Journal of Cultural Economics
https://doi.org/10.1007/s10824-025-09549-x

ORIGINAL ARTICLE

Psychological capital, effort costs, and creativity: the trajectories of artistic careers

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Received: 7 February 2025 / Accepted: 16 June 2025

Abstract

Why do some artists maintain a high level of productivity throughout their careers, while others experience bursts of creativity followed by burnout or stagnation? Existing explanations emphasize economic incentives and human capital but often overlook an artist's ability to sustain effort over time. We introduce a conceptual framework centered on psychological capital—a stock of confidence, motivation, and resilience that accumulates in response to past creative work and evolves in response to emotional volatility, financial stress, and external feedback—as a dynamic factor in creative production that shapes long-term artistic productivity. By influencing the perceived effort cost of creative work, psychological capital helps explain why some artists enter self-reinforcing cycles of creativity while others disengage. While previous research has examined psychological capital in relation to workplace performance and well-being, its role in sustaining creative careers remains unexplored. We illustrate the framework's predictions using historical case studies, offering insights for cultural policy and the economics of artistic labor. Although we focus on artists, our framework applies to other creative fields where motivation, external reinforcement, and financial stability shape long-term productivity.

Keywords Psychological capital · Creativity · Cultural economics · Effort cost · Path dependence

PACS Z11 · J24 · D91 · D83 · L82

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Published online: 15 July 2025

1 Introduction

The career trajectories of artists differ widely. Some sustain high levels of creative output throughout their careers, while others experience cycles of intense productivity followed by stagnation or burnout. Some artists flourish under pressure while others struggle when faced with external constraints. What explains these divergent paths? Standard economic explanations emphasize incentives, human capital, and artistic labor markets, linking creative productivity to financial rewards, skill accumulation, and occupational choice. While these factors undoubtedly shape artistic careers, they do not fully explain why creative trajectories exhibit such stark differences, even among individuals with similar levels of talent and training.

History offers many such examples. Johannes Brahms (1833-1987) and César Franck (1822-1890) were equally gifted composers of the same era, yet their creative paths differed sharply: Brahms maintained creative momentum throughout his life, producing significant works at every stage of his career, whereas Franck's major compositions only came in his last decade. In literature, F. Scott Fitzgerald (1896-1940) and William Faulkner (1897-1962) provide another striking contrast: Both were acclaimed novelists working within the same publishing industry, yet while Fitzgerald's productivity declined amid financial and emotional struggles, Faulkner continued to produce at a steady pace and achieved lasting recognition during his lifetime. Though these cases differ in some respects, they suggest that innate and acquired ability, even when comparable, do not solely determine an artist's ability to sustain creativity over time. Understanding why some artists flourish while others falter may require moving beyond standard economic factors—like incentives and skill accumulation—to consider how psychological resilience and emotional dynamics shape long-term creative productivity.

A growing body of research highlights the role of emotions in shaping creative output. Artistic production is intensely personal, requiring intrinsic motivation and persistence, both of which may fluctuate in response to an artist's emotional state. Studies in psychology and economics suggest that emotional variation affects creative engagement, sometimes fueling artistic innovation and at other times disrupting it (for an overview, see Ivcevic et al. 2023). Borowiecki (2017) provides empirical evidence linking composers' emotional states to their productivity, demonstrating that periods of high emotional intensity correlate with fluctuations in creative output. Relatedly, Graddy and Lieberman (2018) show that bereavement disrupts the creative process in the short term, with artworks produced in the first year after a loss fetching lower auction prices and receiving less curatorial recognition. Studies from psychology suggest that emotions affect creativity by influencing cognitive processes and motivation (Beaty et al. 2016; Radwa et al. 2019; Kharkhurin and Kashapov 2017; Kadyirov et al. 2024). Yet despite widespread recognition of the relationship between emotions and creativity, the precise mechanisms through which emotions affect artistic careers over the long-run remain less well understood compared to more established determinants such as human capital and economic incentives.

This paper develops a framework for understanding how psychological factors influence creative output and shape long-term career trajectories. While human capital contributes to an artist's productive capacity, creative work—perhaps more than other forms of labor—also depends on an additional input: the ability to sustain effort and engagement in the face of uncertainty and fluctuating rewards. We propose the concept of psychological capital, which we define as a stock of confidence, motivation, and resilience that influences the perceived effort cost of creative work and the likelihood of sustained engagement over time. This definition builds on existing work in organizational behavior, where psychological capital has been studied primarily in the context of workplace performance (e.g., Luthans et al. 2006). Our framework extends this concept to artistic careers and models psychological capital as a dynamic input that accumulates or depletes over time, creating feedback loops that shape long-term creative trajectories. Unlike human capital, which accumulates gradually through skill acquisition and experience, psychological capital is more volatile, fluctuating in response to successes, failures, emotional states, and economic conditions. Because it moderates the effort cost of artistic production, psychological capital plays a central role in determining whether artists persist in creative work, reduce their output, or stop producing entirely. Our framework is general enough to apply beyond artistic careers, offering insights into other fields where persistence, motivation, and external reinforcement shape long-term productivity, such as scientific research, entrepreneurship, and technological innovation.

We contribute to existing research in cultural economics, particularly David Throsby's seminal work on artists' labor markets and the role of intrinsic motivation in creative careers (Throsby 1994, 2001). Throsby's work-preference model suggests that artists often prioritize creative fulfillment over financial returns, emphasizing the importance of non-monetary incentives in sustaining artistic production. We extend this framework by introducing a mechanism through which intrinsic motivation accumulates or depletes over time, shaping the perceived effort cost of continued creative work. While the work-preference model explains why artists choose creative work despite higher paying alternatives, it does not fully account for differences in long-term creative productivity, i.e., why some artists maintain momentum and keep producing while others stall or abandon creative work altogether. We therefore incorporate a dimension of long-term creative productivity that extends beyond the work-preference model, offering an explanation for why some artists maintain sustained output while others experience decline.

In addition to intrinsic motivation, research in cultural economics has examined how human capital, networks, and institutional frameworks—for instance, patronage structures, copyright regimes, and cultural policies—shape artistic careers (e.g., Baumol and Baumol 1994; Bille and Jensen 2018; Borowiecki 2022; Borowiecki et al. 2023, 2025; Giorcelli and Moser 2020; Cowen 2009; Frey 2003; Karlsson 2011; Peacock 2006; Peacock et al. 1994; Scherer 2004; Towse 2006; Vaubel 2005). Throsby has also made foundational contributions to this line of scholarship by modeling the production function of artists, highlighting the role of human capital and other inputs in shaping creative output (Throsby 1977; Throsby and Withers 1979; Throsby 2006). However, relatively little work in this field has explored the cumulative effects of psychological factors on sustained creative productivity.

This paper also relates to Throsby's work on cultural sustainability, which emphasizes that cultural capital requires long-term investment to thrive (Throsby 1995, 1997). While Throsby's focus is on sustaining artistic production at the macro level, our framework highlights a complementary issue at the micro level: the sustainability of individual creative careers. Just as cultural sustainability depends on the preservation of artistic ecosystems, the sustainability of creative output depends on the reinforcement of psychological capital. Without mechanisms that replenish psychological capital, even highly skilled artists may struggle to maintain productivity, mirroring the challenges that cultural institutions face when resources for artistic production are depleted.

Our paper connects to David Galenson's influential work on creative careers, which identifies systematic differences in when artists and other creative figures produce their most significant contributions (e.g., Galenson 2006, 2009, 2025). His framework, which has been applied to painters, writers, scientists, and filmmakers, distinguishes between conceptual innovators, who make early breakthroughs by formulating new ideas, and experimental innovators, who refine their work iteratively and peak later in life. While Galenson's analysis provides valuable insights into when creative breakthroughs occur, it does not fully explain why some artists sustain productivity over time while others experience burnout or disengagement. We shift the focus away from the timing of peak contributions and instead examine how fluctuations in psychological capital can create self-reinforcing cycles that shape long-term creative trajectories. This perspective allows us to account for variation within experimental innovators and may also help explain why some conceptual innovators sustain productivity beyond an early peak while others disengage.

Finally, we build on research in organizational behavior that conceptualizes psychological capital as a set of psychological resources—self-efficacy, optimism, hope, and resilience—that enhance on-the-job performance (Luthans et al. 2006). Although this view of psychological capital has also been applied to studies of health and well-being as well as other domains, most research focuses on short-term outcomes rather than modeling long-term career dynamics (e.g., Li et al. 2022; Youssef-Morgan and Luthans 2015; Newman et al. 2014). Our framework extends this concept to artistic careers by modeling psychological capital as an evolving stock that accumulates or depletes over time. Unlike in workplace settings, where psychological capital functions as a relatively stable productivity-enhancing factor, we argue that in artistic careers, its fluctuations directly alter the perceived effort cost of sustained creative work, shaping an artist's long-term output. This distinction allows us to capture path-dependent dynamics in creative careers, which have not been explicitly modeled in prior psychological capital research.

The remainder of this paper proceeds as follows. We begin by developing the conceptual framework, exploring how psychological capital interacts with human capital in the production of creative output, and examining the forces that drive its accumulation or depletion. This section also introduces the key predictions that emerge from our framework. We then illustrate how these mechanisms operate in practice through historical case studies of composers, painters, and writers whose careers reflect the patterns predicted by our framework. The paper concludes with

a discussion of the broader implications of psychological capital for cultural policy and artistic careers, as well as potential avenues for future research.

2 Conceptual framework

2.1 Psychological capital and human capital

We posit that creative output is a function of two primary inputs: human capital and psychological capital.[1] Human capital consists of the formal and informal training, skills, and domain-specific knowledge that an artist acquires through education and practice. Psychological capital, in contrast, captures an individual's accumulated confidence, intrinsic motivation, and resilience—the internal resources that influence effort allocation and persistence in creative work.[2] Importantly, effort costs are endogenous to psychological capital. As psychological capital accumulates, the perceived effort cost of producing new work declines, making sustained creative engagement more likely. Conversely, when psychological capital is depleted, the effort required to continue creating increases, raising the likelihood of hesitation or withdrawal. These two forms of capital interact, jointly determining the quality and quantity of artistic output. While human capital provides the technical foundation for artistic production, psychological capital determines whether and to what extent an artist is able to apply these skills in practice, particularly when faced with setbacks, uncertainty, and external pressures. The appendix presents a formalization of this framework using a dynamic production model in which psychological capital enhances productive capacity and shapes the evolution of creative output over time. In what follows, we develop the key mechanisms and predictions in conceptual terms, leaving the mathematical structure to the appendix.

An artist with high human capital—i.e., extensive training and mastery of technical skills—has the potential to produce high-quality work. However, without sufficient psychological capital, they may struggle to sustain the necessary creative effort, particularly when facing setbacks or career volatility. Their technical ability remains, but fluctuations in confidence, motivation, and engagement can raise the perceived effort cost of producing new work, leading to underutilized potential. When psychological capital is low, artists may discount the expected benefits of future creative effort, making each new project seem riskier and more difficult to

[1] In Throsby's formulation, artistic output depends on human capital and physical capital, with the latter encompassing tangible resources such as instruments, tools, and materials (see, for instance, Throsby 2006). We set aside physical capital for two reasons. First, artistic production does not, in general, require substantial capital investment compared to other sectors of the economy. Second, in Throsby's model, physical capital is exogenous. While access to physical capital may influence baseline output levels, it is unlikely to alter the dynamic mechanisms central to our framework. To the extent that physical capital matters, its effects likely operate indirectly through financial constraints, a channel we also consider with respect to psychological capital.

[2] Resilience and persistence are related to grit, which has been defined as passion and perseverance toward long-term goals. Studies link grit to success in a wide variety of domains (e.g., Duckworth et al. 2007; Duckworth 2016).

justify. Conversely, an artist with limited formal training but strong psychological capital may still generate substantial creative output, relying on persistence, adaptability, and external feedback to refine their craft. While such an artist may face technical constraints, their ability to maintain effort despite challenges helps sustain productivity over time.

The most successful and enduring artists are those who accumulate both forms of capital in tandem. Neither form alone is sufficient for sustained creative productivity, as they are mutually reinforcing. Human capital augments psychological capital by increasing the likelihood of external validation, as greater skill and expertise enable artists to produce higher-quality or more innovative work that is more likely to be rewarded. This reinforcement, in turn, reduces the perceived effort cost of continued creative work by providing artists with greater confidence in the value of their output. Conversely, psychological capital amplifies the returns to human capital by sustaining the willingness to create, experiment, and refine artistic output, even in the face of uncertainty. When psychological capital is high, artists perceive a higher expected return to their creative investments, making sustained effort more likely. Understanding how psychological capital accumulates or depletes over time is key to explaining why equally skilled artists follow different career trajectories.

2.2 Reinforcement and accumulation

Psychological capital evolves dynamically and is shaped by three forces. The first is past creative output. When an artist completes a major work—whether a symphony, novel, or painting—the experience reinforces their belief in their creative ability. External validation, such as critical acclaim or audience engagement, strengthens this effect by reducing uncertainty about the value of their work. Artists who achieve high early output often find that each completed project lowers the perceived effort cost of future creative work, as past reinforcement builds confidence and increases expectations of success. By contrast, those who produce little work or fail to gain recognition revise downward their expectations about future returns, making sustained creative effort seem riskier and less rewarding. Just as physical capital depreciates without reinvestment, psychological capital erodes when reinforcement is absent, making each new creative endeavor feel more costly. If this cycle persists unchecked, the perceived cost of creative work may rise to the point where disengagement becomes the more attractive option. Over time, these effects generate path-dependent career trajectories: Artists with early reinforcement are more likely to sustain output, while those who face persistent setbacks may find continued effort increasingly costly, raising the probability of withdrawal.

The second force influencing psychological capital is emotional fluctuation, which makes it inherently volatile over time. This is in contrast with human capital, which follows a relatively stable accumulation path. Emotional fluctuations arise from external shocks—for instance, critical feedback—or erratic internal variations in mood, confidence, and motivation. While some of these shifts stem from identifiable external events, others arise unpredictably, making psychological capital less stable than human capital. These emotionally driven shifts in psychological capital

do not directly determine creative output but influence an artist's perceived effort cost at any given time. Positive shocks temporarily boost psychological capital, lowering the perceived effort cost of new work, and increasing creative productivity. Conversely, negative shocks erode psychological capital, raising effort costs, increasing hesitation and disengagement, and lowering output.

Since psychological capital is volatile, its impact on creative persistence depends on the strength of external reinforcement mechanisms—such as commissions, patronage, or audience demand—which stabilize psychological capital by buffering against depletion and moderating perceived effort costs. Artists with stable external support are better able to sustain psychological capital when facing setbacks, while those without such reinforcement may experience cycles of depletion that undermine long-term engagement with creative work. For instance, a composer facing a period of self-doubt or critical rejection may experience a decline in psychological capital. However, securing a prestigious commission can serve as a counteracting force, restoring confidence and lowering the perceived effort cost of continued creative work, thereby increasing the probability of sustained output. Conversely, another artist encountering similar setbacks but lacking external validation may revise their effort cost upward, making it increasingly difficult to justify further creative investment. These dynamics highlight the importance of external reinforcement in counterbalancing depletion and maintaining long-term creative persistence.

The third factor shaping psychological capital is financial stability, which influences an artist's ability to sustain creative effort by affecting the opportunity cost of artistic work. A stable income acts as a buffer against psychological capital depletion by reducing financial uncertainty and allowing artists to focus on creative work without the immediate need for alternative income sources. When income is secure, artists face lower perceived effort costs, making it easier to maintain creative momentum. In contrast, financial stress raises the opportunity cost of artistic production, making alternative income-generating activities relatively more attractive. Empirical studies support this mechanism: Financial burdens such as student loan debt have been shown to deter entry into artistic careers, while access to affordable health insurance reduces the likelihood of exit, helping to sustain creative work (Paulsen 2022, 2024; Woronkowicz et al. 2020). As a result, artists under financial pressure may be forced to divert time and energy away from creative work, disrupting reinforcement cycles and slowing the accumulation—or accelerating the depletion—of psychological capital over time.[3]

Although financial constraints do not automatically lead to burnout, they disrupt the reinforcement mechanisms that sustain psychological capital, making it more

[3] Behavioral research suggests an additional mechanism linking financial stress to reduced creative output. Financial concerns impose a cognitive load that impairs attention, planning, and self-regulation, thereby raising the effective mental cost of sustained effort. Mani et al. (2013) show that financial strain can significantly reduce cognitive function, while Mullainathan and Shafir (2013) argue that scarcity creates a tunneling effect that narrows mental bandwidth and hinders long-term focus. Although our framework emphasizes how financial instability disrupts reinforcement and alters opportunity costs, these behavioral findings offer a complementary explanation for why economic insecurity may erode psychological capital and reduce creative engagement.

difficult to sustain long-term engagement with creative work. An artist who can work full time on their craft is more likely to maintain a self-reinforcing cycle of creative persistence than one who must divide their attention between artistic and non-artistic labor. Financial insecurity raises the perceived effort cost of creative work, making hesitation, delays, and disengagement more likely. Over time, this higher effort cost can create a downward spiral, in which artists increasingly discount the expected return to creative investments, further reducing motivation and increasing the risk of creative withdrawal. Thus, while financial resources do not directly determine output, they play a crucial role in moderating the volatility of psychological capital, shaping whether artists can sustain long-term productivity.[4]

2.3 Path dependence and creative careers

Because psychological capital accumulates over time and exhibits path dependence, past experiences shape future creative effort in ways that are difficult to reverse. A process is path-dependent when its past trajectory influences future outcomes, meaning early reinforcements or setbacks create self-reinforcing patterns that are not easily undone. In artistic careers, this means that once psychological capital moves in one direction, it tends to follow a self-perpetuating trajectory. When reinforcement is sustained, artists accumulate psychological capital, lowering the perceived effort cost of initiating future projects. Each completed work strengthens confidence and motivation, making creative engagement easier. This creates a positive feedback loop: Higher psychological capital reduces the expected cost of continued effort, increasing the probability of sustained productivity. Over time, as reinforcement accumulates, artists can maintain high output even in the face of external volatility. However, psychological capital, like physical capital, depreciates when not replenished. Without continued reinforcement, confidence erodes, uncertainty increases, and the perceived cost of creative work rises, slowing momentum. If depletion persists, the perceived effort cost of re-engaging with creative work may become prohibitively high, increasing the likelihood of withdrawal.

Just as reinforcement sustains creative engagement, persistent setbacks—whether in the form of reduced output or lack of external validation—can generate a downward trajectory, leading to what we call a burnout trap. If repeated setbacks or lack of reinforcement persists, psychological capital depreciates, making sustained creative effort more costly. As psychological capital erodes, the expected effort cost of new creative work rises, increasing the likelihood of hesitation or disengagement. This rising effort cost is an endogenous response to past failures—when previous investments in creative work yield little validation, the perceived return to future effort declines. If reinforcement mechanisms fail, artists face a compounding

[4] Borowiecki et al. (2024) find that the quality and quantity of composers' musical output decline during periods of low income, with the negative effects being most pronounced among those from lower socioeconomic backgrounds. Our framework provides a mechanism that helps explain these patterns by linking financial insecurity to the depletion of psychological capital, which in turn raises the effort cost of sustained creative work.

problem: Each additional setback raises the threshold for creative engagement, making new projects seem riskier and increasing the probability of withdrawal. If psychological capital falls below a critical threshold, the artist may exit creative work entirely. Unlike human capital, psychological capital does not passively accumulate with experience; without reinforcement, even highly skilled individuals may find it difficult to restore creative momentum.

2.4 Predictions

This framework generates several testable predictions about the relationship between psychological capital and creative productivity.

Prediction 1: *High early output increases the likelihood of sustained creative productivity*. Artists who complete major creative works early in their career are more likely to maintain long-term productivity because psychological capital accumulates in response to positive reinforcement. When early output is accompanied by external validation like critical acclaim, audience enthusiasm, or professional recognition, the reinforcement effect is amplified, strengthening confidence and motivation and further lowering the perceived effort cost of continued work. Conversely, artists who struggle to produce work or receive little early validation may revise expectations about future effort costs upward, making continued investment in creative work less likely.

Prediction 2: *Financial stability moderates the volatility of psychological capital and supports sustained engagement*. While financial constraints do not independently determine output, they affect psychological capital by influencing its rate of depletion. Stable income mitigates the erosion of psychological capital, while financial stress slows its accumulation, raising the likelihood that it will fall below a functional threshold. Artists who lack reliable income sources face a rising opportunity cost of creative work, making sustained output harder to maintain.

Prediction 3: *Burnout occurs when psychological capital is depleted faster than it can be replenished.* Setbacks, emotional exhaustion, or excessive perfectionism reduce psychological reinforcement, making it harder for past output to restore psychological reserves. If psychological capital falls below a critical threshold, the effort cost of creative work rises sharply, increasing the risk of hesitation, disengagement, or career withdrawal.

Prediction 4: *Lack of external validation weakens reinforcement cycles and raises the risk of long-term stagnation or decline*. When artists receive little public, critical, or professional recognition, the psychological rewards of creative work diminish. As a result, the internal reinforcement that sustains motivation and effort is weakened, increasing the risk of reduced engagement or long-run creative decline, even when technical skill and output remain high.

These predictions echo core ideas in the economics of talent and innovation. Rosen's (1981) theory of superstars and MacDonald's (1988) dynamic model of rising stars show how small initial differences in talent, effort, or early human capital investment can compound into large disparities in career outcomes through scale economies in consumption or endogenous skill accumulation. We offer

a complementary perspective: Early differences in psychological capital, arising from initial output, validation, or financial stability, can compound over time through reinforcement dynamics, generating divergent creative trajectories. In his seminal work on entrepreneurial innovation, Schumpeter (1934, 1942) emphasized traits such as confidence and initiative in the face of uncertainty, qualities he saw as essential to economic disruption. Modern theoretical work extends this view, showing that overconfidence and risk tolerance can play an important role in motivating entrepreneurial entry despite uncertain or unfavorable odds (e.g., Bernardo and Welch 2001; Camerer and Lovallo 1999; Kihlstrom and Laffont 1979). Although the focus of this literature is on entrepreneurship, the psychological traits it identifies also underpin creative persistence in the arts and other expressive fields. Our framework captures these dynamics through the concept of psychological capital, which models how confidence, motivation, and resilience evolve in response to past experience and shape sustained creative effort.

3 Case studies

To explore whether the predictions of our framework align with real-world patterns, we examine historical case studies of artistic careers. These examples provide suggestive evidence that psychological capital accumulation—or its depletion—helps shape long-term creative trajectories. However, because artistic careers are influenced by multiple factors, isolating causal mechanisms remains challenging. Rather than establishing definitive causal relationships, these cases highlight recurring patterns that align with our framework, illustrating how psychological capital interacts with financial pressures and reinforcement dynamics to influence creative persistence and career longevity. While our examples focus on individuals who eventually attained recognition, either during their lifetimes or posthumously, we acknowledge that lasting artistic recognition is rare and not representative of the average artist's historical legacy. Most artists never achieve enduring visibility, and the creative professions are marked by far more instances of obscurity than lasting success. Our aim is not to claim that these cases are typical, but to show how the mechanisms in our framework can help explain variation in creative trajectories, including patterns of persistence and decline.

3.1 Self-sustaining cycles

The first prediction of our framework is that high early output increases the likelihood of sustained creative productivity. When artists complete major works early in their careers, psychological capital accumulates through reinforcement, lowering the perceived effort cost of continued work. External validation can further amplify this

effect, strengthening confidence, motivation, and persistence.[5] The careers of Wolfgang Amadeus Mozart and Charles Dickens illustrate this pattern.

3.1.1 Wolfgang Amadeus Mozart (1756-1791): early success and lifelong productivity

From a young age, Mozart composed prolifically and received widespread recognition, performing before European royalty and attracting significant public attention.[6] His father, Leopold, played a key role in facilitating these opportunities, securing commissions, and promoting public performances that reinforced the young composer's confidence. By his teenage years, Mozart had composed symphonies, operas, and chamber works, receiving continued encouragement that likely strengthened his psychological capital.

This early reinforcement appears to have created a positive feedback loop that helped sustain Mozart's creative momentum. Even after the death of his mother in Paris in 1778, he remained highly productive, composing works such as the *Piano Sonata in A Minor*, the *Concerto for Flute and Harp*, and the *Paris Symphony* that same year, demonstrating his ability to maintain creative momentum despite personal loss. Later, after leaving the Salzburg court in 1781—a period marked by financial uncertainty—Mozart continued to produce major works including *The Abduction from the Seraglio* (1782) and numerous piano concertos. Despite growing financial pressures in Vienna, his output remained remarkably high. In his final year (1791), he wrote *The Clemency of Titus*, *The Magic Flute*, his *Clarinet Concerto*, and the unfinished *Requiem*. While multiple factors likely influenced Mozart's creative trajectory, his career aligns with the prediction that early output, reinforced by validation, can build psychological capital, and lower the perceived cost of sustained artistic effort, even under difficult financial circumstances.[7]

3.1.2 Charles Dickens (1812-1870): serial validation and sustained output

Dickens' career similarly supports the prediction that early external validation can help sustain long-term creative productivity.[8] His breakthrough came with *The Pickwick Papers* (1836), which became an immediate sensation and established his public reputation. Its serialization format provided Dickens with regular audience

[5] Our framework distinguishes between output and external validation as sources of psychological capital reinforcement; however, historical evidence often does not permit these effects to be disentangled. Artists who produce significant early work frequently receive recognition, and the psychological reinforcement likely reflects both the act of creation and its reception. Accordingly, the case studies should be interpreted as illustrative of the broader dynamics of psychological capital accumulation rather than as tests of the individual components of reinforcement.

[6] This discussion draws on Solomon (1995), Gutman (1999).

[7] Mozart's financial instability is generally attributed to excessive spending rather than low income; Baumol and Baumol (1994) estimate that his real earnings were relatively high in his last decade. In our framework, however, financial stress, whether due to inadequate income or poor financial management, can erode psychological capital.

[8] For more details about Dickens' life and career see Schlicke (2011), Kaplan (1998).

feedback, turning each installment into a source of psychological reinforcement. This structure not only ensured financial stability, but may also have lowered the perceived cost of continued creative effort by sustaining his motivation and engagement.

Over the next three decades, Dickens maintained a remarkable level of productivity, writing *Oliver Twist* (1837–39), *David Copperfield* (1849–50), *Bleak House* (1852–53), and *Great Expectations* (1860–61), among others. Serialization likely played a key role in reinforcing his psychological capital by creating a self-sustaining cycle of output and audience response. Frequent public readings of his work added an additional channel of validation, strengthening his connection with readers and reinforcing the value of his creative efforts. While multiple factors—including financial incentives—shaped his career, Dickens' career pattern is consistent with the idea that consistent validation helps maintain creative momentum over time by supporting the accumulation of psychological capital .

3.2 Role of financial stability

A second key prediction of this framework is that financial stability serves as a buffer against the depletion of psychological capital, allowing artists to remain productive even in the face of creative struggles or external pressures. Although financial security does not guarantee sustained productivity, it reduces the likelihood that economic stress will erode psychological capital. Artists who enjoy stable incomes are better positioned to focus on their creative work while those who face persistent financial instability may experience greater emotional stress, making them more vulnerable to depletion. Johann Sebastian Bach and Claude Monet provide evidence consistent with this prediction.

3.2.1 Johann Sebastian Bach (1685-1750): stable employment and continuous output

Like many of his Baroque Era contemporaries, Bach secured salaried positions in aristocratic courts and in ecclesiastical organizations that provided steady income and professional support.[9] His tenure as Kapellmeister in Köthen (1717–1723) and later as Thomaskantor in Leipzig (1723–1750) ensured that he had the financial security and the professional support necessary for consistent creative output.

This stability allowed Bach to produce an extraordinary body of work, including the *Brandenburg Concertos* (1721), *The Well-Tempered Clavier* (1722, 1742), *St. Matthew Passion* (1729), the *Mass in B Minor* (1749), and over 200 cantatas without the strain of financial uncertainty. Although he faced professional conflicts in Leipzig—particularly disputes with town authorities over artistic autonomy and workload—these challenges did not disrupt his momentum. His case suggests that

[9] See Wolff (2000) for a more complete discussion of Bach's life and career.

secure employment can help buffer against external pressures, making it less likely that setbacks or workplace tensions will translate into prolonged creative stagnation.

3.2.2 Claude Monet (1840-1926): economic security and late-career masterpieces

Monet's career provides a different perspective on how financial stability can help sustain artistic output, particularly later in life.[10] Unlike Bach, Monet spent his early years in financial distress, often relying on loans from friends and patrons to continue painting. However, his situation improved significantly in the 1880s and 1890s as his paintings gained commercial success, allowing him to purchase property in Giverny and devote himself fully to his work without financial distractions.

This economic security became especially important as Monet faced personal and health-related challenges in his later years. Struggling with cataracts and deteriorating eyesight, he nonetheless maintained a high level of productivity, producing some of his most celebrated works, including the iconic *Water Lilies* series (1899–1926). The absence of financial pressure may have allowed him to remain engaged in his creative practice, focusing on artistic experimentation rather than survival. While other artists in precarious financial situations may have been forced to take on unrelated work, Monet's economic independence likely reduced the effort costs associated with continuing to paint, allowing him to remain productive despite physical difficulties.

3.3 Burnout and the depletion of psychological capital

The third prediction of our framework is that burnout occurs when setbacks, emotional exhaustion, or excessive perfectionism deplete psychological capital faster than it can be replenished, leading to declining output or career withdrawal. While some artists sustain productivity through reinforcement and external validation, others experience cycles of intense creative effort followed by exhaustion. Perfectionism, in particular, can contribute to this process by raising the psychological cost of creation: When every new work demands an unattainable standard, the perceived effort required for continued production increases, making sustained output more difficult. The careers of Gustave Flaubert and Herman Melville illustrate how both internal and external pressures can erode psychological capital, leading to creative decline.

3.3.1 Gustave Flaubert (1821-1880): perfectionism and psychological drain

Flaubert's career illustrates how extreme perfectionism can deplete psychological capital, making sustained creative output more difficult.[11] Unlike Dickens, who thrived under the pressure of serialization, Flaubert's creative process was

[10] For more details about Monet see Tucker (1995).

[11] See Brown (2006) for more information concerning Flaubert's life and work.

painstakingly slow; he agonized over every sentence, obsessing over stylistic precision and the rhythm of his prose. His most famous novel, *Madame Bovary* (1856), took nearly five years to complete, during which he revised obsessively, rewriting entire passages multiple times.

This relentless pursuit of artistic perfection may have amplified the psychological cost of creative work, contributing to periods of exhaustion and inactivity. Flaubert himself lamented the toll that writing took on him, and his later works, such as *Sentimental Education* (1869) and *Bouvard et Pécuchet* (unfinished at his death in 1880), reflect a slower creative pace and growing frustration with his craft. While other factors—including shifts in literary trends and declining personal health—likely influenced his career trajectory, Flaubert's case is consistent with the prediction that excessive cognitive strain, without adequate reinforcement, can drain psychological capital and increase the effort cost of continued production.

3.3.2 Jackson Pollock (1912–1956): creative exhaustion and psychological collapse

Pollock's career furnishes an example of how the depletion of psychological capital—driven by mounting pressure, creative fatigue, and personal struggles—can lead to burnout, even when preceded by a period of extraordinary productivity.[12] His meteoric rise in the late 1940s reinforced his psychological capital, fueling an intense period of productivity that culminated in his famous drip paintings, such as *Number 1* (1948) and *Lavender Mist* (1950). However, as expectations mounted and the demand for constant innovation intensified, he grew increasingly frustrated and plagued by self-doubt. By the early 1950s, his artistic direction shifted, and he abandoned his signature style in favor of darker, more restrained works, culminating in the "Black Pourings" series.

When the "Black Pourings" failed commercially—none of them sold at his 1951 exhibition—Pollock suffered a severe psychological blow. This rejection, combined with his growing struggles with alcoholism, led to cycles of avoidance and creative stagnation. His output declined, and despite attempts to return to painting, he struggled to remain engaged with his art. As his psychological capital eroded, burnout set in, manifesting in artistic paralysis and self-destruction. His career ended abruptly in 1956 when he died in a car crash while driving intoxicated. Accordingly, Pollock's trajectory illustrates how burnout can result from sustained creative pressure, external disappointment, and the inability to replenish psychological resilience.

3.4 Lack of external validation and creative decline

A final prediction of our framework is that a lack of external validation can erode psychological capital, increasing the perceived effort cost of continued creative work. Without consistent recognition—whether through commissions, critical acclaim, or audience engagement—motivation may decline, making sustained

[12] For more information about Pollock see Naifeh and Smith (1989).

artistic effort more difficult. Over time, the depletion of psychological capital may lead to a gradual slowdown in output, artistic stagnation, or even complete withdrawal from creative pursuits. While some artists persist despite fluctuating external support, others struggle to sustain creative engagement once reinforcement mechanisms fade. The experiences of Edgar Allan Poe and Jean Sibelius highlight how the long-term absence of validation can, in some cases, contribute to creative disengagement.

3.4.1 Edgar Allan Poe (1809-1849): instability and decline

Though now regarded as one of the most influential figures in American literature, Poe struggled for much of his life to achieve financial stability or consistent professional recognition.[13] His works, including *The Raven* (1845) and *The Tell-Tale Heart* (1843), gained brief popularity but failed to secure lasting commercial success. Throughout his career, he relied on low-paying editorial jobs and irregular magazine contributions, leaving him in constant financial distress.

The economic pressures Poe faced likely exacerbated the effort cost of creative work, as he was frequently forced to write for financial necessity rather than artistic ambition. Unlike authors such as Dickens, who benefited from serialization and a steady readership, Poe lacked a stable publishing platform that could have reinforced his psychological capital over time. His later years were marked by declining output, worsening health, and professional instability. While multiple factors contributed to his struggles, including personal and medical issues, his case is consistent with the prediction that a sustained lack of external reinforcement can weaken psychological capital and make continued creative engagement more difficult.

3.4.2 Jean Sibelius (1865-1957): loss of validation and withdrawal from composition

Sibelius provides another striking example of how the waning of external recognition can lead to total creative withdrawal.[14] Early in his career, he was Finland's most celebrated composer, earning widespread acclaim for works such as *Finlandia* (1899) and his first five symphonies (1899–1919). However, as musical styles shifted away from Romanticism, Sibelius received fewer commissions, and public enthusiasm for his work declined. Over time, this loss of external reinforcement appears to have eroded his psychological capital, making it increasingly difficult for him to sustain creative momentum.

Despite living for another 30 years, Sibelius produced almost no major works after 1926, an extended period often referred to as *The Silence of Järvenpää*. Unlike composers such as Bach or Mozart, who continued creating despite setbacks, Sibelius became increasingly withdrawn, ultimately burning his unfinished *Eighth Symphony* and largely ceasing composition. His case suggests that when external

[13] See Meyer (2000) for more details.

[14] See Barnett (2011) for further discussion of Sibelius' career.

validation fades, the perceived effort cost of creative work may rise to the point where continued artistic production becomes untenable.

4 Conclusion

This paper develops a conceptual framework in which psychological capital functions as a dynamic input into creative production, alongside human capital. Psychological capital influences creative output by shaping perceived effort costs. Unlike human capital, which accumulates gradually, psychological capital is volatile, fluctuating in response to past creative success, emotional shocks, and financial instability. Positive reinforcement of psychological capital can create self-sustaining cycles of creativity, while repeated setbacks or economic uncertainty can accelerate its depletion, increasing the likelihood of stagnation or withdrawal. The historical case studies illustrate patterns consistent with this framework, suggesting that differences in the reinforcement of psychological capital help explain divergent creative trajectories.

Although our framework highlights how emotions influence psychological capital, underlying psychological disorders may further shape how it evolves over time. Many artists, composers, and writers—including Jackson Pollock, Jean Sibelius, and Edgar Allan Poe—struggled with conditions such as depression, bipolar disorder, or substance abuse, which likely contributed to the volatility of their psychological capital. Sibelius' prolonged creative silence may reflect the cumulative effects of depression and self-doubt, while Pollock's self-destructive behavior and artistic paralysis in the 1950 s illustrate how psychological capital depletion can interact with substance abuse and external pressure. Similarly, Poe's lifelong mental instability may have contributed to cycles of creativity and decline, ultimately leading to disengagement. In some cases, psychological disorders may fuel creativity in bursts, while in others, they accelerate burnout and artistic withdrawal.[15] Future research could explore how different mental health conditions interact with reinforcement mechanisms, financial stability, and the opportunity cost of continued creative work, offering further insight into the relationship between psychological resilience and long-term creativity.

While psychological disorders may intensify the volatility of psychological capital, some artistic careers deviate from the model's predictions for other reasons. For

[15] The life and career of composer Robert Schumann illustrates how psychological disorders can amplify fluctuations in psychological capital. Schumann is widely believed to have suffered from bipolar disorder, with scholars noting that his most prolific periods–including his *Liederjahr* (Year of Song) (1840), *Symphony Year* (1841), and *Chamber Music Year* (1842)—coincided with what appear to be manic episodes, while his periods of creative slowdown, particularly in the late 1840 s and early 1850 s, align with depressive phases. In our framework, these cycles reflect extreme variations in psychological capital. During manic episodes, Schumann likely experienced surges in confidence and motivation, dramatically lowering the perceived effort cost of creative work and enabling periods of astonishing productivity. Conversely, during depressive episodes, psychological capital would have rapidly depleted, raising effort costs and contributing to stagnation or withdrawal. For an analysis of Schumann's mental health and its connection to his creative output see Weisberg (1994).

example, Dmitri Shostakovich continued composing major works during the Stalinist period despite intense psychological strain stemming from fear of political persecution and cycles of state denunciation. Francisco Goya remained highly productive late in life, even after illness, deafness, and political exile, and despite limited external reinforcement. Fyodor Dostoevsky continued writing while contending with chronic debt, epilepsy, and emotional volatility.[16] These cases suggest that some individuals may maintain creative productivity despite prolonged depletion or unstable reinforcement. Rather than undermining the framework, however, these examples point to the role of additional factors, such as political conditions, health, or temperament, that interact with psychological capital to shape artistic trajectories.

Our findings have implications for cultural policy and the economics of artistic labor markets. Grants, commissions, and prizes that offer early recognition and support may have persistent productivity effects by fostering psychological capital accumulation. Likewise, financial support mechanisms that reduce income volatility can help stabilize psychological capital by lowering the uncertainty and effort cost associated with creative work. More broadly, organizations that support or amplify professional recognition, whether by subsidizing market demand, offering patronage, or facilitating peer validation, may serve as stabilizing forces that reduce the likelihood of inefficient exits from creative professions. These findings suggest that policy interventions aimed at supporting artistic careers should extend beyond direct financial subsidies to include measures that mitigate uncertainty and sustain creative engagement over time.

Future research could build on this framework by drawing on longitudinal data on artistic careers. One possible direction is to examine how observable factors such as fluctuations in creative output, external validation, and financial stability correlate with inferred changes in psychological capital. A key empirical challenge is to identify the causal relationship between reinforcement mechanisms and career persistence, particularly when distinguishing true psychological capital accumulation from selection effects. An alternative empirical strategy would be to directly measure psychological capital through surveys of artists working within specific sectors or regions of the creative economy, using or adapting validated instruments from organizational psychology. Such an approach could provide a more robust test of the framework's predictions by linking individual differences in psychological capital to creative output and career trajectories. Another promising avenue would be to explore whether reinforcement dynamics differ by gender, specifically, whether the absence of external validation weakens reinforcement cycles more acutely for women than for men, thereby raising the risk of long-term stagnation or decline. Additionally, further study is needed on the role of network effects and peer spillovers in reinforcing psychological capital, for instance, whether artists in collaborative environments maintain higher long-term productivity due to mutual reinforcement. Investigating these questions could improve our understanding of the microeconomic determinants of sustained creativity and inform strategies to foster artistic excellence over time.

[16] For more details on these figures, see Wilson (2006), Tomlinson (2020), Frank (2010).

While our framework was developed to understand the career paths of artists, its application extends beyond the creative sector. The mechanisms that govern the accumulation and depletion of psychological capital—reinforcement through success, erosion due to setbacks, and its effect on effort costs—are likely to shape career trajectories in any field that requires sustained intellectual or creative effort, including scientific research, academia, high technology, and entrepreneurship. Examining these dynamics in other domains could offer new insights into the factors that influence long-term productivity and the conditions that allow individuals to sustain creative engagement over time.

Appendix: A dynamic production model with psychological capital

We present a dynamic production model in which creative output depends on both human capital and psychological capital. Psychological capital evolves over time in response to past output, financial stress, and emotional volatility. While effort is not modeled explicitly, we assume that psychological capital reduces the perceived cost of sustaining effort. When psychological capital is high, creative work is easier to maintain; when it is low, the psychic burden of effort increases, leading to reduced output even when skill remains unchanged.

Creative output in period t, denoted Q_t, is given by the production function:

$$Q_t = Ah^{\alpha}\psi_t^{1-\alpha} \tag{1}$$

Here, h denotes human capital and ψ_t is psychological capital. The parameter $A > 0$ influences overall productivity, and $\alpha \in (0, 1)$ determines the elasticity of output with respect to human capital. Although human capital may evolve gradually over the course of a career through accumulated training or experience, we treat it as fixed in order to isolate the effects of psychological capital, which is more volatile and responsive to recent events.[17]

Psychological capital follows a recursive law of motion:

$$\psi_{t+1} = (1 - \delta)\psi_t + g(Q_t) - \theta F_t + \varepsilon_t \tag{2}$$

where $\delta \in (0, 1)$ represents natural depreciation, $g(Q_t)$ is a reinforcement function with $g' > 0$ and $g'' < 0$, F_t represents financial stress or insecurity, with higher values indicating greater economic pressure, $\theta > 0$ reflects the sensitivity of psychological capital to financial strain, and ε_t is a mean-zero shock representing short-term emotional volatility. The function $g(Q_t)$ captures how current output contributes to psychological capital; its responsiveness may vary depending on whether the output is externally validated or ignored, with public or professional recognition amplifying reinforcement effects. This formulation reflects three key mechanisms discussed in Section 2: reinforcement from current creative output, depletion due to financial constraints, and stochastic fluctuations.

[17] For similar reasons, we abstract from physical capital.

This framework yields several implications for creative careers, each of which corresponds to a testable prediction.

First, high early output reinforces psychological capital and lowers the effective cost of sustained effort, increasing the likelihood of continued creative engagement. Output in period t contributes to psychological reinforcement via the function $g(Q_t)$, which boosts psychological capital in the following period. Because psychological capital raises productivity and lowers effort costs, this feedback loop can generate a self-reinforcing dynamic: Individuals who begin with high early output are more likely to maintain momentum. Conversely, when early output is low, reinforcement weakens, and psychological capital may erode. This raises the effective cost of effort and reduces the likelihood of future productivity, potentially triggering a downward spiral.

Second, financial stress reduces psychological capital accumulation and raises the risk of creative disengagement. When an individual faces economic stress—due to irregular income, sporadic commissions, or lack of access to paid creative work—the associated increase in F_t accelerates the erosion of psychological capital. Even if skill and prior output remain stable, financial pressure increases the psychological cost of sustained effort, making withdrawal or a shift away from creative work more likely. In this way, financial stress undermines persistence, not by diminishing skill, but by increasing the internal cost of maintaining creative focus.

Third, psychological capital may fall below a critical threshold when reinforcement mechanisms are too weak to counteract depreciation or financial stress. This can occur when individuals discount their own output due to perfectionism, chronic self-doubt, or emotional exhaustion, or when external validation is lacking. In these cases, the reinforcement function $g(Q_t)$ becomes flatter, limiting the psychological return to effort. If $g(Q_t)$ fails to offset $\delta\psi_t + \theta F_t$, then psychological capital diminishes, raising effort costs and making hesitation, delays, or burnout more likely.

Fourth, artists who lack external validation—through commissions, critical acclaim, or audience engagement—experience weaker reinforcement cycles. When public or peer recognition is limited, the psychological rewards from output are muted, flattening the reinforcement function $g(Q_t)$. Over time, this makes it harder to maintain creative engagement, even when output remains high.

These predictions illustrate how psychological capital acts as a dynamic bridge between past experiences and future productivity, shaping creative trajectories through reinforcement, depletion, and nonlinear feedback. The model's recursive structure implies strong path dependence: Even small early differences in productivity, financial stability, or recognition can result in sharply diverging outcomes over time, as psychological capital either accumulates or erodes.

Acknowledgements We are grateful to Jordi McKenzie, Paul Crosby, Hiromi Fukuda, and two anonymous referees for helpful comments on earlier drafts of this paper.

Funding Open access funding provided by University of Southern Denmark.

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