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Perfectionism is accelerating over time: A cross-temporal meta-analytic review of 35 years of college student data

Curran, T. Hill, A. P., & Pose, P. M. (accepted). Perfectionism is accelerating over time: A cross-temporal meta-analytic review of 35 years of college student data. *Psychological Bulletin*.

Abstract

Research indicates that perfectionism is on the rise among college students. This study updates and expands on this work in several ways. First, we investigate whether self-oriented and socially prescribed perfectionism continue to increase in tandem with personal standards, concerns about mistakes, and doubts about actions. Second, we examine generational differences in higher-order dimensions of perfectionism (perfectionistic strivings and concerns). Third, we investigate whether changes in GDP per capita and inequality account for temporal differences. Fourth, we test whether relationships between perfectionism and psychopathology are changing over time. Cross-temporal meta-analyses of 307 samples encompassing 82,939 American, Canadian, and British college students revealed that self-oriented perfectionism, concerns over mistakes, and doubts about actions increased linearly. Socially prescribed perfectionism followed a quadratic trajectory, with a notable acceleration starting in the early 2000s. At the higher-order level, perfectionistic strivings increased linearly, whereas perfectionistic concerns followed a quadratic trajectory. Declining GDP per capita was associated with higher perfectionistic strivings, while rising inequality was associated with steeper increases in perfectionistic concerns. Furthermore, correlations between perfectionism and psychopathology remained stable over time. Overall, results reveal that college students increasingly perceive others as excessively demanding while becoming more demanding of themselves, accompanied by growing indecisiveness, uncertainty, and sensitivity about making mistakes.

Public Significance Statement

Perfectionism has notably risen among college students in the US, Canada, and the UK over the last 35 years. Of particular concern is the rapid increase in socially prescribed perfectionism,

concern over mistakes, and doubts about actions since 2000. Within countries, higher income inequality and decreasing GDP per capita are associated with sharper increases. Because perfectionism's associations with depression and anxiety have remained stable despite rising prevalence, rising perfectionism translates directly into greater population-level harm. Together, these findings indicate that tackling the youth mental health crisis should involve both individual efforts and a focus on the cultural and economic factors that foster perfectionism across generations.

Perfectionism is accelerating over time: A meta-analytic review of 35 years of college student data

Perfectionism is a global public health concern and a transdiagnostic risk factor for multiple psychopathologies (Flett et al., 2022; OECD, 2021; Limberg et al., 2017). Evidence suggests that perfectionism is increasing among recent generations, yet several knowledge gaps remain (Curran & Hill, 2019).¹ First, cultural theories of the development of perfectionism lack empirical testing of their basic tenets. Second, previous analyses require updating given that the pandemic and related socioeconomic disruptions have intensified pressures on young people (Molnar et al., 2023). Third, prior work has focused on a limited set of perfectionism measures, leaving other dimensions unexplored. Fourth, the clinical significance of rising perfectionism remains unclear. Fifth, questions persist about measurement artefacts and whether observed changes reflect genuine psychological shifts. This study addresses these gaps by: (a) conducting updated and expanded cross-temporal meta-analyses integrating additional measures and higher-order dimensions, (b) testing whether GDP per capita and inequality explain variance in perfectionism levels, (c) examining temporal stability of perfectionism-psychopathology correlations, and (d) evaluating measurement invariance.

Multidimensional Perfectionism

Perfectionism is defined as excessively high standards accompanied by harsh self-critical evaluation (Frost et al., 1990). It is a multidimensional construct that has been examined through various theoretical lenses. Researchers have developed individual models with their constituent

¹ Where possible, we avoid the term “generation” (e.g., Gen Z, Millennials) as our data speak only to college students sampled at different time points, not to broader birth cohorts. Any use of 'generation' or 'generational' in this manuscript refers strictly to temporal differences among college student samples.

subdimensions (e.g., Frost et al., 1990; Hewitt & Flett, 1991; Slaney et al., 2001), while others have attempted to integrate multiple models into unified frameworks (e.g., Frost et al., 1993; Mackinnon & Sherry, 2012; Rice et al., 1998). This diversity of approaches reflects the vast surface area of perfectionism, which manifests across multiple spheres, including the trait, self-presentational, and cognitive domains (Hewitt et al., 2017). The present study focuses on trait perfectionism.²

The current understanding of trait perfectionism is that it is multidimensional. As such, perfectionism encompasses multiple dimensions and is commonly measured using two instruments. The first tool is Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (HF-MPS), which measures three core dimensions of perfectionism. Self-oriented perfectionism is the tendency to attach irrational importance to perfection, hold unrealistic expectations, and engage in punitive self-evaluations. Socially prescribed perfectionism is the tendency to believe that the social environment is excessively demanding, that others are judgmental, and that perfection must always be displayed to secure approval. Other-oriented perfectionism is the tendency to impose unrealistic standards on others and evaluate others critically. The HF-MPS is a clear, well-developed, and widely used measure of perfectionism, with strong evidence for its psychometric properties and predictive validity (Hewitt et al., 2017).

The second measurement tool is Frost et al.'s (1990) Multidimensional Perfectionism Scale (F-MPS). This scale assesses four core dimensions of perfectionism and two parenting

² Trait perfectionism warrants particular attention for several reasons. It is the foundational component of the CMP and thus represents the stable individual differences from which perfectionistic self-presentation and cognitions emerge. It also has the longest empirical history, providing a substantial evidence base for understanding its antecedents, correlates, and consequences.

antecedents. Personal standards is the tendency to set extremely high standards and rely on them for positive self-evaluation. Concerns over mistakes is the tendency to react adversely to mistakes, overgeneralize them as personal defects, and fear losing others' good regard following failure. Doubts about actions is the tendency to doubt, be uncertain, and exhibit indecisiveness about whether tasks have been completed correctly. Finally, organization is the tendency to overemphasize order, precision, and neatness. Although there has been less empirical work on the F-MPS than on the HF-MPS, it is well supported and has strong evidence for its psychometric properties (Smith et al., 2021). If the HF-MPS is the most widely used and accepted measure of perfectionism, the F-MPS follows closely behind.

The Two-Factor Model

In addition to reflecting distinct measurement models, researchers have explored the possibility that higher-order factors subsume the HF-MPS and F-MPS sub-scales. This possibility was first mooted by Frost et al. (1993), who found that the F-MPS and HF-MPS dimensions exhibited substantial loadings on two distinct factors: *positive strivings* and *maladaptive evaluative concerns*. Personal standards, organization, self-oriented perfectionism, and other-oriented perfectionism formed the positive strivings factor. Concerns over mistakes, doubts about actions, and socially prescribed perfectionism formed the maladaptive evaluative concerns factor.

Later, Cox and colleagues (2002) lent support to an analogous factor structure using confirmatory factor analysis, but they excluded other-oriented perfectionism because it yielded a better fit when omitted from their models. The exclusion of other-oriented perfectionism has generally been met with approval among those who work in this area, who view it as a distinct, intrapersonal form of perfectionism (see Stoeber, 2014). Researchers typically exclude

organization from higher-order models as well. They do so, because organization shows the weakest intercorrelation with other subscales and is considered by some to be an outcome of perfectionism rather than a core characteristic (e.g., Frost et al., 1990; Smith et al., 2022).³

Having removed other-oriented perfectionism and organization, consensus has converged on a two-factor structure (e.g., Bieling et al., 2004; Cox et al., 2003; Madigan, 2023). The first factor, *perfectionistic strivings*, combines self-oriented perfectionism with personal standards. The second factor, *perfectionistic concerns*, combines socially prescribed perfectionism with doubts about actions and concerns over mistakes. This factor structure has extensive factor-analytic support and, as such, has garnered significant traction, expanding the conceptual scope of perfectionism measurement and consolidating findings across studies employing different assessment instruments (e.g., Hill et al., 2024). With this approach, researchers have illustrated that subscales indicative of the same higher-order dimensions of perfectionism tend to exhibit similar associations with outcome variables (Gaudreau & Thompson, 2010).

Perfectionistic strivings is complex. It has a salient motivational component (i.e., striving to meet excessive personal standards) and is therefore often associated with desirable achievement-related behaviors (see Hewitt & Flett, 1991). Yet, this achievement behavior belies vulnerability to psychological difficulties, particularly in response to life stress and performance difficulties (e.g., Besser et al., 2004; Besser et al., 2008; Hill et al., 2011). Meta-analyses often find, for example, small positive relationships between perfectionistic strivings and markers of psychopathology, such as anxiety, eating disorders, and depressive symptoms (see Hill et al.,

³ It should be noted that while organization shows weak correlations with other perfectionism dimensions in adult samples, emerging research suggests it may be more central to perfectionism in adolescent samples (Molnar et al., 2023).

2025).

Although perfectionistic strivings carry risk, perfectionistic concerns is by far the most debilitating of the two higher-order dimension. Those high in perfectionistic concerns chronically doubt themselves, never feel good enough, and perceive others' expectations as excessive, uncontrollable, and unfair. Hence, those high on perfectionistic concerns experience low self-esteem, high anxiety and depression, debilitating and chronic rumination, and an omnipresence of negative emotional states (Hewitt et al., 2017). Indeed, meta-analyses reveal moderate-to-large effects of perfectionistic concerns on several psychopathologies, often over time, including anxiety disorders, anorexia, depressive symptoms, and suicidality (see Hill et al., 2025). If perfectionism is a public health concern, the pernicious nature of perfectionistic concerns is likely the reason why.

Rising Perfectionism

Not only does perfectionism pose substantial risks to psychological health, but it is also on the rise. Recent cohort analysis using the HF-MPS reveals a significant increase in self-oriented, socially prescribed, and other-oriented perfectionism among college students in the United States, Canada, and the United Kingdom (Curran & Hill, 2019). The increase in self-oriented and other-oriented perfectionism has been moderate, with approximately 60% of young people in 2016 surpassing the typical levels observed in 1989. Still, the rise in socially prescribed perfectionism has been more substantial, with 66% of young people in 2016 surpassing typical levels seen in 1989. These findings are particularly concerning given the relationship of socially prescribed perfectionism with psychopathology. Indeed, we believe rising levels of socially prescribed perfectionism likely account for some of the concurrent rise in depression and anxiety observed among young people worldwide (e.g., McManus et al., 2019; Collishaw & Sellers,

2020; OECD, 2025). At least, rising socially prescribed perfectionism provides a compelling backdrop to what the OECD calls a “youth mental health crisis” (OECD, 2021, p. 13).

We adopted a broad cultural lens to understand the rise in perfectionism, drawing on theoretical perspectives that link individual psychological patterns to broader societal changes. We were guided by Karen Horney's (1937, 1950) seminal work, which connects perfectionistic behavior to conflicts between actual and idealized selves, propagated by what she termed “tyrannical shoulds.” This thinking finds contemporary resonance in Byung-Chul Han's (2014, 2015) analysis of the modern “achievement society,” in which individuals become trapped in cycles of self-exploitation, subjecting themselves to relentless optimization under the illusion of freedom. Both theorists emphasize how perfectionistic modes of thinking and behaving are socialized by societal conditions, albeit from different directions: Horney from negative prohibitions (“Shoulds” and “Cannots”), Han from positive compulsions (“Coulds” and “Cans”).

Hewitt and colleagues' (2017) ideas on the development of perfectionism in early life have also been instructive to our thinking. They describe the role of asynchrony, or mismatch, between children's attachment needs for belonging and self-esteem and parents' responses to those needs. Asynchrony experienced by a child will result in distorted perceptions of significant others as judgmental and critical, a fragile sense of self-worth, and relational and self-schemas characterized by feelings of unworthiness and shame. The pursuit of perfection arises as a child's strategy to compensate for these feelings by seeking approval and validation from other people. While Hewitt et al. focus on asynchrony in the child-parent relationship, they also emphasize the broader significance of relationships with siblings, peers, and romantic partners, which is where our perspectives begin to align. Like Hewitt et al., we believe that perfectionism develops primarily through unmet attachment needs, but it can also arise from asynchronous exchanges

with both immediate *and* broader cultural environments.

The environments we have emphasized as especially germane are those shaped by the emergence of neoliberalism across the United States, Canada, and the United Kingdom over the past four decades (Curran & Hill, 2019).⁴ Neoliberalism operates on multiple levels. As an economic system, it empowers capital at the expense of workers through regressive taxation, privatization, deunionization, and deregulation (Harvey, 2005). As a political project, it creates legal protections for firms and investors while limiting democratic influence over economic decision-making (Slobodian, 2018). And importantly, as a cultural movement, it compels people to view themselves as competitive, entrepreneurial subjects competing in a global marketplace (Brown, 2003). We believe this culture generates the very conditions for attachment asynchrony that Hewitt et al. identify as central to perfectionism development, but now operating at a societal scale through political organizations, the media, civic institutions, and social structures that emphasize market value, hyper-individualism, personal achievement, and self-optimization above basic needs like autonomy, purpose, and social connection (Kasser et al., 2007).

Against this backdrop, and drawing on the theoretical frameworks of Horney, Han, and Hewitt et al., we propose three interconnected cultural pathways underneath rising perfectionism. First, neoliberalism's emphasis on commodified selfhood and personal consumption, promoted and sustained via key channels of social persuasion (e.g., advertising, PR, and social media), fosters irrational ideals of the perfectible life and lifestyle (individualism pathway). Second,

⁴ Some will view the recent rise of authoritarianism and protectionism and the rolling back of multilateralism as evidence that neoliberalism is in retreat. However, we agree with Slobodian's (2025) analysis that, while these developments may signal a retreat from neoliberalism globally, the economic, political, and cultural aspects of neoliberalism continue to be pursued as vigorously as ever on the domestic stage.

neoliberalism's foundational commitment to meritocracy generates harmful narratives about achievement as a measure of personal worth and frames the absence of exceptional accomplishment as evidence of individual deficiency, particularly within educational contexts (meritocratic pathway). Third, these meritocratic pressures intensify parental anxieties about their children's competitive positioning, leading to achievement-focused, controlling forms of parenting that transmit perfectionistic expectations across generations (parenting pathway). In what follows, we provide a brief overview of each pathway, presenting updated evidence and justifications for the present study.

Individualism Pathway

Under neoliberalism, individuals are compelled to live atomized lives, disconnected from collective identities and social solidarity (Adams et al., 2019). The fundamental expectation is that they author their own destinies by treating themselves as personal enterprises, carefully managing a balance sheet of assets (e.g., house, car, education, skills, appearance) and liabilities (e.g., debt, health problems, social deficits, personal shortcomings). Success in managing this balance sheet promises increased social value, which is rewarded by social prestige, material security, and cultural capital. Conversely, poor management results in diminished social worth, with individuals experiencing consequences across multiple life domains (e.g., professional opportunities, social relationships, self-esteem, material well-being). Importantly, this framework places the burden of responsibility squarely on the individual. Success validates personal virtue and competence, whereas failure is taken as evidence of individual inadequacy rather than systemic inequity or structural obstacles.

As this hyper-individualism has permeated modern culture, young people have, quite naturally, begun to focus on self-improvement and display signs of narcissistic self-reference

(e.g., Gentile et al., 2010; Han, 2014; Twenge, 2000). Contemporary college students in the US demonstrate this shift through measurably higher levels of narcissism and extraversion compared to previous generations, while simultaneously spending less time in collective activities and more time pursuing individual endeavors oriented toward instrumental gain or personal achievement (Twenge, 2014). They also engage in more upward social comparison than their parents' generation, worry more about their appearance, and show a greater preference for aligning their lives and lifestyles with the latest material trends and fads (e.g., De Botton, 2004; Marmot, 2004; Scott et al., 2014). More than 80% of Americans born in the 1980s consider material wealth a core life goal, a figure nearly 20% higher than that of those born in the 1960s and 1970s (Pew Research Centre, 2007).

This cultural shift toward extrinsic and material markers of self-worth exacts a toll on mental health (Kasser, 2003). The psychological costs are evident across multiple indicators. Youth happiness has declined globally (Helliwell et al., 2024), feelings of persistent sadness and hopelessness among US high schoolers have increased by 40 percent since 2009 (CDC, 2019), and the incidence of body dysmorphia and eating disorders has risen by approximately 30% over the past two decades among young people in Britain and America (e.g., PwC, 2015; Smink et al., 2012; Thompson & Durrani, 2007). Social media can amplify these pressures (Haidt, 2024). Facebook's research shows that about half of Instagram users feel the platform exacerbates pressures to look perfect, and forty per cent report that the platform causes them to worry about not appearing attractive, wealthy, or popular enough (Wells et al., 2021).

Indeed, social media's expanding influence has almost certainly enhanced neoliberalism's cultural penetration in recent years. It has exacerbated the upward trajectories of individualism and materialism and intensified personal insecurities, fostering a belief that one must be perfect

to fit in (Curran, 2023). These are precisely the conditions that Hewitt et al. (2017) identify as central to the development of perfectionism. Neoliberalism's fixation on the individual and the "perfectible" life and lifestyle, in particular, generates patterns of intermittent reinforcement for approval-seeking behaviors, creating cycles where individuals experience occasional validation followed by periods of social rejection or indifference. This promotes what Hewitt et al. describe as the "flawed" or "disordered" self, characterized by self-schemas that include fears of negative social evaluation, a preoccupation with personal deficiencies, and hypersensitivity to rejection, criticism, and failure. Such self-schemas represent the core phenomenology of perfectionism, specifically the self-critical rumination associated with perfectionistic strivings and the perceived external demands that drive perfectionistic concerns. These traits are now observable at the generational scale, manifesting in widespread changes in self-concept, identity formation, and behavioral patterns documented among young people. The proliferation of perfectionistic modes of thinking and acting thus reflects not merely individual vulnerability, but their cultural production through neoliberal institutions, analogue media, and nascent digital technologies.

Meritocratic Pathway

If the core thrust of neoliberalism is hyper-individualism, then its caveat emptor is meritocracy. Under meritocratic logic, the promise of a perfect life is available to all, but only through personal achievement and competitive success (Markovits, 2019). Those who fall short are undeserving, and their lack of success is attributable solely to personal deficiencies. Meritocracy thus falsely and insidiously connects the principles of achievement, status, and wealth with innate personal value (Guiner, 2015). As individuals cannot avoid being sorted, sifted, and ranked by schools, universities, and workplaces, meritocracy constitutes a form of societal organization that places significant emphasis on striving and overstraining, performance

and achievement, and output and productivity at the forefront of modern life (Curran, 2023).

This emphasis is most striking in education. In recent years, students have been subjected to unprecedented levels of surveillance and evaluation, facing relentless assessments and standardized testing regimes that far exceed the scrutiny experienced by previous generations (Guinier, 2015). Such pressure is evident in teenagers' achievement-related concerns. For example, in a recent national US survey, more than two-thirds of students are concerned about gaining admission to their preferred school (Wallace, 2019). Moreover, approximately three-quarters of high school students and half of middle school students reported feeling frequently or constantly stressed by academic demands.

These concerns are further compounded by structural challenges, particularly the diminishing returns to college education as measured by wage premiums (Moretti, 2013). As such, young people find themselves trapped in an escalating arms race in which a standard college degree no longer suffices. They must also secure admission to prestigious institutions and increasingly pursue postgraduate qualifications to maintain competitive standing in the labor market. According to research by Luthar et al. (2020), such pressure leads to heightened levels of emotional distress, particularly among the more affluent young people who are most aggressively coached for elite colleges.

Excessive achievement expectations are commonly described in models that attempt to explain the development of perfectionism. Decades ago, Hamachek (1978) identified the connection between achievement obsession and perfectionistic psychology, observing that "[perfectionists] may overvalue performance and undervalue the self. He learns only through performance that he has a self" (p. 29). Hewitt and colleagues (2017) have expanded this understanding, conceptualizing perfectionism as a misguided effort to secure worth and

belonging through adherence to impossibly high standards, reflecting an underlying conviction that acceptance is contingent upon exceptional performance. Neoliberalism imprints this achievement-contingent self-esteem onto the developing child with a cultural logic that says meritocracy's rules are honorable and fair and apply to everyone equally. This creates an environment in which perfectionism is essential, as young people conclude that anything less than perfection risks social rejection and personal worthlessness in a society that has made merit the sole criterion of human value.

Parenting Pathway

Meritocracy does not affect perfectionism only through education; it affects perfectionism through parenting, too. As Fromm (1944) observed, parents function as society's psychological vassals, serving as the primary conduits through which cultural values are transmitted across generations. They naturally and often unconsciously propagate society's dominant ideologies – including faith in individualism, competitive achievement, and meritocratic fairness – while simultaneously acting upon their own achievement anxieties that are themselves products of these same cultural forces. Within the neoliberal context, this cultural transmission manifests as intensified parental involvement, characterized by excessive intervention, unrealistic expectations, and psychological control over children's development (Doepke & Zilibotti, 2019).

United States research substantiates these trends. Since the late 1980s, studies have documented a dramatic increase in controlling parental behaviors, including systematic monitoring of children's whereabouts and activities, alongside heightened involvement in academic domains through homework supervision and extracurricular tutoring (Collishaw et al., 2012; Ramey & Ramey, 2010). These patterns have been characterized in the literature via terms

such as “helicopter parenting” (Nelson et al., 2015), “parental overinvolvement” (Givertz & Segrin, 2014), and “coddling” (Haidt & Lukianoff, 2018), each capturing different aspects of a shift toward parenting that treats child-rearing as a strategic investment in future competitive advantage. Although not direct evidence of a causal relationship between changing parenting styles and the increase in perfectionism, these more anxious and controlling forms of rearing interfere with attachment needs and thus promote the parent-child asynchrony described by Hewitt and colleagues (2017).

We found supporting evidence for these ideas in two recent meta-analyses (Curran & Hill, 2022). The first meta-analysis revealed a positive correlation between excessive parental expectations and criticism and self-oriented and socially prescribed perfectionism. The second indicated that these parenting practices were rising among British, American, and Canadian college students. Support can also be found in individual studies reporting strong correlations between controlling parental practices and the development of perfectionism (e.g., Curran et al., 2020; Curran et al., 2017; Soenens et al., 2005). It appears, then, that intrusive and controlling parenting practices, which have well-established links to the development of perfectionism, are rising alongside perfectionism itself. This parallel rise in achievement-focused parenting thus represents one of the most plausible and empirically validated explanations yet for generational increases in perfectionism.

Macroeconomic Covariates

By documenting trends in perfectionism and proposing explanatory pathways, we provided the theoretical and empirical basis for viewing perfectionism as an individual and social character type. Nonetheless, several limitations warrant consideration. Most notably, our analyses did not incorporate theoretically relevant macroeconomic variables that could illuminate

not only the patterns of change in perfectionism but also the underlying mechanisms driving these changes. Two macroeconomic variables are particularly salient in this context: the Gini coefficient and GDP per capita.

The Gini coefficient is especially relevant. It captures income inequality – the gap between rich and poor – which has generally increased across the United States, Canada, and the United Kingdom in lockstep with the rise of neoliberalism (Kwon, 2018). Neoliberalism generates inequality via the efficiency-equity trade-off, in which market-oriented policies prioritise economic growth over distributive outcomes (Okun, 1975). Multiple interconnected mechanisms are salient here, including deunionization (which weakens collective bargaining power), financial deregulation (which concentrates wealth among capital owners), and labor market casualization (which reduces job security and wage stability). Crucially, inequality is not merely a corollary of neoliberal policy but a deliberate feature that supposedly motivates individuals to compete more intensely against one another (Friedman, 1962).

Widening inequality has two key implications for perfectionism. First, it constrains social mobility while intensifying status anxieties, worries about the future, and fears of failure, as individuals must exert greater effort to advance socioeconomically (Andrews & Leigh, 2009). Second, it reinforces societal emphasis on work ethic and meritocratic fairness, as achievement becomes increasingly linked to economic survival and social status (Corneo & Neher, 2014). For these reasons, incorporating the Gini coefficient into our analyses of perfectionism provides a test of our theoretical framework, particularly the individualism and meritocracy pathways. We expect economic inequality to be positively associated with levels of perfectionistic strivings and concerns.

GDP per capita is another potentially informative macroeconomic mechanism. It

measures economic output per person, which is a central priority of neoliberal policymaking (Centeno & Cohen, 2012). Yet, the nature of the relationship between GDP per capita and perfectionism is a matter of debate. On the one hand, a higher GDP per capita could yield more perfectionistic tendencies by enabling materialism, status consumption, and an individualistic achievement culture that characterises neoliberal societies (De Botton, 2004). Conversely, economic stagnation or decline may intensify perfectionistic tendencies through scarcity-driven achievement anxiety (Marmot, 2004; Pickett & Wilkinson, 2015). Therefore, we included GDP per capita as a relevant variable in our models but did not propose directional hypotheses about its impact, as multiple alternative effects are possible.

The Great Acceleration?

Another limitation of our research pertains to its contemporary relevance. Confined to a static paper in a scientific journal, analyses showing rising perfectionism are inherently backwards-facing. Almost a decade later, these findings appear increasingly dated, particularly given major intervening events, such as the coronavirus pandemic, its cascading socioeconomic disruptions, inflationary pressures on living costs, Artificial Intelligence, and the saturation of social media usage among young people (e.g., Flett & Hewitt, 2020; Haidt, 2024; Jackson et al., 2025). The pandemic proved particularly destabilizing. Within the first year alone, the global prevalence of youth anxiety and depression increased by 25 per cent, as teenagers faced rising loneliness, social isolation, and academic disruption, with especially severe declines in mathematics and science achievement (Di Pietro, 2023; Sampogna et al., 2021; WHO, 2022). Although young people bore no responsibility for this global health crisis, the cultural logic of neoliberalism demands that they assume personal accountability regardless. Hence, individuals, not systems, must compensate for lost academic time, diminished resources, and reduced

opportunities through intensified personal striving (Han, 2015). It is unsurprising, therefore, that researchers have suggested young people are likely to adopt more perfectionism in response to pandemic-related setbacks (Flett & Hewitt, 2020).

Together, this evidence leads us to hypothesize that a sharp rise in perfectionism has likely characterized the pandemic and post-pandemic periods. Several studies support this idea. A large-scale survey of over 10,000 US college students, conducted partway through the pandemic, found that young people reported far more stress about achievement than they had at the pandemic's outset (Challenge Success, 2021). Students cited grades, workload, time management, lack of sleep, and college-related fears as triggers, but the primary factor was parental expectations. Fifty-seven per cent of young people said their parents' expectations did not decrease during the pandemic, while thirty-four per cent said their parents' expectations increased. In keeping with neoliberalism's emphasis on personal accountability, rather than accommodating extraordinary circumstances, many families saw no choice but to raise their academic demands precisely when college students were most vulnerable to educational challenges.

Beyond increased stress and social expectations, emerging research provides empirical evidence that the pandemic accelerated changes in personality traits associated with perfectionism. Sutin and colleagues (2022) documented significant increases in neuroticism and decreases in agreeableness and conscientiousness among young Americans during the pandemic period, which is a personality profile consistent with heightened perfectionistic vulnerability. More directly, Molnar and colleagues (2023) conducted a longitudinal study that demonstrated significant increases in socially prescribed perfectionism among Canadian adolescents from a pre-pandemic baseline to the second lockdown of 2021. These convergent findings point toward

a potential acceleration in perfectionism coinciding with pandemic-related disruptions, representing what we might term a "great acceleration" in perfectionism trajectories. Or, at least, this possibility is worth investigating. In updating our cross-temporal analyses, we are interested in comparing linear, quadratic, and cubic trends and anticipate that the relationship between perfectionism dimensions and time will be quadratic, indicating acceleration in recent years.

Testing Clinical Significance

Rising perfectionism might indicate a worsening public health concern, but it could also reflect normative adaptation to achievement-oriented environments (Eckersley, 2006). An important consideration when interpreting the rise in perfectionism, therefore, is whether its associations with mental health outcomes have changed over time. If correlations between perfectionism and psychopathology have weakened as perfectionism has increased, one might argue that rising self-reports reflect the normalization of perfectionism rather than mounting harm. Conversely, stable or strengthening associations would indicate that each unit increase in perfectionism entails proportional mental health costs, implying that rising prevalence translates directly into increased population-level harm.

This question has theoretical precedent. Some psychological constructs exhibit weakening associations with outcomes as they become more normative (e.g., self-esteem; Twenge & Campbell, 2001), whereas other traits maintain stable effects despite increasing prevalence (e.g., neuroticism; Sutin et al., 2022). For perfectionism, our theoretical framework suggests stable associations: That is, if perfectionism is rising due to growing individualism and achievement pressure, its mental health consequences should remain constant or worsen rather than diminish (Curran, 2023). Therefore, in addition to cross-temporal analyses on perfectionism

means, we also conducted meta-analyses examining temporal trends in correlations between perfectionism dimensions and anxiety and depression.

Expanded Conceptual Coverage

Another limitation of our original meta-analysis is that we only modelled responses to the HF-MPS, which limits its conceptual coverage. Although Hewitt and Flett's model captures the source and targets of perfectionism, Frost and colleagues' model places greater emphasis on perfectionism's self-evaluative tendencies and disaggregates individual attitudinal components (Smith et al., 2020). These disaggregated components are theoretically relevant to the cultural mechanisms underlying the rise of perfectionism. Neoliberalism promotes both excessive possibility *and* excessive self-reliance, creating what Han (2015) describes as a paradoxical situation in which individuals must bear sole responsibility for outcomes that are increasingly beyond their control. This generates not only elevated standards but also chronic worry, uncertainty, and insecurity about one's capacity to achieve them.

The relevant F-MPS dimensions in this regard are concern over mistakes and doubts about actions. By incorporating these dimensions into our cross-temporal models, we can test whether and how the attitudinal components of perfectionism change among college students, and whether excessive standards, social expectations, and uncertainty are indeed rising in parallel. Furthermore, F-MPS data enables us to test our cultural hypotheses across a broader range of perfectionism measures, provide more comprehensive conceptual coverage of the construct, and better capture the multifaceted nature of perfectionism (Frost et al., 1993). Most notably, this expanded measurement approach allows for a broader test of our theoretical predictions. If the rise of neoliberalism is indeed behind the rise of perfectionism, we should observe increases not only in achievement-oriented dimensions (strivings) but also in the

anxiety-laden, self-critical dimensions (concerns) that reflect the psychological costs of living under constant evaluative pressure.

Based on our theoretical framework and the empirical evidence reviewed above, we advance several specific hypotheses regarding temporal changes in perfectionistic strivings and concerns. First, we predict that the F-MPS dimensions of personal standards, concerns over mistakes, and doubts about actions will significantly increase among more recent cohorts of college students. Second, consistent with our "great acceleration" hypothesis and paralleling our predictions for HF-MPS dimensions, we anticipate that F-MPS dimensions will exhibit quadratic rather than linear trajectories. Third, when the HF-MPS and F-MPS dimensions are combined into higher-order factors, we expect both perfectionistic strivings and perfectionistic concerns to increase significantly over time.

The Present Study

The present study will employ a cross-temporal meta-analysis to investigate cohort differences in perfectionism among American, Canadian, and British college students, as measured by the HF-MPS and F-MPS. This methodology tests the weighted correlation between the year of data collection and the mean level of perfectionism across multiple studies. College students were selected as the target population for several reasons. Our focus on college students reflects both pragmatic considerations (availability of standardized samples across decades) and theoretical relevance (college environments embody meritocratic pressures central to our framework). This approach also enables direct comparison with previous cross-temporal research

on perfectionism (Curran & Hill, 2019) and related personality constructs (e.g., Twenge et al., 2008).⁵

Method

Literature Search

A comprehensive literature search was conducted using various databases, including PsycINFO, PsycARTICLES, MEDLINE, Google Scholar, and ProQuest Dissertations & Theses (both American and international, as well as those from the United Kingdom and Ireland). The search terms employed were "Multidimensional Perfectionism Scale" AND "college students" OR "university students." Additionally, we conducted a cited title search of the two core papers on the Multidimensional Perfectionism Scales in Web of Science (i.e., "The dimensions of Perfectionism", Frost et al., 1990; "Perfectionism in the self and social contexts: Conceptualisation, assessment, and association with psychopathology", Hewitt & Flett, 1991)⁶. This search spanned the period from January 1989 to June 2025, with no other limitations imposed on the search.

In addition to the electronic search, a manual search was conducted. The reference lists of the articles identified through the electronic search were examined to identify any additional relevant articles. Furthermore, authors (from December 2017 to April 2025) were contacted via email to ascertain the availability of unpublished studies or datasets that employed either of the two Multidimensional Perfectionism Scales with college students, along with the year of data collection. Of the 68 contacted authors, 26 responded, yielding clarifications of data and data-

⁵ However, this limits generalisability to non-college populations, a point we return to in the discussion.

⁶ Web of Science search included the following core collection databases: Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, and Emerging Sources Citation Index

collection years but no additional data points. The search yielded 2,357 studies. After eliminating duplicate entries and screening abstracts for relevance (e.g., empirical studies of perfectionism), 491 studies remained. Subsequently, a detailed review of the full-text versions of these studies was conducted to identify which MPS scale was used.

Studies were coded independently by the first and third authors. Both are contributors to research on perfectionism. Upon comparing the recorded information, the agreement rate exceeded 90% (information provided directly by the authors after the initial literature search was not independently coded). Any disagreements were resolved by revisiting the articles and reaching a consensus. In total, the combined electronic and manual literature searches yielded 297 studies, comprising 307 samples, that met the inclusion criteria (see Figure 1).

Inclusion Criteria

For inclusion in the analysis, a research study or dataset needed to provide either the cumulative score (the sum of all items) or the mean score (the sum of all items divided by the number of items) and the standard deviation for at least one subscale of the Frost (F-MPS) or Hewitt and Flett (HF-MPS) Multidimensional Perfectionism Scales.

The F-MPS comprises 35 items and uses a 5-point Likert scale for responses (1 = *Strongly Disagree* to 5 = *Strongly Agree*). The scale is widely adopted and has good psychometric qualities, particularly with respect to internal consistency in adult populations ($\alpha = .77$ to $.93$). For personal strivings, the F-MPS subscale associated with the higher-order factor is personal standards. For perfectionistic concerns, the subscales are concerns over mistakes and doubts about actions. The HF-MPS, on the other hand, comprises 45 items across three 15-item subscales and employs a 7-point Likert scale (1 = *Strongly Disagree* to 7 = *Strongly Agree*). The HF-MPS subscales associated with the higher-order factors of perfectionistic strivings and

perfectionistic concerns are self-oriented perfectionism and socially prescribed perfectionism, respectively.

The inclusion criteria were as follows: (a) The average age of participants had to fall between 18 and 26 years; (b) participants had to be enrolled in a college or university in the United States, Canada, or the United Kingdom; (c) participants should not have been selected based on scoring high or low on a Multidimensional Perfectionism Scale subscale; (d) in case of an experimental study, only scores obtained before any manipulation took place were considered (i.e., any effects of experimental manipulation on Multidimensional Perfectionism Scale scores were excluded); and (e) each study or dataset had to present a sample that was not replicated elsewhere (i.e., studies/data sets were only included once).

To establish the year of data collection, we followed the following procedure: (a) if the study explicitly mentioned the year of data collection, we recorded it accordingly; (b) when we obtained data directly from authors, we requested the data collection year; (c) in cases where no information was available, we coded the year of data collection as two years prior to the publication date (one year for MSc theses). This approach aligns with the standard strategy in analogous meta-analyses (e.g., Twenge et al., 2008). Additionally, we included the percentage of females in each sample and the country in which the data were collected as control variables.

The data collection and request process concluded on June 30th 2025, initiating data reduction and analysis. After applying our inclusion criteria, we coded a total of 307 datasets, comprising 82,939 college students (71% female; M age = 20.64). Of the five relevant subscales from F-MPS and HF-MPS, the present datasets reported 113 mean scores for personal standards, 112 for concerns over mistakes, 98 for doubts about actions, 195 for self-oriented perfectionism, and 194 for socially prescribed perfectionism.

Effect Size Calculation

Both the F-MPS and HF-MPS use response scales anchored at 1 to 5 or 7, respectively. Where studies reported only subscale totals (sum scores), we divided by the number of items to restore scores to item-level means. In various studies, Multidimensional Perfectionism Scale scores were reported separately for males and females. In such cases, weighted grand means were calculated for the entire sample by pooling the scores of both genders.

For the higher-order analysis, we harmonized the F-MPS and HF-MPS dimensions using Percent of Maximum Possible (POMP) scores (Cohen et al., 1999). POMP scores are raw scores transformed to a 0–100 scale, which quantifies the percentage of the maximum possible score. We used this transformation for several reasons. First, POMP scores retain common interpretability as percentages of the maximum possible score. Second, POMP scores are bounded (0–100), preventing extrapolation beyond the observed range. Finally, Cohen et al. (1999) demonstrated that POMP scores perform well when combining scales with different ranges. POMP scores were calculated using the formula:

$$POMP = 100 \times \frac{(M - \text{minimum})}{(\text{maximum} - \text{minimum})}$$

Here, M is the sample mean, minimum is the lowest possible score on the scale (1 for both instruments), and maximum is the highest possible score (5 for the F-MPS; 7 for the HF-MPS). POMP standard deviations were transformed by applying the same linear rescaling to the standard deviation, a direct algebraic extension of the POMP formula presented in Cohen et al. (1999):

$$POMP\ SD = 100 \times \frac{SD}{(\text{maximum} - \text{minimum})}$$

Once transformed, we combined the subscale scores into their respective higher-order factors. Personal standards and self-oriented perfectionism for perfectionistic strivings and concern over mistakes, doubts about actions, and socially prescribed perfectionism for perfectionistic concerns. For studies reporting only one instrument, the relevant subscales from that instrument were used. For the 16 studies reporting scores from both the F-MPS and the HF-MPS, we averaged the POMP-transformed means and standard deviations to derive a single study value for each higher-order factor.⁷ Sample sizes and POMP-transformed standard deviations were entered into metafor, which computed sampling variances internally for inverse-variance weighting. This resulted in 292 POMP-transformed scores for perfectionistic strivings and 286 POMP-transformed scores for perfectionistic concerns.

Meta-Analytic Procedures

To examine whether sample means for perfectionism dimensions have changed over time among college students, we conducted metaregression analyses using the metafor R package (Viechtbauer, 2010). In these analyses, the year of data collection was the predictor variable, and the corresponding perfectionism scores (mean scores for lower-order factors; POMP scores for higher-order factors) were the criterion. Year of data collection was centered at 1988 (coded as 0) so that the intercept represents the predicted perfectionism score at baseline. Centering also reduces multicollinearity between linear and quadratic terms in polynomial models. To account for between-sample residual heterogeneity, random effects were modelled using an additive

⁷ We aggregated across instruments for studies reporting both HF-MPS and F-MPS scales for two reasons. First, combining scales maximises the information from these studies rather than arbitrarily selecting a single instrument. Second, the higher-order factors (perfectionistic strivings and concerns) are explicitly conceptualised as encompassing subscales from both instruments (e.g., Bieling et al., 2004), so aggregation aligns with the theoretical rationale for examining these factors. For interested readers, our primary analyses of the lower-order subscales preserve instrument-specific data (see Figure 2).

between-sample variance component (τ^2) estimated by restricted maximum likelihood (see Thompson & Sharp, 1999). Alongside τ^2 , we calculated I^2 values for each metaregression model to quantify the proportion of observed effect size dispersion attributable to between-study heterogeneity.

In addition, to allow for non-linearity, we tested the linear (first-degree polynomial), quadratic (second-degree polynomial), and cubic (third-degree polynomial) effects of the centered year of data collection. Following model estimation, chi-square likelihood ratio tests were conducted to determine whether the added complexity of higher-order polynomials was offset by improved model fit (Tabachnick & Fidell, 2007). Model selection prioritized both statistical fit and coefficient interpretability (Singer & Willett, 2003).

Finally, to control for potential influences of GDP per capita, income inequality, the country of data collection, age, and gender, we included several control variables in the best-fitting polynomial model for perfectionistic strivings and perfectionistic concerns. GDP per capita and economic inequality were assessed using World Bank (2024) data on GDP per capita and the Gini index. GDP per capita is a country's gross domestic product divided by population (measured in US dollars). The Gini index measures income inequality on a scale from 0 (perfect equality) to 100 (perfect inequality). Missing data in the World Bank time series were imputed with the nearest available year.

Next, we controlled for the country of data collection by including two dummy categorical variables. The first, the United States (US), reflected the US versus the United Kingdom (UK) or Canada (CA) contrast (coded as US = 1, UK = 0, CA = 0) and the second, UK, reflected the UK versus US or CA contrast (coded UK = 1, US = 0, CA = 0). In these models, CA served as the reference group. Finally, we controlled for the percentage of females in

each sample and the mean age of participants by including these variables as continuous measures.

Following the metaregression analyses, we computed the overall *SD* change across time. For linear models, predicted values were derived using the regression equation ($y = bx + c$) for the first year (1988) and last year (2024) of the dataset. When the predicted score for the first year of data collection is subtracted from that for the last year, the product quantifies the change in raw units; dividing by the weighted-average within-study standard deviation converts this to units of *SD* (Cohen's *d*). For quadratic models, predicted values were derived using the equation ($y = b_1x + b_2x^2 + c$), where b_1 is the linear coefficient, and b_2 is the quadratic coefficient. The difference between predicted values at 1988 and 2024 was then computed and converted to *SD* units using the pooled within-study standard deviation.

Clinical Significance

To test whether associations between perfectionism and psychopathology have changed over time, we selected studies from our dataset that reported correlations between perfectionism dimensions and anxiety and depression.⁸ Studies were included if they reported: (a) bivariate correlations between at least one perfectionism dimension and anxiety or depression, (b) an established measure of generalized depression (Beck Depression Inventory, Beck et al., 2012; Center for Epidemiologic Studies Depression Scale, Radloff, 1977) and/or anxiety (Beck Anxiety Inventory, Beck et al., 2012; Center for Epidemiologic Studies Anxiety Scale, Faro &

⁸ We focused on depression and anxiety for a couple of reasons. First, depression and anxiety represent the two most prevalent disorders globally and are consistently identified as primary correlates of perfectionism in meta-analytic reviews (e.g., Limburg et al., 2017; Smith et al., 2016). Second, limiting our analysis to these outcomes enabled us to use well-validated, widely used measures with established psychometric properties, thereby reducing heterogeneity attributable to measurement variability. Other forms of psychopathology (e.g., eating disorders, OCD) were assessed too infrequently or with too diverse a range of instruments to permit reliable analysis.

Eaton, 2020; Trait Anxiety Inventory, Spielberger et al., 1983), and (c) sample size. The year of data collection was coded as two years prior to the publication date (one year for MSc theses).

We conducted separate meta-regression analyses for perfectionistic strivings and perfectionistic concerns, testing whether year predicted the effect size. Within each dimension of perfectionism, we tested whether temporal trends differed between anxiety and depression outcomes using moderation models. Models included year as a continuous predictor, outcome type (anxiety vs. depression) as a moderator, and their interaction. We report results for both the main-effects model (including year and outcome) and the interaction-effects model (including year, outcome, and the year $\times$ outcome interaction). In total, this approach yielded 98 effect sizes from 41 studies across four combinations: perfectionistic strivings and anxiety, perfectionistic strivings and depression, perfectionistic concerns and anxiety, and perfectionistic concerns and depression.

Heterogeneity Patterns

To examine temporal patterns in heterogeneity that may indicate measurement inconsistencies over time, we conducted three analyses. First, we computed τ^2 (between-study variance) separately for the early (1989–1999) and late (2020–2024) periods and then compared the estimates using a Q -test for heterogeneity (Viechtbauer & López-López, 2022). The resulting t -statistic (period heterogeneity t) tests whether measurement variance differs significantly between the first and last time periods. Second, we regressed τ^2 estimates on year to obtain $\tau^2\beta$, the slope indicating whether between-study variance systematically increased or decreased over time. Third, we computed the residual trend r , defined as the correlation between absolute residuals from the primary meta-regression model and year. A significant positive residual trend r would suggest an increase in unexplained measurement variance over time. Heterogeneity

patterns were classified as stable when period heterogeneity t , $\tau^2\beta$, and residual trend r , were non-significant ($p > .05$) and increasing when one estimate was significant ($p < .05$).

Transparency and Openness

This study was not preregistered. We followed PRISMA 2020 reporting guidelines for systematic reviews and meta-analyses (Page et al., 2021). Generative artificial intelligence (Anthropic, 2024) was used to assist with code development and debugging. The complete meta-analytic dataset and R analysis code are available on the Open Science Framework (Curran, 2026).

Results

Study Characteristics

This study included 307 k_{means} with a combined total of 82,939 college students (71% female). The studies were conducted between 1988 and 2024. The average age ranged from 18.00 to 25.96 years ($M = 20.64$, $SD = 1.64$). The percentage of females in each sample ranged from 0 to 100% ($M = 71.71$, $SD = 18.43$). Descriptive statistics are summarized in Table 1.

Preliminary Analysis

Before our primary analyses, effect sizes were standardized and screened for extreme outliers. We did this to identify probable reporting errors in the original studies and to reduce the statistical complications created by extreme outliers in regression analyses (Osbourne, 2008). We deemed a data point an extreme outlier when it would be randomly sampled fewer than once in a thousand times (Tabachnick & Fidell, 2007; $Z > \pm 3.29$, $p < .001$). One outlier was detected and removed for concerns over mistakes (Ryan et al., 2024), self-oriented perfectionism (Gilbert et al., 2006), and socially prescribed perfectionism (Minichiello, 2024), and three outliers were detected and removed for personal standards (Fletcher et al., 2012; Shim & Fletcher, 2012;

Wainwright et al., 2020). In summary, the studies reported mean scores of 3.46 ($SD = 0.24$) for personal standards, 4.64 ($SD = 0.23$) for self-oriented perfectionism, 2.58 ($SD = 0.30$) for concerns over mistakes, 2.72 ($SD = 0.25$) for doubts about actions, and 3.65 ($SD = 0.26$) for socially prescribed perfectionism.

Lower-Order Factors

Results of the metaregression analyses for the five lower-order perfectionism dimensions are summarized in Table 2 and displayed in Figure 2. For each dimension, we compared linear, quadratic, and cubic models using chi-square likelihood ratio tests to determine the best-fitting trajectory. Self-oriented perfectionism ($d = 0.28$, 95% CI [0.13, 0.34]), personal standards ($d = 0.45$, 95% CI [0.20, 0.49]), concerns over mistakes ($d = 0.80$, 95% CI [0.44, 0.32]), and doubts about actions ($d = 0.57$, 95% CI [0.43, 0.86]) showed significant linear increases over time (all $Q_{\text{model}} ps < .01$). Socially prescribed perfectionism had a different pattern. The quadratic model significantly improved upon the linear model ($\Delta\chi^2 = 17.46$, $df = 1$, $p < .001$), indicating a curvilinear trajectory ($Q_{\text{model}} = 110.00$, $df = 2$, $p < .001$). The non-significant linear coefficient ($b = -0.01$, 95% CI [-0.02, 0.001]) combined with the positive quadratic coefficient ($b = 0.001$, 95% CI [0.0004, 0.001]) indicates that socially prescribed perfectionism was flat from 1988 to around 2000, before accelerating upwards ($d = 0.52$, 95% CI [0.20, 0.49]).

Higher-Order Factors

Perfectionistic Strivings. The results of the metaregression analysis for perfectionistic strivings are displayed in Tables 3 and 4 and Figure 3. To determine the best-fitting model, we compared linear, quadratic, and cubic models using chi-square likelihood ratio tests (see Table 2). Although the quadratic vs linear ($\Delta\chi^2 = 7.59$, $df = 1$, $p < .01$) and cubic vs quadratic ($\Delta\chi^2 = 4.87$, $df = 1$, $p < .05$) tests showed significant improvement on the linear model, R^2 did not

improve with polynomial terms ($R^2 = .08$ across both models), and higher-order coefficients were non-significant in the quadratic and cubic models. Accordingly, the linear model was deemed the most parsimonious.

In the linear model, year of data collection accounted for a significant proportion of variance in perfectionistic strivings ($R^2 = .09$, $Q_{\text{model}} = 25.23$, $df = 1$, $p < .001$). The metaregression coefficient was positive ($b = 0.14$, 95% CI [0.09, 0.20], $\beta = 0.28$) and predicted perfectionistic strivings POMP scores of 58.19 for 1988 (95% CI [56.98, 59.40]) and 63.40 for 2024 (95% CI [62.34, 64.45]). Given the weighted-average within-study standard deviation of 17.93, this represents an increase of 0.29 standard deviations over the 35-year study period (Cohen's $d = 0.29$, 95% CI [0.16, 0.42]).

We then added the Gini and GDP per capita indices alongside year of data collection, and this model explained more variance ($R^2 = .13$, $Q_{\text{model}} = 41.98$, $df = 3$, $p < .001$). Year of data collection remained a significant predictor ($b = 0.30$, 95% CI [0.14, 0.45], $\beta = 0.58$). The Gini index was a positive predictor ($b = 0.34$, 95% CI [0.16, 0.51], $\beta = 0.32$), suggesting that greater income inequality is correlated with higher perfectionistic strivings. GDP was a negative predictor ($b = -0.13$, 95% CI [-0.25, -0.01], $\beta = -0.37$), suggesting that lower GDP per capita is associated with higher perfectionistic strivings.

Next, we added country covariates, and these dummy variables further improved the model ($R^2 = .17$, $Q_{\text{model}} = 58.51$, $df = 5$, $p < .001$). Year of data collection remained a significant predictor ($b = 0.32$, 95% CI [0.17, 0.48], $\beta = 0.63$). The US dummy variable was also significant ($b = 4.87$, 95% CI [1.79, 7.94]), but the UK dummy variable was not. Thus, American college students show significantly higher perfectionistic strivings than both Canadian students (mean difference = 4.87) and British students (mean difference = 5.41). Notably, adding country

variables reduced the previously significant Gini index effect to zero. Still, the GDP per capita estimate remained significant ($b = -0.13$, 95% CI $[-0.35, -.01]$, $\beta = -0.37$), suggesting that as GDP per capita declines, perfectionistic strivings increase beyond both each country's baseline level and the temporal trend.

Finally, we added age and gender covariates to create the final model for perfectionistic strivings ($R^2 = .17$, $Q_{\text{model}} = 62.14$, $df = 7$, $p < .001$). Year of data collection ($b = 0.33$, 95% CI $[0.12, 0.48]$, $\beta = 0.64$), GDP per capita ($b = -0.13$, 95% CI $[-0.25, -0.02]$, $\beta = 0.64$), and the US dummy variable ($b = 4.83$, 95% CI $[1.76, 7.90]$) remained significant predictors. All other variables were non-significant.

Perfectionistic Concerns. We conducted the analyses for perfectionistic concerns POMP scores (see Tables 3 and 5 and Figure 4). Although the quadratic vs linear ($\Delta\chi^2 = 29.11$, $df = 1$, $p < .001$) and cubic vs quadratic ($\Delta\chi^2 = 5.31$, $df = 1$, $p = .02$) likelihood ratio tests showed significant improvement, R^2 did not improve with the cubic term ($R^2 = .30$ across quadratic and cubic models), and higher-order coefficients were non-significant in the cubic model. Accordingly, the quadratic model was deemed the most parsimonious.

In the quadratic model, the linear and quadratic terms for year of data collection explained a significant proportion of variance in perfectionistic concerns POMP ($R^2 = .30$, $Q_{\text{model}} = 113.12$, $df = 2$, $p < .001$). The linear year of data collection term negatively predicted perfectionistic concerns scores ($b = -0.36$, 95% CI $[-0.62, -0.10]$, $\beta = -0.57$) and the quadratic year of data collection term positively predicted scores ($b = 0.02$, 95% CI $[0.01, 0.02]$, $\beta = 1.06$). The signs of these terms are consistent with the interpretation that perfectionistic concerns declined to a point of inflection (around 2000, see Figure 4), then accelerated upwards.

The model predicted perfectionistic concerns POMP scores of 41.91 for 1988 (95% CI [39.81, 44.02]) and 51.55 for 2024 (95% CI [49.76, 53.34]). Given the weighted-average within-study standard deviation of 17.58, this increase represents 0.55 standard deviations over the 35-year study period (Cohen's $d = 0.55$, 95% CI [0.33, 0.77]). We then added the Gini and GDP per capita indices along with year of data collection ($R^2 = .30$, $Q_{\text{model}} = 113.69$, $df = 4$, $p < .001$). The quadratic year of data collection term remained significant ($b = 0.02$, 95% CI [0.03, 0.03], $\beta = 1.03$) but the linear year of data collection term was non-significant. The Gini index and GDP per capita did not predict perfectionistic concerns.

Next, we added country covariates, which explained additional variance ($R^2 = .33$, $Q_{\text{model}} = 134.86$, $df = 6$, $p < .001$). The linear coefficient was significant ($b = -0.49$, 95% CI [-0.81, -0.17], $\beta = -0.77$), as was the quadratic coefficient ($b = 0.02$, 95% CI [0.01, 0.03], $\beta = 1.34$). The US dummy variable predicted perfectionistic concerns ($b = -6.75$, 95% CI [-10.42, -3.08]), but the UK dummy variable did not. The negative sign of the US coefficient is consistent with the interpretation that Americans follow the same accelerating trend as Britons and Canadians, but from a lower baseline. Notably, the Gini index emerged as a significant positive predictor ($b = 0.81$, 95% CI [0.34, 0.1.29], $\beta = 0.61$) after controlling for country differences. This suggests that higher income inequality is associated with elevated perfectionistic concerns and steeper acceleration over time. GDP per capita did not predict perfectionistic concerns scores.

Finally, we added age and gender covariates, and the model explained a significant amount of variance ($R^2 = .33$, $Q_{\text{model}} = 134.35$, $df = 8$, $p < .001$). Linear ($b = -0.50$, 95% CI [-0.82, -0.18], $\beta = -0.79$) and quadratic ($b = 0.02$, 95% CI [0.01, 0.03], $\beta = 1.35$) year of data collection, the US dummy variable ($b = -6.66$, 95% CI [-10.34, -2.98]), and Gini index ($b = 0.80$, 95% CI [0.32, 1.27], $\beta = 0.60$) remained significant. All other variables were non-significant.

Clinical Significance

We also meta-analyzed 98 effect sizes examining correlations between dimensions of perfectionism and mental health outcomes (see Table 6). The dataset included 49 effect sizes for perfectionistic strivings ($k = 9$ anxiety, $k = 40$ depression) and 50 effect sizes for perfectionistic concerns ($k = 9$ anxiety, $k = 41$ depression). The main effects model revealed no significant effect of time on the correlations between perfectionistic strivings and outcomes ($\beta = -0.01$, 95% CI [-0.29, 0.28]). In addition, the interaction model revealed no year $\times$ outcome interaction ($\beta = 0.51$, 95% CI [-0.49, 1.50]). Similarly, the main effects model showed no significant effect of time on the perfectionistic concerns-outcome correlations ($\beta = -0.14$, 95% CI [-0.42, 0.15]). The year $\times$ outcome interaction was also non-significant ($\beta = 0.89$, 95% CI [-0.11, 1.89]).

Heterogeneity patterns

To examine temporal patterns in heterogeneity that might suggest change in measurement properties, we analyzed method variance patterns across time periods and residual trends (see Table 7). Analyses revealed no evidence of systematic increases in heterogeneity over time for socially prescribed perfectionism, personal standards, concern over mistakes, and doubts about actions. Self-oriented perfectionism showed a positive residual trend ($r = .16$, $p = .03$), suggesting some unexplained method variance that increases over time. Collectively, these patterns suggest stable method variance across time for most dimensions, although the positive residual trend for self-oriented perfectionism warrants cautious interpretation.⁹

Discussion

⁹ It should be noted that these analyses examine patterns of between-study heterogeneity rather than measurement invariance. Stable heterogeneity is consistent with, but does not confirm, measurement stability. Formal invariance testing requires item-level data, so it was not possible (Millsap, 2011).

In the current study, multidimensional perfectionism data from 304 samples comprising 82,114 American, Canadian, and British college students were meta-analyzed to evaluate temporal trends from 1989 to 2024. College students' socially prescribed perfectionism scores increased following a quadratic trajectory, while self-oriented perfectionism, personal standards, concerns over mistakes, and doubts about actions increased linearly. At the higher-order level, perfectionistic strivings increased linearly, whereas perfectionistic concerns showed nonlinear acceleration. These findings held after controlling for age, gender, and country differences in perfectionism scores. Furthermore, the linear increase in perfectionistic strivings was steeper in countries and periods with lower GDP per capita, and the quadratic increase in perfectionistic concerns was augmented in countries and periods with higher inequality. Perfectionism-psychopathology correlations remained stable over time, indicating that rising perfectionism has a multiplicative effect on population-level harm. Finally, heterogeneity pattern analyses revealed stable method variance for most dimensions, supporting the validity of observed temporal changes.

Hewitt and Flett: Is It a “Perfectionism Pandemic”?

Building on Curran and Hill (2019), we found that socially prescribed perfectionism was accelerating over time. It is possible that significant events in recent years, such as the global financial crisis, the COVID-19 pandemic, and the rapid growth of social media, may be contributing to and intensifying the pressure to appear perfect. The sharp rise since the early 2000s is particularly striking and chimes with Flett and Hewitt's (2020) suggestion that we may be experiencing a "perfectionism pandemic" (p. 1). This trend also dovetails with the rapid increase in anxiety, depression, self-harm, and suicide ideation currently being observed among young people (e.g., Collishaw & Sellers, 2020; OECD, 2025; WHO, 2017). Given that socially

prescribed perfectionism has a large correlation with these outcomes (e.g., Hill et al., 2025; Limburg et al., 2017), and that this correlation is not weakening as its level increases, our findings suggest that this type of perfectionism is likely to be contributing to the worsening mental health of young people.

Self-oriented perfectionism also continues to increase over time. As to why it increases, we have proposed several cultural pathways, including individualism, meritocracy, and anxious and controlling parental practices. The first two are likely to be especially salient to the increase in self-oriented perfectionism, which is self-directed and has an especial focus on individual achievement. Yet the magnitude of change over time was small. Perhaps self-oriented perfectionism is more heritable and therefore less impacted by broader cultural shifts than socially prescribed perfectionism (Hewitt et al., 2017). Perhaps there is a base effect, given the higher level of self-oriented perfectionism (compared to socially prescribed perfectionism) at the first time point in our analysis.

Or perhaps this finding calls into question the extent to which achievement pressures are being internalized as self-oriented pressures (see Han, 2014, 2015). Although young people have absorbed neoliberalism's achievement anxieties, our analyses reveal a curious asymmetry: socially prescribed perfectionism is increasing at more than twice the rate of self-oriented perfectionism. The most striking implication of such asymmetry is a growing awareness among young people that perfectionistic requirements to excel, achieve, and appear flawless in modern life are externally mandated obligations. Or, at least, that these requirements are increasingly being interpreted as such.

If so, our findings have implications for the thinking of Karen Horney (1950) and Byung-Chul Han (2014). Horney argued that society's tyrannical shoulds are experienced as both

obligations and desires, leaving perfectionists caught between actual and perfect selves. Han, in contrast, describes achievement subjects who experience perfectionistic self-exploitation as authentic desire, with the peripheral sources of this desire fully internalized and thus invisible. Our data suggest recent generations occupy a position closer to Horney than Han. External demands appear to be growing, and, relatedly, they are becoming overtly visible in ways that prevent them from being experienced as purely self-oriented. Even so, and here is the crucial point, they remain reluctant to recalibrate their self-oriented expectations accordingly.¹⁰

Their predicament, then, is perhaps best captured not by Horney's "I must" or even Han's "I can," but by their combination: "I must, *therefore* I can." In this telling, Horneian obligations reinforce Hanainian desire. Per Han, recent cohorts remain personally invested in doing what society needs them to do (i.e., commit themselves to capital; Fromm, 1955), but they are distinguished from older cohorts in that the "needs-them-to-do" part of that equation appears to loom larger and is coming into ever-sharper focus. This is not quite the invisible subjugation Han describes. It is a more conscious, Faustian form of subjugation, in which one is aware that the perfectionistic demands one places on oneself have social origins, yet, against a backdrop of hyperindividualism, such demands can only be interpreted as personal expectations.

The result is perfectionism experienced as both imposed and chosen.¹¹ This psychology, in many ways, embodies the core contradiction facing recent cohorts under neoliberal capitalism. The neoliberal subject is ostensibly untethered from external authority, able to be exactly who

¹⁰ If they were resisting external demands, self-oriented perfectionism would decline as socially prescribed perfectionism rises. However, both rise together.

¹¹ This dual trend marks a departure from older generations, for whom perfectionism appears to have been more straightforwardly self-oriented, with high personal standards lacking the same degree of perceived external judgment and expectation.

they want to be, and yet, despite this, it is made abundantly clear through all channels of social persuasion and levers of economic compliance that only a self-maximizing market actor will be tolerated. This demand is interpreted as one's own standard (high self-oriented perfectionism), even as it carries the unmistakable weight of external judgment (high socially prescribed perfectionism). The inner conflict that emerges is precisely what Horney (1950) identified as the perfectionist's dilemma: an idealized self that, although internalized and defended as authentic, is fundamentally a cultural artefact. Unable to reconcile these contradictory tendencies, the perfectionist begins to resent themselves for failing to match the idealized image, while simultaneously resenting the societal demands that make such an image necessary. This inalienable tension likely underlies much of the psychopathology experienced by recent generations and is why accelerating socially prescribed perfectionism warrants especially close monitoring alongside other, more visible indicators of distress (Flett & Hewitt, 2022).

Frost: Self-Doubt Above All?

We also tested for cohort differences in perfectionism dimensions from the F-MPS. The most eye-catching was the trend for concerns over mistakes, which exhibited the largest increase by a considerable margin ($d = 0.80$). The magnitude of this change is nearly four times that of personal standards and comfortably exceeds the increases observed across all other F-MPS and HF-MPS dimensions. According to Smith et al. (2020), concerns over mistakes has three core elements. The first is a tendency to react negatively to mistakes. The second is a tendency to equate mistakes with personal failure. The third is a belief that others judge people who make mistakes critically. Based on these diverse themes, Smith and colleagues (2020) argue that concerns over mistakes may be more adequately named “concerns over mistakes and failure sensitivity” (p. 22).

We are inclined to agree. Research shows that not only do people high in concerns over mistakes report anxiety about mistakes ahead of time, but they are also hyper-sensitive to mistakes after the fact (e.g., Brown et al., 1999; Frost et al., 1997). This sensitivity has several consequences. One is a tendency to avoid social interactions, particularly evaluative situations, and another is to conceal imperfections from others (Fletcher & Shim, 2019; Shim et al., 2016). In the context of the current findings, an increased anxiety about, sensitivity to, and avoidance of mistakes, especially public mistakes, appears to be characteristic of more recent generations. Such a trend aligns with allied observations of rising externality of control, anxiety, and neuroticism among young people, as well as increasing social disconnection and loneliness (see Twenge, 2023). These are concerning developments, suggesting that young people may be increasingly aware of and sensitive to their imperfections, and that they are finding it difficult to accept their perceived shortcomings against a backdrop of pressure to be perfect.

Consistent with expectations, doubts about actions also increased linearly over time. The magnitude of the increase was smaller than that of concerns over mistakes, but still moderate and significant. People with high levels of doubt about their actions tend to obsess over their ability to perform tasks correctly (Frost et al., 1990). They are therefore characterized by chronic self-doubt and uncertainty (Smith et al., 2020). For this reason, doubts about actions are positively correlated with procrastination and have far stronger links with compulsiveness and indecisiveness than concerns over mistakes or personal standards (e.g., Frost & Shows, 1993; Frost et al., 1990; Sherry, Stoeber, & Ramasubbu, 2016). Taken together, these findings suggest that recent generations of college students appear to doubt themselves more and find it increasingly difficult to focus, make decisions, and complete tasks compared with previous generations.

Perfectionistic Strivings and Concerns: The Worst of Both Worlds?

We also tested for cohort differences in the higher-order dimensions of perfectionism. Perfectionistic strivings had a modest but significant linear increase over time. Changes in the lower-order dimensions suggest this increase was attributable to both personal standards and self-oriented perfectionism. Perfectionistic concerns also increased over time, but to a much greater extent and with a quadratic trajectory. Changes in the lower-order dimensions suggest that this increase was attributable to all factors, although the acceleration appears to be specific to socially prescribed perfectionism. Whether this represents a temporary trend that will stabilize or an inflection point toward sustained acceleration is a question for future research.

Cross-national differences also warrant mention. American college students reported significantly higher perfectionistic strivings but significantly lower perfectionistic concerns than their Canadian and British counterparts. Given American culture's especial emphasis on individualism, this finding is perhaps unsurprising (Twenge, 2014). The more privatized nature of American higher education may also concentrate perfectionistic pressure on personal achievement rather than diffuse social expectations (Jerrim, 2014). Importantly, though, all three countries exhibited similar trajectories of perfectionistic strivings and concerns, and, as such, while cultural differences influence absolute levels, the underlying temporal trend appears consistent across all of these Western, English-speaking nations.

When interpreting these trends, it is worth noting that the higher-order perfectionism dimensions exhibit positive correlations (e.g., Beiling et al., 2004; Cox et al., 2002; Lundh, Saboonchi, & Wångby, 2008). Therefore, at the within-person level, perfectionism encompasses not strivings or concerns but strivings and concerns (see Frost et al., 1990; Smith et al., 2020). The rise in both these dimensions thus offers the clearest evidence yet of how perfectionism, as a

multidimensional trait, is changing among college students. Whereas previous generations of college students typically reported high levels of strivings, these were often accompanied by only moderate levels of concerns. Today, high (and rising) levels of strivings seem to be accompanied by (rapidly) increasing levels of concerns. Alongside stable psychopathology correlations, this pattern should alarm policymakers since high strivings and high concerns are linked to significantly worse mental health outcomes than either dimension alone (Hill et al., 2021).

The rapid rise in perfectionistic concerns is also reminiscent of what Haidt (2024) has recently called the “anxious generation.” That is, a generation emerging from a childhood of overprotection and digital media, incapacitated by insecurity and an inability to cope adaptively with setbacks. Although compelling, this analysis is rather reductive. Focusing solely on technology and parenting ignores the systemic factors we discuss here (hypercompetitiveness, inequality, social mobility), and it locates the problem (and solutions) at the level of individual behavior (screen time, insufficient play, overprotection). What it misses is the reason these phenomena emerged in the first place. Social media algorithms that promote polarization, perfectionistic ideals, and upward social comparison have arisen quite naturally from business models that require continual growth in user engagement and advertising revenue (Curran, 2023). Similarly, intensive parenting emerged as a rational adaptation to intensifying meritocratic competition and declining social mobility (Doepke & Zilibotti, 2019). Digital media and overprotection, in other words, constitute downstream symptoms of a decidedly agnostic capitalism *operating exactly as it is supposed to operate* within neoliberal market logic (Hayek,

1945).¹² It is precisely such considerations that led us to macroeconomic variables as potential explanatory covariates.

Macroeconomic Covariates: Stagnation Drives Strivings, Inequality Drives Concerns

GDP per capita emerged as a negative predictor of perfectionistic strivings (but not perfectionistic concerns). The inverse relationship indicates that the temporal trajectory of perfectionistic strivings is increased by declining GDP per capita. We might label this effect “economic vulnerability,” as it aligns with research indicating that financial stress exacerbates psychological distress and academic pressure among students (Richardson et al., 2013; Jessop et al., 2005). It also substantiates field work showing that economic recessions correlate strongly with increased competitive behavior and achievement anxiety (Clark et al., 2010; Catalano et al., 2011). In essence, declining GDP per capita appears to compound neoliberal pressures and place young people in an unwinnable bind. Not only do they experience perfectionistic strivings in response to cultural changes that impress the need to excel and achieve (rising neoliberalism), but also in response to material conditions that make the accomplishment of those outcomes more challenging (declining GDP per capita).

The Gini coefficient, by contrast, was a positive predictor of perfectionistic concerns (but not perfectionistic strivings). In the context of the quadratic model, this means that inequality makes the upturn portion of the U-curve steeper and more problematic. We might call this effect the inequality “top up,” and it aligns with research indicating that fears about negative judgment and social standing are higher in more unequal countries (Buttrick & Oishi, 2017; Cheung &

¹² Indeed, one cannot help but feel that talk of the anxious generation would be tremendously improved if, rather than assuming things are going dreadfully wrong, we were to entertain the possibility that things are working precisely as intended and draw our conclusions from there.

Lucas, 2016). Likewise, it complements work showing that, in unequal societies, errors and mistakes carry greater social and economic consequences (Paskov et al., 2017; Delhey & Dragolov, 2014). It is notable that the effect of inequality appeared only after controlling for country differences. This suggests that perfectionistic concerns arise in response to lived experiences of widening gaps within one's own society, rather than to abstract comparisons between countries. Such lived experiences, like declining GDP per capita, compound neoliberal pressures but do so in relation to perfectionistic concerns as young people become hypervigilant about their self-presentation, seek approval from others, and worry about mistakes and failings that might signal their unworthiness in an increasingly stratified society.

The distinct impact of GDP per capita and inequality on perfectionistic strivings and concerns warrants mention. On the one hand, economic stagnation promotes achievement-related, self-oriented aspects of perfectionism (strivings), whereas rising inequality promotes hypervigilant, fear-based dimensions (concerns). Although treated as orthogonal in our models, these economic conditions are interdependent entities and converge under secular stagnation, in which economic growth slows below the rate of return on capital, thereby concentrating income and wealth (Piketty, 2014). The 2000s landscape exemplifies this dynamic. As advanced economies entered a prolonged period of stagnation, young people faced both economic pressures that demanded greater effort and structural barriers that limited their mobility (Summers, 2016). This creates fertile conditions for perfectionism, as young people simultaneously feel compelled to strive more and worry more because structural conditions render both responses rational yet ultimately insufficient, thereby fueling further perfectionism, and so on.

These macroeconomic findings provide additional context for recent debates about youth mental health. While time spent on social media and overprotection may represent proximate causes of rising anxiety and depression (but not without debate; see Odgers, 2024), these phenomena operate within, and are thus almost certainly shaped by, structural conditions. Our results support this idea. In particular, the acceleration in perfectionistic concerns (beginning around 2000) predates social media and, rather curiously, coincides extremely well with the point of college entry for the first generation of young people to be socialized under neoliberalism (born in the early 1980s). Rising inequality and slowing growth also predate widespread social media and smartphone use, suggesting that these technologies, if they have a role in the youth mental health crisis, are feeding off and amplifying preexisting material pressures rather than creating them *de novo*. If so, then addressing the crisis will require far more ambition and imagination than phone bans or free-range parenting. Alongside them, it will also require a sincere commitment to building, or to be more exact, rebuilding, an economy where shared prosperity replaces winner-takes-all individualism and the relentless meritocratic sorting underneath widespread perfectionism and related psychopathology.¹³

Alternative Explanations for Rising Perfectionism

Worth discussing when weighing the evidence of rising perfectionism are several alternative explanations that could account for our findings. First, achievement-oriented attitudes may have become normalized in recent years, leading college students to endorse items

¹³ That includes regulatory decisions about what are (e.g., renewables, health-enhancing innovations, core infrastructure) and are not (e.g., predatory advertising, addictive algorithms, surveillance-based business models, planned obsolescence) tolerable sources of growth in the economy, and where the proceeds go, whether reinvested in public goods and distributed as broad-based wages, or extracted by a narrow ownership class.

reflecting perfectionism more readily without experiencing corresponding psychological harm. If correct, we would expect correlations between perfectionism and psychopathology to weaken over time as perfectionism becomes decoupled from distress. Our analyses, however, revealed no significant temporal trends in perfectionism-anxiety or perfectionism-depression correlations for either perfectionistic strivings or concerns (all $ps > .05$). Thus, perfectionism appears to retain its association with psychopathology, even as its level increases, suggesting a multiplicative effect and worsening population-level harm.

Uniform scale recalibration represents another explanation. That is, college students might interpret response anchors differently over time without changes in underlying psychology (e.g., reporting "strongly agree" where previous cohorts reported "agree"). If so, then means will be inflated, while rank order and correlations with outcomes will remain unchanged. While theoretically possible, such recalibration requires several implausible assumptions. It would need to occur in tandem across three countries, over multiple decades, with hundreds of independent samples and tens of thousands of individuals, and it would also need to affect perfectionism measures systematically while leaving other psychological constructs unchanged or changing them in precisely coordinated ways. In any case, our heterogeneity analyses provide indirect evidence against widespread recalibration. If measurement properties were shifting substantially, we would expect increasing heterogeneity or period-specific patterns of variability. Instead, most dimensions of perfectionism showed stable measurement variance across time periods.

Another possibility is systematic error affecting both perfectionism and mental health outcomes. If economic anxiety or cultural pressures lead college students to endorse all distress-related items more eagerly, correlations would remain stable despite response bias. This represents perhaps the most difficult alternative explanation to rule out with meta-analytic data.

Nevertheless, two considerations are relevant. First, even if perfectionism and mental health outcomes are rising in parallel due to shared response tendencies, this still indicates that population-level harm is increasing; whether we label it "genuine" or "systematic bias" is somewhat semantic. Second, this explanation does not account for differences in temporal trajectories across perfectionism dimensions, distinct economic predictors, and dimension-specific heterogeneity patterns. A general response bias affecting all distress items would produce more uniform patterns.

The alternative interpretation, and in our view most likely, is that rising perfectionism reflects genuine shifts in how college students are relating to themselves and other people. This hypothesis aligns with our theoretical framework, which links perfectionism to neoliberal cultural conditions. It accounts for the specificity of the findings, explains the macroeconomic predictors, is consistent with allied evidence of rising neuroticism, declining agreeableness, and increasing external locus of control, and finds concordance in the stable outcome correlations. Of course, prospective designs with item-level measurements would provide more definitive tests. Until such evidence emerges, we believe the most scientifically defensible position is that perfectionism is increasing among college students in ways that matter for their psychological health and the health of Western populations more broadly.

Assuming that is the case, it is worth noting in closing that current POMP scores for perfectionistic strivings (2024 $M = 63$) and perfectionistic concerns (2024 $M = 52$) remain well below the theoretical maximum of 100. This headroom means that temporal trends are unlikely to be approaching a ceiling and that there is considerable scope for perfectionism to continue rising. Indeed, should the cultural and economic conditions we have identified as driving perfectionism persist, there is little reason to expect an abatement in the near term. That said,

should mean values continue to rise, score distributions will compress, attenuating future effect sizes, which will be something to keep an eye on. Finally, another reading of the POMP scores offers hope, and it seems opportune to end on this note. While historically elevated, levels of perfectionism remain generally in the middle range of their scales. Individual and social interventions thus have ample room to attenuate population-level harm, and the fact that perfectionism has not yet reached the upper limits of its measurement scale should serve as an impetus to act before it does.

Limitations and Future Research

Several additional limitations warrant consideration. While our heterogeneity analyses and stable outcome correlations suggest genuine change, we cannot rule out all forms of systematic measurement error without item-level data. Most notably, it remains unknown whether specific MPS items have been reconceptualized (gamma change) or recalibrated (beta change). Our heterogeneity analyses represent the most rigorous assessment feasible with aggregate published data, but future prospective studies with consistent item-level measurement would provide more definitive tests (Millsap, 2011). Moreover, analyses examining perfectionism-outcome associations were limited to anxiety and depression via self-report, not clinical diagnoses or other outcomes. As such, we cannot test whether more individuals are crossing diagnostic thresholds over time. Future cross-temporal research might analyze clinical data to identify changes in case rates.

We were unable to assess the methodological quality of the included studies because established risk-of-bias tools do not transfer well to cross-temporal meta-analyses of study means. Moreover, we were unable to systematically code all studies for methodological features such as response rates, sampling procedures, or missing-data handling because many studies,

particularly older ones, did not report this information. These are common challenges when the eligible literature spans several decades (Twenge et al., 2008). It should be noted that both HF-MPS and F-MPS have well-established psychometric properties. Our heterogeneity analyses also revealed stable method variance across time periods for most dimensions. We acknowledge, though, that these conditions are not equivalent to formal study-level quality moderation, and we encourage future research to address these gaps as data become available.

Furthermore, while we report associations between macroeconomic indicators and perfectionism, these findings are correlational. Our Gini analyses, in particular, include country-year combinations, providing temporal variation, but lack state-level information for finer-grained analyses. Direct tests of our proposed cultural pathways require prospective, multi-level designs that simultaneously measure cultural values, family socialization, and the development of perfectionism. Likewise, our focus on college students limits the generalizability of our findings to other populations. College samples overrepresent individuals from higher socioeconomic backgrounds and specific racial or ethnic groups, and we lacked enough data for detailed subgroup analysis (Chetty et al., 2017). These socioeconomic disparities in college enrollment have also grown over time, shifting the composition of university attendees during our study period (Jackson & Holzman, 2020). Whether perfectionism itself predicts university enrollment is unknown, but if perfectionistic individuals are more likely to come from wealthier families, then rising college enrollment among them might partly explain the observed trends.¹⁴

¹⁴ There is no evidence that perfectionism operates on a class gradient. However, even if there were evidence, selection effects would themselves reflect the broader cultural pressures we theorise are driving perfectionism, suggesting the phenomenon is consequential regardless of its exact cause.

Our focus on three Western nations also restricts our conclusions about non-Western contexts, where different socio-economic systems might lead to different trajectories or similar ones for different reasons (e.g., Chang et al., 2014). Whether perfectionism trends generalize to non-college, non-Western, community, or clinical populations remains unknown and should be the focus of future research. Another limitation of this study is that it summarizes research at a single time point. Of course, this affects all meta-analyses, but it is particularly problematic for cross-temporal research. To address this issue, we developed a continually updating online tool, *The Perfectionism Observatory* [www.perfectionismobservatory.com], which is an open-access platform that aggregates and analyses perfectionism data as researchers contribute it. This platform supports open science principles while providing researchers, practitioners, and policymakers with up-to-date insights into trends in perfectionism (Nosek et al., 2022).¹⁵ We hope this model of living meta-analysis will be adopted for other psychological constructs that found to be changing over time.

Conclusions

This study examines generational differences in college student perfectionism. Our analysis shows that self-oriented perfectionism, concerns over mistakes, and doubts about actions are rising linearly, while socially prescribed perfectionism exhibited an accelerating pattern of growth. Higher-order factors are also on the rise, with perfectionistic concerns following a quadratic trajectory. Rising inequality predicts higher perfectionistic concerns, while declining GDP per capita predicts higher perfectionistic strivings. Moreover, perfectionistic

¹⁵ We urge researchers measuring perfectionism to contribute their data to the Observatory regardless of whether their findings confirm rising trends. The platform includes mechanisms for tracking submission patterns and will flag potential reporting asymmetries in future updates.

vulnerability to psychopathology remained stable over time. These findings support our theoretical framework linking perfectionism to neoliberal cultural conditions, suggesting that young people face pressures to strive harder for success precisely when that success becomes more elusive and its absence more consequential. The emergence of social media and the impact of the coronavirus pandemic likely accelerated these trends, with the quadratic growth in perfectionistic concerns now representing a significant public health concern. Given perfectionism's sizable and stable links to psychopathology, these rising levels, particularly when understood as responses to deteriorating economic conditions, demand urgent attention from educators, mental health professionals, and policymakers alike.

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Note: References marked with an asterisk (*) indicate studies included in the meta-analysis.

References marked with both asterisk and dagger (†) indicate studies that were included in the outcome correlation analysis.

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Table 1*Descriptive Statistics and Distributional Properties of Study Variables*

Variables	<i>k</i> _{means}	<i>n</i>	Original <i>M</i>	POMP <i>M</i>	Original <i>SD</i>	POMP <i>SD</i>	Original range	POMP Range
Perfectionism								
Lower-order factors								
Personal standards	110	31,440	3.46	61.50	0.24	6.00	2.46, 4.27	36.50, 81.75
Concerns over mistakes	111	31,579	2.58	39.50	0.30	7.50	1.99, 3.44	24.75, 61.00
Doubts about actions	98	27,961	2.72	43.00	0.25	6.25	2.10, 3.43	27.50, 60.75
Self-oriented perfectionism	194	51,601	4.64	60.67	0.23	3.83	3.93, 5.42	48.83, 73.67
Socially prescribed perfectionism	193	51,184	3.65	44.17	0.26	4.33	3.06, 4.56	34.33, 59.33
Higher-order factors								
Perfectionistic strivings (PS)	288	78,447	60.97	--	4.49	--	42.94, 73.60	--
Perfectionistic concerns (PC)	285	77,919	43.31	--	5.51	--	26.25, 62.49	--
Country								
Canada	110 (36%)	30,877	--	--	--	--	--	--
United Kingdom	47 (15%)	13,304	--	--	--	--	--	--
United States	150 (49%)	38,758	--	--	--	--	--	--
Age	307	82,939	20.64	--	1.64	--	18.00, 25.96	--
Female %	307	82,939	70.71	--	18.43	--	0.00, 100.00	--

Note. Perfectionism descriptive statistics are for the *k*_{means} passed forward to analysis (i.e., following outlier removal). Country, age, and female % *k*_{means} are those reported in the complete dataset (i.e, prior to outlier removal).

Table 2*Summary of Cross-Temporal Trends for Perfectionism Dimensions*

Dimension	Best-fitting model	<i>k</i>	β (95% CI)	<i>d</i> (95% CI)	1988 predicted (POMP)	2024 predicted (POMP)	Pooled <i>SD</i> (POMP)	2024 percentile	Relative percentile change
Self-oriented perfectionism	Linear	194	0.23 (0.15, 0.42)	0.23 (0.13, 0.34)	4.51 (58.50)	4.76 (62.67)	1.07 (17.83)	61 st	+22%
Personal standards	Linear	110	0.29 (0.11, 0.47)	0.45 (0.20, 0.49)	3.28 (57.00)	3.61 (65.25)	0.73 (18.25)	67 th	+34%
Socially prescribed perfectionism	Quadratic	193	0.96 (0.53, 1.40)	0.52 (0.39, 0.82)	3.53 (42.17)	4.02 (50.33)	0.95 (15.83)	70 th	+40%
Concerns over mistakes	Linear	111	0.46 (0.30, 0.63)	0.80 (0.44, 1.32)	2.22 (30.50)	2.88 (47.00)	0.82 (20.50)	79 th	+58%
Doubts about actions	Linear	98	0.40 (0.21, 0.58)	0.57 (0.43, 0.86)	2.46 (36.50)	2.94 (48.50)	0.84 (21.00)	72 nd	+44%
Perfectionistic strivings	Linear	288	0.28 (0.17, 0.39)	0.29 (0.16, 0.42)	58.19	63.40	17.93	61 st	+22%
Perfectionistic concerns	Quadratic	285	1.06 (0.65, 1.48)	0.55 (0.33, 0.77)	41.91	51.55	17.58	71 st	+42%

Note. *k* = number of samples; β = standardised coefficient; *d* = Cohen's *d*; 2024 percentile = the percentile at which the average 2024 college student would fall relative to the 1988 distribution (assuming 1988 mean at the 50th percentile). *SD* = standard deviation; Relative percentile change = the percentage increase in percentile rank relative to the 50th percentile baseline, calculated as $((2024 \text{ percentile} - 50) / 50) \times 100$. Predicted scores are expressed only as the Percent of Maximum Possible (POMP) for perfectionistic strivings and concerns.

Table 3*Summary of Model Fitting Results of Polynomial Analyses*

Variable	Perfectionistic strivings						Perfectionistic concerns					
	Linear		Quadratic		Cubic		Linear		Quadratic		Cubic	
	b	SE	B	SE	b	SE	b	SE	b	SE	b	SE
Birth cohort												
Intercept	58.04***	0.64	59.59***	1.12	60.04***	1.68	37.66***	0.69	42.26***	1.19	41.26***	1.48
Year	0.14***	0.03	-0.06	0.12	-0.17	0.34	0.29***	0.03	-0.36**	0.13	-0.13	0.32
Year ²	--	--	0.01	0.003	0.01	0.02	--	--	0.02***	0.003	0.004	0.02
Year ³	--	--	--	--	-0.0001	0.0003	--	--	--	--	0.0002	0.0004
Model statistics												
Q _{model} (df)	25.23 (1)***		28.21 (2)***		28.26 (3)***		81.05 (1)***		113.12 (2)***		113.27 (3)***	
Q _{residual} (df)	3980.37 (286)***		3974.10 (285)***		3952.75 (284)***		6016.68 (283)***		5834.70 (282)***		5832.14 (281)***	
R ²	0.09		0.09		0.09		0.24		0.30		0.30	
τ ² (SE)	16.59 (1.53)		16.50 (1.52)		16.55 (1.53)		21.23 (1.92)		19.41 (1.77)		19.47 (1.78)	
I ²	94.05		94.00		94.01		95.69		95.28		95.28	
LogLik	-822.66		-818.87		-816.43		-847.38		-832.82		-830.17	
Δχ ² (df.)	--		7.59 (1)***		4.87 (1)*		--		29.11 (1)***		5.31 (1)*	

Note. Year is centered at 1988 (coded as 0), such that the intercept represents the predicted POMP score at baseline. * $p < .05$; ** $p < .01$., *** $p < .001$.

Table 4
Summary of Metaregression Results for Perfectionistic Strivings

<i>k</i> = 288	Model 1			Model 2			Model 3			Model 4		
	<i>b</i> (95% CI)	<i>SE</i>	β	<i>b</i> (95% CI)	<i>SE</i>	β	<i>b</i> (95% CI)	<i>SE</i>	β	<i>b</i> (95% CI)	<i>SE</i>	β
Birth cohort												
Year	.14*** (0.09, 0.20)	.03	.28	.30*** (0.14, 0.45)	0.08	0.58	.32** (0.17, 0.48)	0.08	0.63	.33** (0.12, 0.48)	.08	.64
Economics												
Gini	--	--	--	.34** (0.16, 0.51)	0.09	0.32	-.22 (-0.60, 0.17)	0.20	-0.20	-0.21 (-0.60, 0.17)	.20	-.20
GDP/capita	--	--	--	-.13** (-0.25, -0.01)	0.06	-0.37	-.13* (-0.35, -0.01)	0.06	-0.37	-.13* (-0.25, -0.02)	.06	-.38
Country ^a												
USA	--	--	--	--	--	--	4.87** (1.79, 7.94)	1.57	1.08	4.83** (1.76, 7.90)	1.57	1.08
UK	--	--	--	--	--	--	-0.54 (-2.13, 1.05)	0.81	-0.12	-0.55 (-2.14, 1.04)	0.81	-0.12
Gender												
% female	--	--	--	--	--	--	--	--	--	-0.01 (-0.04, 0.02)	0.01	-0.04
Mean age	--	--	--	--	--	--	--	--	--	0.004 (-0.001, 0.01)	0.002	0.09
Model statistics												
$Q_{\text{model}}(df)$	25.23 (1)***			41.98 (3)***			58.51 (5)***			62.14 (7)***		
$Q_{\text{residual}}(df)$	3980.37 (286)***			3752.69 (284)			3694.40 (282)			3677.07 (280)		
R^2	0.09			0.13			0.17			0.17		
$\tau^2(SE)$	16.59 (1.53)			0.78 (0.07)			0.75 (0.07)			0.74 (0.07)		
I^2	94.05			93.71			93.41			93.39		

Note. GDP per capita is scaled in \$1,000 USD units. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5
Summary of Metaregression Results for Perfectionistic Concerns

<i>k</i> = 285	Model 1			Model 2			Model 3			Model 4		
	<i>b</i> (95% CI)	<i>SE</i>	β	<i>b</i> (95% CI)	<i>SE</i>	β	<i>b</i> (95% CI)	<i>SE</i>	β	<i>b</i> (95% CI)	<i>SE</i>	β
<i>Birth cohort</i>												
Year	-0.36** (-0.62, -0.10)	0.13	-0.57	-0.28 (-0.59, 0.03)	0.16	-0.44	-0.49* (-0.81, -0.17)	0.16	-0.77	-0.50* (-0.82, -0.18)	0.16	-0.79
Year^2	.02*** (0.01, 0.02)	0.003	1.06	0.02*** (0.01, 0.03)	0.004	1.03	.02** (0.01, 0.03)	0.004	1.34	0.02*** (0.01, 0.03)	0.004	1.35
<i>Economics</i>												
Gini	--	--	--	0.000 (-0.20, 0.20)	0.10	0.000	0.81*** (0.34, 1.29)	0.24	0.61	0.80*** (0.32, 1.27)	0.24	0.60
GDP/capita	--	--	--	-0.05 (-0.18, 0.08)	0.07	-0.11	-0.08 (-0.19, 0.07)	0.07	-0.13	-0.05 (-0.18, 0.08)	0.07	-0.12
<i>Country^a</i>												
USA	--	--	--	--	--	--	-6.75** (-10.42, -3.08)	1.87	-1.23	-6.66** (-10.34, -2.98)	1.89	-1.21
UK	--	--	--	--	--	--	0.08 (-1.67, 1.84)	0.90	-0.02	0.17 (-1.60, 1.94)	0.90	0.03
<i>Gender</i>												
% female	--	--	--	--	--	--	--	--	--	-0.001 (-0.04, 0.02)	0.02	-0.01
Mean age	--	--	--	--	--	--	--	--	--	-0.01 (-0.01, 0.004)	0.002	-0.03
<i>Model statistics</i>												
$Q_{\text{model}}(df)$	81.05 (1)***			113.69 (4)***			134.86 (6)***			134.35 (8)***		
$Q_{\text{residual}}(df)$	6016.68 (283)***			5725.75 (280)***			5583.47 (278)***			5577.64 (276)		
R^2	0.24			0.30			0.33			0.33		
$\tau^2(SE)$	21.23 (1.92)			19.51 (1.78)			18.57 (1.71)			18.70 (1.72)		
I^2	95.69			95.28			95.03			95.06		

Note. GDP per capita is scaled in \$1,000 USD units. Standardised coefficients for the polynomial terms exceed ± 1 due to the quadratic transformation. * $p < .05$; ** $p < .01$., *** $p < .001$.

Table 6*Summary of Meta-regression Results for the Effect of Time on Outcome Correlations*

Perfectionism	Outcome	<i>k</i>	β (95% CI)	SE
Strivings	Anxiety	9	-.38 [-1.12, 0.36]	.38
Strivings	Depression	40	.04 [-0.27, 0.35]	.16
Concerns	Anxiety	9	-.61 [-1.26, 0.04]	.33
Concerns	Depression	41	-.01 [-0.38, 0.24]	.16

Note. *k* = number of effect sizes; β = standardised meta-regression coefficient representing the standardised change in Fisher's z-transformed correlation as a function of year; SE = standard error; 95% CI = confidence interval for β . To interpret: a β of -0.38 indicates that correlations decreased by 0.38 standard deviations across the range of years in the dataset (not that correlations changed by 0.38 per year). None of the temporal trends were statistically significant.

Table 7
Heterogeneity Patterns Across Time by Perfectionism Dimension

Dimension	<i>k</i>	$\tau^2\beta$	Residual trend <i>r</i>	Period het. <i>t</i>	Heterogeneity pattern
Self-oriented perfectionism	195	.001	.16*	-.36	Increasing trend
Socially prescribed perfectionism	194	.0004	.13	-1.50	Stable
Personal standards	112	.001	.03	-.47	Stable
Concern over mistakes	111	<.0001	.12	-1.30	Stable
Doubts about actions	98	.001	.11	-.59	Stable

Note. *k* = number of studies; $\tau^2\beta$ = slope for the trend in τ^2 across time periods; Period het. *t* = early vs late period heterogeneity *t*-value. Risk assessment based on systematic patterns in heterogeneity and residuals. * $p < .05$.

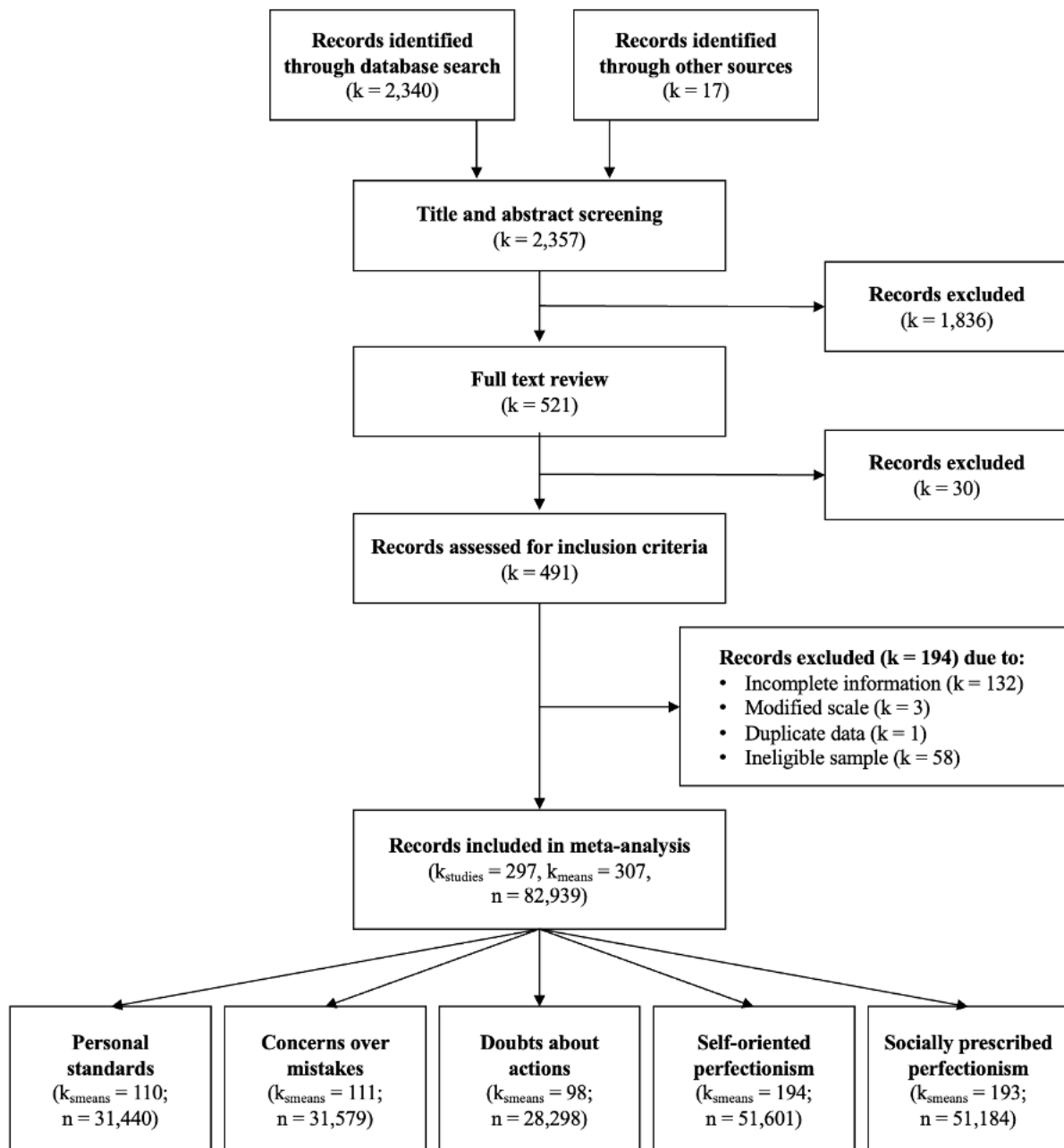
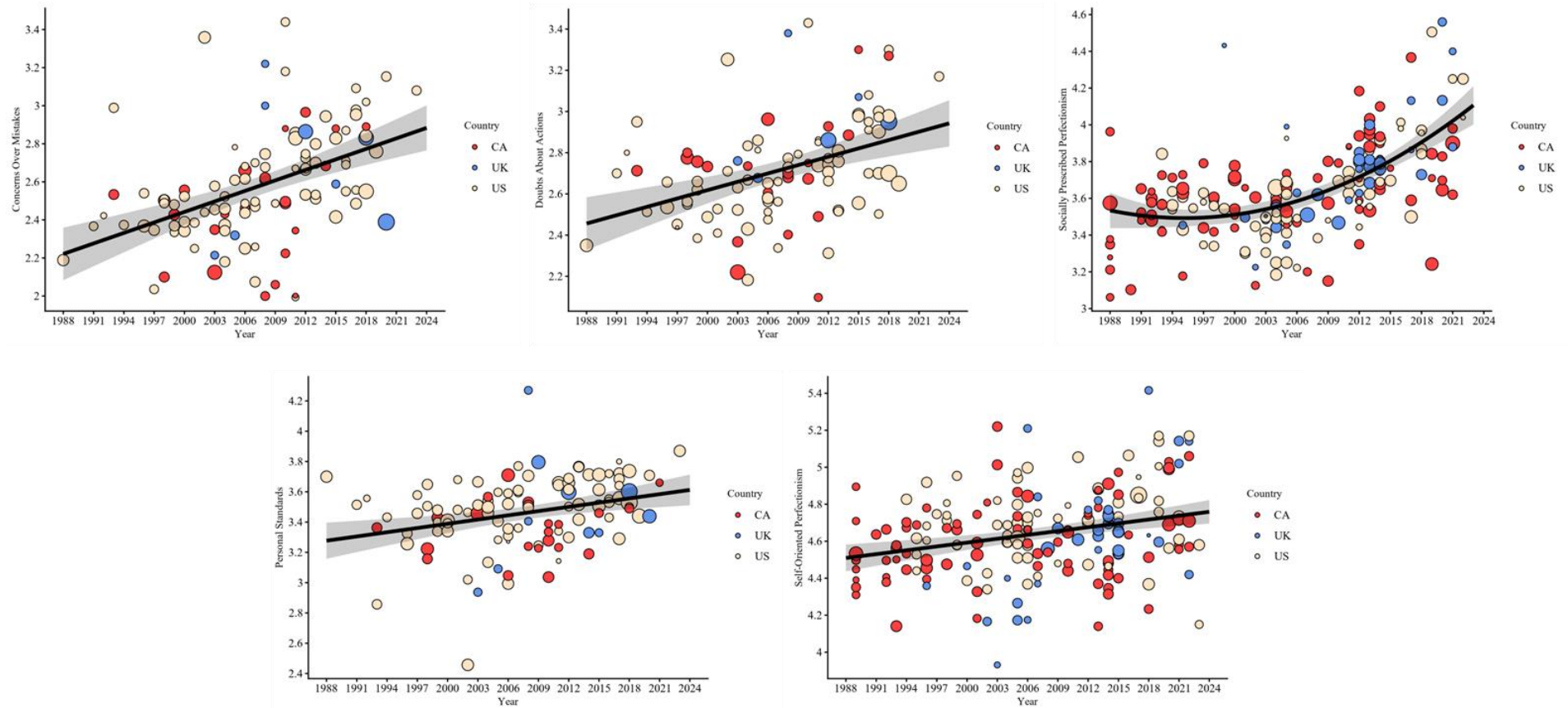
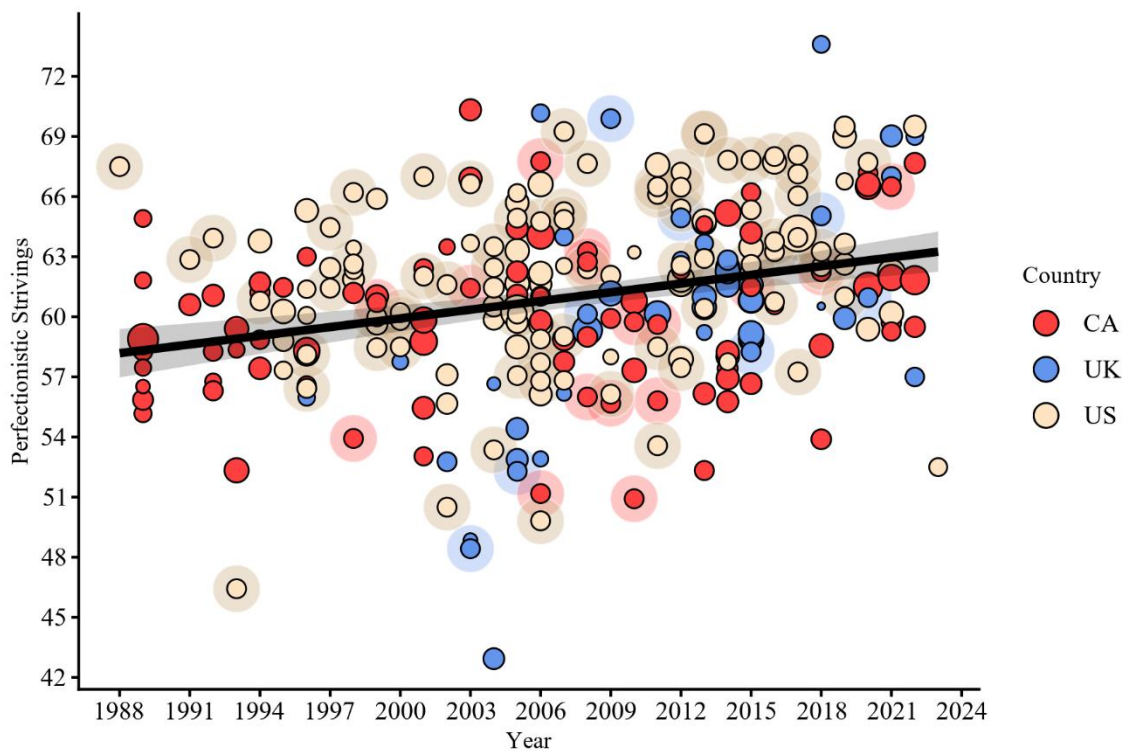
Figure 1*PRISMA Flow Diagram for the Literature Search*

Figure 2

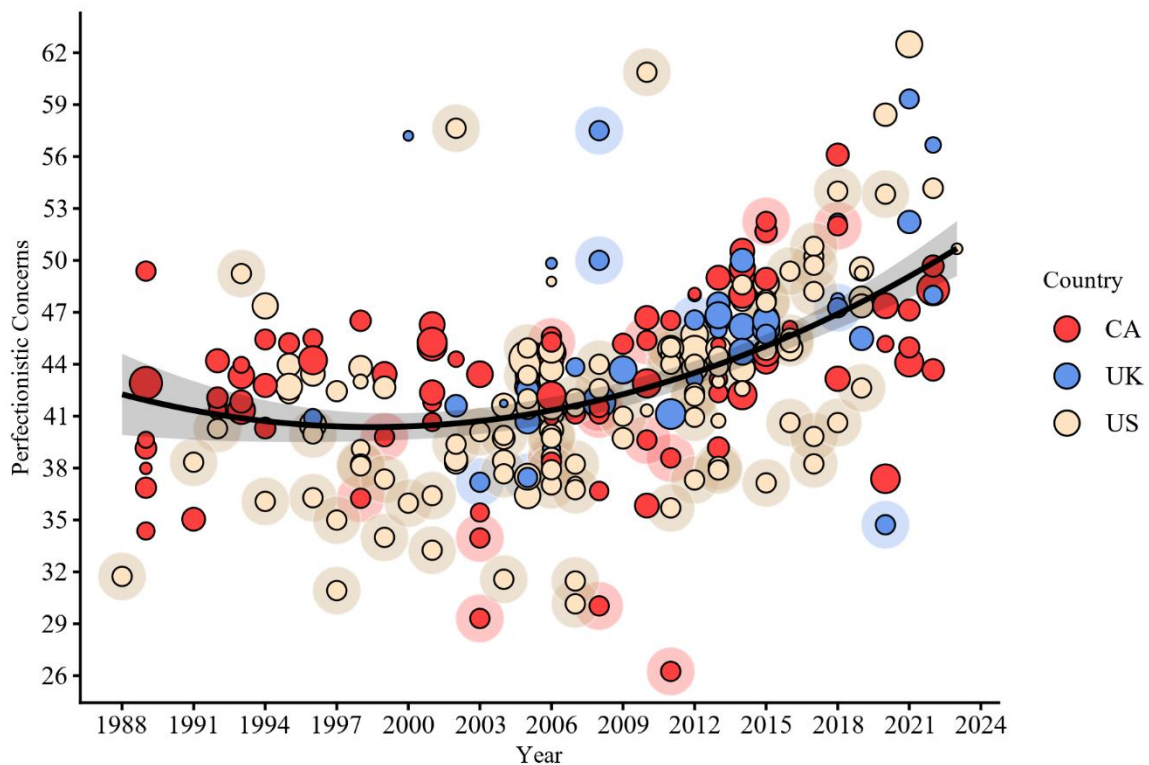
Best-Fitting Models of Lower-Order Perfectionism Dimensions Plotted Against the Year of Data Collection



Note. CA = Canada; US = United States of America; UK = United Kingdom. Data points represent study means, and the size of the data point is proportional to study (inverse variance) weighting. The band between the upper and lower limits of the 95% confidence interval for the predicted values is contained within transparent grey area around the solid regression line.

Figure 3.*Linear Model of Perfectionistic Strivings Plotted Against the Year of Data Collection*

Note. CA = Canada; US = United States of America; UK = United Kingdom. Data points represent Percent of Maximum Possible (POMP) scores, and their size is proportional to the study weight (inverse variance). Points with a halo contain data from the Frost MPS. Points without a halo contain data from the HF-MPS. The band between the upper and lower limits of the 95% confidence interval for the predicted values is contained within the transparent grey area around the solid regression line.

Figure 4.*Quadratic Model of Perfectionistic Concerns Plotted Against the Year of Data Collection*

Note. CA = Canada; US = United States of America; UK = United Kingdom. Data points represent Percent of Maximum Possible (POMP) scores, and their size is proportional to the study weight (inverse variance). Points with a halo contain data from the Frost MPS. Points without a halo contain data from the HF-MPS. The band between the upper and lower limits of the 95% confidence interval for the predicted values is contained within the transparent grey area around the solid regression line.