Introduction: The Spatiality of Creativity

Peter Meusburger, Joachim Funke, and Edgar Wunder

The concept of creativity used to be seen entirely as an entity depending on the faculties of individuals. Research on creativity in psychology, philosophy, and art criticism focused on the attributes of geniuses, gifted persons, creative artists and scientists, and creative performance and problem-solving. Eventually, researchers acknowledged that the creative scientist or artist does not work in a social, cultural, and economic vacuum. It was accepted that creative individuals are inspired or impeded by societal and organizational structures and that they depend on evaluators, audiences, and research infrastructure. It was recognized that such people may meet with incomprehension, competition, hostility, and social conflict, that interactions play an important role, and that learning processes are situated in environments and spatial structures. With the ascendance of these new perspectives, creativity began capturing attention in other disciplines as well.

A Brief Retrospective

From Persons to Persons in Situations

When research on creativity was still in its infancy (for an overview, see Albert & Runco, 1999; Simonton, 1999), few scholars found it necessary to include the environment in their considerations. At best, they admitted that talented individuals could not develop their creativity in repressive societies. One of the first

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scholars to discuss the influence that external conditions (parents, schools, peers, role models, teachers, political institutions, and scientific policies) have on the scientific achievements and careers of eminent scientists was the German chemist and Nobel Prize winner Wilhelm Ostwald. In his 1909 book *Große Männer* (Great Men), which describes the careers of Humphry Davy, Julius R. Mayer, Michael Faraday, Justus Liebig, Charles Gerhardt, and Hermann Helmholtz, he addressed almost all individual, social, organizational, environmental, and political aspects now known to be capable of affecting creativity and scientific careers. However, this early pioneer did not work in any of the core disciplines of the social sciences. As for psychologists, they concentrated more on intelligence than on creativity, at least before Guilford's (1950) famous presidential address to the Association of American Psychologists. Ostwald's research was therefore largely ignored by the epistemic centers of the social and behavioral sciences of that time.

The environmental road to research on creativity was gradually charted in the 1940s and 1950s, beginning with Stalnkecht's (1941) discussion of the relations between environment (reality and actual concrete existence) and consciousness. Osborn (1953) continued this line of thought by underlining the importance of environment for the development of creativity. So did Stein (1953) when he pointed out that there is an interaction between the creative individual, the problem on which he or she is working, and the environment in which that person exists.

To speak solely of the existence of the stresses and strains in the environment without due consideration of the individual, as some investigators do, or to deal primarily with the stresses and strains in the individual and to overlook the nature of the problem or the environment as other investigators do, is an arbitrary approach which is a consequence of the specialization in our profession today. (p. 312)

The creative product resonates with the needs or experience of a group. Art works resonate with feeling, while technical inventions find resonance because they fulfill practical needs. (p. 318)

The creative work must strike a chord or resonate in some manner with the group that accepts it. (p. 321)

The way to the interactional and environmental study of creativity was also prepared by environmental psychologists focusing on the relation between actor, situation, and environment, especially by Barker's (1968) concept of action settings. Management studies, too, became interested in the psychological climate of organizations and found that creative persons are very sensitive and responsive to the attitudes and behavior prevailing within an organization or at their place of work (see Raudsepp, 1958).

Not until the latter part of the 1980s did mainstream research on creativity turn to the impact that situations and environments have on creativity. At that point, scholars increasingly began addressing issues that had been raised 80 years earlier by Ostwald (1909). More and more of these late twentieth-century social and behavioral scientists regarded behavior as a function of the interaction between a person and a situation, and situational determinants of creativity became a research focus of cognitive psychologists. It was accepted that creative individuals are embedded in particular environments capable of either fostering or hindering their creativity and that cognitive processes are guided not only by personal capabilities or intrinsic motivation but also by interactions with and influences of the environment. This alteration in the study of creativity was summarized by two leading researchers of that period:

There has been a concentration on the creative person, to the exclusion of "creative situations"—i.e., circumstances conducive to creativity. There has been a narrow focus on internal determinants of creativity to the exclusion of external determinants. (Amabile, 1983, p. 5)

We cannot study creativity by isolating individuals and their works from the social and historical milieu in which their actions are carried out. This is because what we call creative is never the result of individual action alone; it is the product of three main shaping forces: a set of social institutions, or field, that selects from the variations produced by individuals; a stable cultural domain that will preserve and transmit the selected new ideas or forms to the following generations; and finally the individual, who brings about some change in the domain, a change that the field will consider to be creative.... Creativity is a phenomenon that results from interaction between these three systems. (Csikszentmihalyi, 1988, pp. 325–326)

Creativity is a phenomenon that is constructed through an interaction between producer and audience. (Csikszentmihalyi, 1999, p. 314)

Whether in anticipation of or in response to this turn, some psychologists developed multilevel models of creativity to distinguish between the creativity of individuals, groups, and organizations (e.g., Woodman et al., 1993). Other psychologists applied a systems perspective of creativity, including contextual variables that influence creativity (Csikszentmihalyi, 1999; Simonton, 1975, 1977, 1988, 1990). All this work drew attention to the processes of problem-solving, the interaction between members of teams, the various phases of a creative process, the spatial diffusion of creative ideas and products, and the contextual or environmental determinants promoting or suppressing creativity. When referring to environmental variables, though, most authors mentioned only organizational, cultural, socioeconomic, or political factors. They disregarded the spatiality of creativity and the role of places and spatial contexts.

Some psychologists hypothesize that multiple components must converge for creativity to occur and that creativity evolves through a confluence of various individual abilities, societal structures, economic resources, political conditions, and cultural values (for an overview see Amabile, 1983; Sternberg & Lubart, 1999). This confluence or convergence is inconceivable without a spatial coincidence or co-presence of these components. Processes of learning and gathering experience are inseparable from interactions with a specific environment and from situational challenges.

**Creativity and Space**

The constituents of creativity and their interrelations materialize in social macrophenomena called creative environment, milieu, or context (see the chapter by
Measurably in the sum of its parts. Its symbolic meaning, reputation, and attractiveness are not only by agents, but also by institutions, resources, and processes. The more that people and institutions are connected, the more their knowledge and resources are shared and leveraged.

Interdisciplinarity

The concept of interdisciplinary research is essential in understanding the complex nature of contemporary issues. Interdisciplinary research involves the integration of knowledge, methodologies, and perspectives from multiple fields to address complex problems. It is not just about adding disciplines together but about creating new insights and perspectives that can lead to innovative solutions.

Human geography, too, has a long tradition of studying the regional distribution of elements and organisms and the patterns of their spatial interactions. However, researchers in this discipline did not necessarily adopt a holistic approach to understanding these patterns. Instead, they focused on specific aspects of the environment, such as climate, vegetation, or human activity, without considering the overall system.

In contrast, interdisciplinary approaches allow for a more comprehensive and integrated understanding of complex systems. By bringing together knowledge from different fields, researchers can uncover new insights and develop more effective strategies for addressing environmental challenges, promoting sustainability, and enhancing the quality of life for communities around the world.
and output and by analyzing the impact of clusters and networks. Taking a different route, other students of creativity retrospectively explore its spatial disparities by analyzing the careers, professional achievements, and social mobility of elites and the performance of outstanding scientists and artists. This biographical material serves as background information about a creative person, the conditions of his or her early socialization, and the chances and challenges that contributed to that individual’s creative career. The emphasis falls on the interrelations of factors and the influence that various spatial contexts and path dependencies have on creativity and scientific careers. Such research on creativity thus complements and amplifies the work done in this area by other social and behavioral sciences.

The attention that creativity has received in an increasing number of disciplines has enriched the work on this subject and has broadened scholarly horizons. The researchers from each field of inquiry bring their own specific ideas, core competencies, and main interests to the task. At the same time, this expansion of research has been problematic. The scales, methodologies, theories, definitions, and indicators of creativity used in research differ from one discipline to the next (and even from author to author within the same discipline). Recognizing that elucidation of a lengthy creative process requires resources other than the description of a creative environment, scholars agree that an individual’s creative performance must be measured, analyzed, and explained with resources and techniques that diverge from those used to study the spatial distribution of creative products. In short, the resulting variety complicates interdisciplinary discourse and sometimes dilutes concepts of the core disciplines.

Although innovation, invention, and the generation of scientific knowledge are closely related to creativity, surprisingly few economists and economic geographers have taken notice of the results reported in science studies, psychology, and the geography of knowledge. Until recently, psychologists have similarly disregarded the vast amount of relevant work in science studies. This aglossia results partly from the fact that the concepts, definitions, and methodologies in these disciplines differ from those in economics and economic geography. But it might also be due to parochialism that leads publishers and readers to assume that the most innovative ideas, theories, and results appear in a few journals of one or two disciplines. Until recently, the exchange of ideas and concepts across disciplinary borders left much to be desired.

Goals and Content of This Book

The very appearance of this book in a series entitled “Knowledge and Space” indicates one of the goals behind this enterprise: to raise awareness that spatial disparities of creativity exist and that spatial contexts are important in knowledge generation and creative processes. Are societal factors spatially footloose? What is the point in focusing on places, spatial structures, and spatial relations in creativity research? How should the term environment be conceptualized? Are only social factors relevant for the development of creativity or should one also include material artifacts and resources in its definition? How can relationships between environment, cognitive processes, and action be explained without falling victim to geodeterminism? Environmental psychology, human ecology, social geography, semiotics, and actor-network theory offer at least some ways to link between nature (material objects) and society (humans) and thereby find out how sociomaterial things act upon humans and what meaning “materiality [has] in the course of knowledge production” (Jön, 2006, p. 559).

Yet gaps and contradictory results of the continuing inquiry into creativity remain. Another goal of this book is, hence, to address at least a few of them and to promote an understanding of the approaches taken in other disciplines and at other levels of analysis. In the first six chapters the authors review the most fundamental results of research on creativity from the perspectives of psychology, philosophy, and geography. Psychologist Joachim Funke (Chapter 1) focuses on possible definitions, the methods of analysis, and known determinants of the construct called creativity. Robert Sternberg (Chapter 2), drawing on his “investment theory of creativity,” argues that creativity is not the same across different domains (e.g., art and science) and that knowledge is one crucial variable explaining why creativity is domain-specific. To be a creative individual in a given domain, one must at least know what the state of the art in that domain is. But knowledge is by no means sufficient for creativity. The third psychologist, Dean K. Simonton (Chapter 3), focuses on scientific creativity, trying to predict creative performance in science by using combinatorial models.

The philosophers Günter Abel (Chapter 4) and Hans Lenk (Chapter 5) deal with possible typologies of creativity, analyzing the typical structures of creative processes. Both authors highlight the importance of symbolizing signs in that approach, the relationship between creativity and rules, and the use of creative metaphors to help overcome limits of human understanding and explanation. The geographer Peter Meusburger (Chapter 6) discusses fundamental concepts of creativity research from the viewpoint of their applicability to human geography. Asking why highly creative individuals are not evenly distributed over time and space, he points out the crucial role of particular milieus in which individuals are raised, trained, and embedded.

Chapters 7–15 delve into rather specific problems and case studies in an investigation of the role that milieus, contexts, and social spaces have in the emergence of creativity. James Kaufman (Chapter 7) is concerned with the relationship between creativity and intelligence, which seems to be amazingly varied across different cultures and ethnicities. To understand the factors that support or hinder the creativity of individuals of differing problem-solving styles, Scott Isaksen (Chapter 8) examines how those people rate their working climates. Similarly, the aim of Ricardo Bouncken’s study (Chapter 9) is to explore the effects that national culture has on teamwork and innovation in global teams. The results indicate that cultural values have unequal effects on teamwork and creativity in the innovation process. Martina Fromhold-Eisebeth (Chapter 10), an economic geographer, is concerned with the problem of why innovative actors agglomerase and how local
Introduction: The Spatiality of Creativity

In this paper, we explore the concept of creativity from a spatial perspective, arguing that creativity is not just a mental process but also a spatial one. This perspective allows us to understand how spatial factors can influence the creative process and how creative ideas can be generated in specific spatial contexts.

We begin by reviewing the existing literature on creativity and spatiality. We then present our research methodology, which involves a qualitative case study of a creative design project. Finally, we discuss the implications of our findings for the field of creativity research.

References

Chapter 1

On the Psychology of Creativity

Joachim Funke

Creative thinking—this combination of words raises the question of whether thinking is possible without creativity, and whether creativity can occur without thinking. But one might also ask: Is this miraculous ability called creativity compatible with the rational act of thinking? Are not irrational elements more important in explaining creativity? Are creative processes accessible with scientific methods at all? Has every human being a creative potential? Instead of providing answers to these questions directly, I structure my paper around the following lead questions:

1. Which methods of analysis are available to researchers working in the field of creativity? What is the source of researchers’ knowledge about this issue?
2. What does creative thinking look like, and how does it manifest itself?
3. What are known determinants of creative thinking?
4. Why is there a need for creative thinking?
5. What can be done to improve creative thinking?

Space limitations preclude detailed answers to all these questions, but after reading this article you should feel a bit more informed about the above-mentioned topics.

According to Simonton (2000), creativity is present in all fields of human activity. For example, the building in which you are now was designed by an architect; the clothes you wear were designed by a fashion designer; the chair you are sitting on was designed in a perfect way (hopefully ergonomically); and the book you are reading was designed and produced. Behind each of the things around you, which are normally called artifacts, is a person who has created these things with a specific intention in mind.

This omnipresence of creative products in the environment contrasts the comparatively small amount of research that has been conducted on creativity. For many centuries, creative activities were seen as something miraculous, something that comes over a person and needs no further explanation. With the advent of empirical psychology at the end of the nineteenth century, those assumptions
Knowledge and Space

The close interrelation of knowledge and power, knowledge and socio-economic development, the conflicts between orthodox and heterodox knowledge systems, and the economisation of knowledge play a decisive role in society and has been studied by various disciplines. The series “Knowledge and Space” is dedicated to topics dealing with the production, application, spatial distribution and diffusion of knowledge. Science Studies, Actor-Network Theory, research on learning organisations, studies on creative milieus, and the Geographies of Knowledge. Education and Science have all highlighted the importance of spatial disparities and of spatial contexts in the creation, legitimisation, diffusion and application of new knowledge. These studies have shown that spatial disparities in knowledge and creativity are not a short-term transitional event, but a fundamental structural element of economy and society.

The volumes in the “Knowledge and Space” series will cover a broad range of topics relevant for all disciplines in the humanities, social sciences and economics focusing on knowledge, intellectual capital or human capital, e.g. clashes of knowledge, milieus of creativity, Geographies of Knowledge and Science, the storing of knowledge and cultural memories, the economization of knowledge, knowledge and power, learning organizations, the ethnic and cultural dimensions of knowledge, knowledge and action, and the spatial mobility of knowledge. These topics are to be analysed and discussed at an interdisciplinary level by scholars from various disciplines, schools of thought and cultures.

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