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The Psychology of Perfectionism:
Critical Issues, Open Questions, and Future Directions

Joachim Stoeber

Overview

In this concluding chapter, I follow the approach of the introductory chapter in taking a personal perspective to discuss what I see are critical issues, open questions, and future directions in perfectionism research. Because all chapters of this book address open questions and future directions, I only discuss topics that the chapters did not cover or that I would like to emphasize again. These include the definition and measurement of perfectionism, the question of whether perfectionism is a trait or a disposition, the need for more longitudinal studies, and the search for mediators and moderators. Further, I make a call for more research on perfectionism going beyond self-reports and point to three areas that I believe are “under-researched”: perfectionism at work; ethnic, cultural, and national differences in perfectionism; and perfectionism across the lifespan. Moreover, I address three critical issues that I find problematic because they may present obstacles to further progress in our understanding of perfectionism: focusing on perfectionistic concerns (and ignoring perfectionistic strivings), employing cluster analyses to investigate differences in multidimensional perfectionism, and assessing perfectionism with measures that do not measure perfectionism.

Critical Issues

Focusing on Perfectionistic Concerns (and Ignoring Perfectionistic Strivings)

The first issue I find problematic (see also Stoeber & Gaudreau, 2017) is that there are studies that examine only indicators of perfectionistic concerns and do not include indicators of perfectionistic strivings, or do not report any findings they obtained for indicators of perfectionistic strivings (cf. Chapter 1, Table 1.1). As to why this is the case, I can only speculate. Maybe the studies’ focal interest was psychological maladjustment and—because perfectionistic strivings often fail to show unique positive relationships with maladjustment (Stoeber & Otto, 2006)—the studies did not include perfectionistic strivings and only examined perfectionistic concerns (which reliably show positive relationships with maladjustment). Or maybe the studies

originally included perfectionistic strivings but—for the same reason as above—perfectionistic strivings did not show any significant relationships, and so they were dropped from the final analyses that were reported.

Whatever the motivation, studies that do not include perfectionistic strivings are problematic. One reason is that such studies may give a distorted view of perfectionism because they exclusively focus on its maladaptive aspects while blending out aspects that may be harmless, benign, or even adaptive (see Chapters 2, 3, 8, 11, and 12). In addition, such studies may fail to provide an accurate account of how maladaptive perfectionistic concerns are, or even severely underestimate the degree to which perfectionistic concerns are maladaptive. First, including perfectionistic strivings allows for comparisons, so readers can see how maladaptive perfectionistic concerns are relative to perfectionistic strivings. Second, perfectionistic strivings and perfectionistic concerns usually show substantial overlap. Because perfectionistic strivings tend to be less maladaptive than perfectionistic concerns, this overlap may attenuate (or “dampen”) the positive relationships that perfectionistic concerns show with indicators of psychological maladjustment as well as the negative relationships they show with indicators of psychological adjustment. To investigate if this is the case, statistical analyses controlling the overlap can be employed (Stoeber & Gaudreau, 2017), and the resulting unique relationships can then be compared with the original relationships (cf. Chapter 8, Table 8.1). Third, research following the 2×2 model of perfectionism (Gaudreau & Thompson, 2010) has demonstrated that perfectionistic concerns tend to be more maladaptive when combined with low levels of perfectionistic strivings (see Chapter 3 for details). Forth, it is important to note that—whereas perfectionistic strivings often do not show unique positive relationships with indicators of psychological maladjustment—there are numerous studies where they do show such relationships and explain variance in psychological maladjustment beyond perfectionistic concerns (e.g., dietary restraint in disordered eating; Bardone-Cone, 2007; Stoeber, Madigan, Damian, Esposito, & Lombardo, in press). For all these reasons, even researchers whose main interest is perfectionism and psychological maladjustment should not exclusively focus on perfectionistic concerns, but also take perfectionistic strivings into account.

Finally, and perhaps most importantly, the conceptualization of perfectionism as a multidimensional characteristic has been central to perfectionism theory and research since the 1990s. It was also responsible for the steep rise in the number of scientific publications on perfectionism and the associated progress in our understanding of perfectionism (cf. Chapter 1).

Studies focusing on perfectionistic concerns (and ignoring perfectionistic strivings) represent a regression to the onedimensional conceptions of perfectionism that dominated the 1980s and risk discounting everything we have learned and achieved in the past 25 years.

Cluster Analyses and “Types” of Perfectionists

The second issue I find problematic is the use of cluster analyses in perfectionism research. By this, I do not mean the use of cluster analyses per se, but how they are used and how their findings are reported. Cluster analyses typically take multidimensional measures of perfectionism and then use the scores from these measures to “cluster” participants into groups that show similar patterns on these scores (cf. Hair, Black, Babin, Anderson, & Tatham, 2006, Chapter 9). However, there are problems with this approach. First, some studies employing cluster analyses suggest that the clusters represent “types” of perfectionists. However, these clusters are not discrete types in the classic sense representing different kinds of perfectionists (Meehl, 1992). They are merely groups of perfectionists representing different within-person combinations of continuous perfectionism dimensions (see also Broman-Fulks, Hill, & Green, 2008). Second, some studies use cluster analyses to examine perfectionism against the theoretical frameworks of two models of perfectionism: the tripartite model of perfectionism differentiating healthy perfectionists, unhealthy perfectionists, and non-perfectionists (Parker, 1997; Stoeber & Otto, 2006), and the 2×2 model of perfectionism differentiating pure personal standards perfectionism, pure evaluative concerns perfectionism, mixed perfectionism, and non-perfectionism (Gaudreau & Thompson, 2010; see Chapter 3). This too is problematic for a number of reasons.¹ For example, the clusters frequently show significant differences in more than one perfectionism dimension (e.g., healthy perfectionists showing not only lower perfectionistic concerns than unhealthy perfectionists, but also lower perfectionistic strivings). In these cases, it is unclear which dimension is responsible for the differences between clusters (e.g., why healthy perfectionists show lower adjustment problems than unhealthy perfectionists). If researchers want to investigate whether data conform to the tripartite model or the 2×2 model of perfectionism, I would recommend they use variable-centered approaches such as multiple regressions and then test for significant differences between non-perfectionism and pure evaluative concerns

¹See also Chapter 3 for a detailed discussion of why cluster analyses should not be used to examine the 2×2 model of perfectionism.

perfectionism (Gaudreau, 2012). If the two show no significant differences, the data support the tripartite model. If they show significant differences, the data support the 2×2 model (Stoeber, 2014).

Third, the results of cluster analyses are often not comparable between studies. Even when studies find the same number of clusters, the clusters usually show different perfectionism profiles (e.g., healthy perfectionists in one study show higher perfectionistic strivings and concerns than healthy perfectionists in another study). Fourth, cluster analyses do not allow to probe for interactions between different perfectionism dimensions (e.g., interactions between perfectionistic strivings and concerns), and they cannot differentiate common, unique, and interactive effects of the different dimensions (see also Stoeber & Gaudreau, 2017, Appendix A).

A final problem is that studies employing cluster analyses often fail to report the bivariate correlations between the perfectionism dimensions and the key variables of interest. Instead, they report only differences between the clusters they created. This is problematic not only because crucial information is missing (i.e., what correlations the clusters are based on), but also because the studies are of limited use for secondary data analyses such as quantitative literature reviews and meta-analyses (cf. Hill & Curran, 2016; Gotwals, Stoeber, Dunn, & Stoll, 2012).

Consequently, my recommendation is to follow good research practice and *always report bivariate correlations*. This goes not only for studies employing cluster analyses, but for all studies employing multivariate analyses based on correlations or covariances such as multiple regressions, structural equation modeling, and factor analyses as well as latent class and latent profile analyses.

Measures of Perfectionism Not Measuring Perfectionism

The third issue I find problematic is what can be described as “measures of perfectionism not measuring perfectionism.” In particular, I see two problems. The first (and most frequently encountered) concerns the use of the Positive and Negative Perfectionism Scale (PANPS; Terry-Short, Owens, Slade, & Dewey, 1995). The PANPS has a number of shortcomings. First and foremost, the items of the positive perfectionism subscale do not capture perfectionistic strivings, but characteristics, feelings, and behaviors that people high in perfectionistic strivings are expected to show if they feel positive about themselves and their accomplishment (e.g., “I enjoy the glory gained by my successes”). Consequently, the subscale captures positive consequences of perfectionistic strivings that Terry-Short and colleagues associate with “positive perfectionism,” but this is not perfectionism (see also Flett & Hewitt, 2006). The items of the negative

perfectionism subscale are less problematic because many are similar to items from established measures of perfectionistic concerns (see Chapter 1, Table 1.1). A few items, however, are similar to items other measures use to capture perfectionistic strivings (e.g., “I set impossibly high standards for myself”). Hence it comes as no surprise that the PANPS has shown problems with factorial validity. Haase and Prapavessis (2004) had to discard 21 of the 40 items before a two-factorial structure emerged differentiating positive and negative perfectionism. Similar problems were reported by Egan, Piek, Dyck, and Kane (2011). Moreover, Egan and colleagues found that positive perfectionism showed positive relationships with depressive symptoms, and Haase, Prapavessis, and Owens (1999) found positive relationships with disordered eating. Both findings contradict Terry-Short et al.’s conceptualization of positive perfectionism. Hence, the PANPS cannot be regarded as a reliable and valid measure of perfectionism differentiating perfectionistic strivings and perfectionistic concerns.

The second (less frequently encountered) problem concerns the use of scales and items capturing self-criticism as measures of perfectionism. Examples are the self-criticism subscale of the Depressive Experiences Questionnaire (Blatt, D’Afflitti, & Quinlan, 1976) and the self-critical items from the Dysfunctional Attitude Scale (Weissman & Beck, 1978). This is problematic because they are measures of self-criticism, not measures of perfectionism or perfectionistic concerns (cf. Chapter 1). Neither are they measures of self-critical perfectionism, because self-critical perfectionism is a hybrid form of perfectionism that is typically assessed by *combining* measures of self-criticism with measures of perfectionistic concerns (Dunkley, Zuroff, & Blankstein, 2003; Smith, Saklofske, Stoeber, & Sherry, 2016; see also Chapters 9 and 11). Self-criticism is not an indicator, proxy, or defining component of perfectionism or perfectionistic concerns, but a separate psychological construct that should be differentiated from perfectionism and perfectionistic concerns (e.g., Dunkley, Blankstein, Masheb, & Grilo, 2006; Sherry, Stoeber, & Ramasubbu, 2016). I am aware that the multitude of measures used in perfectionism research can be confusing, but researchers who use scales or items measuring self-criticism should be clear in their publications that they measured self-criticism, not perfectionism (cf. Stoeber, Hutchfield, & Wood, 2008).

Open Questions

The Definition and Measurement of Perfectionism: Too Many Perfectionisms?

There are two open questions that I would like to discuss which the individual contributions have not discussed. The first question is: Are there “too many perfectionisms” in perfectionism

theory and research, that is, more definitions, models, and measures of perfectionism than are healthy for the discipline? This question reflects two issues that are sometimes lamented in perfectionism research. One is that there is no commonly agreed definition of perfectionism. The other is that there are so many different models and measures of perfectionism.

As regards the first issue, I am not sure how problematic this is. True, there is no commonly agreed definition of perfectionism. And because perfectionism researchers like to disagree about specific aspects of perfectionism (as alluded to in Chapter 1), I see little chance for a commonly agreed definition in the near future. On the positive side, I think that most perfectionism researchers are in tacit agreement about the core components that define perfectionism. To support this view, I have only anecdotal evidence. In our publications, for example, we usually define perfectionism as “a personality disposition characterized by striving for flawlessness and setting exceedingly high standards of performance accompanied by overly critical evaluations of one’s behavior” (e.g., Stoeber, Haskew, & Scott, 2015, p. 171) or use similar definitions along these lines. These definitions have never been seriously challenged in peer review, which to me suggests that the core elements of these definition are widely agreed. And I get the same impression from the discussions we have at conferences and symposia when presenting papers and posters on perfectionism.

As regards the second issue, I agree that the many models and measures of perfectionism that have been developed over the past 25 years must be confusing for anyone who is not an expert in perfectionism research. But how to address this issue? One suggestion has been to follow the example of the Obsessive Compulsive Cognitions Working Group (OCCWG, 1997) and get all the leading perfectionism researchers together, discuss and agree the core elements of perfectionism, and develop a commonly agreed measure of perfectionism as did the OCCWG with obsessive-compulsive beliefs (OCCWG, 2001). However, when this suggestion was made at the last Perfectionism Network Meeting (University of Kent, 12-13 July 2016)—a meeting where most of the leading perfectionism researchers were present—the response was muted. Consequently, I also see little chance for a commonly agreed measure of perfectionism in the near future.

But are there really too many measures? I personally do not think so. First, the vast majority of research on perfectionism is based on only two measures—the Frost Multidimensional Perfectionism Scale (FMPS; Frost, Marten, Lahart, & Rosenblate, 1990) and the Hewitt–Flett Multidimensional Perfectionism Scale (HF-MPS; Hewitt & Flett, 1991)—followed by the Almost

Perfect Scale–Revised (Slaney, Rice, Mobley, Trippi, & Ashby, 2001) in a distant third place. This means that most perfectionism research is based on three measures only (or short forms and adaptations of these measures). Second, all widely used multidimensional measures of perfectionism have subscales capturing perfectionistic strivings and perfectionistic concerns, the two higher-order dimensions of the two factor-model of perfectionism (see Chapter 1). Consequently, the two-factor model provides a common conceptual framework to understand and compare the findings from different studies using different measures of perfectionism (Stoeber & Otto, 2006; see also Gotwals et al., 2012; Jowett, Mallinson, & Hill, 2016).

Further, there are good reasons why we have so many different measures of perfectionism. Perfectionism can affect all domains of life, but most perfectionists are not perfectionistic across all domains of life (Stoeber & Stoeber, 2009). Instead, perfectionism is often domain-specific, meaning that perfectionists are usually more perfectionistic in some domains than in others (Dunn, Gotwals, & Causgrove Dunn, 2005; McArdle, 2010). Consequently, it makes sense to have not only general measures of perfectionism, but also measures that assess perfectionism in specific domains such as sport, dance, exercise, parenting, physical appearance, or sex (Snell, Overbey, & Brewer, 2005; Stoeber, Harvey, Almeida, & Lyons, 2013; Stoeber & Madigan, 2016; Yang & Stoeber, 2012). Moreover, domain-specific measures of perfectionism are useful because they have been shown to explain variance in specific populations or specific variables beyond general measures of perfectionism (e.g., sport perfectionism → body image in athletes: Dunn, Craft, Causgrove Dunn, & Gotwals, 2011; physical appearance perfectionism → eating disorder symptoms in students: Stoeber & Yang, 2015). Further note that most domain-specific measures of perfectionism are adaptations of general measures of perfectionism (like the FMPS and HF-MPS) or were inspired by these measures (cf. Stoeber & Madigan, 2016). Consequently, the many different measures we see in perfectionism research often share the same underlying models and have comparable dimensions.

Finally, theory and research on perfectionism is still evolving and developing, and this includes the expansion of extant models of dispositional perfectionism, perfectionistic self-presentation, and perfectionism cognitions (including the expansion in new domains). In addition, there is a continued development of further models of perfectionism including new, hybrid forms of perfectionism. All this evolution, expansion, and development requires reliable and valid measures (e.g., Ferreira, Duarte, Pinto-Gouveia, & Lopes, in press; Flett, Nepon, Hewitt, Molnar, & Zhao, in press; Smith et al., 2016). Furthermore, perfectionism research has a strong tradition

of revisiting established measures of perfectionism for a critical reexamination of their psychometric properties (e.g., De Cuyper, Claes, Hermans, Pieter, & Smits, 2015; Stöber, 1998) as well as developing reliable and valid short forms of these measures (e.g., Burgess, Frost, & DiBartolo, in press; Stoeber, in press). Consequently, I do not see the multitude of perfectionism models and measures that we have (and the continued development of further models and measures) as a problem or a sign of weakness. To me, they signify that perfectionism theory and research is alive and well, and flourishing.

Perfectionism: Trait or Disposition?

The second open question I would like to discuss (but discuss more concisely), is whether perfectionism is a personality trait or a personality disposition. Like the first question, this question is not easy to answer, and other researchers may have views and preferences different from the ones presented here. Following Allport (1937), personality traits are commonly defined as broad descriptions of individual differences between people that are relatively general and enduring and are responsible for consistent patterns—consistent across time and consistent across situations—in the way individuals behave, feel, and think (McAdams, 2006; Pervin, Cervone, & John, 2005). Prominent trait models of personality include the five-factor model and the HEXACO model described in Chapter 4. Some of these models include perfectionism on the facet level (i.e., as a facet of a broad personality trait), most notably Cattell’s 16 personality factor model (where perfectionism is a facet of self-control vs. lack of restraint), Cloninger’s model of personality (where it is a facet of persistence), and the HEXACO model of personality (where it is a facet of conscientiousness) (Cattell & Mead, 2008; Cloninger, Przybeck, Svrakic, & Wetzel, 1994; Lee & Ashton, 2004). But is perfectionism itself a trait?

Whereas the chapters in this book use the terms “trait perfectionism” and “dispositional perfectionism” interchangeably, I prefer to regard perfectionism as a disposition rather than a trait. There are a number of reasons. In research on personality and individual differences, the term “trait” usually refers to stable individual differences with high cross-situational consistency that have a neuro-biological basis and are to a significant extent inherited. Like most individual differences, perfectionism has a genetic component (see Iranzo-Tatay et al., 2015, for a review). Developmental models of perfectionism, however, suggest that—whereas the child’s temperament may play a role in the development of perfectionism—individual differences in perfectionism are mostly learned and shaped by children’s and adolescents’ experiences and expectations (Flett, Hewitt, Oliver, & Macdonald, 2002; Rice, Lopez, & Vergara, 2005; Stoeber,

Edbrooke-Childs, & Damian, in press). Social-cognitive theories of personality development that regard stable individual differences as learned and shaped by the environment, however, tend to regard these differences as dispositions, not as traits (cf. Fleeson, 2012; Mischel, Shoda, & Ayduk, 2007). Further, there are questions about the generality and stability of perfectionism. As already mentioned, only few perfectionists are perfectionistic across all domains of life (Stoeber & Stoeber, 2009). Instead, perfectionism is often domain-specific (e.g., Dunn et al., 2005; McArdle, 2010). Moreover, longitudinal studies have shown that perfectionism—while relatively stable—may show changes over fairly short periods of time and that these changes are the result of individual differences in perceptions, expectations, and experiences (Damian, Stoeber, Negru, & Băban, 2013; Damian, Stoeber, Negru-Subtirica, & Băban, in press; Soenens et al., 2008). Consequently, I find that perfectionism has more characteristics of a personality disposition than a personality trait.

Future Directions

Longitudinal Studies

The final section of this chapter discusses some areas that, from my view, future research should take on if we want to continue making progress in our understanding of perfectionism. First and foremost, I think we need more longitudinal studies on perfectionism. This includes prospective studies as well as diary studies and other methods of ecological momentary assessment (Bolger, Davis, & Rafaeli, 2003; Shiffman, Stone, & Hufford, 2008). All such studies have more than one measurement point and thus allow to investigate the temporal relationships between perfectionism and key variables of interest providing stronger evidence for causal influences and the direction of these influences. Unfortunately, the vast majority of published research on perfectionism still uses cross-sectional designs (all measurements are taken at one point of time). Such studies, however, are limited because they cannot tell us whether perfectionism is an antecedent or a consequence of a variable of interest, whether the two show reciprocal relationships, or whether they are mere correlates. Regarding the question of perfectionism as an antecedent, longitudinal studies are important to examine the effects of perfectionism because only such studies can determine if perfectionism predicts changes in an outcome variable over time (e.g., Madigan, Stoeber, & Passfield, 2015). In addition, if they comprise three or more measurement points, longitudinal studies allow for modeling between-person as well as within-person changes (e.g., Madigan, Stoeber, & Passfield, 2016; see also Chapter 11). Furthermore, only longitudinal studies with three or more measurement points can

properly test mediation effects (Cole & Maxwell, 2003). Regarding the question of perfectionism as a consequence, longitudinal studies are important to understand the development of perfectionism. This is an area of research where we have various theoretical models suggesting developmental antecedents of perfectionism (e.g., Flett et al., 2002; Stoeber et al., in press) but only very few longitudinal studies actually examining developmental antecedents of perfectionism (e.g., Damian et al., 2013; Damian et al., in press; Soenens et al., 2008; Stoeber, Otto, & Dalbert, 2009).

Furthermore, it is important that longitudinal studies test for reciprocal effects, because these tests can yield important new (and sometimes surprising) insights. For example, Gautreau, Sherry, Mushquash, and Stewart (2015) conducted a 12-month, three-wave study examining self-critical perfectionism and social anxiety. Results showed that self-critical perfectionism did not predict increases in social anxiety. Instead, social anxiety predicted increases in self-critical perfectionism, suggesting that social anxiety may contribute to the development of perfectionistic concerns. As another example, Damian et al. (in press) conducted a 9-month, three-wave study examining perfectionism and academic achievement. Differently from what was expected, perfectionistic strivings did not predict increases in academic achievement. Instead academic achievement (and academic self-efficacy) predicted increases in perfectionistic strivings, suggesting that students who are high achievers and believe in their academic abilities may develop perfectionistic strivings. Finally, it is important to note that longitudinal studies do not have to be “long.” Any study on perfectionism using more than one measurement point qualifies as a longitudinal study, and any findings from such a study are likely to provide valuable new insights into perfectionism. Moreover, short-term longitudinal studies (also known as “shortitudinal” studies) may have higher statistical power for finding longitudinal effects than studies with longer intervals between measurement points (Dormann & Griffin, 2015) which is something worth keeping in mind.

Mediators and Moderators

Second, more research examining mediators and moderators of the relationships and effects of perfectionism is needed.² Research on mediators is important because we need to know *how*

²See Baron and Kenny’s (1986) classic article for an explanation of mediators and moderators.

perfectionism, as a relatively stable personality disposition, affects an outcome X (perfectionism → mediator → X). However, not all variables qualify as mediators, and not all research designs are suitable for testing mediation effects. According to Cole and Maxwell (2003), “a mediator is a mechanism of action, a vehicle whereby a putative cause has its putative effect” (p. 559).

Consequently, only variables that represent actions or processes qualify as mediators (not stable individual differences, personality dispositions, or traits). Further, Cole and Maxwell point out that “a mediator cannot be concurrent with X” (p. 561). Consequently, proper mediation analyses require longitudinal studies. Whereas a full mediation design requires three measurement points (perfectionism at Time 1 → mediator at Time 2 → outcome at Time 3), it is worth pointing out that also studies with two measurement points can be used to test mediation effects by employing a so-called “half-mediation model.” In this model, the predictor–mediator relationships (perfectionism at Time 1 → mediator at Time 2) and mediator–outcome relationships (mediator at Time 1 → outcome at Time 2) are tested separately to establish longitudinal mediation (see Cole and Maxwell, 2003, for details). I am not aware of any perfectionism studies applying this model, but would like to encourage researchers to give this model a try if they have studies with two measurement points including potential mediators.

Researchers should also continue looking for possible moderators of perfectionism–outcome relationships, that is, variables that show significant interactions with perfectionism when predicting an outcome X (see also Chapter 8). Research on moderators is important because they show that the relationships (or effects) of perfectionism are dependent on a third variable. Important questions in the search for moderators are, for example, whether there are any variables buffering the negative effects of perfectionistic concerns (e.g., daily coping; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Stoeber & Janssen, 2011) or what the circumstances are under which perfectionistic strivings are adaptive versus maladaptive (see Chapter 3, Figure 3.3). However, there is a problem. Interactions between naturally occurring individual differences (e.g., perfectionism × daily coping) are usually smaller in size than interactions between experimental conditions (which can be manipulated to provide large-sized differences). Consequently, interactions between naturally occurring individual differences tend to be difficult to detect and may require large sample sizes (McClelland & Judd, 1993). This could also be the reasons why we seldom find significant interactions between perfectionistic strivings and perfectionistic concerns (cf. Hill, 2013; Stoeber & Yang, 2010). Still, these difficulties should not deter researchers from probing for interactions between perfectionism and possible moderators, or

between perfectionistic strivings and perfectionistic concerns (see also Gaudreau, 2012).

Going Beyond Self-Reports

Finally, I think that perfectionism research needs more studies including data that are not from self-reports. Don't get me wrong. Self-reports in psychological research are invaluable. They provide reliable and valid information about people's thoughts, feelings, and behaviors, and they are practical, economical, and easy to interpret (Paulhus & Vazire, 2007). Moreover, because only self-reports have an inside perspective, they can provide "information no one else knows" (Baldwin, 2000). Still, we would be missing essential parts of the perfectionism puzzle if we only examined self-reported antecedents, self-reported correlates, and self-reported consequences of perfectionism. Perfectionism research needs to go beyond inner experiences, and take a look at what perfectionism does in the outside world.

Whereas most studies examining perfectionism do not go beyond self-reports, there are notable exceptions. First, a significant number of studies have included objective measures of academic performance (e.g., students' grade point average). Other studies have examined perfectionism and objective performance in aptitude tests and laboratory tasks or sports. These studies have provided valuable new insights into perfectionism indicating that only perfectionistic strivings show consistent positive relationships with performance whereas perfectionistic concerns usually show no relationships (see Stoeber, 2012, for a review). In addition, a number of studies have included observer ratings (also known as observer reports or informant reports). Self-reports and observer ratings have been described as the "counterpoint of personality assessment" (McCrae, 1994). Applied to perfectionism research, they show us how perfectionists see themselves and how others see them (see Chapter 9 for an illustrative example). Furthermore, some studies have begun to go beyond self-reported stress and included physiological measures of stress (e.g., Albert, Rice, & Caffee, 2016; Richardson, Rice, & Devine, 2014). Finally, there are two longitudinal studies examining how perfectionism predicts what is perhaps the ultimate objective outcome: mortality. Unfortunately, the studies' findings were inconclusive. Whereas the first study found that self-oriented perfectionism predicted lower survival rates (Fry & Debats, 2009), the second study found the opposite: Self-oriented perfectionism predicted higher survival rates (Fry & Debats, 2011). Clearly more research including observer ratings and objective measures of stress, health, and well-being is needed to address the complex associations among perfectionism, stress, health behaviors, health and, ultimately, mortality (see also Chapter 10).

Under-Researched Areas

Perfectionism at work. Finally, I would like to draw attention to three areas that I think are under-researched. The first is perfectionism at work. We know that work comes out top when people are asked what domains of life perfectionism affects most (Slaney & Ashby, 1996; Stoeber & Stoeber, 2009). For example, Stoeber and Stoeber (2009) investigated how perfectionistic people are across a list of 22 domains of life. They found that 58% of a university student sample and 53% of an Internet sample indicated they were perfectionistic at work, putting work at the first position on both lists. Consequently, perfectionism at work should be an important research topic. Yet, compared to the number of studies examining perfectionism in students, relatively few studies have examined perfectionism in employees and how perfectionism relates to variables that are of key interest in the domain of work such as workaholism (e.g., Stoeber, Davis, & Townley, 2013; Tziner & Tanami, 2013) or job burnout (e.g., Childs & Stoeber, 2010; Li, Hou, Chi, Liu, & Hager, 2014). Beyond workaholism and job burnout, there is even less research on perfectionism at work. In particular, we do not know how perfectionism affects people's social relations at work and their work performance (individual performance and team performance). Both questions would be important to investigate given that perfectionism is linked with interpersonal problems (see Chapters 9 and 15) and has been associated with higher-quality performance, but reduced productivity and efficiency (Sherry, Hewitt, Sherry, Flett, & Graham, 2010; Stoeber & Eysenck, 2008). Consequently, perfectionism research may profit from further research on perfectionism at work. In addition, because many jobs require team work, this research should go beyond individual-level aspects of perfectionism and also examine group-level aspects like “team perfectionism” (Hill, Stoeber, Brown, & Appleton, 2014), that is, the level of perfectionism in teams and how this level influences the team (e.g., team relationships and coherence, team performance). Whereas we found team perfectionism to predict higher performance in sport (Hill et al., 2014), team perfectionism may have different effects at work, but until we investigate perfectionism at work, we will not know.

Ethnic, cultural, and national differences. Another question I think is under-researched is the question of ethnic, cultural, and national differences in the relationships that perfectionism shows with key variables of interest such as psychological adjustment and maladjustment. Note that I am not referring to differences in levels of perfectionism (e.g., whether Group A shows higher or lower levels of perfectionism compared to Group B). I am referring to differences in the relationships of perfectionism (e.g., whether perfectionism in Group A shows stronger or weaker relationships with psychological adjustment and maladjustment compared to perfectionism in

Group B) and differences in the effects of perfectionism (e.g., whether perfectionism in Group A has more adaptive or more maladaptive effects compared to perfectionism in Group B). For example, it is conceivable that socially prescribed perfectionism—the belief that striving for perfection and being perfect are important to others—is less dysfunctional in collectivistic cultures where people tend to have an interdependent conception of the self and conforming to expectations from others is the norm. In comparison, socially prescribed perfectionisms may be more dysfunctional in individualistic cultures where people have an independent conception of the self and expectations are primarily self-focused (cf. Markus & Kitayama, 1991; Stoeber, Kobori, & Tanno, 2013).

Unfortunately, systematic research on ethnic, cultural, and national differences in perfectionism is lacking. More studies are needed comparing the relationships and effects of perfectionism across samples from different nations (e.g., Sherry et al., 2016), different ethnicities (e.g., C. Chen, Hewitt, & Flett, 2017), and different cultures (e.g., Stoeber, Kobori, & Tanno, 2013). In this endeavor, however, there are three important points to consider. First, when comparing perfectionism across cultures, researchers need to make sure that their measures are equivalent across cultures so they do not compare “chopsticks with forks” (F. F. Chen, 2008). Second, researchers should not only look for differences, but also for similarities. And they should make sure they publish studies that find more similarities than differences as well as studies that do not find any differences (cf. Sherry et al., 2016; Smith, Saklofske, Yan, & Sherry, 2016). This is to avoid biasing the published literature in a direction suggesting there are more differences than similarities. Publishing only studies that find significant differences is a serious problem in psychological science (e.g., Ferguson & Heene, 2012). As is the case with gender differences (Hyde, 2005), it may be that the similarities between different nations, ethnicities, and cultures regarding perfectionism are much greater and more important than any differences. And if we find differences, we need to demonstrate that these differences are reliable and replicate in other studies and samples. In addition, we need theories that can *explain* these differences.

Perfectionism across the lifespan. Concluding this section, another question I think deserves more attention is the question of how perfectionism develops across the life span. When I give talks about perfectionism, one question that is frequently asked is if we know what happens with perfectionism when people get older. In particular, do people become less perfectionistic when they get older? Unfortunately, the answer to these questions is: We don’t know. Whereas numerous studies have investigated how major personality traits develop across the life span (e.g.,

McCrae et al., 1999; Roberts, Walton, & Viechtbauer, 2006), I am not aware of any studies that have investigated how perfectionism develops across the lifespan.

There are, however, a few studies suggesting that perfectionism declines with age. For example, Landa and Bybee (2007) examined the dimensions of perfectionism from Frost et al.'s (1990) model comparing undergraduates of a sorority (mean age = 19.9 years) with alumnae of the same sorority (mean age = 33.7 years). They found that the alumnae showed significant lower levels of perfectionism regarding personal standards, concerns over mistakes, doubts about actions, and parental expectations suggesting that both perfectionistic strivings and perfectionistic concerns decline with age. Stoeber and Stoeber (2009) examined self-oriented and socially prescribed perfectionism from Hewitt and Flett's (1991) model in an Internet sample including adults from below 20 to above 70 years of age. Both self-oriented and socially prescribed perfectionism showed small negative correlations with age, again suggesting that perfectionistic strivings and perfectionistic concerns decline with age. In comparison, Hewitt and Flett (2004) examined a large community sample of adults from 18 to over 45 years of age and found that older adults showed lower levels of socially prescribed perfectionism (but not self-oriented or other-oriented perfectionism), suggesting that perfectionistic concerns decline with age, but not perfectionistic strivings. Taken together, the findings point in the direction of perfectionism showing declines over the lifespan, particularly perfectionistic concerns (cf. Hewitt & Flett, 2004; Landa & Bybee, 2007). Because perfectionistic concerns are closely linked with trait neuroticism (e.g., Stoeber & Otto, 2006), this would be in line with findings from research on personality across the lifespan showing that levels of neuroticism decline across the life span, with particularly steep declines in the first decades of adulthood (McCrae et al., 1999; Roberts et al., 2006). What is unclear, however, is why perfectionistic strivings also seem to decline even though perfectionistic strivings are closely linked with trait conscientiousness, and conscientiousness shows *increases* across the lifespan (McCrae et al., 1999; Roberts et al., 2006). Clearly there are important questions on how perfectionism and its various aspects, forms, and dimensions develop across the lifespan, and what explains these developments. I hope that future research will engage with these questions and provide answers.

Concluding Comments

I have the same hope for the other open questions addressed in this chapter as well as the open questions that the other chapters of this book addressed. But looking back at the past 25 years of research on multidimensional perfectionism and all that has been achieved in these

years—and also looking at the individual contributions in this book that not only reflect past achievements, but also point toward future achievements—I am confident that the next 25 years will see all these questions answered, and more.

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