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6 Young people's perceptions of their parents' expectations and criticism are increasing over time:

7 Implications for perfectionism

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Abstract

1 We recently found evidence for rising self-oriented, other-oriented, and socially
2 prescribed perfectionism among young people from the United States, United Kingdom, and
3 Canada (Curran & Hill, 2019). One reason why perfectionism is increasing may be that rising
4 competitiveness and individualism are requiring parents to engage in anxious, overly involved,
5 and/or overly controlling forms of parenting. Yet data to support this claim are limited and
6 contested. In two meta-analyses, we expanded upon and tested this claim by examining whether
7 excessive parental expectations and harsh parental criticism are correlated with perfectionism
8 (Study 1), and whether these perceived practices are changing over time among American,
9 Canadian, and British college students (Study 2). In study 1, meta-analyses found small-to-
10 moderate positive mean weighted effects of parental expectations and parental criticism on self-
11 oriented and other-oriented perfectionism, and large positive mean weighted effects of parental
12 expectations on parental criticism with socially prescribed perfectionism. In study 2, using cross-
13 temporal meta-analysis, we found that mean levels of parental expectations and parental
14 criticism had linearly increased between 1989 and 2019 among college students. With rising
15 competitiveness, individualism, economic inequality, and pressure to excel at school and college
16 as the societal background, increases in excessive parental expectations and harsh parental
17 criticism offer perhaps the most plausible explanation for rising perfectionism to date.

Public significance statement

19 Two meta-analyses support a possible explanation for rising perfectionism among young
20 people: changing parenting practices. Parental expectations and criticism were positively
21 correlated with perfectionism in meta-analysis one, and these practices were found to be
22 increasing over time in meta-analysis two. The latter finding has especial public significance.
23

1 Rising expectations and criticism likely reflect one response parents are making to escalating
2 societal competitiveness, individualism, inequality, and pressures to excel at school and college.

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1 Perfectionism is a pressing societal concern. It contributes to several mental health
2 difficulties and is increasing, with more young people reporting unrealistic expectations for
3 themselves and others, and pressure to be perfect than ever before (Curran & Hill, 2019). In
4 seeking to explain reasons for rising perfectionism, we have argued for several potential
5 pathways. One of these was changing parenting practices. We believe that perfectionism may be
6 rising because parents are responding to societal pressures with more anxious, controlling, and
7 pressurised parenting. Data to support these ideas are limited and contested (Soenens &
8 Vansteenkiste, 2019). Hence, we attempt to test our thinking by examining whether two forms of
9 perceived controlling parenting, parental expectations and parental criticism, are correlated with
10 perfectionism and whether these practices are changing over time.

11 **Multidimensional perfectionism**

12 Perfectionism is a multidimensional personality characteristic. It encapsulates a
13 combination of excessively high personal standards and overly critical self-evaluations (Frost,
14 Marten, Lahart, & Rosenblate, 1990). One of the most extensively tested theory of perfectionism
15 is Hewitt and Flett's (1991) multidimensional model.¹ In this model, perfectionism is understood
16 to have three core trait dimensions that are differentiated by the direction of perfectionistic
17 beliefs and behaviors. Self-oriented perfectionism is perfectionism turned on the self and arises
18 when individuals attach irrational importance to being perfect, hold unrealistic expectations of
19 themselves, and are punitive in their self-evaluations. Socially prescribed perfectionism is
20 perfectionism directed from others and reveals itself when individuals believe their social context

¹ Alongside Hewitt and Flett's (1991) model, there are other multidimensional models of perfectionism such as Frost et al (1990), which includes high personal standards, concern over mistakes, doubts about actions, organization, and two parenting antecedents (expectations and criticism). There are univariate models, too, that capture personal standards only, like Fairburn and colleagues' clinical measure (Fairburn, Cooper, & Shafran, 2003). We take Hewitt and Flett's approach in this paper because much evidence indicates that perfectionism is multidimensional and, of the multidimensional models, theirs is clinically informed and has good evidence for its basic theoretical tenets (see Hewitt et al., 2017).

1 is excessively demanding, that others judge them harshly, and that they must display perfection
2 to secure approval. Other oriented perfectionism is perfectionism turned on others and is evident
3 when individuals impose unrealistic standards on those around them and evaluate others
4 critically.

5 All three of Hewitt and Flett's trait perfectionism dimensions give vulnerability to
6 psychological difficulties. Socially prescribed perfectionism is especially harmful however since
7 it includes profound interpersonal inferiority and preoccupation with concealing perceived
8 defectiveness from others (Hewitt et al., 2017). These difficulties are evident in research
9 indicating that socially prescribed perfectionism is positively associated with major
10 psychopathology including anxiety, depression, and suicide ideation (e.g., Limburg, Watson,
11 Hagger, & Egan, 2017; Smith et al., 2018). For self-oriented perfectionism, psychological
12 difficulties arise as a function of tying self-worth to lofty achievement standards and the knock-
13 on impact of failure (Hewitt & Flett, 1991). Like socially prescribed perfectionism, research
14 shows self-oriented perfectionism to be positively associated with major psychopathology
15 including depression, anorexia nervosa, and suicide ideation albeit to a lesser degree (e.g.,
16 Limburg et al., 2017; Smith et al., 2018). Other oriented perfectionism, unlike socially prescribed
17 or self-oriented perfectionism, erodes social relations because of a tendency to criticize others
18 and treat them with hostility and disdain (Hewitt et al., 2017). This is evident in research
19 showing other-oriented perfectionism to be associated with higher narcissism, vindictiveness and
20 hostility, as well as lower altruism, compliance, and trust (e.g., Stoeber, 2014, 2015; Smith et al.,
21 2016).

22 **Rising perfectionism among young people**

1 Not only is perfectionism damaging to mental health and relationships, but it is also
2 rising. In a recent cohort analysis, we found that American, Canadian, and British college
3 students' reports of self-oriented, socially prescribed, and other-oriented perfectionism have
4 significantly increased in the past two and a half decades (Curran & Hill, 2019). For self-oriented
5 perfectionism and other-oriented perfectionism, the increases were modest: almost sixty percent
6 of young people in 2016 were above typical levels in 1989. For socially prescribed
7 perfectionism, the increase was far more sizeable. In 2016, sixty-six percent of young people
8 were above the typical level in 1989. Alongside research documenting the harmfulness of
9 socially prescribed perfectionism, we argued that this finding was especially important as it has
10 the potential, at least in part, to explain allied increases in psychopathology currently being
11 observed among young people (e.g., McManus et al., 2019; Sellers et al., 2019; World Health
12 Organization, 2017).

13 When thinking about reasons for rising perfectionism, we took a broad cultural lens. We
14 were guided in this direction by the seminal ideas of Karen Horney (1937, 1950), among others
15 (e.g., Burns, 1980; Pacht, 1984), who has linked perfectionistic behavior to inner conflicts (i.e.,
16 between the actual and idealized self) and dictates (i.e., tyrannical shoulds) that originate from
17 the social conditions outside of the individual. The conditions we emphasized as especially
18 important and characteristic of modern-day culture were those created by the recent emergence
19 of neoliberalism in the US, Canada, and the UK (i.e., governance committed to the imposition of
20 market-based competition and reward into every sphere of life; Ostry, Loungani, & Furceri,
21 2016). With these changes as the societal background, we suggested three pathways that might
22 explain rising perfectionism. The first was that neoliberalism amplifies competitiveness,
23 individualism, and irrational ideals of perfectibility as desirable and obtainable goals. The second

1 pathway stressed the importance of meritocracy and the harmful messages that the hard work
2 doctrine sends to young people about the link between their accomplishments and self-worth
3 (especially in school and college). The third pathway focused on parents and described how
4 competitive pressures create achievement anxieties that are passed down to young people
5 through anxious and controlling forms of parenting.

6 **Is parenting really a pathway?**

7 In response to our theorizing, concerns have been mooted about the possible role of
8 changing parenting practices in the rise of perfectionism (Soenens & Vansteenkiste, 2019).
9 These concerns hinge on the specific nature of the parenting practices that are changing and
10 whether they are contributing to the documented increases in perfectionism. In their response to
11 our paper, Soenens and Vansteenkiste (2019) queried whether anxious and controlling parenting
12 practices really were rising. They pointed out differences in aspects of parental control (as-
13 structure versus as-pressure). They also provided evidence from the US and Sweden showing
14 that the parental practices important to perfectionism, such as physical punishment and
15 authoritarian parenting are in fact decreasing (see Ryan, Kalil, Ziol-Guest, & Padilla, 2016;
16 Trifan, Stattin, & Tilton-Weaver, 2014). Soenens and Vansteenkiste concluded that if any form
17 of parental control is rising, it is control-as-structure (i.e., rules and supervision) and that control-
18 as-structure is not associated with perfectionism's development (Soenens Vansteenkiste, Luyten,
19 Duriez, & Goossens, 2005).

20 We offered several counterarguments to Soenens and Vansteenkiste (Hill & Curran,
21 2019). As regards the studies used to support their argument that controlling parental practices
22 important to perfectionism are decreasing, we argued that the political context (Sweden vs US,
23 Canada, and the UK) and what is being measured (physical vs psychological control) need to be

1 considered. We foregrounded parenting data from North America because the perfectionism data
2 came from North American (and British) college students and the relationship between parental
3 expectations and anxious overparenting with perfectionism is better evidenced than that of
4 physical punishment or authoritarianism (e.g., Akram, Ellis, Myachykov, Chapman, & Barclay,
5 2017; Fletcher, Pierson, Speirs Neumeister, & Holmes Finch, 2019; Flett, Sawatzsky, & Hewitt,
6 1995). We also took issue with the narrow definition of parental control (as-structure) offered by
7 Soenens and Vansteenkiste. In the parenting literature, control is often defined in far broader
8 terms and characterized by “parents’ pressure, intrusiveness, and dominance” (Grolnick &
9 Pomerantz, 2009, p.167). These characteristics are synonymous with the overly anxious and
10 controlling parent behaviors that appear to be on the rise (e.g., Collishaw et al., 2006; Doepke &
11 Zilibotti, 2019; Ramaey & Ramey, 2010) and that contribute to perfectionism’s development
12 (e.g., hostility, conditional regard, and harshness; Flett, Hewitt, Oliver, & Macdonald, 2002;
13 Hewitt et al., 2017).

14 The main difference between our thinking and that of Soenens and Vansteenkiste,
15 though, is the vantage point. We are attempting to place changes in parenting within a wider
16 purview of cultural change. Doing so invariably means our focus is less on conceptual
17 differences in (sub)definitions of control from one particular theoretical perspective and more on
18 trying to understand how a shifting social environment can change parental behaviors broadly.
19 When it comes to environmental change and parenting, our focus is on the influence of
20 neoliberal ideals (primarily competitiveness and individualism). Not only do these ideals place
21 pressure on young people to strive, achieve, and perfect themselves, we think that inevitably
22 parents will respond by becoming increasingly concerned over their child’s successes (and
23 failures), raising their expectations for their children, and becoming excessively involved in their

1 children's lives. We expect the ways in which parents are responding to be complex and evident
2 in a multitude of different ways including not just how they behave but also how they are
3 perceived by their children.

4 Our ideas about culture, parenting, and perfectionism have so far rested on systems-level
5 observational data. Although suggestive, these data provide only indirect support for our belief
6 that changing parenting practices may be contributing to rising levels of perfectionism. In
7 addition, as highlighted by our disagreement with Soenens and Vansteenkiste, this type of data
8 rarely fits one particular theoretical position and can be interpreted in different ways. In what
9 follows we provide a fuller theoretical account of our thinking concerning the role of changing
10 parenting practices and rising perfectionism than we were able in our original paper. We then put
11 these ideas to the test using empirical data at an individual-level by assessing the relationship
12 between perfectionism and perceptions of parental behavior and whether we are seeing similar
13 increases in these perceptions as observed for perfectionism.

14 **The theoretical basis for changing parental practices in the rise of perfectionism**

15 The role of parents in the development of perfectionism has a long history (e.g., Frost et
16 al., 1991; Horney, 1950; Missildine, 1963). More recent theories draw from attachment theory
17 and describe the development of perfectionism in terms of parent-child "asynchrony" (Hewitt et
18 al., 2017). From this perspective, perfectionism emerges in response to parental socialization that
19 only intermittently fulfills attachment needs of esteem and belonging. Germane to asynchrony is
20 the (non)availability and (non)responsiveness of parents to such attachment needs. This
21 mismatch need not be intentional and indeed is often inadvertent. Parental behaviors understood
22 to promote asynchrony include pressurizing, punitive, and controlling socialization, which
23 involves a combination of high expectations and harsh criticism (Flett et al., 2002). Such

1 practices encourage children pursue or present an idealized, perfect version of themselves, and
2 engage in behaviors that are aimed at avoiding criticism and gaining approval of parents.

3 When describing rising perfectionism, our thinking took heed of Hewitt and Flett's ideas
4 to suggest that anxious and controlling parenting may be one way neoliberalism is impacting on
5 its increased prevalence (Curran & Hill, 2019). We considered the pressure to raise successful
6 children in a neoliberal culture emphasizing merit, wealth, social standing and academic
7 achievement to be especially noteworthy in this regard. We think of parents like Enrich Fromm
8 (1944) did, that is, as society's psychological agents, passing on the dominant values and
9 attitudes of society, such as faith in competition and meritocracy, as well as acting on their own
10 perfectionism and achievement anxieties. The conditions are likely to manifest, for example, in
11 excessive parental involvement in children's routines, schooling, and emotions (Belsky, 1984).
12 We supported this thinking with data from the US showing that parental levels of surveillance
13 (e.g., telling parents where they are and what they will be doing) and involvement in academic
14 activities are on the rise (Collinshaw et al., 2012; Ramey & Ramey, 2010). Although not direct
15 evidence for the link between changing parenting practices and rising perfectionism, these more
16 intrusive practices, we argued, are likely to interfere with attachment needs and yield the parent-
17 child asynchrony described by Hewitt and colleagues (2017).

18 In this paper, we advance our thinking one step further. With an emphasis on economic
19 inequality, we suggest that the economics of neoliberalism are just as important as its cultural
20 frames in explaining why parenting may be changing over time. We take our lead in this regard
21 from Doepke and Zilibotti (2019), who suggest that inequality is fundamental to understanding
22 child-rearing choices from one generation to the next, and parenting can, therefore, be studied
23 as an artifact of economics (as well as culture). It is well documented that neoliberal

1 policymaking (e.g., low taxation, privatization, and deregulation) has ushered a sharp increase in
2 economic inequality since the mid-1980s across the US, Canada, and the UK (Piketty, 2014).
3 According to Doepke and Zilibotti (2019), widening gaps between the rich and poor mean
4 parents are increasingly concerned that, without high expectations, close monitoring, and an
5 emphasis on hard work, their children might fall behind and compromise their all-important
6 social position.

7 Parental behaviors and the choices parents knowingly or unknowingly make regarding
8 child-rearing, in this view, are rational given the economic environment they happen to inhabit.
9 Parents are not to blame in this sense. They are simply part of an economy that provides both the
10 backdrop and mechanism for socialization (Harris, 1998). It follows therefore that recent
11 generations of parents will parent very differently than older generations by circumscribing their
12 children's behaviors in new and important ways. With escalating inequality, downward mobility,
13 and increasing returns to college education parents internalize anxieties associated with
14 economic insecurity (Ehrenreich, 1989). The invariable response is higher demands, more
15 intrusion, and a desire for greater levels of control over their children's lives (Doepke &
16 Zilibotti, 2019). Although well-intentioned, we believe these behaviors are closely linked to the
17 development of perfectionism.

18 **The empirical basis for changing parental practices in the rise of perfectionism**

19 Researchers have described the emergence of time-intensive, demanding, and controlling
20 parenting in several ways. This includes phenomenon such as helicopter parenting (e.g., Nelson,
21 Padilla-Walker, & Nielson, 2015), overinvolvement (e.g., Givertz & Segrin, 2014), and coddling
22 (e.g., Lukianoff & Haidt, 2018). What these varied descriptions have in common is a recognition
23 of how immersed parents have become in their children's lives. Across the US, Canada, and the

1 UK, these trends are evident in data showing that parents now spend approximately twice as
2 much time with their children as they did fifty years ago (Sani & Treas, 2016). According to the
3 American Time Use Survey, this translates to almost two hours of additional time that US
4 parents spend with their children per day (Doepke & Zilibotti, 2019). As the number of children
5 per family is declining across the US, Canada, and the UK, these differences are, in all
6 probability, an underestimation at the per-child level.

7 Although true of most families, increasing time with children is especially evident among
8 more privileged parents. American parents across the socioeconomic gradient spent
9 approximately the same amount of time with their children in 1970. By 2012, well-educated
10 parents were spending more than three hours longer with their children than less-educated
11 parents (Doepke & Zilibotti, 2019). Well-educated parents invariably value academic
12 achievement more and are thus far more likely to send their children to university (Chetty,
13 Friedman, Saez, Turner, & Yagan, 2017). Their time spent with children on school activities like
14 homework has increased sharply since the mid-seventies, from three hours a week in 1976 to
15 eight hours a week in 2012 (Doepke & Zilibotti, 2019).

16 Time on schooling comes at the expense of time with children in leisure. According to
17 Doepke and Zilibotti (2019), free playtime decreased by twenty-five percent between 1981 and
18 1997 among six-to-eight-year-old Americans. Likewise, research by economists Ramey and
19 Ramey (2010) indicates that parents in the US have reallocated over nine hours per week from
20 leisure time to childcare since the early 1990s, with two additional hours granted specifically to
21 academic support. Post-hoc analyses revealed that these shifting priorities of childcare have
22 occurred in tandem with escalating competition for college (Ramey & Ramey, 2010). A “rug rat
23 race,” so to speak. The underlying message here, which could conceivably be inferred by

1 children, is that some activities are worthy of parental time (academic attainment) whereas as
2 others are not (leisure).

3 Alongside the amount of time parents spend on academic activities, there is also evidence
4 of parental values and styles have changed in recent years. Data from the World Values Survey,
5 analyzed by Doepke and Zilibotti (2019), show that the extent to which American parents, when
6 interviewed, mention that they value hard work from their children increased from thirty-nine
7 percent to fifty-three percent between 1995 and 2011. Doepke and Zilibotti (2019) also
8 documented significant increases in American parents' value of child obedience, a distinctive
9 aspect of parental control, albeit to a lesser extent. Together these trends indicate that
10 meritocratic values – hard work and dedication – are beliefs that parents increasingly promote to
11 their offspring, as is compliance with these values.

12 Perhaps not surprisingly, these changing values coincide with a tumultuous period in
13 which educational pressures are rising at a rapid rate (Luthar, Kumar, & Zillmer, 2020). A recent
14 survey of over ten thousand US college students conducted by a non-profit organization called
15 Challenge Success (2021) part way through the coronavirus pandemic, for example, found that
16 young people were reporting far more stress about school than they did when the pandemic
17 began. Students cited grades, workload, time management, lack of sleep, and college fears as
18 triggers. But the main culprit, according to young people, was achievement expectations from
19 parents. Fifty-seven percent of young people said that their parents' achievement expectations
20 did not drop during the pandemic, while thirty-four percent said their expectations increased.

21 Alongside more emphasis on work ethic and higher achievement expectations, parental
22 monitoring, surveillance, and anxious rearing are also seemingly on the rise. According to
23 Collinshaw et al.'s (2012) YouthTrends survey, American youth reporting that their parents

1 routinely ask who they were with, and what they were doing outside of the home, increased from
2 sixty-seven to seventy-seven percent between 1986 and 2006. A related pattern of increased
3 monitoring and surveillance has been observed throughout the 1990s in the UK's British
4 Household Panel Survey (Office of National Statistics, 2009). Like the YouthTrends data, the
5 British Household Panel Survey shows significant declines in children being permitted to stay
6 out late without parents knowing where they are or what they are doing. More recent data
7 compiled by the Policy Studies Institute indicates that while almost nine in every ten British
8 children were permitted to travel to school alone in 1971, just over two in ten could do so in
9 2010 (Shaw, Bicket, et al., 2015).

10 One of the most interesting things about these parenting trends is that they are far less
11 apparent in countries where inequality is lower. Doepke and Zilibotti's (2019) found a large
12 positive correlation between the Gini coefficient (a measure of inequality) and parental value of
13 hard work and obedience in the World Values Survey. Some of the between-country differences
14 in this analysis were especially instructive. Less than fifteen percent of parents in Sweden and
15 Norway, which belong to a group of most equal OECD countries, say they value hard work from
16 their children. By contrast, up to half of the parents in the US, Canada, and the UK value the
17 same characteristic. Coupled with evidence showing that parental value of obedience and hard
18 work is correlated with other aspects of neoliberal policymaking, such as tax progressivity, these
19 data substantiate the idea that changes in parenting are rooted in the cultural and economic
20 environment of a particular country at a particular period of time.

21 **The present set of studies**

22 Data on changing parenting priorities and practices are suggestive. However, they
23 provide only indirect support for our thinking that parenting may be one pathway linking

1 neoliberalism to rising perfectionism. In the present study, we test this idea by examining
2 generational differences in perceptions of parental socialization that are specifically related to
3 perfectionism. To do so, we identified two parenting practices included in the Frost
4 Multidimensional Perfectionism Scale (F-MPS) that are closely matched to parenting practices in
5 models of perfectionism development and resemble those parenting practices that are seemingly
6 on the rise (Frost et al., 1990). The first, parental expectations, is a demanding parenting practice
7 emphasizing the attainment of perfectionistic standards and expectations. The second, parental
8 criticism, is a harsh parenting practice that includes tendencies for punitive socialization in
9 response to child displays of imperfection. The F-MPS items used to measure these parenting
10 perceptions are listed in Table 1.

11 Parental expectations and parental criticism are influential in the development of
12 perfectionism. In line with Hewitt et al.'s (2017) concept of asynchrony, perceptions of these
13 socialization practices yield parent-child asynchrony by blocking attachment needs. For parental
14 expectations, excessive standards mean children rarely reach the heights of achievement
15 necessary for good parental regard. Perfectionism emerges as children take on a sense of self-
16 esteem and belonging that are conditioned on excessive achievement standards and the validation
17 of parents (Flett et al., 2002). For parental criticism, harsh punishment for mistakes means that
18 children rarely feel a secure sense of belonging or a lasting sense of adequacy. Perfectionism
19 develops as children seek escape from the shame and rejection that follow their parents' punitive
20 judgment (Flett et al., 2002). In support of these ideas, correlational studies link perceived
21 parental expectations and criticism to the development of self-oriented, socially prescribed, and
22 other-oriented perfectionism (see Flett et al., 2002 and Hewitt et al., 2017 for reviews).

1 The purpose of Study 1 was to examine the correlations of perceived parental
2 expectations and parental criticism with self-oriented, socially prescribed, and other-oriented
3 perfectionism. Extant research documents small-to-moderate positive relationships between
4 these variables in samples of children, college students, and inpatients (e.g., Cox & Enns, 2003;
5 Damian et al., 2013; Dunkley, Zuroff, & Blankstein, 2006). However, to date, this literature is
6 yet to be pooled, and effects aggregated, to arrive at summary estimates of effect size. We,
7 therefore, conduct a meta-analysis of relationships between perceived parental expectations and
8 parental criticism and the dimensions of perfectionism. Based on theory and research, we expect
9 parental expectations and parental criticism to positively correlate with self-oriented, socially
10 prescribed, and other-oriented perfectionism.

11 We also tested for the moderation of effects by year of data publication, age (mean age of
12 sample), gender (percentage of females in the sample), and setting (clinical vs non-clinical
13 sample). We tentatively hypothesized that effect sizes may be larger in more recent and younger
14 samples. This is due to two factors. First, because perfectionism is higher among younger people
15 and rising over time, younger and more recent samples may show larger effects. Second, as
16 people get older so the influence of parenting on their perfectionism may wane meaning older
17 samples might show smaller effects. In the case of gender, we hypothesized that effects would be
18 larger among males because there is evidence that males typically report greater perceptions of
19 parental control than females (Barber & Harmon, 2002). Finally, we expected that the effects
20 would be larger in clinical samples than in non-clinical samples based on meta-analytic data
21 showing relationships between perfectionism and psychopathology are larger in clinical samples
22 (Limburg et al., 2017).

23 **Method**

1 **Literature search.** An electronic literature search was conducted using PsycINFO,
2 PsycARTICLES, MEDLINE, Google Scholar, and ProQuest Dissertations & Theses (American
3 & International and the United Kingdom & Ireland). The search terms used were
4 “Multidimensional Perfectionism Scale” AND “parental expectations” OR “parental criticism”
5 AND “self-oriented” OR “socially prescribed” OR “other-oriented”. We also conducted a cited
6 search of the F-MPS and the Hewitt and Flett Multidimensional Perfectionism Scale (HF-MPS)
7 papers in Web of Science² (i.e., “Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990).
8 The dimensions of perfectionism. *Cognitive therapy and research*, *14*, 449-468.” AND “Hewitt,
9 P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization,
10 assessment, and association with psychopathology. *Journal of personality and social*
11 *psychology*, *60*, 456-470.”) The period of each search spanned publications between January
12 1989 and November 2020. No other restrictions were placed on the searches. This initial
13 literature search yielded 1,773 studies. Once duplicates were removed and abstracts were
14 screened for relevance (e.g., empirical studies of perfectionism), 353 studies remained (6 theses
15 and 347 journal articles). Next, we embarked on a full-text review of the retrieved papers to
16 further screen for relevance. Following the full-text review, 57 papers remained (6 theses and 51
17 journal articles).

18 A manual search followed the electronic search. The reference lists of the articles
19 identified in the electronic search were inspected to identify additional articles. In addition,
20 authors with 2 or more articles retrieved in the electronic literature search were emailed to
21 enquire about the possession of any unpublished studies/data sets that included correlations of

² The database we accessed for Web of Science was the Web of Science Core Collection. It includes the; (a) Science Citation Index Expanded, (b) Social Sciences Citation Index, (c) Arts & Humanities Citation Index, (d) Conference Proceedings Index – Science, (e) Conference Proceedings Index – Social Science & Humanities, and (f) Emerging Sources Citations Index.

1 parental expectations and criticism with self-oriented, socially prescribed and other-oriented
2 perfectionism, as well as any clarifications regarding missing information. Five authors were
3 contacted on this basis, but none responded to our request within 8 weeks of the initial email (our
4 stated deadline). In total, the electronic and manual literature search yielded 51 studies/data sets
5 for reduction using the inclusion criteria. Literature searches and study screenings were
6 conducted by the first author, who has a Ph.D. in psychology and is a regular contributor to
7 research on perfectionism.

8 **Inclusion criteria.** Studies were included in the meta-analysis if they: (a) measured
9 parental expectations and/or parental criticism using the F-MPS Scale; (b) measured any of the
10 perfectionism dimensions from the HF-MPS; (c) included an effect size (i.e., correlation
11 coefficient) or sufficient information for estimation of effect size; (d) were published in English;
12 (e) were a published journal article, thesis/dissertation, or conference presentation; and (f)
13 included a sample that was not replicated elsewhere (e.g., included in both a journal article and a
14 thesis/dissertation). When this was the case, only the most complete and recent account of the
15 sample/data was used. Of noting, one study split self-oriented perfectionism into two sub-
16 dimensions (striving and critical) and therefore we averaged the two correlations between these
17 two sub-dimensions and each parenting perception to arrive at a single estimate (Harvey, 2017).
18 Finally, in studies where the effect sizes were not reported, we emailed the corresponding author
19 to request this information. Thirty-five authors were contacted on this basis, but none responded
20 to our request within 8 weeks of the initial email (our stated deadline). On 09/07/2021, we ended
21 our searches and requests for missing information to instigate data reduction and analysis. The
22 implementation of the inclusion criteria resulted in the final inclusion of 21 studies/data sets
23 reporting 114 effect sizes capturing the relationship between perceptions of parenting and

1 perfectionism (see Figure 1). These data sources are marked with an asterisk (*) in the references
2 section.³

3 We coded studies that met the inclusion criteria using a coding sheet that included: (a) the study
4 reference, (c) the effect size (Pearson's r), (f) the sample size, (d) the internal reliability of the
5 measurement scales, (g) the setting of study, (h) the mean age of participants, (i) and the percentage of
6 females in the sample, and (j) the inter-correlation of parental expectations and parental criticism. The
7 first author coded effect sizes and moderators. Then, the second author did the same with studies
8 retrieved from the electronic literature search. Based on this double-coding, an interrater
9 reliability percentage was calculated. It showed 98.13% agreement (Cohen's kappa = 0.96).
10 Where the two raters disagreed, resolution was achieved by reference to the primary source.

11 **Meta-analytic procedures.** We conducted meta-analyses using random-effects models in
12 the metafor R package (Viechtbauer, 2010). Random-effects models assume variation in effect
13 size between studies is due to both sampling error and a true random variance arising from
14 differences between studies in terms of their procedures and settings (as opposed to just sampling
15 error stipulated in fixed-effects models; Lipsey & Wilson, 2001). Effect sizes were estimated
16 using correlation coefficients (i.e., Pearson's r). As is conventional in random effect models,
17 effect sizes were first transformed into Fisher's z , meta-analyzed, and then back-transformed so
18 that the weighted mean effect sizes and confidence intervals can be expressed in terms of r .
19 Effect sizes are deemed statistically significant when their 95% confidence intervals exclude a
20 zero, or null, effect.

³ Descriptive information and effect sizes for the included studies can be found in the supplementary material Table 1.

1 We also meta-analyzed effect sizes corrected for measurement error (r_c ; Schmidt &
 2 Hunter, 2015). We used the correlation coefficient for each pair of variables and the reliability
 3 coefficient for each variable (Cronbach's α) to calculate r_c with the following formula:

$$4 \quad r_c = \frac{r_{xy}}{\sqrt{r_{xx} * r_{yy}}}$$

5 Here, r_c is the corrected estimate of the correlation coefficient, r_{xy} is the correlation
 6 coefficient between predictor (parenting) and outcome (perfectionism), r_{xx} is the reliability
 7 coefficient for the predictor, and r_{yy} is the reliability coefficient for the outcome. Where
 8 reliability coefficients were not reported, we imputed the grand mean for the respective sub-
 9 scales. Calculated this way, effect sizes reflect the correlation coefficient corrected for
 10 measurement error using the artifact distributions of the reliability coefficients.

11 Alongside the measurement-error corrected correlation coefficients, we also meta-
 12 analyzed the measurement-error corrected partial correlation coefficients. Partial correlation
 13 coefficients are the unique relationships between the parenting practices and perfectionism
 14 dimensions, unique in the sense that the shared variance between the parenting dimensions is
 15 removed from the correlation coefficient with the following formula:

$$16 \quad pr_{c1,2,3} = \frac{r_{c1,2} - (r_{c1,3} * r_{c2,3})}{\sqrt{1 - r_{c1,3}^2} * \sqrt{1 - r_{c2,3}^2}}$$

17 Here, $pr_{c1,2,3}$ is the measurement-error corrected estimate of the correlation coefficient
 18 between the parenting variables (r_{c1}) and the perfectionism variable (r_{c2}) controlling for the other
 19 parenting variable (r_{c3}). Calculated this way, effect sizes reflect the correlation coefficient
 20 corrected for measurement error between residualised parenting and residualized perfectionism.

21 We opted to use Cochran's (1954) total Q and Higgins and Thompson's (2002) I^2 to
 22 quantify the degree of between-study heterogeneity in effect sizes. The former is a chi-square

1 statistic that quantifies the total variance in the meta-analysis whereas the latter is the percentage
2 of variance in the meta-analysis that is explained by between-study differences. A statistically
3 significant total Q is understood to reflect substantial heterogeneity in effect sizes and I^2
4 proportions of 25%, 50%, and 75% represent low, moderate, and high heterogeneity,
5 respectively (Higgins, Thompson, Deeks & Altman, 2003). Alongside these metrics, we also
6 report the total between-study variance, or tau squared (τ^2).

7 Where there was significant between-study heterogeneity, we used metaregression to
8 conduct moderator analyses with the year of data collection, age, gender and setting (clinical vs
9 non-clinical) as potential moderating factors. In this analysis, the year of publication, the
10 percentage of females, and the mean age of participants in each sample were treated as
11 continuous variables. Setting was included as a categorical variable (non-clinical = 0, clinical =
12 1). We took a significant beta coefficient at the $p < .05$ level to be indicative of moderation.

13 Finally, publication bias was estimated using the trim and fill procedure (Duval &
14 Tweedie, 2000), Begg's rank test (Begg & Mazumdar, 1994), and Egger's regression test (Egger,
15 Davey Smith, Schneider, & Minder, 1997). The trim and fill procedure estimates the number of
16 studies (k) missing from the funnel plot distribution due to funnel plot asymmetry and then
17 imputes those missing studies to recalculate the effect size. A difference of $> .05$ in the effect
18 size (i.e., observed vs imputed) is indicative of a significant number of k studies missing from
19 either side of the distribution. Begg's rank test examines the correlation between effect size and
20 sampling variance, whereas Egger's test regresses the effect size on its standard error. In both
21 cases, a significant relationship ($p < .05$) between effect size and the precision of effect size
22 implies publication bias.

23

Results

1 **Study Characteristics.** This study included 21 independent studies involving 7,060
 2 participants. Of these 21 studies, 17 were published in peer-reviewed journals and 4 were
 3 unpublished theses. The studies were conducted between 1991 and 2020. The average age of
 4 participants ranged from 9.83 to 43.60 years ($M = 23.81, SD = 8.75$). Six studies used clinical
 5 samples and 15 used non-clinical samples. The percentage of females in each sample ranged
 6 from 6.18 to 100.00 percent ($M = 65.84, SD = 22.71$). Descriptive statistics are summarized in
 7 Table 2.

8 **Preliminary analysis.** Before our primary analyses, effects sizes were standardized and
 9 screened for extreme outliers. We did this to identify probable reporting errors in the original
 10 studies and to reduce the statistical complications created by extreme outliers in regression
 11 analyses (Osbourne, 2008). We deemed a data point to be an extreme outlier when it would be
 12 randomly sampled less than one time in a thousand (Tabachnick & Fidell, 2007; $Z > \pm 3.29, p <$
 13 $.001$). No outliers were detected across all sets of effect sizes.

14 **Overall effect sizes.** The mean weighted correlations between perceptions of parenting
 15 and the dimensions of perfectionism are reported in Table 3. Parental expectations shared a
 16 small-to-moderate positive relationship with both self-oriented ($r^+ = .33, r_c^+ = .39, p < .001$) and
 17 other-oriented perfectionism ($r^+ = .22, r_c^+ = .27, p < .001$). Notably, it shared a large positive
 18 relationship with socially prescribed perfectionism ($r^+ = .57, r_c^+ = .67, p < .001$). Similarly,
 19 parental criticism displayed small positive relationships with self-oriented ($r^+ = .20, r_c^+ = .25, p$
 20 $< .001$) and other-oriented perfectionism ($r^+ = .14, r_c^+ = .17, p < .001$). Like parental
 21 expectations, parental criticism shared a large positive relationship with socially prescribed
 22 perfectionism ($r^+ = .53, r_c^+ = .64, p < .001$).

1 **Partial correlations.** The mean weighted measurement-error corrected partial
2 correlations between perceptions of parenting and the dimensions of perfectionism are also
3 reported in Table 1. A slightly different pattern emerged in this analysis. The positive
4 correlations between parental expectations and all perfectionism dimensions remained significant
5 when controlling for parental criticism. The positive relationship between parental criticism and
6 socially prescribed perfectionism also remained when controlling for parental expectations.
7 However, relationships between parental criticism and self-oriented perfectionism and other-
8 oriented perfectionism were rendered negligible in the presence of parental expectations.

9 **Moderation analyses.** Effect sizes exhibited moderate-to-large heterogeneity across all
10 sets of correlations (see Q , I^2 , and τ^2 in Table 3). As such, we added our continuous (year, mean
11 age, and percentage of females) and categorical (setting) moderator variables to a metaregression
12 model of each effect size to ascertain whether they could explain such between-study variance.
13 Year of publication moderated the correlation of parental expectations and parental criticism
14 with self-oriented perfectionism, such that more recent years were correlated with larger effect
15 sizes (parental expectations, $b = .01$, $p < .01$; parental criticism, $b = .01$, $p < .01$). Furthermore,
16 the percentage of females moderated the correlation of parental expectations with self-oriented
17 perfectionism, such that effect sizes were larger when the sample contained more males ($b = -$
18 $.001$, $p < .05$). No other moderation effects emerged.⁴

19 **Publication bias.** The trim and fill procedure, Begg's rank test, and Egger's regression
20 test were employed to detect publication bias. As regards the trim and fill procedure, none of
21 these relationships exhibited a greater than .05 difference between the mean weighted effect size
22 and imputed mean weighted effect size. Likewise, Begg's rank test indicated no significant

⁴ The results of these analyses are reported in Table 2 of the supplementary materials.

1 correlations between effect sizes and sample variances. Egger's regression test, however,
2 suggested the potential for publication bias in three of the six correlations (see Table 3). Of these,
3 the imputed effect sizes from the trim and fill procedure suggested an overestimation of one
4 effect size (parental criticism and self-oriented perfectionism) and an underestimation of two
5 effect sizes (parental criticism and socially prescribed perfectionism and parental expectations
6 and socially prescribed perfectionism). We discuss the implications of these findings in the
7 discussion.

8 **Study 2**

9 In Study 1, we pooled correlations of perceived parental expectations and parental
10 criticism with the dimensions of perfectionism. Analyses offered several important findings.
11 Parental criticism and parental expectations shared large positive mean weighted correlations
12 with socially prescribed perfectionism. These correlations were evident at the bivariate level and
13 when the shared variance in the parenting dimensions was removed from the estimates. The
14 bivariate correlations of parental expectations and parental criticism with self-oriented and other-
15 oriented perfectionism were also positive, albeit to a lesser degree. While relationships between
16 parental expectations and all perfectionism dimensions remained when controlling for parental
17 criticism, relationships between parental criticism and self-oriented and other-oriented
18 perfectionism were substantially reduced when controlling for parental expectations. What is
19 shared between parental criticism and self-oriented and other-oriented perfectionism, therefore,
20 seems to be explained by the relationship between parental expectations and parental criticism.

21 There was significant study-to-study variability in these effect sizes. Follow up
22 moderation analyses uncovered some sources of this variability. Relationships between both
23 parenting practices and self-oriented perfectionism were larger in more recent years. Similarly,

1 the correlation of parental expectations with self-oriented perfectionism was greater among
2 males. We consider the implications of these findings in the discussion.

3 As study 1 indicated that parental expectations and parental criticism are positively
4 correlated with the dimensions of perfectionism, a logical next step in this line of inquiry is to
5 ascertain whether these parenting practices are changing over time. In Study 2, then, we examine
6 cohort differences in perceptions of parental expectations and parental criticism using a cross-
7 temporal meta-analysis of American, Canadian, and British college students' responses to the F-
8 MPS. Since there is evidence that parental expectations and parental criticism items can load on
9 a one factor, parental pressure, we also combined expectations and criticism to examine whether
10 this factor was increasing, too (Harvey, Pallant & Harvey, 2004).

11 Cross-temporal meta-analysis tests the weighted correlation of mean parental
12 expectations, parental criticism, and parental pressure scores, on the one hand, and year of data
13 collection, on the other hand. As college students are approximately the same age, data collected
14 from the F-MPS at different time points yields a test of potential birth cohort differences. In this
15 way, we can establish how perceptions of parental expectations, parental criticism, and their
16 combination – parental pressure – have changed since the late 1980s. In line with the theory and
17 research presented earlier, we expect that year of data collection would be positively correlated
18 with perceptions of parental expectations, parental criticism, and parental pressure (i.e., we
19 would observe mean scores increasing over time).

20 **Method**

21 **Literature search.** Akin to study one, an electronic literature search was conducted using
22 PsycINFO, PsycARTICLES, MEDLINE, Google Scholar, and ProQuest Dissertations & Theses
23 (American & International and the United Kingdom & Ireland). The search terms used were “the

1 dimensions of perfectionism” AND “Frost” AND “parental expectations” OR “parental
2 criticism”. We also conducted a cited title search of the Frost Multidimensional Perfectionism
3 Scale paper in Web of Science.⁵ The period of each search spanned publications between
4 January 1989 and July 2021. No other restrictions were implemented. This initial literature
5 search yielded 743 studies. Once duplicates were removed and abstracts were screened for
6 relevance (e.g., empirical studies of perfectionism), 300 studies remained (10 theses and 290
7 journal articles). Next, we embarked on a full-text review of the retrieved papers to further
8 screen for relevance. Following the full-text review, 176 papers remained (10 theses and 166
9 journal articles).

10 A manual search followed the electronic search. The reference lists of the articles
11 identified in the electronic search were inspected to identify additional articles. In addition,
12 authors of 2 or more articles retrieved in the literature search were emailed to inquire about the
13 possession of any unpublished studies/data sets that included the Multidimensional Perfectionism
14 Scale and college students (e.g., conference papers). Fifty-eight authors were contacted on this
15 basis and 1 responded to our request with new data within 8 weeks of the initial email (our stated
16 deadline). The manual search resulted in the addition of 7 new data points (6 theses and 1 new
17 data). In total, the electronic and manual literature search yielded 183 studies/data sets for
18 reduction using the inclusion criteria. All literature searches and study screenings were
19 conducted by the first author, who has a Ph.D. in psychology and is a regular contributor to
20 research on perfectionism.

⁵ The database we accessed for Web of Science was the Web of Science Core Collection. It includes the; (a) Science Citation Index Expanded, (b) Social Sciences Citation Index, (c) Arts & Humanities Citation Index, (d) Conference Proceedings Index – Science, (e) Conference Proceedings Index – Social Science & Humanities, and (f) Emerging Sources Citations Index.

1 **Inclusion criteria.** For inclusion in the analysis, a study or data set had to report the total
2 score (all items added together) or mean score (all items added together divided by the number of
3 items) and standard deviation (*SD*) of at least one parental subscale of the F-MPS (i.e., parental
4 expectations or parental criticism), and meet the following criteria: (i) participant mean age was
5 within typical undergraduate range (i.e., between 18 and 25 years), (ii) participants were
6 attending a college or university in the US, Canada, or the UK, (iii) participants were not
7 selected based on criteria relating to the Multidimensional Perfectionism Scale (e.g., scoring high
8 or low on a Multidimensional Perfectionism Scale subscale), (iv) if an experimental study, the
9 experimental manipulation did not affect Multidimensional Perfectionism Scale scores (only
10 scores taken before any manipulation were included), and (v) the study included a sample that
11 was not replicated elsewhere (studies/datasets were included only once).

12 The parental expectations and parental criticism subscales of the F-MPS contain 9 items
13 (5 items for parental expectations and 4 items for parental criticism) and a 5-point Likert scale
14 response format. Numerous studies reported F-MPS scores for males and females only. On these
15 occasions, we calculated weighted grand means for the overall sample (i.e., pooled male and
16 female scores). Furthermore, authors typically reported the total score of the subscales for
17 parental expectations and parental criticism. For ease of interpretation, when this was the case,
18 we divided these sums and *SDs* by the number of items in the respective subscales to put the
19 scores back into their item-level units.

20 One study used a six-item short version of parental expectations (3-items) and parental
21 criticism (3-items) subscales (Burgess, DiBartolo, & Rendon, 2017). In this case, we divided the
22 total score and *SDs* by 3 to provide a comparable mean score. When the F-MPS was used but the
23 subscale totals or mean scores were not reported, we emailed authors to request this information.

1 Fifty-eight authors were contacted on this basis and 7 responded to our request within 8 weeks of
2 the initial email (our stated deadline). Finally, to create a parental pressure mean score and *SD*
3 we divided the item-level parental expectations and parental criticism scores and *SDs* by two.

4 To code the year of data collection, we adhered to the following procedure: (i) if the year
5 of data collection was described in the study, we coded it as such, (ii) if we retrieved data from
6 authors, we asked them to report when it was collected, and (iii) otherwise, the year of data
7 collection was coded 2 years before publication. This is a strategy that is common in similar
8 meta-analyses (e.g., Curran & Hill, 2019; Twenge, Konrath, Foster, Campbell, & Bushman,
9 2008). We also coded the percentage of females in each sample and country of data collection as
10 control variables. On 09/07/2021, we ended our searches and requests for missing information to
11 instigate data reduction and analysis. The implementation of the inclusion criteria resulted in the
12 subsequent coding of 82 studies with 84 datasets, comprising a total of 23,975 college students
13 (67% female, $M_{\text{age}} = 20.35$), reporting 82 mean scores for parental expectations, 83 mean scores
14 for parental criticism, and 81 mean scores for parental pressure (see Figure 1). These data
15 sources are marked with an obelisk (†) in the references section.⁶

16 The first author coded effect sizes. Then, the second author did the same with studies
17 retrieved from the electronic literature search. Based on this double coding, an interrater
18 reliability percentage was calculated. It showed 98.08% agreement (Cohen's kappa = 0.96).
19 Where the two raters disagreed a resolution was achieved by reference to the primary source.

20 **Meta-analytic procedures.** To examine whether sample means for parental expectations
21 and parental criticism have changed over time, we conducted metaregression analyses using the

6

Descriptive information and effect sizes for the included studies can be found in the supplementary material Table 3.

1 metafor R package (Viechtbauer, 2010). For all analyses, the year of data collection was entered
2 as the predictor, and respective scale mean scores were the criterion (Model 1). To allow for
3 between-sample residual heterogeneity, random effects metaregression models were employed
4 with an additive between-sample variance component (τ^2) derived from restricted maximum
5 likelihood estimation (see Thompson & Sharp, 1999). Alongside estimated τ^2 , we calculated I^2
6 values for each metaregression model to quantify the proportion of observed effect size variance
7 due to between-sample heterogeneity.

8 To control for the possibility that differences in parental expectations and parental
9 criticism are explained by salient confounds, we added several covariates to our random-effects
10 metaregression models. First, we controlled for economic inequality by including the World
11 Bank's (2018) Gini index for the years covering the period of study (Model 2). The Gini index is
12 a widely used measure of income inequality that ranges from zero (perfect equality) to one
13 hundred (perfect inequality). In the World Bank data, some time series are missing. Where the
14 Gini index was missing for a particular country in a particular year, we imputed the nearest
15 available year.

16 Next, we controlled for the country of data collection by including two dummy
17 categorical variables (Model 3). The first, USA, reflected the USA vs others contrast (coded
18 USA = 1, UK and Canada = 0) and the second, UK, reflected the UK vs others contrast (coded
19 UK = 1, USA and Canada = 0). When these dummy variables were entered into the
20 metaregression model Canada was the reference group. Finally, we controlled for the percentage
21 of females in each sample and the mean age of participants by including them as continuous
22 variables (Model 4).

1 data collection was 2017. Studies reported mean parental expectation scores of 3.08 ($SD = .20$)
2 and mean parental criticism scores of 2.25 ($SD = 0.28$).

3 **Primary analysis.** To examine the effect of time on perceptions of parenting, we
4 conducted several random effects metaregression models for parental expectations, parental
5 criticism, and parental pressure. Results are summarized in Figure 3.

6 **Parental expectations.** The results of cross-temporal meta-analyses for parental
7 expectations are displayed in Table 5 and Figure 2. We first tested a simple random effects
8 metaregression model including the year of data collection (time) as a single covariate (Model
9 1). Here, time explained a significant amount of variance in parental expectations scores ($R^2 =$
10 $.27$, $Q_{\text{model}} = 26.72$, $df = 1$, $p < .001$). Inspection of the metaregression coefficient revealed that
11 time positively predicted parental expectations scores ($\beta = .49$, $p < .001$). The positive sign of the
12 metaregression coefficient is consistent with the interpretation that more recent generations of
13 college students reported higher perceptions of parental expectations than older generations of
14 college students.

15 Next, we added the Gini index alongside time in a second multiple random effects
16 metaregression model (Model 2). A significant portion of model variance was explained by the
17 covariates in this model ($R^2 = .33$, $Q_{\text{model}} = 37.43$, $df = 2$, $p < .001$). The significant
18 metaregression coefficient of time remained in this model ($\beta = .44$, $p < .001$). In addition, the
19 Gini index also predicted parental expectations ($\beta = .28$, $p = .004$). The positive sign of the
20 metaregression coefficient for the Gini index is consistent with the interpretation that greater
21 income inequality is associated with higher levels of perceived parental expectations.

22 Then we added the country covariates alongside time in a third multiple random effects
23 metaregression model (Model 3). A significant portion of model variance was explained by the

1 covariates ($R^2 = .39$, $Q_{\text{model}} = 49.48$, $df = 4$, $p < .001$). A significant coefficient of time remained
2 ($\beta = .49$, $p < .001$), but the Gini index was not a significant predictor of parental expectations in
3 this model ($\beta = .05$, $p = .96$). In addition, the UK dummy variable predicted parental expectations
4 ($\beta = -.31$, $p = .004$), but the USA dummy variable did not ($\beta = .09$, $p = .80$). The negative sign of
5 the UK metaregression coefficient is consistent with the interpretation that parental expectations
6 are lower among British college students compared to Canadian (mean difference = -0.28) and
7 American college students (mean difference = -0.34).

8 We then entered our age and gender covariates in a fourth multiple random effects
9 metaregression model (Model 4). The covariates explained a significant portion of variance ($R^2 =$
10 $.39$, $Q_{\text{model}} = 49.48$, $df = 6$, $p < .001$). The significant metaregression coefficients for time ($\beta =$
11 $.45$, $p < .001$) and the UK dummy variable ($\beta = -.29$, $p = .01$) remained in this model, but the
12 Gini index ($\beta = .04$, $p = .94$), USA dummy variable ($\beta = .08$, $p = .86$), gender ($\beta = .10$, $p = .29$),
13 and mean age ($\beta = -.12$, $p = .21$) were not significant predictors of parental expectations scores.

14 **Parental criticism.** We used the same model building process to examine the influence
15 of time on parental criticism. Results are reported in Table 6 and Figure 2. The first simple
16 random effects metaregression model (Model 1) indicated that time explained a significant
17 amount of variance in parental criticism scores ($R^2 = .13$, $Q_{\text{model}} = 11.91$, $df = 1$, $p < .001$).
18 Inspection of the metaregression coefficient revealed that time positively parental criticism
19 scores ($\beta = .28$, $p < .001$). The positive sign of the metaregression coefficient is consistent with
20 the interpretation that more recent generations of college students reported higher perceptions of
21 parental criticism than older generations of college students.

22 Next, we added the Gini index alongside time in a second multiple random effects
23 metaregression model (Model 2). A significant portion of model variance was explained by the

1 covariates in this model ($R^2 = .12$, $Q_{\text{model}} = 11.77$, $df = 2$, $p = .002$). The significant
2 metaregression coefficient of time remained in this model ($\beta = .29$, $p < .001$). However, the Gini
3 index did not predict parental criticism ($\beta = -.05$, $p = .92$).

4 Then we added the country covariates alongside time in a third multiple random effects
5 metaregression model (Model 3). A significant portion of model variance was explained by the
6 covariates ($R^2 = .11$, $Q_{\text{model}} = 13.49$, $df = 4$, $p = .01$). The significant metaregression coefficient of
7 parental criticism scores on time remained in this model ($\beta = .36$, $p = .001$). However, neither the
8 Gini index ($\beta = -.43$, $p = .35$) nor the UK dummy variable ($\beta = -.08$, $p = .45$) or the USA dummy
9 variable ($\beta = .34$, $p = .39$) predicted parental criticism scores.

10 We then entered our age and gender covariates to a fourth multiple random effects
11 metaregression model (Model 4). The covariates explained a significant portion of variance in
12 parental criticism scores ($R^2 = .10$, $Q_{\text{model}} = 14.22$, $df = 6$, $p = .03$). The significant metaregression
13 coefficient for time ($\beta = .35$, $p = .003$) remained in this model. The effects of the Gini index ($\beta =$
14 $-.44$, $p = .35$), UK dummy variable ($\beta = -.09$, $p = .39$) and the USA dummy variable ($\beta = .37$, $p =$
15 $.41$) remained non-significant. Gender ($\beta = .09$, $p = .33$) and mean age ($\beta = .01$, $p = .94$) were not
16 a significant predictors of parental criticism scores.

17 **Parental pressure.** We used the same model building process to examine the influence
18 of time on parental pressure. Results are reported in Table 7 and Figure 2. The first simple
19 random effects metaregression model (Model 1) indicated that time explained a significant
20 amount of variance in parental pressure scores ($R^2 = .16$, $Q_{\text{model}} = 15.27$, $df = 1$, $p < .001$).
21 Inspection of the metaregression coefficient revealed that time positively parental pressure scores
22 ($\beta = .25$, $p < .001$). The positive sign of the metaregression coefficient is consistent with the

1 interpretation that more recent cohorts of college students reported higher perceptions of parental
2 pressure than older cohorts of college students.

3 Next, we added the Gini index alongside time in a second multiple random effects
4 metaregression model (Model 2). A significant portion of model variance was explained by the
5 covariates in this model ($R^2 = .16$, $Q_{\text{model}} = 16.58$, $df = 2$, $p < .001$). The significant
6 metaregression coefficient of time remained in this model ($\beta = .26$, $p < .001$). However, the Gini
7 index did not predict parental pressure ($\beta = .01$, $p = .27$).

8 Then we added the country covariates alongside time in a third multiple random effects
9 metaregression model (Model 3). A significant portion of model variance was explained by the
10 covariates ($R^2 = .19$, $Q_{\text{model}} = 21.10$, $df = 4$, $p < .001$). The significant metaregression coefficient
11 of parental pressure scores on time remained in this model ($\beta = .33$, $p < .001$). However, neither
12 the Gini index ($\beta = -.04$, $p = .39$) nor the UK dummy variable ($\beta = -.19$, $p = .13$) or the USA
13 dummy variable ($\beta = .31$, $p = .35$) predicted parental pressure scores.

14 We then entered our age and gender covariates to a fourth multiple random effects
15 metaregression model (Model 4). The covariates explained a significant portion of variance in
16 parental pressure scores ($R^2 = .18$, $Q_{\text{model}} = 22.88$, $df = 6$, $p < .001$). The significant metaregression
17 coefficient for time ($\beta = .32$, $p = .001$) remained in this model. The effects of the Gini index ($\beta =$
18 $-.44$, $p = .38$) UK dummy variable ($\beta = -.18$, $p = .18$) and the USA dummy variable ($\beta = .31$, $p =$
19 $.36$) remained non-significant. Gender ($\beta = .001$, $p = .38$) and mean age ($\beta = -.02$, $p = .34$) were
20 not a significant predictors of parental pressure scores.

21 **Effect size.** In the final step of our analysis, we calculated the effect size (Cohen's d) for
22 the overall change in perceptions of parenting from our initial time point (1989) to the present
23 day (2021). Effect size calculations were made using unstandardized beta coefficients from

1 mean weighted correlations between both parenting perceptions and socially prescribed
2 perfectionism. Then, using cross-temporal meta-analysis we examined whether parental
3 expectations, parental criticism, and, when combined, parental pressure, were changing over
4 time. In line with expectations, college students' mean parental expectations, parental criticism,
5 and parental pressure scores showed linear increases between 1989 and 2019. These trends
6 remained holding economic inequality, age, gender, and between-country differences constant.

7 **Effects of parental expectations and parental criticism on perfectionism**

8 Study one offered several important findings. Notably, all trait perfectionism dimensions
9 were positively correlated with both parental expectations and parental criticism. According to
10 Hewitt and Flett (Hewitt et al., 2017; Flett et al., 2002), children who become perfectionistic do
11 so within an environment of extreme parental expectations and criticism. This is because such
12 behaviors foster parent-child asynchrony and, in doing, create conditionalities of self-worth tied
13 to excessive achievement standards and others' approval. Depending on the dimension of
14 perfectionism such conditional self-worth reveals itself in different ways. For instance, through
15 demanding perfection from oneself (self-oriented perfectionism) and others (other-oriented
16 perfectionism) or internalizing a world view that includes perceptions of oppressive
17 perfectionistic demands from a generalized other (socially prescribed perfectionism). These
18 analyses support this theorizing and substantiate research showing that parental behavior can
19 partly account for the intergenerational transmission of perfectionism (e.g., Curran, Hill,
20 Madigan, & Stornæs, 2020; Soenens et al., 2005).

21 To ascertain whether these findings would remain when controlling for the variance
22 shared between parental expectations and parental criticism, we also meta-analyzed partial
23 correlations. Four of the six partial correlations were significant. Parental expectations and

1 parental criticism seemingly have unique relationships with trait perfectionism, especially
2 socially prescribed perfectionism, that emerge over and above their shared influence. Two effects
3 were lost when the parenting dimensions were partialled. These were the relationships of
4 parental criticism with self-oriented and other-oriented perfectionism. One thing that can be
5 inferred from these lost effects is that perceptions of parental expectations seem to be
6 comparatively more central to the development of perfectionism than parental criticism. This
7 might be considered unexpected. However, one reason parental expectations seem more
8 important than parental criticism is that while parents could conceivably criticise children for
9 innumerate reasons, excessive expectations may be experienced as more overtly perfectionistic
10 and instructive by children.

11 It is notable that parental expectations and parental criticism explained most variance in
12 socially prescribed perfectionism and effects remained when the parenting dimensions were
13 residualised. Perhaps this is not surprising. Socially prescribed perfectionism is, after all,
14 characterized by the perception that others are judgemental and excessively demanding (Hewitt
15 & Flett, 1991). These perceptions are anchored in significant others but are invariably reinforced
16 by parents who provide high expectations and high criticism (Flett et al., 2002). The close
17 overlap of such variables may have introduced a degree of confounding and inflation in the
18 effect. For this reason, some caution is required when interpreting these specific findings. Yet we
19 note that conceptually and empirically both parenting perceptions are distinct from socially
20 prescribed perfectionism, which is akin to a worldview of oppressive expectations, generalized
21 pressure, and a dependency on others' approval (rather than discreet parental behaviors per-se).
22 Hewitt and Flett (Hewitt & Flett, 1991; Hewitt et al., 2017) have argued pointedly that socially
23 prescribed perfectionism includes the influence of a wider array of others and family members,

1 peers, and teachers, as well as perceptions of broader societal pressures. Parental behaviors, then,
2 are an important part, but far from the only part, of socially prescribed perfectionistic standards.

3 Study one's findings need to be qualified by significant study-to-study variability.

4 Sources of this variability were uncovered in the moderation analyses. Between-study
5 differences in relations between both parenting practices and self-oriented perfectionism, for
6 instance, were partly explained by time such that larger effects were observed in more recent
7 samples. This observation chimes with our wider theorizing. Growing societal pressure is
8 seemingly amplifying achievement anxieties, especially as they are passed from parent to child.
9 Young people appear to be increasingly sensitive to parental pressure and this potentially renders
10 parenting increasingly important to the development of perfectionism. Moderation analysis also
11 revealed that, as expected, the correlation of parental expectations with self-oriented
12 perfectionism was larger among males. Males tend to report their parents as more controlling
13 than females and hence larger effects should be expected in samples that contain more of them
14 (Barber & Harmon, 2002). Such moderators are important factors when considering the
15 development of perfectionism in future research.

16 **Changes in parental expectations and parental criticism over time**

17 Our second study sought to ascertain whether, and to what extent, rising perfectionism
18 dovetails with generational differences in perceptions of parental expectations, parental criticism,
19 and parental pressure. Like increases in trait perfectionism, we found that perceptions of all these
20 parenting practices have increased over time among young people. More recent cohorts appear to
21 be experiencing their parents as increasingly demanding and are becoming harsher and more
22 critical. In the case of parental expectations, such a trend is consistent with observations of
23 increasing time that parents are spending with their children in achievement activities such as

1 schooling, as well as the value that they are placing on achievement-related qualities such as hard
2 work (e.g., Doepke & Zilibotti, 2019; Ramey & Ramey, 2010). As regards parental criticism, our
3 findings substantiate data indicating that more recent generations of parents value compliance,
4 and are engaging in more monitoring, surveillance, and otherwise anxious forms of rearing
5 (Collinshaw et al., 2012; Shaw et al., 2015). Combined, these two trends support our thinking
6 that escalating societal pressures may be being amplified among young people via parental
7 pressure.

8 As to why parents may be increasing their expectations and criticism, our theorizing
9 centers on several decades of substantial societal change (Bronfenbrenner, 1989). Since the late
10 1970s, there has been a global shift toward neoliberal policymaking. Copious market-based
11 reforms, including labor casualization, public sector outsourcing, deregulation, privatization, and
12 the opening of economies to global capital have placed the priorities of competitive
13 individualism at the core of modern society and sought to move them into every sphere of life
14 (Davies, 2014). Conditions that are perhaps most evident and relevant here is the rise of school-
15 based testing and the endless measuring, sifting, sorting, and ranking of young people into
16 classes, sets, and colleges. In tandem with rising returns to college education, neoliberalism is
17 exerting enormous pressure on young people to compete with one another as a way of
18 demonstrating their merit. We believe that some parents, too, internalize this pressure and
19 respond, in kind, with a hyper-vigilance for their child's successes (and failures). This hyper-
20 vigilance is seemingly revealing itself in increasing perceptions of parental expectations and
21 criticism.

22 Findings from the covariate analyses go one step further. Not only was time positively
23 associated with parental expectations, but income inequality was too. This finding is consistent

1 with the analyses of Doepke and Zilibotti (2019) who found a large positive correlation between
2 the Gini coefficient and parental value of hard work and obedience in the World Values Survey.
3 In our analyses, the effects of time and Gini index were independent, indicating that the cultural
4 (competitive individualism) and economic (high inequality) signatures of neoliberalism have
5 related but also distinct effects on parental expectations (but not criticism) – the former being the
6 dimension of perfectionism most strongly related to trait perfectionism. We have previously
7 focused on how competitive individualism is seemingly prompting young people to appraise
8 their parents as more expectant. It appears that lacing these cultural changes with widening gaps
9 between the rich and poor creates an even greater requirement to pursue and attain excessively
10 high standards.

11 **Perfectionism and changing parenting practices**

12 Turning to the general aim of this paper, our findings offer perhaps the best indication yet
13 of how parental practices that contribute to the development of perfectionism are changing over
14 time (at least in the US, Canada, and the UK). The increase in perfectionism Curran and Hill
15 (2019) observed among young people seemingly coincides with a similar increase in perceptions
16 of parental expectations and parental criticism. This is especially evident for socially prescribed
17 perfectionism, which shared the largest correlation with parental expectations and parental
18 criticism in study one and had the steepest increase over time in Curran and Hill (2019).
19 Although, of course, it is evident for all dimensions of trait perfectionism to some degree,
20 reflecting both the tendency for perfectionism to manifest in multiple related ways and the
21 common etiological basis for perfectionistic tendencies (Hewitt et al., 2017).

22 The findings, we should add, are at variance with arguments provided by Soenens and
23 Vansteenkiste (2019). These authors suggest that psychological control (i.e., control-as-pressure)

1 among parents has decreased rather than increased, and that more structuring forms of parental
2 control (i.e., control-as-structure) are on the rise. Certainly, parental expectations and parental
3 criticism are not exactly the same as either kind of control defined by Soenens and Vansteenkiste
4 (2019). However, parental expectations and parental criticism are more akin to control-as-
5 pressure than control-as-structure, conceptualised, as they were by Frost et al (1990), to capture
6 expectations that children “cannot meet” and criticisms that communicated “rejection [and] loss
7 of love” (Frost et al., 1990, p. 451). A family environment characterized by these practices will
8 be experienced as overbearing and will instil in children a sense of inadequacy and dependency
9 on approval (Hewitt et al., 2017). As such, our findings provide an important counterpoint to the
10 position of Soenens and Vansteenkiste’s (2019).

11 Many of Soenens and Vansteenkiste’s (2019) arguments, however, remain instructive. It
12 is likely, in our opinion, that what Soenens and Vansteenkiste call control-as-structure is rising,
13 but that it is doing so in parallel with what they call control-as-pressure. At least, that is, in
14 countries with high economic inequality or in some sub-groups of parents and not others.
15 Control-as-structure and control-as-pressure are not mutually exclusive practices. Combinations
16 of these practices coexist and, indeed, comparable practices often display synergistic
17 relationships (e.g., Curran, Hill, & Niemiec, 2013; Jang, Reeve, & Deci, 2010; Sierens,
18 Vansteenkiste, Goossens, Soenens, & Dochy, 2009). This synergy may be what we are seeing in
19 the spectacle of “helicopter parenting” (Padilla-Walker & Nelson, 2012). Indeed,
20 overinvolvement in children’s academic activities has been increasing across a comparable
21 period to parenting changes observed in this study (e.g., Doepke & Zilibotti, 2019). At least, the
22 available data does not rule out an increase in “helicopter” practices that provide both structure
23 and pressure.

1 If it is the case that changing parenting practices are linked to rising perfectionism, we
2 feel it important in closing to restate our conviction that parents are *not to blame*. What we have
3 observed in this study are systems-level changes whose explanation lies, if anywhere, at the door
4 of society.

5 Since 2000, the average American family with two children has seen the cost-of-living
6 rise by more than ten thousand dollars while their income has stagnated (Price & Edwards,
7 2020). Although the United States is a clear outlier, the divergence of wages and prices is a
8 distinguishing feature of rich economies in the modern world (Nolan, Roser, & Thewissen,
9 2016). The invariable result of this divergence has been increasing downward mobility. In
10 developed countries, across each of every four years for the past two decades, one-in-seven
11 households within the middle sixty percent of the income distribution has descended into the
12 bottom twenty percent (OECD, 2019). Their lost income has been systematically siphoned
13 upwards. While the share of income going to middle-class households has dwindled, the share of
14 income going to households in the top five percent has almost doubled (Horowitz, Igielnik, &
15 Kochhr, 2020).

16 Drawing out these trends exposes an uncomfortable fact. Today, most young people will
17 need to work far harder than their parents, and earn much more, just to have the same standard of
18 living. They are paying the price for this burden with their mental health. And their parents, too,
19 are anxiously responding by projecting the kind of excessive standards that they think, in a
20 meritocracy, are necessary to overcome economic hurdles. Even so, most families are struggling
21 to maintain their position on the social ladder.

22 To the injury of downward mobility, meritocracy adds the insult of shame (cf. De Botton,
23 2004). There was no action young people or their parents could take, yet they still feel somehow

1 responsible for headwinds far from them, and far from their control. We should not be surprised
2 to see perceptions of parental expectations and criticism rising. Against a background of
3 downward mobility, in economies where the next generation will be materially poorer, and
4 where inequalities are exacerbated by escalating returns to elite college education, rising parental
5 expectations and criticism are rational, indeed inevitable, and are deployed in what is understood
6 to be the best interests of the child given the competitive and uncertain world they happen to
7 inhabit.

8 Like all behavior, parenting is simply part of a wider social milieu that, in the context of
9 child development, impresses itself directly and indirectly via multiple pathways. As the
10 COVID-19 pandemic deepens economic inequalities, we must look beyond the inner world of
11 parents and their families when interpreting changes to parenting. Parents are hugely influential
12 in their children's lives. But besides their direct effects on child development, of which there are
13 many, they are also critical intermediaries of broader economic and cultural conditions. Parents
14 are not, as a rule, setting higher expectations or giving more criticism out of choice. Far from it.
15 They engage in these practices because, more often than not, their better instincts must be
16 suspended for instincts that are superimposed by a competitive, individualistic, and precarious,
17 neoliberal society.

18 **Limitations and future research**

19 Several limitations of the study are noteworthy. Studies included in the meta-analyses
20 contained samples from North American and British young people and hence studies from
21 regions other than these (e.g., European and Eastern/Asian countries) are not represented. This
22 will influence the generalizability of the findings and is particularly noteworthy considering
23 emerging evidence of potential cultural differences in the correlates and levels of perfectionism

1 (e.g., Stoeber, Kokorin, & Tino, 2013). Relatedly, the inclusion of only English published reports
2 is another restriction to generalizability, as is a focus on college students in Study 2. Focusing on
3 college students is especially limiting since they are more likely to be White and from higher
4 socioeconomic backgrounds than young people more generally.

5 Only expectations and criticism were included as correlates in study one. Other forms of
6 parental control are equally relevant to perfectionism's development (e.g., Soenens et al., 2005).
7 Future research should extend this study to include such variables. As well, cross-temporal meta-
8 analyses can confound period (contemporaneous time) and cohort (birth year) effects and so this
9 analytic approach is not without practical problems in the absence of rich theory (Rudolph,
10 Rauvola, Costanza, & Zacher, 2020).

11 It is also noteworthy that the correlation between parental expectations and socially
12 prescribed perfectionism exhibited especially high heterogeneity. We found no evidence of
13 moderation by study year, age, gender, and setting, but there may be other things, such as
14 method factors (e.g., the order of response) or changes in survey techniques (e.g., online vs paper
15 and pencil), which we could not control for. As well as explaining unexplained heterogeneity,
16 method factors may have had other impacts. For example, we used subscales of one
17 perfectionism measure (i.e., F-MPS) as correlates of another (i.e., HF-MPS). Although the
18 dimensions we chose as predictors (i.e., parental expectations and criticism) are purported to be
19 antecedents of perfectionism, rather than dimensions, this may have inflated effects.

20 There is also the issue of publication bias. Egger's regression test found evidence of
21 publication bias for three effects in study one. Meta-analyses that review many independent
22 relationships often find publication bias in select effects (e.g., Curran, Hill, Vallerand, Appleton,
23 & Standage, 2015). But it is notable that these effects showed no evidence of publication bias

1 using the trim and fill procedure or Begg's rank test. Also noteworthy is that in two of these
2 relationships, the effect size is underestimated. Nonetheless, according to Egger's test, studies
3 are missing from the distribution of three effects and hence they should be interpreted with
4 caution and the lower Trim and Fill estimates may be more accurate in these cases.

5 The prevalence of cross-sectional studies reporting correlations between parenting
6 practices and perfectionism is another limitation. We assume that causality moves from parent to
7 child, but it may be in reverse. Perfectionistic children outwardly express a desire to meet
8 excessive standards and lord those standards over others (Hewitt et al., 2017). These behaviors
9 may provoke in parents a sense that stringent expectations and harsh criticism are apt or even
10 desired. As trait perfectionism appears to be increasing over the period addressed in this paper
11 (Curran & Hill, 2019), there is the possibility that changes in parental expectations and criticism
12 are due to changes in trait perfectionism rather than vice versa. Or, more troubling, that these
13 relationships are reciprocal and mutually reinforcing. Cross-lagged studies are needed to test this
14 interplay.

15 Study two also has limitations. First, the magnitude of change is worth comment.
16 Between 1988 and 2020, mean parental expectations scores increased by .41 units, and mean
17 parental criticism scores increased by .38 units. These differences are ostensibly trivial. But in
18 the context of their Likert scales, they represent increases of eight and seven percent,
19 respectively. Our use of the F-MPS is, of course, not without drawbacks. First, it measures
20 subjective perceptions of parenting practices rather than objective parenting practices. We are
21 inferring that these perceptions are anchored, at least to some degree, in changes in actual
22 parental behaviours. Yet we cannot rule out that this may not be the case or that these changes
23 reflect other things like rises in the degree to which people are perfectionistic and are therefore

1 more likely to perceive pressure from others. The second drawback of the F-MPS is that,
2 although we believe parental expectations and parental criticism well-approximate the parenting
3 practices we have described (i.e., anxious and overly controlling parenting), it is noteworthy that
4 select items may not capture them fully. It will be important for subsequent work to further test
5 our's and Soenens and Vansteekiste's (2019) competing hypotheses with other measures of
6 anxious rearing and psychological control.

7 While the between-study variance in study two was relatively small ($\tau^2 \leq .07$), the
8 proportion that was not due to chance was quite large ($I^2 \geq 89\%$). This is probably due to several
9 factors including the extensive period of data retrieval (33-years), data collected from different
10 laboratories, and the influence of third factors beyond the year of data collection. To this latter
11 possibility, several other parenting practices such as monitoring, surveillance, and behavioral
12 control have been found to have increased over a comparable period. Changing demographic
13 factors among college students (e.g., gender, social-economic status, country of origin) may, too,
14 be significant. Since the early 2000s, college selection has become fiercely competitive, and
15 access is increasingly concentrated among those with the most resource (Markovitis, 2019).
16 These social shakeups are important because analyses show that parenting changes akin to those
17 observed here are concentrated among more privileged families (Doepke & Zilibotti, 2019). It
18 may be that our findings reflect the changing make-up of college just as much as they do shifts in
19 parental socialization.

20 **Conclusion**

21 The current study provided results from two meta-analyses, which found that perceptions
22 of parental expectations and parental criticism not only positively correlate with perfectionism
23 but are also rising over time among young people. Although the idea that overly anxious and

1 controlling parenting was increasing has previously been met with skepticism, this evidence
 2 suggests that perceptions of at least some forms of similar parental practices are on the rise in the
 3 US, Canada, and the UK. With increasing competitiveness, growing economic inequality, and
 4 escalating pressure to strive and achieve as the societal background, increases in parental
 5 expectations and parental criticism likely offer one of the most plausible explanations for rising
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2 **Table 1.**

3 Parental expectations and parental criticism items from the Frost Multidimensional Perfectionism Scale (Frost et al., 1990)

4

Parental expectations (5 items)	Parental criticism (4 items)
My parents set very high standards for me.	As a child, I was punished for doing things less than perfect.
My parents wanted me to be the best at everything.	My parents never tried to understand my mistakes.
Only outstanding performance is good enough in my family.	I never felt like I could meet my parents' expectations.
My parents have expected excellence from me.	I never felt like I could meet my parents' standards.
My parents have always had higher expectations for my future than I have.	

5 *Note: Items are responded on a 5-point Likert scale, with 1 = strongly disagree and 5 = strongly agree.*

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Table 2.

Descriptive statistics and distributional properties of moderators for studies carried forward to final analysis in Study 1

Variables	<i>k</i> _{means}	<i>N</i>	<i>M</i>	<i>SD</i>	Range
<i>Age</i>					
Mean age	21	7,060	23.81	8.75	9.83-43.60
<i>Setting</i>					
Clinical	4	632			
Non-Clinical	17	6,428			
<i>Gender</i>					
Female %	21	7,060	65.84	22.71	6.18-100.00

Note: *N* = sample size; *M* = mean; *SD* = standard deviation.

1 **Table 3.**
 2 Results of the Primary Meta-Analysis for Bivariate Correlations
 3

Measure	N	k	r^+	CI r^+ 95%	r_c^+	CI r_c^+ 95%	pr_c^+	Heterogeneity			Publication bias			
								I^2	Q_T	$\tau^2(SE)$	k^a	r^{+b}	p_E	p_B
<i>Parental expectations</i>														
Self-oriented perfectionism	7060	21	.33	.29, .36	.39	.35, .43	.31 ^{**c}	64.89%	59.40 ^{**}	.005(.002)	2	.32	.55	.79
Socially prescribed perfectionism	6857	20	.57	.53, .60	.67	.62, .72	.37 ^{**d}	81.02%	121.45 ^{**}	.01(.002)	4	.58	.001	.29
Other-oriented perfectionism	5125	16	.22	.17, .26	.27	.22, .33	.22 ^{**e}	64.38%	44.77 ^{**}	.01(.003)	0	.22	.76	.45
<i>Parental criticism</i>														
Self-oriented perfectionism	6990	20	.20	.16, .25	.25	.20, .31	-.06 ^c	72.57%	62.60 ^{**}	.01(.003)	3	.18	.05	.32
Socially prescribed perfectionism	6857	20	.53	.51, .56	.64	.61, .68	.38 ^{**d}	61.50%	56.45 ^{**}	.004(.002)	6	.56	.001	.03
Other-oriented perfectionism	5125	16	.14	.08, .19	.17	.11, .24	-.07 ^{ce}	71.12%	55.11 ^{**}	.01(.004)	0	.14	.71	.82

4 *Note.* r^+ = mean weighted correlation coefficient corrected for sampling error; r_c^+ = mean weighted correlation coefficient corrected for measurement and sampling error;
 5 pr_c^+ = mean weighted partial correlation corrected for measurement and sampling error; N = overall sample size; k = number of independent studies; CI = confidence interval; I^2 =
 6 Higgins and Thompson's (2002) measure of heterogeneity; Q_T = Cochran's (1954) measure of total homogeneity; τ^2 = total between-study variance; k^a = Number of missing
 7 studies; r^{+b} = Weighted correlation after missing studies imputed using Duval and Tweedie's (2000) trim and fill procedure; p_E = p value of Begg's test; p_B = p value of Egger's
 8 test. ^ck = 16, ^eN = 5794. ^dk = 15, ^dN = 5591. ^ek = 12, ^eN = 3929.
 9 * $p < .05$. ** $p < .01$.

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4 **Table 4.**

5 Descriptive statistics and distributional properties of variables for studies carried forward to final analysis for Study 2

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Variables	<i>k</i>	<i>N</i>	<i>M</i>	<i>SD</i>	Range
<i>Perceptions of parenting</i>					
Parental expectations	82	23,581	3.11	.21	2.65-3.65
Parental criticism	81	23,171	2.27	.28	1.70-3.18
Parental pressure	81	23,305	2.69	.23	1.96-3.45
<i>Country</i>					
US	67	18,245			
Canada	12	3,741			
UK	4	1,713			
<i>Gender and Age</i>					
Female %	83	23,699	66.87	23.96	0.00-100.00
Mean age	83	23,699	20.30	1.10	18.28-23.66

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Note: *N* = sample size; *M* = mean; *SD* = standard deviation.

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Table 5.

Summary of inverse variance-weighted metaregression results for parental expectations.

<i>k</i> = 82	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>												
Time	.01** (.01, .02)	.003	.49	.01** (.01, .02)	.003	.44	.01** (.01, .02)	.003	.49	.01** (.01, .02)	.003	.45
<i>Inequality</i>												
Gini				.02** (.01, .03)	.01	.28	.002 (-.07, .07)	.04	.05	.003 (-.07, .07)	.03	.04
<i>Country^a</i>												
USA							.06 (-.43, .56)	.25	.09	.05 (-.45, .54)	.25	.08
UK							-.28** (-.48, -.09)	.10	-.31	-.27** (-.47, -.07)	.10	-.29
<i>Gender</i>												
% female										.001 (-.001, .003)	.001	.10
Mean age										-.02 (-.09, .01)	.02	-.12
<i>Model statistics</i>												
$Q_{\text{model}}(df)$	26.72(1)**			37.43(2)**			49.48(4)**			52.99(6)**		
$Q_{\text{residual}}(df)$	1048.34(80)			872.93(79)			793.18(77)			771.83(75)		
R^2	.27			.33			.39			.40		
$\tau^2(SE)$	.03(.01)			.03(.005)			.02(.004)			.02(.004)		
I^2	91.90			91.06			90.14			89.97		

^aThe comparison group for the country covariate was Canada.
 $p < .05$, $p < .01$ **

Table 6.
Summary of inverse variance-weighted metaregression results for parental criticism.

<i>k</i> = 81	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>												
Time	.01** (.01, .02)	.004	.28	.01** (.01, .02)	.004	.29	.02** (.01, .03)	.01	.36	.02** (.01, .03)	.01	.35
<i>Inequality</i>												
Gini				-.001 (-.02, .02)	.01	-.02	-.05 (-.16, .06)	.06	-.43	-.05 (-.16, .06)	.06	-.44
<i>Country^a</i>												
USA							.34 (-.45, 1.14)	.40	.38	.34 (-.46, .18)	.41	.37
UK							-.12 (-.42, .19)	.16	-.08	-.14 (-.46, .18)	.16	-.09
<i>Gender</i>												
% female										.001 (-.001, .004)	.001	.09
Mean age										.002 (-.06, .06)	.03	.01
<i>Model statistics</i>												
$Q_{\text{model}}(df)$	11.91(1)**			11.77(2)**			13.49(4)**			14.22(6)*		
$Q_{\text{residual}}(df)$	1678.47(79)			1632.28(78)			1581.16(76)			1569.80(74)		
R^2	.13			.12			.11			.10		
$\tau^2(SE)$	.06(.01)			.06(.01)			.06(.01)			.07(.01)		
I^2	95.61			95.58			95.46			95.49		

Table 7.

Summary of inverse variance-weighted metaregression results for parental pressure.

<i>k</i> = 81	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>												
Time	.01** (.01, .02)	.003	.25	.01** (.01, .02)	.003	.26	.01** (.01, .02)	.004	.33	.01** (.01, .02)	.004	.32
<i>Inequality</i>												
Gini				.01 (-.01, .03)	.01	-.03	-.04 (-.13, .05)	.05	-.44	-.04 (.13, .05)	.05	-.44
<i>Country^a</i>												
USA							.31 (-.34, .96)	.33	.38	.31 (-.35, .96)	.33	.38
UK							-.19 (-.44, .06)	.13	-.08	-.18 (-.44, .08)	.13	-.09
<i>Gender</i>												
% female										.001 (-.001, .003)	.001	.06
Mean age										-.02 (-.07, .02)	.02	.01
<i>Model statistics</i>												
$Q_{\text{model}}(df)$	15.27(1)**			16.58(2)**			21.10(4)*			22.88(6)		
$Q_{\text{residual}}(df)$	1481.62(79)			1361.65(78)			1307.61(76)			1260.55(74)		
R^2	.16			.16			.19			.18		
$\tau^2(SE)$	.04(.01)			.04(.01)			.04(.01)			.04(.01)		
I^2	94.14			94.03			93.73			93.69		

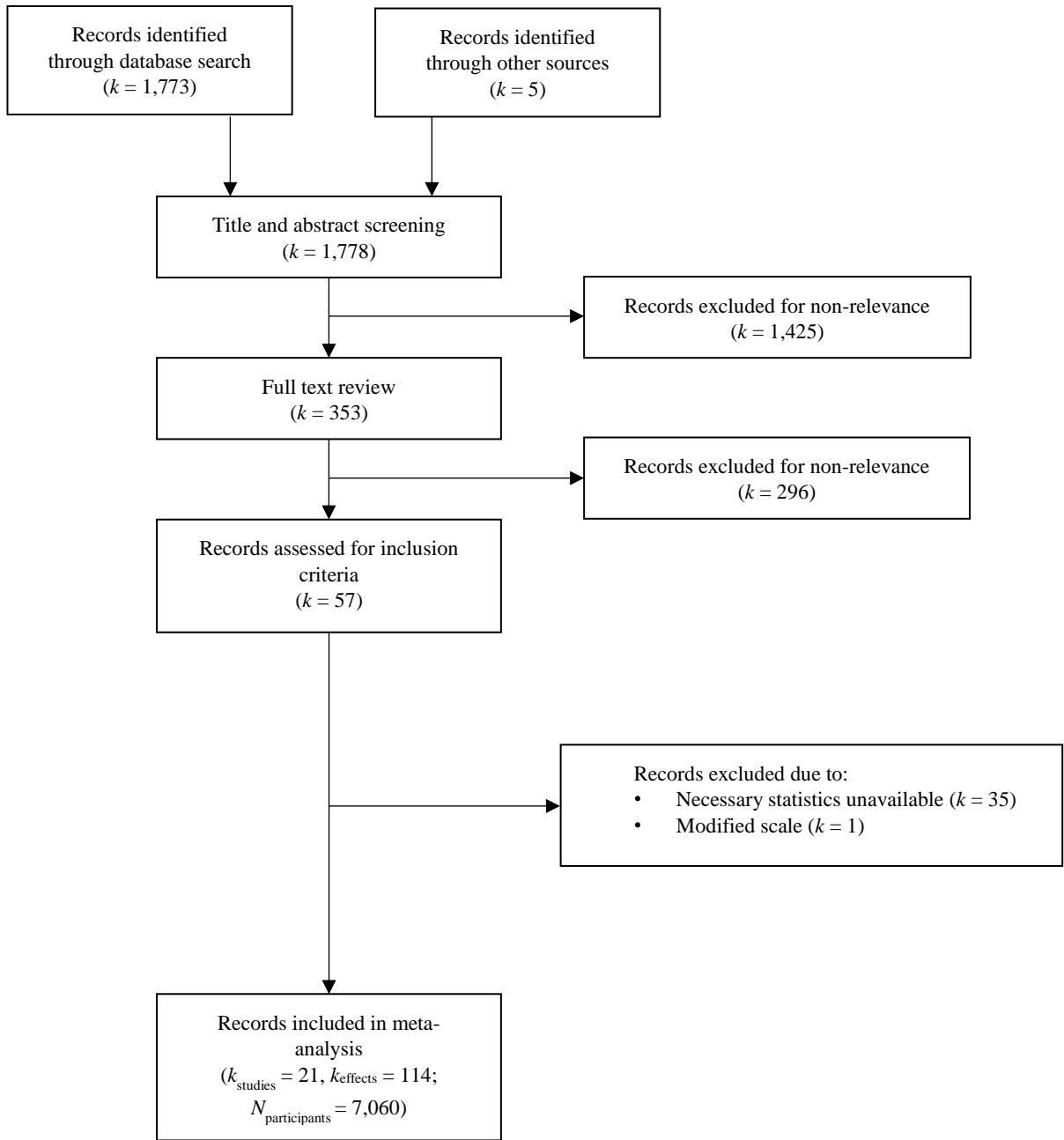


Figure 1. Systematic review flow diagram for the study 1 literature search

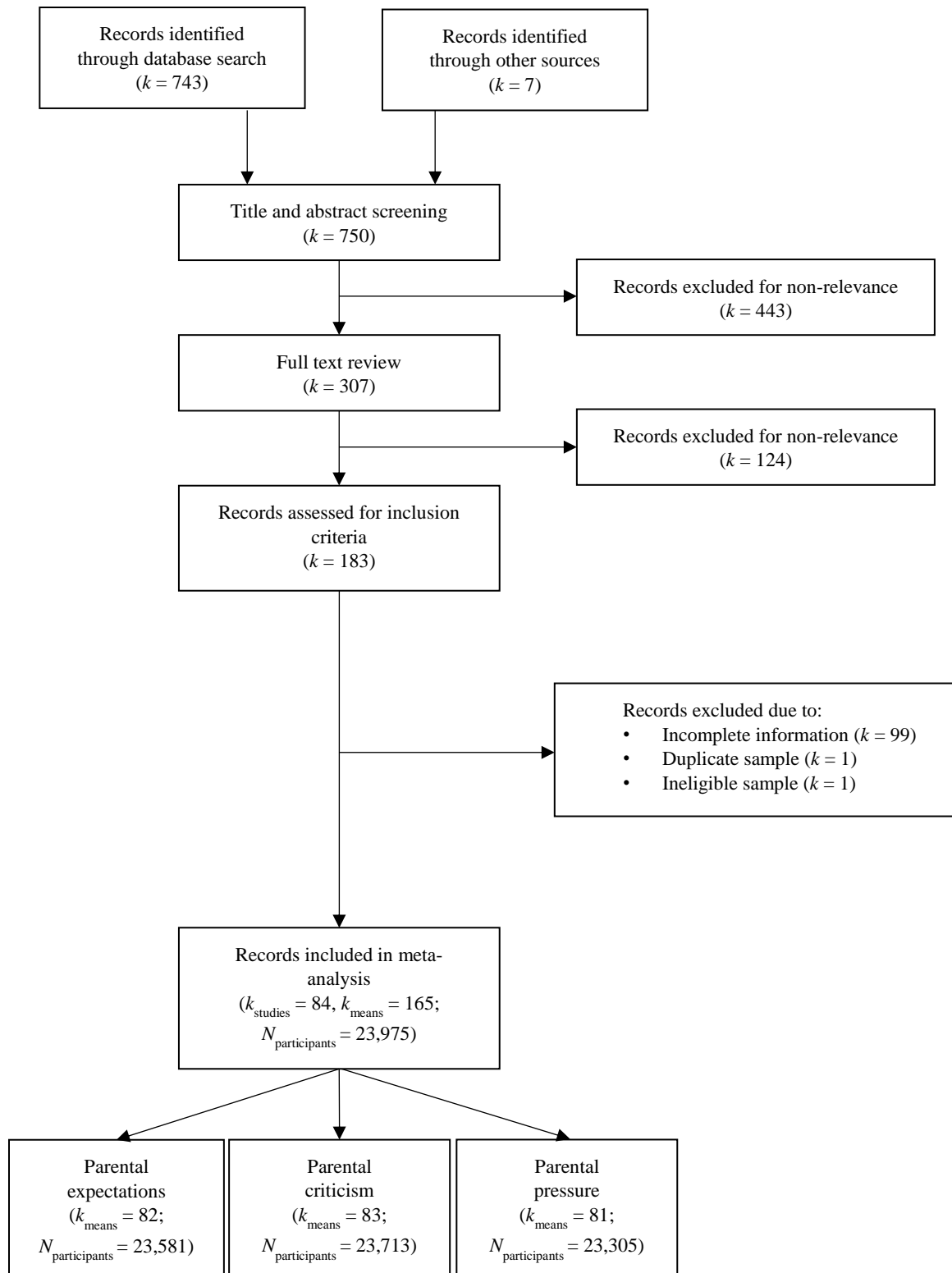


Figure 2. Systematic review flow diagram for the study 2 literature search.

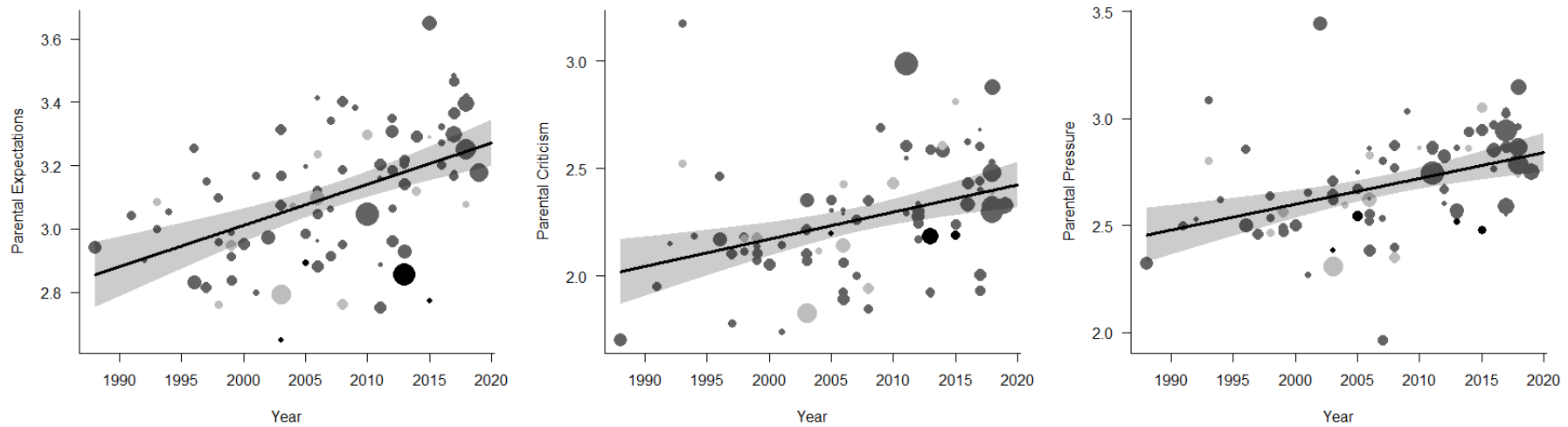


Figure 3. Parental expectations, parental criticism and parental pressure scores plotted against year of data collection.

Note. The solid regression line is plotted through the predicted scores from the metaregression equation in Model 1. Data-points represent study means and the size of the data-point is proportional to study (inverse variance) weighting. Points shaded black are data from the UK, points shaded dark grey are data from the US, and points shaded light grey are data from Canada. 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.