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Gratitude and well-being: A review and theoretical integration

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ABSTRACT

This paper presents a new model of gratitude incorporating not only the gratitude that arises following help from others but also a habitual focusing on and appreciating the positive aspects of life", incorporating not only the gratitude that arises following help from others, but also a habitual focusing on and appreciating the positive aspects of life. Research into individual differences in gratitude and well-being is reviewed, including gratitude and psychopathology, personality, relationships, health, subjective and eudemonic well-being, and humanistically orientated functioning. Gratitude is strongly related to well-being, however defined, and this link may be unique and causal. Interventions to clinically increase gratitude are critically reviewed, and concluded to be promising, although the positive psychology literature may have neglected current limitations, and a distinct research strategy is suggested. Finally, mechanisms whereby gratitude may relate to well-being are discussed, including schematic biases, coping, positive affect, and broaden-and-build principles. Gratitude is relevant to clinical psychology due to (a) strong explanatory power in understanding well-being, and (b) the potential of improving well-being through fostering gratitude with simple exercises.

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1. Introduction

Throughout this special issue, contributors have highlighted the clinical importance of various aspects of positive functioning, such as positive affect (Watson & Naragon-Gainey, this issue), positive emotions (Garland, Fredrickson, Kring, Johnson, Meyer, & Penn, this issue), psychological flexibility (Kashdan & Rottenberg, this issue), and optimism (Carver, Scheier, & Segerstrom, this issue), as well as the implications of these findings for conducting research in clinical psychology (Joseph & Wood, this issue). As these reviews show, at a broad level, positive functioning can explain unique variance in understanding disorder and clinically relevant characteristics. Constructs such as optimism have a long lineage of clinical and health research, and have already been integrated into established practice. This review considers the role of gratitude in well-being, and the potential of interventions that facilitate gratitude to contribute to the treating of disorder. Unlike constructs such as optimism, until very recently gratitude has been one of the most unstudied emotions (McCullough, Emmons, & Tsang, 2002; Wood, Joseph, & Linley, 2007b), despite having been historically considered essential to normal functioning in philosophical and theological accounts (Emmons & Crumpler, 2000), and 67% of young people reporting expressing gratitude "all of the time" (Gallup, 1999). As with other understudied aspects of positive functioning (Linley, Joseph, Harrington, & Wood, 2006), the previous low knowledge base in gratitude provided the opportunity for rapid scientific progress (cf., Gable & Haidt, 2005).

In recent years a very large body of evidence has emerged suggesting that gratitude is strongly related to all aspects of well-being, on the basis of which promising clinical interventions have been developed (e.g., Bono, Emmons, & McCullough, 2004; Emmons & McCullough, 2003), in fitting with calls to explore the potential for improving disorder through fostering positive functioning and psychological strengths (Duckworth, Steen, & Seligman, 2005; Linley, Harrington, Joseph, Maltby, & Wood, 2009; Seligman, Rashid, & Parks, 2006). This paper presents the first review of the burgeoning literature on gratitude and well-being, and reviews the potential of interventions to increase gratitude as a way of increasing well-being and improving disorder, as well as considering the necessary future research and developments for these interventions to become used in mainstream clinical practice. This review presents a new integrative framework for gratitude research, conceptualizing the trait as involving a life orientation towards noticing and appreciating the positive in life. Gratitude is shown to relate to various clinically relevant phenomena, including psychopathology, adaptive personality characteristics, health, positive relationships, subjective and eudemonic well-being, and humanistically orientated functioning. Four forms of interventions to increase gratitude are critically considered, along with methodological critiques, and a research agenda for the future study of these techniques. Finally, four mechanisms whereby gratitude may relate to well-being are evaluated, including characteristic schematic processing, coping, the general benefits of positive affect, and mechanisms suggested by broaden-and-build theory. The review argues that gratitude is a key underappreciated trait in clinical psychology, of relevance due to a strong, unique, and causal relationship with well-being, and due to the potential to use simple and easy techniques to increase gratitude alongside existing clinical interventions.

2. Defining trait gratitude

Within the field of gratitude research, there is a lack of agreement about the nature of the construct. In part, gratitude is an emotion which occurs after people receive aid which is perceived as costly, valuable, and altruistic (Wood, Maltby, Stewart, Linley, & Joseph, 2008). On this basis, several researchers have conceptualized gratitude as an emotion that is always directed towards appreciating the helpful actions of other people (c.f. McCullough, Kilpatrick, Emmons, & Larson, 2001). This conception, however, fails to fully capture the aspects of life that people report to be their sources of gratitude. When Emmons and McCullough's (2003) participants maintained daily lists of events for which they were grateful, sources of gratitude included such events as "waking up in the morning", which do not appear to be directed towards a particular benefactor. In experimental research, Graham and Barker (1990) presented young participants with videos showing another child successfully completing a task. The participants either saw the child in the video being helped by a teacher, or working independently. Although participants thought the child would feel most gratitude when helped, participants also thought that child would feel at least some gratitude when they had been working independently. Gratitude in this case may have arisen from such sources as appreciation of one's abilities, or of a climate in which such successful work was possible. Similar findings have been reported in adult samples (Weiner, Russell, & Lerman, 1979; Veisson, 1999), suggesting that gratitude involves more than an interpersonal appreciation of other people's aid.

2.1. A "life orientation" conception of gratitude

We suggest that at the dispositional level, gratitude is part of a wider life orientation towards noticing and appreciating the positive in the world. This life orientation should be distinct from other emotions such as optimism, hope, and trust. Whilst these may involve life orientations, these would not characteristically be towards noticing and appreciating the positive in life, with, for example, optimism representing a life orientation towards expecting future outcomes (Carver et al., this issue), and hope incorporating this focus as well as tendency to see the pathways through which these positive outcomes can be reached (Geraghty, Wood, & Hyland, 2010).

Evidence for this wider conceptualization of gratitude is provided by Wood, Maltby, Stewart, and Joseph, (2008), who tested whether a single higher order factor existed above various scales assessing gratitude and appreciation. Three scales to measure gratitude have now been developed, the unifactorial GQ-6 (McCullough et al., 2002), the multifactorial Appreciation Scale (Adler & Fagley, 2005), and the multifactorial Gratitude, Appreciation, and Resentment Test (GRAT: Watkins, Woodward, Stone, & Kolts, 2003). Each of these scales arose from a different conceptualization of what composes gratitude, and together provide a wide definition of gratitude, in keeping with a life orientation approach. As shown in Table 1, these three scales provide 12 sub-scales assessing eight diverse aspects of gratitude: (1) individual differences in the experience of grateful affect, (2) appreciation of other people, (3) a focus on what the person has, (4) feelings of awe when encountering beauty, (4) behaviors to express gratitude, (5) focusing on the positive in the present moment, (6) appreciation rising from understanding life is short, (7) a focus on the positive in the present moment, and (8) positive social comparisons.

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Table 1
Conceptions of trait gratitude.

Conception	Scale (or sub-scale) assessing conception	Brief description	Characteristic item
Individual differences in grateful affect	GQ-6	Assesses gratitude as a single factor, based on the frequency, intensity, and density of grateful affect.	I have so much in life to be thankful for
Appreciation of other people	GRAT: appreciation of others	Gratitude towards other people.	I'm really thankful for friends and family
	AS: interpersonal	Gratitude towards other people.	I reflect on how important my friends are to me
Focus on what the person has	AS: have focus	A focus on the positive tangible and intangible assets that a person possesses.	I reflect on how fortunate I am to have basic things in life like food, clothing, and shelter
	GRAT: sense of abundance	The absence of feelings of deprivation	I think life has handed me a short stick (reverse coded)
Awe	AS: awe	Frequency of feelings of awe.	When I see natural beauty like Niagara Falls, I feel like a child who is awestruck
Behavior	AS: ritual	Performing regular behaviors to express gratitude.	I use personal or religious rituals to remind myself to be thankful for things
	AS: gratitude	Behaviors designed to express gratitude.	I say "please" and "thank you" to indicate my appreciation
Present moment	AS: present moment	Regularly focusing positive aspects in a given moment.	I stop and enjoy my life as it is
	GRAT: simple appreciation	Gratitude towards non-social sources.	I think it's really important to "stop and smell the roses"
Life is short	AS: loss/adversity	Appreciation arising from the understanding nothing is permanent.	Thinking about dying reminds me to live every day to the fullest
Positive social comparisons	AS: self/social comparison	Positive feelings arising for appreciation of how life could be worse.	When I see someone less fortunate than myself, I realize how lucky I am

Note: GQ-6 (McCullough et al., 2002), AS = Appreciation Scale (Adler & Fagley, 2005), GRAT = Gratitude, Appreciation, and Resentment Test (Watkins et al., 2003). Based in part on Wood, Maltby, Stewart, and Joseph (2008).

The life orientation view of gratitude suggests that each of these conceptions is an indicator of a higher order gratitude factor, implying that the grateful personality involves each of these aspects. Thus if a person is grateful, they will generally experience each of the eight ways of viewing and interacting with the world. If these aspects were genuinely an indicator of a single personality trait then, in general, if a person is high on one aspect they should also be high on others. Wood, Maltby, Stewart, and Joseph, (2008) tested this view with two large groups of participants who completed each of the 12 sub-scales. Across two studies, exploratory and confirmatory factor analysis on the totals of each sub-scales clearly indicated that each sub-scale was a facet of a single higher order factor. The higher order gratitude factor was not correlated with socially desirable responding, and the model was invariant across gender. The two studies provided strong support for the life orientation view.

The life orientation perspective does not suggest that each of the eight conceptions of gratitude and appreciation are identical or synonymous. Rather, in keeping with evidence that personality is hierarchically organized (e.g., Costa & McCrae, 1995; Paunonen, 1998), it suggests that a latent grateful personality exists, of which the 8 aspects are lower order facets. Conceptually, this is similar to the Big Five model of personality where, for example, neuroticism exists above the traits of anxiety, hostility, depression, self-consciousness, impulsivity, and vulnerability to stress (Costa & McCrae, 1995). This is not to suggest that anxiety and hostility are the same construct, but rather they are both indicators of a higher order neuroticism dimension, and may have distinct causes, correlates, and prospective outcomes. Similarly, the hierarchical view of gratitude does not suggest that any two of the lower order facets of gratitude (e.g., interpersonal gratitude and appreciation of the present moment) are identical, but rather that a single higher order grateful personality exists above each aspect of gratitude.

The higher order gratitude factor appears to cover the full breath of the people and events which people report eliciting gratitude, explaining the studies (outlined above) where people reported gratitude towards non-social sources (e.g., Weiner et al., 1979; Emmons & McCullough, 2003; Veisson, 1999). The factor also seems to widen the definition of gratitude more than the construct has previously been considered. The higher order factor appears to represent a "life orientation towards the positive" (Wood, Joseph, Lloyd, & Atkins, 2009, p. 43) involving a "worldview towards noticing and appreciating the positive in life" (Wood, Joseph, & Maltby, 2009, p. 443).

The life orientation towards noticing a appreciating the positive in life is considered a dispositional (trait) tendency. Considerable work has focused on explaining the relationships between trait and state levels of emotions and cognitive tendencies. Following Rosenberg (1998), we consider people to be high on the life orientation if they experience the eight facets of gratitude (a) frequently, (b) intensely, and (c) through a wide range of eliciting stimuli (cf., McCullough et al., 2002). Clearly, each of the eight facets of gratitude (see Table 1) can also be experienced on a state level, and how and why trait and state level of gratitude interact is an important area of study (with early work conducted by Wood and Maltby et al., 2008). However, for a person to be said to have a life orientation, these components would have to be easily experienced in a strong and frequent manner.

The relationship of the emotion of gratitude to the life orientation needs further empirical work. We suggest that the emotion occurs when one or more of the other components of gratitude are active. Thus gratitude serves as an indicator of aspects of life for which to be appreciative. This is consistent with McCullough's et al. (2001) review of gratitude, which showed that emotional gratitude can act to draw attention to aid received and encourage the reciprocation of aid. We would agree with this view, but suggest that the process applies more widely than simply through the recognition and reciprocation of interpersonal aid; with gratitude drawing attention to the perception of *anything* to appreciate in the world, and this appreciation making the person more likely to behave in personally and socially productive manner as a result.

Theoretically, a life orientation towards noticing and appreciating the positive in life may be expected to be strongly related to well-being, and may be contrasted with the Beckian view of depression, which views the disorder as involving a life orientation towards perceiving the negative in the self, world, and future (Beck, 1976).

Conceptualizing gratitude as a life orientation also resolves a logical inconsistency in the literature. If trait gratitude simply involved thankfulness to other people, it is unclear that it should be related to well-being. Both attribution theory and the reformulated learned helplessness theory suggest that well-being (and conversely

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psychopathology) arises from how people interpret the events of their lives. Specifically, people with low well-being attribute their successes to causes that are uncontrollable, short-lived, and due to the actions of other people (Abramson, Seligman, & Teasdale, 1978). This attribution style has been related to both clinical depression (Alloy, Abramson, Whitehouse, & Hogan, 2006), anxiety (Ralph & Mineka, 1998), and negative affect (Sanjuan, Perez, Rueda, & Ruiz, 2008). If gratitude simply involved an interpersonal thankfulness, a person high in gratitude may actually have impaired well-being, through a general tendency to attribute the causes of their successful events to another person. The inconsistency of this expectation and the positive relationship between gratitude and well-being has been highlighted previously (e.g., McCullough et al., 2002). The present view of gratitude as a higher order life orientation resolves this inconsistency. The interpersonal facet of gratitude may be expected to be related to better social relationships, but perhaps at the expense of well-being. This effect, however, is mitigated by the strong expected relationship between other facets of gratitude and well-being.

3. Research into gratitude and personality, well-being, relationships and health

If gratitude is a life orientation towards the positive, then it should have a wide range of adaptive correlates. Research into the individual differences in gratitude has largely focused on four areas, (a) relationships to other personality traits, (b) various indicators of well-being, (c) social relationships and socially facilitative behavior, and (d) physical health. Research in to these four areas has led to a consistent picture of gratitude being important for well-being, broadly defined.

3.1. Personality

Research into the personality correlates of gratitude support the trait as being clinically important for well-being and the understanding of psychopathology. In relating gratitude to personality, researchers have normally used the Big Five personality traits, which can act as an integrative map of psychology (Watson, Clark, & Harkness, 1994). Several studies have linked gratitude to each of the Big Five, with grateful people being more extroverted, agreeable, open, and conscientiousness, and less neurotic (McCullough et al., 2002; McCullough, Tsang, & Emmons, 2004; Wood, Maltby, Gillett, Linley, & Joseph, 2008; Wood, Maltby, Stewart, Linley et al., 2008); but although the findings are always in the same direction, gratitude has not always correlated with each trait in every study. This may be because gratitude has different relationships with the lower order personality characteristics that compose the Big Five traits. In the Five Factor model, personality is assumed to be hierarchically organized, with other personality characterizes existing under each of the Big Five (McCrae & Costa, 1999). Two studies have examined how gratitude relates to the full terrain of the Big Five model (Wood, Joseph, & Maltby, 2008, 2009), correlating gratitude with 30 traits covering the span of the Big Five, as operationalized by the NEO PI-R (Costa & McCrae, 1995). These results are summarized in Table 2.

As can be seen in Table 2, there was a high degree of correspondence between the findings of the two studies. Summarizing only the consistent results, gratitude was correlated with traits associated with positive emotional functioning, lower dysfunction, and positive social relationships. Grateful people were less angry and hostile, depressed, and emotionally vulnerable, experienced positive emotions more frequently. Gratitude was also correlated with traits associated with positive social functioning; emotional warmth, gregariousness, activity seeking, trust, altruism, and tender-mindedness. Finally, grateful people had higher openness to their feeling, ideas, and values (associated with humanistic conceptions of well-being; see Joseph & Wood, this issue), and greater competence, dutifulness, and achievement striving. The general pattern from the studies correlating gratitude with the Big Five suggests that gratitude is associated with a wide variety of adaptive personality traits, characterized by habitual positive well-being and the traits conducive to the development and maintenance of positive relationships.

Table 2
Correlations between gratitude and the 30 facets of the Big Five.

	Wood et al. (2008)	Wood and Joseph et al. (2009)
N1: Anxiety	−.02	−.03
N2: Anger hostility	−.18*	−.20**
N3: Depression	−.13*	−.31***
N4: Self-consciousness	−.08	−.12
N5: Impulsiveness	.11*	.02
N6: Vulnerability	−.14**	−.27***
E1: Warmth	.34***	.44***
E2: Gregariousness	.26***	.26***
E3: Assertiveness	.10	.16*
E4: Activity	.12*	.24***
E5: Excitement seeking	.11*	.12
E6: Positive emotions	.43***	.51***
O1: Fantasy	.15**	.13
O2: Aesthetics	.19**	.01
O3: Feelings	.14**	.33***
O4: Actions	.23***	.03
O5: Ideas	.16**	.15*
O6: Values	.13*	.18*
A1: Trust	.31***	.26***
A2: Straightforwardness	.09	.17*
A3: Altruism	.26***	.40***
A4: Compliance	.11*	.06
A5: Modesty	.06	.02
A6: Tender-mindedness	.30***	.18*
C1: Competence	.16**	.24**
C2: Order	.01	.055
C3: Dutifulness	.15**	.28***
C4: Achievement striving	.15**	.20**
C5: Self-discipline	.03	.27***
C6: Deliberation	.01	−.04

Note: results summarized from two previous studies (Wood, Joseph et al., 2008; Wood, Joseph, & Maltby, 2009).
* $p<.05$, ** $p<.01$, *** $p<.001$.

3.2. Well-being

Well-being can be defined through (a) psychopathology, (b) general emotional functioning, (c) existential functioning, or (d) humanistic conceptions (see Joseph & Wood, this issue). As Table 3 shows, gratitude is robustly associated with each of these conceptions of well-being.

3.2.1. Psychopathology

Table 3 shows that gratitude has been associated with a range of psychopathological conditions. First, gratitude has been related to depression in three studies (e.g, Wood, Maltby, Gillett et al., 2008). These findings are consistent with the life orientation approach to gratitude, as a life orientation towards the positive seems incompatible with the "negative triad" of beliefs about self, world, and future, which is associated with depression (Beck, Rush, Shaw, & Emery, 1979; Evans et al., 2005). The findings are also consistent with the personality correlates between gratitude and trait tendencies towards depression (Wood, Joseph et al., 2008; Wood, Joseph, & Maltby, 2009). Surprisingly, research has not much focused on the relationship between gratitude and happiness. However, with increasing evidence that depression and happiness are part of the same continuum (Wood, Taylor, & Joseph, in press), it is likely that gratitude may be equally related to happiness.

Second, a large ($N=2621$) epidemiological study (Kendler et al., 2003) examined the role of religiously orientated "thankfulness" in predicting the lifetime history of nine psychiatric disorders (assessed

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Table 3
Studies of gratitude and well-being.

Study	Reference	*N* (per study, as applicable)	Construct related to gratitude
1	Baron (1984)	186	Mood, liking, and pleasantness
2	Bernstein and Simmons (1974)	26	Self-esteem
3	Emmons and McCullough (2003)	192/157/65	Positive affect, negative affect, life satisfaction as a whole, expected life satisfaction for upcoming week, and response to aid
4	Fredrickson, Tugade, Waugh, and Larkin (2003)	133	Depression
5	Froh and Kashdan et al. (2009)	89	Positive affect
6	Froh and Sefick et al. (2008)	221	Positive and negative affect, life satisfaction, and reactions to aid
7	Froh and Yurkewicz et al. (2009)	154	Positive affect, negative affect, and life satisfaction
8	Kashdan, Mishra, Breen, and Froh (2009)	77	Intensity of feelings upon receipt of a gift, and autonomy (for women)
9	Kashdan and Uswatte et al. (2006)	77	Daily hedonic and eudemonic well-being, positive affect, negative affect, daily intrinsically motivating activity, and daily self-esteem
10	Lambert and Fincham et al. (2009)	131/171	Materialism and life satisfaction
11	Kendler and Liu et al. (2003)	2,621	Major depression, generalized anxiety disorders, phobia, bulimia nervosa, nicotine dependence, alcohol dependence, and drug "abuse".
12	McCullough and Tsang et al. (2004)	96/112	Daily mood, life satisfaction, optimism, positive affect, negative affect, well-being, and depression.
13	Naito, Wangwan, and Tani (2005)	284	Positive feelings
14	Park, Peterson, and Seligman (2004)	5299	Life satisfaction
15	Peterson, Ruch, Beermann, Park, and Seligman (2007)	12,439	Life satisfaction
16	Sheldon and Lyubomirsky (2006)	67	Positive affect, negative affect, self-concordant motivation (SCM) (perceiving an exercise as engaging, interesting, challenging and meaningful)
17	Watkins, Grimm, and Kolts (2004)	66/122	Positive life event recall bias
18	Wood and Joseph et al. (2008)	389	Life satisfaction
19	Wood, Joseph, and Maltby (2009)	201	Life satisfaction, autonomy, environmental mastery, personal growth, purpose in life, and self-acceptance
20	Wood, Maltby, Gillett et al. (2008)	156/87	Depression during a life transition

through a diagnostic interview). Thankfulness predicted significantly lower risk of major depression, generalized anxiety disorder, phobia, nicotine dependence, alcohol dependence, and drug "abuse" or dependence (odds ratios = .81 to .84). Additionally, thankfulness was related to a much lower risk of bulimia nervosa (odds ratio = .60), which is interesting given that interventions that increase gratitude appear to improve body image (Geraghty, Wood, & Hyland, in press-a), as will be discussed further in Section 4. Notably, the thankfulness variable was also more strongly and consistently predictive of psychopathology than most other aspects of religiosity studied. However, as this study was not designed to assess gratitude (but rather a domain of religiosity), it is questionable whether the four items composing the scale assessed only thankfulness. Items both assessed only gratitude (e.g., "I feel grateful nearly every day"), and possible amalgamations of gratitude and other constructs, with items (e.g., "I express anger at God for letting terrible things happen"; "I wonder whether God abandoned me") appearing to also cover other constructs such as anger and abandonment. This study provides important early suggestion that gratitude may be related to a wide range of psychopathological conditions, and future work needs to establish whether it is gratitude *per se* that is responsible for this effect.

Third, Kashdan, Uswatte, and Julian (2006) examined the role of gratitude in Post-Traumatic Stress disorder (PTSD) in a sample of Vietnam war veterans, including 42 patients diagnosed with PTSD, and a control group of 35 comparison veterans. There were 1.38 standard deviations of difference in gratitude between the two groups, suggesting that gratitude is substantially lower in people with PTSD. Further, for both groups, using a diary study methodology, gratitude was shown to relate to more daily self-esteem and positive affect, above the effects of symptomatology. This suggests that (a) gratitude is lower in people with PTSD, but (b) to the extent that people with PTSD experience gratitude, they have better daily functioning, irrespective of symptomatology. The results suggest that interventions to increase gratitude may have benefits for people with PTSD.

Fourth, there has recently been a focus on how some people may gain some benefit from overcoming trauma ("post-traumatic growth"), in addition to the intense suffering they undergo (Joseph & Linley, 2005; Linley & Joseph, 2004), and there is a suggestion that gratitude may be integral to this process. People's recovery from the traumatic experience is influenced by the extent to which they are able to find some benefit in the experience (Davis, Nolen-Hoeksema, & Larson, 1998; Frazier, Conlon, & Glaser, 2001), and people frequently report having a higher level of well-being and functioning compared to before the trauma (Joseph & Linley, 2005). In reporting the kinds of benefits they have encountered, people regularly report such changes as "living life to the full", greater appreciation of family and friends, and valuing each day more, partially through appreciation of the finiteness of life, and partially through appreciation of how they are better off than other people (c.f. Linley & Joseph, 2004). Such changes seem remarkably described by a life orientation towards noticing and appreciating the positive in life, incorporating several of the facets of gratitude (see Table 1).

If gratitude is the key form of post-traumatic growth that people experience, this may explain Kashdan and Uswatte et al.'s (2006) findings; the relationship between gratitude and positive daily functioning (irrespective of symptomatology) in Vietnam War Veterans seems notably similar to the previously observed relationship between post-traumatic growth and recovery from trauma (Davis et al., 1998; Frazier et al., 2001). More direct evidence is provided by research into post-traumatic growth following the September 11 attacks in 2001. Peterson and Seligman (2003) measured people before and after the attacks on the VIA inventory of psychological strengths, which acts a map of positive functioning (Linley et al., 2007). Gratitude was shown to increase over this period. Similarly, other studies showed that gratitude appeared to increase for both adults (Peterson & Seligman, 2003), and children (Gordon, Musher-Eizenman, Holub, & Dalrymple, 2004), which was related to positive functioning in this period (Fredrickson, Tugade, Waugh, & Larkin, 2003). Such findings are consistent with gratitude being a key aspect of post-traumatic growth. However, the evidence is largely indirect, especially compared to the sophisticated new techniques

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developed in the field of post-traumatic growth research. More direct research is indicated.

3.2.2. Emotional functioning

Emotional functioning is conceptualized within the construct of subjective well-being, which comprises high positive affect, low negative affect, and high satisfaction with life (Joseph & Wood, this issue). As Table 3 shows, 12 studies have supported the link between gratitude and subjective well-being. This is consistent with survey results suggesting that over 90% of American teens and adults indicated that expressing gratitude made them "extremely happy" or "somewhat happy" (Gallup, 1999). Gratitude appears robustly related to mood and life satisfaction.

3.2.3. Existential conceptions

Regarding more existential conceptions of well-being, gratitude has been linked to psychological, or "eudemonic", well-being. Whilst subjective well-being incorporates the emotionally pleasant and satisfying life, eudemonic well-being represents a life lived the fullest, which makes most use of human potentials and growth (Ryan & Deci, 2001). Subjective and eudemonic well-being have been found to be two distinct factors (Linley, Maltby, Wood, Osborne, & Hurling, 2009), and have developed from different historical and theoretical perspectives (see Joseph & Wood, this issue). Two studies have linked gratitude to eudemonic well-being (Kashdan et al., 2006; Wood, Joseph, & Maltby, 2009). Wood et al. showed that gratitude correlated with autonomy, environmental mastery, personal growth, purpose in life, and self-acceptance, covering most of the terrain of eudemonic well-being, as conceptualized by Ryff (1989). In Kashdan and Uswatte et al.'s (2006) diary study of Vietnam war veterans with and without PTSD, gratitude was shown to relate to greater intrinsically motivated activity, again beyond the effects of symptomatology. It appears that gratitude is important for both subjective and eudemonic well-being, and thus for both emotional functioning and social, purposeful activity. The two conceptions of well-being may be related; in a longitudinal cohort of over 5500 people initially aged 55–56, Wood and Joseph (2010) showed that people low in eudemonic well-being were 7.16 times more likely to meet criteria for clinical depression 10 years later. The experience of gratitude may foster eudemonic well-being, conferring resilience to depression in later life.

3.2.4. Humanistic conceptions

Finally, gratitude has been shown to relate to conceptions of well-being arising from humanistic counseling perspectives, which offer an alternate conception of human nature and psychopathology (Joseph & Wood, this issue, Wood & Joseph, 2007). The construct of authenticity (Wood, Linley, Maltby, Baliousis, & Joseph, 2008) represents the Rogerian concept of "congruence", representing (1) "self-alienation", involving not knowing oneself, having a lacking sense of identity, inconsistent beliefs, and inaccurate symbolization of experiences, (2) accepting external influences, and (3) behaving in ways consistent with personal beliefs and values ("authentic living"); with authentic living being indicative of authenticity, and self-alienation and accepting external influence being indicative of inauthenticity. Wood et al. showed that gratitude was strongly positive correlated with authentic living and negatively correlated with self-alienation. These findings are interesting in light of arguments that gratitude serves an evolutionary purpose. Its unique social characteristics seem to have adaptive value for facilitating humans' tendency to cooperate with non-family members (McCullough, Kimeldorf, & Cohen, in press) and for sustaining reciprocal altruism (Nowak & Roch, 2006; Trivers, 1971). If gratitude is evolutionarily adaptive, and it is higher in people who are in touch with their core selves and acting in the way they believe to be right, then it is possible that gratitude is the natural and normal way of responding to life and social situations.

Until recently (Gordon et al., 2004), research on gratitude and well-being has largely been conducted on adult populations. Froh, Kashdan, Ozimkowski, and Miller (2009) and Froh, Yurkewicz, and Kashdan (2009) has examined the correlates of gratitude in early adolescence (ages 11–13). Early adolescents' gratitude is positively related to many of the same emotions found in the adult research, such as hope, forgiveness, pride, contentment, optimism, inspiration, and global positive affect. Gratitude was also positively related with gratitude in response to aid, providing emotional support, and satisfaction with school, family, friends, community, and self; it was negatively related to physical symptoms. The study of gratitude in adolescence is becoming a growth area within recent research.

3.3. Relationships

As illustrated in Table 4, gratitude appears related to a wide range of social outcomes, and positive relationships. Gratitude is related to

Table 4
Studies of gratitude and social relationships.

Study	*N* (per study, as applicable)	*N* (per study, as applicable)	Construct related to gratitude
1	Algoe and Haidt (2009), Study 1	165	Motivation to improve relationships with benefactors
2	Algoe and Haidt et al. (2008)	160	Relationship formation and the repaying of kind gestures
3	Andersson, Giacalone, and Jurkiewicz (2007)	308	Corporate social responsibility
4	Baron (1984)	186	Positive view of others and constructive conflict resolution
5	Bar-Tal, Barzohar, Greenberg, and Hermon (1977)	100	Relationship closeness
6	Bartlett and Desteno (2006)	105	Costly helping behavior
7	Baumgarten-Tramer (1938)	2,000	Types of expressive thanks
8	Bennett, Ross, and Sunderland (1996)	174	Positive organizational climate
9	DeShea (2003)	317	Willingness to forgive
10	Deutsch, Roksa, and Meeske (2003)	22	Praise
11	Dunn and Schweitzer (2005)	161	Trust
12	Emmons and McCullough (2003)	65/157	Connection with others and emotional support to others
13	Froh and Sefick et al. (2008)	221	Prosocial behavior
14	Froh and Yurkewicz et al. (2009)	154	Perceived peer and family support, prosocial behavior, and social support
15	Kashdan and Mishra et al. (2009)	288/190	Expressiveness, and relatedness (for women)
16	Michie (2009)	298	Pride, social justice, and altruism
17	Naito et al. (2005)	284	Prosocial motivation
18	Tsang (2006)	40	Motivation to act prosocially
19	Ventimiglia (1982)	479	Receipt of an altruistic act
20	Weiner and Graham (1989)	370	Helping, sympathy to the distress of others, and altruism
21	Wood and Joseph et al. (2008)	389	Positive relationships
22	Wood, Joseph, and Maltby (2009)	201	Positive relationships
23	Wood, Maltby, Gillett et al. (2008)	156/87	Perceived social support

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perceived quality of relationships through both self-report (e.g., Wood, Maltby, Gillett et al., 2008) and peer-report (Algoe, Haidt, & Gable, 2008; Emmons & McCullough, 2003). Gratitude relates to willingness to forgive (DeShea, 2003), which is associated with the absence of psychopathological traits (Maltby et al., 2008), and is integral to positive functioning (Maltby, Day, & Barber, 2004). Gratitude relates to low narcissism (Farwell & Wohlwend-Lloyd, 1998), and early adolescents also reported greater perceived peer and family support (Froh, Kashdan et al., 2009; Froh, Yurkewicz et al., 2009). Gratitude seems to strengthen relationships and promote relationship formation and maintenance (Algoe et al., 2008), as well as relationship connection and satisfaction (Algoe, Gable, & Maisel, in press), and experimental evidence suggests that gratitude may promote conflict resolution and increase reciprocally helpful behavior (Baron, 1984; Tsang, 2006). As illustrated by Table 4, a large body of cross-sectional and longitudinal evidence suggests that gratitude is robustly related to both positive relationships, and the characteristics needed for their development and maintenance.

3.4. Health

Almost no studies have been conducted into gratitude and physical health, and this remains a key understudied area of research. There is, however, an early indication that gratitude may be related to health. First, Krause (2006) related gratitude to various self reported health symptoms, and subjective stress. Gratitude was also correlated with stress by Deutsch (1984), and gratitude has shown to lead to decreasing levels of stress over time (Wood, Maltby, Gillett et al., 2008). As stress is related to a host of physical well-being complaints, gratitude may relate more generally to health through the mechanism of stress. Second, there is an indication that gratitude may be especially important for sleep.

In an intervention to increase gratitude (Emmons & McCullough, 2003), discussed more fully in a later section, improvements in hours of sleep and refreshment upon waking emerged as a key physical health improvement. Wood and Joseph et al. (2009) specifically examined the possible relationships between gratitude and sleep in a community sample of 401 people, 40% of who had clinically impaired sleep. Gratitude was related to total sleep quality, sleep duration (including both insufficient and excessive sleep), sleep latency (abnormally high time taken to fall asleep), subjective sleep quality, and daytime dysfunction (arising from insufficient sleep). In each case, gratitude was related to sleep through the mechanism of pre-sleep cognitions. Negative thoughts prior to sleep are related to impaired sleep, whereas positive pre-sleep cognitions are related to improved sleep quality and quantity (Nelson & Harvey, 2003). Grateful people experienced less sleep harming negative cognitions, and more sleep promoting positive cognitions, which seemed to explain why they had better sleep overall. Further these relationships all persisted when controlling for social desirability and the Big Five. Given that sleep itself is related to a wide variety of physical and psychological well-being variables, further research is needed into the combined role of gratitude and sleep in disorder.

3.5. Issues with research into gratitude personality, well-being, relationships and health

Much of the early work into the grateful personality has been cross-sectional, and it has been unclear whether gratitude has a unique relationship with well-being, whether this relationship is simply due to shared variance other variables, or the direction of causality in these relationships. Several more recent studies, however, have suggested that the relationship between gratitude may be unique and causal.

3.5.1. Incremental validity of gratitude

Several studies have shown that the relationship between gratitude and well-being persists when controlling for other variables. Froh and Kashdan et al. (2009) and Froh and Yurkewicz et al. (2009) showed that gratitude in youth correlated with well-being and relationships after controlling for general positive affect. This suggests that gratitude exerts effects above and beyond simple affective valance. Several studies (McCullough et al., 2002, 2004; Wood, Maltby, Stewart, Linley et al., 2008) have shown that gratitude correlates with well-being and social relationships above the Big Five traits, suggesting that gratitude may be capturing variance that other personality traits cannot. The most conservative test of the incremental validity of gratitude comes from two studies (Wood, Joseph et al., 2008; Wood, Joseph, & Maltby, 2009) which tested whether gratitude can predict well-being after controlling for the 30 facets of the Big Five (shown in Table 2). A large number of traits are known to relate to well-being (e.g., Emmons & Diener, 1985), and within personality psychology there are thousands of different measures, each purporting to measure a unique and meaningful construct, whilst many are actually measuring similar or identical constructs. Indeed, much of the last 50 years of personality psychology appears to be a continuous process of reinventing the wheel. If gratitude is to make a meaningful advance for the study of well-being, then it seems necessary to demonstrate that gratitude can predict well-being above other commonly studied traits (Emmons & McCullough, 2003). The 30 facets of the Big Five represent the full terrain of personality psychology, and are amongst the most studied traits in personality psychology over the last 50 years. Recently it has been shown that gratitude can predict 8% of individual differences in satisfaction with life (equivalent to $r = .28$) after controlling for the 30 facets of the Big Five (Wood, Joseph et al., 2008), and between 2% and 6% (equivalent to rs between .16 and .25) in personal growth, positive relationships with others, purpose in life, and self-acceptance (Wood, Joseph, & Maltby, 2009). To put such effect sizes in context, Hunsley and Meyer (2003) consider an incremental validity of .15 to represent a "reasonable contribution" (p. 451), as conventional effect size estimates assume the relationship accounts for both shared and non-shared variance, whereas incremental validities represent only the non-shared variance. As a "thirty first order effect", the size of the unique relationships between gratitude and subjective and eudemonic well-being appears substantial, suggesting that gratitude has a unique and distinct impact on well-being, and is a worthwhile subject for specific future research in the area.

3.5.2. Causality

As most of the previous work into the grateful personality has been cross-sectional, the direction of causality between gratitude and well-being is not clear. An indication, however, that gratitude leads to well-being is provided by two complimentary research streams. First, experimental interventions to increase gratitude (reviewed below) cause higher levels of well-being. Such experimental work provides the clearest indication of causality, although it is sometimes unclear from these studies whether the effects were due to increasing gratitude as a personality trait, or through common mechanisms associated with psychosocial interventions (Kirsch, 2005; Wampold, 2007). Complimentary longitudinal evidence, however, supports gratitude as a precursor of well-being. In two longitudinal studies (Wood, Maltby, Gillett et al., 2008), gratitude was assessed in first year undergraduate students starting university, at the start and ends of their first term, approximately 3 months apart. This period is known to be a life transition with varying implications for well-being, with some people finding the experience excellent, and others stressful and depressing (e.g., Brissette, Scheier, & Carver, 2002). Using structural equation modeling, Wood et al. directly tested several rival models, such as (a) gratitude leading to well-being, (b) well-being leading to gratitude, (c) mediated effects, and (d) reciprocal models where both gratitude led to well-being, and well-being led to gratitude. In both studies, only the model where gratitude led to well-being was supported, with people higher in gratitude

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becoming less stressed, less depressed, and having higher perceived social support at the end of the first term. This suggests that gratitude may confer resilience in a period of life transition. Conversely, no variable led to gratitude.

However, as all participants were going through the same life transition, it could not be tested whether gratitude interacted with life experiences, so that more grateful people functioned better in the face of adversity. This test would be a necessary condition of showing that gratitude is a resiliency factor ("buffer"), rather than simply a causal precursor of well-being (cf., Johnson, Gooding, Wood, & Tarrier, 2010).

Additionally, although gratitude did not change in this short period of time, this should not be taken as evidence that gratitude cannot change. Rather, it may be that individual differences in gratitude represent stable phenomena, like schematic processing, or stable beliefs about the word, which lead trait gratitude towards tending to remain quite stable. Changing levels of gratitude may need to involve a "kick start" intervention.

4. Gratitude interventions

If gratitude is strongly related to well-being, and there is an indication that this relationship may be unique and causal, the question arises on how to increase gratitude therapeutically. Gratitude interventions have commonly been highlighted as a key success of the positive psychology movement (Bono et al., 2004; Seligman, Steen, Park, & Peterson, 2005), and as an especially clinically relevant technique (Duckworth et al., 2005; Seligman et al., 2006). As shown in Table 5, there have now been 12 published evaluations of gratitude interventions evaluated across a range of clinically relevant outcomes. These interventions have can be classed into three categories: (a) daily listing of things for which to be grateful, (b) grateful contemplation, and (c) behavioral expressions of gratitude.

4.1. Gratitude lists

The "classic" gratitude intervention involves making written lists of several things for which one is grateful on a regular basis. For example, people may be asked to keep a dairy, in which they write three things for which they are grateful, to be completed each night directly before bed. Of the gratitude interventions, this approach has been studied the most, being used in 7 out of the 12 gratitude intervention studies. This technique has particular potential to be used in clinical settings, due to the easy nature of the technique, and the speed with which it can be completed. Participants often report that the technique is enjoyable and self-reinforcing, choosing to continue the exercise even after the ending of the intervention (Seligman, 2005). The paper originally proposing gratitude lists as an effective intervention for well-being enhancement was Emmons and McCullough (2003), and two recent studies (Geraghty et al., in press, 2010) have suggested that gratitude lists may be as effective as techniques commonly used in clinical therapy.

Both studies were online self-help interventions, where clients self-referred to a web-site and downloaded workbooks. Once set-up, such interventions are low cost, and have the potential to substantially increase access to psychological services (Bennett & Glasgow, 2009), thus improving population health. However, as these interventions are given without human contact, attrition is commonly very high (Eysenbach, 2005), creating problems as the therapies are most effective when followed to conclusion. Thus such interventions need to be evaluated both on the presenting problem and through their effects on attrition.

The first study (Geraghty et al., in press) involved a community sample of 479 people, with severely impaired body image (at 1.33 standard deviations below the population mean, the average participant in the study would score in the 9th percentile of body satisfaction in the general population). The intervention lasted 14 days. Participants were allocated to one of three conditions, (a) a waiting list that simply completed measures at start and end, (b) a gratitude condition, which involved keeping daily lists of up to 6 things for which the client was grateful, or (c) daily automatic through records (ATR), involving recording situations in which body dissatisfaction was experienced and associated negative thoughts, providing support for and against their negative thoughts, and thinking in a more neutral, balanced way. The ATR condition replicated an effective and commonly used clinical technique (Bennett-Levy, 2003; Greenberger & Padesky, 1995). For those who completed the study, both the gratitude and ATR groups decreased in body dissatisfaction very substantially relative to the waiting list. The gratitude group decreased in body dissatisfaction by 0.71 standard deviations. To put this effect size in context, 76% completing the intervention would be less body dissatisfied than a matched control group. Such effects suggest that a gratitude list may be an effective means of reducing body dissatisfaction. However, the differences between the two groups depended on the outcome measure. The ATR group improved in body dissatisfaction, to an *equal degree* as the gratitude group, suggesting the techniques were comparable in effectiveness. However, the gratitude group was over twice as likely to complete the intervention as the ATR group.

The same pattern of results was observed in the second study (Geraghty et al., 2010). This study used a community sample of 247 people with excessive worrying, with 81% meeting diagnostic cut-off for generalized anxiety disorder. Conditions were similar, with (1) the same gratitude condition being compared with (2) a worry specific ATR (participants' practiced planning/problem-solving as well as thought monitoring and restructuring) and (3) a waiting list. Again the gratitude condition lead to a significant and large decrease in worry (1.5 standard deviations) compared to the waiting list control, which was of a level comparable to the ATR group. People in the gratitude condition were again more than twice as likely to complete the intervention than the ATR group.

The two studies showed that gratitude and ATR techniques are equally as effective in reducing both body dissatisfaction and excessive worry. The results support neither extreme position of either some positive psychology promoters or positive psychology detractors. Gratitude diaries are *not* more effective than currently used clinical techniques, suggesting against replacing existing clinical techniques. However, they are *as* effective as rigorously developed and extensively used techniques from clinical psychology, suggesting they should not be dismissed out of hand. Further, people seem more ready to comply with gratitude diary protocols. These are some of the first studies to suggest that any positive psychology technique may outperform currently used therapeutic techniques on any domain. A balanced approach may be to conclude that gratitude diaries are an effective technique that can be useful for clinical practice, which may be particularly indicated in situations where compliance is likely to be an issue. Quite why people are less likely to drop out is an open empirical question. It may be that they found the task easier. Alternatively, anecdotal evidence, largely based on spontaneous e-mail from participants, suggested that people much preferred completing the gratitude diaries. Direct empirical work is needed into testing these mechanisms.

As shown in Table 5, several further studies have also shown support for gratitude lists. The two best conducted studies showed that (a) gratitude lists were more effective than waiting lists at improving functioning in people with neuromuscular diseases (Emmons & McCullough, 2003), and (b) the effects of gratitude lists persisted up to 6 months (Seligman et al., 2005). However, as noted in Section 4.4, many of the design features of most of the studies in Table 5 studies make interpretation difficult.

Recently, the effect of making gratitude lists has been investigated in school settings. If gratitude does confer resilience (Wood, Maltby, Gillett et al., 2008), building the characteristic in youth may be an

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important public health objective. In Froh, Sefick, and Emmons' (2008) study eleven classes of school children (ages 11–14) were randomly assigned to one of three conditions over a 14 day intervention: (1) listing up to five things for which the participant was grateful, (2) listing five hassles, and (3) no-treatment control. Relative to both the hassles and control condition, the gratitude group reported more satisfaction with their school experience (i.e., find school interesting, feel good at school, think they are learning a lot, and be eager to go to school), known to relate to both academic and social success (Verkuyten & Thijs, 2002), an effect that was apparent both at the end of the study and at 3-week follow-up. However, making gratitude lists, only improved well-being relative to the hassles not the control condition. The inclusion of a hassles condition is common in gratitude research, and this pattern of results is commonly observed (see Table 5). The implications of this condition are considered in Section 5.4. Despite this, this study does provide important early evidence that inducing gratitude in students via making gratitude lists may be a viable intervention for decreasing negative academic appraisals and simultaneously promoting a positive attitude about school.

4.2. Grateful contemplation

Less specific than listing things which one is grateful for, others have instructed participants to think or write about these things in a more global fashion. For example, in one study (Watkins et al., 2003), undergraduate students were asked to list activities over the summer that they were grateful for. This was a brief intervention, lasting only 5 min. Compared to those who listed things they wanted to do over the summer, but were unable to do, those who focused on what they were grateful for reported less negative affect. Similar findings have been observed elsewhere (Koo, Algoe, Wilson, & Gilbert, 2008). Thus, a brief gratitude intervention focused on positive experiences, lasting only minutes, might be a useful way to raise immediate mood. This may have implications for clinical therapy, where a positive mood induction is needed.

4.3. Behavioral expressions of gratitude

People instructed to go on a "gratitude visit" write a letter to a benefactor thanking them for the gift they received and read it to the benefactor in person. In Seligman et al. (2005), adults from an internet sample were instructed to write and deliver their gratitude letter within 1-week. Compared to those who wrote about their early childhood memories, those who went on the gratitude visit reported more happiness and less depression at the immediate post-test and 1 month follow-up. Indeed, of the other five positive psychology interventions tested in this study, the gratitude visit yielded the largest effect sizes. But compared to some of the others (e.g., focusing on three good things), the effects were rather short-lived.

Similar findings were found in a sample of children and adolescents from a parochial school (Froh, Kashdan et al., 2009; Froh, Yurkewicz et al., 2009). Students were randomly assigned to one of two conditions: the gratitude visit or writing about daily events. Findings indicated that youth low in positive affect in the gratitude condition, compared with youth in the control condition, reported greater gratitude and positive affect at post-treatment and greater positive affect at the 2-month follow-up. Thus, this study suggests that there may be specific individuals—such as those low in positive affect—who may benefit the most from gratitude interventions.

4.4. Evaluating gratitude interventions

The 12 studies clearly suggest that interventions to increase gratitude are effective in improving well-being. As such, they have been widely promoted as being as being the most successful positive psychology intervention, and one that should be used widely, perhaps even on a national scale (Bono et al., 2004; Duckworth et al., 2005; Seligman, 2005; Seligman et al., 2005, 2006). Such conclusions, however, seem premature. Although gratitude interventions are effective, the question remains: effective compared to *what*? With the notable exception of the two recent studies comparing gratitude techniques to those commonly used in therapy (Geraghty et al., in press, 2010), most studies have not shown that gratitude interventions are effective against a true control group (see Table 2).

Many of the previous studies have claimed they are comparing gratitude to a "placebo control" group. As Kirsch (2005) convincingly argues, the term placebo arises from medicine, and refers to a treatment that works due to psychological effects, rather than through direct biological impact. By this definition, all psychological therapies are placebos, given they work through psychological rather than direct biological pathways. Thus it is still unclear what many of the previous gratitude therapies are trying to show with their "placebo" control groups. Presumably, the term is used metaphorically to claim that gratitude condition is being compared to an alternate condition which is "psychologically inert", having no impact in and of itself, and only impacting on the dependant variable (e.g., "well-being") through generic mechanisms, such as psychological expectancy of change. This itself is problematic, as expectancy of change may be a key mechanism whereby psychological change occurs (see Hyland, Geraghty, Joy, & Turner, 2006; Hyland, Whalley, & Geraghty, 2007). It is also highly unlikely that most of the previously used control group would generate the same degree of expectancy as the gratitude condition. The best control groups are those that are identical in all aspects apart from the aspect of interest. In the absence of such control groups, it is difficult to evaluate the effectiveness of the gratitude component of the intervention — compared to the other more generic aspects.

As shown in Table 5, previous control groups used have involved listing daily hassles (versus things for which to be grateful), listing five events that had an impact, listing things participants wanted to do over the summer but were unable to do (versus things they did over the summer that they were grateful for), writing about the layout of the their living room (versus writing and delivering a letter to a living person to whom they were grateful), writing about the typical things that happen during a day (versus things to be grateful about), writing about earliest memories (versus gratitude lists). From this list, it is unclear that all of the control groups were effective in producing equal expectancy effects, or fully controlling for other generic explanations of the results. Indeed, where studies used multiple control groups, comparing gratitude lists with both listing hassles and more neutral controls, gratitude was only effective for certain aspects of well-being when compared with listing hassles, but not versus other controls (e.g., Emmons & McCullough, 2003; Froh et al., 2008; Sheldon & Lyubomirsky, 2006). The inclusion of hassles conditions in these studies is valuable, as it allows this conclusion to be drawn. Additionally, these results cannot be used to suggest that gratitude only works versus hassles, as the studies only had statistical power to detect medium to large effects (of a greater magnitude than often seen in clinical therapies); trends were also always in the right direction, and with more participants the results may well have been significant. It would be misleading, however, to suggest that gratitude is an effective intervention, on the basis the data suggests that gratitude is an effective intervention versus listing hassles, but not more control groups. Indeed we believe that the portrayal of gratitude interventions as a key success of positive psychology is somewhat premature, and are alarmed that the effectiveness of these interventions now seems to be taken for granted amongst the positive psychology community, without appreciation of the issues regarding control groups. Indeed out of the 12 studies conducted, only a very small number show that gratitude interventions are

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Table 5
Interventions to increase gratitude.

Study	Description	Gratitude condition	Control condition	Effects of gratitude condition relative to control (with effect size)
Emmons and McCullough (2003) Study 1	10 week intervention with college students	List weekly up to five things for which to be grateful ($n=65$)	List up to five hassles ($n=67$)	Increases in gratitude (9-week mean composite) $d=.56$, hours spent exercising $d=.34$, overall life satisfaction $d=.36$, expected life satisfaction in the upcoming week $d=.35$; approaching significant decreases in headaches $d=.31$ and negative affect $d=.23$, and increases positive affect $d=.23$.
			List five events that had an impact ($n=64$)	Increases in overall life satisfaction $d=.30$, expected life satisfaction in the upcoming week $d=.29$; approaching significant decreases in headaches $d=.30$, negative affect $d=.19$, and increases in positive affect $d=.19$.
Study 2	2 week intervention with college students	List daily up to five things for which to be grateful ($n=52$)	List up to five hassles ($n=49$)	Increases in gratitude and positive affect (13 day composite) $d=.36$, providing emotional support to others $d=.35$, decreases in negative affect (13 day composite), and $d=.10$
			Downward social comparison ($n=56$)	Providing emotional support to others $d=.33$, decreases in negative affect (13 day composite), and $d=.10$
Study 3	3 week intervention with adults with neuromuscular diseases	List weekly up to five things for which to be grateful ($n=33$)	No-treatment control ($n=32$)	Increases in gratitude and positive affect (21 day composite) $d=.56$, increases in overall life satisfaction $d=.92$, expected life satisfaction in the upcoming week $d=.57$, connection with others $d=.84$, time spent sleeping $d=.59$, feeling refreshed upon waking $d=.43$, reductions in negative affect (21 day composite) $d=-.51$, experiencing physical pain $d=.23$, pain interference with desired daily accomplishments $d=.05$, time spent exercising $d=.33$, functional status (e.g. walking across the room, and bathing a dressing)
Watkins et al. (2003) Study 4	5 min intervention ($N=104$)	List things done over the previous summer that they felt grateful for	List things they wanted to do over the summer but were unable to do	Decreases in negative affect $\eta^2=.06$
Study 5	Writing intervention in one sitting	Write about someone they were grateful for ($n=37$) Think about someone living for whom they were grateful ($n=37$) Write a gratitude letter and give it to researchers to mail ($n=42$)	Write about the layout of their living room ($n=42$)	All 3 gratitude interventions in this study led increases in positive affect $\eta^2=.12$, and decreases in negative affect $\eta^2=.10$
Lyubomirsky, Tkach, and Sheldon (2004)* Study 6	6 week intervention with college students ($N=$ not reported)	Think about things they are grateful for once a week	No-treatment control	Increases in well-being (effect size unobtainable)
Seligman et al. (2005) Study 7	1 week intervention with an Internet sample of middle-aged adults in becoming happier	List three good things that went well and their causes ($n=59$)	Write about early memories ($n=70$)	Increases in happiness at the 1-month follow-up $\lambda=.21$, happiness at the 3-month follow-up $\lambda=.36$, happiness at the 6-month follow-up $\lambda=.50$, decreases in depression at the 1-month follow-up $\lambda=.31$, depression at the 3-month follow-up $\lambda=.30$, and depression at the 6-month follow-up $\lambda=.28$
		Write a gratitude letter to a living person and deliver it in person ($n=80$)		Increases in happiness at the 1-month follow-up $\lambda=.49$, happiness at the 3-month follow-up $\lambda=.39$, happiness at the 6-month follow-up $\lambda=.06$, decreases in depression at the 1-month follow-up $\lambda=.36$, depression at the 3-month follow-up $\lambda=.29$, and depression at the 6-month follow-up $\lambda=.32$
Sheldon and Lyubomirsky (2006) Study 8	4 week intervention college students	Write about the many things to be grateful about ($n=21$)	Write about a typical day ($n=23$)	Non-significant increases in positive affect $d=.34$, non-significant decreases in negative affect, $d=.40$
Froh et al. (2008) Study 9	2 week gratitude diary early adolescents in a school setting	List up to 5 things to be grateful for ($n=76$)	List up to 5 hassles ($n=80$)	Increases in gratitude at the immediate post-test $\eta^2=.04$, gratitude at the 3-week follow-up $\eta^2=.04$, satisfaction with the past few weeks at the immediate post-test $d=.30$, expected life satisfaction in the upcoming week at 3-week follow-up $d=.29$, residency satisfaction at 3-week follow-up $d=.31$, gratitude in response to aid at 3-week follow-up $\eta^2=.05$, decreases in negative affect using the 8-day mean composite excluding the pre and post-test data $\eta^2=.06$, negative affect at the immediate post-test $\eta^2=.04$, negative affect at the 3-week follow-up $\eta^2=.06$, increases in school satisfaction at the immediate post-test $d=.32$, and school satisfaction at the 3-week follow-up $d=.34$. Non-significant changes in multiple variables, including positive and negative affect, and various satisfactions at some time points.
			No-treatment control ($n=65$)	Increases in school satisfaction at the immediate post-test $d=.32$, school satisfaction at the 3-week follow-up $d=.34$. Non-significant changes in positive affect, prosocial behavior, family satisfaction, friend, overall life satisfaction, satisfaction with the past few weeks, family satisfaction, and friend satisfaction at the 3-week follow-up
Froh, Kashdan et al. (2009)	10–15 min every other day for two weeks in children and	Write a gratitude letter and deliver it in person	Write about things they did and how they felt	Increases in gratitude at immediate post-test (for those low in T1 positive affect) $d=-.57$, and increases in positive affect at 2-

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Table 5 (*continued*)

Study	Description	Gratitude condition	Control condition	Effects of gratitude condition relative to control (with effect size)
Study 10	adolescents in a school setting	($n=44$)	about doing them ($n=45$)	month follow-up (for those low in T1 positive affect) $d=-.59$
Geraghty et al. (in press) Study 11	2 week gratitude diary, community sample, internet administered. Body dissatisfaction targeted	List up to 6 things to be grateful for ($n=40$)	Complete automatic thought records (ATR, $n=22$)	Decreases in body dissatisfaction $d=.15$
			Waitlist control ($n=120$)	Decreases in body dissatisfaction $d=.96$
Geraghty et al. (2010) Study *12*	2 week gratitude diary, community sample, Internet administered. Worry targeted	List up to 6 things to be grateful for ($n=52$)	Complete a worry diary (self-monitoring/ restructuring/planning, $n=28$)	Decreases in worry $d=.11$
			Waitlist Control ($n=56$)	Decreases in worry $d=1.5$

*As cited in Lyubomirsky, Sheldon, and Schkade (2005).

more effective than genuine controls, and are generally concentrated on gratitude lists, rather than grateful contemplation or behavior.

Such problems are highlighted by a recent meta-analysis of positive psychology interventions (Sin & Lyubomirsky, 2009), which showed the interventions were (a) most effective against no-treatment controls, (b) were less effective against "treatment as usual controls", and (c) were less effective than conditions labeled as placebo. However, these results become considerably less clear when considering that some of the composing studies suffered from the design concerns considered above. For example, in this meta-analysis, the comparison condition of "listing things participants wanted to do over the summer but were unable to do" was labeled a "neutral control" (p. 474). Whilst this may be an accurate description of how the study was reported, it is questionable whether this is genuinely what this study represents. Such meta-analyses need to be treated with caution until there are enough studies with optimum methodology to directly test the implications of including such control groups.

It is, however, neither our intention to dismiss gratitude interventions, or to criticize the previous work. As practitioners (JF) we personally believe these interventions to be effective, and the existing work has been seminal in developing a potentially strong new therapeutic approach. As researchers, however, we draw attention to these issues to encourage future research into gratitude interventions and to make three specific recommendations about the construction of control groups for future research.

4.4.1. A research agenda for gratitude interventions

First, a no-treatment or waiting list control can be a highly effective comparison group. The research question is clear, as the interpretation of the results: is a gratitude intervention preferable to doing nothing at all? Given the ease of techniques such as gratitude lists, and the potential for gratitude as self-help interventions (Emmons, 2007), this is an important clinical question. Where resources are low, or large scale population well-being changes are desired, it is useful to know whether gratitude lists in isolation are effective. Indeed, the most convincing evidence for the benefit of gratitude interventions comes from this technique: Emmons and McCullough (2003) showed that compared to no-treatment controls, people with neuromuscular diseases had between half and one standard deviation improvement in clinically relevant criteria (see Table 5).

Second, control groups must at the very least control for such effects as expectancy. The closest study to doing this was Seligman and Steen et al. (2005), who showed improvements in well-being from maintaining gratitude lists versus writing about early memories. Future work needs to build on this with more careful controls, ideally this would involve having two identical therapies, and selectively removing components from one therapy until it stops working, to isolate the truly effective component (Ahn & Wampold, 2001). Given the difficulty in interpreting the implications of differences between gratitude therapy and any of these forms of control groups, these should be an addition not a replacement for no-treatment or waiting list controls.

Third, it is essential to compare gratitude interventions with therapies of known existing effectiveness ("gold standards"). This is particularly important if people wish to make claims that gratitude interventions are in some way better that existing common approaches used by clinical psychologists. Only two studies have used this technique (Geraghty et al., in press, 2010). A weakness of these studies is they did not have a further condition involving gratitude lists in addition to the technique of known effectiveness. Whilst gratitude lists were shown to be as effective as automatic thought records, it is not known whether a gratitude *plus* automatic thought record group would have had been the most effective. Further, this needs to be investigated in a variety of settings, especially normal clinical practice. This may address the question of whether the optimum intervention in any given setting involves (a) a gratitude diary, (b) an existing intervention, or (c) a combination of the two; should gratitude interventions be used in isolation or in combination with existing practice. Early results have suggested that gratitude interventions may be useful clinical techniques. However, only a small number of studies used clearly interpretable methodologies, and no study used an optimum methodology. Much more future work is needed, utilizing these recommendations. Until such research is conducted it would be premature to promote the use of gratitude interventions as an evidence based clinical technique, although given the low cost and risk of the approach, it may be appropriate to use based on individual clinician judgment.

5. Mechanisms linking gratitude to well-being

Mechanisms linking gratitude and well-being may be different for gratitude interventions and for gratitude as a personality trait. Currently there is little evidence to show that gratitude interventions operate through the mechanisms of increased gratitude. Whilst it may seem intuitively obvious that this is the case, it is not logical to say (a) gratitude interventions increase well-being, and (b) gratitude interventions increase gratitude, therefore (c) gratitude interventions increase well-being because they increase gratitude (this would be an illogical syllogism). To make this inference, statistical mediation would have to be established (for challenges in truly establishing mediation, see Proudfoot, Corr, Guest, & Dunn, 2009), which would not be possible for most of the studies reviewed, which did not assess whether levels of gratitude actually changed post intervention. In a notable exception, Emmons and McCullough's (2003, Study 3) showed that the increases in positive affect from keeping gratitude

lists versus a no-treatment control were mediated by changes in average daily gratitude across the intervention period. Although, however, the gratitude group had decreased negative affect, changes in gratitude did not mediate this effect. It is therefore possible that gratitude interventions exert their effects through mechanisms other than changes in gratitude as a personality characteristic or emotion; this could be due to non-specific factors common to any therapeutic approach (cf., Wampold, 2007), or it may be due to more general changes in life outlook. Indeed, the lack of mediation for negative affect in Emmons and McCullough's study could be due to a conceptualization of gratitude as an emotion, rather than a wider life orientation. Even if gratitude interventions did not operate through increasing gratitude, they would still be valuable if there was a therapeutic effect on clinically important outcomes. Much more research, however, is needed into how and why gratitude interventions work.

The mechanisms relating gratitude as a personality trait to well-being have also not been systematically explored. Here, however, regarding mechanisms previous research has suggested two gratitude specific hypotheses; (a) the schematic hypothesis, and (b) the coping hypothesis, as well as two more general hypotheses; (c) the positive affect hypothesis, and (d) the broaden-and-build hypothesis.

5.1. Schematic hypothesis

As an interpersonal emotion, gratitude is caused by receiving help that is appraised as costly to provide, valuable, and altruistically offered (rather than provided through ulterior motives) (Lane & Anderson, 1976; McCullough et al., 2001; Tesser, Gatewood, & Driver, 1968). Wood, Maltby, Stewart, Linley, and Joseph, (2008) investigated the cognitive mechanisms explaining why grateful people experienced more gratitude following help. McCullough and Tsang et al. (2004) have previously shown that trait and state levels of gratitude were linked, showing with a 21-day diary study that grateful people experienced more grateful affect on a daily basis. Wood, Maltby, Stewart, Linley, and Joseph, (2008) showed that more grateful people had specific schematic biases towards viewing help as more beneficial, which explained why they felt more gratitude following help. In Study 1, 200 participants read identical vignettes detailing an event where they had hypothetically been helped. Although everyone had read about the same situation, participants substantially varied according to whether they thought the help was costly (for their benefactor to have provided), valuable (to them), and whether their benefactor genuinely wanted to help them, or had ulterior motives for providing the aid (altruistic intentions). Perceptions of cost, value, and altruism explained over 80% of the variance in how much gratitude people thought they would experience. More grateful people saw the situation as higher in cost, value, and altruism, and this different interpretation of the situation fully mediated the relationship between trait gratitude and the amount of gratitude experienced following aid (state gratitude). The results were replicated in two further studies, including an experimental study that directly manipulated cost, value, and altruism, and a diary/daily process study where all participants reported on real event that occurred to them on a daily basis for 14 days.

Wood, Maltby, Stewart, Linley, and Joseph's (2008) findings suggest that grateful people have characteristic schemas that influence how they interpret help giving situations. This is consistent with evidence showing that people have biases towards interpreting other people's intentions and behaviors as similar to their own (e.g., Markus, Smith, & Moreland, 1985), and more generally evidence of characteristic biases in processing and emotional disorders (e.g., Beck, 1976).

Wood, Maltby, Stewart, Linley, and Joseph's (2008) model suggest that grateful people go around in life with a particular interpretive lens, seeing help as more costly, valuable, and altruistic. Equally, ungrateful people will view the help they see as lower on these dimensions. For example, an ungrateful person could receive a lift to an airport, which saves them vast amounts of time (high value), takes their benefactor hours to complete (high cost), and which their benefactor simply does to help them out (high altruism). Most people would perceive this relatively accurately and feel gratitude. Grateful people would see the event as even higher on these dimensions. However, ungrateful people would make highly biased attributions about the event, and not feel gratitude as a result. For example, they may rationalize that they did not really need anyone else's help (low value), their benefactor had nothing better to do anyway (low cost), and their benefactor only wanted to prove he was better than them by being able to provide the lift (low altruism). If these attributions are severely inaccurate and distanced from reality, this may represent a psychopathological reaction. This raises the possibility more generally that gratitude may be related to well-being through schematic processing.

5.2. Coping hypothesis

The second specific mechanism that could potentially explain the link between gratitude and well-being are positive coping strategies. Only one study has examined the line between gratitude and coping (Wood et al., 2007a). Across two samples, gratitude was shown to relate to three broad categories of coping. First, grateful people were more likely to seek out and use both instrumental and emotional social support. This is consistent with the schematic hypothesis; if grateful people were primed to realize the supportiveness of their social networks, then they would be more likely to make full use of the social resources' available to them when the need arose. Second, grateful people used coping strategies characterized by approaching and dealing with the problem, such as through coping actively, planning, and positive reinterpreting the situation and trying to find the potential for growth. Third, grateful people were conversely less likely to behaviorally disengage, deny the problem exists, or escape through maladaptive substance and use. Three of these coping strategies (lower self-blame and behavioral disengagement, and more positive reinterpretation and growth) mediated 51% of the relationship between gratitude and stress. Coping, however, did not mediate the relationship between gratitude and happiness, depression, or satisfaction with life. Coping mediating only gratitude and stress makes theoretical sense, as stress arises when events are appraised as threatening, and exceeding coping resources (Lazarus & Folkman, 1984). If grateful people make more positive coping appraisals then they would be less likely to experience stress. The results suggest that coping may partially explain why grateful people are less stressed, but that other mechanisms may relate gratitude to other aspects of well-being.

5.3. Positive affect hypothesis

The first of the general mechanisms that may relate gratitude to well-being is positive affect. As Watson and Naragon-Gainey (this issue) review, the habitual experience of positive emotions is protective from a variety of mental disorders. Gratitude is a positively valanced emotion, and is strongly related to the habitual experience of positive emotions (see Table 2). As such, the generally protective effect of positive emotions may be a benefit of being grateful. As a positive experience in itself, gratitude may change the balance of positive experiences from positive to negative, leading to more life satisfaction (cf., Diener, 1984). Additionally, the emotion of gratitude is pleasant to experience (Gallup, 1999), and the more frequent experience of positive emotions may change the hedonic balance of positive to negative affect, leading to greater life satisfaction.

The relationship, however, between gratitude and well-being does not seem to simply be due to positive affect. The Big Five trait of agreeableness consumes trait differences in positive affect, and several studies have shown that gratitude relates to a host of social

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and well-being variables after controlling for agreeableness (McCullough et al., 2002; Wood, Joseph, Lloyd et al., 2009; Wood, Maltby, Gillett et al., 2008; Wood, Maltby, Stewart, Linley et al., 2008). In the most conclusive study, using meta-analytic methods, McCullough et al., showed that controlling for agreeableness made little difference to the relationship between gratitude and any variable studied. Positive affect was directly controlled as one of the 50 facets of the Big Five, in the two studies discussed above (Wood, Joseph et al., 2008; Wood, Joseph, & Maltby, 2009), suggesting that positive affect cannot explain why grateful people are more satisfied with life, or have higher eudemonic well-being. Note that all of these studies also controlled for negative affect (either directly, or through the higher order construct of neuroticism), suggesting that gratitude is neither only associated with well-being due to more grateful people experiencing less negative affect. Thus, although gratitude may be related to the general benefit associated with positive affect (Watson & Naragon-Gainey, this issue), the relationship between gratitude and other variables is not simply due to affective valenced.

5.4. Broaden-and-build hypothesis

The second possible general mechanisms relating gratitude is highlighted by broaden-and-build theory (see Garland et al., this issue). In contrast to the generic positive affect explanation, the broaden-and-build theory (Fredrickson, 1998, 2001) suggests that each positive emotion has a unique evolutionary purpose, and a discrete function. At the most general level, negative emotions serve to narrow attention to facilitate dealing with specific problems. In contrast, positive emotions broaden thought to encourage cognitive and behavioral activities that will build resources that can be utilized during the next stressful period such as creativity, curiosity (see Kashdan & Rottenberg, this issue), planning, or various enjoyable activities that build resources (e.g., physical playing which increases stamina). There is now a very large body of evidence supporting this position (e.g., Fredrickson & Branigan, 2005; Johnson & Fredrickson, 2005; for review see Garland et al., this issue). Critically, unlike the general positive affect explanation (above), in addition to the general benefits of positive affect, broaden-and-build theory suggests that each positive emotion also has a discrete evolutionary based benefit. Fredrickson (2004) suggests that gratitude operates in such a fashion. For example, gratitude could serve to build social bonds during unstressful times, which would then become an additional resource of the person. This would be compatible with both the schematic hypothesis (with more grateful people orientating towards higher thankfulness following help), and the coping hypothesis (particularly as grateful people are more likely to use social support coping). It is, however, unclear to what extent the broaden-and-build hypothesis of gratitude is a mechanistic account of the relationship between gratitude and well-being, versus a descriptive account of the overall relationship. The hypothesis, however, does suggest specific mechanisms that may be involved, such as social relationships.

6. Conclusion and future directions

The research reviewed suggests that gratitude is related to a variety of clinically relevant phenomena, including psychopathology (particularly depression), adaptive personality characteristics, positive social relationships, and physical health (particularly stress and sleep). Further many of these relationships may be unique, as gratitude can explain variance in the outcome after controlling for 50 of the most studied traits in psychology, suggesting that gratitude may be able to add a genuinely new contribution to the literature on well-being without simply reinventing or repackaging an existing construct. Longitudinal and experimental work suggests that the benefits of gratitude to well-being may be causal. Such findings are compatible with the framework introduced at the start of the review, involving a reconceptualization of gratitude as a life orientation towards noticing and appreciating the positive in the world.

As Joseph and Wood (this issue) highlight, an implication of an increased focus on the positive in clinical psychology will necessitate the use of new outcome measures in clinical trials. Gratitude may be useful in such a function. The inclusion of measures of gratitude and appreciation into randomized controlled trials of clinical treatments will demonstrate whether the treatment is effective in increasing positive functioning, instead of a total focus on reducing negative functioning. Indeed, with increasing evidence that all mainstream therapies are equally as effective in reducing the presenting disorder, using different outcome measures to test whether some therapies are superior on secondary outcomes may be an important agenda for future research (Wood & Joseph, in press).

Future research is needed into establishing the mechanisms whereby gratitude relates to well-being. It is the sign of a developing field when research attention turns from establishing an effect, to showing why that effect occurs, and gratitude research appears to be in that position. Four possible candidates were outlined, including schematic processing, coping, positive affect, and broaden-and-build processes. It remains to be seen which, if any, of these relationships explain why gratitude is linked to well-being. As suggested by the work on coping (Wood et al., 2007a), different mechanisms may relate gratitude to different outcomes. In much of the research reviewed, gratitude relates to variables which are known to have broad impacts on life (e.g., coping, sleep and relationships); more research is needed into whether gratitude is related to additional outcomes through these mechanisms. In a similar vein, as well as these "broad mechanisms", further work is needed to identify the precise cognitions and low down cognitive mechanisms which explain how gratitude operates. Recently there has been increased attention towards what common cognitive mechanisms may underlie all clinical therapies and disorder (e.g., Higginson, Mansell, & Wood, in press); similar work is needed into gratitude.

Gratitude appears to involve both individual facets and a common core, representing a life orientation towards noticing and appreciating the positive in life. More research is needed into whether the common core is itself distinct from other forms of functioning, in the same way grateful affect appears to be. Equally, a higher order conception of gratitude does not suggest the facets (See Table 1) are all equally related to other variables, and research is needed into whether, when, and why the facets differ from each other in development, correlates, and causal consequences.

The natural development of gratitude, in its various forms, is a key outstanding area of research. From a humanistic perspective, gratitude could be seen as naturally developing, unless thwarted through environmental processes (e.g., Rogers, 1951; Sheldon, Arndt, & Houser-Marko, 2003). If this is the case, then these environmental influences need to be identified, both for understanding of the construct, and for promoting these conditions.

Relatedly, no research has examined whether there might be a negative side associated with gratitude. It could be the case that gratitude is always an adaptive emotion, in which case it is likely that evolution would have provided everyone with the inclination towards being grateful, and only through negative environments does this tendency become blocked. Alternatively, there could be costs associated with gratitude, which prevent it becoming completely wide spread. Even other generally adaptive traits, such as optimism, become maladaptive in certain situations (see Carver et al., this issue). The conditions under which gratitude becomes maladaptive should be examined. For example, feeling grateful for an objectively unfair provision may reduce the likelihood of adaptive corrective action.

Much more research needs to examine the role of gratitude in people diagnosed with clinical disorders. The strong link between gratitude and well-being suggests the same processes may apply in people diagnosed with certain conditions, but much more work is

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needed to test this. Kashdan and Uswatte et al.'s (2006) work is an exemplar of this; demonstrating that gratitude is related to higher levels of daily subjective and eudemonic well-being in people with PTSD after controlling for symptomatology, as well as showing mean level of difference in gratitude between veterans with and without the diagnosis of the disorder. Kendlers and Liu et al.'s (2003) study further suggests that gratitude may be important to a wide variety of disorders. Similarly, it seems likely that gratitude is linked to post-traumatic growth, more research is needed into this possibility.

In addition to the general recommendations for testing gratitude interventions given above, new approaches should be developed that may be more effective than the four currently used approaches. Techniques such as making gratitude lists seem to work better when people are highly motivated to participate (such as Seligman et al., 2005, participants, who sought out a self-help website) than when they are somehow externally motivated to perform the intervention (such as in schools, Froh, Kashdan et al., 2009; Froh, Yurkewicz et al., 2009). In clinical practice it may be desirable to have an intervention that is both less affected by motivation, and targets cognitions more directly. Wood and Linley et al.'s (2008) model of the grateful schema may highlight a specific attribution set that can be directly targeted. Changing these attributions associated with interpersonal gratitude may be a useful target for psychological therapy. If a person does not experience gratitude they are less likely to notice help and less likely to reciprocate the help they do notice (McCullough et al., 2001). Additionally, people who are not thanked are less likely to provide help in the future (Carey, Clicque, Leighton, & Milton, 1976; Rind & Bordia, 1995), and people who do not thank their benefactor are evaluated negatively by observers (Suls, Witenberg, & Gutkin, 1981).

A person who commonly makes unrealistic negative attributions about aid is likely to suffer relationship difficulties as a result. Additionally, even if a person is not generally making these negative attributions, they may be doing so in the case of specific relationships. For example, in family and relationship therapies it may be helpful to examine whether clients are making negative attributions about aid, and whether the lack of gratitude in that specific context is related to relationship problems. In many cases of relationship breakdown partners have fallen into a pattern of making negative attributions about their partners (Bradbury & Fincham, 1990), of which low gratitude may be a special and especially damaging case. In principle, these automatic negative attributions could be changed through general through recognition and challenging techniques such as automatic thought records (Bennett-Levy, 2003; Greenberger & Padesky, 1995). More research is needed into the effectiveness and efficacy of this approach.

In recent years, a large body of literature has developed showing that gratitude is related to a wide variety of forms of well-being. This literature stands in contrast to work showing that huge increases in income — an indication of how spending power — are needed for even modest gains in well-being (Boyce & Wood, in press). Perhaps instead of spending lives trying to amass ever more possessions, people would be better advised to appreciate more what they actually have (c.f., Lyubomirsky, Sheldon, & Schkade, 2005). Simple easy interventions have been developed that can be easily used in clinical therapy to increase gratitude, which may consequently improve well-being. More research is now needed into the mechanisms whereby gratitude relates to well-being, and into developing optimum therapies.

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