The Social Environment of Creativity

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1 Introduction

We can consider the relationship between creativity and the environment in several ways. First, creative ideas never stem from the void. Some kind of input, at some given time, is necessary for the creative process to unfold, such as an outside problem to be solved creatively, or pieces of knowledge originally combined. Next, we must also acknowledge the role of the environment in the development of the cognitive and emotional resources the individual will use during the creative act. Among other things, our present mental and emotional abilities have been shaped by the social and physical environment of our developmental years of life.

Last, but not least, the environment is determinant in the "production" or final phase of the creative process, as the product or idea must be accepted by specific social groups (such as gatekeepers in Csikszentmihalyi's model of creativity, 1988) to gain the social label "creative". In fact, one way to operationalize creativity is based on this idea of creativity as a social judgment (Amabile, 1996). This facet

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of the relationship between environment and (the acceptance of) creativity will be addressed in the chapter on assessment.

In spite of the relevance of studying the environment of creativity (the "Press" factor, within the four P categorization), data on research in creativity journals give a quite different picture. As we pooled indexed articles from the major creativity research peer-reviewed journals, results showed that the environmental or contextual perspective is not such a priority: less than 5% of articles were recorded with "environment" as a keyword, less than 1% on "social environment". This lack of effort toward gaining increased knowledge about the environment is detrimental to an exhaustive comprehension of the creative process. For Csikszentmihalyi (2006), there is a common, perhaps ontological bias for psychology to study creativity with the lens focused on the individual and less on the environment. Thus our understanding of the multivariate creative process will be more comprehensive with a true contribution of contextual/environmental variables.

This chapter will discuss how the social environment impacts the development of creativity. This implies first to differentiate social from physical environment, which might be an extremely difficult task, for the reason that past and present physical environments of creative individuals are and have been permanently shaped and selected by cultural processes that are also social in nature. As a result, the present chapter, while concentrating on the various social variables at play in the developmental processes of the creative person, such as the presence of siblings, peers, parents, schooling experiences, work environments and culture at large, will also have to discuss how these variables indirectly affect the creative process via the physical environments of the person.

As presented in this volume, comparing and contrasting the numerous fields of creative endeavors is an ongoing process in creativity research. For a broader perspective, we wish here to adopt an inclusive definition of the creative process, and consider the short and long-term processes that lead to creative ideas, discoveries, or objects. In the short term, we must consider the immediate influences the social groups have on the creator in the process of being/becoming creative (what kind of advice can he get, especially in the first part of the process? Is the social environment willing to accept novelty?). Longer-term processes are individual developmental processes (the school-child interaction) and more macro-social processes (such as cultural evolution(s)).

One useful framework for investigating the social contexts in creativity is Bronfenbrenner's ecological systems theory (1979, 1986), which proposes that the individual's psychological development results from interactions with different types of environmental systems that range from local to global. Consider how a better understanding of each of these systems could help us grasp the effect of social environment variables on the individual's development of creativity.

First are *microsystems*, or social groups in which the individual participates, such as family, peer groups, schools, as well as religious communities, workmates and neighborhoods.

Next are *mesosystems*, which represent the relationships and interactions between microsystems, as experiences in each of these groups affect experiences in the other

circles. At times these interactions are very intricate, such as private schooling within a religious perspective and community, or employers that provide for virtually all of their employees' living needs (housing, dating services, schooling of children, cultural outgoings, *etc.…*). Third are *exosystems*, or parameters of the environment that only indirectly affect human development. These systems are for instance the work environment of the parents (what is the status of creativity in the parents' jobs ?), that may induce specific representations of creativity in the rearing practices (cf. the notion of social reproduction, Bourdieu & Passeron, 1964, 1970). The fourth level is the cultural level or *macrosystem*, which includes variables like socioeconomic status, ethnicity, as well as culturally shared values and identity. Last in Bronfenbrenner's model comes the *chronosystem*, which represents the lifelong evolution of the four previous systems over time. This last and overall system is hard to grasp, because it includes many multivariate interactions and retroactions with strength varying in time. Yet the notion of change in the environment with time is central in our conception of creativity, which is the result of lifelong experience, and which occurs in an evolving environment. Even if some environmental variables cannot be easily categorized in Bronfenbrenner's model, we will adopt it as a useful framework to describe the various influences of past and present social worlds on the individual's creativity.

2 Microsystems

2.1 The Family

2.1.1 Birth Order

Let's first consider the family microsystem. Demographic differences such as the presence or absence of siblings, their gender, age differences and birth order have been examined with respect to creativity development (Baer et al., 2005). Birth order have been discussed at length in recent years after the publication of Sulloway's book "Born to rebel" (1996, see also Zweigenhaft & Von Ammon, 2000), which asserted, based on historical case studies, that laterborns were more supportive of radical rebellions than were first-borns. This birth order effect Sulloway claimed was later nuanced, saying that it was strongest within families and people living together, and less potent outside family contexts (Sulloway & Zweigenhaft, 2010, p. 12). For example, Forland et al. (2012), using historical data from the 60s student protests in Norway ($n = 1246$), found no birth order effect, with upbringing in an urban environment and parental personality and values as the strongest predictors of the child's subsequent radicalisation. The creativity-birth order connection is indeed a controversy, as several empirical studies failed to replicate Sulloway's findings, while others found an over-representation of first born in other creative

fields (for example, in musical creativity; Schubert et al., 1977). Using an experimental approach, Baer and collaborators (2005) found that creative potential, based on teammates' evaluation of undergraduates' creative responses to human resources and product development problems, was positively associated to the first birth rank, but only when the firstborn had either a large group of siblings close of age, or a large group of siblings of opposite sex. Here is one of many observations of the complexity of doing research in creativity, as we see that examining the effect of a single environmental microsystem entails to fully take into account the interactions between variables within that system, not considering the interactions with the other systems.

2.2 Parenting Style

The link between parenting style and creativity has also been scientifically investigated. However, no data has been able to fully falsify one of two opposing views regarding the role of parenting styles in creativity development. On the one hand, experimental data on child and adolescent creativity has shown that a nurturing parental environment (such as Baumrind's [1966] authoritative style) was positively associated with creative potential (Harrington et al. 1987; Lubart et al., 2003; Mouchiroud & Bernoussi, 2008), whereas an authoritarian parenting style was negatively associated with the child's creative potential (Fearon et al., 2013). This is in accordance with developmental perspectives such as Carl Rogers', that of a positive effect on child development of a family environment that provides both psychological safety and psychological freedom, an environment that is psychologically scaffolding, encouraging and with delayed criticism. In the same vein, Mumford and Gustafson (1988) propose that the environment most favorable to creativity development is the one in which children can learn that some stability exists, but also that modification can be possible as a result of one's own action.

Yet an opposite view proposes that the family environment that is more likely to lead to creative offspring must include obstacles to be overcome, as a sort of problem solving exercises that will "train" the creator. In order to become creative, the child must learn to overcome hardship and be independent. Metaphorically speaking, the child facing family hardship is akin to the butterfly which needs the long and strenuous task of breaking through its cocoon to become able to properly fly into adulthood. Based on biographical data, authors such as Ochse (1990) thus found that a significant portion of creators came from "unstable" families or lacking emotional support (broken family, parents rejecting or absent).

These two contrasting results could be interpreted in terms of the type of data considered to assess creativity: In one former case, the creative potential of children in experimental studies; in the latter, reports and writings on the "actual" creativity of famous artists and inventors. As we cannot be certain that each member of the first group actually becomes part of the second after a few years, it could be said that the

former investigates "everyday creativity," whereas the latter is more concerned with "historical creativity" (Boden, 1990).

In sum, the family composition and functioning already shows us the complex interactive effects of social variables on the development of creativity, which entails a complex and interactive model of the creative process.

2.3 Peers

The influence of peers on creativity development can be of two kinds. First, dyadic relationships between peers can shape in part the psychological characteristics of the child. It can be extended that particular friendship during childhood also affects the creative personality of the individual. Second, peer groups can act as a sort of micro culture in the child's personality development, influencing it via group norms and evaluations. According to Harris (1995, 2009), peer groups have actually a strong influence on the child and adolescent personality development, stronger than the influence of both parents and school systems. She proposed a group socialization developmental model, whose validity is still under debate (see Vandell, 2000), as no empirical study has yet incorporated longitudinal designs and genetic controls together with all the possible social predictors of adult psychological characteristics. In spite of the absence of data, we should consider peers (both in close friendships as well as in the peers' social circles) as potential influences on subsequent creativity careers.

2.4 Schooling

The school environment is one additional microsystem that impacts creativity development. Some educators have actually crafted curricula specially designed to foster creativity development (see Chapter "Creativity in the Classroom: Advice for Best Practices").

Before addressing the link between school environment and creativity, one particular teaching environment that must be discussed is homeschooling. This form of education has been growing steadily in the past decades in developed countries, yet to date no empirical research has been set to measure its potential effect on creativity. In a literature review of some of the educational, psychological and sociological impacts of homeschooling, Murphy (2014), while stating that research in this area is scarce and not exempt of sampling and/or methodological biases, provides evidence that homeschooled children do not on average score below children in regular or private schools when comparing performances in classical achievement tests, as well as in success in subsequent university graduation. On the contrary, some of the variables that usually significantly affect school achievement, such as family income and parental education, do not predict as strongly performances in the home

schooled children sampled. Last, the hypothesis of home schooled children socially at risk because of their "isolation" from the usual school social circle is not supported by research. Home schooled children and adolescents seem to demonstrate appropriate pro-social behaviors and social responsibility, while homeschooled families on average are more socially and civically engaged in their community than are regular families. These interesting results again point at the need for longitudinal research on the effect of home school environment on creative life-long achievements.

Class schooling, or school in the classroom, can also host various kinds of learning environments. In a study on the development of creative abilities in primary school children, Besançon and Lubart (2008) contrasted traditional pedagogy from alternative pedagogy in learning environments. In the traditional type, knowledge is mainly provided by the teacher ("the authority figure"), and this knowledge can be at time quite remote from everyday life. Next, pupils are ranked by a grading system, which may impact on self-perception and motivation to pursue excellence. Last, in traditional pedagogy, little time is devoted to divergent thinking, an essential aspect of creative abilities. Instead, traditional pedagogy emphasizes teaching of classical subjects such as math or language. In contrast, alternative pedagogies promote the acquisition of knowledge through actions, so that the role of teachers is here to provide learning contexts that will foster the motivation to learn. Knowledge is considered the child's own construction (or creation). In addition, alternative pedagogies usually put more emphasis on the development of imagination, via more creative and/or artistic activities. Empirical research on the influence of regular vs alternative school environments on creativity have been rare, and results are still non-conclusive. In their study, Besançon and Lubart (2008) compared regularly schooled children with ones enrolled in two alternative schools, following the pedagogy proposed by Montessori (1958/2004) or by Freinet (1990), using both divergent thinking and integrative tasks. Complex pattern of results emerged, with observed influence of pedagogy, teacher and type of creativity measurement. To sum up, children in alternative pedagogy showed on average higher creative potential than children in traditional pedagogy. In addition, their longitudinal design showed progression of creativity measures for children schooled in the Montessori school after at least one year of schooling.

In future research, studies on the effect of the types of pedagogy should be investigated together with types of teachers, as their psychological characteristics can affect their representations and implementations of teaching methods (Cheung & Leung, 2013). Even though most teachers declare they foster creativity in their classroom, this intention often contradicts their conception of the "good" student, conceived as one that complies to the rules and does not question authority (Verkasalo et al., 1996). Cropley (1997) identifies traits common to "creativity school teachers": they encourage independent learning, they encourage cooperation in and outside of the classroom, they motivate pupils to acquire the basic knowledge that can be later creatively combined, they foster flexible thinking by giving them a large array of learning contexts, they delay evaluation and favour the pupil's own self-evaluation, they take seriously pupils' questions and suggestions, and they help pupils overcome their frustrations and failures when the creative process does not lead (or takes time to lead) to a creative production. (see Kaufmann chapter in this volume).

2.5 Mentors

One last learning environment in the early years must be discussed, the one provided by the presence of a mentor. Here again the empirical evidence is scarce, yet the positive effect of mentorship has been observed in some studies (Nakamura et al., 2009; see also Torrance's 22 year longitudinal study, 1983) on the number of creative contributions a person produces in a lifetime. In the same vein, Zukerman (1983) notes that most Nobel Laureates reported they have had mentors to help them lead their career.

2.6 The Work Environment

During adulthood, other more proximal variables affect the probability of occurrence of creativity. The type of professional activity will predict in part the possibilities for creative accomplishments. Whereas (every minutes of) some occupations are extremely structured through strict procedures that cannot be circumvented, thus leaving virtually no room for creativity, others come with an environment specially designed to foster creative ideas: quick access to information and latest technological tools, a work atmosphere that can offer both stimulation (in the preparation and illumination phases of the classical creative process model) and calmness (in the incubation and verification phases), as well as a relative freedom from temporal constraints. As this ideal work environment is not often observed in most firms, it is no wonder why creators and inventors often "individualize" their work environment, by creating their own company.

Even if most work environments are highly structured and leave little room for creative behaviors, creativity still manages to find its way through the work constraints, whatever the individual's position in the firm's hierarchy (see examples in Lubart et al., 2003). In addition, in many cases, work problems cannot be solved using the usual procedure. For those types of problems (i.e., real problems), a creative solution is always needed.

To sum up this part on the environmental micro-systems potentially acting on creativity development, more research is needed to isolate the variance explained by each systems (the effect of neighborhood and religious local institutions in creativity development remains to be empirically tested). Yet, we must consider the possibility of interactions between micro-systems, that is, mesosystems in Bronfenbrenner's ecological model.

3   Mesosystems

Mesosystems are defined as interconnections between micro-systems. In spite of its relevance in a multivariate model of creativity, studies investigating mesosystems are even scarcer than those investigating microsystems. In one study however, Mouchiroud and Bernoussi (2008) examined how children's performances in the domain of social creativity could be linked to social and individual variables. Among other results, they reported that both popularity in the school peers group and type of parental education predicted a significant portion of variance of creative potential.

Future directions for research on mesosystems should begin with the exploration of a matrix that enumerates all the possible interactions: for example, the interaction between family and school (are parents involved in the school life? Are teachers' judgments of pupils' abilities biased by their previous experiences with older siblings ?), or between family and peers (are parents favoring interactions between their child and peers, for example via their willingness [or not] to invite their children's peers at home?).

4   Exosystems

Exosystems deal with environmental variables that can indirectly affect the child's psychological development, such as changes in parental work environments (for example, how a promotion at work can affect the family environment), or changes in the neighborhood (for example, how the building of a new factory, or the closure of one, can impact the child's microsystems: strong variations in the school's functioning, with opening or closure of classes, evolution in the child's peer groups, …). In turn, each of these changes in exosystems can impact the development of creativity. For example, in the previous example of the parents' work environment, a promotion could lead both to less financial pressure on the family, which could result in a richer and more varied physical environment, possibly a good thing for creativity, and to longer working hours, leading to less interactions between the child and his or her parent(s), a change that could be detrimental to creativity development. Unfortunately, even though the previous examples illustrate the potential influence of exosystems on creativity, to our knowledge no empirical study has been devoted to this type of investigation.

5 Macrosystem and Chronosystem: The Influence of Culture

The culture macrosystem refers to the thoughts, behaviors, traditions, values, representations and symbols people share. Culture is the variable with the larger spectrum of influence on creativity, as it impacts societal variables, but it also indirectly affects narrower systems, such as the neighborhood, family and school systems. Cultural factors that can influence creativity are the era in which the child grows, the importance of religion, the current political ideologies and type of policies, as well as the socio-economic status (SES) of the parents, which includes not only financial, but also social and cultural capital. Concerning the SES variable, empirical evidence supports the existence of a creativity gap, similar to the well-known academic achievement gap (Dai et al., 2012; Dudek et al., 1994; Karwowski, 2011).

Culture structures the way a group of persons will interact with its physical and social environment, influencing both the type of experiences the child will have and how these experiences will be interpreted. The culture of one community is learned from one generation to the other, yet it evolves according to cultural innovations created within or borrowed from other cultures. This change in time suggests that culture should be considered a macrosystem as well as a chronosystem. Yet beside temporal variability, we must acknowledge the existence of inter-cultural variations that have a strong impact on creativity. Several empirical studies have investigated the impact of cultures on the creative potential. More than differences between cultures, researchers emphasize the fact that exposure to multiple cultures can have a significant impact on divergent thinking and creative thinking (Çelik et al., 2016; Cheung et al., 2016; Forthmann et al., 2018; Lau et al., 2013; Storme et al., 2017a, 2017b). Several explanations have been suggested, focusing mostly on the impact of cultural complexity on executive functions (Tadmor et al., 2009). Though interesting and informative, such studies are often limited because they rely on a culturally influenced definition of what creativity is. Indeed, studies show that each culture has its own conception of what is a creative act. In addition, the cultural framework acts on the level of creative activities as on the possibilities to behave creatively, depending on the domains of expression.

5.1 The Cultural Definition of Creativity

The definition of creativity that is referred to as the "consensual" definition refers to the idea of a creative act that is both original and adapted to the task. Yet this definition is rooted in the European cultures. One crucial aspect of this definition lies in the tangible nature of the creative act: the creative process leads to the production of an "object", which characteristics can be assessed by a panel of judges (Amabile, 1996). This conception of creativity centered on the creative product is coherent with the "occidental" perspective on creation, underlined by a continuous motion toward

a new achievement, and incidentally by a continuous growth of innovations. This can be traced in part back to Genesis, which lasted six days, with each working day producing significant creations: earth, animals, etc. From a precise zero point (the void, in most western tales), the process leads to a concrete product, the universe, which the divine creator finds satisfying.

There are however other conceptions of creativity than those derived from western cultures. Among the most contrasted ones are the perspectives originating in the oriental or Asian cultures. In this case, creativity is less related to the production of novel objects than to the truthfulness of the discovery process. Creativity corresponds to a feeling of plenty, to the establishment of a link with a traditional world, to the expression of a deep self, of an ultimate reality (or an ultimate illusion, in the Buddhist framework). Meditation takes a central role, by helping the individual to discover the true nature of one object, one event, one motion and ultimately of one's own consciousness. In the artistic field, Li (1997) proposes a spatial metaphor to account for the east vs. west contrast in conceptualizing creativity: artistic expression would be "vertical" in eastern cultures, in which novelty derives from well-defined fundamentals, whereas western cultures would be more "horizontal", as they authorize novelty in virtually every aspects of the piece of art.

Promotion (or prohibition) of creativity varies dramatically from one culture to another, and from one field to another within a given culture. In his historiometric research, Simonton (1997) shows for example that the presence of eminent creators in one field in a given generation predicts in part the level of creativity in the same field in the next generation. In addition, increased creative activity can also be predicted by the proximity of cultural, commercial or industrial places.

The values transmitted by the cultural environment stimulate or impede creative activities, depending on the importance given to the individual or to the group. The more individualistic societies (such as North America and Europe), tend to consider the individual as an autonomous and independent person, contrary to more collectivist societies (such as Asian countries), which define the individual first with reference to his or her social context (social and family norms). At the psychological level, this cultural framework will influence the way the individual will differentiate himself or herself from other members of the community (the individuation process). In a study on the artistic creativity of American and Malaysian students, Burns and Brady (1992) note that these two groups differ in the expression of their need for individuation, in their use of rare and innovative materials, as well as in their endorsement of original behaviors or ideas. In the same vein, Ng (2001) states that the differences between eastern and western cultures in terms of creativity can be largely explained by the individualism-collectivism cultural variable.

Related to the individualism-collectivism continuum is the place given to the respect of traditions. Some cultures more than others allow for behaviors that depart from traditions. There also exists cultural beliefs and attitudes that promote or hinder creativity. In the western world, Adams (1986) identified some beliefs that can block creativity: "fantasy and reflection are a waste of time", "adults should not be playing", "reasoning, logic and success are positive; intuition, emotions and failures are negatives".

5.2 The Cultural Definition of Creative Products

Perhaps as much as they explain the activity of creating, different cultural contexts shape the way that creative tasks and creative problems are defined. By changing the criteria for judging creative products, culture does not only change creativity evaluations, but also redefines creativity and changes an individual's creative activity. Indeed, one of the components of culture is the definition of creative or aesthetic "standards" to define superior creative achievements. For example, in the domain of figural creativity, in spite of (incomplete) evidence of cultural invariance in evaluations of quality of execution (see Myszkowski & Zenasni, 2020), different cultural environments define aesthetic value differently (e.g., one culture may favor round shapes or symmetry more than the other), orienting the individual's creative products towards (or in opposition to) a form of "good taste", which varies depending on the cultural context (Myszkowski et al., 2020).

This relationship between culture-specific standards and the creative activity is a probable explanation for artistic movements: Specific standards are favored and even sometimes overtly promoted (consider how Vinci's *Vitruvian Man* or Dürer's *Man Drawing A Lute* are at the same time works of art and prescriptions to artists that shape creativity), and creators respond to these standards. They may respond to standards in different ways, such as following them, expanding them, refining them, pastiching them or transgressing them, but either way, their creative activity is often essentially a response to (and thus, in some ways, a product of) the cultural environment. Empirical research suggests that the ability to recognize aesthetic standards is indeed a predictor of creative potential (Myszkowski et al., 2014; Myszkowski & Zenasni, 2016), that creating new objects is often based on the use of "natural" and "classical" rules observed in the environment (Ward, 1994; Ward & Sifonis, 1997; Ward et al., 2004), and that the evaluation of one's creative ideas is in fact a component of the creative process itself (Cropley, 2006). This series of results, advocates for the idea that culture, through the constant production and refining of standards, provides creators with a path towards a product that is likely to be judged creative—and, more generally, favorably—in a specific cultural context, and therefore defines and orients creative products towards (or away from) specific features.

5.3 The Shaping of the Social Environment via New Cultural Tools

In westernized cultures, the rate of technical innovations (chronosystem) has set a rapid pace of change in the social environment, that in turn affects creativity and its development. Technologies, particularly information technologies, are new cultural artefacts that have taken an increasingly central place in children's environment, in the time spend in the family as well as with peers and in school. Data shows that today children and adolescents watch more TV, play more video games and stay longer on

the web than before, and they do this at an increasingly younger age (see Calvert & Valkenburg, 2013). As the evidence generally establishes a negative relationship between media use, particularly television, and the development of creativity, more research is needed to assess the impact of these tools on the micro and meso systems we discussed above. As Gaudin (2005) states, we can draw opposite hypotheses regarding this impact. On the one hand, due to the multiple solicitations of communication tools, is there a risk for the developing individual to grow schizoid symptoms, that is multiple personalities scattered between several "software programs"? On the other hand, since the individual is being trained to permanently negotiate between these multiple processes, thus replacing the affirmation of a unitary "self", might the collective processes of creativity become more "natural" and more desirable than centralized creativity structures? Again longitudinal research is needed to support one of these two opposite predictions.

6 Conclusion

The multivariate model of creativity implies to investigate the numerous individual and contextual variables that can predict individual differences. This task is not a small one, as we only presented in this chapter multiple aspects of the social environment that could be associated with better creative performances. Even if the empirical evidence is scarce in this domain, we presented significant findings that link social environment variables to creativity and to its development. Yet how the environmental systems interact with the acquisition of individual resources necessary for creativity remains largely unexplored.

Research on creativity has made notable progress in improving our understanding of the creative process, but the individual/psychological approach alone is unable to fully grasp the complexity of this process. With the integration of the additional viewpoints provided by social perspectives, we should be able to benefit from a larger and more heuristic/comprehensive science of creativity.

References

Adams, J. L. (1986). *Conceptual blockbusting, a guide to better ideas*. Addison-Wesley.

Amabile, T. M. (1996). *Creativity in context*. Westview Press.

Baer, M., Oldham, G. R., Hollingshead, A. B., & Jacobsohn, G. C. (2005). Revisiting the birth order-creativity connection: The role of sibling constellation. *Creativity Research Journal, 17*(1), 67–77.

Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development, 37*, 887–907.

Besancon, M., & Lubart, T. I. (2008). Differences in the development of creative competencies in children schooled in diverse learning environments. *Learning and Individual Differences, 18*, 381–389.

Boden, M. A. (1990). The creative mind: Myths and mechanisms Weidenfeld. *Abacus & Basic Books, 4.*

Bourdieu, P., & Passeron, J.-C. (1964). *Les héritiers: les étudiants et la culture* [The inheritors: French students and their relations to culture]. Edition de Minuit.

Bourdieu, P., & Passeron, J.-C. (1970). *La Reproduction. Éléments pour une théorie du système d'enseignement* [Reproduction in education, society and culture]. Les Éditions de Minuit.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Harvard University Press.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*(6), 723–742.

Burns, D. J., & Brady, J. (1992). A cross-cultural comparison of the need for uniqueness in Malaysia and the United States. *The Journal of Social Psychology, 132*(4), 487–495.

Calvert, S. L., & Valkenburg, P. M. (2013). The influence of television, video games and the internet on children's creativity. In M. Taylor (Ed.), *The Oxford handbook of the development of imagination* (pp. 438–450). Oxford University Press.

Çelik, P., Storme, M., & Forthmann, B. (2016). A new perspective on the link between multiculturalism and creativity: The relationship between core value diversity and divergent thinking. *Learning and Individual Differences, 52*, 188–196.

Cheung, R. H. P., & Leung, C. H. (2013). Preschool teachers' beliefs of creative pedagogy: Important for fostering creativity. *Creativity Research Journal, 25*(4), 397–407.

Cheung, P. C., Lau, S., Lubart, T., Chu, D. H., & Storme, M. (2016). Creative potential of Chinese children in Hong Kong and French children in Paris: A cross-cultural comparison of divergent and convergent-integrative thinking. *Thinking Skills and Creativity, 22*, 201–211.

Cropley, A. J. (1997). Fostering creativity in the classroom: General principles. In M. A. Runco (Ed.), *Creativity research handbook* (Vol. 1, pp. 83–114). Hampton Press.

Cropley, A. (2006). In praise of convergent thinking. *Creativity Research Journal, 18*(3), 391–404.

Csikszentmihalyi, M. (1988). Society, culture, and person: A systems view of creativity. In R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 325–339). Cambridge University Press.

Csikszentmihalyi, M. (2006). *La créativité: Psychologie de la découverte et de l'invention* [Creativity: Psychology of discovery and invention]. Robert Laffont.

Dai, D. Y., Tan, X., Marathe, D., Valtcheva, A., Pruzek, R. M., & Shen, J. (2012). Influences of social and educational environments on creativity during adolescence: Does SES matter? *Creativity Research Journal, 24*(2–3), 191–199.

Dudek, S. Z., Strobel, M., & Runco, M. A. (1994). Cumulative and proximal influences of the social environment on creative potential. *Journal of Genetic Psychology, 154*, 487–499.

Fearon, D. D., Copeland, D., & Saxon, T. F. (2013). The relationship between parenting styles and creativity in a sample of Jamaican children. *Creativity Research Journal, 25*(1), 119–128.

Forland, E., Korsvik, T. R., & Christophersen, K.-A. (2012). Brought up to rebel in the sixties: Birth order irrelevant, parental worldview decisive. *Political Psychology, 33*(6), 825–838.

Forthmann, B., Regehr, S., Seidel, J., Holling, H., Çelik, P., Storme, M., & Lubart, T. (2018). Revisiting the interactive effect of multicultural experience and openness to experience on divergent thinking. *International Journal of Intercultural Relations, 63*, 135–143.

Freinet, C. (Ed.). (1990). *Co-operative learning and social change: Selected writings of Celestin Freinet*. Ontario Institute for Studies in Education Press.

Gaudin, T. (2005). *La prospective*. Presses Universitaires de France.

Harrington, D. M., Block, J. H., & Block, J. (1987). *Testing aspects of Carl Roger's theory of creative environments: Child-rearing antecedents of creative potential in young adolescents.* Cambridge University Press.

Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. *Psychological Review, 102*, 458–489.

Harris, J. R. (2009). *The nurture assumption: Why children turn out the way they do.* Touchstone.

Karwowski, M. (2011). It doesn't hurt to ask…But sometimes it hurts to believe: Polish students' creative self-efficacy and its predictors. *Psychology of Aesthetics, Creativity, and the Arts, 5*(2), 154–164.

Lau, S., Cheung, P. C., Lubart, T. I., Tong, T. M., & Chu, D. H. (2013). Bicultural effects on the creative potential of Chinese and French children. *Creativity Research Journal, 25*(1), 109–118.

Li, J. (1997). Creativity in horizontal and vertical domains. *Creativity Research Journal, 10*(2–3), 107–132.

Lubart, T. I., Mouchiroud, C., Tordjman, S., & Zenasni, F. (2003). *La psychologie de la créativité* [Psychology of creativity]. Armand Colin.

Montessori, M. (1958/2004). *Pédagogie scientifique, Tome 2: éducation élémentaire* [Scientific pedagogy, vol 2: Elementary education]. Desclée de Brouwer.

Mouchiroud, C., & Bernoussi, A. (2008). An empirical study of the construct validity of social creativity. *Learning and Individual Differences, 18*(4), 372–380.

Mumford, M. D., & Gustafson, S. B. (1988). Creativity syndrome: Integration, application, and innovation. *Psychological Bulletin*, *103*(1), 27–43. https://doi.org/10.1037/0033-2909.103.1.27

Murphy, J. (2014). The social and educational outcomes of homeschooling. *Sociological Spectrum: Mid-South Sociological Association, 34*(3), 244–272.

Myszkowski, N., Çelik, P., & Storme, M. (2020). Commentary on Corradi et al.'s (2019) new conception of aesthetic sensitivity: Is the ability conception dead? *British Journal of Psychology*, *111*(4), 659–662.

Myszkowski, N., Storme, M., Zenasni, F., & Lubart, T. (2014). Is visual aesthetic sensitivity independent from intelligence, personality and creativity? *Personality and Individual Differences, 59*, 16–20.

Myszkowski, N., & Zenasni, F. (2016). Individual differences in aesthetic ability: The case for an aesthetic quotient. *Frontiers in Psychology, 7*, 750.

Myszkowski, N., & Zenasni, F. (2020). Using visual aesthetic sensitivity measures in museum studies. *Frontiers in Psychology, 11*, 1–4.

Nakamura, J., Shernoff, D., & Hooker, C. (2009). *Good mentoring.* Jossey-Bass.

Ng, A. K. (2001). *Why are Asians less creative than westerners?* Prentice-Hall.

Ochse, R. A. (1990). *Before the gates of excellence: The determinants of creative genius.* Cambridge University Press.

Schubert, D. S. P., Wagner, M. E., & Schubert, H. J. P. (1977). Family constellation and creativity: Firstborn predominance among classical music composers. *The Journal of Psychology, 95*, 147–149.

Simonton, D. K. (1997). Creative productivity: A predictive and explanatory model of career trajectories and landmarks. *Psychological Review, 104*, 66–89.

Storme, M., Çelik, P., Camargo, A., Forthmann, B., Holling, H., & Lubart, T. (2017a). The effect of forced language switching during divergent thinking: A study on bilinguals' originality of ideas. *Frontiers in Psychology, 8*, 2086.

Storme, M., Lubart, T., Myszkowski, N., Cheung, P. C., Tong, T., & Lau, S. (2017b). A cross-cultural study of task specificity in creativity. *The Journal of Creative Behavior, 51*(3), 263–274.

Sulloway, F. J. (1996). *Born to rebel: Birth order, family dynamics, and revolutionary genius.* Pantheon.

Sulloway, F. J., & Zweigenhaft, R. L. (2010). Birth order and risk taking in athletics: A meta-analysis and study of major league baseball. *Personality and Social Psychology Review, 14*, 402–416.

Tadmor, C. T., Tetlock, P. E., & Peng, K. (2009). Acculturation strategies and integrative complexity the cognitive implications of biculturalism. *Journal of Cross-Cultural Psychology, 40*(1), 105–139.

Torrance, E. P. (1983). Role of mentors in creative achievement. *The Creative Child and Adult Quarterly, 8*, 8–15.

Vandell, D. L. (2000). Parents, peer groups, and other socializing influences. *Developmental Psychology, 36*(6), 699–710.

Verkasalo, M., Tuomtvaara, P., & Lindeman, M. (1996). 15-year-old pupils' and their teachers' values, and their beliefs about the values of an ideal pupil. *Educational Psychology*, *16*(1), 35–47. https://doi.org/10.1080/0144341960160103

Ward, T. B. (1994). Structured imagination: The role of category structure in exemplar generation. *Cognitive Psychology, 27*(1), 1–40.

Ward, T. B., Patterson, M. J., & Sifonis, C. M. (2004). The role of specificity and abstraction in creative idea generation. *Creativity Research Journal, 16*(1), 1–9.

Ward, T. B., & Sifonis, C. M. (1997). Task demands and generative thinking: What changes and what remains the same? *Journal of Creative Behavior, 31*(4), 245–259.

Zukerman, H. (1983). The scientific elite: Nobel laureates' mutual influence. In R. S. Albert (Ed.), *Genius and eminence* (pp. 241–252). Pergamon Press.

Zweigenhaft, R. L., & Von Ammon, J. (2000). Birth order and civil disobedience: A test of Sulloways's 'born to rebel' hypothesis. *The Journal of Social Psychology, 140*(5), 624–627.