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## **Hopelessness, stress, and perfectionism: The moderating effects of future thinking**

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It has been argued that a negative view of the future characterised by impaired positive future thinking is associated with increased hopelessness and suicide risk (e.g., MacLeod & Moore, 2000). Hence, the central focus of the two studies reported in this paper was to extend our knowledge of positive future thinking by investigating its relationship with established suicide risk factors: stress, perfectionism, and hopelessness. Study 1 demonstrates, for the first time, that positive future thinking moderates the relationship between stress and hopelessness. The findings of Study 2 replicated those found in Study 1 and they also supported the notion that perfectionism is best understood as a multidimensional construct and that its relationship with future thinking and hopelessness is not straightforward. The results are also discussed in terms of the relationship between the structure of affect and motivational systems.

A negative view of the future is generally considered to be a central component of hopelessness (Abramson, Alloy, & Metalksy, 1989; O'Connor, 2003; O'Connor, Sheehy, O'Connor, 2000a). But pessimism for the future can be conceptualised as either fear of the future (i.e., the presence of negative future

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expectations) or the absence of anything to look forward to (i.e., the lack of positive future expectations). As a result, MacLeod and colleagues (MacLeod, Pankhania, Lee, & Mitchell, 1997; MacLeod, Rose, & Williams, 1993) set out to determine whether these two representations of the future were functionally equivalent. They investigated samples of suicidal patients and compared them to matched control groups. They found that suicidal patients were impaired in the number of positive events that they were looking forward to relative to matched controls but they did not exhibit an increase in the number of negative future events (MacLeod et al., 1997, 1993). Moreover, this difference could not be explained by differences in levels of depression (Hunter & O'Connor, 2003; MacLeod et al., 1997; O'Connor, Connery, & Cheyne, 2000b).

Nevertheless, there is a dearth of studies in the hopelessness and suicidal behaviour literature. The majority of research centres on negative experiences despite the growing evidence to support the importance of positive life experiences in predicting psychological well-being (Johnson, Young-Sook, Douglas, Johannet, & Russell, 1998; MacLeod & Moore, 2000; Needles & Abramson, 1990). In order to redress the balance, the two studies reported in this paper focused on the relationship between *positive* future thinking and hopelessness given its established relationship with suicidal behaviour. In addition, all the studies to date, which have investigated positive future thinking, have been circumscribed to clinical populations. Therefore, we aimed to extend previous studies by determining whether positive future thinking had a similar relationship to hopelessness in a nonclinical population.

Psychological adjustment is often viewed as an individual's ability to deal with the stressful demands placed on them. For example, life stress is associated with general psychological distress (O'Connor, Cobb, & O'Connor, 2003), depressed mood (Chang, 1997, 2001), anxiety (Endler, 1997), and suicide ideation (Bonner & Rich, 1988; Chang, 2002; Joiner & Rudd, 1995). Furthermore, psychological diathesis-stress models, put forward to explain the stress-well-being relationship, argue that psychological vulnerability factors, when activated by stress, result in depression, hopelessness, and suicide ideation (Joiner & Rudd, 1995; O'Connor, O'Connor, White, & Bundred, 2000). Hence, consistent with the diathesis-stress literature, we were interested to determine, for the first time, whether positive future thinking was a vulnerability factor that when activated by stress would be associated more strongly with hopelessness. In other words, does positive future thinking moderate the relationship between stress and hopelessness?

### **Perfectionism and psychological distress**

A considerable body of evidence has shown that perfectionism is an important factor in explaining individual differences in psychological distress (Blatt, 1995; Chang, 1998, 2000; Chang & Rand, 2000; Flett, Hewitt, & Dyck, 1989; Frost,

Marten, Lahart, & Rosenblate, 1990; Hewitt, Newton, Flett, & Callander, 1997; Shafran & Mansell, 2001). However, these studies have yielded disparate findings and the relationship is not straightforward. It is acknowledged that perfectionism is more than a unidimensional construct (Flett, Hewitt, Blankstein, & Mosher, 1995), and this is reflected in the development of the Multi-dimensional Perfectionism Scale (MPS; Hewitt & Flett, 1996). This scale has three dimensions: socially prescribed perfectionism, self-oriented perfectionism, and other-oriented perfectionism. Socially prescribed perfectionism taps beliefs about the excessive expectations we perceive significant others have of us and self-oriented perfectionism focuses on the standards we set for ourselves (i.e., self-standard setting). Other-oriented perfectionism is the extent to which we possess high expectations and standards for other people's behaviour.

An important debate in the literature is whether each of the three dimensions of the MPS are equally detrimental to psychological well-being. Flett and colleagues posit that higher scores on each of these dimensions are associated with adverse psychological health (Flett et al., 1995). However, the empirical evidence is equivocal. On the whole, social perfectionism is associated with psychological distress (Dean, Range, & Goggin, 1996; Hewitt & Flett, 1991; O'Connor & O'Connor, 2003; O'Connor & Sheehy, 2000; Wyatt & Gilbert, 1998) but the evidence for the role of self-oriented and other-oriented perfectionism is divided. Some studies with clinical patients have found evidence for a positive association between self-oriented perfectionism and suicidal threat (Hewitt, Flett, & Weber, 1994) and others have not (Hewitt, Flett, & Turnbull-Donovan, 1992). Moreover, self-oriented perfectionism may also, in some situations, actually buffer against suicidal risk. Hunter and O'Connor (2003) found in a sample of parasuicide patients and matched controls that high levels of self-oriented (and other-oriented) perfectionism were positively associated with future positive thinking. Although other-oriented perfectionism may be associated with increased paranoia and phobic symptoms (Hewitt & Flett, 1991), elevated levels are sometimes associated with reduced depressive symptoms (e.g., Flett et al., 1995) and protection from suicide attempt (Hewitt, Flett, Norton, Callander, & Cowan, 1998).

Perhaps social perfectionism is tapping issues around being driven by the fear of failure or the need to please others and to avoid punishment (Deci & Ryan, 1985), whereas self-oriented perfectionism is concerned with the pursuit of success? Furthermore, high levels of other-oriented perfectionism may buffer against hopelessness because such individuals are concerned with other people's behaviour thereby distracting attention away from negative self-appraisal (Hewitt et al., 1998; Hunter & O'Connor, 2003).

It may be that the motivations for success-failure do not exist along one continuum but rather act separately and should be considered as two relatively orthogonal dimensions. Consonant with this dichotomy and previous research (Hunter & O'Connor, 2003), the primary aim of Study 2 was to determine

whether socially prescribed perfectionism was positively correlated with hopelessness and negatively correlated with positive thoughts for the future. Conversely, we hypothesised that self-oriented and other-oriented perfectionism would have the opposite effect, that they would be negatively correlated with hopelessness and positively correlated with positive thoughts for the future. Previous research has already demonstrated that stress moderates the relationship between socially prescribed perfectionism and psychological adjustment (Chang & Rand, 2000), therefore, we wished to extend the literature, to investigate whether positive future thinking moderated the relationship between perfectionism and hopelessness.

We conducted two cross-sectional studies involving university undergraduate students who completed a battery of psychological measures to assess perceived stress, depression, anxiety, hopelessness, perfectionism, and future thinking. Study 1 focused on the relationships between stress, future thinking, and hopelessness, whereas Study 2 was concerned with the relationships between perfectionism, future thinking, and hopelessness. Separate studies were desirable for two reasons: (a) the second study would afford the opportunity to replicate the future thinking-hopelessness effect, which is at the core of this research; and (b) it is more practicable to administer all the measures in two studies rather than one.

To summarise, the aims of the research were:

#### *Study 1*

1. To determine if positive future thinking was negatively correlated with hopelessness in a nonclinical population.
2. To test the diathesis-stress hypothesis, that those individuals reporting fewer positive future expectations, when under stress, would exhibit higher levels of hopelessness than those reporting more positive future thoughts. We did not formulate a hypothesis for negative future thinking.

#### *Study 2*

1. To investigate: (i) if socially prescribed perfectionism correlated positively with hopelessness and negatively with positive future thinking; and (ii) whether self-oriented and other-oriented perfectionism were negatively correlated with hopelessness and positively associated with positive thoughts for the future.
2. To test: (i) if those individuals reporting high levels of social perfectionism and impaired positive future thinking would report the highest levels of hopelessness; and (ii) whether those individuals with low levels of self-oriented and other-oriented perfectionism and low levels of positive future thinking would exhibit higher levels of hopelessness relative to those high on these constructs. We formulated no moderating hypotheses for negative future thinking.

## STUDY 1

### Method

#### *Participants*

A total of 102 undergraduate students (29 men and 73 women) were recruited from a Scottish university. Prior to beginning the study, all students were informed that participation was voluntary, confidential and that even if they agreed, they could withdraw at any stage without explanation. The mean age of the participants was 20.5 years ( $SD = 6.8$ ) and the ages ranged from 17 to 58 years. The men and women did not differ significantly in age,  $t(100) = -1.1$ ,  $ns$ , and the majority of the participants were not married (91%).

#### *Measures*

*Future thinking.* The future thinking task (FTT; MacLeod et al., 1997) requires participants to think of potential future experiences (prospective cognitions) across three time periods: the next week (including today), the next year, and the next 5–10 years. This is completed for positive as well as negative future experiences (e.g., “Please try to think of and write down as many things that you’re looking forward to (things that you enjoy) over the next year”). Order of completion of positive and negative conditions (Valence) is counterbalanced, such that half of the participants complete the positive condition followed by the negative condition and vice versa. Order of presentation of items within each condition is constant (i.e., the next week, year, 5–10 years). For each of the three time periods, participants are given one minute to generate as many responses as possible. It is explained to the participants that the responses can be trivial or important, just write down whatever comes to mind. The responses should be things that are going to happen, or reasonably likely to happen. Finally, they are told to keep trying until the time limit is up. To our knowledge, this is the first time that the FTT has been administered in a large-scale group setting.<sup>1</sup>

*Hopelessness.* Hopelessness was measured using the 20-item Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974). Respondents are asked to indicate either agreement or disagreement with statements that assess pessimism for the future (e.g., “I look forward to the future with hope and

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<sup>1</sup> In previous case-control studies, participants have completed a measure of verbal fluency before they begin the Future Thinking Task (FTT), to ensure that the “experimental” groups do not differ from the control groups in terms of general cognitive fluency. As this was not a comparative study and given time constraints, this was deemed not to be necessary. However, in the interests of rigour, in the pilot phase of this study, we administered the Beck Hopelessness Scale and a measure of verbal fluency to 30 participants. Correlational analyses revealed no significant associations.

enthusiasm''). Higher scores represent higher hopelessness. This is a reliable and valid measure that has been shown to predict eventual suicide (Beck, Steer, Kovacs, & Garrison, 1985; Beck et al., 1974; Holden & Fekken, 1988). In the present study, internal consistency was good (Kuder-Richardson-20 = .83).

*Anxiety and depression.* The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) consists of 14 questions, seven corresponding to the anxiety subscale and seven corresponding to the depression subscale. Items are rated on a 0–3 point scale indicating strength of agreement with each item. The maximum score for each subscale is 21. Both subscales are reliable and valid and are suitable for use in the general population (Bjelland, Dahl, Haug, & Neckelmann, 2002; Crawford, Henry, Crombie, & Taylor, 2001). Cronbach's  $\alpha$  for the present study were .71 and .69 for anxiety and depression, respectively.

*Stress.* The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) is a 14-item global measure of self-appraised stress (e.g., "In the last month, how often have you been upset because of something that happened to you unexpectedly?"). Respondents are asked to rate the extent of agreement with these items across a 5-point Likert-type scale ranging from 0 (*never*) to 4 (*very often*). Higher scores reflect elevated levels of stress. In this study, we employed the shorter 4-item version of PSS. Test-retest reliability and construct validity have been shown to be acceptable (Cohen et al., 1983; Cohen & Williamson, 1988). Cronbach's  $\alpha$  for the present sample was .74.

### *Procedure*

All participants were given a brief introduction of what the study would require and invited to participate. The future thinking task was always administered first and it was followed by the self-report measures. To control for transfer effects, the order of presentation of the self-report measures was counterbalanced. Ethical approval had been obtained from the University Psychology Department's ethics committee.

## **Results**

As gender differences are frequently reported in the emotion literature and given that time period effects have been found in previous future thinking studies (e.g., Godley, Tchanturia, MacLeod, & Schmidt, 2001), consistent with other research (Hunter & O'Connor, 2003; MacLeod et al., 1997), we conducted ANOVAs to investigate potential main effects and interactions. Consequently, a Valence (positive/negative future thoughts)  $\times$  Period (week, year, 5–10 years)  $\times$  Gender (male/female) mixed-model ANOVA was conducted and it produced four significant effects (see Table 1 for means and standard deviations). There

TABLE 1  
Studies 1 and 2: The mean number of future thoughts (and standard deviations) by gender

	Next week		Next year		Next 5–10 years	
	Positive	Negative	Positive	Negative	Positive	Negative
<i>Study 1</i>						
Males	4.59 (1.90)	2.97 (1.21)	3.83 (1.51)	2.86 (1.16)	4.17 (1.58)	3.07 (1.56)
Females	4.19 (1.36)	3.23 (1.26)	4.58 (1.64)	3.00 (1.26)	5.16 (1.60)	3.49 (1.60)
Total	4.30 (1.54)	3.16 (1.25)	4.36 (1.63)	2.96 (1.23)	4.88 (1.65)	3.37 (1.59)
<i>Study 2</i>						
Males	4.28 (1.82)	3.00 (1.36)	4.14 (1.39)	2.90 (1.31)	4.04 (1.69)	3.38 (1.26)
Females	4.15 (1.73)	3.12 (1.36)	4.17 (1.52)	3.24 (1.31)	4.49 (1.55)	3.36 (1.43)
Total	4.18 (1.75)	3.09 (1.36)	4.16 (1.47)	3.16 (1.31)	4.38 (1.59)	3.36 (1.39)

was a main effect of Valence, participants reporting significantly more positive future thoughts ( $M = 13.39$ ;  $SD = 3.93$ ) than negative thoughts ( $M = 9.42$ ),  $SD = 3.04$ ;  $F(1, 100) = 95.96$ ,  $p < .001$ . There was a significant effect of Period,  $F(2, 200) = 5.64$ ,  $p < .005$ , pairwise comparisons indicating higher scores for the next 5–10 years versus the next year ( $p < .001$ ). The interaction between Gender  $\times$  Period was also significant,  $F(2, 200) = 5.17$ ,  $p < .01$ . To identify the source of the difference, we conducted post hoc *t*-tests with Bonferroni corrections which revealed that women ( $M = 8.6$ ;  $SD = 2.4$ ) reported significantly more future events in the next 5–10 years than men, ( $M = 7.5$ ;  $SD = 2.6$ ),  $t(100) = -2.6$ ,  $p = .01$ . However, the two-way interaction was qualified by the three-way Gender  $\times$  Period  $\times$  Valence interaction, showing that women were reporting significantly more *positive* future events in the next 5–10 years time period compared to the men,  $t(100) = -2.82$ ,  $p = .006$ .

The bivariate correlations and mean scores for all the variables are displayed in Table 2.<sup>2</sup> Positive future thinking was negatively correlated with hopelessness and positively correlated with negative future thinking. The latter coefficient is likely to reflect the individual's verbal fluency, higher levels of positive thinking are associated with higher levels of negative future thinking. Stress correlated positively with anxiety, hopelessness and negative future thinking but it was not related to positive future thinking. It is noteworthy that depression and hopelessness were not significantly correlated. This may reflect the lack of suitability of the HADS for use in a student population. Although it has been validated for

<sup>2</sup> Given that, with one exception, there are no differences in recall across the time periods, we collapsed the future thinking measures into: (1) total future positive thinking; and (2) total future negative thinking. This is consistent with other studies in the field (e.g., MacLeod et al., 1998; 1997; O'Connor et al., 2000b).

TABLE 2  
Study 1: Bivariate correlations, means, (and standard deviations) for all the variables

	Positive thoughts	Negative thoughts	Anxiety	Depression	Hopelessness	Stress
Positive thoughts	—					
Negative thoughts	.398***	—				
Anxiety	-.188	-.001	—			
Depression	-.121	-.163	.027	—		
Hopelessness	-.253***	.112	.222*	.176	—	
Stress	.045	.241*	.271**	.044	.581***	—
<i>M</i>	13.40	9.42	10.30	6.70	3.86	5.95
( <i>SD</i> )	(3.92)	(3.04)	(1.81)	(1.86)	(2.65)	(3.24)

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001 (two-tailed).

use in nonclinical samples (Crawford et al., 2001), future research should explore its psychometric properties within a student population.

Next, two hierarchical multiple regression analyses were conducted, to determine whether future thinking moderated the relationship between perceived stress and hopelessness. To minimise the risk of Type 1 error, we adopted the *p* < .01 level of significance. Depression and anxiety were entered at step 1, to remove variance associated with measures of affect. Stress was entered at step 2 followed by either positive or negative future thinking entered at the third step. To test for the stress × future thinking interaction, the relevant multiplicative term (stress × positive thinking or stress × negative thinking) was entered in the final step of the equation (see Table 3). In the positive future thinking regression, stress and the interaction term emerged as predictors of hopelessness thereby suggesting that positive future thinking moderates the stress-hopelessness relationship.<sup>3</sup>

To illustrate the stress × positive future thinking interaction, consistent with Aiken and West (1991), we plotted the lines of best fit of high and low stress on hopelessness at one standard deviation above (high) and below (low) the mean for positive future thinking (see Figure 1, Panel A). Further tests were conducted separately on the slopes of the high and low positive future thinking lines to determine whether they were significantly different from zero. Application of the procedures outlined by Aiken and West (1991) revealed that both the high future thinking,  $\beta = .355$ ,  $t(96) = 3.08$ ,  $p < .01$ , and the low future thinking lines were significantly different from zero,  $\beta = .801$ ,  $t(96) = 7.14$ ,  $p < .001$ . This suggests that, irrespective of levels of positive future thinking, there was an effect of stress: higher levels associated with elevated hopelessness. Never-

<sup>3</sup> The regression analyses yielded similar results when conducted without entering depression and anxiety at step 1.

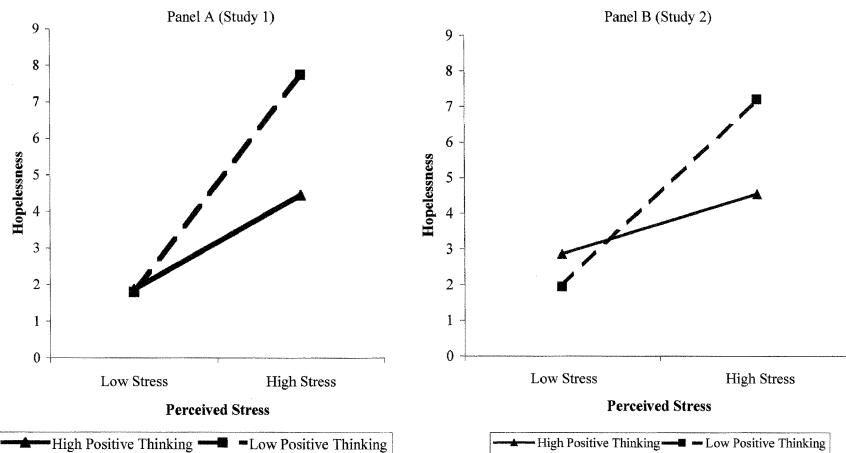
TABLE 3  
Studies 1 and 2: Hierarchical regression analyses testing the moderating effects of future thinking in the relationship between stress and hopelessness

Hopelessness		Adj R <sup>2</sup>	Final beta	Sig.
<i>Study 1</i>				
Positive				
Step 1	Anxiety	.059	-.043	n.s.
	Depression		.108	
Step 2	Stress	.345	1.338	.001
Step 3	Positive thinking	.406	.216	n.s.
Step 4	Stress × Positive thinking	.441	-.928	.01
Negative				
Step 1	Anxiety	.059	.068	n.s.
	Depression		.146	
Step 2	Stress	.345	.400	n.s.
Step 3	Negative thinking	.338	-.088	n.s.
Step 4	Stress × Negative thinking	.333	.203	n.s.
<i>Study 2</i>				
Positive				
Step 1	Stress	.274	1.299	.001
Step 2	Positive thinking	.301	.389	.01
Step 3	Stress × Positive thinking	.377	-.969	.001
Negative				
Step 1	Stress	.274	.538	.01
Step 2	Negative thinking	.272	.055	n.s.
Step 3	Stress × Negative thinking	.268	-.029	n.s.

theless, the interaction shows that low levels of positive future thinking, at high levels of stress, are associated with significantly greater hopelessness than high levels of positive future thinking (see Table 3). The negative future thinking regression did not yield any significant effects although the contribution of depression approached significance ( $p = .08$ ).

## Discussion

This study yielded evidence in support of the two aims. First, positive future thinking was negatively correlated with hopelessness. This extends previous research on future thinking as it demonstrates that positive future thinking is an important correlate of hopelessness in a nonclinical population. Similar to findings elsewhere (Hunter & O'Connor, 2003; MacLeod et al., 1997), the prevalence of negative future expectations was not associated with hopelessness. The three-way interaction (Gender × Period × Valence) suggests that women can think of more positive expectations in the longer term (i.e., 5–10 years). This



**Figure 1.** Studies 1 and 2: Relationship of stress with hopelessness at high and low levels of positive future thinking.

may help explain why young men are more likely to kill themselves, as they may be impaired in their ability to generate positive expectations over longer time periods. However, it is important to replicate this effect.

The regression analyses provide clear evidence for the diathesis-stress hypothesis (Chang & Sanna, 2001; Schotte & Clum, 1987), that positive expectations buffer the relationship between stress and hopelessness. Individuals who perceive high levels of stress but who can think of positive future events report lower levels of hopelessness compared to similarly stressed individuals reporting fewer positive future thoughts. This finding reinforces the central role of positive thinking in psychological well-being and demonstrates, for the first time, that such cognitions moderate the stress-hopelessness relationship.

## STUDY 2

### Method

The first aim of Study 2 was to replicate the findings from Study 1. However, the central focus of Study 2 was on the relationship between perfectionism, future thinking, and hopelessness. Specifically, socially prescribed perfectionism was expected to correlate positively with hopelessness and negatively with positive future thinking, with the opposite pattern of results predicted for self- and other-oriented perfectionism. Finally, we hypothesised that impaired positive future thinking would strengthen the relationship between socially prescribed perfectionism and hopelessness, whereas individuals high on positive future thinking and self- and other-oriented perfectionism would report lower levels of hopelessness (see Introduction).

### *Participants*

Using the same procedures as outlined in Study 1, a second sample of 206 undergraduate students (50 men and 156 women) was recruited from a Scottish university. The mean age of the participants was 19.8 years ( $SD = 5.10$ ) and the ages ranged from 17 to 47 years. The men and women did not differ significantly in age,  $t(204) = -.313$ ,  $ns$ , and the majority of the participants were not married (91.2%).

### *Measures*

*Future thinking.* The future thinking task (FTT; MacLeod et al., 1997) was used to assess positive and negative future thinking (see Study 1).

*Hopelessness.* The Beck Hopelessness Scale (BHS; Beck et al., 1974) was used to assess levels of hopelessness (see Study 1). In the present study, internal consistency for the BHS was good (Kuder-Richardson-20 = .82).

*Stress.* The 4-item version of the Perceived Stress Scale (PSS; Cohen et al., 1983) was used to assess perceived stress levels (see Study 1). Cronbach's  $\alpha$  for the present sample was .77.

*Perfectionism.* The Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1996) is a 45-item measure of perfectionism, with 15 questions assessing each of three dimensions of perfectionism: (i) self-oriented perfectionism (MPS-Self), defined as a strong motivation to be perfect, all-or-nothing thinking and self-reported high achievement expectations (e.g., "One of my goals is to be perfect in everything I do"); (ii) socially prescribed perfectionism (MPS-Social) assesses the degree of belief that others hold unrealistically high expectations of one's behaviour and that they would only be satisfied with these standards (e.g., "The people around me expect me to succeed at everything I do"); and (iii) other-oriented perfectionism (MPS-Other) is the degree to which an individual sets unrealistic standards for others (e.g., "If I ask someone to do something, I expect it to be done flawlessly"). Respondents are asked to rate each statement on a 7-point Likert-type scale ranging from 1 (*disagree*) to 7 (*agree*). Higher scores on each scale represent greater levels of perfectionism. The MPS has been shown to exhibit acceptable test-retest reliability and construct validity (Hewitt & Flett, 1991). The three scales yielded good internal consistency in the present investigation (Cronbach's  $\alpha = .91, .84, .64$  for MPS-Self, MPS-Social, and MPS-Other, respectively).

### *Procedure*

All participants were given a brief introduction of what the study would require and invited to participate. The future thinking task was always administered first and it was followed by the self-report measures. To control for

transfer effects, the self-report measures were counterbalanced. Ethical approval had been obtained from the University Psychology Department's ethics committee.

## Results

We employed the same data analytic procedures as those used in Study 1. A Valence (positive/negative future thoughts)  $\times$  Period (week, year, 5–10 years)  $\times$  Gender (male/female) mixed model ANOVA produced three significant effects. First, there was a main effect of Valence, similar to that found in Study 1, participants reported significantly more positive future thoughts ( $M = 12.72$ ;  $SD = 3.95$ ) than negative thoughts ( $M = 9.61$ ;  $SD = 3.25$ ),  $F(1, 204) = 104.44$ ,  $p < .001$ . Second, the main effect for Period,  $F(2, 408) = 3.38$ ,  $p < .05$ , indicated that participants reported significantly more future expectations over the next 5–10 years versus the next year ( $p < .05$ ).<sup>4</sup> Third, the three-way interaction (Valence  $\times$  Period  $\times$  Gender) was also significant,  $F(2, 408) = 3.17$ ,  $p < .05$ . Consistent with Study 1, the interaction shows that women reported more positive thoughts over the 5–10 year period by comparison with men,  $t(204) = -1.74$ ,  $p = .042$ . The mean numbers of future thoughts by valence, period, and gender are displayed in Table 1.

The bivariate correlations and mean scores for all the variables are displayed in Table 4 (see footnote 2). Positive future thinking correlated with self-oriented perfectionism: Higher levels of self-oriented perfectionism were associated with more positive future thoughts. Similar to the findings in Study 1, positive future thinking was positively correlated with negative future thinking and negatively correlated with hopelessness and not related to perceived stress. Hopelessness correlated with each of the perfectionism measures: Higher levels of social perfectionism were associated with higher levels of hopelessness whereas lower levels of both self-oriented and other-oriented perfectionism explained higher levels of hopelessness. With the exception of self-oriented perfectionism, negative future thinking correlated with all other variables.

In advance of the perfectionism regression analyses, to replicate the buffering effect of positive future thinking in the stress-hopelessness relationship, we conducted two analyses regressing stress, positive or negative future thinking and the relevant interaction term on hopelessness (see Table 3). Similar to Study 1, we found that positive future thinking moderated the relationship between stress and hopelessness,  $\beta = -.969$ ,  $t(202) = -5.05$ ,  $p < .001$ ; the interaction is displayed in Figure 1 (Panel B). Stress was the only predictor of hopelessness in the negative future thinking analysis,  $\beta = .538$ ,  $t(202) = 2.85$ ,  $p < .01$ .

Next, a series of hierarchical regressions were conducted, to determine whether future thinking moderated the relationship between the dimensions of

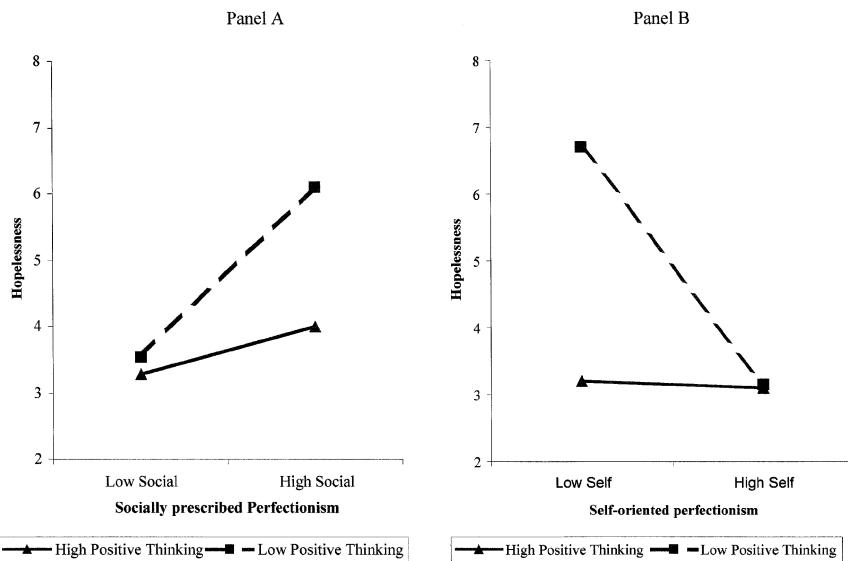
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<sup>4</sup> Significance levels are adjusted for multiple comparisons (Bonferroni).

TABLE 4  
Bivariate correlations, means, (and standard deviations) for all the variables

	<i>Positive thoughts</i>	<i>Negative thoughts</i>	<i>Hopelessness</i>	<i>Socially prescribed perfectionism</i>	<i>Self-oriented perfectionism</i>	<i>Other-oriented perfectionism</i>	<i>Stress</i>
Positive thoughts	—						
Negative thoughts	.460***	—					
Hopelessness	—.221***	.156*	—				
Socially prescribed perfectionism	—.052	.225***	.238***	—			
Self-oriented perfectionism	.156*	.119	—.294***	.371***	—		
Other-oriented perfectionism	.084	.198***	—.170*	.303***	.476***	—	
Stress	—.087	.226***	.527***	.413***	.022	.030	—
<i>M</i>	12.72	9.61	4.25	52.44	62.49	55.90	6.51
<i>(SD)</i>	(3.95)	(3.25)	(3.52)	(13.33)	(17.84)	(11.16)	(3.17)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed).



**Figure 2.** Study 2: Relationship of socially prescribed and self-oriented perfectionism with hopelessness at high and low levels of positive future thinking.

perfectionism and hopelessness. To remove variance associated with stress, it was entered at step 1 of each analysis. Next, one of the perfectionism dimensions was entered at step 2 followed by either positive or negative future thinking at step 3. Finally, to test the interaction between each pair of variables, the relevant multiplicative term was entered at the final step (as in Study 1).

The outcomes of the six regression analyses are displayed in Table 5.<sup>5</sup> To minimise the risk of Type 1 error, we adopted the  $p < .01$  level of significance. The socially prescribed and self-oriented perfectionism  $\times$  positive future thinking interactions were significant, thereby suggesting moderating relationships. To illustrate the interactions, consistent with the procedures outlined in Study 1, we plotted lines of best fit (see Figure 2). With respect to the socially prescribed perfectionism interaction (see Panel A), post hoc analyses confirmed that the slope of the low positive future thinking line differed significantly from zero,  $\beta = .367$ ,  $t(202) = 4.05$ ,  $p < .001$ , whereas the high positive thinking line did not,  $\beta = .112$ ,  $t(202) = 1.34$ ,  $ns$ . In other words, impaired positive future thinking and high levels of socially prescribed perfectionism accounted for the highest levels of hopelessness.

<sup>5</sup> The regression analyses yielded the same results when conducted without controlling for perceived stress at step 1.

TABLE 5  
Hierarchical multiple regression analyses testing the moderating effects of future thinking on the relationship between perfectionism and hopelessness

	Variable	Adj <i>R</i> <sup>2</sup>	Final beta	Sig.
<i>Positive valence</i>				
Step 1	Stress	.274	.506	.001
Step 2	Social	.271	.475	.01
Step 3	Positive FT	.298	.413	n.s.
Step 4	Social × Positive FT	.321	-.745	.01
Step 1	Stress	.274	.484	.001
Step 2	Self	.364	-.824	.001
Step 3	Positive FT	.378	-.794	.001
Step 4	Self × Positive FT	.410	.936	.001
Step 1	Stress	.274	.514	.001
Step 2	Other	.306	-.289	n.s.
Step 3	Positive FT	.328	-.350	n.s.
Step 4	Other × Positive FT	.326	.234	n.s.
<i>Negative valence</i>				
Step 1	Stress	.274	.512	.001
Step 2	Social	.271	.063	n.s.
Step 3	Negative FT	.268	.106	n.s.
Step 4	Social × Negative FT	.265	-.093	n.s.
Step 1	Stress	.274	.501	.001
Step 2	Self	.364	.230	n.s.
Step 3	Negative FT	.367	.801	.001
Step 4	Self × Negative FT	.399	-.972	.001
Step 1	Stress	.274	.513	.001
Step 2	Other	.306	-.153	n.s.
Step 3	Negative FT	.308	.172	n.s.
Step 4	Other × Negative FT	.305	-.113	n.s.

*Note:* Social = Socially prescribed perfectionism; Self = Self-oriented perfectionism; Other = Other-oriented perfectionism; Positive FT = Positive future thinking; Negative FT = Negative future thinking.

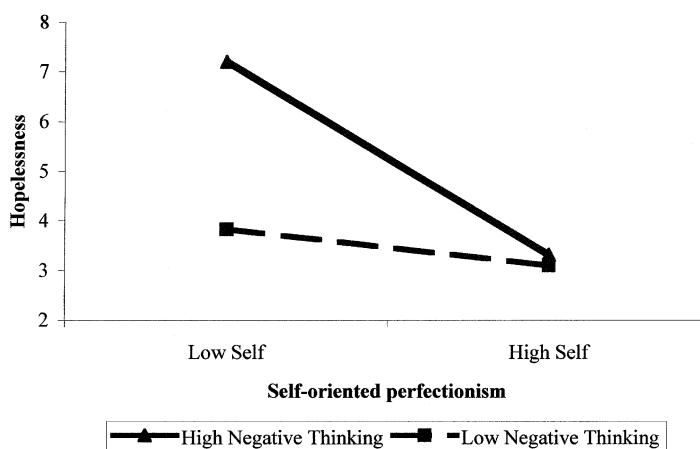
The post hoc analyses for the self-oriented perfectionism interaction demonstrated that the moderation was strongest at low levels of positive future thinking (see Figure 2 Panel B). The slope of the low positive thinking line differed significantly from zero across the levels of self-oriented perfectionism and there was no effect of the high positive thinking slope,  $\beta = -.501$ ,  $t(202) = -6.09$ ,  $p < .001$ ; and  $\beta = .021$ ,  $t(202) = .235$ , *ns*, respectively. Therefore, reduced levels of self-oriented perfectionism and impaired positive future thinking are associated with the highest hopelessness scores.

Finally, the only other regression analysis to yield a significant interaction was the negative future thinking  $\times$  self-oriented perfectionism equation. The relationship between these two variables with hopelessness is illustrated in Figure 3: High levels of negative future thinking interacted with low levels of self-oriented perfectionism to yield the highest ratings for hopelessness,  $\beta = -.566$ ,  $t(202) = -5.86$ ,  $p < .001$ .

## Discussion

In the main, the results supported the study's central aims. As predicted, hopelessness was positively correlated with socially prescribed perfectionism and negatively correlated with self- and other-oriented perfectionism. However, positive future thinking was correlated with only one of the perfectionism dimensions; positively with self-oriented perfectionism. Negative future thinking was also associated with elevated hopelessness suggesting a separate pathway to hopelessness in addition to positive future thinking. The pattern of correlations also suggests that negative future thinking has strong, direct relationships with socially prescribed and other-oriented perfectionism. Furthermore, we replicated the second finding from Study 1, that positive future thinking moderated the relationship between stress and hopelessness.

As predicted, those individuals with impaired positive future thinking and high levels of socially prescribed perfectionism reported higher hopelessness scores relative to those low on social perfectionism. In other words, the absence of positive expectations exacerbates the relationship between a relatively stable personality dimension—social perfectionism—and psychological distress.



**Figure 3.** Study 2: Relationship of self-oriented perfectionism with hopelessness at high and low levels of negative future thinking.

Furthermore, those people with low levels of self-oriented perfectionism, the lack of self-standard setting, together with reduced positive future expectations, are also more hopelessness and therefore, at elevated risk from suicide. The adaptive effects of self-oriented perfectionism are reinforced by its interaction with negative future thinking. Individuals who are high on the self-oriented perfectionism dimension and are worried about negative future expectations report lower hopelessness than those low on self-oriented perfectionism.

The findings reported herein fit well with previous research, which has demonstrated that levels of socially prescribed perfectionism are significantly higher in parasuicide patients (those individuals who engage in deliberate self-harm) by comparison with controls (Hewitt et al., 1998; Hunter & O'Connor, 2003). They also add to the growing body of literature suggesting that perfectionism does not always have a pernicious effect on psychological well-being and that future expectations seem to modify these relationships (Hewitt et al., 1998; Hunter & O'Connor, 2003; Mills & Blankstein, 2000; O'Connor & O'Connor, 2003).

## GENERAL DISCUSSION

This research extends the hopelessness literature in several ways. First, cognition and emotion relationships that had only been described in clinical patient groups, have been shown to hold in nonclinical samples: Future positive thinking relates to hopelessness in the same way among students, as has been reported previously in psychiatric and general hospital parasuicide populations (Hunter & O'Connor, 2003; MacLeod et al., 1993, 1997; O'Connor et al., 2000b). Although this relationship could not be explained in terms of anxiety and depression levels, future research should endeavour to replicate these findings employing a different measure of depression.

Second, taking the results from Studies 1 and 2 together, they show that participants report significantly more future expectations in the longer term (i.e., 5–10 years), and this is qualified by the fact that women report more positive future expectations than men (in the next 5–10 years). However, the main effect of time period may simply reflect the special circumstances of our samples. The participants were at university, therefore their expectations for the next couple of years would be relatively stable. One could posit that the greatest change in their expectations would be for the 5–10 years time period, when, for the most part, they will have finished at university. Such an explanation, however, does not explain the gender effect. As noted in Study 1, this may represent a suicide protective factor, more common to women. Future research ought to replicate this effect with different populations, to determine whether it is an artefact of this sample.

Third, there was substantial support for the diathesis-stress literature (Chang & Sanna, 2001; Schotte & Clum, 1987), in both Studies 1 and 2, the stress-

hopelessness relationship was significantly stronger when positive future thinking was low. Fourth, this research tentatively points to issues around the conceptualisation of future thinking and perfectionism, both as being mediated by different motivational systems. Specifically, the differential relationship between positive and negative future thinking and stress is consistent with postulations about the structure of affect and adds to the growing evidence that positive and negative expectations for the future are two separate dimensions of experience (MacLeod, Byrne, & Valentine, 1996; MacLeod & Moore, 2000; MacLeod & Salaminou, 2001). Some authors (Fowles, 1994; Gray, 1994) posit that positive and negative experiences are mediated by two separate motivational systems: the Behavioural Inhibition System (BIS) and Behavioural Adaptation System (BAS). The BIS is concerned with anticipating and avoiding unfavourable outcomes whereas the BAS facilitates behaviours to promote the attainment of favourable outcomes. Hence, it could be argued that the anticipation of negative future experiences is related to the BIS and the positive expectations about the future are associated with the BAS (MacLeod & Moore, 2000). Needless to say, future research ought to address this research supposition directly.

Furthermore, self-oriented perfectionism seems to facilitate the attainment of favourable outcomes (BAS): "Driving" to succeed is obviously directed toward pleasant goals. Whereas socially prescribed perfectionism is concerned with anticipating and avoiding unfavourable outcomes (BIS). Interpreted in this light, the present findings could go some way to explain the contradictory findings with respect to perfectionism, particularly those related to self-oriented perfectionism (Hewitt et al., 1992, 1994; Hunter & O'Connor, 2003; Mills & Blankstein, 2000). Albeit that the interaction between negative future thinking and self-oriented perfectionism was unexpected it still fits within this motivational perspective. It suggests that negative future thinking is associated with hopelessness most strongly when levels of self-standard setting are low.<sup>6</sup> Other-oriented perfectionism is not included in this conceptualisation as it does not relate to the individual, rather one's expectations of others. The interpretation of the correlational and regression analyses for other-oriented perfectionism is equivocal. All that is clear is that it correlates strongly with negative future thinking and social perfectionism.

A word of caution is required, though. The two studies reported here are cross-sectional and therefore, we cannot infer causality. One could argue that the

<sup>6</sup> However, an alternative explanation for the negative self-oriented perfectionism (MPS-Self)–hopelessness correlation may concern the order of administration of the measures. It may be that the completion of the future thinking task first acts as a manipulation itself and affects participants' responses on the MPS. Given that participants generate many more positive events than negative events, completion may be promoting the adaptive self-striving items rather than the self-critical items of the MPS-Self. Future research should investigate this possibility.

effects reported here are an artefact of shared construct variance which is conflated by the completion of all of the measures contemporaneously. Although this is one possible explanation, it is unlikely given that our analyses yielded moderated effects. Nonetheless, before we draw any firm conclusions, we must replicate these effects within a longitudinal study design or experimental manipulation. That noted, this paper fits well with previous longitudinal research that has demonstrated that the occurrence of positive events, which are attributed to internal, stable, and global causes, are associated with reduced depressive symptoms and hopelessness over time (Johnson et al., 1998; Needles & Abramson, 1990). Specifically, our research suggests that positive thoughts *per se* may have similar protective effects as *actual* positive events. Furthermore, a recent longitudinal study has shown that changes in hopelessness (10–12 weeks later) were predicted by the interaction between positive thinking, pessimism and stress, beyond initial levels of hopelessness (O'Connor & Cassidy, 2003).

## CONCLUSION

This paper extends previous research in several key respects. It demonstrated that impaired positive future thinking is related to hopelessness in a nonclinical population. Second, it showed that positive future expectations moderate the relationship between hopelessness and stress, and between socially and self-oriented perfectionism. The findings also support the notion that the components of perfectionism and future thinking are mediated by different motivational systems. Future research should endeavour to replicate these findings and determine whether future thinking moderates psychological well-being within a prospective study design.

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