



## An investigation of approach behaviour in Prolonged Grief

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### ARTICLE INFO

#### Keywords:

Grief  
Prolonged grief disorder  
Approach behaviour  
Avoidance behaviour

### ABSTRACT

Prolonged Grief (PG) is recognized as a potentially debilitating post-bereavement syndrome. Theoretical models of PG highlight the importance of both approach and avoidance behaviours in maintaining the syndrome. Research to date has focussed primarily on investigating avoidance in response to loss reminders. Comparatively few studies have indexed approach behaviours in PG. We use a quasi-experimental paradigm to simultaneously examine approach and avoidance behaviours to reminders of the deceased. Fifty-five bereaved individuals with and without PG responded to stimuli showing the deceased's name, an attachment figure's name, a neutral name, or a letter string, by pulling or pushing a joystick according to whether the stimuli was a word or not. Concurrent visual feedback created the illusion that the images were either approaching or receding from the participant. Participants with PG were quicker to pull than push the three name stimuli, with quicker pulling of the deceased and attachment name than the neutral name. Non-PG participants responded more quickly to the attachment name but evidenced no relative approach or avoidance of any stimuli. Findings provide behavioural evidence about approach behaviour in PG, and are discussed with references to models that recognise the role of yearning for the deceased in PG.

### 1. Introduction

Prolonged grief (PG) is a potential deleterious consequence of bereavement that affects around 10% of bereaved individuals (Lundorff, Holmgren, Zachariae, Farver-Vestergaard, & O'Connor, 2017; Maciejewski, Maercker, Boelen, & Prigerson, 2016). The condition is characterized by intense yearning and distress at the lost relationship, disbelief, avoidance of reminders, loss of trust, bitterness, numbness and disturbances in identity and meaning that impair functioning and continue for more than six months, or longer than would be expected according to cultural norms. The widespread recognition of the condition has resulted in the inclusion of Prolonged Grief Disorder (PGD) in ICD-11 (World Health Organization, 2018), and Persistent Complex Bereavement Disorder in DSM-5 (American Psychiatric Association, 2013). All models of PG recognise that management of memories of the deceased and other reminders of the loss are pivotal to development and maintenance of the disorder (Boddez, 2018; Boelen, van den Hout, & van den Bout, 2006; Maccallum & Bryant, 2013; Shear et al., 2007).

One of the major debates in the study of PG is the relative roles of avoidance and approach tendencies (see Stroebe, Schut, & Boerner, 2010). Much focus on PG has been directed towards understanding the role of avoidance in maintaining the syndrome (Baker et al., 2016;

Boelen, van den Bout, & van den Hout, 2006; Eisma et al., 2015; Eisma et al., 2013; Yu et al., 2017), however, there is also recognition that PG may involve strong approach tendencies (Boddez, 2018; Maccallum & Bryant, 2013; Prigerson et al., 2009). Initial self-report studies examined how approach behaviours, such as attempting to maintain a bond with the deceased by holding on to possessions, getting lost in reminiscing, or seeking out reminders, related to grief outcomes. Some studies found that concrete, tangible strategies (e.g., maintaining the deceased's possessions) were linked with poorer outcomes, and symbolic, internalized strategies (e.g. cherishing memories) were linked with better outcomes (Field & Filanosky, 2010; Field, Gal-Oz, & Bonanno, 2003). However, a study focusing specifically on PG, found that internalized behaviours were also linked with poorer outcomes (Schut, Stroebe, Boelen, & Zijerveld, 2006).

More recently, researchers have begun to apply behavioural paradigms to investigate PG. Schneck et al. (2018) employed an emotional Stroop paradigm with individuals recruited for a study of suicide bereavement. They found participants were slower to colour name deceased-related versus living-relating words, suggesting a general attentional bias towards the deceased. This bias was correlated with grief severity (see also Maccallum & Bryant, 2010; Mancini & Bonanno, 2012). In another study, O'Connor et al. (2008) examined activation of

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brain reward centers (nucleus accumbens) in response to grief eliciting (deceased related) and non-grief eliciting (non-deceased related) images. In response to grief eliciting images, individuals with and without PG showed similar activation in areas of the brain linked to pain processes. However, relative to non-grief eliciting images, grief eliciting images produced significant nucleus accumbens activation for participants with PG, whereas they produced reductions in nucleus accumbens responding for participants without PG. That is, for individuals with PG, images of the deceased activated a brain area important for reward processing. The authors concluded that reminders of the deceased may activate a craving response that interferes with adaption to the loss (see also [Boddez, 2018](#)).

The current study sought to extend our understanding of approach behaviour in PG by assessing behavioural tendencies to approach deceased-related stimuli. Numerous studies have demonstrated that we are drawn to things we find rewarding and repelled from things that we find aversive ([Chen & Bargh, 1999](#)). Such approach and avoidance behaviours are thought to reflect the operation of a basic motivational system that enables automatic and functional responses to salient environmental stimuli ([Lang, Bradley, & Cuthbert, 1997](#)). [Rinck and Becker \(2007\)](#) developed the Approach-Avoidance Task (AAT) to index these tendencies in phobias. Participants pulled or pushed a joystick, based on a target-irrelevant feature stimuli, in order to perform body movements consistent with approaching or avoiding stimuli presented on a screen. Pulling the joystick caused the picture to increase in size, creating the illusion it was moving closer to the participant. Pushing the joystick caused the picture to shrink, creating the illusion it was moving further away. Participants have been found to perform motivationally compatible behaviour more quickly than motivationally incompatible behaviour. For example, participants with spider phobia were quicker to push than pull spider images than non-phobic participants ([Rinck & Becker, 2007](#)). The task has also been used to investigate and modify approach tendencies in alcohol abuse and dependency (e.g., [Wiers, Rinck, Kordts, Houben, & Strack, 2010](#)).

More recently, the AAT has been adapted to examine approach and avoidance behaviour in grief. [Eisma et al. \(2015\)](#) modified the AAT to examine the relationship between avoidance and grief-related rumination. Bereaved participants pulled and pushed images of the deceased or a stranger combined with either a neutral or grief-related word, or puzzle images. Greater grief rumination was associated with a stronger relative avoidance bias (i.e. faster to push than pull) for loss specific images (deceased combined with a grief-related word) only. [Maccallum, Sawday, Rinck, and Bryant \(2015\)](#) asked bereaved participants to pull and push generic grief (funeral, graves), positive, negative, and abstract images. In this study, participants with more severe PG symptoms were slower to push the generic grief-related images away than individuals with low PG symptoms, that is, they showed a relative approach bias to these stimuli. Differences in sample characteristics make it difficult to draw direct comparisons between these studies, nonetheless the different patterns of responding highlight the potential complexity involved in responding to reminders in PG and underscore the need for further systematic investigation of both approach and avoidance responses. Accordingly, in the current study we adapted the AAT methodology to more directly assess responding to reminders of the deceased, absent from specific death-related cues. Participants with and without PG were asked to pull and push deceased-related (deceased's name), non-deceased related (living attachment figure's name), and neutral (neutral person's name, letter string) stimuli according to a deceased-irrelevant aspect of the image. In line with propositions that individuals with PG are motivated to approach reminders of the deceased, we predicted that participants with PG should be quicker to pull than push the deceased's name, both in relation to non-PG participants and compared to the non-deceased related stimuli. We included the non-deceased related name stimuli to provide a personally relevant (attachment) and non-relevant (neutral) comparison for the deceased stimuli ([Mancini & Bonanno, 2012](#)). We expected PG

participants to show a greater relative approach bias to the deceased than non-deceased stimuli; however, we had no strong a priori hypothesis as to whether PG participants would show relative response biases to these non-deceased stimuli.

## 2. Method

### 2.1. Participants

Fifty-eight bereaved participants (16 males and 42 females) with a mean age of 42.60 years ( $SD = 4.08$ ) participated in the study. Participants were recruited through newspaper advertisements and online recruitment websites seeking bereaved individuals aged 18–65 years, interested in participating in a research project focused on understanding adaption to bereavement. All participants attended a clinical assessment conducted by a Masters level clinical psychologist. Twenty-five (43.1%) participants met criteria for PG, and the remaining 33 (56.9%) formed a non-PG group. This study formed part of a larger research project, for which participants were reimbursed a total of AUD \$100. A priori power analyses conducted using GPower suggested this sample size would be sufficient to detect effects in the range observed in [Maccallum et al., 2015](#) for the key hypotheses, with power at  $1 - \beta = 0.80$  ([Faul, Erdfelder, Lang, & Buchner, 2007](#)).<sup>1</sup>

### 2.2. Measures and materials

*Prolonged Grief assessment* (PG-13; [Prigerson et al., 2009](#)). Prolonged grief was assessed using a semi-structured interview based on the PG-13 ([Prigerson et al., 2009](#)). The PG-13 assesses for the presence of yearning and emotional distress at the lost relationship (Criterion A), difficulty accepting the death, shock, avoidance of reminders, numbness, bitterness, difficulty engaging in life, identity disturbance, and a sense of purposelessness and meaninglessness (Criterion B). Items are scored by clinicians on a 5-point scale (1 = *not at all*, 5 = *several times a day/overwhelmingly*). A diagnosis of PG is made if Criterion A has been met for at least 6 months, five out of nine Criterion B items are endorsed daily or to a disabling degree, and there is evidence of serious day to day impairment in functioning (Criteria C).

*The Beck Depression Inventory-2<sup>nd</sup> edition* (BDI; [Beck, Steer, & Brown, 1996](#)) is a 21-item self-report inventory designed to measure depressive symptoms “in the past two weeks”. Items are scored on a 4-point Likert scale to provide an overall severity score.

*Approach avoidance Task (AAT)*. The AAT was adapted from [Rinck and Becker \(2007\)](#). Four stimuli type were included: deceased person's name, an attachment figure's name, a neutral name and letter strings. During the first research session, participants were asked six questions to identify an attachment figure (e.g., Who is the person you want to be with when you are feeling upset or down? Who is the person you can always count on?; ([Hazan & Zeifman, 1994](#))). The most frequent name was used as the attachment stimuli. Participants also completed a “social networks” questionnaire, where they nominated names of first degree and other important relatives or friends. The neutral name was matched for gender and letter number of the deceased name and not provided by the participant during either of these tasks. Letter string stimuli were matched for length. Twenty versions of each stimuli were created by varying colour and font.

Participants pulled or pushed a Logitech Attack 3 joystick according to whether the presented image was a word or a non-word. In one block, participants pulled the joystick in response to a word and pushed it in response a non-word. In a second block this instruction was

<sup>1</sup> Effect sizes were computed in SPSS and this was specified in GPower. Power was estimated to test the key hypotheses that PG and Non-PG groups would differ in RT to push and pull the deceased's name, and PG would differ for deceased compared to the other stimuli (partial  $\eta^2 = 0.13$ ).

reversed. Images were presented in semi-randomised order, with the limitation that the same response was not required on more than 3 consecutive trials. Each stimulus was presented once in each block. Block order was counterbalanced. When participants pulled or pushed the joystick, the images increased or decreased in size, respectively, to create the visual impression that the pictures were moving closer to or further away from the participant. We did this by creating seven images for each stimulus (100% of screen size, 65%, 42%, 27%, 18%, 12%, 7%). Each trial started with the middle image (27%). Larger or smaller images were shown according to whether the participant pulled or pushed the joystick, respectively.

### 2.3. Procedure

Following written informed consent, participants underwent a clinical assessment during which they were administered the PG-13 interview, social network tasks and several activities not relevant to the current study. Participants returned one week later and completed the AAT task, followed by several unrelated tasks. During the AAT, participants were seated in front of a computer monitor at a desk on to which a joystick was fixed. They were given the relevant instructions to pull or push the joystick according to whether the image they saw was a word or not a word. They were also told "... When you pull the joystick, the picture will grow in size, as if you were pulling it closer. When you push the joystick, the picture will shrink, as if you were pushing it away". Participants then completed the practice trials and 120 test trials. This was followed by a second set of practice trials and 120 test trials where the direction of responding was reversed. At the end of the research session they were debriefed and thanked for their participation. This research was approved by the Human Research Ethics Committee of Western Sydney Local Health District.

### 2.4. Data reduction and analysis

Prior to analysis the data was checked for errors (initial movement in the opposite direction to the instructions). Trials with errors were discarded. Where participants made errors on more than 20% of trials their data was excluded from further analysis ( $n = 3$ ). All excluded individuals were in the non-PG group. On average, participants made errors on 7.5% ( $SD = 4.32$ ) of trials. Following AAT convention, the top and bottom 1% of trials were removed and median values were used in the analysis (Rinck & Becker, 2007). There were eight dependent variables: median RT to pull deceased, attachment, neutral, and letter string stimuli, and median RT to push deceased, attachment, neutral, and letter string stimuli. Compatibility effect scores were calculated by subtracting median RT's in the pull condition from median RT's in the push condition. A positive score indicates a stronger approach tendency.

## 3. Results

Table 1 presents participant characteristics for the 55 individuals included in the final analysis. The PG and non-PG groups did not differ significantly in terms of mean age, mean time since loss, nature of the death, or relationship of the deceased. Overall, the most common loss was death of a parent (43.6%), followed by partner (21.8%). The most common cause of death was a medical condition or illness (83.2%). As expected, the PG group scored significantly higher than the non-PG group on the PG-13 ( $t(53) = -13.71, p = .000, 95\%CI [-22.35 to -16.65]$ ) and BDI ( $t(49) = -5.23, p = .000, 95\%CI [-22.79 to -10.21]$ ).

Table 2 presents the median RT data and compatibility effects. Block order did not impact responding and was not included in subsequent analyses. A 2 (Group) x 2 (Direction) x 4 (Stimulus Type) repeated measures ANOVA revealed significant main effects for Group [ $F(1,53) = 12.23, p = .001, \eta = 0.18$ ], Direction [ $F(1,53) = 4.01,$

**Table 1**  
Participant Characteristics.

	non-PG		PG	
	n = 30	SD	n = 25	SD
Female	66.7%		80%	
Age	44.80	16.87	44.60	12.53
Years since death	3.05	1.65	3.92	2.87
Relationship of deceased				
Partner	16.7%		28.0%	
Parent	53.3%		32.0%	
Child	10.0%		20.0%	
Sibling	13.3%		20.0%	
Other	6.0%		0	
Death type				
Medical illness	83.2%		80.0%	
Accident or violence	9.9%		12.0%	
Suicide	10.0%		8.0%	
PG*	17.30	5.25	36.80	5.25
BDI*	10.50	8.99	27.00	13.82

Note: PG = Prolonged Grief 13; BDI = Beck depression inventory. SD = standard deviation, \* $p < .05$ .

$p = .050, \eta = 0.07$ ] and Stimulus Type [ $F(3,159) = 10.07, p = .000, \eta = 0.16$ ], significant 2-way interactions between Group and Direction [ $F(1,53) = 6.08, p = .017, \eta = 0.10$ ], and Direction x Stimulus Type [ $F(3,159) = 3.27, p = .023, \eta = 0.06$ ], and the predicted significant 3-way interaction between Group x Direction x Stimulus Type, [ $F(3,159) = 5.99, p = .001, \eta = 0.10$ ]. To unpick the 3-way interaction, we first investigated between group differences by performing a 2 (Group) x 2 (Direction) ANOVA for each stimulus type. These analyses revealed significant Group main effects and Group x Direction interaction effect for each stimulus type, and a Direction main effect for the deceased and neutral stimuli (Deceased: Group:  $F(1,53) = 6.68, p = .013, \eta = 0.11$ , Direction:  $F(1,53) = 4.26, p = .044, \eta = 0.07$ , Group x Direction:  $F(1,53) = 5.21, p = .026, \eta = 0.09$ ; Attachment: Group:  $F(1,53) = 10.34, p = .002, \eta = 0.16$ , Group x Direction:  $F(1,53) = 6.49, p = .014, \eta = 0.11$ ; Neutral: Group:  $F(1,53) = 14.75, p = .000, \eta = 0.22$ , Direction:  $F(1,53) = 4.44, p = .040, \eta = 0.07$ , Group x Direction:  $F(1,53) = 7.98, p = .007, \eta = 0.13$ ; Letter String: Group:  $F(1,53) = 4.23, p = .044, \eta = 0.07$ , Group x Direction:  $F(1,53) = 4.27, p = .044, \eta = 0.07$ ). Next we examined within group differences by performing 2 (Direction) x 4 (Stimulus Type) ANOVAs separately for non-PG and PG participants. For the non-PG Group, this revealed a main effect for Stimulus Type [ $F(3,87) = 12.71, p = .000, \eta = 0.30$ ]. Overall, this group responded more quickly to the attachment stimuli than the deceased-related stimuli [ $t(29) = -2.77, p = .010, CI 4.79 to 32.04$ ], and to both of these stimuli more quickly than the neutral or letter string stimuli ( $p$  values ranging between  $p = .000 - .011$ ). For the PG group, the analysis revealed main effects for Direction [ $F(1,24) = 6.23, p = .020, \eta = 0.21$ ] and Stimulus Type [ $F(3,72) = 4.18, p = .009, \eta = 0.15$ ], and a 2-way interaction between Direction and Stimulus Type [ $F(3,72) = 5.65, p = .002, \eta = 0.19$ ]. The PG group was significantly quicker to pull than push the deceased [ $t(24) = -2.36, p = .028, CI -97.21.13 to -6.51$ ], attachment [ $t(24) = -2.50, p = .020, CI -75.41 to -7.23$ ] and neutral stimuli [ $t(24) = -2.68, p = .013, CI -87.82 to -11.53$ ], and they were quicker to pull the deceased than the neutral [ $t(24) = -2.19, p = .008, CI -85.78 to -14.61$ ] or letter string stimuli [ $t(24) = -4.52, p = .000, CI -108.38 to -40.46$ ].

## 4. Discussion

This study investigated approach and avoidance behaviour towards the deceased in PG. Bereaved participants responded to images of the deceased's name, a living attachment figure's name, a neutral name, or letter string, by pulling or pushing a joystick according to whether the image they saw was a word or not a word. We hypothesised that

**Table 2**

Median RT's in milliseconds and compatibility effects for deceased, attachment figure, neutral and letter string images for PG and non-PG participants.

Stimuli	Group	Response Direction		Compatibility Effect* (Push – Pull)
		Pull	Push	
Deceased	PG	720.76 (97.42)	772.62 (161.30)	51.86 (109.86)
	NonPG	681.41 (60.61)	678.82 (84.40)	-2.60 (64.77)
Attachment	PG	733.86 (127.26)	775.18 (136.06)	41.32 (82.59)
	NonPG	674.97 (74.25)	666.85 (64.38)	-8.12 (61.11)
Neutral	PG	770.96 (118.69)	820.64 (138.08)	49.68 (92.42)
	NonPG	701.37 (69.34)	694.15 (72.65)	-7.22 (55.16)
Letter string	PG	795.18 (135.36)	766.04 (99.44)	-29.14 (73.33)
	NonPG	691.75 (81.36)	697.92 (75.52)	6.17 (53.18)

Note: Standard deviations appear in parentheses. \*Positive values indicate a faster pull time.

participants with PG would show a bias towards approaching the deceased-related stimuli, when compared with other stimuli, and in comparison to the non-PG participants. These hypotheses were partially supported. As predicted, individuals with PG showed a relative bias towards approaching the deceased's name, that is, they were faster at pulling than pushing this stimuli. However, this pattern of responding was not isolated to the deceased stimuli. The PG group also showed a relative biases for approaching the attachment and neutral names. In comparison, non-PG participants were equally fast to pull and push each of the stimuli types. Second, although the PG and non-PG groups differed in their pattern of responding, the PG group were not faster to pull the deceased's name than the non-PG group. Rather, as was seen in Maccallum et al. (2015), the PG group appeared slower to push these stimuli. Overall, both groups responded more quickly to the deceased and attachment names than to the other two stimuli types; however, individuals with PG responded equally quickly to the deceased and attachment name, whereas individuals in the non-PG group showed quicker responses to the attachment than the deceased's name.

Our finding that PG was associated with a relative approach bias towards reminders of the deceased is consistent with theoretical models that propose a role for yearning and proximity seeking in the maintenance of PG (e.g., Boddez, 2018; Maccallum & Bryant, 2013). However, the absence of an absolute bias underscores the potential complexity involved in PG. O'Connor et al. (2008) reported that whereas non-PG participants showed activation of brain regions associated with pain in response to grief reminders, PG participants showed activation of brain regions associated with both pain and reward. The current finding that PG was associated with a slowed avoidance response may reflect the activation of such competing approach (reward) and avoidance (pain) responses. Previous studies employing an AAT paradigm with grief populations have been framed primarily as investigations of avoidance behaviour. Eisma et al. (2015) found that bereaved participants who scored higher on grief rumination showed a relative avoidance bias (faster to push than pull) for images of the deceased paired with a loss reminder. In contrast, Maccallum et al. (2015) found that participants with PG showed a relative approach bias to generic grief-related images; but, as with the present study, participants appeared slower to push these stimuli away rather than quicker to pull them. Methodological differences across these studies hinder direct comparison of their results; however, it may be that the relative degree of approach and avoidance is determined by the extent to which individual stimuli act as reminders of the person versus specific reminders of the loss (Boddez, 2018).

Although we predicted a relative approach bias for deceased related stimuli, the finding that participants with PG showed similar relative approach tendencies in response to the attachment and neutral names was less expected. We observed a difference in overall speed of responding to deceased and attachment stimuli compared to neutral stimuli. However, previous studies indexing attentional bias with bereaved populations have shown differential responding to deceased-related, compared to living attachment figures, and neutral stimuli (Mancini & Bonanno, 2012; Schneck et al., 2018). It is important to

recognise, however, that the AAT indexes motivational rather than attentional processes: participants are moving stimuli closer to or further away from themselves (Rinck & Becker, 2007). This motivational aspect of the task was captured by participants during debriefing with comments such as "It was hard to push [deceased] away". Although speculative, one possible explanation for the current findings is that the results reflect a generalisation of a motivational tendency triggered by the deceased-related stimuli to other "person-related" stimuli, or other stimuli in the same instruction set (i.e. "words"; Boddez, 2018). That is, that individuals with PG also approach stimuli paired or linked with the deceased. Future studies could test this proposition by implementing opposite responding to deceased and other person stimuli, or by including nonperson-related stimuli in the same instruction set and the deceased.

Consistent with previous studies employing an AAT paradigm, participants in this study were asked to pull or push based on a content-irrelevant (i.e. deceased-irrelevant) aspect of the stimuli. In this way the paradigm typically seeks to index more automatic than controlled or reflective processes. Our instruction was equivalent to that used in Maccallum et al. (2015). Nonetheless, deciding whether a stimulus is word may have involved a deeper level of processing than required in AAT paradigms which have used word colour (Eisma et al., 2015) or picture orientation (Rinck et al., 2007). The extent to which automatic and reflective processes represent distinct systems or different states of the same system is an ongoing debate (see Gladwin & Figner, 2015). The degree to which response tendencies are influenced by specific the instruction could be examined in future studies that utilise colour or picture orientation instructions. A recent dot-probe study employing a subliminal (50 ms) and supraliminal (1000 ms) prime conditions found that, whereas PG severity independently predicted avoidance of death words on supraliminal conditions, anxiety severity was the independent predictor of avoidance on subliminal trials (Yu et al., 2017; see also; Eisma et al., 2014). Together, these results highlight that further research is needed to understand the time course of approach and avoidance responding in PG. Moreover, consistent with the findings that individual difference factors such as grief rumination (Eisma et al., 2015) or anxiety (Yu et al., 2017) impact responding, we note that not all participants in our PG condition showed a relative approach bias, and that variation around the median response times appeared larger in the PG group than the non-PG group. Overall, these findings underscore the need for systematic investigation of stimuli features and contextual factors that may influence approach and avoidance tendencies in PG.

There are several limitations to the conclusions that can be drawn from this study. Our sample volunteered to participate in a bereavement study, and as such may reflect a subgroup of individuals with less avoidance. Also, our sample were bereaved primarily as a result of medical conditions, such as cancer and heart attacks. Future studies involving populations who have experienced bereavement due to accidents or violent acts will help to establish the extent to which the nature of the death impacts approach tendencies. Relatedly, the most common loss was that of a parent, and so it is important to determine how generalizable these findings are to people who have lost other

types of relationships. Also, there are often high rates of comorbid depression and anxiety with PG (Simon et al., 2007). The overlap between these constructs means that statistical approaches that control for comorbidity likely remove meaningful variation in PG. The application of alternative statistical approaches, for example clustering individuals who share patterns of comorbid symptoms (Maccallum & Bryant 2019; Boelen, Reijntjes, Djelantik, & Smid, 2016), may help shed light on the role of individual differences and comorbidity in approach avoidance responding in PG. We also recognise that the cross-sectional nature of the current study precludes causal conclusions: it may be that grief symptoms, such as yearning, promote relative approach behaviours in an attempt to achieve or maintain proximity to the desired goal; or, that exposure to a particular stimuli may trigger yearning. Future studies would benefit from repeated assessment to identify the potentially complex relationships between symptoms and approach and avoidance tendencies over time. Finally, we note that the current study was completed prior to publication of the ICD-11 (WHO, 2018). We indexed PG using a validated self-report measure; however, there are some differences from PGD as defined in the ICD-11 (for discussion see Eisma & Lenferink, 2018; Killikelly & Maercker, 2018).

Empirical investigation of PG is in its relative infancy. Much of this work has focussed on understanding the role of avoidance of the loss on the maintenance of PG (e.g., Boelen, van den Bout, & van den Hout, 2010; Bryant et al., 2014; Eisma et al., 2015; Eisma et al., 2014; Yu et al., 2017). In the current study we indexed responding to the person who was lost rather than the loss itself. Our results showed that rather than avoiding these reminders, individuals with PG were slower to push away their deceased love one than participants without PG. This tendency is likely to perpetuate distress by fostering preoccupation, and interfering with participation in restoration activities necessary to rebuild a life and sense of self. Our findings also raise many questions for future investigation, including the role of response generalisation and contextual influences. As the field advances, more attention is being directed towards understanding the role of attachment and yearning processes within in PG (Boddez, 2018; Maccallum & Bryant, 2013; Shear et al., 2007). Developing a stronger evidence base for how approach and avoidance tendencies interact and function in PG will be important for advancing our understanding of the syndrome.

### Declaration of conflicting interests

The authors declare no conflict of interest.

We thank Mike Rinck and Frank Leonhardt, the authors of the approach-avoidance task (AAT) software.

### Acknowledgements

This work was supported by the National Health and Medical Research Council of Australia [grant numbers 568970, 455341, and 1053997].

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