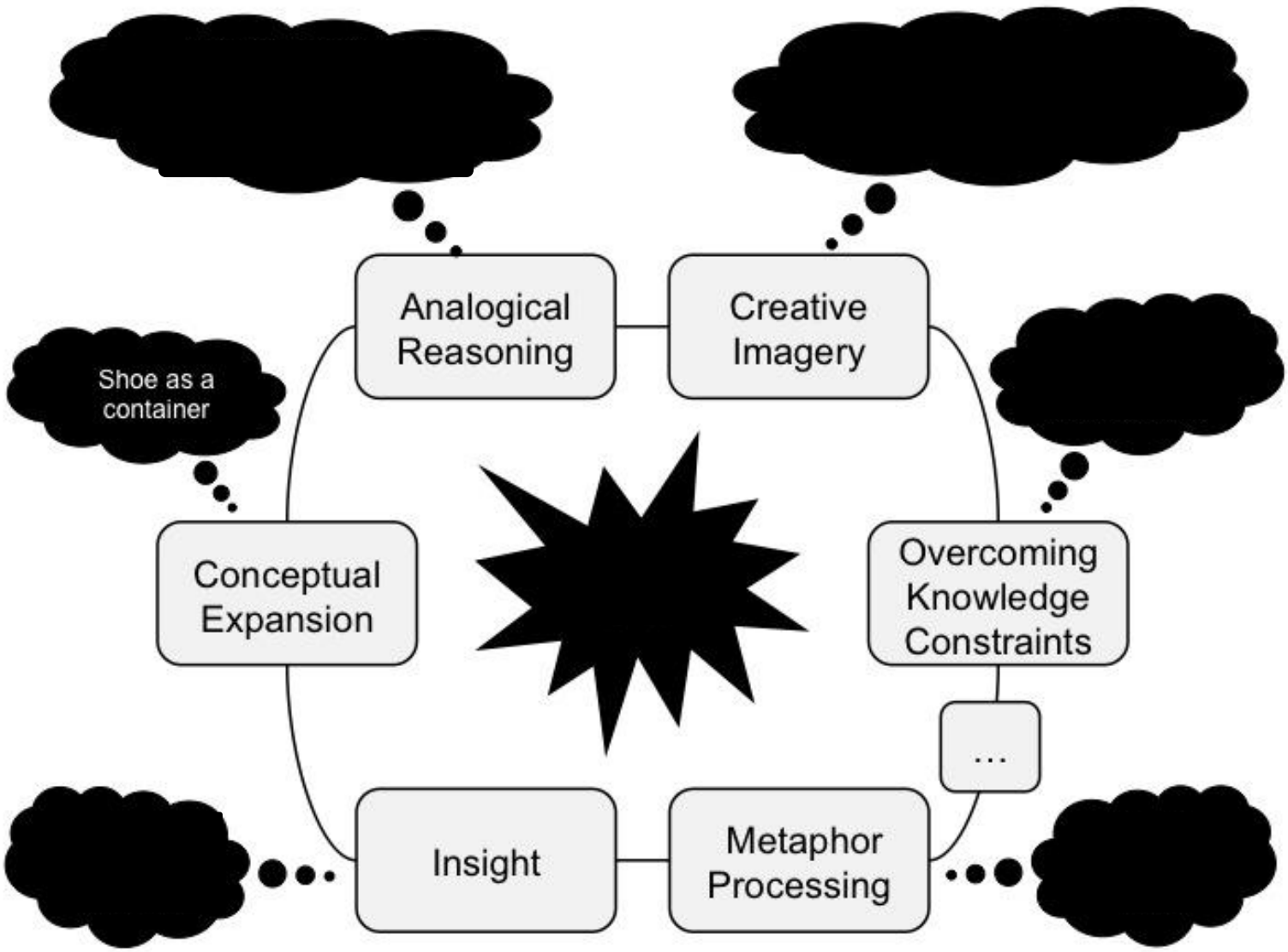
Creative Cognition: Processes

TASK: Generate as many uses as you can for a SHOE

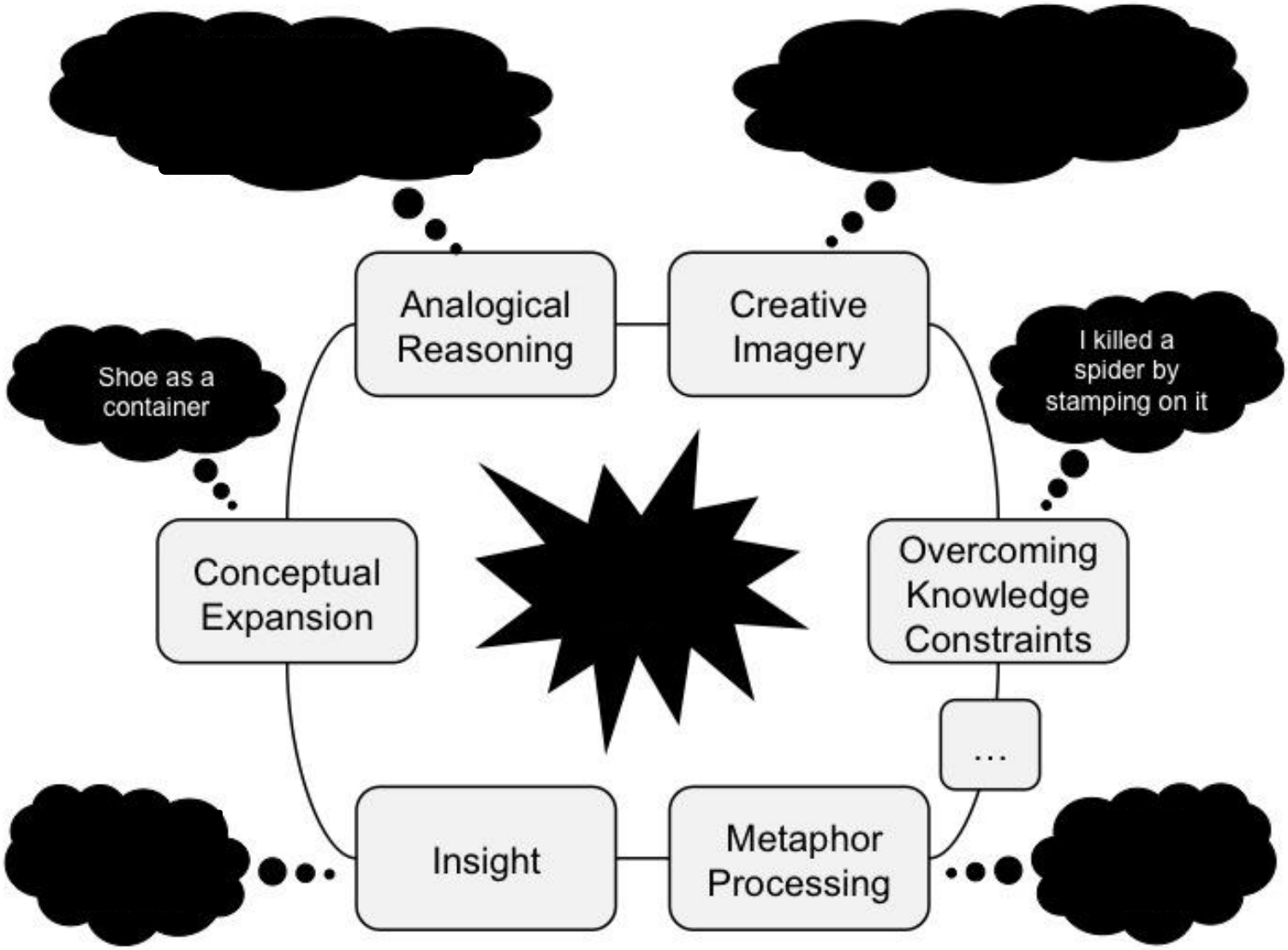
Creative Cognition: Processes



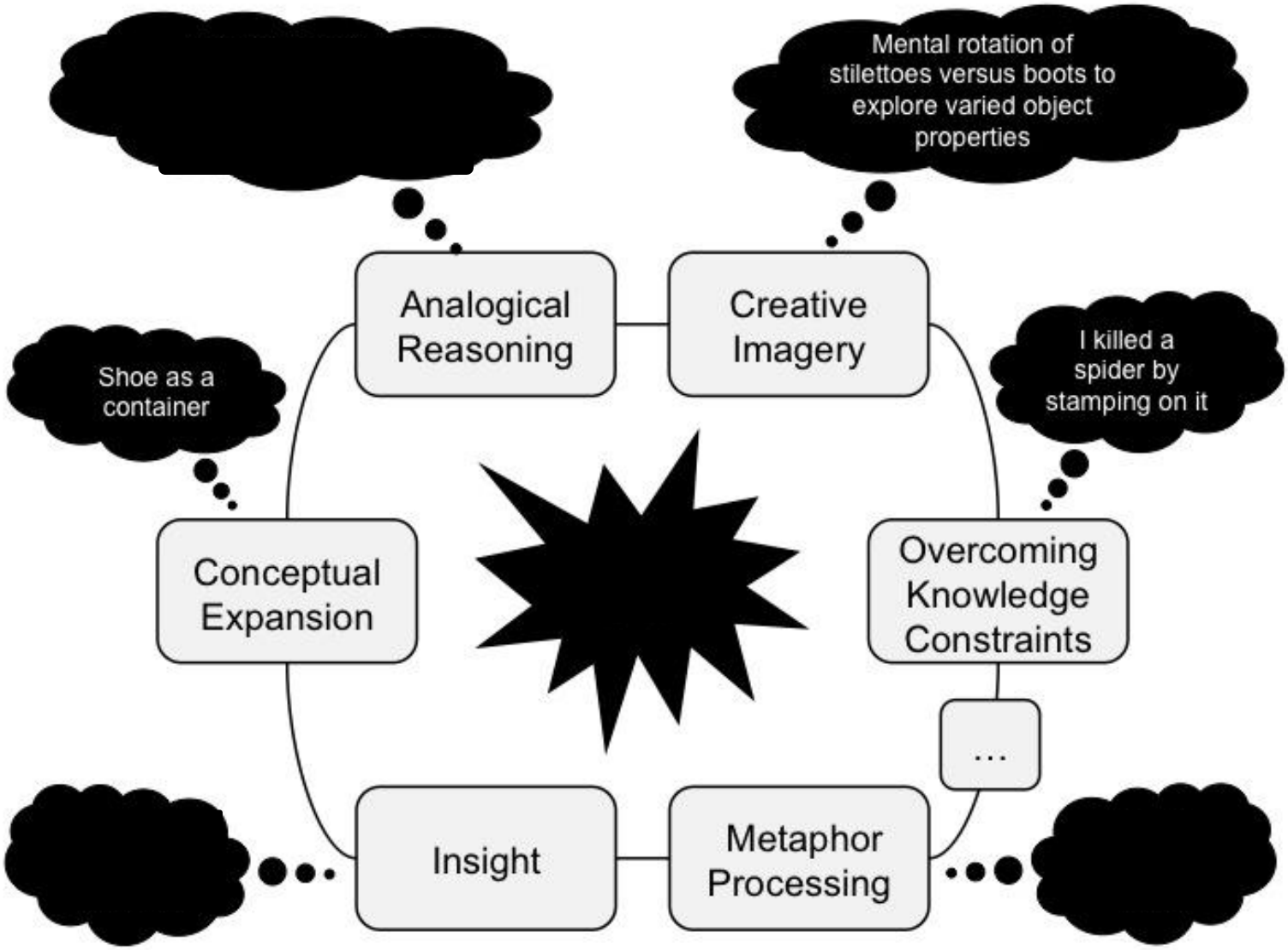
Creative Cognition: Processes



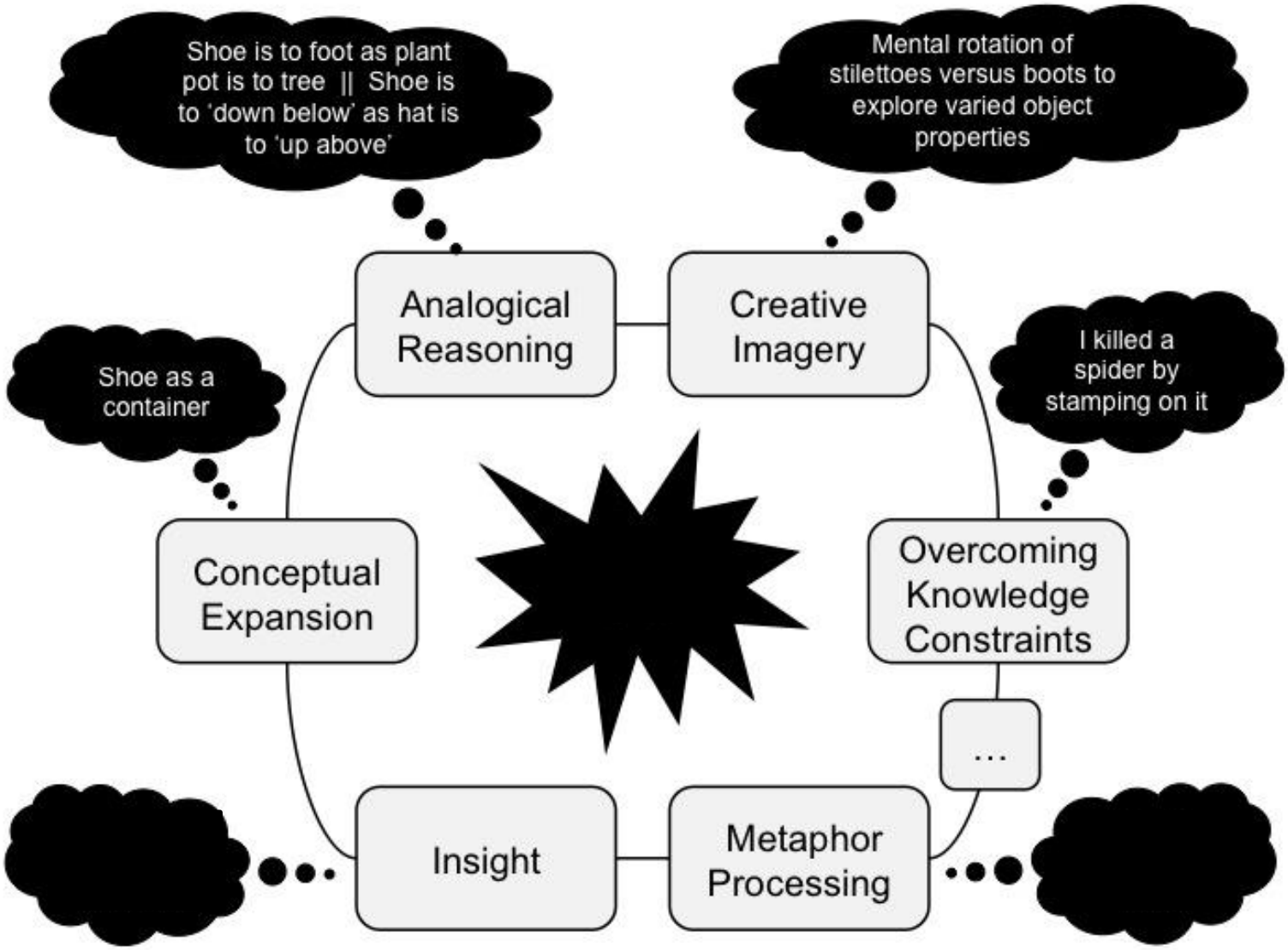
Creative Cognition: Processes



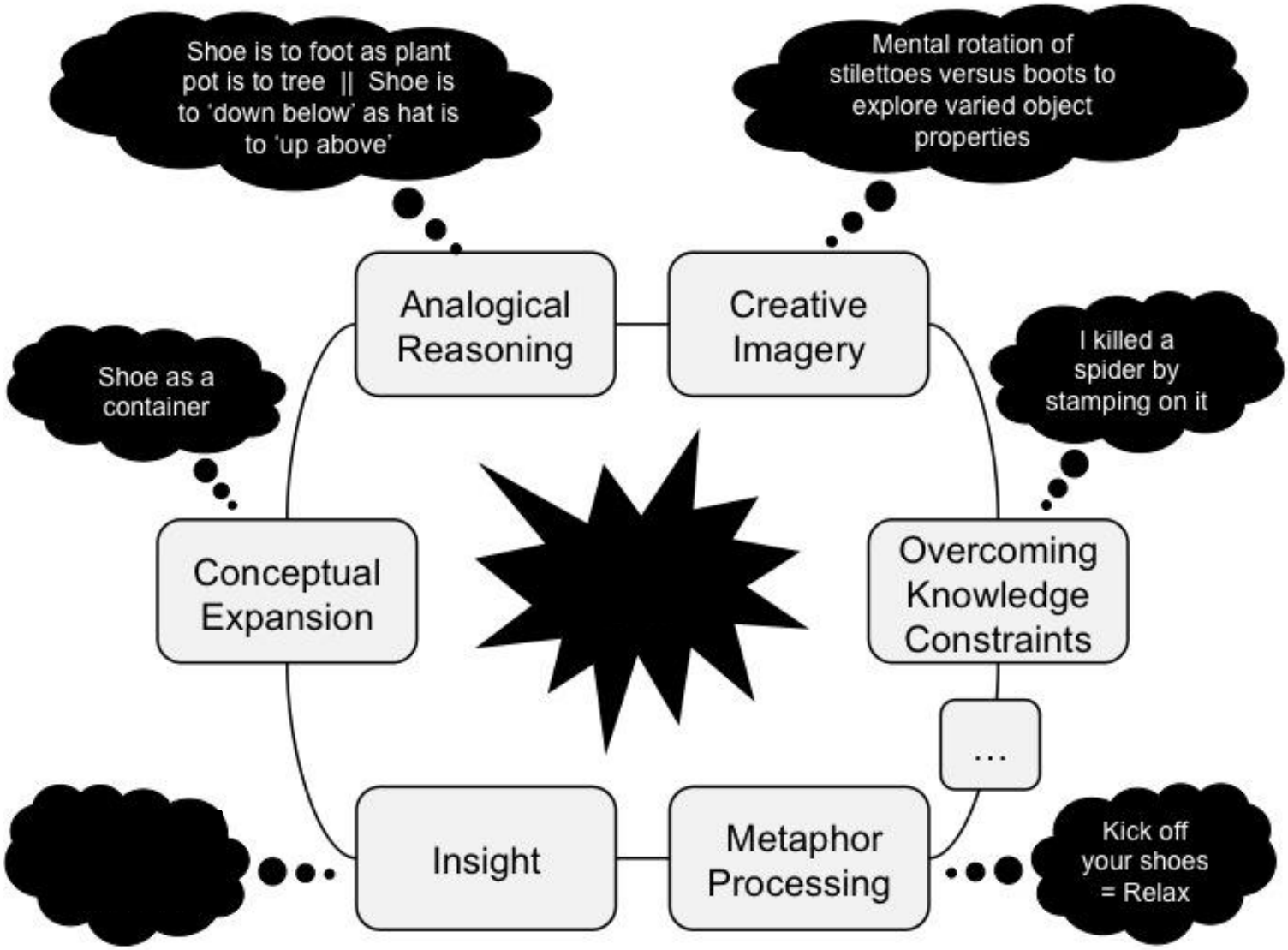
Creative Cognition: Processes



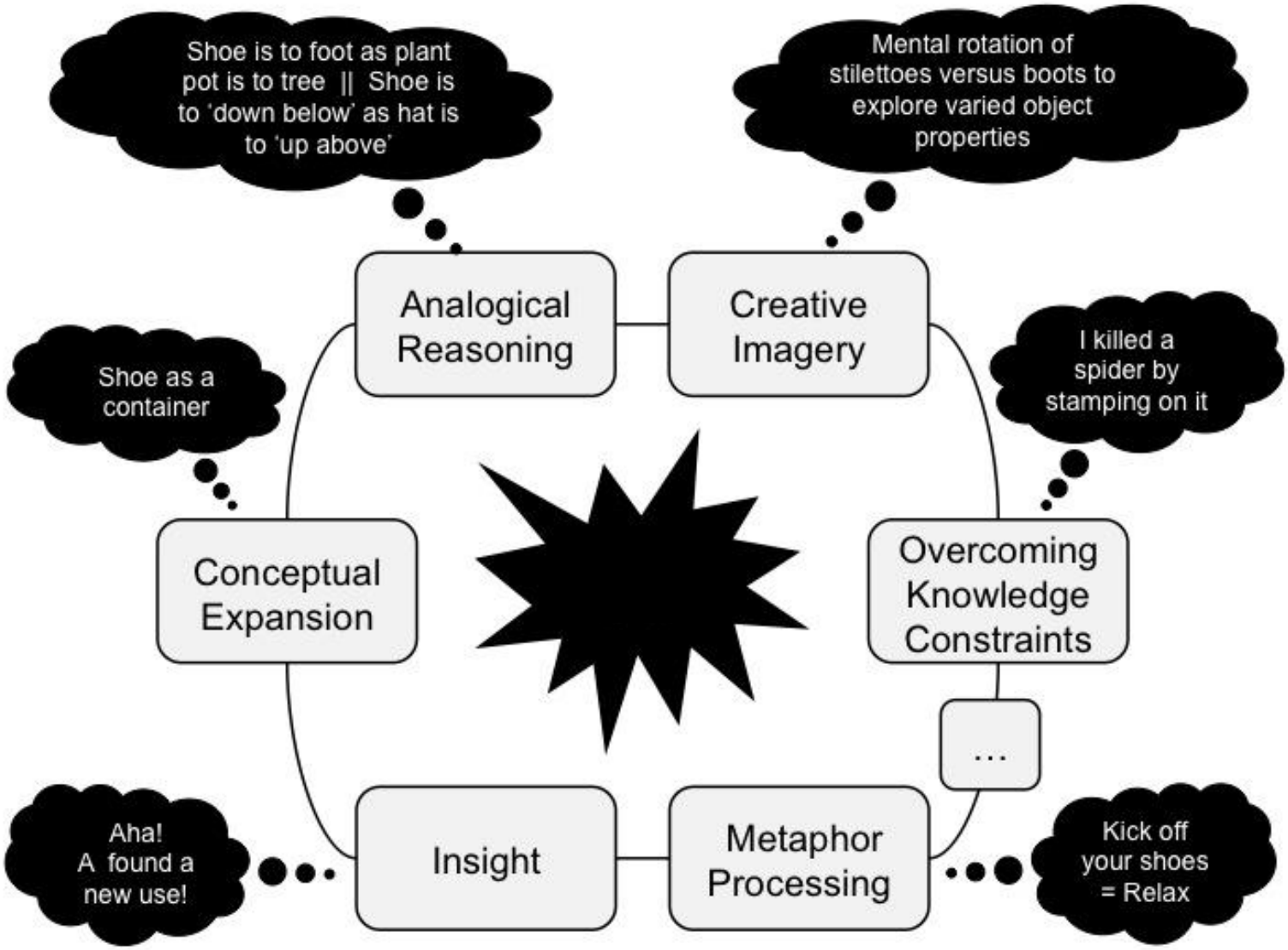
Creative Cognition: Processes



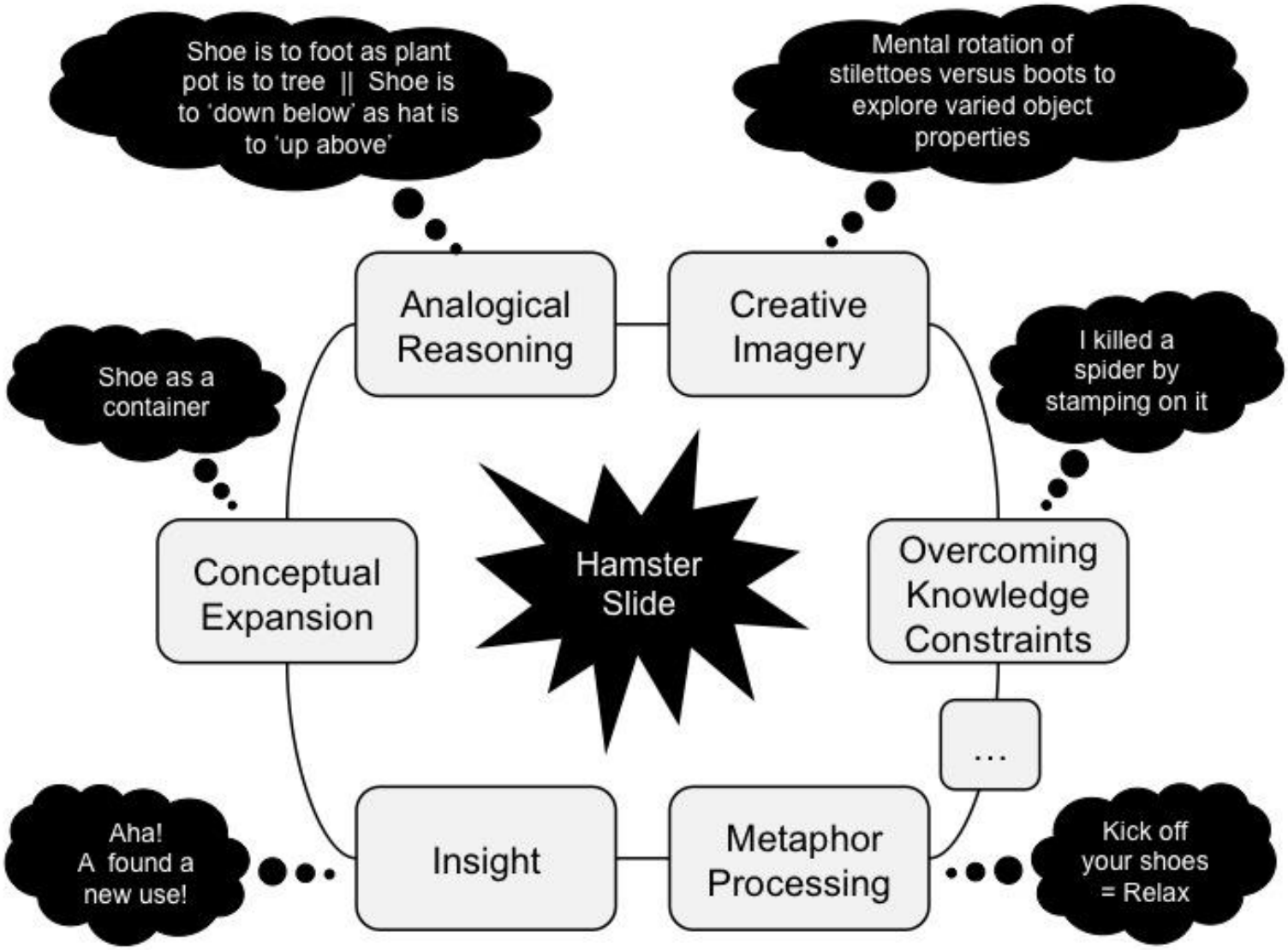
Creative Cognition: Processes



Creative Cognition: Processes



Creative Cognition: Processes

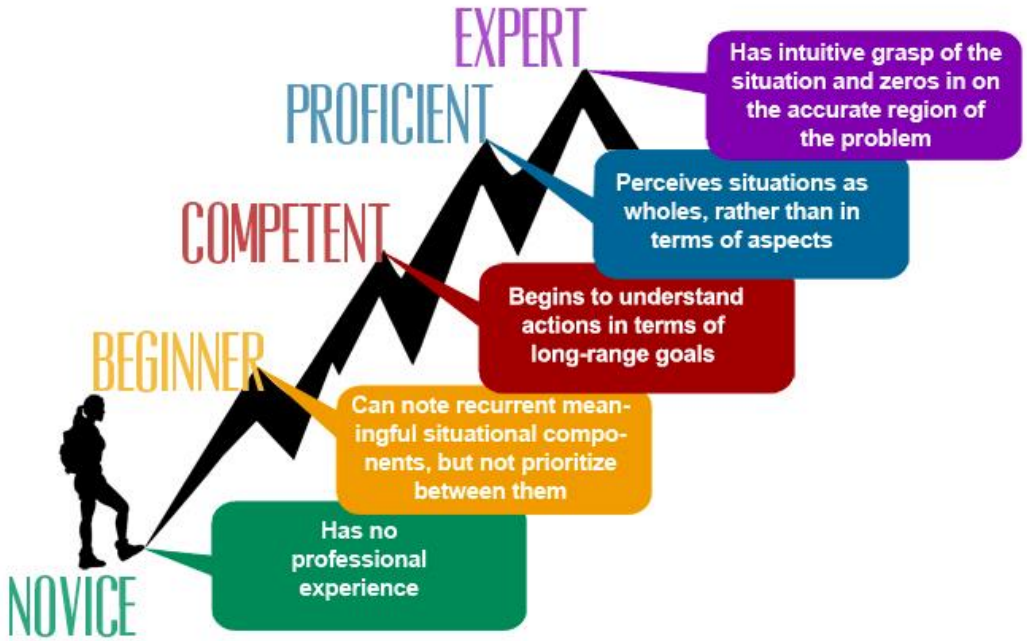


The Problem of Recognizing Creativity

Recognizing Creativity

the ability of an individual to recognize or estimate creativity

Recognizing Creativity



Recognizing Creativity

the consensus within

a group in their

evaluations of

creativity

Recognizing Creativity

Recognizing Creativity

domain

differences in

objectivity

Recognizing Creativity

Recognizing Creativity

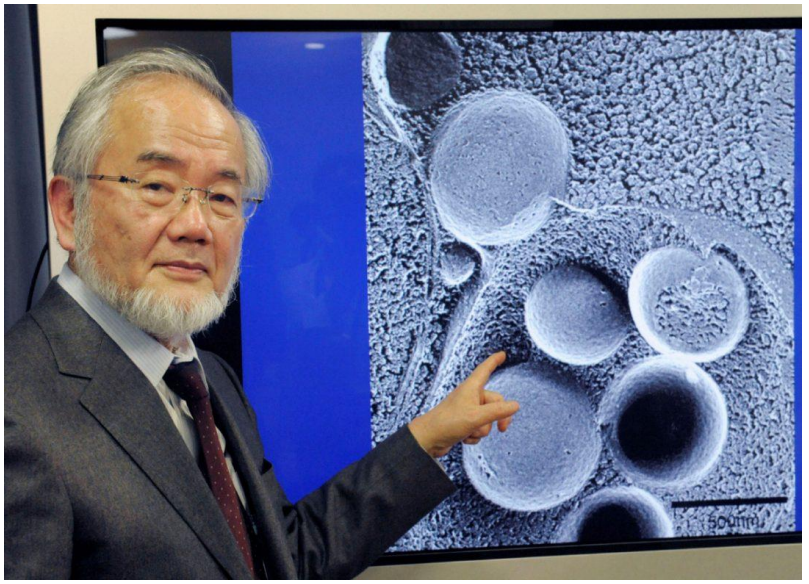
domain

differences in

objectivity and

accessibility

Recognizing Creativity



Recognizing Creativity

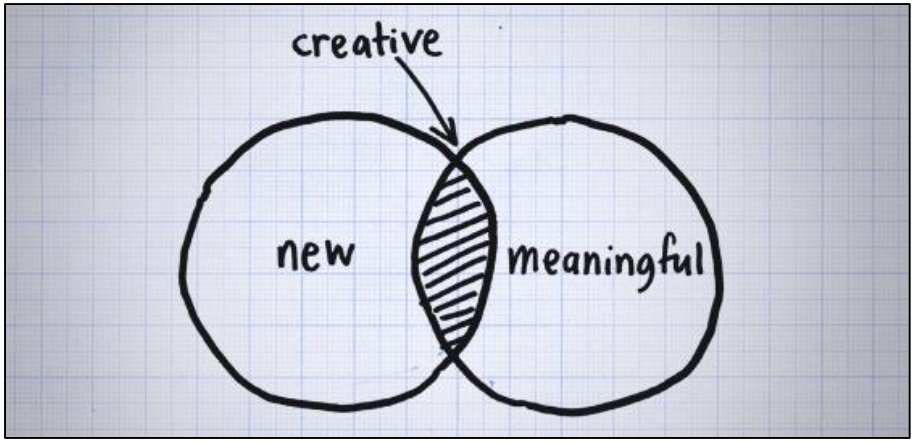
different

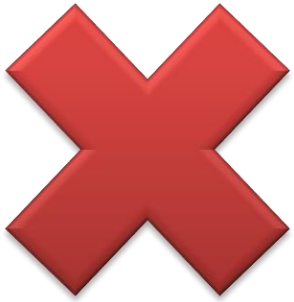
connotations of

the term

“creative”

Recognizing Creativity





Recognizing Creativity

Peggy Olsen

in

Mad Men

Recognizing Creativity

"Creativity is a threat to the great uncreative majority"

- Hans Eysenck (1994) -

Research Report

aps ASSOCIATION FOR PSYCHOLOGICAL SCIENCE

Psychological Science
23(1) 13–17

DOI: 10.1177/0956797611421018
http://pss.sagepub.com
SAGE

The Bias Against Creativity: Why People Desire but Reject Creative Ideas

Jennifer S. Mueller[1], Shimul Melwani[2], and Jack A. Goncalo[3]
[1]Management Department, The Wharton School, University of Pennsylvania; [2]Organizational Behavior Department, University of North Carolina, Chapel Hill; and [3]School of Industrial and Labor Relations, Cornell University

Abstract

People often reject creative ideas, even when espousing creativity as a desired goal. To explain this paradox, we propose that people can hold a bias against creativity that is not necessarily overt and that is activated when people experience a motivation to reduce uncertainty. In two experiments, we manipulated uncertainty using different methods, including an uncertainty-reduction prime. The results of both experiments demonstrated the existence of a negative bias against creativity (relative to practicality) when participants experienced uncertainty. Furthermore, this bias against creativity interfered with participants' ability to recognize a creative idea. These results reveal a concealed barrier that creative actors may face as they attempt to gain acceptance for their novel ideas.

Keywords

creativity, bias, stereotyped attitudes, social cognition

Recognizing Creativity

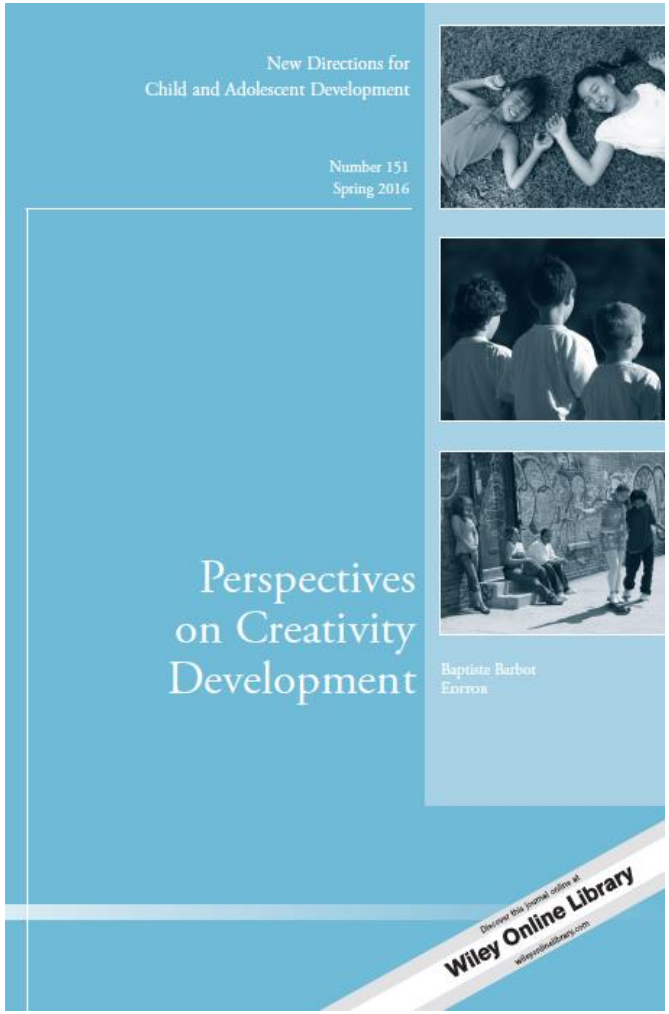
"Creativity is a threat to the great uncreative majority"

"there is nothing more painful than the pain of a new idea"

- Hans Eysenck (1994) -

Factors Influencing Creativity

Recent Special Issues



2016

2015

Examples: Factors to Consider *(content)*

Creativity Doesn't Develop in a Vacuum

John Baer

Abstract

The skills, knowledge, attitudes, motivations, and personality traits that lead to creative thinking and creative behavior do not exist—and do not develop—in a vacuum. They are inextricably tied to content, to domains, in particular, and they therefore vary by domains. The more we learn about creativity, the more we discover how domain specific creativity is. This means we cannot nurture creativity, or any of the skills or attributes that contribute to creativity, without thinking about content. One cannot become physically fit by doing just one kind of exercise that trains a single set of muscles; all-around fitness requires diverse exercises that use and train many different sets of muscles. So it is with creativity. Different domains require different creativity-relevant skills, knowledge, attitudes, motivations, and personality traits. If we want to help children and adolescents become more creative, then we need to attend to the domains we use in the development of creativity.

Baer, J. (2016). Creativity doesn't develop in a vacuum. In B. Barbot (Ed.), *Perspectives on creativity development. New Directions for Child and Adolescent Development*, *151*, 9–20.

Examples: Factors to Consider *(domain)*

Creativity Research Journal
2004, Vol. 16, No. 4, 361–388

The Effectiveness of Creativity Training: A Quantitative Review

Ginamarie Scott, Lyle E. Leritz, and Michael D. Mumford
The University of Oklahoma

Scott, Leritz, and Mumford (2004) conducted a quantitative meta-analysis of creativity training research covering a half century of research—70 published and peer-reviewed studies on the effectiveness of creativity training. There was good news: they found that "well-designed creativity training programs typically induce gains in performance" (p. 361). But there was also bad news, which was encapsulated in the phrase "*well-designed* creativity training programs."

> What constituted good design, the kind that led to positive outcomes?
>
> [M]ore successful programs were likely to focus on development of cognitive skills and the heuristics involved in skill application, using realistic exercises appropriate to the domain at hand. (p. 361)

The key issue was that the training exercises needed to be "appropriate to the domain at hand." Creativity training worked when the training and the goals of the training (and the ways the effectiveness of the training was assessed) were *in the same domain*. "The most clear-cut finding to emerge in the overall analysis was that the use of domain-based performance exercises was positively related ($r = .31$, $\beta = .35$) to effect size" (p. 380).

Examples: Factors to Consider *(drive)*

Psychology of Aesthetics, Creativity, and the Arts
2015, Vol. 9, No. 2, 172–177

1931-3896/15/$12.00 http://dx.doi.org/10.1037/aca0000019

A Completion Mindset: Bridging the Gap Between Creative Thinking and Creativity

Charles R. Cadle
Destination Imagination, Inc., Cherry Hill, New Jersey

Anecdotal and scientific evidence has documented the relationship between students trained in creative thinking and novel idea generation. Creative thinking can be taught; however, cognitive traits must be developed for creative thinking to be manifested in output, which requires ego-strength and a completion mindset. For creativity to be realized, students need to develop the drive and commitment to bring a creative idea to fruition. Neuro-education can be effective in highlighting brain optimization as integral to the creative process. This article, which builds on the works of Plucker, Beghetto, and Dow (2004) and Runco (2003), offers a new definition for creativity that includes the construct of a completion mindset.

Keywords: brain health, completion mindset, creative thinking, creativity, perseverance

Examples: Factors to Consider *(motivation)*

Psychology of Aesthetics, Creativity, and the Arts
2015, Vol. 9, No. 2, 187–192

1931-3896/15/$12.00 http://dx.doi.org/10.1037/aca0000012

If I Were Secretary of Education: A Focus on Intrinsic Motivation and Creativity in the Classroom

Beth A. Hennessey
Wellesley College

The U.S. public education system is the product of centuries of philosophical debate, sweeping societal changes, and impassioned politicking. Prevailing educational ideologies and practices have moved from a learning-by-doing model, toward a "back to basics" approach dominated by high-stakes testing and calls for accountability. Importantly, empirical data have never been the driving force behind educational reform, and statistics show that this move farther and farther away from a child-centered focus has not met with success—either in terms of overall performance gains or efforts to close racial or socioeconomic status gaps. Most worrisome of all, educational reform and the move away from student-centered approaches have meant that the motivational orientation of students is now overlooked in most school settings. My own experience, first as an elementary-level classroom teacher and later as an experimental social/developmental psychologist, tells me that positive changes leading to both improved learning outcomes and significantly higher levels of student engagement and creativity are possible. Careful empirical investigations provide an arsenal of evidence for the importance of intrinsic motivation and the benefits accrued by an open-education system. Not only does intrinsic motivation lead to deeper, more long-lasting learning, but hundreds of empirical studies have shown that an intrinsic motivational orientation is also a crucial component of the creative process. The argument is made that it is not too late to turn things around—this time for good. Toward this end, two "to do" lists are provided: One for the Secretary of Education and the other for researchers.

Keywords: educational reform, open education, intrinsic motivation, student creativity

An Example Study: Predictors of Creativity in Young People (Age 14-20)

+ individual predictors (personality, IQ)
+ contextual predictors (leisure activities)

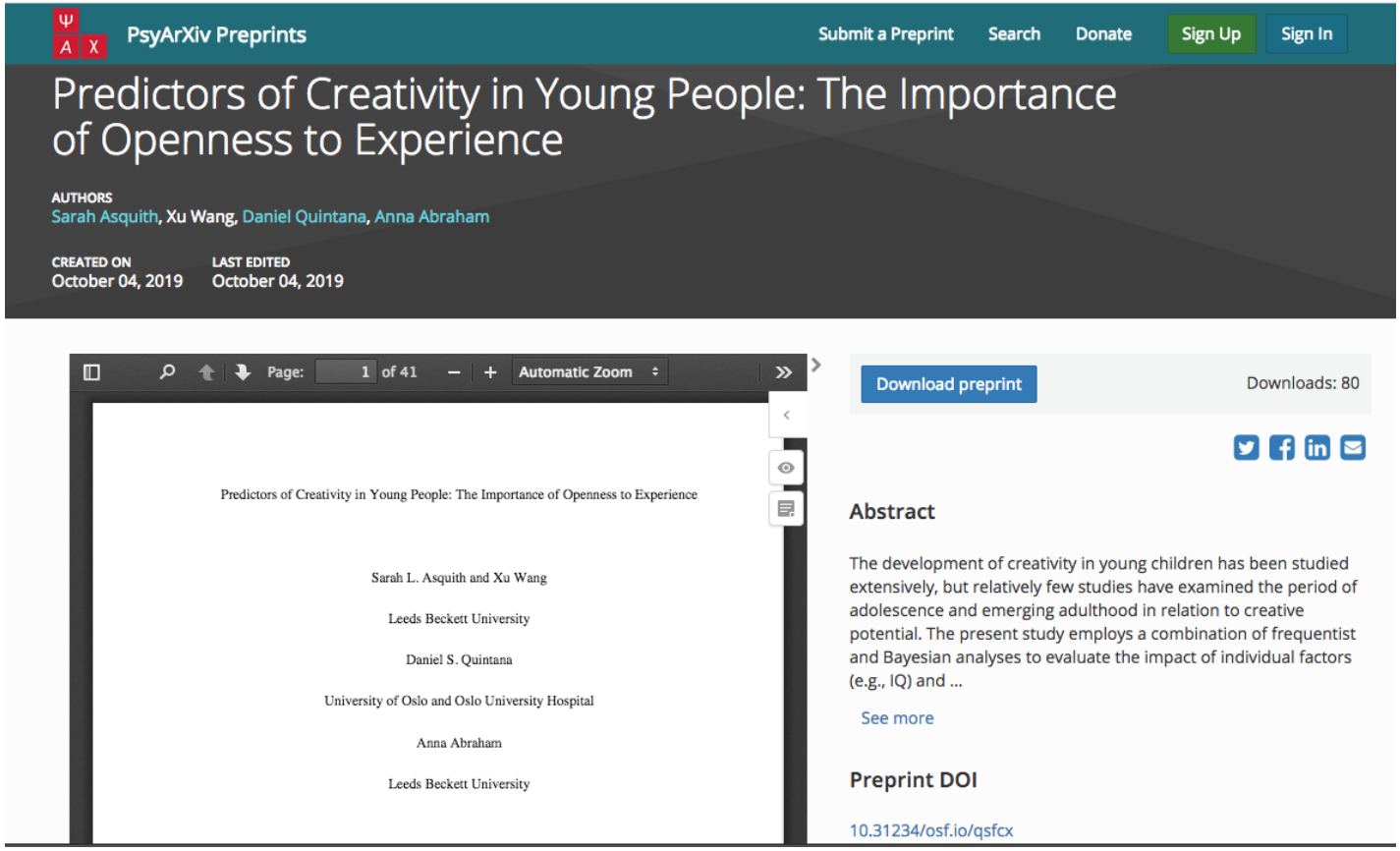


Table 3

Summary of the Frequentist Multiple Regressions Predicting Creativity From Openness, IQ, LDSS and Engagement in Creative Hobbies

		Whole dataset (n = 271)	
Outcome variable	Predictor	B	95% CI
Fluency			
Overall Originality			
Peak Originality			

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

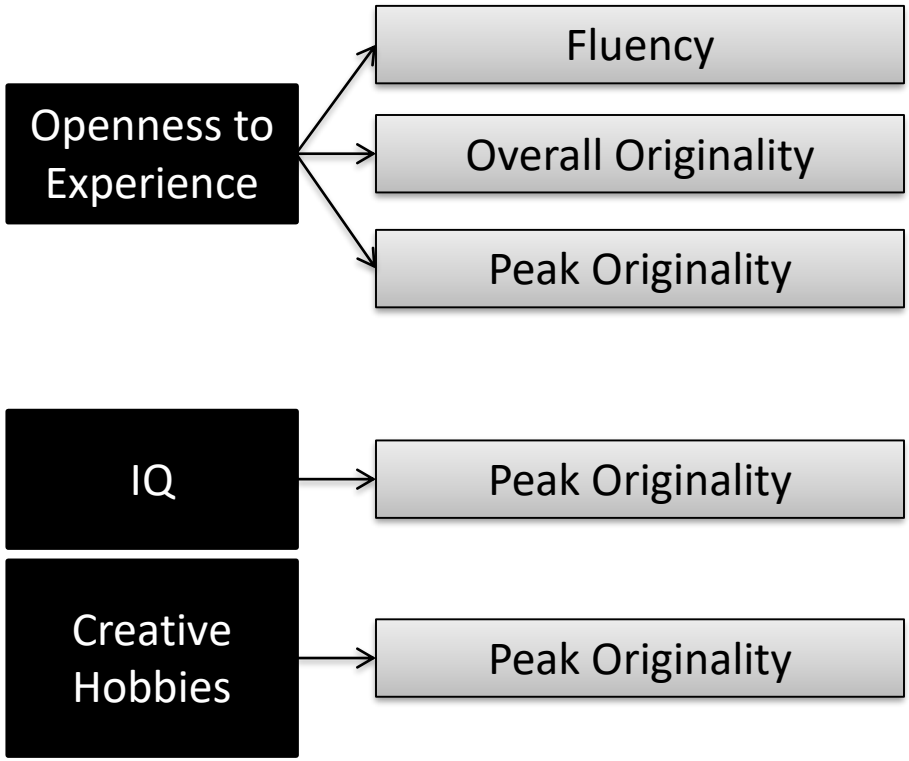
Source: Asquith, Wang, Quintana & Abraham (in review). Predictors of Creativity in Young People

Table 3

Summary of the Frequentist Multiple Regressions Predicting Creativity From Openness, IQ, LDSS and Engagement in Creative Hobbies

		Whole dataset (n = 271)	
Outcome variable	Predictor	B	95% CI
Fluency	Openness	0.19***	[0.09, 0.29]
	IQ	0.01	[-0.02, 0.03]
	Creative hobbies	0.02	[-0.01, 0.06]
	p	< .001	
Overall Originality	Openness	0.15*	[0.02, 0.28]
	IQ	0.02	[-0.01, 0.05]
	Creative hobbies	0.01	[-0.03, 0.05]
	p	.030	
Peak Originality	Openness	0.39**	[0.17, 0.61]
	IQ	0.06*	[0.00, 0.11]
	Creative hobbies	0.08*	[0.01, 0.15]
	p	< .001	

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

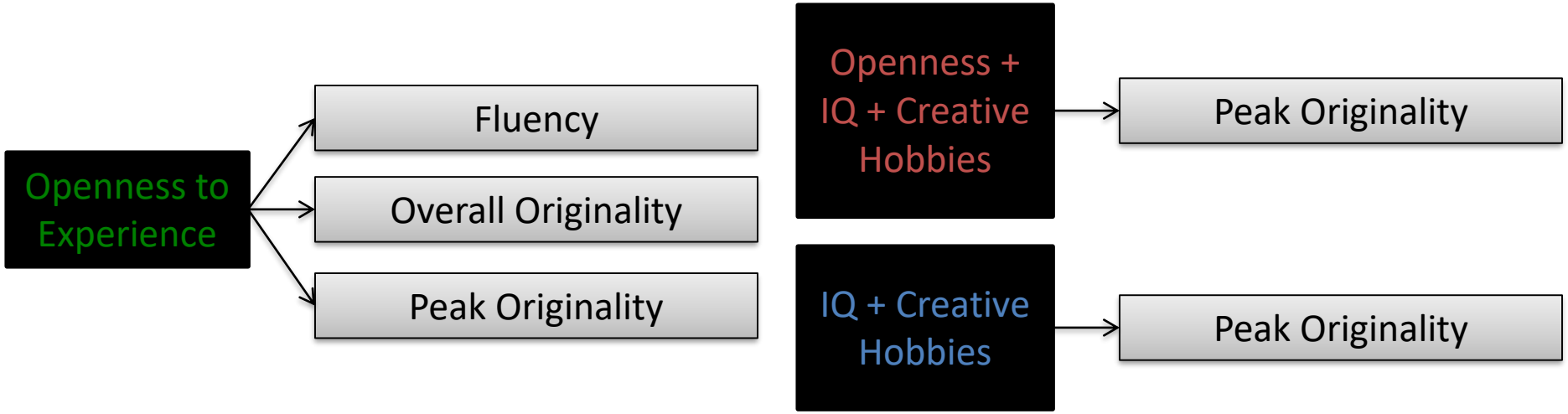


Source: Asquith, Wang, Quintana & Abraham (in review). Predictors of Creativity in Young People

Table 4

Summary of the Bayesian Multiple Regressions Predicting Creative Potential From Openness, IQ, LDSS and Engagement in Creative Hobbies

Fluency			Overall Originality			Peak Originality		
Model predictors	BF_{10}	R^2	Model predictors	BF_{10}	R^2	Model predictors	BF_{10}	R^2
Null model	1.00	.00	Null model	1.00	.00	Null model	1.00	.00
Openness	8575.61	.08	Openness	4.85	.03	Openness + IQ + Creative hobbies	13513.90	.11
Openness + Creative hobbies	3845.16	.09	Openness + IQ	1.62	.03	Openness + Creative hobbies	9901.73	.10
Openness + IQ	1733.28	.08	Openness + Creative hobbies	1.00	.03	Openness	8406.81	.08
Openness + IQ + Creative hobbies	1000.70	.09	Openness + IQ + Creative hobbies	0.42	.03	Openness + IQ	7982.03	.10
Creative hobbies	15.04	.04	Creative hobbies	0.37	.01	IQ + Creative hobbies	233.52	.07
IQ + Creative hobbies	5.37	.04	IQ	0.34	.01	Creative hobbies	83.09	.05
IQ	0.26	.01	IQ + Creative hobbies	0.18	.02	IQ	2.02	.02



Source: Asquith, Wang, Quintana & Abraham (in review). Predictors of Creativity in Young People

Creativity & Empathy

In the Arts

Oxford Handbooks Online

Empathy and Creativity in Group Musical Practices: Towards a Concept of Empathic Creativity

Ian Cross, Felicity Laurence, and Tal-Chen Rabinowitch

The Oxford Handbook of Music Education, Volume 2 (2 ed.)
Edited by Gary E. McPherson and Graham F. Welch

Print Publication Date: Sep 2012 Subject: Music, Music Education
Online Publication Date: Nov 2012 DOI: 10.1093/oxfordhb/9780199928019.013.0023

Abstract and Keywords

This article examines the role of empathy in creative musical interaction. It first investigates the relationships between empathy and engagement in creative group musical activities. It then describes the ways in which empathy is related to processes that are significant in social interaction; these processes may either be automatic or volitional, reflectively rational, or emotionally embodied. The article then shows how structured musical group improvisations that emphasize other-directed behaviour can help children develop a sense of empathy. It concludes with a case-study involving the collaborative composition of songs by an adult and a group of children.

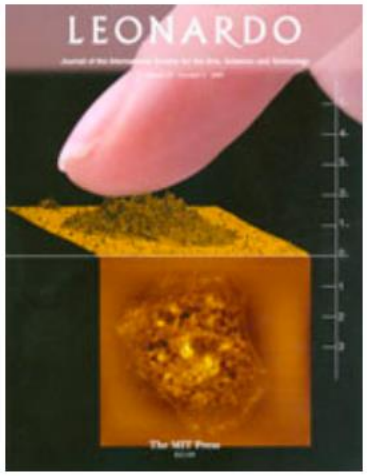
Keywords: creative music, musical interaction, empathy, creativity, emphatic creativity, musical groups, improvisation, collaborative composition

In the Arts

The MIT Press Journals

Books Journals Digital Resources About Contact

Home | Leonardo | List of Issues | Volume 42 , No. 3 | Materiality, Memory and Imagination: Using Empathy to Research Creativity



Materiality, Memory and Imagination: Using Empathy to Research Creativity

Cathy Treadaway

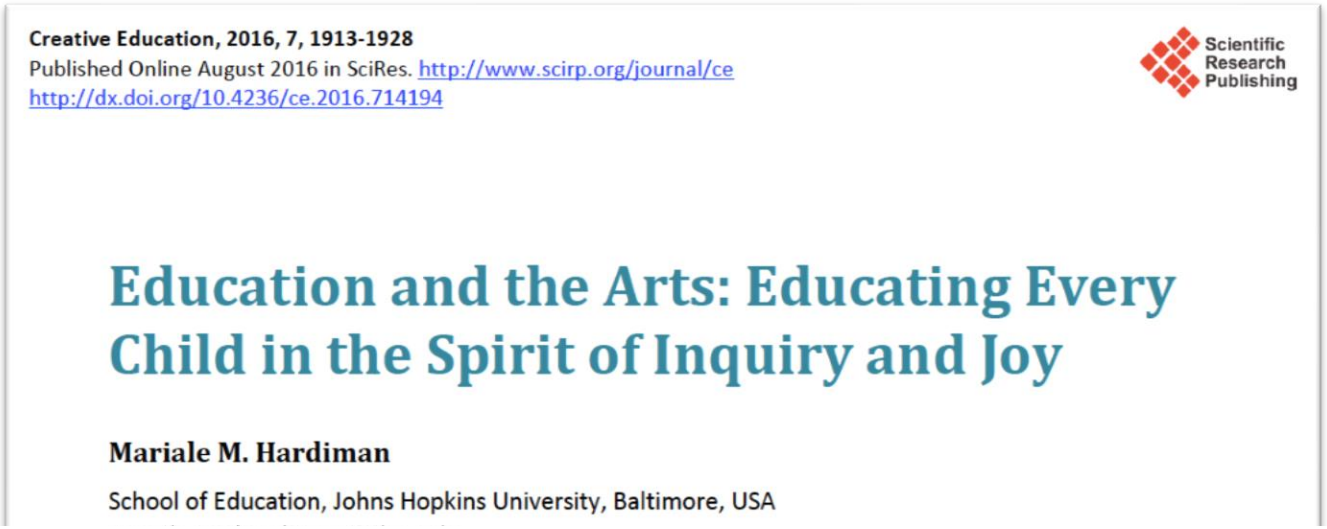
Posted Online April 30, 2009
https://doi.org/10.1162/leon.2009.42.3.231

Leonardo
Volume 42 | Issue 3 | June 2009
p.231-237

Six issues per year incl. Leonardo Music Journal (February, April, June, August, October)
112pp. per issue
8 1/2 x 11, illustrated

Abstract Authors

In Education



Creative Education, 2016, 7, 1913-1928
Published Online August 2016 in SciRes. http://www.scirp.org/journal/ce
http://dx.doi.org/10.4236/ce.2016.714194

Scientific Research Publishing

Education and the Arts: Educating Every Child in the Spirit of Inquiry and Joy

Mariale M. Hardiman
School of Education, Johns Hopkins University, Baltimore, USA

"Similarly, in the research compilation Critical Links: Learning in the Arts and Student Academic and Social Development, Deasy (2002) reports multiple studies that suggest the benefits of the arts for general learning in non-arts subjects, including self-motivation, social skills, tolerance, empathy, persistence and positive peer interaction."

"Catterall (2002) highlights that the arts help not only in academic skills, but also with social skill development by increasing a student's ability to solve problems and reduce conflicts. Perhaps the benefits of the arts in promoting thinking dispositions and social development are further explanations for why students who participate in arts programs in schools demonstrate higher academic achievement and better school attendance than those who have little or no arts participation (Dwyer, 2011)."

BUT … there is a Dark Side to Creativity

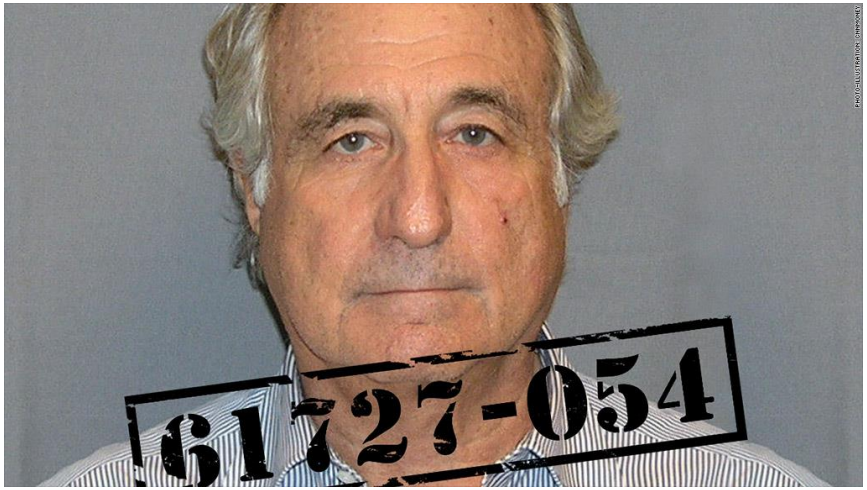
the outcome of

creativity

is not necessarily

positive

The Dark Side of Creativity



WIKIPEDIA ENTRY

Occupation
Stock broker, investment adviser, financier, former chairman of NASDAQ

Employer
Bernard L. Madoff Investment Securities

Known for
Ponzi scheme, Chairman of NASDAQ (prior)

Criminal charge
Securities fraud, investment advisor fraud, mail fraud, wire fraud, money laundering, false statements, perjury, making false filings with the SEC, theft from an employee benefit plan

Criminal penalty
150 years imprisonment and forfeiture of $17.179 billion

Criminal status
Incarcerated at Butner Federal Correctional Institution; Federal Bureau of Prisons Register #61727-054; scheduled date of release: November 14, 2139

Final Remarks

Six Precepts of Progressive Education

1. "Individual differences among children must be recognized."

1. "We learn by doing and by having a vital interest in what we are doing."

1. "Education is a continuous reconstruction of living experience that goes beyond the four walls of the classroom."

2. "The classroom should be a laboratory for democracy."

3. "Social goals, as well as intellectual goals, are important."

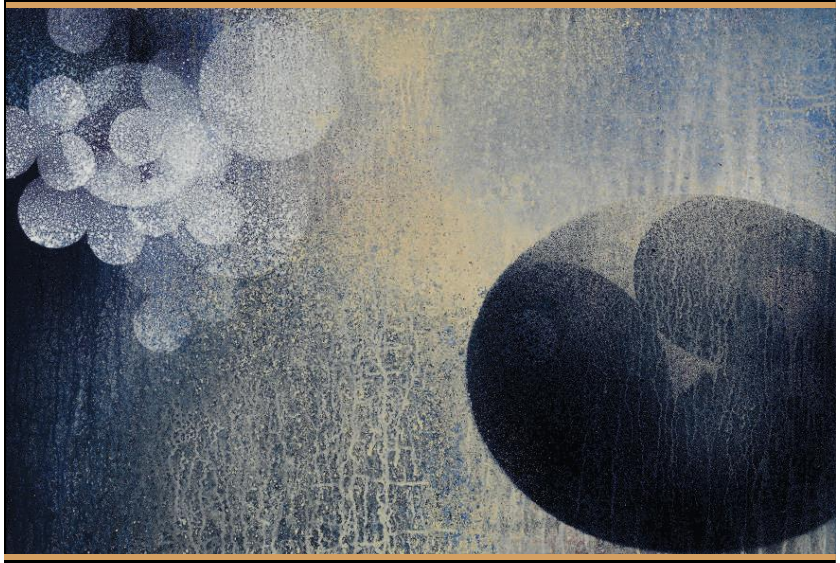
4. "A child must be taught to think critically rather than to accept blindly."

- Torrance (1965: 677)

CAMBRIDGE FUNDAMENTALS OF NEUROSCIENCE IN PSYCHOLOGY

The Neuroscience of Creativity

ANNA ABRAHAM



Handbook of the Imagination

Cambridge University Press

EDITED BY ANNA ABRAHAM

- *To be published in April 2020*
- *48 chapters (multidisciplinary focus)*

Nurturing the Imagination

Anna Abraham, PhD

✉ annaabr@gmail.com 💻 www.anna-abraham.com

LEEDS BECKETT UNIVERSITY
LEEDS SCHOOL
OF SOCIAL SCIENCES