

BOOK REVIEW

Tromp, C., Sternberg, R. J., & Ambrose, D. (Eds.). (2024). *Constraints in Creativity*. BRILL. <https://doi.org/10.1163/9789004707238>.

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Published online: May 26, 2025

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The book is the 13th Volume in the Series: Advances in Creativity and Giftedness (ISSN: 2543-0416, ISBN: Paperback: 978-90-04-70721-4, Hardback: 978-90-04-70722-1, eBook: 978-90-04-70723-8), edited by Bharath Sriraman. The series aims to explore cutting-edge research on creativity, innovation, and giftedness from a multidisciplinary perspective, providing valuable insights for educators, researchers and professionals. *Constraints in Creativity* fits into this scope by examining how limitations, whether external, cognitive, or environmental, play a fundamental role in the creative process.

The volume provides an exhaustive interdisciplinary analysis of the complex interplay between creativity and constraints, offering a detailed examination of how limitations shape, refine, and propel the creative process. The authors compellingly argue that constraints should not be viewed merely as impediments but rather as integral structural elements that direct creative thought and innovation. Their method provides profound insights into the sophisticated nature of creativity, as the book reveals how constraints, traditionally perceived as obstacles can actually foster creative thinking. For example, one of the book's authors recounts how, even under an oppressive communist regime, individuals managed to express their creativity by using subversive methods to voice their resistance. This demonstrates that even the most severe external limitations do not necessarily hinder innovation; rather, they can sometimes encourage inventive solutions. A central thesis of the book is that all creative acts exist within clearly defined constraints. These constraints—whether sociocultural, psychological, technological, or structural—delineate the parameters within which creativity unfolds. While they may restrict certain possibilities, they simultaneously serve as generative forces that guide creative cognition and problem-solving. The book critically examines this paradox, illustrating how constraints both inhibit and facilitate creativity through a wealth of empirical research, theoretical discourse, and interdisciplinary case studies drawn from psychology, the arts, education, design, and innovation sciences. The breadth and depth of perspectives underscore the complexity and dynamism of the creative process, demonstrating that constraints are fundamental to its operation.

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As for the structure of the book, it consists of 13 chapters, each written by different experts in creativity research and exploring the impact of constraints from multiple angles, including psychology, education, and design. A particularly compelling aspect of the book is its distinction between constraints that hinder creativity and those that serve to foster it by imposing a necessary structure on it.

The introductory chapters emphasize the necessity of understanding the intricate relationship between creative cognition and constraints at both the individual and the societal levels. The authors explore how social norms, technological progress, and economic imperatives impose structural constraints that simultaneously limit and catalyze creative innovation. The rapid expansion of digital technologies, for example, has introduced new forms of constraints that demand novel methodological adaptations, particularly in academic, professional, and educational contexts where creativity is increasingly recognized as a critical skill. Further elaboration on the topic delves into the transformative impact of digitalization on artistic and scientific creativity, providing authoritative case studies from industries that have undergone significant shifts due to digital constraints and emerging opportunities.

A crucial approach is the exploration of natural and temporal constraints. Environmental limitations—such as resource scarcity or stringent time constraints—are reframed as dynamic factors that, rather than merely obstructing creativity, actively stimulate innovative problem-solving. For instance, enforced time restrictions frequently compel individuals to devise rapid, effective solutions, thus underscoring the generative nature of constraints. Similarly, structural constraints, such as formalized rules, procedural templates, or material limitations, are demonstrated to act as catalysts for ingenuity rather than barriers, shaping the contours of the creative process in meaningful ways. Several chapters provide an extensive discussion of these mechanisms reinforcing the argument that constraints are indispensable components of creativity. The topic is further explored through historical perspectives tracing how material constraints have influenced artistic and scientific breakthroughs over time.

The book also underscores the contextual nature of creativity, emphasizing that it cannot be divorced from the broader social, cultural, and institutional environments from which it emerges. Through a series of well-documented case studies, the book illustrates how creative expression is shaped by external constraints. For instance, it explores the role of diversity and constructive conflict in fostering innovation within teams and examines how pedagogical frameworks can be optimized to enhance students' creative potential despite institutional limitations. Additionally, it investigates how governance, legal framework and policy-making play an instrumental role in structuring creative environments and offering valuable insights into how regulatory and institutional constraints shape systemic innovation. A particularly intriguing concept introduced in the book is that of *'positive constraints'*, i.e., limitations that not only fail to hinder creativity but are, in fact, crucial for its emergence. This idea is especially pertinent in disciplines such as design and architecture, where material, technological, or environmental constraints frequently serve as sources of creative breakthroughs.

Beyond individual cognitive processes, the book extends its analysis to the realm of leadership and education demonstrating that while excessive freedom can be as detrimental as excessive rigidity, the careful calibration of constraints is essential to cultivating creativity in both pedagogical and professional settings. In the context of education, curricular constraints and assessment frameworks are shown to be valuable tools for enhancing students' problem-solving skills while simultaneously offering opportunities for experimentation and innovation.

This study further expands on this by illustrating how positive constraints have been methodically employed in high-risk innovation sectors, such as aerospace engineering, bioinformatics, and medical research, in order to facilitate pioneering discoveries. Moreover, this volume provides an in-depth examination of the differential effects of constraints on individual versus collective creativity. While individual creativity is often shaped by self-imposed constraints—such as working within a specific medium, adhering to personal deadlines, or engaging in habitual creative rituals—collective creativity emerges from the intersection of diverse perspectives, backgrounds, and problem-solving methodologies. These discussions offer rich insights into the mechanics of collaborative creativity, elucidating how constraints operate at different levels of group interaction. The authors further explore the psychological processes through which constraints influence teamwork and present novel theoretical models that account for the ways in which constrained environments can engender productive synergies and innovation within teams.

Another significant dimension concerns the ethical implications of constraints in creative processes. The authors explore how constraints can be strategically manipulated to direct or control creativity, raising essential ethical considerations. For example, corporate constraints are often deliberately structured to shape consumer behaviour, while educational policies impose standardization measures that either stimulate or stifle students' creative capacities. These discussions underscore the importance of critically assessing the intentional application and potential consequences of constraints across various fields. Furthermore, the book explores the philosophical ramifications of imposed constraints engaging with debates surrounding the balance between intellectual property protections and the open dissemination of knowledge in the information economy era. Beyond synthesizing existing research, it provides practical guidance on how to harness constraints to maximize creative output. This section is particularly valuable for educators, leaders, researchers, and industry professionals seeking to effectively navigate and leverage structural and psychological constraints in their respective fields. Readers are also presented with strategic methodologies for transforming perceived limitations into opportunities for innovation, and reframing constraints as productive rather than restrictive forces. The final chapters offer thought-provoking discussions on how anticipated technological advancements and evolving societal structures may introduce novel constraints that will fundamentally reshape the creative landscape in unforeseen ways.

Ultimately, this volume represents a masterful and exhaustive study of the intersection between creativity and constraints, a topic of fundamental importance within creativity research. The theoretical insights and empirical findings provided throughout the book reveal that constraints are not merely obstacles to be overcome but are, in many cases, essential drivers of creative thought and action. By systematically elucidating the underlying mechanisms through which constraints shape creativity, the book makes an indispensable contribution to the field, serving as an essential resource for scholars, practitioners, and policymakers alike.