



Shorter communication

Asking ‘why’ from a distance facilitates emotional processing: A reanalysis of Wimalaweera and Moulds (2008)[☆]Ozlem Ayduk^{a,*}, Ethan Kross^{b,**}^aDepartment of Psychology, University of California, 3210 Tolman Hall, Berkeley, CA 94720-1650, USA^bDepartment of Psychology, University of Michigan, 530 Church Street, Ann Arbor, MI 48109-1043, USA

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ABSTRACT

Wimalaweera and Moulds [Wimalaweera, S. W., & Moulds, M. L. (2008). Processing memories of anger-eliciting events: the effect of asking ‘why’ from a distance. *Behaviour Research and Therapy*, 46, 402–409] reported a failure to replicate previous findings demonstrating the effectiveness of analyzing anger-related experiences from a self-distanced perspective for reducing negative affect in the short-term (Ayduk, O., & Kross, E. (2008). [Enhancing the pace of recovery: self-distanced-analysis of negative experiences reduces blood pressure reactivity. *Psychological Science*, 9(3), 229–231; Kross, E., Ayduk, O., & Mischel, W. (2005). When asking “why” does not hurt. *Psychological Science*, 16, 709–715.] and facilitating adaptive emotional processing over time [Kross, E., & Ayduk, O. (2008). Facilitating adaptive emotional analysis: distinguishing distanced-analysis of depressive experiences from immersed-analysis and distraction. *Personality and Social Psychology Bulletin*]. A reanalysis of their data that takes into account effect sizes and participants’ scores on the avoidance subscale of the Impact of Events Scale, which were not reported in the original write-up, contradict this and a number of other conclusions reported in their article. In this article, we review the key findings that emerged from this reanalysis.

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In their recent article, “Processing memories of anger-eliciting events: The effect of asking ‘why’ from a distance,” Wimalaweera and Moulds (2008) sought to replicate and extend prior research indicating that directing individuals to analyze (i.e., focus on ‘why’) autobiographical anger experiences from a self-distanced perspective (distanced-why) leads to lower levels of angry affect compared to conditions in which individuals are instructed to either focus on ‘why’ from a self-immersed perspective (immersed-why) or focus on ‘what’ (i.e., what happened; what was felt) from a self-immersed (immersed-what) or a self-distanced (distanced-what) perspective (Kross, Ayduk, & Mischel, 2005, Study 1). Contradicting these and many other recent results (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross et al., 2005; also see Gruber, Harvey, & Johnson, 2007), Wimalaweera and Moulds (2008) report finding no evidence that asking ‘why’ from a distance attenuates

negative affect in the short-term or facilitates emotional processing over time.

We embrace attempts to replicate research and believe that doing so is the hallmark of a cumulative science which requires taking failures to replicate important findings seriously, particularly when they have potentially consequential treatment implications. However, our reading of Wimalaweera and Moulds (2008) raised a number of concerns regarding patterns in their data that were not discussed in their article. We thus asked and received permission to reanalyze the authors’ data set, including data on the avoidance subscale of the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979), which was not included in Wimalaweera and Moulds’ original report despite its central relevance to the authors’ key prediction that asking ‘why’ from a distance should facilitate avoidance and thus undermine emotional processing (p. 404). As detailed below, our reanalysis of this data set revealed a pattern of findings that contradict a number of Wimalaweera and Moulds’ key conclusions. We describe these findings below, organizing our discussion around two main themes: (1) differences between asking “why” from a self-distanced vs. self-immersed perspective and (2) differences in outcomes across the four experimental groups (distanced-why vs. distanced-what vs. immersed-why vs. immersed-what).

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Differences between asking “why” from a self-distanced vs. self-immersed perspective

In reanalyzing Wimalaweera and Moulds (2008) data set, our initial focus was on the difference between the distanced-why and immersed-why groups. In prior research, we have focused on these two conditions most extensively because asking “why” and attempting to understand one’s feelings are at the heart of both maladaptive rumination and adaptive “working through.” In this vein, we have shown in five published studies (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross et al., 2005; for review, see Kross & Mischel, in press) that asking ‘why’ from a distanced (vs. an immersed) perspective leads to lower levels of emotional reactivity (using self-report as well as physiological measures) in the short-term. It also facilitates emotional processing in the long-term, for example, by buffering individuals against future negative affect and reducing recurring thoughts about distressing experiences over 24-h and 7-day periods. Moreover, the finding that the distanced-why strategy leads to less emotional reactivity compared to the immersed-why strategy has recently been demonstrated in the context of processing positive emotions in individuals with bipolar disorder by an independent research group using the same paradigm that we have employed in all of our studies (Gruber et al., 2007).

Overview of data reanalysis

Previous research examining the differences between the distanced-why and immersed-why strategies on negative affect (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross et al., 2005) has consistently yielded effect sizes in the medium range (average $d=0.51$) with samples sizes that average 47 participants per condition (range: 36–66). Wimalaweera and Moulds (2008), in contrast, included 14–16 participants per condition. Although a sample of this size is adequate for identifying large effects, it is not sufficient for detecting medium size effects (Cohen, 1992) that characterize our prior findings. Such small sample sizes are particularly problematic as they raise the chance of committing Type II errors (i.e., erroneously accepting the null hypothesis when there are real differences in the population). Therefore, we focus this reanalysis primarily on the discussion of effect sizes in order to make comparisons between the present findings and those observed in our prior research. As we illustrate below, this approach reveals a number of small- and medium size effects that replicate prior research and call into question Wimalaweera and Moulds’ argument that the distanced-why strategy hinders emotional processing.

Effect size differences for short-term outcomes and intrusions at 24-h follow-up

Analyses of the effect sizes that characterize the differences between the immersed-why and distanced-why conditions in Wimalaweera and Moulds study revealed results that are remarkably consistent with our prior findings. As Table 1 illustrates, participants in the distanced-why group displayed lower levels of anger and negative affect at time 1. Furthermore, at time 2 distanced-why participants reported lower levels of intrusions and memory-related distress and anger. These findings replicate the bulk of our prior research (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross et al., 2005) in which we have demonstrated similar differences with an average effect size of Cohen’s d around 0.50 (range: 0.20–0.82).

The only finding that was not consistent with prior research was participants’ performance on the implicit anger measure, with distanced-why participants completing more anger words than

Table 1

Means, standard deviations, and effect sizes for the distance-why and immersed-why conditions.

	Dependent Variables		Distanced-why	Immersed-why	Effect size d
Time 1 Outcomes	PANAS anger	Pre	3.73 (0.88)	4 (1.41)	–0.46
		Post	6.87 (2.56)	8.4 (3.07)	
	PANAS negative affect	Post-pre	3.14 (2.41)	4.4 (3.01)	–0.17
		Pre	12.87 (4.45)	14.2 (6.38)	
	Anger words	Post	15.93 (4.15)	18 (4.81)	0.69
		Post-pre	3.06 (5.29)	3.8 (3.23)	
Time 2 Outcomes (24 h later)	Memory-related anger	Pre	45.33 (32.8)	38.87 (28.66)	–0.52
		Post	36.87 (29.83)	47.67 (31.39)	
		Post-pre	–8.46 (25.66)	8.8 (39.91)	
	Memory-related distress	Pre	51.67 (32.82)	51.67 (32.93)	–0.31
		Post	38.33 (27.62)	47.67 (24.27)	
	IES-intrusions	Post-pre	–13.34 (23.72)	–4.00 (36.45)	–0.53
		Pre	6.87 (5.87)	9.27 (8.32)	
	IES-avoidance	Post	9.2 (6.56)	14.33 (6.00)	–0.37
		Post-pre	2.33 (3.43)	5.06 (6.25)	
		Pre	10.47 (9.14)	11.67 (10.77)	
		Post	9.33 (8.21)	13.2 (8.41)	
		Post-pre	–1.14 (6.43)	1.53 (7.83)	

Notes. Cohen’s d statistics are reported for the effect size of the difference for the within-subject changes (pre-post) for each outcome variable. Negative effect sizes indicate lower scores in the distanced-why relative to the immersed-why group. Conventional values for interpreting effect sizes for the d statistic are, 0.20 for small, 0.50 for medium and 0.80 for large effects (Cohen, 1992).

The anger words measure was only administered after the manipulation. Thus, no pre-manipulation scores and anger word change scores exist.

participants in the immersed-why condition. This is a puzzling effect given the consistency of the differences between these groups on all other measures administered in this study, with distanced-why participants displaying lower levels of negative affect at time 1 and lower levels of intrusions and memory-related anger and distress at time 2. We thus call for caution in interpreting this finding and feel that it requires further replication.

Does asking ‘why’ from a distance lead to avoidance?

A key assumption motivating Wimalaweera and Moulds’ (2008) research was that “...the ‘distanced’ aspect of this [distanced-why] manipulation appears to promote an observer perspective – a quality that has been linked to avoidance and consequently, poor processing of negative events...” (p. 404). Given the claim that distancing in general, and the distance-why strategy particular, should lead to avoidance, we directly investigated this issue by examining how participants in the distanced-why vs. immersed-why groups compared on the avoidance subscale of the IES (Horowitz et al., 1979) – data which were not reported by Wimalaweera and Moulds (2008). This subscale assesses the degree to which individuals try to deny the meaning of their emotional experiences, engage in suppression and behavioral inhibition, and experience blunted emotional reactions (e.g., I avoided myself getting upset when I thought about it or was reminded of it, “I tried to remove it from memory”).

As the means in Table 1 illustrate (also see Fig. 1), participants in the distanced-why group demonstrated a *reduction in avoidance* from time 1 to time 2, whereas participants in the immersed-why group showed an *increase in avoidance* over time. This difference reflects a small to medium size effect that directly contradicts the claim that the distanced-why strategy facilitated avoidance in the Wimalaweera and Moulds’ study.

The finding that the distanced-why strategy did not lead to avoidance in Wimalaweera and Moulds’ study is consistent with



Fig. 1. Change in avoidance from pre-manipulation to 24-h follow-up as a function of experimental condition.

findings from a recent set of studies in which we directly examined this question. Specifically, Kross and Ayduk (2008) compared the effect of analyzing negative feelings from a self-distanced perspective on emotional processing to the effect of distraction, in which participants were instructed to cognitively avoid focusing on their emotions. In the short-term, participants in both the distanced-why and distraction conditions reported lower levels of negative affect compared to an immersed-why comparison condition. In the long-term (i.e., at 1 day and 1 week follow-ups), however, distraction led to significantly higher levels of intrusions and negative affect compared to the distanced-why strategy. In fact, at time 2, the distraction group was indistinguishable from the immersed-why group on all measures.

In addition to these findings, in 5 of the 6 studies we have published on this topic, we specifically asked participants in both the immersed-why and distanced-why groups to describe in writing what they think about as they attempt to analyze their feelings during the study. Content analyses of these “stream of thought” essays consistently indicate that participants in both of these conditions focus relatively more on recounting the emotional features of their past experience (i.e., what happened, what was felt?) than on reconstructing their experience abstractly. These findings provide additional evidence indicating that the distanced-why strategy does not facilitate avoidance (Kross & Ayduk, 2008; Kross et al., 2005, Study 2).

Differences in outcomes across the 4 groups

One of Wimalaweera and Moulds’ main conclusions was that “in the context of anger, emotional processing is more affected by focusing on ‘what’ vs. ‘why,’ rather than on the vantage point adopted in memory recall” (p. 408). Although we acknowledge that significant differences with large effect sizes distinguish between the “what” and “why” conditions on the time 1 outcome variables and time 2 intrusions (see Table 2), findings from our reanalysis call into question the assertion that these findings support the conclusion that focusing on “what” promotes emotional processing.

Overview of data analyses

Wimalaweera and Moulds reported results from one-way ANOVAs. However, the experimental procedure used by Wimalaweera and Moulds reflects a focus (2: what vs. why) by perspective (2: distanced vs. immersed) factorial design. Therefore, in examining the relationships across all four experimental conditions in this reanalysis, we computed effect sizes conducting repeated measures ANOVA’s on the within-subjects’ change in outcomes

over time, with focus (2: what vs. why), perspective (2: distanced vs. immersed) and the interaction between them as predictors. This analytic approach is the most appropriate to use in making inferences about the effects of one factor over the other.¹ The results from these analyses are presented in Table 2. We detail our interpretation of these findings below.

Effects of perspective and focus on emotional processing indices at the 24-h follow-up

Change in intrusions and avoidance

Wimalaweera and Moulds concluded that the focus (what vs. why) participants adopted was the only factor that influenced emotional processing at the 24-h follow-up (see p. 408). However, our reanalysis revealed a small to medium size effect of perspective for both intrusions and avoidance with people in the self-immersed conditions experiencing *more intrusions* and *more avoidance* than people in the self-distanced condition (see Table 2). Moreover, while focus (what vs. why) had a large effect on intrusions, it had no effect on avoidance – if anything, there was a small size effect that ran in the opposite direction to Wimalaweera and Moulds’ predictions with the ‘what’ focus group showing greater avoidance than the ‘why’ focus group. In this vein, it is noteworthy that the distanced-why group (presumably the most abstract condition) showed the *largest decrease* in avoidance over time among the four groups, whereas the immersed-what group (presumably the most concrete condition) displayed the *largest increase* in avoidance over time, with the difference between these groups approaching a medium size effect ($d = 0.46$). Thus overall, findings on the avoidance subscale provide clear evidence demonstrating that asking ‘why’ from a distance does not lead to avoidance. These findings also indicate that the relationship between abstract vs. concrete thought and emotional processing is more nuanced than Wimalaweera and Moulds suggest (for discussion see Kross & Ayduk, 2008).

Change in memory-related distress and anger

Using one-way ANOVAs, Wimalaweera and Moulds reported null results for the change in memory-related anger and distress variables at the 24-h follow-up. However, when the data are reanalyzed using the factorial design described above, medium size interaction effects between focus and perspective emerged in predicting within-person change in distress (distress: $F(1, 56) = 3.96$, $p = 0.05$, $\eta^2 = 0.07$) and in anger ($F(1, 56) = 2.97$, $p = 0.09$, $\eta^2 = 0.05$). These interactions indicate that participants in the distanced-why and immersed-what groups experienced larger decreases in memory-related anger and distress over time than participants in the immersed-why and distanced-what groups (see Table 2).

On the surface, the fact that the immersed-what strategy led to significant reductions on these measures may seem consistent with the notion that engaging in concrete thought facilitates emotional processing (since immersed-what should theoretically be the cell that generates the most concrete thought). However, the avoidance data showing that people in the immersed-what condition engaged

¹ Planned contrasts comparing the effect of the distanced-why manipulation on affect relative to all three other experimental conditions (immersed-why, immersed-what, distanced-what) were reported in Kross et al. (2005, Study 1) because we had specific a priori predictions about how the distanced-why group would compare to each of the other three conditions (with interaction effects predicted for all dependent measures). The results of 2×2 ANOVAs that tested for significant interaction effects were additionally reported in the original manuscript and confirmed the results of the planned contrasts, but were removed before final publication in order to abide by the journal space limits and to respect reviewer suggestions.

Table 2
Means, standard deviations, effect sizes, and *F*-values for experimental groups.

			Experimental groups				F-values and effect sizes						
			Distanced-why		Distanced-what		Immersed-why		Immersed-what		Perspective × time	Focus × time	Perspective × focus × time
			Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	<i>F</i> (η^2)	<i>F</i> (η^2)	<i>F</i> (η^2)				
Time 1 outcomes	PANAS anger	Pre	3.73 (0.88)	5.00 (3.20)	4.00 (1.41)	3.86 (1.10)	1.47 (0.03)	6.85 (0.11)	<1 (0.00)				
		Post	6.87 (2.56)	6.31 (2.77)	8.40 (3.07)	5.86 (2.91)							
		Post-pre	3.14 (1.72)	1.31 (2.99)	4.40 (2.24)	2.00 (2.01)							
	PANAS negative affect	Pre	12.87 (4.45)	15.50 (5.98)	14.20 (6.38)	16.07 (6.68)	<1 (0.00)	10.50 (0.16)	<1 (0.00)				
		Post	15.93 (4.15)	14.50 (4.97)	18.00 (4.81)	15.21 (6.00)							
		Post-pre	3.06 (4.30)	−1.00 (5.48)	3.80 (5.60)	−0.86 (6.34)							
	Anger words ^a	Pre	3.27 (1.16)	2.06 (1.24)	2.40 (1.35)	1.93 (1.27)	2.37 (0.04)	6.66 (0.11)	1.27 (0.02)				
		Post											
		Post-pre											
Time 2 outcomes (24 h later)	Memory-related anger	Pre	45.33 (32.80)	47.81 (30.66)	38.87 (28.66)	47.18 (32.35)	<1 (0.004)	<1 (0.01)	2.96 (0.05)				
		Post	36.87 (29.83)	47.19 (34.60)	47.67 (31.39)	36.43 (25.07)							
		Post-pre	−8.46 (31.32)	−0.62 (32.63)	8.80 (30.03)	−10.75 (28.71)							
	Memory-related distress	Pre	51.67 (32.82)	40.69 (35.74)	51.67 (32.93)	56.43 (28.25)	<1 (0.007)	<1 (0.00)	3.96 (0.07)				
		Post	38.33 (27.62)	40.63 (34.78)	47.67 (24.27)	38.57 (26.92)							
		Post-pre	−13.34 (30.22)	−0.06 (35.26)	−4.00 (28.60)	−17.86 (27.59)							
	IES intrusions	Pre	6.87 (5.87)	7.38 (7.40)	9.27 (8.32)	8.36 (9.32)	2.64 (0.05)	7.52 (0.12)	<1 (0.00)				
		Post	9.20 (6.56)	5.56 (5.76)	14.33 (6.00)	8.93 (7.27)							
		Post-pre	2.33 (6.22)	−1.82 (6.58)	5.06 (7.16)	0.57 (8.30)							
	IES avoidance	Pre	10.46 (9.15)	12.75 (11.43)	11.67 (10.77)	13.07 (10.50)	1.88 (0.03)	<1 (0.00)	<1 (0.00)				
		Post	9.33 (8.22)	12.65 (9.51)	13.20 (8.42)	16.57 (10.87)							
		Post-pre	−1.13 (8.68)	−0.10 (10.47)	1.53 (9.60)	3.50 (10.69)							

Notes. Partial eta squared (η^2) statistics derived from conducting repeated measures 2×2 ANOVA's are reported for the effect size of the difference for the within-subject change (pre-post) for each outcome variable (except anger words). Conventional values for interpreting effect sizes for the η^2 statistic are: 0.01 for small, 0.06 for medium and 0.14 for large effects (Stevens, 1996).

^a The anger words measure was only administered after the manipulation. Thus, no pre-manipulation scores and anger word change scores exist.

in the most avoidance calls this interpretation into question. Instead, these data suggest that people in the immersed-what condition may have reported lower levels of distress and anger over time because they engaged in avoidance. Consistent with this interpretation, the increase in avoidance displayed by participants in the immersed-what group from time 1 to time 2 correlated negatively with both change in memory-related distress ($r = -0.42$) and change in memory-related anger ($r = -0.31$) over time. Although these correlations were not statistically significant, they reflect medium to large size effects that would likely become statistically significant with larger samples (see Cohen, 1992).² In contrast, change in avoidance was unrelated to change in memory-related distress ($r = -0.04$) and memory-related anger ($r = 0.005$) in the distanced-why condition, further demonstrating that avoidance did not account for the beneficial effects of engaging in the distanced-why strategy at time 2.

Effects of perspective and focus on affect measures at time 1

Before concluding, it is important to note that although Wimalaweera and Moulds found a significant effect of focus (what vs. why) on the time 1 dependent variables, with a 'what' focus leading to lower levels of negative affect than a 'why' focus, this finding not only failed to replicate our previous findings, in which we did not find a significant main effect of 'what' vs. 'why' (Kross et al., 2005, Study 1), but also Moulds' own theory and research.

² An examination of the distribution of change scores for avoidance (for the entire sample) revealed an outlier which was over 3.5 standard deviations above the mean and which was in the immersed-what condition. To be conservative, we first winsorized this data point to the next highest value on the avoidance change scores and then re-ran our analyses on the avoidance data. This transformation did not change any of the results. If anything, the correlation between avoidance and memory-related distress ($r = -0.47$) and anger ($r = -0.33$) change scores became slightly stronger in the immersed-what group.

Specifically, in prior research, Watkins and Moulds (2006) predicted and found that instructing both clinically depressed and normal healthy participants to focus on their feelings (analogous to a 'what' focus) vs. focus on the meanings, causes and consequence of their mood (analogous to a "why" focus) did not differentially affect their mood. As such, given that Wimalaweera and Moulds' time 1 findings concerning the main effect of focus were not predicted and contradict prior research, we feel that caution is in order in interpreting the significance of these results.

Concluding comments

The question of what distinguishes adaptive vs. maladaptive self-reflection is one of enormous interest and importance. In this vein, we hope this paper helps clarify and enhance our collective understanding of this important question. Our reanalysis of the Wimalaweera and Moulds data set revealed several new findings, two of which stand out in our view as being particularly noteworthy. First, with the exception of participants' performance on the word completion task, engaging in the distanced-why strategy was more effective than engaging in the immersed-why strategy for reducing short-term negative affect and facilitating emotional processing. These data provide an important independent replication of recent findings from our lab, which suggest that directing people to ask 'why' from a self-distanced perspective facilitates emotional processing compared to analyzing emotions from a self-immersed perspective. Second, although Wimalaweera and Moulds argue that the distanced-why strategy should lead to avoidance, analysis of participants' scores on the avoidance subscale of the IES contradicted this assumption. In fact, participants in the distanced-why group displayed the largest reduction in avoidance over time, whereas participants in the immersed-what group displayed the largest increase in avoidance. Taken together, these findings add to a growing body of research that suggests that asking 'why'

from a distanced perspective facilitates, rather than undermines, effective coping.

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