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The Dual Process Model of Coping with Bereavement: A Cross-Cultural Examination

Master Thesis

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Abstract

The Dual Process Model of Coping with Bereavement (DPM; Stroebe & Schut, 1999) has provided significant insights to understand bereavement experience. However, cross-culture studies examining the applicability of DPM across cultures remain scant. The current study examined if the theoretical propositions of DPM would be moderated by both culture (Asian vs. European) and interdependent self-construal (ISC; high vs. low). Two-hundred and twenty-seven adult participants from Cyprus (21.1%), Germany (14.5%), Hong Kong (24.2%), Turkey (29.1%), and other countries (10.9%) participated in an online questionnaire study measuring their coping style (loss-oriented [LO]/restoration-oriented [RO]/balance coping), dynamic oscillation (high/low), interdependent self-construal (high/low), and adjustment outcomes (i.e., grief, depression, life satisfaction, loneliness, and stress-related growth). Results of the current suggest that (1) LO coping (compared to RO and balance coping) was linked to poorer psychological adjustment (PA), (2) dynamic oscillation was associated with better PA, (3) culture and ISC did not moderate the above relationships in general, and (4) ISC moderated the relationship between coping and life satisfaction among the recently bereaved (bereaved for < 2 years), with the level of life satisfaction higher for those with a LO coping than those with a balanced coping only among those with a high level of ISC. These findings were discussed in regard of DPM.

*Keywords:* Dual Process Model of Coping with Bereavement, oscillation, psychological adjustment, cross-cultural study, grief

## The Dual Process Model of Coping with Bereavement: A Cross-Cultural Examination

Bereavement tends to elicit responses that vary largely individuals, depending on numerous demographic (e.g., Yoon et al., 2022; Zonnebelt-Smeenge & DeVries, 2003) or death-related (Burton et al., 2006; Wagner et al., 2021) factors. Still, bereavement is coped with is also suggested to be dependent on culture (e.g., Bonanno et al., 2005; Kokou-Kpolou et al., 2020; Stelzer et al., 2020; Xiu et al., 2016). The Dual Process Model of Coping with Bereavement (DPM; Stroebe & Schut, 1999) receives increasing attention in the grief research. However, cross-cultural studies validating its applicability across cultures are scarce. The current study aims to fulfil such knowledge gap.

### *The Dual Process Model of Coping with Bereavement (DPM)*

Stressing on the connection between a dynamic coping process and adjustment during bereavement, DPM postulates that there are two types of coping processes that are distinctly related to two concurrent stressors faced by the bereaved individuals, namely loss and restoration (Stroebe & Schut, 1999). While the former is related to the coping process involving the confrontation of loss itself (i.e., grief work), the later focuses on the secondary consequences of loss, such as rebuilding social connection or establishing new identity. The loss-oriented (LO) and restoration-oriented (RO) coping processes cannot be performed simultaneously: attending to one stressor (e.g., LO) would unavoidably lead to the inhibition of another (e.g., RO) (Stroebe & Schut, 2001). More importantly, they are adopted by the bereaved individuals alternately (i.e., oscillation, a concept central to DPM; Stroebe & Schut, 1999). DPM has been proven to reflect bereavement experience in a recent systematic review (Fiore, 2021).

### *LO/RO Coping, Oscillation, and Bereavement Adjustment*

Using self-developed items to reflect LO (e.g., the location where the wife died) and RO (e.g., attendance at different social events), Richardson and Balaswamy (2001) investigated how these two variables were related to the level of well-being among 200 widower with various time since bereavement in a cross-sectional study.

However, Richardson and Balaswamy's (2001) operationalisation of LO seems to focus on the facts related to the death and has limited resemblance to LO coping in DPM. As such, Caserta and Lund (2007) developed a 22-item Inventory of Daily Widowed Life (IDWL). In line with DPM, Caserta and Lund (2007) also introduced a measure of oscillation balance, which was calculated by deducting their LO score from their RO score in the IDWL. It was found that better psychological adjustment (PA; e.g., lower levels of grief, depression, and loneliness) were observed among bereaved individuals who had a RO or balanced coping, compared to those who had a LO coping. Similar trends have been suggested by Meij et al.'s (2008) study in which LO and RO coping processes were associated with negative and positive PA, respectively. Nonetheless, both LO and RO coping processes were linked to elevated levels of stress related growth (SRG) (Caserta et al., 2009). Still, past studies adopting the theoretical background of DPM often lack the precise measure of oscillation (Fiore, 2021), such as setting aside the dynamic nature of oscillation in the measurement (Stroebe & Schut, 2010).

### *Possible Cultural Variations of DPM*

Most studies about DPM were conducted in the West, obscuring the possible cultural variations in the application of DPM. A few studies, however, have preliminarily shown the applicability of DPM in Eastern societies. Li and Chen (2015) have, using qualitative responses, discovered that both LO and RO needs were perceived as needed in bereaved Chinese adults who lost their first-degree relatives approximately two years ago. Tang and

Chow (2017) also indicated the negative relationship between LO coping and detrimental consequences (e.g., complicated grief, depression, and loneliness) in a bereaved Hong Kong sample. More importantly, grief intervention including the element of RO coping generated enormous beneficial outcomes for bereaved Chinese (Yu et al., 2022), Hong Kong (Chow et al., 2018), and Korean (Nam, 2017) individuals, such as greater reduction in grief and unique improvement in secondary outcomes (e.g., anxiety; Chow et al., 2018).

However, these studies lacked the component of adjustment outcomes (e.g., Li and Chen, 2015), or jumped a step to link the association between intervention-induced coping-related knowledge and/or assistance and adjustment outcomes (Chow et al., 2018; Nam, 2017; Yu et al., 2022). To the best of our knowledge, no published empirical studies to date have included cross-cultural samples to examine if DPM similarly reflects bereavement experience across cultures, which is extremely crucial in developing culturally appropriate grief treatment (Rosenblatt, 2008; 2017).

#### *Possible Cultural Differences in LO/RO Coping and Bereavement Adjustment*

The strength of the linkage between coping and adjustment is similar across cultures remains unknown. This, however, is conceivable given the notable cultural differences in coping strategies and well-being outcomes in non-grief settings. Western literature suggests that the habitual use of emotion suppression in daily setting is linked to undesirable outcomes, such as poorer emotional well-being (e.g., Brans et al., 2013), increased risk of depression (e.g., Ehring et al., 2010). The effects brought by emotion suppression, however, were shown to be differently manifested on individuals in Eastern societies, such that Asian were less negatively influenced by emotional suppression (Cheung & Park, 2011) or even benefited from it (Nam et al., 2018).

Importantly, interdependent self-construal (ISC) plays a role in such cultural differences. Chen and Cheung (2021) discovered that the positive relationship between the use of expressive suppression and depressive symptoms was found to be attenuated among individuals with high level of ISC, which might also be able to explain the findings obtained regarding the cultural difference in emotion suppression (Cheung & Park, 2011; Nam et al., 2018). Whether these findings can be generalised to understand coping processes of grief remains unknown. Yet they provide insights into how Eastern individuals may benefit more from engaging more frequently in RO, the coping process linked to voluntary or involuntary avoidance and suppression of grief (Stroebe & Schut, 1999).

#### *Possible Cultural Differences in Oscillation and Bereavement Adjustment*

Though rarely empirically investigated, oscillation is deemed essential for better adjustment outcomes in bereavement (Stroebe & Schut, 1999). Possible cultural difference in oscillation could therefore only be inferred by comparable concept in the general coping theories. Coping flexibility is the ability to adopt a variety of coping strategies across situations with the aim to improve PA to stressors (Cheng et al., 2014). Coping flexibility in the past studies is conceptualised as a broad repertoire of coping strategies, a balanced coping profile, cross-situational variability in coping strategies used, strategy-situation fit, and the perceived ability to adopt diverse strategies (Cheng et al., 2014), which, to a large extent, echoes with the concept of oscillation in bereavement experience (e.g., they both signify the moderate use of variety of strategies and the ability to adopt different strategies across various stressful environments).

Further, the positive effects of coping flexibility on PA were demonstrated to be more noticeable among societies that are lower in individualism (Cheng et al., 2014). In individualistic culture, the PA may be more reliant on whether they can consistently obtain

desirable outcomes, instead of whether they can take into consideration the situational demands (Suh, 2002). Individuals from a more collectivistic culture, on the other hand, values social harmony over personal needs (Merkin, 2015). They may, correspondingly, show greater malleability in adopting coping strategies to match with possible situational demands (Norenzayan et al., 2002).

### *The Present Study*

Based on the literature reviewed above, the following hypotheses are established (please see Figure 1 and 2 for a graphical presentation of H1-H3 and H4-H6, respectively):

H1: Compared to a LO coping, a RO coping and a balanced coping are related to better PA

H2: The relationship between a RO coping/a balanced coping and better PA is more prominent among Asian than European participants

H3: The relationship between a RO coping/a balanced coping and better PA is more prominent among participants with higher level of ISC than those with lower level of ISC

H4: Oscillation is related to better PA

H5: The relationship between oscillation and better PA is more prominent among Asian than European participants

H6: The relationship between oscillation and better PA is more prominent among participants with higher level of ISC than those with lower level of ISC

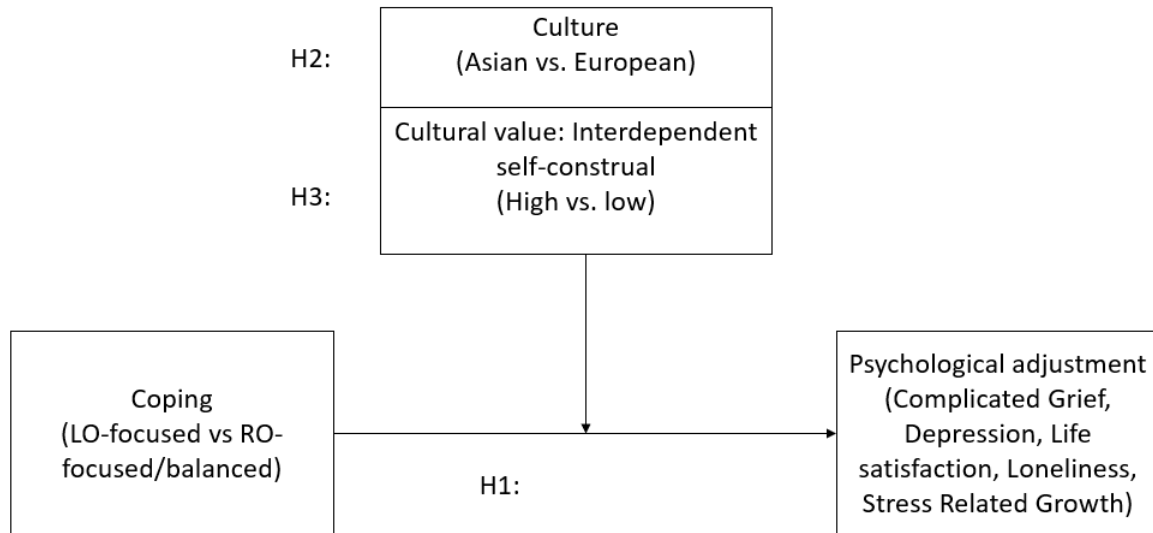


Figure 1. The hypothesised moderating roles of culture and ISC on the relationship between LO/RO coping and PA.

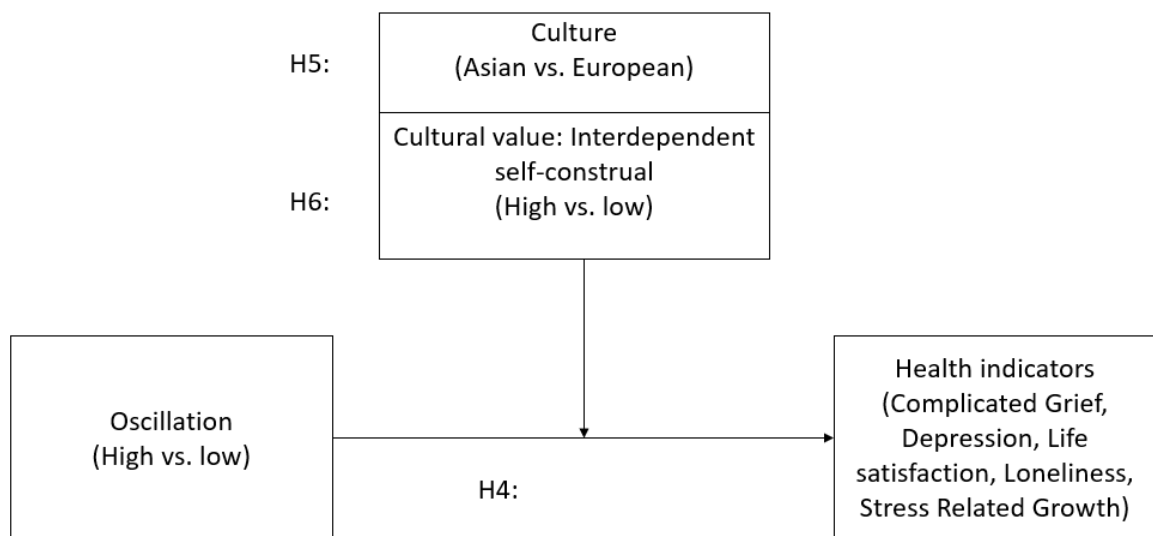


Figure 2. The hypothesised moderating roles of culture and ISC on the relationship between oscillation and PA.

## Method



The current study was a cross-sectional research study that made use of a questionnaire design to access the information of the bereaved individuals worldwide.

### *Participants*

Two-hundred and twenty-seven adult participants who had lost someone significant in the past five years participated in the current study. The participants were recruited via convenience sampling (e.g., word-of-mouth and promotional advertisement on social media).

Efforts were made to recruit prospective participants from a variety of regions, including Cyprus (21.1%), Germany (14.5 %), Hong Kong (24.2%), and Turkey (29.1%). Other regions made up 10.9% of the total sample, with none region individually contributed more than 3% of the current sample. These regions were grouped into either Asian (e.g., Hong Kong and Turkey; 57.3%) and European (e.g., Cyprus and Germany; 41%) countries. The majority of the participants were female (71.8%). The mean age of the current sample was 41.85 (range: 19-72;  $SD = 14.60$ ). Most participants was married/partnered/in a civil partnership (59%), followed by participants with all other marital status (41%). Most participants were religious (58.6%; compared to 41.4% of non-religious participants) and university-educated (71.8 %; compared to 28.2% of non-university-educated participants). Death-related background is supplemented in Appendix A.

### *Measures*

*Oscillation Balance/Coping.* Participants' LO- and RO-focused coping behaviours were measured using the adapted version of the Inventory of Daily Widowed Life (IDWL; Caserta & Lund, 2007). It contained 11 LO-focused and 11 RO-focused coping processes. Sample items for LO- and RO-focused coping processes were "Thinking about how much I miss him/her," and "Finding ways to keep busy or occupied," respectively. Participants were asked to rate each item, based on two different time frames (the past seven days; the period of

seven days preceding the past seven days), on a 4-point Likert scale ranging from 1 (*rarely or not at all*) to 4 (*almost always*). The LO- and RO-focused coping processes were calculated by averaging all the LO- and RO- items answered in separate time frames. Higher mean scores represent higher use of respective coping strategies. The Cronbach's alpha for the LO-coping and RO-coping was .89 and .80, invariably for the two time frames.

With reference to Caserta and Lund's (2007) concept of oscillation balance, a single score indicating the balance between the two coping processes was calculated by subtracting their LO score from their RO score (RO minus LO) for each of the two time frames. Participants' coping style was indicated by the averaged oscillation balance scores of the two time points, with higher scores representing greater use of RO and lower scores representing greater use of LO. Based on this averaged oscillation balance scores from the two time points, individuals with an oscillation balance score of 0.5 standard deviation below/above 0 were classified as LO ( $n = 35$ ) / RO ( $n = 109$ ) coping (Caserta & Lund, 2007). The remaining participants (a score within  $0 \pm 0.5$  SD) were classified as balanced coping ( $n = 82$ ).

*Dynamic oscillation.* To better capture the dynamic coping process, a novel measure of oscillation was proposed. A dynamic oscillation score was calculated by subtracting the oscillation balance score (see section *Method – Measures – Oscillation Balance/Coping*) for the period of the seven days preceding the past seven days from that for the period of the past seven days. A positive/negative score indicated a change towards more RO-/LO- focused in this two-week period. However, given the direction of change was not the major focus of the current study, the negative scores were converted into positive scores. Thus, higher scores of dynamic oscillation denoted greater alternation between the two coping processes in either direction. Participants were allocated to low dynamic oscillation if they showed no difference in the oscillation balance scores measured with reference with the two time frames ( $n = 81$ ). Otherwise, the participants were allocated to high dynamic oscillation ( $n = 144$ ).

*Interdependent self-construal (ISC).* Participants' level of ISC was measured using the interdependent subscale from the Self-Construal Scale (Singelis, 1994). The subscale consists of 15 items, and a sample item was "I often have the feeling that my relationships with others are more important than my own accomplishments." The items were rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). An average score was computed for each participant, with a higher score representing a greater emphasis of interdependence with others. The Cronbach's alpha of .70 was obtained in the current sample. Participants were divided into either low or high ISC based on the median score of the current sample.

*Psychological Adjustment (PA).* A wide range of psychological variables was assessed to reflect participants' adjustment to the loss, including grief (measured with five-item Brief Grief Questionnaire on a 3-point Likert scale ranging from 0 (*not at all*) to 2 (*A lot*); Shear & Essock, 2002), depression (measured with the 10-item short-form Center for Epidemiologic Studies Depression Scale on a 4-point Likert scale ranging from 1 (*rarely or none of the time*) to 4 (*most of the time*); Andresen et al., 1994), life satisfaction (measured with the five-item Satisfaction with Life Scale on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*); Diener et al., 1985), loneliness (measured with UCLA 3-item Loneliness Scale on a 4-point Likert scale ranging from 0 (*never*) to 3 (*often*); Hughes et al., 2004), and SRG (measured with the adapted version of the 4-item personal strength subscale of the Posttraumatic Growth Inventory on a 6-point Likert scale ranging from 0 (*I did not experience this change*) to 5 (*I experienced this change to a very great degree*); Tedeschi & Calhoun, 1996). An average score was computed for all adjustment indicators, higher scores in life satisfaction and SRG and lower scores in grief, depression, and loneliness denoted better adjustment to loss. The Cronbach's alpha for the measures of

grief, depression, life satisfaction, loneliness, and SRG was .74, .87, .82, .86, and .84, respectively.

*Background variables.* (see Appendix B).

All measurements in the current study were made available in six languages, including English, Afrikaans, Traditional Chinese, German, Greek, and Turkish. In the early preparatory phase, English version of the instruments was sought. Depending on the availability, empirically validated translated version of these measurements was then obtained. Measurements without available validated translated version were translated by research group member who was proficient in both English and target language.

### *Procedure*

The data collection took place between 2<sup>nd</sup> January and 2<sup>nd</sup> February 2023 on an online questionnaire platform Qualtrics (See Appendix C for the detailed procedure of the current study).

## Results

### *Descriptive Statistics*

(See Appendix D).

### *The Relationship between Coping and PA and the Moderating Role of Culture and ISC*

A series of 3 X 2 analyses of variance (ANOVAs) were conducted to test the main effects of coping (LO/balanced/RO coping) style on PA, as well as its interaction effect with culture (Asian and European) on the indicators (see Table 1). Results from the ANOVAs revealed that participants with different coping styles exhibited statistically different levels of grief ( $F(2, 216) = 28.47, p < .01$ ) and depression ( $F(2, 216) = 6.07, p = .003$ ), but not other variables. Bonferroni post-hoc comparisons illustrated that participants with LO coping

demonstrated significantly greater level of grief (mean difference = .32,  $SE = .08$ ,  $p < .001$ ) than participants with balanced coping, which in turn demonstrated significantly greater level of grief than participants with RO coping (mean difference = .26,  $SE = .06$ ,  $p < .001$ ). On the other hand, participants with RO coping demonstrated lower level of depression compared to both participants with LO coping (mean difference = -.33,  $SE = .12$ ,  $p = .027$ ) and participants with balanced coping (mean difference = -.26,  $SE = .09$ ,  $p = .017$ ). As a result, H1 is partly supported.

Table 1 and 2 displayed the interaction effect between coping and culture, as well as between coping and ISC, on PA. It was observed that none of the coping X culture or coping X ISC interactions was significant. Further analyses were conducted to see if the interaction effects were observed exclusively for individuals who were recently bereaved (time since loss < 2 years). Of all ten possible ANOVAs conducted among individuals with less than two years of bereavement, significant interaction was found between coping and ISC on life satisfaction,  $F(2, 111) = 3.69$ ,  $p = .028$ . Further Bonferroni post-hoc analyses revealed that for individuals with higher level of ISC, individuals with LO displayed significantly greater level of life satisfaction than those with a more balanced coping (mean difference = 1.15,  $SE = .47$ ,  $p = .051$ ). Such effect was absent for individuals with lower level of ISC (see Figure 1). Therefore, H2 and H3 are not supported.

Table 1. PA as a function of coping style and culture.

Outcome	Coping	European	Asian	Total	F-test (df)		
					Coping	Culture	Coping x culture
Grief	LO	1.05	1.00	1.02 <sup>ac</sup>	28.47*** (2, 216)	.15 (1, 216)	.20 (2, 216)
	Balanced	0.72	0.67	0.69 <sup>ab</sup>			
	RO	0.42	0.45	0.44 <sup>bc</sup>			
	Total	0.63	0.62	0.62			
Depression	LO	2.26	2.14	2.18 <sup>c</sup>	6.07** (2, 216)	.25 (1, 216)	.89 (2, 216)
	Balanced	2.19	2.05	2.12 <sup>b</sup>			
	RO	1.79	1.89	1.85 <sup>bc</sup>			
	Total	2.02	1.99	2.00			
Life satisfaction	LO	3.98	4.26	4.17	2.64 (2, 216)	.15 (1, 216)	1.12 (2, 216)
	Balanced	4.43	4.35	4.39			
	RO	4.86	4.44	4.60			
	Total	4.57	4.38	4.46			
Loneliness	LO	1.58	1.41	1.47	1.46 (2, 215)	.31 (1, 215)	.13 (2, 215)
	Balanced	1.58	1.56	1.57			
	RO	1.37	1.35	1.36			
	Total	1.48	1.43	1.45			
Stress related growth	LO	2.31	2.39	2.36	1.97 (2, 216)	.12 (1, 216)	.11 (2, 216)
	Balanced	2.20	2.02	2.11			
	RO	1.91	1.79	1.84			
	Total	2.08	1.97	2.02			

<sup>a</sup>Statistically different between LO and balanced coping.

<sup>b</sup>Statistically different between balanced and RO coping.

<sup>c</sup>Statistically different between LO and RO coping.

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

Table 2. PA as a function of coping style and interdependent self-construal.

Outcome	Coping	Low ISC	High ISC	Total	F-test (df)		
					Coping	ISC	Coping x ISC
Grief	LO	1.02	1.01	1.02 <sup>ac</sup>	30.28 <sup>***</sup> (2, 219)	.40 (1, 219)	.13 (2, 216)
	Balanced	0.65	0.72	0.69 <sup>ab</sup>			
	RO	0.41	0.46	0.44 <sup>bc</sup>			
	Total	0.59	0.64	0.62			
Depression	LO	2.09	2.28	2.18 <sup>c</sup>	5.18 <sup>**</sup> (2, 219)	2.25 (1, 219)	.15 (2, 219)
	Balanced	2.03	2.19	2.12 <sup>b</sup>			
	RO	1.82	1.90	1.86 <sup>bc</sup>			
	Total	1.94	2.07	2.00			
Life satisfaction	LO	3.96	4.39	4.17	2.16 (2, 219)	1.35 (1, 219)	1.25 (2, 219)
	Balanced	4.47	4.31	4.39			
	RO	4.45	4.79	4.62			
	Total	4.38	4.55	4.46			
Loneliness	LO	1.46	1.47	1.47	1.53 (2, 219)	.39 (1, 219)	.38 (2, 219)
	Balanced	1.46	1.67	1.57			
	RO	1.35	1.36	1.35			
	Total	1.40	1.49	1.45			
Stress related growth	LO	2.14	2.60	2.36	2.47 (2, 219)	6.81 <sup>*</sup> (1, 219)	.23 (2, 219)
	Balanced	1.74	2.40	2.09			
	RO	1.62	2.02	1.82			
	Total	1.74 <sup>#</sup>	2.26 <sup>#</sup>	2.01			

ISC denotes interdependent self-construal.

<sup>a</sup>Statistically different between LO and balanced coping.

<sup>b</sup>Statistically different between balanced and RO coping.

<sup>c</sup>Statistically different between LO and RO coping.

<sup>#</sup>Statistically different between low ISS and high ISS.

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

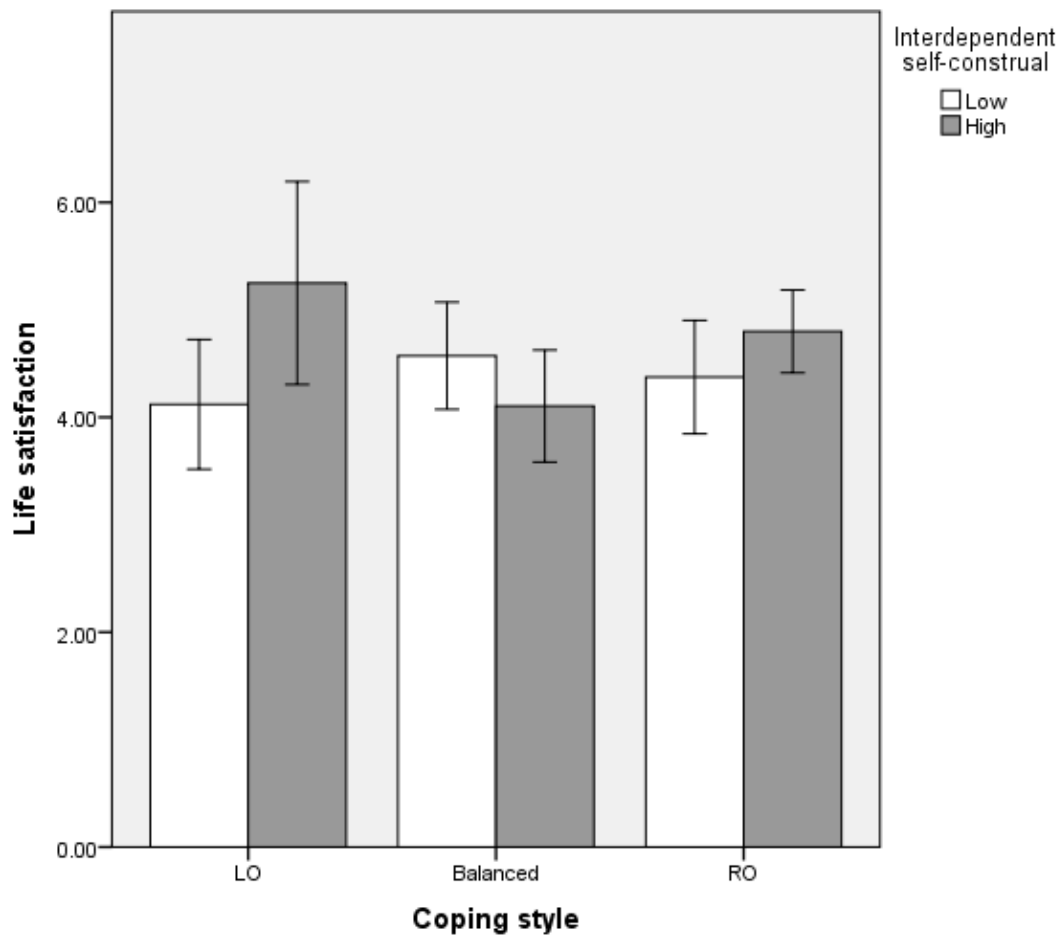


Figure 1. The interaction effect between coping style and interdependent self-construal on life satisfaction. The error bars represent 95% confidence interval.

*The Relationship between Dynamic Oscillation and PA and the Moderating Role of Culture and ISC*

Another series of 2 X 2 analyses of variance (ANOVAs) were conducted to test the main effects of dynamic oscillation (low and high) on PA, as well as its interaction effect with culture (Asian and European) on the indicators (see Table 3). Results revealed that participants with different levels of dynamic oscillation displayed different levels of SRG ( $F(1, 217) = 5.49, p = .020$ ), with participants with higher level of dynamic oscillation reporting higher level of SRG (mean = 2.17, SE = .11) than participants with lower level of dynamic oscillation (mean = 1.72, SE = .16). Therefore, H4 is partly supported. However, none of the dynamic oscillation X culture interactions nor dynamic oscillation X ISC was



found to be significant (see Table 3 and 4). The non-significant results held true for the analyses conducted exclusively among those with less than two years of bereavement.

Therefore, H5 and H6 are not supported.

Table 3. PA as a function of dynamic oscillation and culture.

Outcome	Dynamic oscillation (DO)	European	Asian	Total	F-test (df)		
					DO	Culture	DO x culture
Grief	Low	.59	.62	.61	.11	.00	.17
	High	.64	.62	.63	(1, 217)	(1, 217)	(1, 217)
	Total	.63	.62	.62			
Depression	Low	2.06	1.94	1.98	.02	.36	.52
	High	2.01	2.02	2.01	(1, 217)	(1, 217)	(1, 217)
	Total	2.02	1.99	2.00			
Life satisfaction	Low	4.56	4.47	4.50	.20	.85	.18
	High	4.55	4.32	4.42	(1, 217)	(1, 217)	(1, 217)
	Total	4.56	4.38	4.45			
Loneliness	Low	1.48	1.36	1.41	.33	.43	.15
	High	1.50	1.47	1.49	(1, 217)	(1, 217)	(1, 217)
	Total	1.50	1.43	1.46			
Stress related growth	Low	1.70	1.75	1.73 <sup>#</sup>	5.49 <sup>*</sup>	.03	.20
	High	2.23	2.11	2.17 <sup>#</sup>	(1, 217)	(1, 217)	(1, 217)
	Total	2.06	1.97	2.01			

<sup>#</sup>Statistically different between low DO and high DO.

<sup>\*</sup> $p < .05$ .

Table 4. PA as a function of dynamic oscillation and ISC.

Outcome	Dynamic oscillation (DO)	Low ISC	High ISC	Total	F-test (df)		
					DO	ISC	DO x ISC
Grief	Low	.57	.63	.60	.24	.67	.02
	High	.61	.65	.63	(1, 220)	(1, 220)	(1, 220)
	Total	.59	.64	.62			
Depression	Low	1.86	2.10	1.98	.21	2.66	1.12
	High	2.00	2.05	2.02	(1, 220)	(1, 220)	(1, 220)
	Total	1.95	2.07	2.01			
Life satisfaction	Low	4.42	4.61	4.51	.28	1.25	.01
	High	4.34	4.51	4.43	(1, 220)	(1, 220)	(1, 220)
	Total	4.37	4.55	4.46			
Loneliness	Low	1.41	1.38	1.40	.65	.22	.49
	High	1.42	1.55	1.49	(1, 220)	(1, 220)	(1, 220)
	Total	1.41	1.49	1.46			
Stress related growth	Low	1.37	2.01	1.69 <sup>#</sup>	6.92 <sup>**</sup>	9.28 <sup>**</sup>	.23
	High	1.93	2.40	2.17 <sup>#</sup>	(1, 220)	(1, 220)	(1, 220)
	Total	1.72	2.26	2.00			

ISC denotes interdependent self-construal.

<sup>#</sup>Statistically different between low DO and high DO.

<sup>\*\*</sup> $p < .01$

## Discussion

The current study systematically reviewed the applicability of DPM across cultures. It shows that LO coping is related to worse PA, including higher level of grief and depression. More importantly, the current study also uncovered the beneficial role of dynamic oscillation on PA, which was reflected by the higher level of SRG. However, the effects of coping style and dynamic oscillation were found to be independent of culture, suggesting the applicability of DPM across Asian and European cultures. Paradoxically, ISC was found to be moderating the effects of coping style on life satisfaction, with a unique association between LO and higher level of life satisfaction for those recently bereaved.

### *Coping and PA*

In comparison with RO and/or a more balanced coping style, the use of LO coping was shown to be associated with poorer PA (i.e., grief and loneliness). These results are comparable to previous studies illustrating the connection between the use of LO and detrimental consequences (e.g., Caserta & Lund, 2007; Meij et al., 2008). However, despite non-significant results, the current study also shows a trend that LO coping could be related to greater level of SRG (compared to those with a RO or balanced coping), which is another indicator of the PA in the current study (see Table 1 and 2). It may therefore be imprudent to conclude and suggest bereaved individuals to attend more to RO in general, especially in the case where bereaved individuals intentionally suppress their grief by solely attending to RO, during which stress-related positive growth is not experienced. Corresponding to the theoretical proposition of DPM, it may suggest that both LO and RO are crucial in the grieving process, contributing to different facets of the well-being among the bereaved individuals.

#### *Dynamic Oscillation and PA*

“It is postulated that oscillation is necessary for optimal adjustment over time (p.216; Stroebe & Schut, 1999).” Experiencing alternation between the use of LO and RO was associated with higher level of SRG in the current study, serving a novel evidence supporting the theoretical proposition of DPM. Alternation in the use of LO and RO may render bereaved individuals the opportunities to scrutinise the loss in multiple angles, allowing them to discover the possible positive aspects of the loss (e.g., realising that “I” can be able to accept the way things turn out). Non-grief coping research has argued for the role of coping strategies enhancement (i.e., moving from maladaptive coping strategies to adaptive ones) on SRG (e.g., Park et al., 1996; Bjorck & Byron, 2013). The current study, however, illustrated that alternation between LO and RO in either direction may already be sufficient to induce personal growth following the loss of a significant person.

*DPM and Its Applicability Across Culture*

The effects of coping style and oscillation on PA were equally applicable in both Asians and Europeans. This provides critical insights into the clinical implication of DPM in the therapeutic setting. Originating from the West, DPM has also been incorporated into different grief interventions in the Eastern societies (e.g., Chow et al., 2018; Nam, 2017; Yu et al., 2022). Still, empirical evidence comparing the application of DPM across cultures remains scarce until the current study. Grief counselling focusing on the application of DPM, especially those who were conducted in the Eastern societies, should be delivered with greater confidence with the new evidence gained from the current study.

*Unique Association between LO and Life Satisfaction among High ISC Individuals*

One of the most intriguing findings of the current study would be the moderating role of ISC in the association between coping style and life satisfaction, with a unique beneficial effect of a LO coping on life satisfaction among those with a higher level of ISC (compared to a more balanced coping) who had been bereaved for less than two years. This, to some extent, is inconsistent with the findings that ISC weakened the detrimental effect of emotional suppression on PA in non-grief setting (Chen & Cheung, 2021). Perhaps suppression of grief in bereavement, as manifested in the engagement of RO over LO, is not analogous to emotional suppression in general non-grief setting.

LO coping involves thinking about the loss and connecting with the deceased, it may be that focusing on LO stressors can facilitate the perceived connectedness with the deceased among those with higher level of ISC among the recently bereaved, such that their level of life satisfaction is enhanced through the increased connectedness with the deceased individuals. Such connection, however, is less emphasised on among those with a lower level of ISC (Uskul et al., 2004). It is also worth noticing in the current study that such engagement

in LO among those who were with a higher level of ISC did not come with other detrimental outcomes (e.g., such as increased depression or grief level), suggesting the possibility that those with a higher level of ISC might be able to focus on the positive aspects of the deceased person (e.g., thinking about the positive memories with him/her), thus enhancing their overall satisfaction towards life.

### *Strengths and Weaknesses*

The current study was the first one to examine the theoretical tenets of DPM in a cross-cultural manner, for the first time supporting the comparable applicability of DPM across both Eastern and Western societies. On the other hand, the newly proposed measure of dynamic oscillation in the current study to some extent improved the measure of oscillation in the past by taking into account the temporal differences in the adoption of LO and RO (compared to cross-sectional differences; e.g., Caserta and Lund, 2007). However, several limitations must be acknowledged when interpreting the results of the study. Firstly, the temporal differences in LO/RO were not obtained longitudinally (i.e., measured with more than one time point) and may thus subject to recall bias. Secondly, the current study only included two macro-cultures (e.g., Asian and European), whether the applicability of DPM varies in another macro-culture (e.g., African) or micro-culture (e.g., different religious groups) may await further investigation.

### *Conclusion*

The current study, in line with DPM, stresses on the importance to attend to both LO and RO stressors during bereavement. Minimum and alternate confrontation with each of these two stressors may be essential for improving PA during bereavement. More importantly, such linkage between coping/oscillation and PA was found to be valid for both

Asian and European samples included in the current study, suggesting the universal applicability at least in these two macro-cultures.

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## Appendix A

## Detailed Characteristics of Participating Individuals

<b>Item</b>	<b>Option</b>	<b>Percentage</b>
<b>1. Multiple losses in the past five years</b>		
	Yes	46.7%
	No	53.3%
<b>2. Relationship with the deceased</b>		
	First-degree relative	36.6%
	Close second-degree relative	47.15
	Non- family member (e.g., good friend)	11.5%
<b>3. Cause of death</b>		
	Natural causes (e.g., chronic disease)	93.4%
	Unnatural causes (e.g., accident)	5.7%

Participants on average had been bereaved for 27.42 months (range: 0-60; *SD* = 19).

## Appendix B

### Background Variables - Coding

*Background variables.* Participants gender (1 = male; 2 = female), age (in years), marital status (0 = non-married/not in a civil partnership; 1 = married/in a civil partnership), religion (0 = non-religious; 1 = religious), and educational attainment (0 = non-university-educated; 1 = university-educated) were recorded. On the other hand, the relationship with the deceased person (1 = non-family member; 2 = close second-degree relative; 3 = first-degree relative), cause of the death (0 = natural cause; 1 = unnatural cause) and time since bereavement (in months), subjective closeness with the deceased (range of 1-7), and whether participants experienced multiple losses (0 = no; 1 = yes) were also recorded in the current study.

## Appendix C

### Detailed Procedure of the Data Collection

Ethical approval of the study was obtained from the Ethical Review Board (file number: 22-2088) before the commencement of the study. An online questionnaire containing the measurements was constructed using the online platform Qualtrics. The link to the questionnaire was disseminated to potential participants through instant messages and promotion on online social media site. The data collection took place between 2<sup>nd</sup> January and 2<sup>nd</sup> February 2023. On the online questionnaire platform, the information about the study was presented on the first page of the questionnaire, and participants were able to proceed the study only if they provided consent to the study. Participants with or without the experience of losing someone important in the past five years were recruited; however, due to the specific focus of bereavement experience of the current study, only the bereaved sample was reported in the current study. Participants, in the following sequence, answered questions related to their demographic information, characteristics related to the deceased person and death circumstances, and health indicators. The questionnaire took approximately 20 minutes to complete, and no compensation was provided to the participants afterwards.

## Appendix D

## Descriptive Statistics

The below table presents the means of and correlations among the demographic and major variables in the current study.

Descriptive statistics of and correlations among major variables.

	Mean (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Recent oscillation balance	.36 (.79)	-								
2. Distant oscillation balance	.34 (.79)	.96***	-							
3. Dynamic oscillation	.02 (.24)	.09	.00	-						
4. Interdependent self-construal	4.70 (.68)	-.09	-.10	-.03	-					
5. Grief	.62 (.45)	-.52***	-.51***	-.07	.09	-				
6. Depression	2.00 (.65)	-.24***	-.28***	.05	.18**	.32***	-			
7. Life satisfaction	4.46 (1.20)	.14*	.18**	.11	-.04	-.10	-.41***	-		
8. Loneliness	1.45 (.82)	-.10	-.13	.01	.08	.13*	.60***	-.44***	-	
9. Stress related growth	2.01 (1.35)	-.18**	-.19**	.13	.25***	.34***	.11	-.08	.02	-

*Note.* SD denotes standard deviations. Recent oscillation balance was calculated by RO minus LO in the past 7 days. Distant oscillation balance was calculated by RO minus LO in the 7-day period prior to the past 7 days. Dynamic oscillation was calculated by recent oscillation balance minus distant oscillation balance (negative scores was conversed to positive scores). \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .