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Predicting Hopelessness:

The interaction between optimism/pessimism and specific future expectancies

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ABSTRACT

Improving our understanding of hopelessness is central to suicide prevention. This is the first study to investigate whether generalized expectancies for the future

(optimism/pessimism) and specific future-oriented cognitions (future thinking) interact to predict hopelessness and dysphoria. To this end, participants completed measures of future thinking, optimism/pessimism and affect at Time 1 and measures of affect and stress at Time 2, 10-12 weeks later. Results indicated that changes in hopelessness but not dysphoria were predicted by the interaction between positive future thinking (but not negative future thinking), optimism/pessimism and stress beyond initial levels of hopelessness and dysphoria. Additional moderating analyses are also reported. These findings point to the fruits of integrating personality and cognitive processes, to better understand hopelessness.

In recent decades, there has been considerable interest in the concepts of optimism/pessimism, future thinking and hopelessness. However, given their shared focus (i.e., on the future), it is surprising that little research has investigated how these variables relate to each other. This is even more noteworthy as hopelessness is the psychological construct most closely related to suicidality (O'Connor, Armitage, & Gray, 2006). The brief synopsis of the optimism/pessimism and future thinking literatures which follows highlights the key theoretical and empirical issues which are pertinent to the present study.

### *Optimism/Pessimism*

There has been a proliferation of research focused on optimism and pessimism. Defined as *generalized* positive and negative outcome expectancies (cf. Armor & Taylor, 1998), they are proximal predictors of adjustment (Scheier & Carver, 1985). Carver and Scheier (1998) describe optimists as those people who expect good experiences in the future and pessimists as those who expect bad experiences (see also Carver & Scheier, 1990, Scheier & Carver, 1992; 2003). This conceptualization of optimism/pessimism within their self-regulation model is grounded in the expectancy-value models of motivation which suggest that all behavior is organized around (a) the pursuit of goals or the avoidance of 'anti-goals'<sup>1</sup> (value component) and (b) the degree of confidence or doubt about a goal's attainability (expectancy component; Carver & Scheier, 1998).

Compared to pessimists, optimists are individuals who have greater confidence in their ability to attain goals (i.e., approach system) and avoid anti-goals (i.e., inhibition system), they are better at identifying suitable goals and more tenacious with respect to goal pursuit. The logical extension, therefore, is that when an individual cannot identify a suitable attainable goal, they either remain committed

to the unattainable goal or they disengage; either way, they experience psychological distress, for example, hopelessness. Hopelessness is distinct from pessimism.

Pessimism is thought to be a relatively stable personality dimension whereas hopelessness is a state – the individual's current negative view of the future.

#### *Future Thinking and Hopelessness*

A parallel, but separate, literature concerns the generation of *specific* future expectations in the etiology and maintenance of hopelessness and suicidal behavior (Hunter & O'Connor, 2003; MacLeod, Pankhania, Lee and Mitchell, 1997; MacLeod, Rose & Williams, 1993, MacLeod et al., 1998; O'Connor, Connery & Cheyne, 2000a). This literature stemmed from a desire to clarify the concept of hopelessness beyond its original formulation in the 1970s (Beck, Weissman, Lester, & Trexler, 1974). To this end, MacLeod and colleagues were interested to determine whether hopelessness characterized by negative future anticipations was functionally equivalent to the absence of positive future expectations. To investigate this, they devised the future thinking task, in which participants are asked to think of potential future experiences (essentially goals and anti-goals) that (i) they are looking forward to and (ii) they are worried about (see MacLeod et al., 1993; 1997). Their findings demonstrated that the presence of negative future expectancies is not functionally equivalent to the absence of positive future expectancies (MacLeod et al., 1993). Suicidal individuals, when compared with controls or depressed individuals who are not suicidal, are impaired in their ability to generate positive thoughts for the future but do not differ in terms of the number of negative thoughts that they are worried about (MacLeod *et al.*, 1997; see also O'Connor & Sheehy, 2000). The findings from the future thinking literature are also analogous to those from Clark and Watson's (1991) seminal, tripartite model of depression. Specifically, they argue that

depression (but not anxiety) is characterised by the presence of negative affectivity and the absence of positive affectivity, whereas anxiety is driven by negative affectivity, physiological tension and hyperarousal (Clark & Watson, 1991; Watson, Clark et al., 1995). Similarly, within the future thinking literature, it is positive thinking (not negative future thinking) which distinguishes between depression and hopelessness/suicidality. Both of these literatures also support the overarching premise that the presence of negativity and the absence of positivity are not simply opposites, but functionally distinct.

Although the optimism/pessimism and future thinking literatures have developed separately, there is a theoretical and empirical case for integrating them, to enhance our understanding of the etiology of hopelessness. The evidence for this integration comes from three sources. First, Carver and Scheier's self-regulation model suggests that those individuals who are high on hopelessness have difficulty identifying goals in the form of specific, future positive expectations. This may be because they have continually failed to meet previous goals and have learned that there is no relationship between their behavior and subsequent outcomes. As a result, their generalized motivation and expectancies are much reduced leading to partial disengagement and hopelessness. Such a postulation is consonant with predominant models of hopelessness and suicidal behavior (Abramson, Metalsky, & Alloy, 1989; Baumeister, 1990; O'Connor, 2003; O'Connor & O'Connor, 2003; Williams & Pollock, 2001).

Second, in the light of their findings that optimism interacted with unrealistic optimism to produce changes in health-promoting behaviour and knowledge, Davidson and Prkachin (1997) suggested that other contextual features or traits might operate to influence (moderate) the role that optimism plays in the prediction of

healthy behaviours and cognitions. In our view, future thinking would be one such moderating factor. Third, Needles and Abramson (1990) found that the *occurrence* of positive events interacted with an enhancing attributional style to produce a reduction in hopelessness among college students within a six week period. Consequently, in the present study we were interested to determine whether *cognitions* for positive events (rather than the occurrence of positive events) interact with optimism/pessimism to predict hopelessness.

Before outlining our specific research hypotheses, four design issues require comment. First, although the future thinking task was originally devised to define hopelessness, the evidence suggests that positive future thinking and hopelessness are distinct constructs, as illustrated by their low inter-construct correlations (e.g.,  $r = -.37$  and  $r = -.22$ ; MacLeod et al., 1997 and O'Connor, O'Connor, O'Connor, Smallwood & Miles, 2004, respectively). Second, consistent with the diathesis-stress literature which argues that stress moderates the relations between optimism/pessimism and well-being (Chang, 1998a,b) and between future thinking and distress (O'Connor et al., 2004), we included stress as a moderating variable here. Third, previous research has demonstrated that the symptoms of hopelessness form a cohesive syndrome, distinct from depression (Joiner, Steer, Abramson, Alloy, Metalsky & Schmidt, 2001) and that impaired positive future thinking is associated with hopelessness rather than depression or dysphoria (e.g., Hunter & O'Connor, 2003; MacLeod et al., 1997). Hence, we tested the specificity of the positive future thinking-hopelessness relationship by including a measure of dysphoria (as well as hopelessness) in this study. Finally, despite the plethora of studies describing the relations between optimism/pessimism and psychological well-being (Aspinwall & Taylor, 1992; Carver & Gaines, 1987; Robinson-Whelen et al., 1997; Scheier et al., 2001), to our

knowledge, only one study has directly investigated the relationship between optimism/pessimism and hopelessness (Chang, 2002); and it was cross-sectional in design. For this study, therefore, we conducted a prospective study and examined hopelessness in college students at the beginning of a semester and again, 10-12 weeks later.

There were two key research hypotheses. First, we hypothesized that there would be a three-way interaction between stress, optimism/pessimism and positive future thinking to predict hopelessness 10-12 weeks later. As these variables have never been studied together, our reasoned conjecture was that those individuals reporting high levels of pessimism, low levels of positive future thinking and high levels of stress would be more hopelessness than those who did not. Second, we hypothesized that positive future thinking would not moderate the relationship between optimism/pessimism and dysphoria. Given the inconsistencies in the literature (see O'Connor et al., 2004; Hunter & O'Connor, 2003), we did not formulate any hypotheses concerning negative future thinking.

## METHOD

### *Participants*

One hundred and twenty one college students (102 women and 19 men) 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. Of the initial sample, 91 completed measures at both time points, at Time 1 (T1) and 10-12 weeks later, at Time 2 (T2), at the beginning and end of semester. Those who did not complete the Time 2 measures did not differ significantly from those who did on any of the variables measured in the study. As a result, the subsequent analyses are based on the

responses from the 91 participants. The mean age of the participants was 20.5 years ( $SD = 5.0$ ) and the ages ranged from 17-46 years. The men and women did not differ significantly in age ( $t(89) = 1.14, NS$ ) and the majority of the participants were not married (95%). We did not collect details of the racial/ethnic composition of our sample. However, the students at the university are predominantly White, representing 95 per cent of the student population.

### *Measures*

*Future Thinking.* The future thinking task (FTT; MacLeod et al., 1997) requires participants to think of potential future experiences across three time periods – the next week (including today), the next year and the next five to ten years. This task 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 first while the other half complete the negative condition first. 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 that they should write down whatever comes to mind. The responses should be things that are going to happen, or are reasonably likely to happen. Finally, participants are told to keep trying to generate responses until the time-limit is up<sup>2</sup>.

*Hopelessness.* Hopelessness was measured using the 20-item Beck Hopelessness Scale (BHS; Beck et al., 1974). Participants 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 enthusiasm”). Higher scores represent elevated hopelessness. The maximum score is 20. This is a reliable and valid measure that has been shown to predict eventual suicide (Beck et al., 1974, 1985; Holden & Fekken, 1988). In the present study, internal consistency was very good (Kuder-Richardson–20 = .84 and .86 at Time 1 and Time 2, respectively).

*Dysphoria.* The Center for Epidemiologic Studies Depression Scale (CESD) is a 20-item measure of dysphoria for use in the general population (Radloff, 1977). Participants are required to rate on a four point Likert-type scale (anchored at rarely or none of the time and most or all of the time) how often they have felt or behaved like each of the statements during the past week (e.g., “I felt that I could not shake off the blues even with help from my family or friends”). Higher scores represent elevated depressive symptomatology. The scale is reliable and valid (Radloff, 1991) and it exhibited very good internal consistency ( $\alpha$ s = .90 and .91 at Time 1 and Time 2, respectively).

*Optimism/Pessimism.* Optimism/pessimism was measured by the Life Orientation Test (LOT; Scheier & Carver, 1985). It includes four positively worded items (e.g., “I always look on the bright side of things”), four negatively worded items (e.g., “If something can go wrong for me, it will”), and four filler items (e.g., “It is easy for me to relax”). Participants are asked to indicate either agreement or disagreement with each of the statements. The positively and negatively worded items (after reversal) are summed to yield an overall measure of optimism/pessimism. Higher scores represent higher optimism. The Life Orientation Test (LOT and LOT-R) has been shown to exhibit temporal stability over 4 weeks ( $r$  = .79), 4 months ( $r$  = .68) and 12 months ( $r$  = .60; Scheier & Carver, 1985; Scheier, Carver & Bridges, 1994). In the present study, the internal consistency ( $\alpha$ ) was .80.

*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?”). Participants 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 & Williamson, 1988; Cohen et al., 1983). Cronbach’s  $\alpha$  for the present sample was .81.

#### *Procedure*

All participants were given a brief introduction of what the study would require and invited to take part. At Time 1 (T1), participants completed measures of future thinking, optimism/pessimism, hopelessness (BHS-T1) and dysphoria (CESD-T1). At Time 2 (T2), 10-12 weeks later, participants completed the measures of hopelessness (BHS-T2), dysphoria (CESD-T2) and stress (PSS-T2). All study measures were administered to participants from two intact classes. All those who were approached agreed to participate. At Time 1, the future thinking task was administered first, followed by the self-report measures. To control for transfer effects, the order of presentation of the self-report measures was counterbalanced. To ensure anonymity but to allow for the follow-up, participants were asked to place either a pseudonym or their registration number on the study measures. Ethical approval had been obtained from the University Psychology Department’s ethics committee.

## RESULTS

Before presentation of the regression analyses, consistent with other future thinking studies in the field (e.g., MacLeod et al., 1997), we conducted an ANOVA to

confirm that it was reasonable to aggregate the positive and negative thoughts into composite scores. A Valence (positive / negative future thoughts) x Period (week, year, 5-10 years) x Gender (male / female) mixed model ANOVA produced one significant main effect but no interactions; across all time periods, participants reported significantly more positive expectations for the future ( $M=12.02$ ,  $SD=3.49$ ) relative to the events that they were worried about ( $M=8.45$ ,  $SD=3.42$ ;  $F(1,89)=43.63$ ,  $p<.001$ ). The mean number of future thoughts by time period and valence is displayed in Table 1.

[Insert Table 1 about here]

The bivariate correlations for all the variables are displayed in Table 2. Given that there were no differences across the time periods (i.e., next week, year, 5-10 years), we collapsed the future thinking measures into (1) total positive future thinking and (2) total negative future thinking<sup>3</sup>. Positive future thinking was correlated with negative future thinking which was probably indicative of the shared variance associated with verbal fluency ( $r=.524$ ,  $p<.001$ ). With the exception of the positive correlations between negative future thinking and CESD-T1 and BHS-T1 ( $r=.227$ ,  $p<.05$ ,  $r=.253$ ,  $p<.05$  respectively), neither positive nor negative future thinking were associated with any of the other variable. Hopelessness and dysphoria at baseline (BHS-T1, CESD-T1) and at Time 2 (BHS-T2, CESD-T2) were correlated positively with each other, positively with stress but negatively with optimism/pessimism (all at least  $p<.01$ ).

[Insert Table 2 about here]

We conducted four hierarchical regression analyses to investigate whether future thinking and stress moderated the relationship between optimism/pessimism and psychological distress to predict hopelessness or dysphoria at Time 2 over and above

baseline levels of distress<sup>4</sup>. Consistent with Aiken and West (1991), all predictors were centered before inclusion in the regression analyses. In all the regression analyses, initial levels of distress (BHS-T1 and CESD-T1) were entered at step 1. The three independent predictors were entered in the second step, i.e., stress, optimism/pessimism and negative or positive future thinking (see Table 3). Next, to test for moderation, the three relevant two-way interactions (i.e., multiplicative terms) were entered in step three followed by the appropriate three-way interaction in step four (Aiken & West, 1991)<sup>5</sup>.

[Insert Table 3 about here]

*Positive Future Thinking, Stress and Optimism/Pessimism as Predictors of Hopelessness and Dysphoria*

In the first regression analysis, we investigated the effects of positive future thinking, stress and optimism/pessimism to predict changes in hopelessness. The final model yielded four significant effects: initials level of hopelessness (BHS-T1,  $\beta = .513$ ,  $t(90) = 5.42$ ,  $p < .001$ ) and stress ( $\beta = .434$ ,  $t(90) = 4.93$ ,  $p < .001$ ) were significant predictors of Time 2 hopelessness (BHS-T2). The interaction between optimism/pessimism x stress was also significant ( $\beta = -.189$ ,  $t(90) = -2.55$ ,  $p < .05$ ). However, this was qualified by the significant three-way interaction ( $\beta = -.223$ ,  $t(90) = -2.74$ ,  $p < .01$ ). To probe the three-way interaction, consonant with Aiken and West (1991), in two graphs we plotted the regression lines of best fit at high (one standard deviation above the mean) and low (one standard deviation below the mean) levels of stress and positive future thinking separately for the high pessimism and low pessimism groups (one standard deviation above and below the mean) (see Figure 1).

[Insert Figure 1 about here]

Next, we tested each of the four simple slopes for significance, to determine whether they differed significantly from zero. Among those high on pessimism, both the high and low stress lines were significantly different from zero ( $p < .05$ ) whereas in the optimistic group only the high stress line was significantly different ( $p < .05$ ). These analyses suggest that among the optimists, impaired positive future thinking is only associated with increased hopelessness when under stress. However, there was an interesting pattern of results in the high stress pessimism group. As anticipated low positive thinking was associated with increased hopelessness when under low levels of stress. Contrary to expectations, in the high stress pessimism group, the presence of positive future thinking was associated with increased hopelessness.

Given that the Aiken and West (1991) procedure plots hypothetical predictions generated from the regression model, it is possible that the model generates predictions which no individual actually attains. To investigate whether this was the case, we performed a median split on each of the three independent variables and looked at the 8 cells of the study design. This analysis revealed that 6/8 cells had between 9 and 22 participants, however, two of the cells contained five participants. These were the pessimism x low stress x high positive future thinking cell and the optimism x high stress x high positive thinking cell. So, although all of the cells were populated, it would have been preferable to have more participants in two of the cells.

The second hierarchical regression analysis focused on the same relationship with one difference, the outcome variable was dysphoria rather than hopelessness. As is evident in Table 3, BHS-T1 and CESD-T1, as a block ( $\Delta R^2 = .30, p < .001$ ), as well as stress ( $\beta = .739, t(90) = 8.64, p < .001$ ) were the only significant predictors of dysphoria 10-12 weeks later, at time 2. As predicted, there were no significant interactions.

[Insert Table 4 about here]

*Negative Future Thinking, Stress and Optimism/Pessimism as Predictors of Hopelessness and Dysphoria*

Next, we investigated the moderating effects of stress and negative future thinking on the optimism/pessimism–distress relationship. Hence, the third hierarchical regression analysis focused on hopelessness and, as before, the variables were entered into the regression equation in logical steps as described in Table 4. On this occasion, there were only two significant predictors, independent effects of BHS-T1 ( $\beta = .515$ ,  $t(90) = 4.98$ ,  $p < .001$ ) and PSS-T2 ( $\beta = .419$ ,  $t(90) = 4.34$ ,  $p < .001$ ). None of the interactions were significant. In the final regression, we looked at negative future thinking as a moderator in the optimism/pessimism–dysphoria relationship. This analysis yielded one significant effect, for stress ( $\beta = .723$ ,  $t(90) = 7.79$ ,  $p < .001$ ) and there were no interactions.

## DISCUSSION

This study yielded partial evidence in support of the two key hypotheses and extended our understanding of the relationship between generalized and specific expectancies. First, stress and positive future thinking did moderate the relationship between optimism/pessimism and hopelessness. These findings were strengthened by the fact that the interactions explained additional variance over and above that accounted for by the baseline measures of psychological distress. As anticipated, low levels of positive future thinking were associated with increased distress among the high stress optimists and low stress pessimists. However, we did not expect high levels of positive thinking to be associated with increased hopelessness among the high stress pessimists. These findings point to a more complex relationship between positive future thinking and well-being than was previously thought. The negative

effects of positive thoughts among the high stress pessimists may reflect the fact that the future thoughts represent opportunities for failure and as a result they have a pernicious effect on well-being. Indeed, it may be that pessimists view future thoughts as events or experiences which are unobtainable. Such an explanation is consistent with Carver and Scheier's (1998) definition of pessimists, as individuals who expect bad experiences to happen. What is more, the optimism and pessimism findings also supports a diathesis-stress model of optimism/pessimism. The present study, therefore, suggests that impaired positive future thinking has deleterious effects on well-being under some but not all conditions. Nonetheless, this is the first study to empirically investigate the optimism/pessimism–future thinking relationship and to demonstrate that future positive thinking has utility in the temporal prediction of hopelessness.

The second hypothesis was supported. As predicted, positive future thinking did not moderate the relationship between optimism/pessimism and dysphoria. Indeed, the only independent predictor of dysphoria was stress. It appears that impaired positive future thinking has a particular effect, not on dysphoria per se, rather its effect seems to be circumscribed to hopelessness. These data add to the growing body of research which posits that positive and negative cognitions are mediated via different motivational systems (namely the Behavioral Inhibition System and the Behavioral Activation System; Fowles, 1994; Gray, 1994; O'Connor & Forgan, 2006).

#### *Generalized and Specific Expectancies: A Case of Synergy?*

This is the first study to investigate the relationship between optimism/pessimism and changes in hopelessness prospectively. It teases apart Chang's (2002) cross-sectional finding that optimism/pessimism are strongly

correlated with hopelessness in Asian and Caucasian American college students: Our study suggests that the direct effects of generalized anticipations on hopelessness can be explained via initial levels of distress and time 2 stress; beyond this, they have no independent predictive utility. However, optimism/pessimism does interact with stress and specific future expectations to predict change in psychological distress in the form of hopelessness. This is consonant with the classic work by Beck (1967) and Chang et al.'s (1997) findings that highlight the sometimes detrimental consequences of pessimism.

In addition, the synergistic relationship between specific positive future expectations and optimism/pessimism is of interest clinically. It identifies the types of cognitions (goals/expectancies) that should be targeted in therapy. To this end, behavioral and cognitive techniques have been suggested, to train patients to encode and access particular memories (MacLeod & Moore, 2000) and to develop positive schemas (Padesky, 1994; see also Pretzer & Walsh, 2001 for a discussion of the psychotherapeutic implications of optimism/pessimism). In addition, it may be useful for pessimists to reframe positive cognitions to represent opportunities for success rather than failure.

#### *Self-regulation, Optimism and Pessimism*

This study augments the existing evidence base for Carver and Scheier's (1998) self-regulation model. It is evident that, not only are pessimists predisposed to exhibit generalized, low levels of motivation and tenacity when pursuing goals, but the impact of this predisposition can be strengthened or attenuated by the presence of specific future positive expectancies. This finding is bolstered by our data showing that these future expectations are not correlated with either optimism or pessimism.

These data also extend Needles and Abramson (1990)'s study which found



that the *occurrence* of positive events and an enhancing attributional style interacted to produce a reduction in hopelessness among college students within a six week period. Our findings add to this work in two respects: first, they demonstrate that optimism/pessimism, another relatively stable personality dimension conjoint with positive future thinking, predicts hopelessness beyond initial levels of distress under certain conditions. Second, they suggest that positive *cognitions* per se, as distinct from the *experience* of positive events, serve a function in the etiology of hopelessness.

Nevertheless, there are several issues regarding the nature of the relationship between generalized and specific expectancies that require elucidation. For example, what mediates this relationship? One possibility is that coping or social support may account for the relations between, for example, optimism/pessimism and specific positive expectations. A recent study of college students found that the coping style which students used as well as their ability to generate more supportive social networks improved psychological well-being and adjustment (Brissette et al., 2002). Therefore, it is reasonable to speculate that pessimists who employ less problem-focused coping strategies, particularly when they are stressed, may become less able to conceptualise positive future expectations as being positive.

A second issue concerns the extent to which optimism/pessimism is distinct from other personality dimensions. For example, perfectionism has been implicated in the etiology of hopelessness, suicide risk and specific future expectations (Chang, 1998c; Hewitt, Flett, & Turnbull-Donovan, 1992; Hunter & O'Connor, 2003; O'Connor & O'Connor, 2003). Future research ought to determine its relation with both generalized and specific expectations. Such a contribution by perfectionism would be consistent, not only with Carver & Scheier's (1998) self-regulation model,

but also Baumeister's and Williams' models of suicidal behavior (Baumeister, 1990; Williams & Pollock, 2001; see also O'Connor, 2003). Another possibility is that self-esteem or extraversion might mediate the generalized-specific expectancies relationship given their established association with adjustment and optimism/pessimism (e.g., Marshall et al., 1992; Symister & Friend, 2003).

Given that the focus of this paper was on hopelessness, we need to determine the generalizability of these findings by investigating whether the synergy between specific and generalized expectations has predictive utility across different populations and outcome measures as well as over longer time periods. In particular, we should determine whether pessimism/optimism, positive future thinking and stress interact to predict suicidal thinking. It would also be useful to replicate these findings using the revised life orientation test (LOT-R, Scheier, Carver & Bridges, 1994), although, given that the LOT and LOT-R are strongly correlated ( $r=.95$  reported in Scheier et al., 1994), we would not anticipate any difficulties. One notable limitation of this study was the paucity of men in the sample. Future research should confirm whether or not there are gender differences in this respect. Another issue merits comment. In the present study, for pragmatic reasons, we operationalised optimism/pessimism as a single bipolar dimension. Future research, with a larger sample, should investigate whether pessimism is the functional opposite of optimism or indeed, whether they are two distinct constructs? Finally, to our knowledge, this is the first study to investigate the relations between specific and generalized expectations. Therefore, we urge some caution in the interpretation of these findings until they are replicated, in particular in the light of the observation that two of the cells of the interaction were not well populated within the present dataset. Three-way

interactions are sometimes unstable and the present data may have been affected by the unequal distributions.

In conclusion, the present research has accumulated empirical evidence to support the postulation that *generalized* expectancies can be moderated by *specific* future-oriented expectancies. Moreover, these findings have conceptual, theoretical and clinical importance in the management of hopelessness. Taken together, they point to the fruits of integrating personality and cognitive processes, to better understand the self-regulation of affect.

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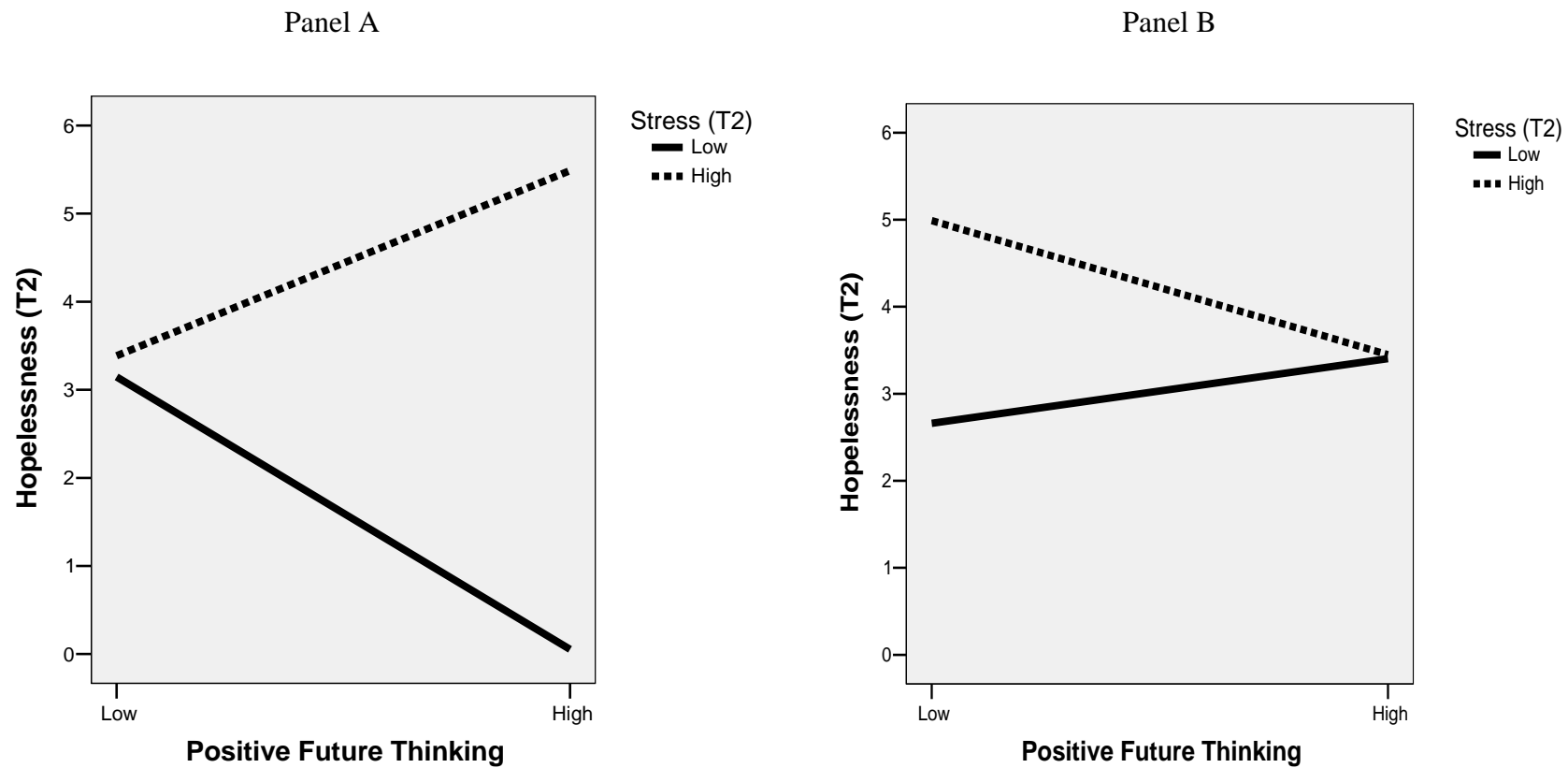
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Figure 1. The relationship between positive future thinking and hopelessness as function of pessimism (Panel A)/optimism (Panel B).



*Table 1.* The mean number of future thoughts (standard deviations in parentheses) by time period and valence

	Next Week		Next Year		Next 5 – 10 years	
	Positive	Negative	Positive	Negative	Positive	Negative
Total	3.85 (1.53)	2.57 (1.94)	3.97 (1.33)	3.00 (1.35)	4.21 (1.55)	2.88 (1.59)

Table 2. Zero order correlations for all the variables

	Total Positive Thinking	Total Negative Thinking	BHS-T1	BHS-T2	CESD-T1	CESD-T2	PSS-T2	Optimism/ Pessimism
Positive Total	-							
Negative Total	.524***	-						
BHS-T1	.092	.253*	-					
BHS-T2	.082	.205	.603***	-				
CESD-T1	.050	.227*	.456***	.607***	-			
CESD-T2	-.047	.075	.301**	.663***	.572***	-		
PSS-T2	-.063	-.006	.315**	.618***	.599***	.777***	-	
Optimism/ Pessimism	.017	-.148	-.637***	-.474***	-.552***	-.317**	-.483***	-

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

*Note.* BHS-T1 = Time 1 Hopelessness, BHS-T2 = Time 2 Hopelessness, CESD-T1 = Time 1 Depression, CESD-T2 = Time 2 Depression, PSS-T2 = Perceived Stress

Table 3.

Hierarchical multiple regression analyses testing the moderating effects of stress and positive future thinking on the relationship between optimism/pessimism and hopelessness and dysphoria

Predictor variable	R	R <sup>2</sup>	$\Delta R^2$	Final $\beta$	F (2, 90)
Dependent variable: Hopelessness (BHS-T2)					
Step 1: BHS-T1	.681	.464		.513***	37.59***
CESD-T1				.105	
Step 2: PSS-T2	.754	.568	.105	.434***	6.80***
Optimism/Pessimism				.095	
Total Positive Thinking				-.046	
Step 3: Optimism/Pessimism x PSS-T2	.775	.601	.033	-.189*	2.22
Total Positive Thinking x PSS-T2				.133	
Total Positive Thinking x Optimism/Pessimism				.032	
Step 4: Total Positive Thinking x Stress x Optimism/Pessimism	.797	.635	.034	-.223**	7.52**
Dependent variable: Dysphoria (CESD-T2)					
Step 1: BHS-T1	.548	.300		.131	18.65***
CESD-T1				.142	
Step 2: PSS-T2	.798	.636	.336	.739***	25.91***
Optimism/Pessimism				.191	
Total Positive Thinking				-.092	
Step 3: Optimism/Pessimism x PSS-T2	.802	.643	.007	-.093	.51
Total Positive Thinking x PSS-T2				.063	
Total Positive Thinking x Optimism/Pessimism				-.008	
Step 4: Total Positive Thinking x Stress x Optimism/Pessimism	.810	.656	.013	-.138	3.05

\*p<.05, \*\*p<.01, \*\*\*p<.001

Table 4.

Hierarchical multiple regression analyses testing the moderating effects of stress and negative future thinking on the relationship between optimism/pessimism and hopelessness and dysphoria

Predictor variable	R	R <sup>2</sup>	$\Delta R^2$	Final $\beta$	F (2, 90)
Dependent variable: Hopelessness (BHS-T2)					
Step 1: BHS-T1	.679	.461		.515***	36.32***
CESD-T1				.083	
Step 2: PSS-T2	.751	.565	.104	.419***	6.52***
Optimism/Pessimism				.138	
Total Negative Thinking				-.014	
Step 3: Optimism/Pessimism x PSS-T2	.778	.605	.041	-.116	2.71
Total Negative Thinking x PSS-T2				.144	
Total Negative Thinking x Optimism/Pessimism				.041	
Step 4: Total Negative Thinking x Stress x Optimism/Pessimism	.789	.623	.018	-.158	3.72
Dependent variable: Dysphoria (CESD-T2)					
Step 1: BHS-T1	.538	.290		.108	17.36***
CESD-T1				.120	
Step 2: PSS-T2	.788	.622	.332	.723***	23.96***
Optimism/Pessimism				.191	
Total Negative Thinking				-.016	
Step 3: Optimism/Pessimism x PSS-T2	.800	.640	.019	-.040	1.38
Total Negative Thinking x PSS-T2				.098	
Total Negative Thinking x Optimism/Pessimism				-.053	
Step 4: Total Negative Thinking x Stress x Optimism/Pessimism	.807	.651	.011	-.122	2.39

\*p<.05, \*\*p<.01, \*\*\*p<.001

Author notes

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<sup>1</sup> Anti-goals are defined as values that an individual sees as undesirable (see Carver & Scheier, 1998, p. 18).

<sup>2</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 a previous study (O'Connor et al., 2004), we administered the Beck Hopelessness Scale and a measure of verbal fluency to 30 participants. Correlational analyses revealed no significant associations.

<sup>3</sup> This is consistent with other studies in the field (e.g., MacLeod et al., 1998; O'Connor et al., 2000b; Hunter & O'Connor, 2003).

<sup>4</sup> Mean hopelessness increased from M=3.77 (BHS-T1) to M=4.01 (BHS-T2). This increase was not significant ( $t(90)=-.762$ , NS)

<sup>5</sup> Due to issues concerning statistical power, the interactions were examined using separate regression analyses (Chaplin, 1991).