Exploring the Dark Triad's Impact on Second Language Burnout: A Structural Equation Modeling Approach

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Abstract

Over the past four decades, numerous studies have explored the relationship between the Big Five Personality Traits and second language (L2) learning outcomes. However, there is limited research on the impact of undesirable personality traits, specifically the Dark Triad, on negative L2 learning outcomes. To address this gap, we investigated the potential effects of the Dark Triad (Machiavellianism, Narcissism, and Psychopathy) on L2 burnout (exhaustion, cynicism, and reduced efficacy) among 337 Chinese college L2 learners, utilizing SPSS 26 and AMOS 24. The structural equation modeling (SEM) results revealed several intriguing findings that contradicted trends observed in other fields. Notably, Psychopathy was found to be the most significant predictor, positively influencing all three dimensions of L2 burnout. Narcissism, on the other hand, was found to positively predict exhaustion and cynicism but had no significant impact on reduced self-efficacy. Surprisingly, Machiavellianism did not show a significant effect on any of the dimensions of L2 burnout. We discussed possible explanations for these findings and proposed directions for future research.

1 Introduction

Second language (L2) learning often leads to attrition, with many learners discontinuing their studies prematurely (Dörnyei & Skehan, 2003; Robinson, 2002). Yet some achieve near-native proficiency, prompting decades of research into individual differences (Dörnyei, 2005; Skehan, 1989; Tseng & Gao, 2021). These variables—spanning cognitive (e.g., metacognitive strategies; Teng, 2024b), affective (e.g., emotions; Teng, 2024a), motivational (e.g., L2 self; Lantolf, 2021; Liu et al., 2025), conative (e.g., behavioral intention; Wu, Wang, et al., 2024b), and personality-related factors (e.g., the Big Five; Chen et al., 2022)—have been extensively explored (Teng, 2024b; Teng & Ma, 2024). Notably, burnout has

gained prominence amid the growing emphasis on positive psychology (Wang et al., 2021), as its adverse effects on learning outcomes and mental well-being underscore its critical role in L2 contexts (Watts & Robertson, 2022).

Burnout is defined as a state of physical, emotional, and mental exhaustion resulting from prolonged stress or overwork, characterized by feelings of exhaustion, cynicism, and reduced efficacy. Originally a concept from organizational psychology, burnout is typically associated with workers. However, L2 learners may also experience burnout due to facing pressures and burdens similar to those encountered by employees (Li et al., 2021). Much of the existing research on burnout in the context of L2 learning has focused on its protective factors and antecedents. Several protective factors have been identified, including resilience, buoyancy, and teacher support (Wu, Wang, et al., 2024b). Additionally, a range of antecedents has been recognized, such as excessively high expectations from parents and self, as well as negative past experiences in L2 learning (Wu, Zeng, et al., 2024).

Recently, Ebn-Abbasi et al. (2025) introduced a new psychological construct to the field of L2 learning, known as the Dark Triad. Unlike the Big Five Personality Traits, which are neutral, the Dark Triad refers to three negative personality traits. It includes Machiavellianism, Narcissism, and Psychopathy (Paulhus & Williams, 2002). Surprisingly, they found that certain personality traits can positively influence various L2 learning outcomes, such as L2 proficiency, different components of motivation and engagement, effort, and willingness to communicate, highlighting the significant role of the Dark Triad in L2 learning. However, the influence of these traits on L2 burnout remains underexplored, as existing studies have not examined how these traits may affect the dimensions of burnout, such as exhaustion, cynicism, or reduced efficacy, in L2 learners. This research makes a novel contribution by investigating how specific personality traits interact with the different aspects of burnout in L2 contexts, an area that has not been extensively studied. By addressing this gap, the study offers valuable insights that could help educators and psychologists develop targeted strategies to reduce burnout risks and enhance learners' mental well-being, ultimately enabling the creation of personalized interventions for long-term success in L2 learning.

2 Literature Review

2.1 Role of the Dark Triad in L2 learning

The Dark Triad, introduced by Paulhus and Williams (2002), consists of three distinct negative personality traits: Machiavellianism, Narcissism, and Psychopathy. Machiavellianism is characterized by manipulation and strategic thinking, where individuals exploit others for personal gain, using deception and manipulation, often disregarding morals and emotional connections, seeing relationships as tools for self-interest (Mirkovic & Bianchi, 2019). Narcissism is marked by excessive self-centeredness (Weiss & Miller, 2018), a constant need for admiration, and an inflated sense of superiority, with individuals overestimating their abilities and appearance, seeking constant validation and belittling others to protect their fragile self-esteem (Besser & Priel, 2010). Psychopathy is defined by emotional detachment and a lack of empathy, where individuals struggle to recognize or connect with the emotions of others (Osumi & Ohira, 2010). Psychopaths often engage in impulsive and aggressive behaviors (Hart & Dempster, 1997), violating social norms and moral codes, driven by immediate gratification or personal gain, with little regard for the consequences of their actions on others or society (Lozano et al., 2014). Recent evolutionary perspectives reveal theoretical tensions regarding the Dark Triad's functional roles. While mainstream research conceptualizes these traits as manifestations of a fast life history strategy—prioritizing immediate gains through risk-taking and exploitation (Jonason & Tost, 2010)—emerging evidence suggests context-dependent strategic shifts (McDonald et al., 2012). For instance, strategic deception in Machiavellianism may paradoxically serve long-term status accumulation in stable learning environments.

Individuals exhibiting the Dark Triad often display negative behaviors and attitudes in social interactions, which can harm others and detrimentally affect their own mental well-being (Azizli et al., 2016). However, some research suggests that these traits may also offer certain advantages, particularly in terms of career advancement (Brownell et al., 2021). For example, Volmer et al. (2016) conducted a three-month longitudinal study with 811 employees to examine the influence of leaders' Dark Triad on employees' career success. Their findings revealed that Narcissism positively influenced subordinates' salaries, promotions, and job satisfaction, without adversely affecting their well-being. Nguyen et al. (2021) applied latent profile analysis to explore the subgroups of the Dark Triad in 447 employees and their relationship with work behaviors. They identified four distinct profiles: benevolent, high Machiavellian, high Psychopathic, and malevolent. The malevolent profile was found to be linked to the highest levels of job performance. Furthermore, given the essential role of senior managers in organizational success, Cesinger et al. (2023) discovered that narcissism positively impacted both continuance and normative commitment within organizational commitment, based on data from 394 senior managers. These findings collectively challenge the monolithic view of the Dark Triad, suggesting context-dependent utility in career ecosystems.

In the field of L2 learning, researchers have examined the relationship between personality traits and L2 learning outcomes for over four decades (Chen et al., 2022). However, most of these studies have predominantly focused on the "Big Five" personality traits. In contrast, the Dark Triad has largely been overlooked. A recent study by Ebn-Abbasi et al. (2025) has broken new ground by examining the impact of the Dark Triad on L2 learning outcomes among 431 English learners. Their findings indicate that, with regard to L2 motivation, Narcissism positively predicted the Ideal L2 Self, while Psychopathy had a negative effect. Additionally, Machiavellianism positively predicted the ought-to L2 self, while Narcissism and Psychopathy had negative effects. In terms of L2 learning engagement, Machiavellianism was a positive predictor of social engagement, peer engagement, and engagement in learning activities; Psychopathy negatively impacted learning effort, social engagement, peer engagement, and learning activity engagement. Narcissism had a mixed effect, positively predicting learning effort and teacher engagement, but negatively influencing social engagement, peer engagement, and learning activity engagement. Regarding L2 learning achievement, Machiavellianism, Narcissism, and Psychopathy all positively predicted both academic and self-perceived achievement, with a stronger impact on self-perceived achievement. For L2 willingness to communicate, Narcissism was positively correlated with willingness to communicate, Psychopathy was negatively correlated, and Machiavellianism had no significant effect. Ebn-Abbasi et al.'s (2025) study makes a valuable contribution to the field, but the effect of the Dark Triad on L2 burnout remains an area yet to be explored.

2.2 Role of burnout in L2 learning

Early research on burnout primarily focused on workers in the service industry, especially those in jobs that involve frequent interpersonal interactions (Golembiewski et al., 1983). In organizational psychology, burnout is defined as a state of physical and mental exhaustion resulting from prolonged work-related stress, typically manifested in three dimensions: exhaustion, cynicism, and a sense of reduced efficacy (Maslach et al., 2001). Exhaustion refers to feelings of being physically and mentally drained due to sustained work or academic pressure, along with a lack of motivation and emotional support to handle tasks. This fatigue is more than just physical; it is primarily emotional and psychological. Cynicism refers to the development of a detached and indifferent attitude toward others or tasks, often resulting in coldness or impatience toward colleagues or clients due to ongoing stress. Reduced efficacy refers to individuals feeling incapable of achieving their goals under persistent pressure, leading them to question their ability to succeed, which in turn diminishes their sense of self-worth. As research continued, the focus of burnout studies gradually expanded beyond the workplace. The concept was introduced into education, shifting the research focus to students (Schaufeli et al., 2002). Given that students face

similar pressures and burdens as employees, they too are susceptible to burnout. As a result, burnout research evolved from organizational psychology to include student populations, shifting the focus from professional settings to the physical and mental impacts of academic stress and learning demands.

The introduction of burnout into the field of L2 learning can largely be credited to the recent rise of positive psychology (MacIntyre & Mercer, 2014). Initially, drawing on the principles of positive psychology, researchers began to explore the effects of positive emotions, such as enjoyment and hope, on L2 learning (Derakhshan & Yin, 2024; Khajavy & and Lüftenegger, 2024; Wang, 2024). This shift in focus was a response to earlier studies that predominantly concentrated on anxiety and placed too much emphasis on cognitive factors in L2 learning. As research evolved, scholars began to take a more holistic approach, revisiting negative emotions like burnout. Li et al. (2021) validated a revised 10-item scale for measuring burnout among Chinese L2 learners. Their findings showed that while overall burnout levels were relatively low, exhaustion was notably higher. Moreover, burnout was found to negatively predict L2 performance. This research is the first to establish a burnout measurement tool specifically tailored to L2 learning. Using this tool, subsequent research delved into the antecedents and consequences of L2 burnout from various theoretical perspectives. For example, Wu, Zeng, et al. (2024), using the Job Demands-Resources Model, burnout in high school L2 learners mainly stems from high academic pressure (e.g., self/parental expectations and academic workload) and low academic support (e.g., poor school management and unfavorable learning environments). On the consequences side, Wu, Wang, et al. (2024a) applied the Conservation of Resources Theory to examine burnout, resilience, and engagement among Chinese high school L2 learners using a mixed-methods approach. The quantitative analysis showed burnout negatively predicted both resilience and engagement, while resilience and engagement reinforced each other. Qualitative interviews identified emotional exhaustion and reduced efficacy as key burnout factors, with social resilience and metacognitive strategies serving as effective mitigators. Despite the growing attention on burnout in L2 research, its relationship with dark personality traits remains unexplored.

2.3 Potential links between the Dark Triad and L2 burnout

Although no studies have specifically explored the relationship between the Dark Triad and burnout in L2 learning, there have been sporadic investigations in educational and organizational psychology. For instance, Klerks et al. (2024), who surveyed 304 college students, found a significant positive correlation between academic burnout and two dark personality traits: Machiavellianism and Psychopathy. Specifically, Machiavellianism's cynical mindset and Psychopathy's emotional detachment were identified as key risk factors. In contrast, the relationship between Narcissism and academic burnout was relatively weak, with only a moderate indirect effect via the avoidance of displaying flaws. The study highlights the importance of developing targeted interventions for different dark personality traits, such as helping Machiavellians address cognitive biases and guiding Psychopaths in forming healthy interpersonal relationships. In the realm of organizational psychology, Ma et al. (2021) compared the role of these traits in predicting exhaustion, one dimension of burnout, among 239 Chinese and 240 American workers. Their findings revealed that Narcissism reduced exhaustion among the American sample, but had no effect on the Chinese sample. Additionally, both Machiavellianism and Psychopathy were found to increase exhaustion, though the strength of this effect varied across the two samples. These studies suggest that the impact of the Dark Triad on burnout differs by domain and culture, thus justifying the need to explore this relationship in the context of L2 learning. However, these studies also have notable limitations. First, Klerks et al. (2024) examined the effects of the Dark Triad on burnout separately, which may overlook the intercorrelated and coexistent nature of these traits, as highlighted by Paulhus and Williams (2002). Furthermore, they treated burnout as a singular construct, failing to offer nuanced insights into how each personality trait influences specific components of burnout. Second, Ma et al. (2021) focused solely on exhaustion, neglecting the other dimensions of burnout, such as cynicism and reduced efficacy. These limitations justified our study.

2.4 Rationale and research questions

Given above limitations and the scarcity of similar explorations in the field of L2 learning, this study aims to comprehensively examine the effect of each Dark Triad on each dimension of burnout (visualized in Figure 1). Specifically, this study will address the following research questions:

RQ1: What are the relationships between the Dark Triad and the dimensions of L2 burnout?

RQ2: Does the Dark Triad predict the dimensions of L2 burnout?

Figure 1

The Visualization of the Relationship Between the Dark Triad and L2 Burnout
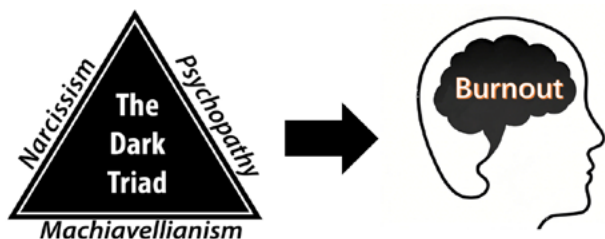
3 Methodology

3.1 Participants

We employed purposive sampling to recruit undergraduates majoring in languages at three Chinese universities in Beijing, Henan, and Hunan. Specifically, the participants were from three majors: English, Russian, and Chinese as a Foreign Language (CFL) education. For the English and Russian majors, these languages are clearly L2s for the Chinese students. In contrast, for CFL majors, who are trained to teach Chinese to foreign learners in English, English learning is an integral part of their curriculum. Thus, CFL majors were also considered L2 learners. The questionnaires were distributed through the Wenjuanxing platform via our colleagues, resulting in a total of 448 completed responses. However, 111 responses were excluded due to incomplete information or identical answers. Consequently, the final sample consisted of 337 participants. Demographic details of the sample are presented in Table 1.

Table 1

Demographic Characteristics of Participants (n = 337)

Gender	Count	Percentage
Male	58	17.2%
Female	239	82.8%
Age		
18-20	123	36.5%
20-25	214	64.5%
Grade		
Frenshman	30	8.9%
Sophomore	109	32.3%
Junior	187	55.5%
Senior	11	3.3%
Major		
English	172	51.0%
Chinese	137	40.7%
Russia	28	8.3%

The self-reported scale concerning the Dark Triad utilized in this study were carefully translated and adapted for the L2 learning context by a team of three bilingual researchers. To ensure the accuracy and consistency of the translations, a professional translator reviewed the scales. All participants completed the Chinese version of the questionnaire and provided informed consent by signing a consent form before participation. Ethical approval for the study was granted by the Ethics Committee of Hunan Normal University.

3.2 Instruments

3.2.1 The Dirty Dozen

We employed the 12-item *Dirty Dozen*, a concise measure of the Dark Triad, developed by Jonason and Webster (2010) to assess participants' Machiavellianism, Narcissism, and Psychopathy, with each trait being measured by four items. An example item for Machiavellianism is: "*I tend to manipulate others to get my way*". All items were rated on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). A higher score indicates a greater level of dark personality traits. In our study, the reliability of this scale was excellent (Viladrich et al., 2017), with Cronbach's α values of 0.889 (>0.7) for Machiavellianism, 0.874 (>0.7) for Psychopathy, and 0.885 (>0.7) for Narcissism. Regarding construct validity, the model fit was also satisfactory (Hu & Bentler, 1999), as indicated by the following fit indices: χ^2/df = 2.595 (<3), CFI = 0.972 (>0.9), TLI = 0.959 (>0.9), RMSEA = 0.072 (<0.08), and SRMR = 0.053 (<0.08).

3.2.2 Maslach Burnout Inventory-EFL Student Survey

We adopted the 10-item Maslach Burnout Inventory-EFL Student Survey developed by Li et al. (2021) to assess participants' L2 burnout. Specifically, exhaustion was measured by four items, while both cynicism and reduced efficacy were assessed by three items. Given the presence of Russian learners in our study, we adjusted the items by adding "/Russian" where applicable. For example, one item for exhaustion is: "*I feel emotionally drained by my English/Russian studies*". All items were rated on a 6-point Likert scale from 1 (strongly disagree) to 6 (strongly agree). A higher score indicates a higher level of L2 burnout. In our study, the reliability of this scale was excellent (Viladrich et al., 2017), with Cronbach's α values of 0.945 (>0.7) for exhaustion, 0.858 (>0.7) for cynicism, and 0.852 (>0.7) for reduced efficacy. Regarding construct validity, the model fit was also satisfactory (Hu & Bentler, 1999), as indicated by the following fit indices: χ^2/df = 2.720 (<3), CFI = 0.986 (>0.9), TLI = 0.976 (>0.9), RMSEA = 0.075 (<0.08), and SRMR = 0.028 (<0.08).

3.3 Data analysis

Data analysis was performed using SPSS 26 and AMOS 24. First, we assessed common method bias (CMB) using Harman's Single-Factor Test (Podsakoff & Organ, 1986) in SPSS 26. Next, confirmatory factor analysis (CFA) was conducted in AMOS 24 to evaluate the construct validity of the instruments, as reported in Section 3.2. Instrument reliability was checked using Cronbach's α values in SPSS 26, with values greater than 0.7 indicating good reliability (Viladrich et al., 2017). For validity, criteria included χ^2/df < 3, CFI > 0.9, TLI > 0.9, RMSEA < 0.08, and SRMR < 0.08 (Hu & Bentler, 1999). To address **RQ1**, we then calculated the mean for each variable and performed descriptive analysis, testing normality and Pearson correlation using SPSS 26, which are prerequisites for covariance-based structural equation

modeling (CB-SEM) (Kline, 2016). Finally, to answer **RQ2**, CB-SEM was conducted in AMOS 24 to examine the impact of the Dark Triad on the three dimensions of L2 burnout.

4 Results

4.1 Common method bias

CMB refers to the systematic error that arises in research outcomes due to the data collection process itself. This type of error is not a result of the actual variables or relationships being studied, but is instead caused by factors like the method of data collection, measurement instruments, and survey design. For instance, when research depends on self-reported data, participants' answers may be influenced by their emotions, social pressures, or memory biases, potentially compromising the accuracy and validity of the data. Harman's Single-Factor Test is a method used to detect CMB. We conducted an exploratory factor analysis by inputting all the items from the questionnaire into a single-factor model, and the results revealed three factors, with the first factor explaining 40.669% of the variance, which was less than the cutoff of 50% (Podsakoff & Organ, 1986). Therefore, we concluded that there was no CMB in our data.

4.2 Descriptive analysis

We initially performed a descriptive statistical analysis of the data. As shown in Table 2, the mean values across the six variables were relatively low, ranging from 2.168 to 2.922, indicating that participants generally exhibited moderately low scores. Additionally, following the guidelines set by Kline (2016), a skewness and kurtosis value between -2 and +2 is typically considered indicative of a normal distribution. In this case, the skewness and kurtosis values ranged from -0.666 to 1.310, suggesting that the data met the criteria for normality. Hence, it paves the way for our subsequent CB-SEM.

Table 2

Descriptive Statistics of All Variables (n = 337)

Variables	Range	Maximum	Minium	Mean	Skewness	Kurtosis
Machiavellianism	1-6	6	1	2.168	0.940	1.310
Psychopathy	1-6	6	1	2.250	0.735	0.783
Narcissism	1-6	6	1	2.922	-0.025	-0.445
Exhaustion	1-6	6	1	2.689	0.537	0.015
Cynicism	1-6	6	1	2.712	0.189	-0.666
Reduced efficacy	1-6	6	1	2.425	0.524	0.183

4.3 Correlation analysis

Subsequently, we performed a Pearson correlation analysis among the variables to address **RQ1**. According to Plonsky and Oswald (2014), an effect size of 0.40 is considered a moderate effect size, while 0.60 is considered a large effect size. As presented in Table 3, the correlations between the three personality traits and the three dimensions of L2 burnout were found to be low to moderate, with values ranging from 0.226 to 0.286. These results provide a foundation for further analysis, as Kline (2016) suggests that correlation is a prerequisite for CB-SEM.

Table 3

Correlations Between All Variables (n = 337)

| Variables	1	2	3	4	5	6
1. Machiavellianism	-					
2. Psychopathy	0.665**	-	.			
3. Narcissism	0.586**	0.530**	-			
4. Exhaustion	0.226**	0.285**	0.313**	-		
5. Cynicism	0.251**	0.285**	0.266**	0.771**	-	
6. Reduced efficacy	0.286**	0.358**	0.250**	0.753**	0.771**	-

Note: **p < 0.01.

4.4 Structural equation modeling

To answer **RQ2**, we conducted a SEM analysis to examine the relationships between our variables. As shown in Table 4 and Figure 2, Machiavellianism did not have a significant effect on any of the three dimensions of L2 burnout, with β values of -0.034, 0.051, and 0.058, all of which were not statistically significant ($p > 0.05$). In contrast, psychopathy had a significant and positive effect on exhaustion (β = 0.181, $p < 0.01$), cynicism (β = 0.175, $p < 0.05$), and reduced efficacy (β = 0.285, $p < 0.001$). Additionally, narcissism demonstrated a significant and positive effect on both exhaustion (β = 0.237, $p < 0.001$) and cynicism (β = 0.144, $p < 0.05$), but had no significant effect on reduced efficacy (β = 0.065, $p > 0.05$).

Figure 2

The Effect of the Dark Triad on L2 Burnout (n = 337)
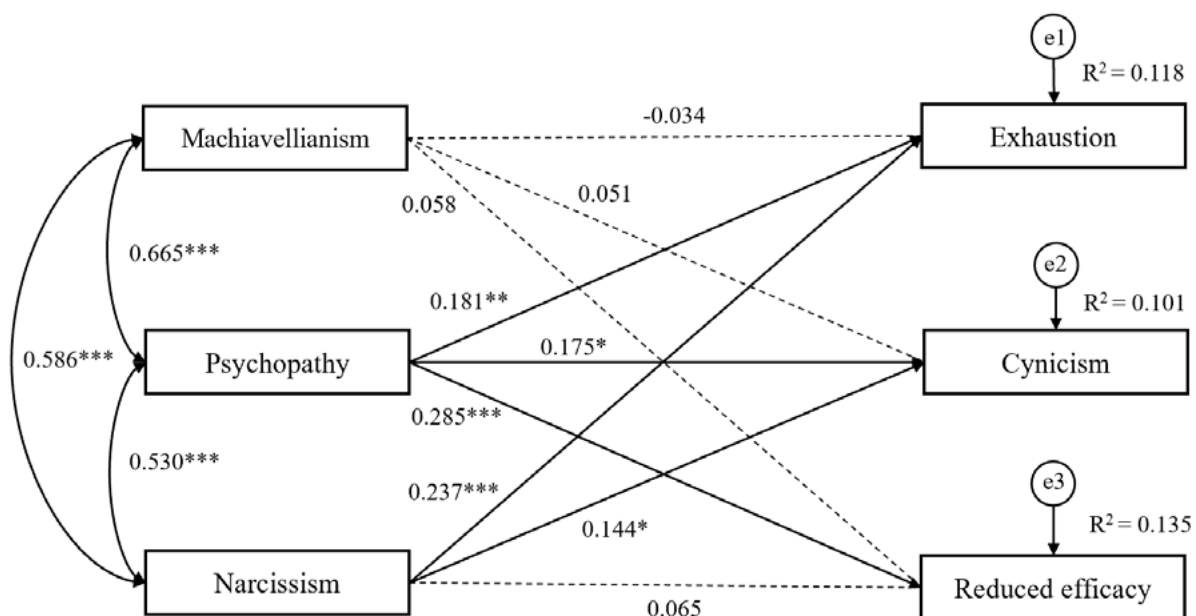
Note: Dotted lines represent non-significant pathways; *p < 0.05; **p < 0.01; ***p < 0.001.

Furthermore, it is important to note that the variance (R^2) explained by the Dark Triad in the dimensions of exhaustion, cynicism, and reduced efficacy were 11.8%, 10.1%, and 13.5%, respectively.

Table 4
The Effect of the Dark Triad on L2 Burnout (n = 337)

Pathways	β	S.E.	C.R.	p
Machiavellianism → Exhaustion	-0.040	0.087	-0.454	0.650
Machiavellianism →Cynicism	0.060	0.088	0.684	0.494
Machiavellianism →Reduced efficacy	0.062	0.077	0.799	0.424
Psychopathy → Exhaustion	0.238	0.093	2.574	0.010
Psychopathy → Cynicism	0.231	0.094	2.454	0.014
Psychopathy → Reduced efficacy	0.336	0.082	4.088	0.000
Narcissism → Exhaustion	0.253	0.069	3.647	0.000
Narcissism → Cynicism	0.154	0.070	2.190	0.029
Narcissism → Reduced efficacy	0.062	0.062	1.008	0.313

Note: β = standardized coefficient; S.E. = standard error; C.R. = critical ratio.

5 Discussion

Building on the seminal study by Ebn-Abbasi et al. (2025), this study aims to explore the effect of the Dark Triad on burnout, a critical L2 learning outcome that was not addressed in the Ebn-Abbasi et al. (2025) study. To answer **RQ1**, we initially investigated the correlations between the Dark Triad traits and the three dimensions of burnout. The results revealed positive, mutually significant correlations with a low to moderate effect size. This suggests that L2 learners exhibiting higher levels of Dark Triad may be more prone to experiencing burnout symptoms, aligning with the findings of Klerks et al. (2024) in educational psychology.

Following this, our SEM analysis revealed several interesting findings, thus addressing **RQ2**. We found that psychopathy emerged as the strongest predictor of L2 burnout, significantly impacting all three dimensions: exhaustion, cynicism, and reduced efficacy. This robust association between psychopathy and burnout is consistent with previous findings in educational psychology by Klerks et al. (2024). Psychopathy's significant role might be attributed to its nature, Psychopathy is characterized by two hallmark traits—emotional detachment and impulsivity (Hart & Dempster, 1997; Osumi & Ohira, 2010)—which are likely to exacerbate academic stress. Emotional detachment involves maintaining an emotional distance or control, preventing oneself from becoming overly affected by or engaged in the emotions of others or one's own feelings. Prior research has shown that emotional detachment is often linked to burnout, as individuals may experience a sense of disconnection or indifference toward their work or personal lives (Wu et al., 2023). In the context of L2 learning, a psychopathic learner may exhibit indifference to the efforts of their peers or instructors, potentially leading to a lack of cooperation and a negative learning environment, which, in turn, fosters feelings of exhaustion and cynicism. Impulsivity, a key trait of psychopathy and viewed by evolutionary theorists as a "fast life history" adaptation that prioritizes immediate rewards (McDonald et al., 2012), involves acting without considering the potential outcomes. This behavior can lead to inconsistent study habits, poor time management, and ineffective planning, contributing to burnout in L2 learning environments (Lozano et al., 2014).

Additionally, our study found that Narcissism positively predicted exhaustion and cynicism but had no significant effect on reduced efficacy. This finding contrasts sharply with Ma et al.'s (2021) results in organizational contexts, where narcissism reduced exhaustion among American workers. The discrepancy may stem from cultural differences: in collectivist L2 learning environments (e.g., East Asian classrooms), narcissistic self-focus may clash with collaborative norms, heightening interpersonal friction and stress. From an evolutionary perspective, narcissistic traits may have evolved as status

signals (McDonald et al., 2012), but their adaptive value depends on social feedback. In collectivist settings, when admiration-seeking behaviors fail to elicit desired responses, social rejection might amplify stress. Furthermore, narcissists' preoccupation with external validation may render them hypersensitive to academic setbacks, fueling emotional exhaustion. Importantly, traditional narcissism research distinguishes between grandiose narcissism (characterized by overt self-confidence, superiority, and admiration-seeking) and vulnerable narcissism (marked by introversion, anxiety, and self-doubt) (Weiss & Miller, 2018). The Dark Triad's conceptualization of Narcissism aligns more closely with reinforced grandiose narcissism. Previous research indicate that grandiose narcissists are particularly sensitive to high-level achievement threats (Besser & Priel, 2010), yet their inflated self-perception might buffer against feelings of inefficacy. This dynamic could explain our non-significant finding for reduced efficacy, highlighting the nuanced interplay between personality traits and cultural contexts in shaping L2 learning outcomes.

Furthermore, no significant associations were found between Machiavellianism and any dimension of burnout. This finding is somewhat unexpected, given Machiavellianism's association with manipulation and strategic behavior, which could be expected to contribute to professional burnout across its three dimensions, as noted by Mirkovic and Bianchi (2019). One might have anticipated that Machiavellianism would influence burnout in the context of L2 learning. However, it is possible that the strategic nature of Machiavellianism does not directly lead to increased burnout within this context. Individuals high in Machiavellian traits may possess the ability to navigate the L2 learning environment in a manner that allows them to avoid burnout, potentially leveraging their manipulative skills to gain advantages without succumbing to the emotional toll typically associated with burnout. This suggests that the relationship between Machiavellianism and burnout may be more complex and context-sensitive than previously assumed. It aligns with recent evolutionary models positing Machiavellianism as a "social chameleon" adaptation (McDonald et al., 2012), where behavioral flexibility minimizes energy expenditure while maximizing situational gains.

In summary, our findings highlight that Psychopathy was the strongest positive predictor of burnout, likely driven by emotional detachment and impulsivity, which contributed to burnout through academic disengagement and ineffective coping strategies (Hart & Dempster, 1997). In contrast, Narcissism positively predicted exhaustion and cynicism but did not affect reduced efficacy. Cultural factors may help explain the differences observed compared to previous organizational research (Ma et al., 2021). Specifically, the collectivist nature of L2 learning, which emphasizes group harmony and collaboration, may amplify the stress associated with narcissistic traits (Besser & Priel, 2010). This suggests that future models of Narcissism in L2 settings could account for cultural variations. Finally, Machiavellianism showed no effect on L2 burnout, challenging previous assumptions about its role in professional burnout (Mirkovic & Bianchi, 2019). This implies its adaptive, strategic qualities may buffer against burnout in L2 learning, highlighting the role of situational factors in its impact. Overall, this study provides a nuanced view of the interplay between the Dark Triad and L2 burnout, suggesting future research incorporate cultural and evolutionary perspectives (McDonald et al., 2012) to better capture the complexities of these constructs.

6 Conclusion

This study pioneers the exploration of the Dark Triad in L2 burnout, challenging assumptions that dark personalities uniformly hinder learning. While psychopathy emerges as a risk factor, narcissism's nuanced effects and Machiavellianism's neutrality highlight the complexity of personality in L2 learning. By integrating these findings into pedagogical strategies, educators can foster resilience in diverse learners, advancing the field toward a more inclusive understanding of individual differences.

The findings of this study have several theoretical implications. First, they support the idea that negative personality traits can have a significant impact on L2 learning outcomes, specifically burnout. This challenges the traditional focus on positive personality traits in L2 research and suggests that a more balanced approach is needed. Second, the differential effects of the Dark Triad on burnout dimensions imply that different theoretical mechanisms may be at play. For example, the relationship between psychopathy and burnout may be related to the disruption of social relationships, while the relationship between narcissism and burnout may be more closely tied to self-esteem and self-validation. Future research could explore these underlying mechanisms in more detail, potentially integrating theories such as the COR Theory and self-esteem models to provide a comprehensive understanding.

The practical implications of this study are extensive. L2 educators could screen for psychopathic tendencies (e.g., lack of empathy) and provide tailored support, such as stress-management workshops or collaborative learning activities to mitigate social isolation. Besides, while Narcissism's link to exhaustion warrants caution, its association with sustained self-efficacy suggests potential to channel narcissistic learners' confidence into resilience-building activities (e.g., leadership roles in group tasks). Moreover, since the Dark Triad explains only ~10–13% of burnout variance, institutions should address broader stressors (e.g., curriculum pressure, lack of teacher support) identified in prior research (Wu, Zeng, et al., 2024). By adopting a multifaceted approach, educators can create a more supportive learning environment that addresses both personality-related and systemic factors contributing to burnout.

Despite its contributions, this study has several limitations. The cross-sectional nature of the study makes it difficult to establish causal relationships. Longitudinal studies are needed to determine whether the Dark Triad lead to burnout or vice versa. Besides, social desirability bias in our study may have suppressed Dark Triad scores, particularly in collectivist cultures where such traits are stigmatized. Moreover, our Chinese sample limits extrapolation to individualistic contexts; replication in Western classrooms is critical. Future research should also consider potential gender differences, as previous studies have shown that the expression and impact of the Dark Triad can vary between males and females (Jones & Figueredo, 2013). Future studies could investigate how cultural values (e.g., individualism-collectivism) or learning environments (e.g., traditional vs. AI-assisted classrooms) shape trait-burnout relationships. For instance, research could explore whether collectivist cultures provide more social support that mitigates the negative impact of the Dark Triad on burnout. Besides, interviews could be conducted to reveal why Machiavellianism's strategic adaptability fails to buffer burnout in L2 contexts. Moreover, future studies could also test whether mindfulness training or peer-mentoring programs could mitigate psychopathy-driven burnout. By addressing these questions, future research can provide a more nuanced understanding of the complex interplay between personality traits and L2 learning outcomes.

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