Review article

Hotspots and research trends of the 'dark side of creativity' in the last decade

Jie Zhou [a], Bin Zhao [b], Meirong Zhang [c,*]

[a] *Department of Educational Psychology, School of Education, Jeonju University, Jeollabuk-do, 55069, South Korea*
[b] *School of Public Administration, Heilongjiang University of Science and Technology, Harbin, 150020, China*
[c] *Changzhou Mechanical and Electrical Vocational and Technical College, Sports Department, Special Research Department, 213164, China*

A B S T R A C T

Creativity can function as a catalyst for social development; however, it also possesses a destructive potential. In recent years, scholars have discovered that creativity harbors a dark side, counterbalancing its positive aspects. This study aims to offer a comprehensive understanding of the dynamics surrounding research on the 'dark side of creativity', disseminate the findings, and provide a valuable reference for future researchers in the field. To achieve this objective, bibliometric methods were employed to visualize the overall landscape of the literature, identify prevailing topics, significant works, highly cited authors, and forecast future trends. The following conclusions were drawn: (1) Society presently places substantial importance on investigating the 'dark side of creativity'. (2) Research exploring this facet of creativity spans across multiple disciplines, fields, and geographical locations. (3) The 'dark side of creativity' exhibits a close association with psychological states and the social environment. (4) Investigations into the 'dark side of creativity' reveal a scientific, diversified, and open research trajectory. (5) Future research is expected to focus on themes such as 'anxiety', 'malevolent creativity', 'COVID-19', 'trait', 'gender', 'depression', 'strategy' as emerging trends.

1. Introduction

Creativity possesses the ability to serve as a catalyst for social development while simultaneously harboring a destructive potential. Although the topic of creativity has garnered significant attention since its inception, most studies have predominantly focused on its 'bright side'. Undoubtedly, creativity plays a positive role in societal progress; however, it is imperative to acknowledge that creativity can also manifest in negative ways, leading to outcomes such as theft, vandalism, and social aggression [1]. Specifically, creativity, as an intrinsically human phenomenon, exhibits a dark side [2].

The 'dark side of creativity' encompasses a phenomenon that pertains to the utilization and development of creativity in a manner that, whether intentionally or unintentionally, yields a detrimental or even harmful effect on individuals and society [3]. Based on this definition, the 'dark side of creativity' manifests itself in two primary domains:

---

* Corresponding author.
  E-mail address: zmr202101078@jj.ac.kr (M. Zhang).

(1) From a results-focused perspective, many studies investigating creativity in this dimension primarily focus on the adverse outcomes arising from creative behavior. It includes intentional and unintentional creative behavior, which are respectively termed "malevolent creativity" and "negative creativity".

The concept of "malevolent creativity" was introduced by Cropley [4] and defined as the deliberate utilization of creativity to achieve harmful objectives. This concept challenged the conventional belief that creativity is inherently associated with positive contributions, emphasizing its potential connection to negative behaviors. Zhe [5] further elucidated this phenomenon by contending that malevolent creativity entailed purposeful harm to an entity or being driven by malevolence to attain certain advantages. Thus, creativity manifests a "dark side", and "malevolence creativity" serves as a prominent exemplification. Illustrative instances of malicious creativity encompass the construction of explosive devices, leadership roles within criminal organizations, and the defamation of competitors to gain a position of power [6].

Conversely, "negative creativity" has been coined to depict the application of creative processes that inadvertently result in negative consequences, potentially causing harm to others [7]. Gino and Ariely [8] demonstrated that creativity enhanced cognitive flexibility, thereby exerting an adverse influence on ethical conduct. Their findings revealed that individuals with high levels of creativity tended to exhibit a greater propensity for engaging in dishonest behaviors. Beaussart [9] highlighted the possibility that nurturing creativity might lead to the violation of social norms and expectations due to the encouragement of unconventional thinking. Breidenthal [10] argued that creative employees were prone to arousing jealousy and experiencing rejection from their colleagues. Additionally, empirical experiments have provided evidence substantiating a connection between creative personalities and increased inclinations towards deceitful practices and persuasive capabilities, further underscoring the dark side of creativity [8].

(2) Cause-based perspective, i.e. the factors that trigger creativity are negative, such as anxiety, stress, dark personality traits, etc., rather than positive factors like happiness, support and pleasure.

Numerous studies have demonstrated that negative factors, such as dark personality traits, a dark environment, approaching avoidance motivation, negative emotions, aggressive behavior, and low emotional intelligence can trigger creative behavior [11–13]. Schizophrenia has also emerged as a significant variable in understanding the relationship between creativity and the development of mental illness, with negative schizophrenic characteristics exhibiting a significant association with creativity [14]; Richards [15] proposed the hypothesis that certain individuals with genetic predispositions to genetic disorders possess a compensatory advantage in terms of creative potential.

Despite some exploration into the dark side of creativity, the research remains insufficient compared to extensive literature on the 'positive side of creativity'. A word analysis of terms associated with 'creativity' revealed that out of 120 words, only five were classified as 'negative' (e.g., malicious, dark), while the majority were positive (e.g., active, useful) or neutral (e.g., realistic, objective) [16]. Consequently, negative facets of creativity tend to be overlooked, especially when malicious acts are perpetrated under the guise of creativity (e.g., exploitation, inequality, environmental pollution, information security, etc.). Therefore, it is crucial to pay attention to and explore the 'dark side of creativity'. The objective of this study is to comprehensively analyze and consolidate research achievements in this field using bibliometrics techniques, identify the developmental characteristics and overall trends, analyze the evolution of the 'dark side of creativity', and provide valuable references for future research by promoting scholarly advancements. To achieve these objectives, the following research questions were formulated:

(1) How is the research literature on the 'dark side of creativity' distributed overall?
(2) What are the emerging research hotspots pertaining to the 'dark side of creativity' in the past ten years?
(3) What are the anticipated future research trends and themes concerning in the 'dark side of creativity'?

2. Materials and methods

2.1. Data source

This study employs bibliometric visualization to analyze the research theme for several reasons.

(1) It ensures the comprehensiveness of the literature review. By utilizing bibliometric methods, we can systematically collect, organize, and summarize a vast body of relevant research literature. This approach enables a comprehensive and global exploration of research on the dark side of creativity, ensuring both breadth and depth in the review process.
(2) It guarantees objectivity and reliability in the literature research. Bibliometric methods serve as an objective and quantifiable research approach, employing various machine algorithms to provide evidence of relevant research on the dark side of creativity. By analyzing the indicators such as subject changes, citation status, author influence, literature influence. and publication age, we can evaluate the quality and reliability of the study while minimizing subjective biases.
(3) It allows for the analysis of research trends and evolution. Through the functions such as keyword evolution and sudden word detection, we can identify research hotspots and development directions in this field. This analysis helps researchers stay abreast of the latest progress in this field of the dark side of creativity and provides valuable reference for future research.

(4) It enables the extraction of interrelated knowledge groups within the literature. Utilizing bibliometric cooperative network analysis, keyword co-occurrence, co-citation, and other functions, we can identify related knowledge clusters, identify classic documents, and uncover likely collaborative groups. These insights can only be obtained through bibliometric visual analysis.

To ensure data quality, this study utilizes Web of Science (WOS) as the data source. WOS, developed by the American Institute for Scientific Information (ISI) in 1997, is currently the world's largest and most comprehensive academic information resource and influential database across various research fields. Due to its extensive time span, high-quality literature, and wide range of disciplines, WOS has become the most used database for bibliometric analysis. Therefore, selecting WOS as the data source ensures the quality and reliability of research objects, enabling the acquisition of credible interdisciplinary academic literature for comprehensive bibliometric analysis. Additionally, WOS offers powerful search and analysis tools, such as Citation Report, Author Search, and Journal Citation Reports, facilitating complex bibliometric analyses and providing visual and quantitative results.

This study follows the PRISMA framework, as shown in Fig. 1. The WOS core dataset was searched using keywords such as 'malevolent creativity', 'negative creativity', 'dark side of creativity' and 'negative side of creativity' to identify topics related to the dark side of creativity, aligning with the research context. Furthermore, to ensure data comprehensiveness, 'malicious creativity' (synonym of 'malevolent creativity') was included. The publication time of the literature is limited to the past ten years (that is, 2014–2023), and the retrieval date is July 20, 2023. Limit the types of articles, excluding Early Access, Book Chapters, Editorial Material, Meeting Abstract, Letter, Book, Book Review, Retracted Publication, a total of 166 articles. 1963 articles were screened out. Then, we read the abstracts of these 1963 literatures for secondary screening, and excluded 153 literatures that did not match the theme of the dark side of creativity. A total of 1810 documents were finally included in the bibliometric visualization analysis.

2.2. Tool

To comprehensively analyze the overall trends in the 'dark side of creativity' over the past decade, we utilized the scientific knowledge mapping visualization tools 'Citespace' with 'Vosviewer'. Citespace is a literature data visualization software developed by Professor Chaomei Chen from Drexel University, USA, based on the Java language environment. It allows for the exploration of knowledge network structures, evolutionary trends, and research frontiers [17]. Vosviewer, on the other hand, focuses on bibliometric network analysis and the construction of visual network diagrams. Citespace and Vosviewer present knowledge maps differently but complement each other in terms of analysis.

2.3. Procedure

This study was conducted in four stages, as illustrated in the flow chart (Fig. 2), ranging from data collection to visual presentation. Initially, a total of 2129 papers related to "The Dark Side of Creativity" were extracted from the WOS core dataset. After screening, 1810 papers were finally included for analysis. Parameters were determined as follows: time slide = 2 years, top N = 50, clipping = PathFinder, and clustering algorithm = LLR. A comprehensive overview of the literature and an analysis of research hotspots are
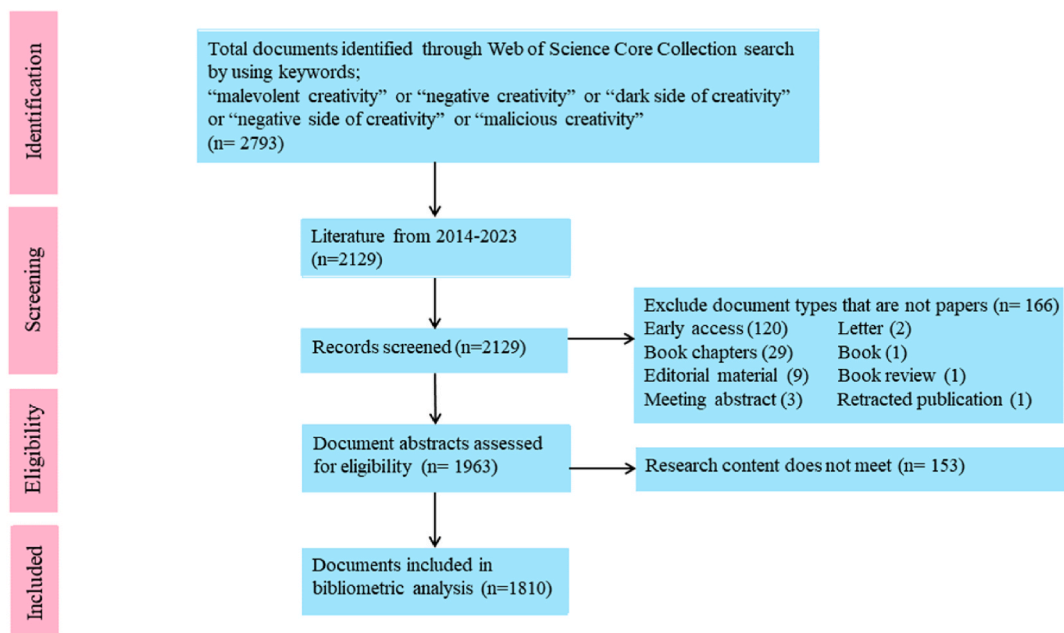

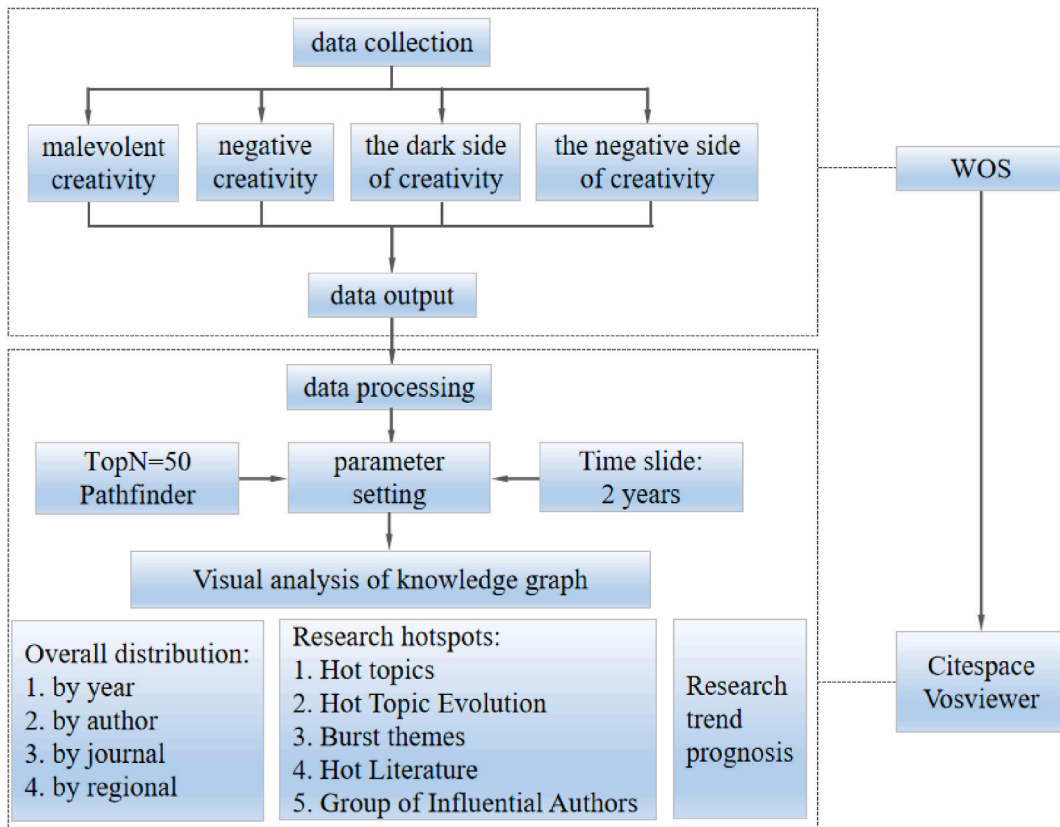**Fig. 1.** A PRISMA flowchart for bibliometric analysis and scoping of the dark side of creativity.
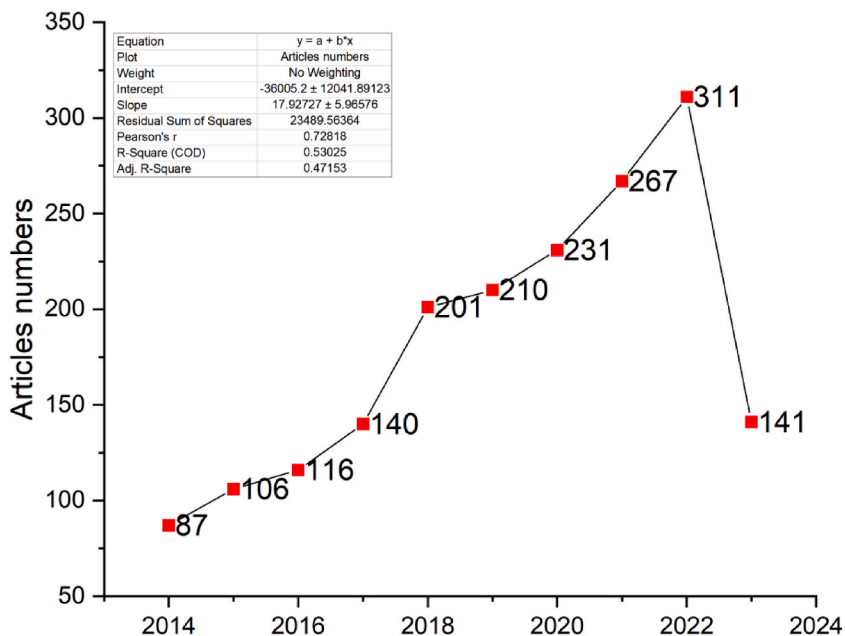
Fig. 2. Study flow chart.

Fig. 3. Annual statistics of the volume of articles issued.

presented below.

3. Results

3.1. Overview of the literature

3.1.1. Article distribution by year

The annual publication volume and trend of papers over the past decade regarding the dark side of creativity are presented in Fig. 3. The number of studies addressing this topic has seen a notable increase, rising from 87 publications in the initial year to 311 publications in 2022, resulting in a total of 1810 published articles. This indicates a significant growth rate of 257% over the ten-year period. The graph exhibits a positive linear trend (Y = 17.92727 ± 5.96576X −36005.2 ± 12041.89123), illustrating a consistent yearly increase in the number of published articles. These findings signify a sustained and growing academic interest in the 'dark side of creativity' in recent years, indicative of an improving research landscape that is poised to progress further in the future.

3.1.2. Article distribution by author

Lotka's law, proposed by Alfred J. Lotka in 1926, is an empirical law that characterizes the distribution of authors in academia and science [18]. According to this law, there exists a specific mathematical relationship between the number of scientific outputs (such as published papers.) of researchers and the number of authors in their respective fields. Lotka's law can be expressed as follows:

$$a_n = \frac{x}{n^2}$$

where x represents the number of authors who contributed only one paper per person.

n represents 1, 2, 3 …. …. n_{max}

a_n represents the number of authors per contribution (n numbers).

Lotka's law reveals that scientific research output follows a power-law distribution. It suggests that a minority of authors with a large number of scientific outputs typically have a greater impact, while the majority of authors exhibit lower productivity and impact. This distribution pattern has been observed across various disciplines, including education [19], computing [20], medicine [21], and others.

Fig. 4 illustrates the distribution of authors in accordance with Lotka's law. The horizontal axis represents the number of authors of articles found in the literature, while the vertical axis represents the proportion of different authors relative to the total authors. The dashed line in the figure depicts Lotka's law. The distribution shows that 89.3% of the total authors (4363 authors) have published a single paper each, 7.3% (358 authors) have published two papers each, 1.9% (94 authors) have published three papers each, and less than 2% (73 authors) have published four or more articles. Notably, the top two first authors with the highest number of publications are Fink A (12 articles, 0.7%) and Hao N (11 articles, 0.6%). The overall distribution trend conforms to the curve defined by Lotka's Law. This indicates that most researchers are in the early stage of exploring creativity, with a short research cycle and potential for further in-depth investigations. Only a small fraction of authors has engaged in extensive research on this topic.

3.1.3. Distribution by journal

Fig. 5 presents the distribution of journals publishing papers related to the dark side of creativity, focusing on the top ten core
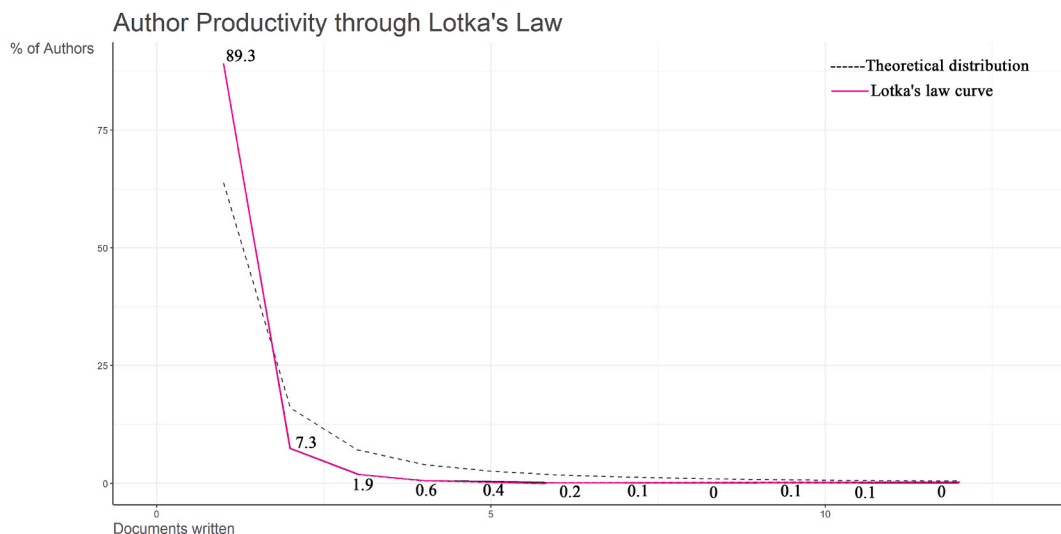

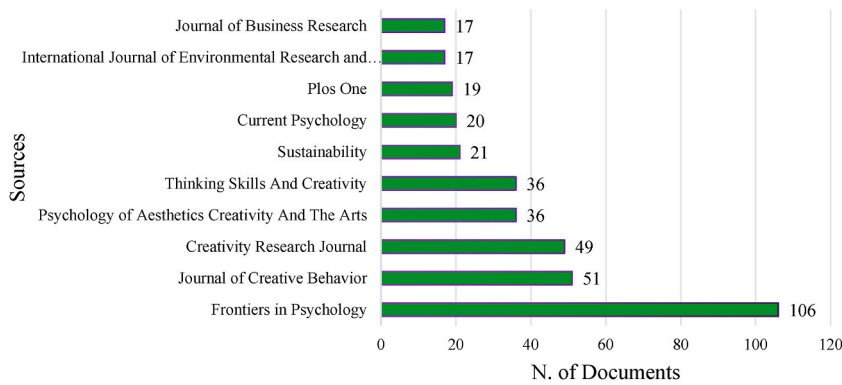**Fig. 4.** Distribution of the authors as per Lotka's law.

Fig. 5. Journals that publish literature on the dark side of creativity (top ten).

source journals. The horizontal axis represents the publication volume of each journal, while the vertical axis displays the names of the journals. The graph reveals that the journal with the highest number of articles in the field of the 'dark side of creativity' is 'Frontiers in Psychology', accounting for 5.8% of the total number of articles, with 105 publications. Following that, 'Journal of Creative Behavior' and 'Thinking Skills and Creativity' have published 52 and 33 articles, respectively. Additionally, 'Psychology of Aesthetics Creativity and the Arts' and 'Sustainability' have published 27 and 24 articles, respectively. These findings highlight the contribution of these journals in exploring the 'darker side of creativity'.

3.1.4. Distribution of cooperation by country/regional

Fig. 6 displays the distribution of national original cooperation in the field of the dark side of creativity. The size of the nodes corresponds to the number of publications, and the links between nodes represent the cooperation relationships between countries or regions. Thicker lines indicate more frequent cooperation. The progress bar at the bottom right indicates the average publication year for each country. The color of the nodes aligns with the progress bar, with warm colors indicating earlier publication dates and cool colors representing later dates. The number of publications and the timeline of countries or regions reflect the level of attention given to the dark side of creativity in each location.

The graph reveals that China and the United States have conducted the highest number of studies, with 455 and 444 publications,
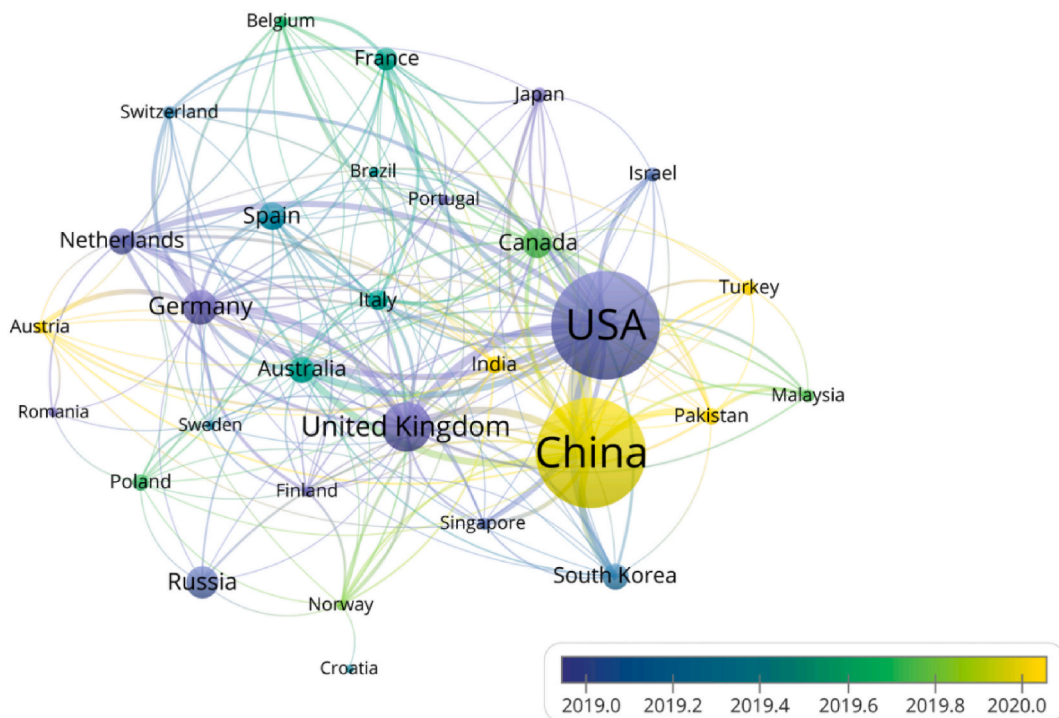

Fig. 6. Network of national/Regional cooperation.

respectively. They are followed by the United Kingdom, Germany, Russia, Canada, Spain, and Australia, each with over 70 articles. The closest cooperation occurred between the United States and with 27 instances, followed by the United States with 23 instances. Additionally, the graph depicts a cyan-purple color representing a US-center collaborative network, indicating that countries or regions led by the United States have been involved in research on the dark side of creativity for a longer time, forming a stable scientific research cooperation network. On the other hand, countries such as India, Turkey, Pakistan, and Austria are shown in yellow, indicating a more recent interest in the field, and a later start in research endeavors.

3.2. Research hotspots

3.2.1. Hot topics

Based on the collected information, the frequency of keywords was arranged in descending order, and co-occurrence (Fig. 7a), and keyword clustering diagrams (Fig. 7b) were generated based on their frequency. Each node in the graph represents a keyword, with the size of the node indicating the frequency of occurrence of the topic, where larger nodes indicate higher frequencies (specific information is shown in Table 1). The pink aperture on the outer layer of each node in Fig. 7 represents the centrality of the keyword, with the thickness of the aperture proportional to the keyword's centrality.

The data presented in Table 1 reveals that the main high-frequency keywords in the field of the 'dark side of creativity' not only include the core word 'creativity', but also other important keywords such as 'performance', 'model' and 'innovation'. The keyword co-occurrence network demonstrates a strong interconnectedness, suggesting that research on the 'dark side of creativity' has accumulated a significant number of results over the past decade, establishing itself as an important research area. Centrality reflects the degree of attention to a topic in the research field. From the information in the table, it can be seen that the keyword 'employee creativity' has the highest centrality (i.e. 0.57). This shows its strong correlation with other keywords appearing in the 'dark side of creativity' related research, highlighting its importance in the field of research, and becoming a key entry point. The most frequently occurring keyword 'creativity' has low centrality and does not appear in the top 15, which shows that the keyword is relatively broad. In addition, the table shows that 'transformational leadership', 'determinant', 'hedonic tone' and 'divergent thinking' are also factors that affect the 'dark side of creativity'. The centrality of meta-analysis is 0.38, indicating that it is an important method for the study of 'the dark side of creativity'. As a research method initially used in the medical field, meta-analysis was gradually used in the field of psychology.

Furthermore, Fig. 7b illustrates keyword clusters formed using the LLR algorithm [22], with irregular squares representing these clusters. The values of the clustering modularity index Q and the clustering contour index S are 0.8006 and 0.9521, respectively. The
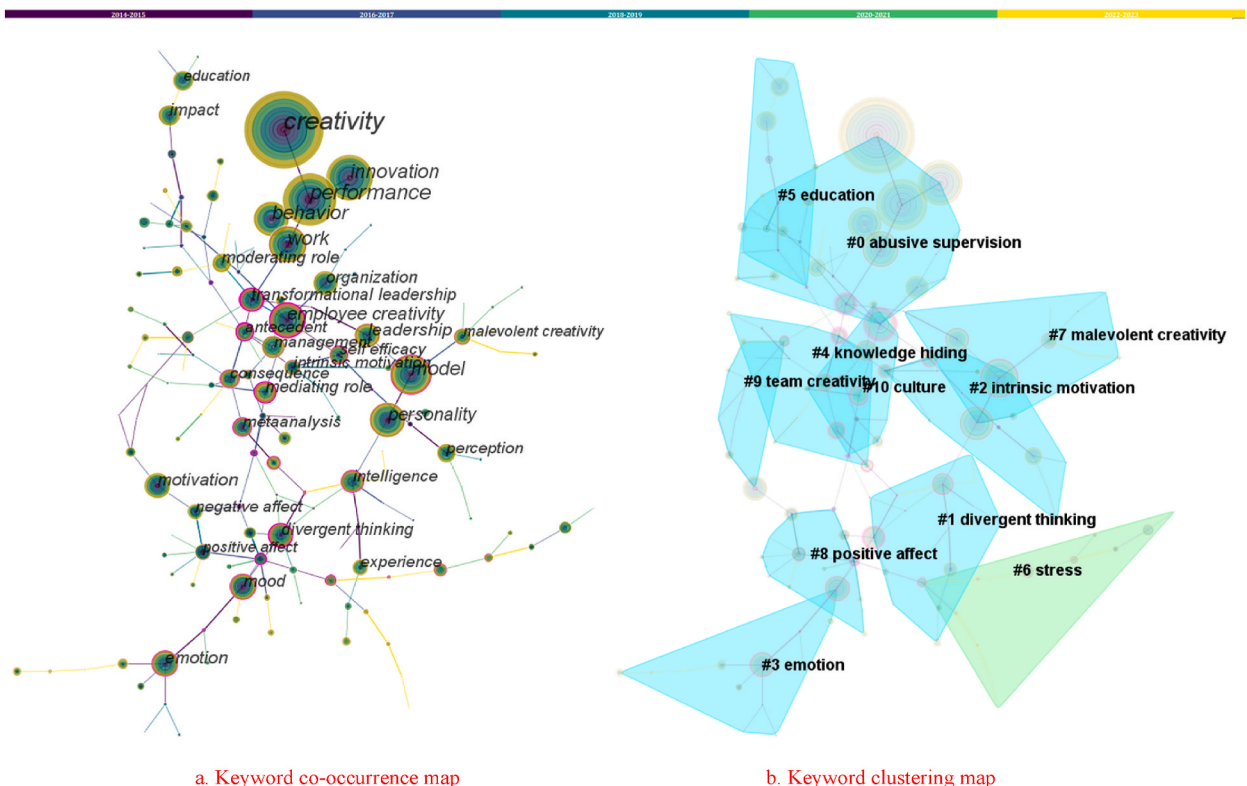

a. Keyword co-occurrence map   b. Keyword clustering map

Fig. 7. Keyword co-occurrence and clustering map.

Table 1
Keyword frequency and centrality statistics.

Keyword Frequency Statistics			Keyword Centrality Statistics		
number	Keywords	Frequency	number	Keywords	Centrality
1	creativity	836	1	employee creativity	0.64
2	performance	320	2	transformational leadership	0.62
3	model	204	3	determinant	0.62
4	innovation	198	4	hedonic tone	0.59
5	work	159	5	divergent thinking	0.55
6	behavior	158	6	mediating role	0.47
7	personality	147	7	creative self-efficacy	0.4
8	employee creativity	137	8	mood	0.39
9	leadership	99	9	meta-analysis	0.38
10	motivation	94	10	intelligence	0.35
11	emotion	93	11	consequence	0.3
12	impact	85	12	exploration	0.3
13	mood	82	13	stress	0.29
14	divergent thinking	81	14	working memory	0.28
15	organization	79	15	affect	0.26

high value of Q (> 0.3) implies significant clustering structure and good modularity, while S (> 0.5) is generally considered reasonable. and S (> 0.7) indicates efficient and convincing clustering results. These indices confirm a scientifically robust atlas and excellent clustering. The majority of clusters are represented by the color blue, with the exception of cluster #6, which is shown in green. This green cluster signifies the emergence of stress as a new area starting from 2020. In addition, the figure also highlights a large amount of overlap between #4, #9, and #10, indicating that there are many common keywords among the three clusters of 'knowledge hiding', 'team creativity', and 'culture'. #9 Cluster has the smallest area, which indicates that it consists of fewer internal keywords. And by looking at Fig. 7, it can be found that "employee creativity" is the bridge connecting #0 abusive supervision and #10 culture. 'personality' connects #2 intrinsic motivation and #7 malevolent creativity.

3.2.2. Hot topic evolution

In Fig. 8, a time zone diagram illustrating the evolution of the keywords is presented. The diagram depicts a five-stage evolution, with each stage comprising a two-year period. The lines connecting the stages indicate the continuity between the themes with the
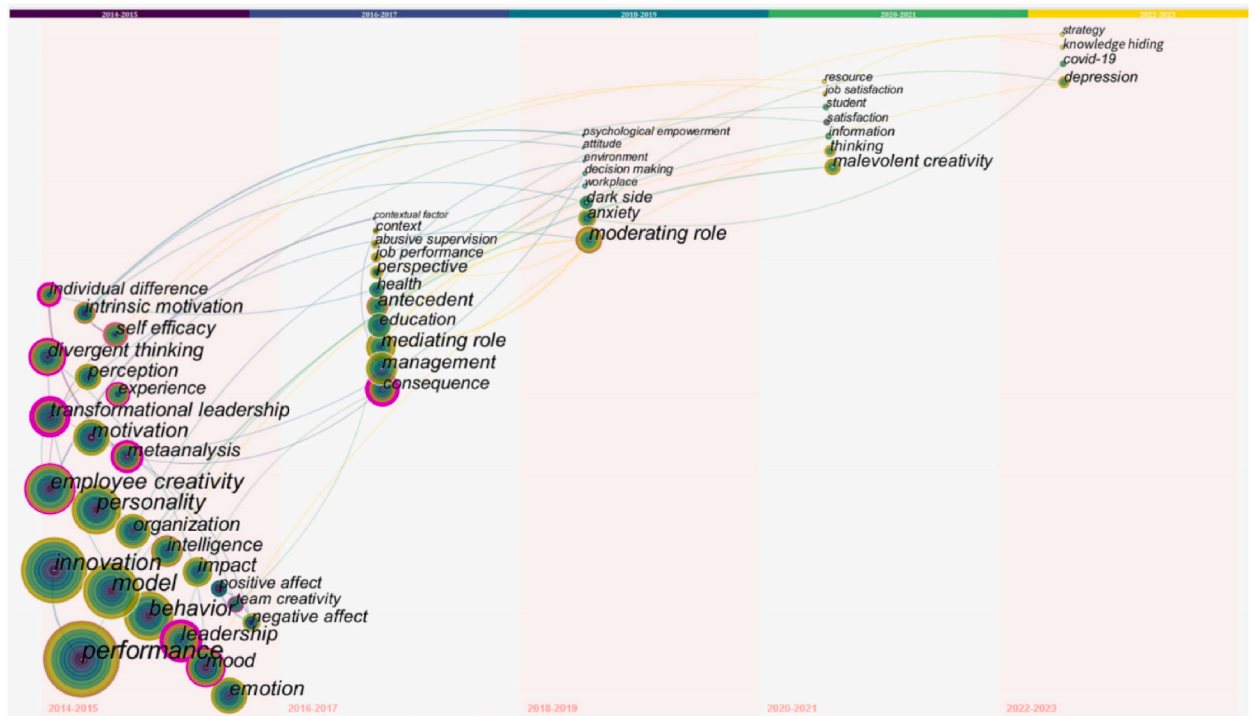

Fig. 8. Hot Topic Evolution Chart; The size of the node is proportional to the frequency of keyword occurrence, and from left to right, represents the evolution trend of the research topic over time.

color of the lines matching the time progress bar above. Lighter colors represent closer proximity to the current time.

Fig. 8 demonstrates a significant progression of research themes across various phases of the 'dark side of creativity', with the highest number of themes observed in the 2013–2014 period. Subsequently, several themes evolved from these initial themes. The current phase highlights hot topics for 2021–2022, including 'strategy', 'knowledge hiding', 'depression', and 'COVID-19'. To capture the latest research trends and academic focus, this study conducts a detailed analysis of keywords in the current stage.

'Knowledge hiding' is an important factor influencing creativity. 'Strategy' refers more to coping methods. Previous research on 'hiding knowledge' has primarily focused on team or organizational creativity. For example, Zhang [23] demonstrated that hiding knowledge negatively impacts team members' knowledge innovation behavior. However, establishing a positive team innovation climate can mitigate this negative impact. Feng [24] found a negative relationship between exploitative leadership and employee creativity, with hiding knowledge mediating this relationship. Xing [25] investigated the mediating role of hiding knowledge in the relationship between social exclusion and innovative behavior. The study suggested that company managers should discourage hiding knowledge behavior to activate employees' creativity. Conversely, 'identification' has often been examined as a prerequisite for creativity. Xu [26] emphasized that creative coping is to use creativity as a positive coping strategy in the face of stress, and this creative coping is positively correlated with students' positive achievement emotions and negatively correlated with negative achievement emotions. Gao [27] pointed out that malicious creativity as the dark side of creativity can harm others materially, physically or mentally, and used different strategies in the study to provide the neural correlation of malicious creative ideas through neuroimaging technology. Alfonso-Benlliure [28] showed that certain coping strategies can mediate the relationship between divergent thinking and depressed mood. There are two most feasible ways: increase problem-centered coping strategies and reduce emotion-centered coping strategies.

The emergence of depression and the COVID-19 pandemic in the current social context signifies the importance of studying the interaction between creativity and the real environment. It suggests that negative situations are more likely to provoke thoughts about the dark side of creativity. Research on the relationship between adverse environments and creativity has yielded inconsistent findings. Some studies indicate that the survival environment during the pandemic hindered creativity, leading to socially detrimental outcomes [29]. Conversely, other studies have shown an increase in daily creativity levels during the COVID-19 lockdown compared to the pre-lockdown period [30]. Furthermore, frequent use of electronics during the lockdown enhanced children's creativity [31]. These findings suggest that negative environments can sometimes stimulate creativity, further exemplifying the 'dark side of creativity'.

3.2.3. Burst themes

By conducting a burst analysis of the research topics, it is possible to identify the research hotspots within these topics. The outbreak intensity corresponds to the outbreak value, with a higher value indicating a greater intensity. Fig. 9 provides detailed information on the four main outbreak topics: conflict, cognition, culture, and anxiety.
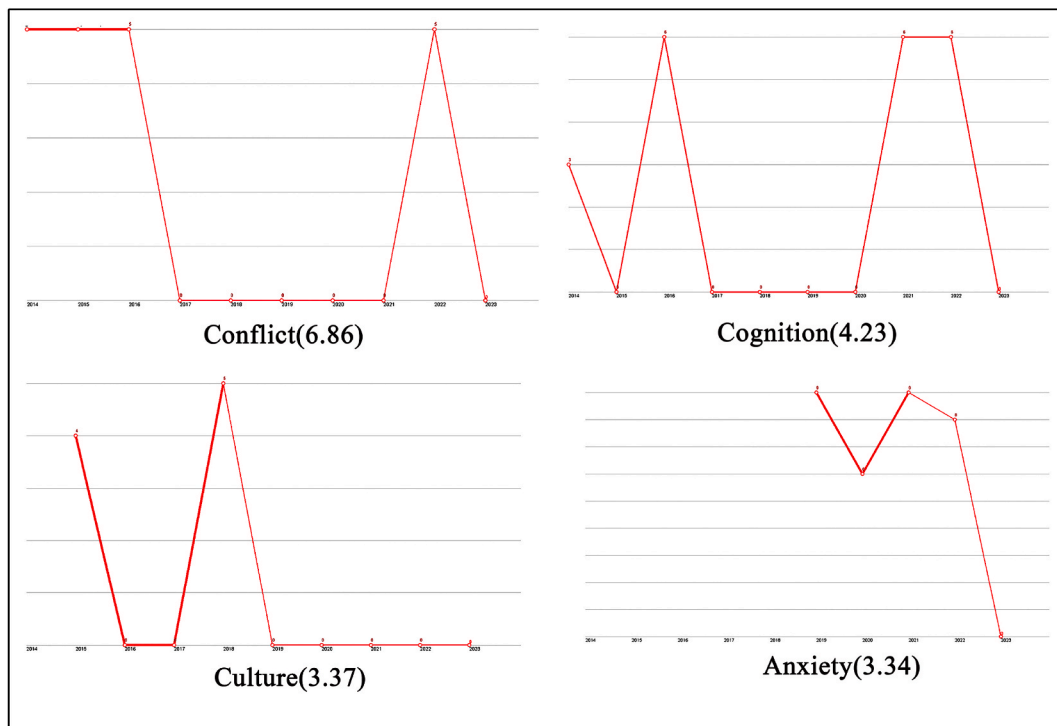

Fig. 9. A graph illustrating the 4 primary themes with the highest outbreak intensity.

Fig. 9 presents detailed information on the four themes and the outbreak values are presented in descending order as 6.86, 5.8872, 3.37, and 3.34. A thorough review of the literature revealed that these themes have been investigated from various perspectives, offering novel and unique research angles that provide fresh insights and ideas for future studies.

Contrary to previous findings that 'conflict reduces creativity', Yong [32] suggested that conflict in negative situations can sometimes increase creative output. They found that task conflict is positively associated with creativity, while relationship conflict is negatively associated with it. Glicksohn [33] proposed that bipolar disorder simulates cognitive flexibility, thereby enhancing creativity. Hong [34] explored cognitive changes based on negative social stimuli and argued that exposure to foreign cultures broadens one's worldview, thereby enhancing creativity. Clobert [35] conducted a study showing that negative astrological predictions increased positive interpretations of ambiguous events and foster creativity. Mu [36] examined the origins of creativity from a biological perspective, suggesting that geographically distinct biological evolutionary systems are foundational factors influencing the cultural development of a country. For example, the presence of the N400 in the frontal and temporal lobe regions is unique to the Chinese population, which is considered a biological factor contributing to differences in creativity among individuals from different regions. Thomson [37] propose that individuals who have experienced childhood neglect are more susceptible to anxiety but also possess enhanced creative processing skills. Cui [38] analyzed the relationship between creativity and anxiety from the perspective of independent variables and found that creativity can contribute to reducing anxiety. In addition, a significant outbreak of 'anxiety' has been observed in the past two years. The outbreak period of COVID-19 from the end of 2019–2020 has brought about significant changes in people's living environment and lifestyle. The pandemic, with its social blockades, economic downturns, unemployment, medical overload, and continuous reports of deaths, has filled society with anxiety, prompting individuals to seek new solutions through creativity.

3.2.4. Hot literature

The citation status of a text serves as an indicator of its influence, and analyzing the cited literature within a field of study can reveal knowledge connections and developments. Fig. 10 depicts the timeline of literature co-citations, with different colored nodes representing cited documents. The size of each node is proportional to the frequency of citations, while the color of each node corresponds to the time bar above, with warmer nodes indicating a later appearance and cooler nodes indicating an earlier appearance. Solid red nodes indicate outbreaks of literature over a short period of time. The horizontal lines represent different clusters, and the labels on the right indicate the content or methodology relevance within each cluster. Based on this, this study screened the most cited documents, the most central documents, the most outbreak documents, and the documents with revolutionary significance, and summarized them in Table 2.

Fig. 10 shows that most of the nodes are concentrated in the two clusters of #0 and #2, and the time span is long, indicating that 'employee creativity' and 'malevolent creativity' have been hot research fields for quite a long time. Among them, the popularity of 'malevolent creativity' has continued to this day, indicating that it has always been of practical significance in the study of 'the dark side of creativity'. The color of #5'relationship conflict' is yellow, with few and small nodes, corresponding to the time progress bar above. It is a new cluster that appeared in 2022–2023, indicating that it has received a certain degree of attention in the near future, but the volume of the article is small. #6 has the shortest duration, indicating that the attention time of the topic about 'COVID-19' is relatively concentrated. The literature in the #0'employee creativity' has the highest frequency of citations and is also the most concentrated. It is represented by Anderson [39] review article on organizational creativity, which is heavily cited and closely connected with other related literature.

In Fig. 10, solid lines represent existing connections and dashed lines represent new connections. These connections represent changes in network structure caused by citations published after the original paper, and they help identify influential citations. Based on the magnitude of changes in network structure, two transformative papers were identified: Godart [40] and Guo [41]. Godart [40] extensively cited literature from 2006 to 2012, and the formed network connections are concentrated at the left end of the group. This study sparked the connection between #0'employee creativity', #1'abuse supervision', #3'team creativity'. Similarly, Guo [41] cites a large number of literature from 2013 to 2019, and the connections are concentrated at the right end of the group. This study sparked
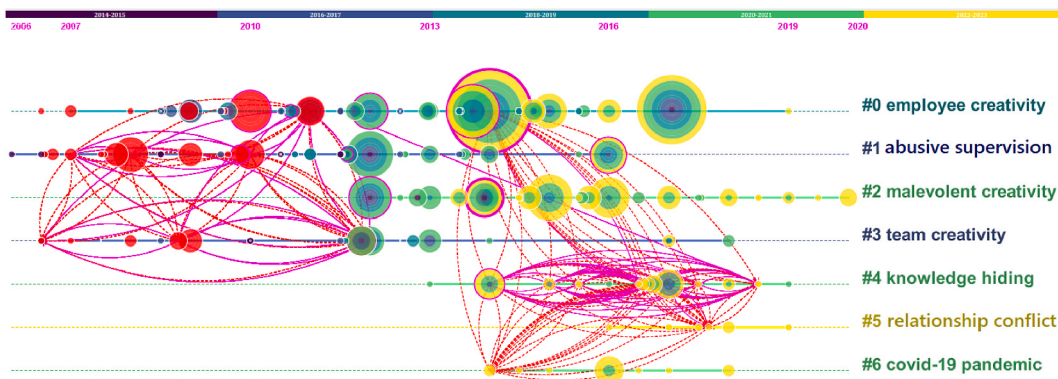

Fig. 10. Co-citation network clusters of highly cited references in the dark side of creativity research.

Table 2

Hot references in the dark side of creativity research.

No.	Title	Hot references
1	Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework.	Highest frequency
2	Evil genius? How dishonesty can lead to greater creativity	Highest centrality
3	The mood creativity link reconsidered: A meta-analysis of 25 years of research	Highest Burst
4	Fashion with a foreign flair: Professional experiences abroad facilitate the creative innovations of organizations	Transformative Document
5	My knowledge: The negative impact of territorial feelings on employee's own innovation through knowledge hiding	Transformative Document

connections between #0'employee creativity', #4'knowledge hiding', #5'relationship conflict', #6'COVID-19'.

Overall, the range of variation induced by these two documents is intricate and intertwined. We read the literature in detail and found that the research content involves human capital theory, innovative behavior, malicious creativity, creativity evaluation, emotional creativity, etc., and also involves meta-analysis and historical evaluation methods in research methods. These literatures show novel and unique perspectives, scientific and reliable methods, rich content, and even interdisciplinary research, and the research results are representative.

3.2.5. Group of influential authors

Author co-citation analysis identified the most influential authors in the field, and they largely contributed similar content. Fig. 10 displays the co-citation network of authors, forming three clusters: 'Research on Creativity Based on Social Psychology Theory', 'Research on Creativity in Intergroup Conflict Based on Information Processing Perspective', and 'Creativity Research Based on Theorization and Science'.

Fig. 11 illustrates that Amabile is the most cited author in the field of the 'dark side of creativity'. Amabile's research focuses on the social psychological perspective of creativity development and utilizes a theoretical model to describe its elements, such as domain-relevant skills, creativity-relevant skills, task motivation, and the social environment [42]. This research model not only provides a crucial theoretical foundation for creativity research but also leads to the formation of the Amabile-centered creativity research group. This group explores creativity in terms of the processes and contexts in which it emerges, examining factors such as work environment [43], incentives [44]' and motivation [45,46].

The blue cluster represents the 'Research on the Relationship between Intergroup Conflict and Creativity' and is centered around De Dreu. De Dreu explained the influence mechanisms of creativity from the perspective of motivational information processing [47–49]. He argued that conflicting information activates the brain's creative information processing, thereby fostering creativity.
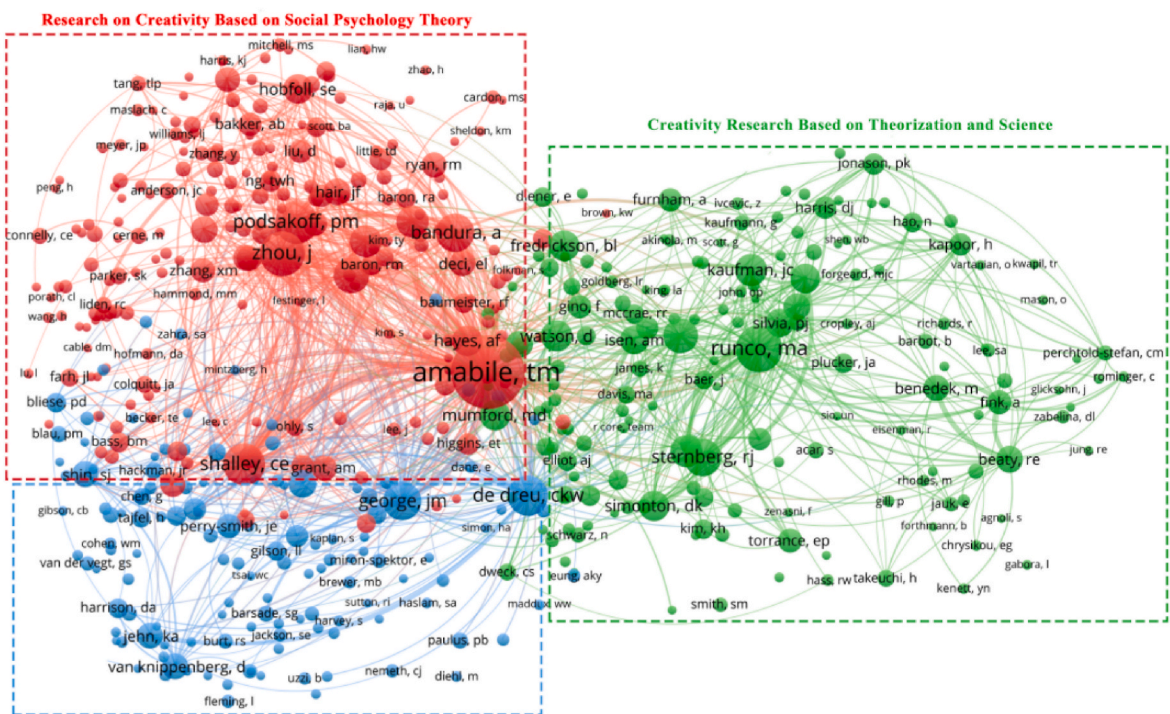

Fig. 11. Hot author groups.

Subsequent researchers have utilized this theoretical background to study creativity, particularly in relation to intergroup relations and creative behavior. For example, research explores negative environmental factors that trigger creativity, such as intergroup conflict [50], work conflict [51], place conflict [52], and productive conflict [53], further exemplifying the 'dark side of creativity'.

The authors indicated in green are engaged in 'creativity research based on theorizing and scientification'. Prominent authors in this group include Runco, Guilford, Sternberg, Kapoor, Kaufman, Cropley, Torrance, and others. Their research covered various creativity-related theories, such as creativity investment theory, intelligence theory, implicit theory, cognitive theory, and functional models of creativity. For example, Sternberg's [54] investment theory of creativity views creativity as an investment where individuals must 'buy low and sell high' in their thinking concepts, encompassing elements such as intellectual abilities, knowledge, thinking styles, personality, motivation, and environment. Guilford [55] proposed a three-dimensional structural model of intelligence (SOI), asserting theoretically that there are 180 types of intelligence with creativity being a product of divergent thinking. Runco focused on cognitive processes of creative thinking based on cognitive theory [56], cross-cultural studies of creativity from the perspective of implicit theory of creativity [57,58], and the biological perspective of genetics and dopamine in understanding creativity from a scientific standpoint [59]. Cropley [60] explored harmful creativity, such as, malicious creativity, through a functional model of creativity. Torrance [61] developed the Torrance Tests of Creative Thinking (TTCT), an objective measurement tool that had a profound impact on the field. Subsequent research has built upon these theories, extending into the exploration of the dark side of creativity, including negative creativity and malicious creativity.

3.3. Research trend prognosis

To predict future research trends in the field, it is essential to identify themes that are likely to have a sustained impact on subsequent research. Table 3 displays emerging words in order of outbreak time, including anxiety, malevolent creativity, COVID-19, trait, gender, depression, strategy. Table 3 shows that these seven subject terms appeared in different periods, and they all have a certain degree of popularity at present, indicating that they are likely to become hot topics in future research.

'Anxiety' has been hot since its appearance in 2019, and it is the longest-lasting topic, indicating that negative emotions are a breakthrough in the research on 'the dark side of creativity'. The most explosive trend topic is 'malevolent creativity', which has continued since 2020 and has an explosion intensity of 7.48, indicating that malicious creativity will be an important aspect of future research on the dark side of creativity. This was followed by 'COVID-19' suggesting that a negative social environment may inspire researchers to explore the 'dark side of creativity'. Although the COVID-19 emergency may have passed, its challenges and impacts are expected to persist, necessitating the examination of its social, economic, and psychological consequences. Dark creativity research can help in understanding these consequences and providing solutions. Additionally, the possibility of future global health crises further underscores the importance of studying dark creativity to preemptively address and mitigate such crises' psychological effects. The emergence of 'Gender' suggests that there may be gender differences in the dark side of creativity, which may involve differences in solutions to different types of problems, imagination, and creative thinking. In addition, depression and strategy are themes that will appear in 2021 and may continue to have an impact in the future.

Overall, the trending themes encompass environment, personality, emotions, psychology, and behavior, spanning multiple research areas. Considering their outbreak values and duration, they can be considered hot topics for future studies, providing implications for future research.

4. Discussion and conclusions

4.1. Main conclusions

(1) The concept of the 'dark side of creativity' is gaining increasing attention in society. The findings indicate that the literature in this area is continuously expanding, with research steadily growing. Initially centered in English-speaking countries, it has now extended to Southeast Asia countries, where both the light and dark sides of creativity are being explored. This trend promotes the development and application of creativity, offering increased opportunities and possibilities for individuals and organizations. Simultaneously, it reflects researchers' growing awareness that creativity is not a perfect trait and can have negative effects on individuals and organizations. These effects may include the simulation of dark personalities, triggering social exclusion, and even contributing to terrorism. Furthermore, the spread of information technology and digitalization has provided less developed regions with access to information and knowledge resources, fostering the development of research on the 'dark side of creativity'. Despite relatively limited research conditions and resources, studies on this topic can still be conducted through transnational collaborations and interdisciplinary exchanges. However, it is worth noting that less than 5% of the authors have published more than three articles, indicating that although the 'dark side of creativity' has garnered attention worldwide, most researchers have only scratched the surface. Thus, further research is needed to gain a deeper understanding of the complex relationship between creativity and its dark side. In summary, the theme of the 'dark side of creativity' has generated a global buzz.

(2) Research on the dark side of creativity is being conducted across disciplines, fostering cross-disciplinary and transnational collaborations. Our findings reveal that research on the 'dark side of creativity' is thriving in various fields, allowing researchers to draw on diverse perspectives and expertise to explore the negative aspects of creativity and the factors that trigger them. For instance, psychology can investigate creative thinking and creative personality, management can explore creative teams and creative leadership, arts and literature can examine creative processes and output, and philosophy can delve into reflections on

Table 3
Keywords with the Strongest Citation Bursts.

Keywords	Strength	Begin-End	2014 – 2023
anxiety	4.32	2019-2023	
malevolent creativity	7.48	2020-2023	
COVID-19	6.43	2020-2023	
trait	4.59	2020-2023	
gender	2.6	2020-2023	
depression	6.02	2021-2023	
strategy	4.13	2021-2023	

creative ethics and values. Furthermore, the complementarity among different countries and cultures enhances our understanding and application of the 'dark side of creativity' as different disciplines and cultures perceive and apply creativity in distinct ways. The interdisciplinary nature of research on the 'dark side of creativity' underscores the significance of cross-disciplinary collaboration and knowledge sharing.

(3) The 'dark side of creativity' is closely linked to psychological states and the social environment. We perform detection on burst themes and selected five representative papers on the dark side of creativity, covering factors such as organizational creativity, social support, and emotion. The results suggest that psychological states (e.g., anxiety, depression, etc), are intrinsically connected to the 'dark side of creativity', and the social environment (e.g., COVID-19, depression, culture, conflict, etc), is an objective factor in studying it. Researchers and individuals face various dilemmas and challenges in real life, emphasizing the need for new ideas and solutions to address social problems.

(4) Research on the 'dark side of creativity' follows a scientific, diversified, and open trend. Our study classified the results into three clusters: 'creativity research based on social psychology', 'creativity research on intergroup conflict based on information processing', and 'creativity research based on theorizing and scientification', each with a different focus. The cluster of 'Social Psychology Based Creativity Study' centers on the Amabile Component Model, exploring the environmental factors and conditions necessary for individual creativity. Studies within the 'Creativity in Intergroup Conflict from an Information Processing Perspective' cluster analyze the mechanism of creativity from an information processing viewpoint, pointing that creativity emerges when the brain processes conflicting information, Consequently, researchers supporting this view primarily analyze creativity in the context of intergroup conflict (e.g., workplace conflict, task conflict), often exploring 'organizational creativity' and 'team creativity'. 'Creativity research based on theorizing and scientification' investigates creativity through various theories, such as creativity investment theory, intelligence theory, implicit theory, and cognitive theory. This approach combines theoretical research and practical research, producing academic results while enhancing the scientific nature of research on the 'dark side of creativity'. Researchers are increasingly focusing on the 'dark side of creativity' in terms of theory and proposing practical pathways. The research content is diversified, and perspectives are evolving, indicating that research on the 'dark side of creativity' is both scientific and open.

4.2. Suggestions for future research

Through a comprehensive review, potential avenues for future research on the 'dark side of creativity' have emerged, including the investigation of 'strategy', 'knowledge hiding', 'depression' and 'COVID-19'. Negative emotions (e.g., anxiety), personality traits (e.g., the dark triad), existential circumstances (e.g., COVID-19), cognition crises, and other negative factors can significantly influence creativity, thereby reflecting the dark side of creativity. Additionally, malevolent creativity represents a distinct expression of the dark side of creativity.

4.3. Significance, limitations, and suggestions for follow-up research

The significance of this research lies in the discovery of knowledge clusters and research trends related to the "dark side of creativity" through visual knowledge graph and analysis. This study has generated valuable academic insights and serves as a valuable reference for future researchers in the field. Its significance is reflected in the following four aspects:

(1) The study provides a comprehensive synthesis of relevant literature, exploring the internal correlation and disseminating the research findings of previous scholars. It offers theoretical support for empirical studies on the dark side of creativity and suggests future research direction.

(2) The cluster analysis of high-frequency authors helps identify groups of authors with similar research interests and expertise, facilitating a clearer understanding of the distribution of experts in the field. This information is valuable for subsequent scientific research, establishing platforms for future empirical research collaborations.

(3) The study emphasizes the importance of considering creativity triggered by dark factors (e.g., anxiety, stress) as a significant component of the dark side of creativity, alongside the more commonly studied negative creativity and malicious creativity. By examining the literature from a systematic perspective and exploring internal knowledge groups, this study attempts to address the visual gap in this area that previous researchers may have overlooked.

(4) Through this study, we advocate for scholars of creativity to pay attention to both the light and darkness of creativity, challenging the prevailing assumption that creativity is solely a positive, valuable expression for individuals and organizations. Drawing inspiration from Josefsson and Blomberg [62] and adopting a Laclauian discourse approach, we encourage scholars to explore the 'dark side of creativity' and question the prevailing positive understanding. This study holds great theoretical and practical significance in reshaping the understanding of creativity.

However, it is important to acknowledge certain limitations in the writing process. The data collection process focused solely on the WOS core database, which, while widely used, has inherent limitations in data coverage. Moreover, there may be a time lag between the publication of literature and its inclusion in the WOS database. Newly published literature may take a certain amount of time to be included and retrieved, which may cause certain deviations in the research results. Therefore, it is recommended that future research employ multiple data sources to ensure comprehensive data collection and minimize gaps in the research field.

Author contribution

Jie Zhou: Formal analysis; Project administration; Resources; Visualization; Writing - original draft. Bin Zhao: Conceptualization; Data curation; Investigation; Methodology. Meirong Zhang: Software; Supervision; Validation; Writing - review & editing.

Authorship statement

The authors declare no competing financial interests or personal relationships that could influence this work.

Data availability statement

Data associated with this study has been deposited at OSF project, https://osf.io/h7638/, account:zhbin202206@163.com, password:Aa369369!

Additional information

No additional information is available for this paper.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] K. James, K. Clark, R. Cropanzano, Positive and negative creativity in groups, institutions, and organizations: a model and theoretical extension, Creativ. Res. J. 12 (3) (1999) 211–226, https://doi.org/10.1207/s15326934crj1203_6.

[2] R.B. McLaren, The dark side of creativity, Creativ. Res. J. 6 (1–2) (1993) 137–144, https://doi.org/10.1037/a0023689.

[3] X. Gao, "Discovering" and exploring the "dark side" of creativity: a new perspective on the philosophical study of creativity, Yuejiang Academic Journal 14 (4) (2022) 12, https://doi.org/10.13878/j.cnki.yjxk.2022.04.002.

[4] D.H. Cropley, J.C. Kaufman, A.J. Cropley, Malevolent creativity: a functional model of creativity in terrorism and crime, Creativ. Res. J. 20 (2) (2008) 105–115, https://doi.org/10.1080/10400410802059424.

[5] G. Zhe, L. Chang, Malevolent creativity: concept, measurement, influence factors and future research, Journal of Psychological Science 39 (1) (2016) 63, https://doi.org/10.16719/j.cnki.1671-6981.20160110.

[6] H. Kapoor, J.C. Kaufman, The evil within: the AMORAL model of dark creativity, Theor. Psychol. 32 (3) (2022) 467–490, https://doi.org/10.1177/09593543221074326.

[7] D.H. Cropley, J.C. Kaufman, A.J. Cropley, Rejoinder to commentaries on malevolent creativity: a functional model of creativity in terrorism and crime, Cropley, Kaufman, and Cropley, Creativ. Res. J. 20 (2) (2008) 134–136, https://doi.org/10.1080/10400410802059812.

[8] F. Gino, D. Ariely, The dark side of creativity: original thinkers can be more dishonest, J. Pers. Soc. Psychol. 102 (3) (2012) 445, https://doi.org/10.1037/a0026406.

[9] M.L. Beaussart, C.J. Andrews, J.C. Kaufman, Creative liars: the relationship between creativity and integrity, Think. Skills Creativ. 9 (2013) 129–134, https://doi.org/10.1016/j.tsc.2012.10.003.

[10] A.P. Breidenthal, D. Liu, Y.T. Bai, Y.N. Mao, The dark side of creativity: coworker envy and ostracism as a response to employee creativity, Organ. Behav. Hum. Decis. Process. 161 (2020) 242–254, https://doi.org/10.1016/j.obhdp.2020.08.001.

[11] D.J. Harris, R. Reiter-Palmon, J.C. Kaufman, The effect of emotional intelligence and task type on malevolent creativity, Psychology of Aesthetics, Creativity, and the Arts 7 (3) (2013) 237, https://doi.org/10.1037/a0032139.

[12] Jiaojiao, L., Xiaobing, L., Dandan, P., Bibo, X., & Xiyang, Y. The Relationship Between Emotional Intelligence and College Students' Malicious Creativity: A Moderated Mediation Model. Studies of Psychology and Behavior, 20(4), 563.https://doi.org/10.12139/j.1672-0628.2022.04.019.

[13] R. Cheng, K. Lu, N. Hao, The effect of anger on malevolent creativity and strategies for its emotion regulation, Acta Psychol. Sin. 53 (8) (2021) 847, https://doi.org/10.3724/SP.J.1041.2021.00847.

[14] A.J. Cox, J.L. Leon, Negative schizotypal traits in the relation of creativity to psychopathology, Creativ. Res. J. 12 (1) (1999) 25–36, https://doi.org/10.1207/s15326934crj1201_4.

[15] P.K. Jonason, E.N. Richardson, L. Potter, Self-reported creative ability and the Dark Triad traits: an exploratory study, Psychology of Aesthetics, Creativity, and the Arts 9 (4) (2015) 488, https://doi.org/10.1037/aca0000037.

[16] P.G. Kampylis, J. Valtanen, Redefining creativity - analyzing definitions, collocations, and consequences, J. Creativ. Behav. 44 (3) (2010) 191–214, https://doi.org/10.1002/j.2162-6057.2010.tb01333.x.

[17] Y. Chen, C. Chen, Z. Liu, Z. Hu, X. Wang, The methodology function of CiteSpace mapping knowledge domains, Studies in Science of Science 33 (2) (2015) 242–253.

[18] D.K. Gupta, Lotka's law and productivity patterns of entomological research in Nigeria for the period, 1900–1973, Scientometrics 12 (1987) 33–46, https://doi.org/10.1007/BF02016688.

[19] N. Barik, P. Jena, Author productivity pattern and applicability of Lotka's inverse square law: a bibliometric appraisal of selected LIS open access journals, Digital Library Perspectives 37 (3) (2021) 223–241, https://doi.org/10.1108/dlp-10-2020-0103.

[20] G.B. Newby, J. Greenberg, P. Jones, Open source software development and Lotka's Law: bibliometric patterns in programming, J. Am. Soc. Inf. Sci. Technol. 54 (2) (2003) 169–178, https://doi.org/10.1002/asi.10177.

[21] M. Kawamura, C.D.L. Thomas, Y. Kawaguchi, H. Sasahara, Lotka's law and the pattern of scientific productivity in the dental science literature, Med. Inf. Internet Med. 24 (4) (1999) 309–315, https://doi.org/10.1080/146392399298320.

[22] C.M. Chen, F. Ibekwe-SanJuan, J.H. Hou, The structure and dynamics of cocitation clusters: a multiple-perspective cocitation analysis, J. Am. Soc. Inf. Sci. Technol. 61 (7) (2010) 1386–1409, https://doi.org/10.1002/asi.21309.

[23] S. Zhang, X. Wang, Effect of knowledge hiding on knowledge innovative behavior of innovative team members, Scientometrics 126 (8) (2021) 6423–6442, https://doi.org/10.1007/s11192-021-04047-1.

[24] Y. Feng, A. Ayub, T. Fatima, S. Irfan, M. Sarmad, I cannot be creative due to my exploitative leader! A moderated mediation interplay of leader–member exchange quality and knowledge hiding, J. Organ. Change Manag. 35 (3) (2022) 558–579, https://doi.org/10.1108/JOCM-04-2021-0127.

[25] Y. Xing, Y. Li, How does workplace ostracism affect employee innovation behavior: an analysis of chain mediating effect, Front. Psychol. 13 (2022), https://doi.org/10.3389/fpsyg.2022.920914.

[26] C.X. Xu, Q. Wang, The relationships of creative coping and college students' achievement emotions and academic stress: the mediating role of psychological capital, J. Intell. 10 (4) (2022) 15, https://doi.org/10.3390/jintelligence10040126.

[27] Z.N. Gao, L.L. Cheng, J.C. Li, Q.L. Chen, N. Hao, The dark side of creativity: neural correlates of malevolent creative idea generation, Neuropsychologia 167 (2022) 11, https://doi.org/10.1016/j.neuropsychologia.2022.108164.

[28] V. Alfonso-Benlliure, J.C. Melendez, Creativity as a "vaccine" for depressed mood: coping and divergent thinking in young adults, An. Psicolog. 38 (2) (2022) 209–218, https://doi.org/10.6018/analesps.481761.

[29] S. Yoon, S.T. McClean, N. Chawla, J.K. Kim, J. Koopman, C.C. Rosen, J.M. McCarthy, Working through an "infodemic": the impact of COVID-19 news consumption on employee uncertainty and work behaviors, J. Appl. Psychol. 106 (4) (2021) 501, https://doi.org/10.1037/apl0000913.

[30] M. Mercier, F. Vinchon, N. Pichot, E. Bonetto, N. Bonnardel, F. Girandola, T. Lubart, COVID-19: a boon or a bane for creativity? Front. Psychol. 11 (2021), 601150 https://doi.org/10.3389/fpsyg.2020.601150.

[31] P. Limone, G.A. Toto, Psychological and emotional effects of digital technology on children in covid-19 pandemic, Brain Sci. 11 (9) (2021) 1126, https://doi.org/10.3390/brainsci11091126.

[32] K. Yong, S.J. Sauer, E.A. Mannix, Conflict and creativity in interdisciplinary teams, Small Group Res. 45 (3) (2014) 266–289, https://doi.org/10.1177/1046496414530789.

[33] J. Glicksohn, O. Boikova, Mood and creativity over time in a bipolar participant, J. Creativ. Behav. 52 (1) (2018) 66–79, https://doi.org/10.1002/jocb.133.

[34] Y.Y. Hong, B.K. Cheon, How does culture matter in the face of globalization? Perspect. Psychol. Sci. 12 (5) (2017) 810–823, https://doi.org/10.1177/1745691617700496.

[35] M. Clobert, P. Van Cappellen, M. Bourdon, A.B. Cohen, Good day for Leos: horoscope's influence on perception, cognitive performances, and creativity, Pers. Indiv. Differ. 101 (2016) 348–355, https://doi.org/10.1016/j.paid.2016.06.032.

[36] Y. Mu, S. Kitayama, S. Han, M.J. Gelfand, How culture gets embrained: cultural differences in event-related potentials of social norm violations, Proc. Natl. Acad. Sci. USA 112 (50) (2015) 15348–15353, https://doi.org/10.1073/pnas.1509839112.

[37] P. Thomson, S. Jaque, Childhood adversity and the creative experience in adult professional performing artists, Front. Psychol. 111 (2018), https://doi.org/10.3389/fpsyg.2018.00111.

[38] Y.-X. Cui, X. Zhou, C. Zu, H.-K. Zhai, B.-R. Bai, Y.-M. Xu, D. Li, Benevolent creativity buffers anxiety aroused by mortality salience: terror management in COVID-19 pandemic, Front. Psychol. 11 (2020), 601027, https://doi.org/10.3389/fpsyg.2020.601027.

[39] N. Anderson, K. Potocnik, J. Zhou, Innovation and creativity in organizations: a state-of-the-science review, prospective commentary, and guiding framework, J. Manag. 40 (5) (2014) 1297–1333, https://doi.org/10.1177/0149206314527128.

[40] F.C. Godart, W.W. Maddux, A.V. Shipilov, A.D. Galinsky, Fashion with a foreign flair: professional experiences abroad facilitate the creative innovations of organizations, Acad. Manag. J. 58 (1) (2015) 195–220, https://doi.org/10.5465/amj.2012.0575.

[41] M.Y. Guo, G. Brown, L.H. Zhang, My knowledge: the negative impact of territorial feelings on employee's own innovation through knowledge hiding, J. Organ. Behav. 43 (5) (2022) 801–817, https://doi.org/10.1002/job.2599.

[42] T.M. Amabile, The social psychology of creativity: a componential conceptualization, J. Pers. Soc. Psychol. 45 (2) (1983) 357, https://doi.org/10.1037/0022-3514.45.2.357.

[43] T.M. Amabile, R. Conti, H. Coon, J. Lazenby, M. Herron, Assessing the work environment for creativity, Acad. Manag. J. 39 (5) (1996) 1154–1184, https://doi.org/10.2307/256995.

[44] T.M. Amabile, Motivational synergy: toward new conceptualizations of intrinsic and extrinsic motivation in the workplace, Hum. Resour. Manag. Rev. 3 (3) (1993) 185–201, https://doi.org/10.1016/1053-4822(93)90012-S.

[45] B.A. Hennessey, T.M. Amabile, Reality, intrinsic motivation, and creativity, Am. Psychol. 53 (6) (1998) 674–675, https://doi.org/10.1037/0003-066X.53.6.674.

[46] Collins, M. A., & Amabile, T. M. (1999). Motivation and creativity. Retrieved from https://library.iated.org/view/GOMEZ2012MOT.

[47] C.K. De Dreu, F. Harinck, A.E. Van Vianen, Conflict and performance in groups and organizations, Int. Rev. Ind. Organ. Psychol. 14 (1999) 369–414.

[48] C.K. De Dreu, A.E. Van Vianen, Managing relationship conflict and the effectiveness of organizational teams, J. Organ. Behav.: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior 22 (3) (2001) 309–328, https://doi.org/10.1002/job.71.

[49] C.K. De Dreu, Cooperative outcome interdependence, task reflexivity, and team effectiveness: a motivated information processing perspective, J. Appl. Psychol. 92 (3) (2007) 628, https://doi.org/10.1037/0021-9010.92.3.628.

[50] C.K. De Dreu, M.J. Gelfand, Conflict in the Workplace: Sources, Functions, and Dynamics across Multiple Levels of Analysis, 2008, https://doi.org/10.1111/j.1365-2338.1979.tb02245.x.

[51] C.K. De Dreu, D. Van Dierendonck, M.T. Dijkstra, Conflict at work and individual well-being, Int. J. Conflict Manag. 15 (1) (2004) 6–26, https://doi.org/10.1108/eb022905.

[52] C.K. De Dreu, B.A. Nijstad, D. Van Knippenberg, Motivated information processing in group judgment and decision making, Pers. Soc. Psychol. Rev. 12 (1) (2008) 22–49, https://doi.org/10.1177/1088868307304092.

[53] C.K. De Dreu, Productive conflict: the importance of conflict management and conflict issue, Using conflict in organizations 9 (1997) 9–22, https://doi.org/10.4135/9781446217016.n2.

[54] R.J. Sternberg, Wisdom, Intelligence, and Creativity Synthesized, vol. 106, Cambridge University Press, 2003.

[55] J.P. Guilford, The nature of human intelligence 132 (2) (1967) 259, https://doi.org/10.5406/amerjpsyc.132.2.0259.

[56] M.A. Runco, I. Chand, Cognition and creativity, Educ. Psychol. Rev. 7 (3) (1995) 243–267, https://doi.org/10.1007/BF02213373.

[57] M.A. Runco, M.D. Bahleda, Implicit theories of artistic, scientific, and everyday creativity, J. Creativ. Behav. 20 (2) (1986) 93–98, https://doi.org/10.1002/j.2162-6057.1986.tb00423.x.

[58] M.A. Runco, D.J. Johnson, Parents' and teachers' implicit theories of children's creativity: a cross-cultural perspective, Creativ. Res. J. 14 (3–4) (2002) 427–438, https://doi.org/10.1207/S15326934CRJ1434_12.

[59] M.A. Runco, E.P. Noble, R. Reiter-Palmon, S. Acar, T. Ritchie, J.M. Yurkovich, Parents' and teachers' implicit theories of children's creativity: a cross-cultural perspective, Creativ. Res. J. 23 (4) (2011) 376–380, https://doi.org/10.1207/S15326934CRJ1434_12.

[60] D.H. Cropley, A.J. Cropley, J.C. Kaufman, M.A. Runco, The Dark Side of Creativity, Cambridge university press, 2010.

[61] E.P. Torrance, Predictive validity of the torrance tests of creative thinking, J. Creativ. Behav. 6 (4) (1972) 236–252, https://doi.org/10.1002/j.2162-6057.1972.tb00936.x.

[62] I. Josefsson, A. Blomberg, Turning to the dark side: challenging the hegemonic positivity of the creativity discourse, Scand. J. Manag. 36 (1) (2020) 10, https://doi.org/10.1016/j.scaman.2019.101088.