



Covert Reorganization / Spatial Learning. Fig. 3 Sleep-dependent modulation of correlation between brain activity and performance in the Recognition condition. Contrasts are displayed at $p < 0.001$ (uncorrected) superimposed on the average T1-weighted MR scan. Correlations were computed at the within-subject level (i.e., between brain activity and individual variations in trial-to-trial performance). *Left panel:* higher correlations in sleep than in sleep-deprived participants in the left frontal gyrus. *Right panel:* higher correlations in sleep-deprived than in sleep participants in the right para-hippocampal gyrus

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Covert Speech

- [Covert Pronunciation and Rehearsal](#)

Creative Inquiry

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Synonyms

[Creativity](#); [Passion](#); [Self-inquiry](#); [Transformative Education](#); [Transformative Learning](#)

Definition

Creative Inquiry frames education as a larger manifestation of the creative impulse rather than as the fundamentally instrumental acquisition, retention, and reproduction of information, or Reproductive Learning (Montuori 1989, 1998, 2005, 2006, 2008). It stresses the role of ongoing inquiry, and the active creative process of bringing forth meaning, knowledge, self, and engagement with the world. Creative Inquiry critiques Reproductive Learning, where the student is an empty vessel to be filled by the instructor, and Narcissistic Learning, which places the individual's largely unreflective and decontextualized opinions, likes and dislikes, at the center of a subjectivist, relativistic world.

Theoretical Background

Creative Inquiry reflects a larger shift in worldview from a Newtonian/Cartesian machine metaphor to the metaphor of a creative universe (Bocchi and Ceruti 2002; Davies 1989; Kauffman 2008; Kaufman 2004; Montuori 1989). In the early twenty-first century, our understanding of creativity itself is being transformed. Creativity is now central to human existence, life, and the Universe. Creativity is not, in the new view, limited to gifted individuals, to a process that leads to a new product, to a revolutionary idea of earth-shaking proportion, or exclusive to specific domains such as the arts and sciences. Creativity is now increasingly seen as a distributed, networked, paradoxical, emergent process that manifests in all aspects of life (Montuori 2011). The fundamental nature of existence, of human beings, and of the Universe itself is creativity, rather than matter (materialism) or ideas (idealism). The inquirer is not a machine or an empty vessel requiring to be filled from the “outside” by a teacher, where the spark of creativity is a rare and mysterious phenomenon. In Creative Inquiry, the inquirer is viewed as engaged in a recursive process of exploration and creation of self and world.

Reproductive Learning reflects educators’ borrowing of concepts from the Newtonian/Cartesian machine metaphor applied to the industrial organization of society, coupled with traditional authoritarianism. It was designed to reproduce the existing social order and educate for conformity, hierarchy, division of labor, hyper-specialization, and the quest for certainty (Giroux 2007, 2010; Kincheloe 1993). Creative Inquiry reflects scientific developments outlining the fundamental creativity of the universe, nature, and humanity, and is informed by epistemological perspectives from the sciences of complexity and constructivism (Morin 2001, 2008a). As such it draws extensively on systems and complexity science.

Reproductive Learning privileges analysis, reductionism, disjunction, abstraction, and simplicity. Creative Inquiry strives to illuminate the complexity of the world by fostering the development of transdisciplinary “complex thought” (Morin 2008a, b). It stresses the importance of connecting and contextualizing, and the inquirer is recognized as an embodied and embedded participant rather than spectator to life and knowledge. Inquiry, learning, knowing, and knowledge themselves are viewed as systemic, relational,

processual, contextual, and creative processes. A musical metaphor can illustrate the difference between Reproductive Learning and Creative Inquiry. Reproductive Learning is similar to classical Western music after 1800, where musicians learned to play their instruments to perform preexisting musical scores. Creative Inquiry is more akin to jazz. Technical competence is required, but the purpose is to learn to develop the skill of improvisation, and to learn to explore musical themes alone and in collaboration with others. While reading musical notation for certain sections of the performance is necessary, during improvisation there is no preestablished “right” set of notes, but rather an inquiry into the musical text (the song) and context (including fellow musicians, audience, etc.) which can be approached or framed in a plurality of ways to elicit and generate a plurality of meanings (Montuori 2003). Much of the jazz repertoire consists of well-worn standards from the Great American Songbook that have been played by all the great legends of jazz, and yet they can be mined for more interpretations, and more remarkable performances. This process brings forth a collaborative performance that sheds new light on the songs, the performers, and indeed on the listeners, and rekindles the passion that motivates further inquiry and further performance. There is no “ultimate” answer, and no edifice of knowledge that must be built, block-by-block, but rather an exploration of a network of people, events, ideas, beliefs, and assumptions, and the way knowledge is always already embodied and created.

Creative Inquiry integrates the learner and his/her experience, affect, and subjectivity in the learning process, and invites the exploration and if necessary unlearning of social and personal habituations that become unchallenged “givens” and thereby create implicit interpretive frameworks. Creative Inquiry also contextualizes and challenges learning. It situates inquiry in the social, cultural, political, and economic roots and matrices of knowledge, and explores the criteria by which some things are considered knowledge and others not, as well as the creative, constructive process involved in knowledge production. It, therefore, addresses the psychology and sociology of knowledge, as well the philosophy of social science.

The Epistemology of Not-Knowing

Reproductive Learning begins with the assumption the learner is an empty vessel awaiting the delivery of

correct knowledge from the instructor. This knowledge must be reproduced to the instructor's satisfaction. Creative Inquiry starts from an attitude of "not-knowing," a willingness to accept the illusion of familiarity that covers the vast mystery of existence, examine one's positions in the process of inquiry, and challenge fundamental and underlying assumptions that shape inquiry. The goal is not to conclude the process by having the correct answer, but to encourage a more expansive, spacious approach to inquiry that actually generates more potential inquiry rather than stopping at the one "correct" answer, and illuminates the creation of knowledge. As in a jazz group, "band members" are invited to make contributions that will make the overall sound of the band the most interesting and surprising. The point of contributions is not to provide "the" answer, and thereby to stop the conversation. In the same way that band members can push a soloist to greater heights with a series of well-placed chords or percussive accents, or simply verbal encouragement, the object of these contributions is to push the dialogue to greater heights and to keep it going (Montuori 2003).

Creative Inquiry recognizes the limitations of knowledge and the opportunities for different perspectives, frames, and approaches. This involves an attitude of epistemological humility and fallibility that recognizes humanity's always partial and limited understanding of the world (Bernstein 1983, 2005). Even more importantly, it also recognizes that not-knowing is a fundamental starting point for creativity. The willingness to be open to the possibility that all knowers have a fallible interpretation of the world allows for the emergence of multiple alternative perspectives rather than the assumption of a fixed "given" world. Creative Inquiry encourages constant exploration and self-examination for attachment to positions, obsession with certainty and power, and a constant awareness of the threats of dogma and/or habituation. Above all, an attitude of not-knowing allows for the space and openness for novelty to emerge.

Creative Inquiry does not accept the common binary opposition between creativity and rigorous scholarship suggested by the Romantic mythology of creativity. This mythology's assumption of "genius without learning," so popular in the West, became Narcissistic Learning. Understood in a wider perspective, the creative process requires and includes

discipline, a foundation of skills, and immersion in the field, in the same way that a creative musician must practice scales and learn music theory. But these are not antithetical to creativity. On the contrary, the foundation in scholarship is essential in order for the creativity to emerge (Montuori 2006; Montuori and Purser 1995).

Creative Inquiry (CI) stresses the importance of immersion and active participation in an ecology of ideas, in the existing discourse, literature, and research (Montuori 2005). It also recognizes that embodied and embedded knowing is grounded in existing cultural, social, and historical assumptions, theories, facts, and beliefs, and that any action in the world is based on, and in fact cannot occur, without interpretations of the world and specific situations. This knowledge is necessary for participation in both discourse and practice. For Creative Inquiry this knowledge, in the form of paradigms, theories, etc., shared by communities of inquiry (fields, disciplines, research methods, and agendas), and the inquirer's own implicit assumptions and theories, is itself constantly the subject of inquiry, offering an opportunity to explore and understand the creation of knowledge, perspectives, positions, beliefs, theories, for purposes of wise and creative action.

Important Scientific Research and Open Questions

Culturally and philosophically, Creative Inquiry emerges as an effort to address the opposition between Objectivism and Relativism (Bernstein 1983, 2005). With (objectivist) Reproductive Learning, the deterministic assumption is that the environment, "objective reality," creates the learner. In (subjectivist) Narcissistic Learning, this assumption is reversed, and captured in the popular New Age dictum "I create my own reality." Creative Inquiry proposes a recursive relationship where "I create a world which creates me." Creative Inquiry is an ongoing creative process in which the inquirer is engaged in self-eco-creation (Montuori 2003; Morin 2008a). Creating not just himself or herself, but creating a relational being whose actions have an impact in an interconnected, interdependent social and natural context. This is a crucial difference with Reproductive Learning, where the learner is treated like an isolated cog, to be molded by the educational process, so as to fit in a larger machine.

Much important research still needs to be done in the application of creativity, complex thought, and co-constructivist epistemologies to education, building on the works of Morin, Kegan, Kincheloe, Varela, and others. Central to this research will be the role of the inquirer in inquiry and the strong parallels between Formal Thinking (Reproductive Learning) and Post-Formal Thinking (Creative Inquiry). Creative Inquiry's improvisational dimension is also akin to the concept of expertise from Dreyfus and Dreyfus's research (Montuori 2003).

Inquiry and/as Self-Inquiry

Creative Inquiry invites inquirers to explore what they are passionate about, and to ground their work in this passion. This passion itself becomes a topic for inquiry and self-reflection as inquiry becomes an opportunity for developing self-knowledge. The inquirer is not a spectator to the world, but embodied and embedded, an active participant in knowledge-creation and praxis. Particular attention is paid to espoused theory and theory-in-use, to dialogue between the inquirer's views and the research literature, and through dialogue with the perspectives of other co-inquirers. Every inquiry becomes self-inquiry in an ongoing process of unearthing one's own implicit theories and assumptions, and in turn how they may be related to one's own personal history, sense of identity, attachments to beliefs and ideologies, and so on.

A central dimension of Creative Inquiry is the self-reflection on this creative process of knowledge-making and knowledge-embodiment. Knowledge and concepts are viewed as creative products of the human mind (Deleuze and Guattari 1994) that can be challenged and opened up to reveal underlying assumptions and the way they define, organize, and determine knowledge. Theories, frameworks, and so forth illuminate some dimensions of the world and obscure or ignore others, and are inevitably limited and partial. CI views concepts as creative products. It frames inquiry into concepts (theories, paradigms, beliefs, etc.) and actions (as embodiments of theories, paradigms, etc.) as inquiries into the creative process of concept-creation. CI is *radical* in the sense that it addresses the underlying roots and matrices from which knowledge emerges, as well as the organization of knowledge and knowledge of organization.

The process of self-creation through Creative Inquiry is not relativistic, self-centered Narcissistic Learning, revolving around the learner's subjective likes and dislikes, agreements and disagreements, but an integration and embodiment of the inquiry process in a practice of *phronesis*, defined in this context as wise action informed by a (self-) reflection on values, beliefs, and implicit theories. Given the assumption that creativity is not an exceptional talent confined to a gifted few but rather the essential condition of all human beings, the question becomes *how* that creativity will be utilized and for *what* purposes. Self-creation in CI, therefore, means taking responsibility for creativity and addressing central questions pertaining to the "who," "why," and "to what end" of inquiry. Inquiry is not a dispassionate, purely "objective" process any more but engagement, participation, and responsibility for creation. It is an action in the world, and as such has repercussions in the world and ethical consequences, as well as being motivated by human passions and social, political, and economic dimensions.

Cross-References

- ▶ [Creativity and its Nature](#)
- ▶ [Narcissistic Learning](#)
- ▶ [Reproductive Learning](#)

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Creative Leap

- ▶ [Mental Leap](#)

Creative Problem Solving

- ▶ [Creativity, Problem Solving, and Feeling](#)

Creative Thinking

- ▶ [Collaborative Learning and Critical Thinking](#)

Creative Thinking in Music

- ▶ [Composition Learning in Music Education](#)

Creativity

- ▶ [Composition Learning in Music Education](#)
- ▶ [Creative Inquiry](#)
- ▶ [Imaginative Learning](#)

Creativity and Its Nature

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Synonyms

[Ingenuity](#); [Innovation](#); [Inspiration](#); [Inventiveness](#); [Originality](#)

Definition

Creativity has traditionally been seen as an ability to respond adaptively to the needs for new approaches and new products. It is often defined as the ability to bring something new into existence purposefully. The concept of creativity has expanded and changed in the last decade. In the sciences, creativity is increasingly being viewed as intrinsic to the very nature of the Universe. A new emphasis on “everyday” and “social” creativity is shifting the focus from individual genius in rarified fields (fine arts, advanced science) to collaborative creativity in everyday life, with implications for learning and education that are only beginning to be explored.

Theoretical Background

Historically, creativity has not been fostered in educational contexts (Plucker et al. 2004; Robinson 2001). Until the twenty-first century, this was largely because creativity itself was poorly understood, and because creativity is generally associated with disruptions and challenges to the existing order. Creativity was not considered a phenomenon that could be scientifically explained or fostered, and there was also no sense that creativity was an essential capacity and competence for human beings. The importance of creativity has become prominent for a number of reasons, including its adaptive nature for individuals and societies in a rapidly