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A philosophical approach to improving empirical research on posttraumatic growth

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ABSTRACT

Post-traumatic growth (PTG) has been a key topic of research by psychologists over the last 25 years. But the idea that a person can benefit from adversity has been around for much longer, and is a stable in many mainstream cultures, and in theological and recent philosophical thinking. However, there has been, to date, little overlap between psychological research into PTG, and philosophical thinking about similar ideas. This is unfortunate, both because philosophers are not taking up potential sources of empirical support, and because psychological research into PTG is subject to a range of criticisms and concerns. In this paper, we aim to show how philosophical thinking can address some of these, and as a result put psychological research into PTG on a firmer theoretical footing.

1. Introduction

Post-traumatic growth (PTG) – the idea that people can undergo positive psychological changes as a result of adversity – has been a key topic of research by psychologists over the last 25 years (Infurna & Jayawickreme, 2019). The idea that a person can benefit from adversity has been around for much longer, however; discussions are found in all major religions, multiple schools of philosophy, and represented in famous works of art and literature (Tedeschi et al., 2018). In particular, Nietzsche's famous dictum that "what does not kill me makes me stronger" (Nietzsche, 1990) has become a cultural touchstone in mainstream American culture in recent years (Infurna & Jayawickreme, 2019), and notions of redemption and strength in the face of adversity are salient cultural narratives at a societal level (McAdams, 1993). More recently, a new wave of theoretical work in philosophy (Brady, 2018; Carel, 2013; Kidd, 2012) has highlighted the importance

of adversity and suffering to the development of character traits, while research in psychology and neuroscience (Bloom, 2021) argues that adversity is vital to the good life. However, there has been, to date, little overlap between psychological research into PTG, and philosophical thinking about similar ideas. This is unfortunate, both because philosophers are not taking up potential sources of empirical support, and because psychological research into PTG is subject to a range of criticisms and concerns. We think that philosophical thinking can address these, and as a result put psychological research into PTG on a firmer theoretical footing.

In the first section of the paper, we will outline what psychologists have said about PTG. In the second section, we will highlight some methodological and conceptual worries that psychological research into PTG face. In sections three and four, we will argue that philosophy can contribute to answering these concerns, by explaining and clarifying three central ideas about PTG: the first concerns the nature of growth itself, the second is about the purported relation between adversity and growth, and the third focuses on whether growth is growth along one particular dimension or is best understood as growth all-things-considered. Our proposal, very briefly, is that PTG is best understood as growth in virtue, and that adversity provides important conditions for the development of a wide range of virtues. In section five, we will outline the implications of all this for future research into PTG, and describe some desiderata for future studies.

2. PTG as understood in psychological research

PTG is typically thought to involve positive psychological changes experienced in the aftermath of adversity (Park, 2009; Tedeschi & Calhoun, 2004). PTG has theoretically been assumed to index "actual", meaningful growth, rather than a perceived improvement in psychological functioning, and is distinct from self-enhancement and forms of coping, such as positive reappraisal; i.e., looking for "silver linings" in adverse life events in order to provide meaning to the event (Jayawickreme & Blackie, 2014; Park et al., 1996). Furthermore, PTG is understood to be distinct from resilience: while resilience is characterized by a return to pre-adversity function, PTG assumes change beyond pre-adversity level of functioning (Tedeschi & Calhoun, 2004). Researchers sometimes reserve the term "PTG" to refer to growth that occurs after an incident that meets (or approximates) the clinical definition of a traumatic event. According to the DSM-5 definition, trauma requires "actual or threatened death, serious injury, or sexual violence".[1] However, psychological researchers have examined PTG in response to a broader range of adverse events, including chronic stressors that exert an impact over an extended period of time (e.g., divorce, Tashiro et al., 2006, or chronic illness, Siegel & Schrimshaw, 2000).[2]

PTG has been studied by psychologists in multiple populations, including war- and genocide-affected samples (L. E. R. Blackie et al., 2015; Powell et al., 2003), bereaved individuals (e.g., Lehman et al., 1993), individuals diagnosed with cancer (Marziliano et al., 2020), and recently, people impacted by the COVID-19 pandemic (Asmundson et al., 2021). PTG has been assessed with both quantitative (most often retrospective self-report assessments of perceived change) and qualitative measures, such as open-ended interviews. Current self-report measures of PTG include the Stress-Related Growth Scale (SRGS; Park et al., 1996) and the Post-Traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996), both of which ask participants the degree to which they agree with statements about areas of their life in which they have observed improvement as a result of an adverse event they experienced. For example, an item from the SRGS is "I rethought how I want to live my life" (Park et al., 1996). On the PTGI, respondents are asked to indicate, for each of the measure's 21 statements, the degree to which a certain change (e.g., "I accept needing others") has been caused by the most impactful "crisis" they have been through recently. The PTGI is by far the most popular assessment of PTG to date (Boals et al., 2022; Brady, 2018), and it conceptualizes growth in terms of five categories or life domains: New Possibilities, Relating to Others, Personal Strength, Appreciation of Life, and Spiritual Growth (Tedeschi & Calhoun, 1996; Tedeschi et al., 2017). It will be helpful to say a little about each of these, as they are understood in the literature. (Here we take, for ease of exposition, Tedeschi, 2020 as our guide.)

New Possibilities: adversity can interrupt and indeed undermine many aspects of our lives, including our habits, goals, careers, and indeed values. However, in so doing, adversity can highlight new possibilities for living, and can facilitate creative thinking about, and responses to, our new situation. Some people who have gone through adversity report seeing the world in a new way afterward, which reflects a new perspective on their options for living.

Relating to Others: adversity can put serious pressure on, and indeed can fracture, our relationships. But at the same time, people can become closer as a result of adversity. Sometimes this happens in loving relationships, where adversity strengthens and deepens love. But at other times, adversity can lead to the forging of new relationships, especially with those we come to rely on during and after the adverse event or circumstance.

Personal Strength: as the aphorism from Nietzsche suggests, adversity can sometimes make people stronger, as well as illuminating hidden strengths that people have. Adversity can result in people becoming more courageous, resilient, and patient, and more knowledgeable about their inner fortitude.

Appreciation of Life: Tedeschi writes that "When confronted with fear and loss, we often become better at noticing what we still have but may have previously overlooked." (2020) One of the main reported effects of adversity, such as serious illness, is that it can make people more appreciative of valuable things that they had previously taken for granted. As with New Possibilities, Appreciation of Life often involves a shift or modification of one's perspective, and one's assessment of what really matters.

Spiritual Growth: adversity can effect another perspective-shift, by generating thoughts about the meaning of (our) life, our relationship to the world around us, and other large and central existential and spiritual questions. Such reflection can generate a more spiritual, and often less materialistic, mind-set, which people regard as an enhancement of their well-being.

This, then, is how psychologists have thought of PTG. In the next section, we'll highlight a number of serious problems with research into PTG.

3. Methodological and conceptual problems with PTG research

A first set of problems with contemporary PTG research is methodological. These have been highlighted by a new wave of psychologists working in the area, and focus, in the main, on limitations inherent to the kinds of self-reported, retrospective assessments typically employed by researchers in the field. First, it is argued that most measures of PTG only include items asking about how a participant's life has improved as a result of experiencing adversity (i.e., only positively valanced items). Even if the participant's life has ultimately worsened more than it has improved following adversity, they may still feel primed or urged to only speak about the positive changes they think may have occurred. Secondly, forcing individuals to think back on how they felt about themselves before a highly stressful event in comparison to how they feel now is cognitively taxing and rarely produces accurate assessments. Specifically, in order to accurately respond to such measures of PTG, individuals must undergo five separate steps for each item on a measure like the PTGI: (1) deducing their current standing on the dimension, (2) recalling their prior standing on the dimension before the event in question had occurred, (3) comparing these standings, (4) calculating the degree of change, and (5) evaluating how much of the change was due to the adverse event (Ford et al., 2008; Jayawickreme & Blackie, 2014; Park & Boals, 2021). Finally, it is often very difficult for individuals to know whether an event that they think caused a change in functioning is indeed the catalyst for that change.

An even greater issue than those limitations, however, is that it is unclear whether common assessments of PTG are in fact measuring actual change rather than simply the perception of growth (Park et al., 1996). Indeed,

researchers have noted that no other psychological assessment of change requires individuals to assess personal change themselves, without pre- and post-event assessments (Adams, 2009; Tennen & Affleck, 1998). Because of this cognitively complex process, individuals responding to the PTGI may provide responses that are more susceptible to self-enhancement biases (Taylor et al., 2000) and societal pressures to be unconditionally resilient and strong (L. E. R. Blackie et al., 2015). As noted above, it is important to recognize that PTG is different from merely coping or benefit-finding (Tennen & Affleck, 2002). PTG requires change beyond simply finding the benefits within a difficult situation. It is thus unclear whether assessment measures such as the PTGI are valid measures of PTG.

While these methodological concerns have been raised by PTG researchers themselves, many still remain indifferent to them (Beck & Jackson, 2022). Yet there are other, more philosophical concerns, relating both to how we understand the notion of growth itself, the "modal status" of the purported relationship between adversity and growth, and whether growth should be understood along one dimension or "all-things-considered". To see this, recall that PTG is traditionally understood as a phenomenon in which an individual experiences "positive psychological changes" after going through a highly stressful life event or circumstance (Park, 2009; Tedeschi & Calhoun, 2004). On this view, then, we are to understand growth in terms of such positive psychological changes. This raises a host of questions, and to date researchers working in PTG have not answered these satisfactorily.[3]

Suppose we ask: what is it for some psychological change to count as positive? Current PTG theory assumes that growth must be along one of the dimensions that PTG researchers highlight, and be "transformative". The dimensions are, recall, personal strength, the exploration of new possibilities, improved relationships, a greater appreciation for life, and spiritual growth. However, it is unclear whether positive changes reported in the wake of adversity should necessarily be seen as transformative. Nor is it at all clear why we should favor these five dimensions rather than others. People may experience improvements because of suffering adversity, which fall a good deal short of transforming them as people. Indeed, good things can happen because of adversity that have little if anything to do with appreciation of life or improved relationships or spiritual growth (Tedeschi & Calhoun, 2004). For example, Seery et al. (2010) observed that moderate levels of cumulative lifetime adversity were associated with improved life satisfaction and low levels of functional impairment. In other words, people may be able to improve their life quality through the experience of adversity without it necessarily having a "transforming" effect on their personality. Moreover, there are changes out with the standard five dimensions that are good candidates for positive psychological change –

such as changes in one's moral outlook (e.g., by becoming more compassionate or benevolent), or through developing valuable forms of vulnerability (e.g., by becoming more modest or creative), or through gaining certain epistemic goals (e.g., greater wisdom or understanding). Indeed, the recent COVID pandemic has provided ample illustration of the way in which experiencing adversity can lead to growth without being transformative of one's personality. Many people responded to the pandemic by rethinking how and where they wanted to work – in some cases, this would be a search for more meaningful work; but in other cases, it was a result of people feeling greater concern for and solidarity with others, feelings which were ill-served by previous kinds of work.[4] There seems little reason, then, to restrict growth to the five categories that Tedeschi and others highlight, nor to think that change along any of an expanded range of dimensions needs to be regarded as transformative.

We might, then, try to set the bar for a positive psychological change somewhat lower. But here we face a different kind of worry, since there is now the danger of setting the bar *too* low. To see this, note that there are very many psychological changes that can be characterized as positive, but which don't seem sufficient for growth. One such candidate would be fleeing or short-lived pleasures which might result from adversity. These are certainly positive psychological changes, but they don't, intuitively at least, seem to count as forms of growth. An obvious reason why this is so is that fleeing pleasures don't seem to take the subject beyond pre-adversity levels of functioning – precisely because they are short-lived. But other positive changes in our psychological lives are longer-lasting, and yet also seem insufficient for growth. We might experience positive psychological change when we form new true beliefs as a result of adversity – in the most basic sense, the true belief about what the form or experience of adversity was like. Or we might develop a new skill or habit as a result of suffering – as when we become adept at solving crossword puzzles or memorizing lists of the kings and queens of England as a way of relieving the boredom of an illness. But these psychological and behavioral changes, whilst positive, also seem to fall short of the right kind of growth for PTG. As a result, even longer-lasting positive changes in our thoughts, characteristics, and behaviors might not be enough for growth.

Researchers working on PTG thus face the problem of identifying the right kind of positive psychological change which is meant to constitute growth. Even if they are successful here, a second major problem soon looms into view. This is the need to identify the right kind of "modal status" that is meant to hold between the adversity and growth; current research into PTG often leaves this relationship unclear. Thus, Tedeschi writes: "We've learned that negative experiences can spur positive change, including a recognition of personal strength, the exploration of new possibilities,

improved relationships, a greater appreciation for life, and spiritual growth." But almost anything *can* have a positive effect and spur positive change, in the right circumstances. For example, my chronic pain can end up benefitting me, because I fall in love with a fellow patient at the pain clinic. This is, intuitively, the wrong kind of relation to count for PTG; the link between adversity and benefit is too fortuitous or lucky. But what, then, is the right kind of link? How strong is the connection between adversity and growth meant to be? At one end of the scale we have the implausibly weak claim that adversity *can* generate positive psychological change. At the other, we have the very strong claim that adversity *necessarily* generates psychological change, i.e., whenever someone experiences adversity, then there are long-lasting positive changes in their thoughts, characteristics, and behaviors. Such a claim is clearly false. General claims about the connection that attempt to occupy a middle ground between these extremes – for instance, the claims that adversity *sometimes* or *usually* or *typically* spurs a positive change – are a slight improvement, but remain uninformative without further specification of the circumstances, the populations/subjects to which they apply, the kind of adversity in question, and so on. As a result, we might be skeptical as to whether PTG can be defined in terms of some distinctive and general modal link between adversity and growth – or whether its claims are considerably more modest, viz. that we observed this kind of growth in this kind of population in these kinds of circumstances. If so, the plausibility of PTG as a *general* thesis about the connection between adversity and growth seems questionable; nothing like the generality of Nietzsche's famous aphorism is likely to be true.

The final concern we want to discuss is whether we understand growth as growth along some particular psychological dimension – e.g., in terms of becoming more compassionate, or patient – or whether growth is meant to characterize a person's psychological state all-things-considered. Here too there are troubling issues for researchers in PTG to face.[5] After all, it seems possible that growth along one dimension – as when someone becomes more compassionate as a result of adversity – can come at the cost of their well-being or flourishing along other dimensions – perhaps the compassionate person becomes *impersonally benevolent* and strives to help whoever she can, at great cost to her personal relationships. Would this constitute PTG, even if the person is all-things-considered worse-off from the standpoint of her overall happiness? Some might well be skeptical about this, and insist that growth requires a person to be better off overall or on balance. But this suggestion raises a host of other problems. Perhaps the most obvious difficulty concerns the measurement of overall growth. For how do we make trade-offs between different ways that someone is benefitted or harmed by adversity? How do we balance the positive value of someone's becoming psychologically stronger or more open to experience as a result of her illness,

let's say, with the negative value of her illness on her career and ambitions, and come to some conclusion as to whether or not she has grown all-things-considered? This balancing and calculation is bound to be especially difficult, given the sometimes long timescales of changes that we might envision as a result of adversity: the benefits of wisdom, for instance, might not be apparent for a very long time, compared to the negative effects of illness or oppression. Once again, this puts significant pressure on the plausibility of PTG as a general thesis.

Research in PTG is thus hampered by at least three serious conceptual difficulties, in addition to those that have been raised against its methodologies. First, researchers need to provide an informative characterization of the positive changes that are meant to constitute growth. Such a specification cannot be too restrictive, and must expand beyond the five that Tedeschi and others traditionally cite. But it cannot count just any longer-term change to our thinking or behavior as growth, as this would set the bar too low. Second, there is a lack of clarity concerning the modal status of the purported relationship(s) between adversity and growth. This threatens the idea that PTG can be stated as a general thesis. Third, researchers need to decide on whether they want to understand growth simply as growth along some particular dimension, or whether it is meant to be understood as growth all-things-considered. In light of these unresolved difficulties, the prospects for research into PTG might look bleak. In the following section, however, we'll propose a way to answer all these worries, and in so doing highlight our own thoughts on the direction that research into PTG should take in future.

4. How a virtue-focused approach helps to resolve these problems

We propose that researchers should understand PTG in a particular way, as *growth in virtue*. In this section, we will provide the broad theoretical backing for this proposal, and show how it enables us to answer the methodological and conceptual worries of the last section. In the section to follow, we will explain the approach in greater detail, and consider its implications for psychological research. We begin with an important preliminary definitional issue; proceed to address the conceptual difficulties detailed above; and then move on to consider the methodological worries.

4.1 A preliminary issue

If our claim that we should understand PTG as growth in virtue, it is important to explain how we understand the concept of virtue itself. Here we want our account to be broad enough to encompass what different traditions want to say about the concept, and to accommodate different

historical and cultural perspectives. First, we understand virtue as denoting a positive psychological trait or disposition, one which is admirable or praiseworthy. Second, we think that what makes virtues admirable or praiseworthy is that they enable their possessor to deal correctly or excellently in important spheres of human experience.[6] Thus, courage enables a person to deal correctly with situations where they face danger or threat; compassion enables a person to deal correctly with situations where others are in need; trustworthiness enables a person to deal correctly with situations where she has responsibilities; humility enables a person to deal correctly with respect to her achievements; and so on.[7] Third, this account can capture the sense in which some virtues – such as courage – seem universal and present in pretty much all cultures, whilst others – such as chastity or cleanliness – would seem to be non-universal and specific to particular times and places. This is because some important spheres of human experience, such as facing danger or threat, are themselves universal; whilst the importance of other spheres, such as respecting particular religious constraints on sexual morality, will obviously be relativized to some cultures and not others. Fourth, this picture of the virtues allows for another element of historical and cultural contingency, if we think that the particular behaviors that constitute compassion or courage or honor (say) can be specific to particular circumstances. So what counts as honorable (and hence admirable) in Ancient Greece might be very different from what counts as honorable (and hence admirable) in Victorian England, or in contemporary Mexico.[8] Finally, we propose that virtues count as admirable or praiseworthy both because they involve a certain kind of admirable or praiseworthy motive – broadly, a right kind of attitude toward the value in question, sometimes characterized as *loving* or *being for* the good[9] – and a reliable tendency to behave properly with respect to that value. Thus, the compassionate person is someone who cares deeply about the needs and plight of others; but is also someone whose behavior reliably tends to improve the situation of those in need. Virtue is thus to be understood as having a distinctive psychological component, which expresses itself in behavior.

In our view, this picture of virtue is broad enough to encompass different theoretical and philosophical accounts of what virtue is – for instance, it is compatible with accounts which prioritize the motivational element, and equally with accounts which prioritize reliability in achieving some ends. At the same time, it accommodates those who think that (some) virtues are universal, and others who think that (some) virtues are culturally- and historically-specific. Moreover, this account of virtue has the right kind of intuitive "fit" to characterize growth for PTG research. For one thing, the view coheres nicely with the new wave of research into PTG, which proposes that "there must be veritable, positive differences in the everyday thoughts,

characteristics, and behaviors of a person" (Jayawickreme, Blackie, et al., 2021) for growth; this is because virtue (understood on the above lines) involves a combination of thoughts, motives, and patterns of behavior. For another, virtue is a "deep" aspect of a person's character: a virtue is a long-lasting, stable trait or quality of a person, and acquired through experience and training. As a result, it coheres with our intuitive ideas about what growth is: as something more substantial than a fleeting, temporary change, and not simply a form of coping. But defining PTG as growth in virtue will also allow us to answer the three main problems described in the previous section, as we'll now see.

4.2 Addressing the conceptual difficulties

(i) Virtues are, by definition, positive traits, since they are intrinsically admirable or praiseworthy. As a result, the development or cultivation of virtue certainly constitutes a positive psychological change, and a change of the right kind. (Unlike the sort of change that occurs when we form a new true belief, or develop some useful habit.) We don't therefore set the bar too low in thinking of growth in this way. Nor do we set the bar too high. For growth in virtue need not be transformative: a person can become more patient or kind or honest or generous or courageous, and hence grow in virtue, without this transforming their lives. The development and cultivation of virtue can take the form of small and incremental steps.[10] By the same token, there are a great number of virtues, and traditional and principled ways of dividing them – for instance, into intellectual, moral, and social virtues – and, as we saw earlier, different traditions that have emphasized the connection between adversity and growth of virtue. So virtue as a concept seems ideally fitted to capture many of the possible ways in which someone might grow after adversity, including some – we are thinking of moral virtues, especially, and as noted earlier – that are missing from the traditional five dimensions of PTG that researchers have tended to focus upon. The concept of virtue is thus broad enough to capture the very many ways in which people can develop and grow as a result of experiencing adversity and suffering, and the different ways that people have, from varying disciplinary perspectives and historical eras, thought about this topic.[11]

(ii) Our definition can also help to clarify the modal status of the relationship between adversity and growth. We saw earlier that definitions of PTG run the risk of making the modal connection so weak as to be completely uninteresting – as when PTG is understood as the claim that adversity *can* lead to growth – or so strong as to be

completely implausible – as when PTG is understood as the claim that adversity necessarily leads to growth. The idea that growth is reflected in growth in virtue helps us address this worry. After all, although the right external circumstances and conditions have to be in place for us to develop and cultivate virtues, the development and cultivation itself is a *non-accidental* matter. By limiting growth to growth in virtue, we therefore rule out accidental or serendipitous connections between adversity and growth, of the kind that threatened to render the claims of PTG uninformative. At the same time, the turn to virtue rules out unduly strong claims about the relationship between adversity and growth, viz. that adversity always (or normally) leads to growth, or that there is always an upside in terms of growth whenever someone suffers. This is because growth in virtue is *difficult*, and as a result it might well be the case that adversity *doesn't* normally result in growth in virtue, and that growth in virtue after adversity is relatively rare.

This highlights, moreover, the plausible *general* claim about the connection between adversity and growth that we want to make. On our account, adversity provides conditions and opportunities for the cultivation and development of virtue that would not be (easily) available otherwise. In some instances, this will mean that adversity is necessary for the development of virtue, since the conditions and opportunities that adversity provides wouldn't have happened in its absence. In other instances, this will mean that adversity, if not strictly necessary, nevertheless provides the most viable opportunity for growth. Moreover, adversity need not generate growth in virtue, since providing the opportunity for development of virtue does not necessarily result in development of virtue. To see our picture in a little more detail, let us look at two kinds of example: one where adversity provides the opportunity for growth in virtue that wouldn't have happened in its absence; the second where adversity provides the most viable opportunity for growth.

Our first kind of example is where adversity is (logically) necessary for growth in virtue, such that without the adversity, there would be no growth. Growth in virtues that constitute strength of character are good illustrations here; one doesn't have the opportunity to be courageous if one doesn't face danger or threat in a way that allows one to deal excellently with fear; and one doesn't have the opportunity for patience if one doesn't face various forms of adversity (suffering, provocation, pain, annoyance) that allow one to bear such things without complaint. Similar things can be said about virtues like faith and commitment, which require testing in adversity in order to grow or develop, a thought which is central to religious traditions of Christianity and Islam. Of course, these forms of adversity don't necessitate

growth in virtue: someone might react to danger in a cowardly rather than a courageous fashion; someone might be short-tempered and intolerant when faced with provocation; someone might have their faith weakened, rather than strengthened, when it is tested. Nevertheless, the point remains: adversity of these kinds provides the opportunity for cultivation and development of these virtues, an opportunity that wouldn't be available otherwise.

Our second kind of example is where adversity provides opportunity for growth that wouldn't be likely in its absence. Consider, then, how a serious injury suffered by a successful sportsperson provides the conditions and opportunity for the cultivation and development of the virtue of humility. Prior to the injury, the person is self-aggrandizing, convinced of their own superiority. After the injury, they realize that success can be fleeting, and highly dependent on the right kind of external circumstances. As a result, they come to develop a more humble outlook, one that recognizes the valuable contributions of others, and acknowledges the role of good fortune in their previous success. Note that serious injury isn't strictly necessary for growth in humility or modesty; it is not the case that suffering a serious injury is the only way in which our sportsperson might have come to be more modest. Still, it is plausible to think that, for this kind of person, growth in humility would have been highly unlikely in the absence of the injury. And note, moreover, that the injury need not bring about an increase in humility; the sportsperson might become angry and bitter as a result of adversity. There is no claim here that adversity necessarily leads to growth, therefore. Nevertheless, the point remains: adversity provides the opportunity for growth in virtue, an opportunity that would be unlikely to occur in its absence. These examples thus serve to show how a turn to virtue can help to clarify the right kind of modal connection between adversity and growth, and one considerably stronger than that which is traditionally presented in the PTG literature: adversity providing conditions and opportunities for growth, conditions and opportunities which would not (easily) occur without adversity, but without necessitating growth.[12]

This claim about the right way to understand the general modal connection between adversity and growth proposal has a further advantage, in that it mitigates a moral worry about PTG research. As Valerie Tiberius mentions in her contribution to the 2021 OUP volume on PTG (Infurna et al., 2021), there is a particular moral or ethical concern around the PTG literature. As she puts it, there is "a sense that growth can be hurtful to people who aren't 'growing' from their trauma. This can be because the possibility of growth makes people who are suffering feel inadequate if they aren't growing from it or (more perniciously) because the narrative of PTG can be taken to support blaming people who don't get over their troubles and become better people." In a similar vein, the journalist and author

Barbara Ehrenreich has highlighted the phenomenon of "bright-siding" that can be associated with the positive psychology movement. Bright-siding involves the talking up the positive aspects or elements of even the worst situation; and Ehrenreich rightly protests about the pernicious and damaging effects that this can have. The ethical concerns presented by Ehrenreich and Tiberius are genuine, and some ways of thinking about suffering and growth – for instance, maintaining that suffering normally or typically promotes growth, or that there is always an upside to suffering – are likely to generate them. But our proposal does not generate these concerns, precisely because it allows that growth might be relatively rare, as the cultivation and development of virtue is difficult. Indeed, one very good reason for thinking that the cultivation and development of virtue is not straightforward is that it depends upon the right external context and social environment being in place. If one's social situation is oppressive, or unjust, or in many other ways unsuited to the reliable achievement of valuable goods, then it will be highly unlikely, if not impossible, for one to develop virtues. Understanding growth as growth in virtue thus undermines a tendency to blame those who are not growing, or engage in bright-siding with respect to all adversity. It does so by recognizing the very great role that a person's environment and other external, non-agential factors will play in whether she grows on some dimension after adversity.

(iii) Understanding PTG in terms of growth in virtue also helps us to address the third issue that has been under-discussed in PTG research to date, namely about whether growth is best regarded as growth along one particular dimension, or growth all-things-considered. One straightforward, if controversial, response to this issue, from a virtue-theoretical perspective, is to maintain that one cannot cultivate or develop one virtue without cultivating or developing them all. This thesis, best known from Plato's *Protagoras*, is termed the *Unity of the Virtues* (UV).[13] Valerie Tiberius writes: "according to the doctrine of "the unity of the virtues", no virtue can be fully possessed without the virtue of practical wisdom, and no one can truly have practical wisdom unless they possess all the other virtues.' (2021, p. 6) If the thesis were true, then growth in virtue along one particular dimension – e.g., when someone becomes more compassionate – is necessarily growth all-things-considered, since one can only become more compassionate by possessing and growing all other virtues. By the same token, if one grows in virtue all-things-considered, then one necessarily grows along any one particular virtue dimension, since, strictly speaking, growth in virtue all-things-considered is actually growth in all of the virtues together. It is not possible, on this view, for one to grow in a majority of virtues, whilst diminishing in a minority – not possible, for instance, for one to become more courageous and honest and just, whilst becoming less kind and generous. Understanding growth as growth in virtue, and accepting UV as

an additional thesis, will thus help researchers working on PTG to answer our third concern. Accepting that virtues are unified in this way might strike us as a high price to pay, however. In particular, and apart from any theoretical worries about the plausibility of UV itself, it might well raise the bar for growth after adversity too high. On this view, in order for us to become more compassionate or wiser as a result of adversity, then we must become more just, honest, courageous, temperate, modest, et al. We might think that this kind of growth is rare indeed. If so, we should reject UV as a way of settling our question, and allow that one can grow in virtue along one dimension (e.g., compassion) without this requiring growth along all other virtue dimensions.

A more promising answer to our third concern, from a virtue-theoretical perspective, is to adopt an idea by Jen Wright, Michael Warren, and Nancy Snow, in their recent book *Understanding Virtue: Theory and Measurement*.[14] Wright, Warren, and Snow develop an "integration thesis" (IT) about virtue. According to this thesis, certain virtues are likely to co-develop, and be integrated into an individual's personality together, in response to particular situations that individuals typically face. On this account, "it will be common for certain virtues, such as compassion and forgiveness, to be called for at the same time, and thus to co-develop", in response to "everyday virtue-relevant situations". (190) Thus compassion and forgiveness might be called for, and co-develop, as a result of encounters with those who are sorry for their misdeeds; by the same token, courage and a sense of justice might co-develop, in situations where one has to respond to unfairness and stand up to others. Virtue development is thus interconnected, as a result of common life-situations calling for a pattern or variety of virtuous response. This falls (well) short of UV, however, since there is no conceptual claim that certain virtues must occur together. Instead, as the authors write, "How virtues are integrated in specific cases . . . depends on individuals' life circumstances embedded within particular sociocultural contexts. Thus, [IT is] very strongly rooted in life's practicalities, rather than in a purely conceptual approach."

It is extremely helpful for our purposes, for two main reasons. First, there are clusters of virtues that plausibly co-develop, given the common virtue-relevant situation of adversity. These include virtues related to strength of character, such as fortitude, perseverance, courage, and patience; virtues related to vulnerability, such as creativity and humility; moral virtues, such as compassion, forgiveness, and wisdom; and social virtues, such as a sense of justice, trust, love, and faith. As with other virtues treated by Wright, Warren, and Snow, these sub-categories are not discrete, but instead are porous and overlap. Thus a sense of justice seems both a social and a moral virtue; forgiveness is plausibly regarded as a kind of strength; and patience can be an appropriate response to the ways in which we are vulnerable.

Second, given that certain virtues commonly co-develop and are integrated together in an individual's personality, growth in one virtue (e.g., compassion) will typically be accompanied by growth in another (e.g., forgiveness), with the result that growth along one virtue dimension will tend toward growth along other dimensions. This falls short of the claim that growth along one dimension will necessarily constitute growth all-things-considered. But IT makes it more likely that someone who experiences PTG along some recognizable single dimension will tend to be better off, at least from the standpoint of growth in virtue, in terms of the development of other virtues, and hence all-things-considered. Adoption of a virtue ethical understanding of growth, and Wright, Warren, and Snow's "integration thesis" about the relation between virtues, can thus help to clarify our third issue, about whether growth is simply growth along one dimension, or growth all-things-considered. Given the truth of IT, these two kinds of growth are closer than we might imagine, if not as close as suggested by UV.

Let us take stock. On our account, outlined and provisionally stated above, we should understand the kind of growth that is of interest to researchers in PTG as growth in a virtue. In particular, growth along a particular dimension is to be understood as growth in a particular virtue. Moreover, we propose that there is a substantive, general, and non-accidental connection between adversity and growth, understood in this way. For adversity provides the opportunities or conditions for growth in virtue, opportunities or conditions that are unlikely to occur in the absence of adversity. This means that growth as a result of adversity is a not a matter of luck; but it means that growth as a matter of adversity is not guaranteed, since providing the conditions for the development of virtue does not guarantee the development of virtue. Finally, adopting something like IT provides helpful clarification of whether growth is understood as growth along one dimension or understood as growth all-things-considered. We propose that there is a non-conceptual, defeasible, but still genuine link between these two ways of understanding growth if we adopt a virtue-theoretical perspective, and that growth along one virtue dimension tends to bring with it growth in other virtues. This falls short of UV, and hence allows for the *possibility* that someone's becoming more compassionate (let's say) can have a deleterious effect on her personal relationships and friendship. In our view, this is a positive feature of the approach. Understanding growth in this way thus promises to answer three pressing definitional problems concerning research into PTG. In the following sub-section, we'll explain how our theoretical model can help us to address the long-standing methodological problems with research into PTG.

4.3 Addressing the methodological difficulties

As we saw earlier, two problems here are particularly pressing. Both concern the limitations of self-reported, retrospective assessments that PTG researchers typically employ. Such self-reporting rarely produces accurate assessments, since they are cognitively taxing, subject to positively and self-enhancement biases, and liable to reflect social pressures to appear to have grown in the face of adversity. In addition, the subject cannot know that the event that they think caused a positive psychological change actually caused that change. How might thinking of growth in terms of growth in virtue help with these challenges?

The turn to virtue can address these problems, and in the main because growth in virtue is plausibly subject to external measurement and verification. This means that measurement of growth might well avoid the problems inherent in self-reported, retrospective assessments listed above. The initial support for such a view comes from something we said earlier, when we noted that virtues are widely accepted to have both internal and external elements. The former are thought to be constituted by particular cognitive, affective, and motivational states which are generated in response to virtue-relevant stimuli; whilst the latter are constituted by the kinds of virtuous behaviors that are characteristic of the virtue in question. Thus, courage can be thought of as involving a specific pattern of cognitive, affective, and motivational mental states, generated in response to situations in which a subject is (or perceives that they are) in danger; and courage results in specific patterns of behavior that constitute their dealing correctly or appropriately with the danger or threat. And as Wright et al. (2020) explain in impressive detail, virtuous traits, so understood, could be measured, given "a multi-layered research program that allows us to identify and track each of these aspects" of virtue manifestation.[15] Although there is no space here to do more than hint at the nature of such a program, the authors make a strong case for the existence of strategies to measure (i) the extent to which a subject can attend to, recognize, and identify virtue-relevant stimuli; (ii) the perceptual, cognitive, and conative elements and mechanisms that constitute a subject's interpretative and motivational capacities; and (iii) trait manifestation in appropriate behavior.[16]

As an illustration of how this third element, trait manifestation, can be measured, consider modest (yet supportive) empirical evidence for people reporting increases in prosocial behavior following the experience of adversity, which has been characterized as "altruism born of suffering" (Frazier et al., 2013; Staub & Vollhardt, 2008; Vollhardt, 2009). Such prosocial behavior may extend to members of out-groups (Vollhardt & Staub, 2011), be explained by increases in empathy and compassion (Lim & DeSteno, 2016, 2020), and be also related to increases in work engagement

(Eskreis-Winkler et al., 2014). Oishi et al. (2017) found that the experience of a major natural disaster (an earthquake) was associated with changes to more pro-social occupations, suggesting that experiencing an earthquake shifted human values from the egocentric to the allocentric direction, leading to the promotion of a social structure that values pro – social occupations. Hoerger et al. (2014) found that compared to a control group, spousal caregivers of patients with terminal lung cancer experienced increases in prosociality, as well as sociability and dependability.

Of course, trait manifestation by itself will not be evidence of virtue. We would need considerable data that such manifestation correlates with and is plausibly generated by a subject's recognition of virtue-relevant stimuli, and the relevant cognitive, affective, and motivational elements that constitute a suitable response to such stimuli at the level of mental states. Nevertheless, given the wide range of potential measurement strategies in each area, Wright, Warren, and Snow are confident that we can develop comprehensive research programs to measure virtue possession and manifestation. We share such confidence, and as a result believe that the turn to virtue will help researchers in PTG avoid the methodological pitfalls that undermine much of the extent psychological research in this area.

Conclusion: A note of caution, and future directions for research

At the end of the previous section, we cited some preliminary empirical support for the idea that adversity can lead to growth in moral virtue. There is, moreover, suggestive evidence that the virtue of wisdom is developed by coping with and overcoming adversity (Jayawickreme & Blackie, 2016; Staudinger & Glück, 2011). In support, it is thought that a distanced perspective from the self when working through adversity could be one pathway to promoting wisdom (Seery et al., 2010; McIsaac & Eich, 2004; see also Kross & Ayduk, 2017 for a review). Specifically, a self-distanced perspective on adversity can promote a bigger picture view of an event and enhance open-mindedness, the realization that life circumstances are constantly changing, and acknowledgment of other perspectives (Grossmann & Kross, 2014). Relatedly, to the extent to which wisdom manifests in the wake of adversity, exploratory reasoning processes (the extent to which individuals self-reflect on the impact on the adverse event) may be a key determinant of manifesting wisdom in the wake of adverse life events (Weststrate & Glück, 2017).

Such evidence is suggestive, but clearly not conclusive. Indeed, existing evidence suggests that in the short term, adversity does not seem to drive changes in wisdom (e.g., Dorfman et al., 2021). And, importantly, multiple recent studies examining PTG in terms of changes in virtues have found inconsistent or null findings (e.g., Infurna et al., 2021). One challenge with empirically examining changes in virtues following the experience of

adversity is that a clearer understanding is needed beforehand of the length of time needed for change, whether that change is expected to be long- or short-term, as well as of the characteristics of the adverse event (e.g., it's negative affective impact; the controllability one had over the event) that may predict changes in specific virtues (Weststrate et al., 2022). We note that such conceptual considerations have been absent in much previous research on PTG (Jayawickreme & Blackie, 2014). Clarifying this understanding of how virtues change will have implications for how studies should be designed, including the length of studies, how many assessments are needed to test theoretical predictions, and how frequently assessments should occur (to capture short-term versus long-term change; Hopwood et al., 2022). An additional consideration here is that such change may not be ubiquitous, and exploring it empirically may require more person-centered (or ideographic) approaches that define change in reference to one's self rather than to others (Beck & Jackson, 2022, b2022).

Indeed, our own model would seem to support the idea that changes after adversity are not ubiquitous, and empirical investigation needs to be more person-centered. For, to repeat, our view is that adversity provides the opportunity for the cultivation and development of virtue; it does not necessitate it. Many other factors – not least, major personality factors, and the right kind of external environment and social structures – will need to be in play before an individual develops or deepens some virtuous trait as a result of the opportunities that adversity and suffering have provided for her. As a result, it is not surprising, from our own theoretical perspective, that thus far there have been inconsistent findings from multiple recent studies examining PTG in terms of changes in virtue.

Nevertheless, we remain optimistic that thinking of growth in terms of growth in virtue, along the lines we suggest, can avoid definitional and methodological problems that have beset PTG research to date, and that such thinking can be helpful in setting up empirical approaches that are nuanced and fine-grained enough to measure PTG. In addition to clarifying how and when we would expect to see change in virtues following adversity (as noted above), it would be important to develop valid measures of virtues that allow for the meaningful assessment of change in the wake of adversity (Jayawickreme, Blackie, et al., 2021). Developing such measures will likely require deep collaborative work between psychologists and philosophers (Wright et al., 2020). Additionally, such measures may take various forms; for example, one may choose to assess prospective changes on a) one's self-reported broad level of particular virtues (i.e., trait self-reports; Helzer et al., 2014), b) reports of growth from close acquaintances (i.e., informant reports; L. E. R. Blackie et al., 2015), c) manifestations of one virtue-relevant thoughts, feelings and behavior in daily life (i.e., sampling everyday thoughts, feelings, and behavior; Meindl et al., 2015), and d) virtue-relevant

beliefs present in one's narrative identity (i.e., coding narrative self-reports; Weststrate et al., 2022). Give the socially desirable nature of both possessing specific virtues and posttraumatic growth, it is especially important to consider multi-method approaches to assessing changes in virtue following adversity (Frazier et al., 2014).

More generally, these new empirical approaches ought to focus on delineating the right kinds of conditions for the development of particular virtues, including personality factors and environments that enhance (and inhibit) virtue development. At the same time, such approaches need to be focused on measuring changes in behavior in bringing about valuable ends, in those who have suffered adversity, whilst being sensitive to the fact that virtuous-looking external behavior need not be generated by virtuous motives. Finally, such approaches should acknowledge that growth in virtue need not be transformative, but instead can consist in small steps along the way to full virtue. In this way, the approaches can avoid raising the bar for PTG too high, whilst mitigating moral concerns about bright-siding. This is a tall order, and we acknowledge that such studies that emerge will necessarily be resource-intensive, highly complex, and time-consuming. But we think that if there is to be genuine evidence of PTG, the approach we are proposing is the right one to take.[17]

Notes

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. American Psychiatric Association; Arlington, VA, U.S.A: 2013.
2. It should be noted that there is a considerable literature beyond psychology that deals with how we should understand trauma. "Trauma Studies" encompasses approaches to trauma from literary theory, psychoanalysis, poststructuralism, sociological, cultural studies, and other disciplines; and some of these approaches shift away from understanding trauma in terms of short- or longer-term events or incidents. (See, for instance, Meretoja, 2020, for a mapping of different approaches.) It should also be noted that the DSM-5 definition of trauma, and related definitions of post-traumatic stress disorder, has generated considerable controversy, and definitions are very much contested. We are happy to acknowledge, therefore, that the definition of trauma is subject to considerable debate. The remit of this paper is, however, somewhat restricted, viz.: to consider how PTG (and hence trauma itself) has been understood in the existing psychological literature; to highlight problems with that understanding; and to propose how this will help us to improve psychological research into PTG. The question of whether our proposal for understanding PTG is compatible with the ways of understanding trauma we receive from other disciplines is a large and fascinating one, but one which will have to be the topic of a rather different kind of paper.
3. For a very helpful discussion of some of these concerns, see Christian Miller's "A Satisfactory Definition of 'Posttraumatic Growth' Still Remains Elusive" (European Journal of Personality, 2014). See also Valerie Tiberius's chapter, "Growth and Multiple Dimensions of Well-Being: A Philosopher's Take on the Idea of Post-

Traumatic Growth", in Infurna et al. (2021). We have benefitted from the insights of both papers when thinking and developing our own model of PTG.

4. Thanks to Nancy Snow for this example.

5. As noted by Miller (op.cit.) and Tiberius (op.cit.).

6. This general line on the nature of virtue is to due Martha Nussbaum. See Nussbaum (1988), "Non-Relative Virtues: An Aristotelian Approach", *Midwest Studies in Philosophy* 13: 32–53.

7. Note that, as we explain below, this does not imply that there is single "correct" way of responding to the relevant situations. What constitutes a correct or excellent response will likely vary with a great number of contextual factors, so that what constitutes a courageous or compassionate response can be sensitive to very many social and historical factors. We are grateful to a referee for urging us to be clearer on this point.

8. So the formal characterization of virtue allows for great variation in the specific instances or embodiments. See Nussbaum, M., for this picture.

9. See Adams, R., *A Theory of Virtue*, Oxford University Press, 2009.

10. For an excellent discussion and defense of the idea that there is goodness and virtue that falls short of perfect virtue, see Rebecca Stangl's *Neither Heroes Nor Saints: Ordinary Virtue, Extraordinary Virtue, and Self-Cultivation*, Oxford University Press, 2020.

11. Might there be kinds of growth that are not characterized as growth in virtue – in which case growth in virtue might be understood as one kind of PTG, rather than as definitional of PTG itself? This will depend upon how broad one thinks the category of virtue is. We think, as we explained above, that it is very broad – encompassing the traditional Aristotelian virtues, but also the category of excellences termed faculty virtues, and indeed the many ways in which a person can be good without being truly excellent. So we are comfortable with a broad definition of virtue, and an understanding of PTG in terms of growth in virtue. For those who prefer a narrower account of virtue, our proposal might be restricted in the following way: that one important kind of PTG is growth in virtue, even though there are other non-virtuous ways that one can grow after adversity. Thanks to Christian Miller for pushing us to be clearer on this point.

12. We don't wish to argue that this is the *only* general connection between adversity and growth. There might well be other claims about the connections that can be made and defended. However, if so, it is up to researchers to state these other connections, and make a case for understanding PTG in these ways too. We thus don't intend our proposal to be exhaustive; but having one clear statement of the general connection between adversity and growth would certainly be a start.

13. *Protagoras* 361a-b.

14. Oxford University Press, 2020.

15. Wright, J., Warren, M, and Snow, N. (2020), p. 122.

16. See Chapter 4, pp. 121–187, for full details.

17. We are very grateful to Sara Mendonca, Christian Miller, Nancy Snow, John Oksanish, Saylor Breckenridge, Emily Austin, delegates at the *Exemplar Interventions to Develop Character* conference at Wake Forest in 2022, and the two referees for this journal for very helpful comments on earlier versions of this paper.

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