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# **Testing the Effectiveness of Task Difficulty, Behaviour Interpretation, and Social Comparison Interventions on Bushfire Preparedness – An Experimental Field Study**

**Brief Report on Phases 7 & 8 of the University of Western  
Australia & Bushfire CRC Research Project**

**Dr Ilona McNeill<sup>1,4</sup>, Mr. Huw Flatau Harrison<sup>1</sup>, Dr Patrick Dunlop<sup>1,4</sup>,  
Prof Timothy Skinner<sup>2,4</sup>, and Prof David Morrison<sup>3,4</sup>**

<sup>1</sup>School of Psychology, University of Western Australia

<sup>2</sup>School of Psychological and Clinical Sciences, Charles Darwin University

<sup>3</sup>Murdoch University

<sup>4</sup>Bushfire Cooperative Research Centre

## **Abstract**

Researchers at the University of Western Australia explored whether three different interventions had an effect on preparedness intentions at the start of the bushfire season and actual preparedness towards the end of the bushfire season for both property preparedness and psychological planning. These manipulations included A. asking residents of bushfire prone areas to focus on completing easy vs. difficult preparatory tasks first, B. influencing residents' perceptions of how much they have done to prepare to date compared to others in Australia, and C. asking residents to interpret their level of bushfire preparedness to date in terms of commitment or progress towards the goal of being prepared. Results suggest that making residents focus on the three easiest tasks first leads to greater intentions to complete uncompleted planning tasks than focusing on the three most difficult tasks first, but it had no influence on actual preparedness by the end of the season. Results also showed that residents who thought about how much progress they had made towards the goal of being prepared showed lower intentions to engage in more tasks that prepare their properties than those who thought about how committed they were towards the goal of being prepared. However, thinking about their progress towards the goal of being prepared led residents to complete more psychological planning tasks than thinking about how committed they were.

## **Executive Summary**

The present study reports on three different interventions that were tested in a longitudinal study on perceived fire risk and fire preparedness. The three interventions were included in Wave 1 of the longitudinal study.

The first intervention (Difficulty) asked approximately half of the respondents to rank the top three most difficult preparedness activities they hadn't done yet, and the other half to rank the top three easiest preparedness activities they hadn't done yet.

In the second intervention (Comparison), respondents were provided with the following piece of text, with approximately half receiving the 25% estimate figure and the other half receiving the 75% estimate figure.

"Previous research into community preparedness for bushfires in Australia has shown that many households in bushfire prone areas complete around 25%/75% of the activities listed on the previous pages.

They were then asked: "What would your guess have been?"

('Much less than 25/75%', 'Somewhat less than 25/75%', 'Around 25/75%', 'Somewhat more than 25/75%', 'Much more than 25/75%').

Finally, for the third intervention (Interpretation), approximately half of respondents were asked to indicate their level of agreement with the following statement on the response anchors 'Strongly disagree', 'Moderately disagree', 'Slightly disagree', 'Neither agree nor disagree', 'Slightly agree', 'Moderately agree' and 'Strongly agree':

'I have made a lot of progress towards being prepared for bushfires'.

The other half of respondents were asked to indicate their level of agreement with a different statement:

'I am very committed to be prepared for bushfires'.

Subsequently respondents were asked to indicate the likelihood of them carrying out the actions they hadn't completed yet, starting with the three actions they listed earlier as either easiest or most difficult. These actions measured either preparedness for bushfire by planning ('Psychological Planning'), or preparedness for bushfire by property preparedness ('Property Preparation', see Appendix A for the list of preparedness items). The following provides a summary of key findings related to these manipulations.

- When it comes to Intentions regarding Psychological Planning, those who had completed more Planning actions had higher intentions to complete uncompleted actions. When examining demographics there was a significant main effect found for Gender, with women having higher intentions to complete Psychological Planning actions than men. When examining the interventions, there was a main effect of the Difficulty on Intentions to Prepare by Planning at Wave 1, with those residents asked to list the three easiest uncompleted preparatory actions reported a greater intention to complete uncompleted planning actions than those asked to list the three most difficult actions. Neither the Interpretation nor Comparison intervention significantly predicted Wave 1 Psychological Planning Intentions.
- When it comes to Intentions regarding Property Preparation, those who had completed more Property Preparations did not have higher intentions to complete uncompleted actions. When examining demographics, there was a significant main effect for Age and Gender. Residents in the 18-24 age bracket reported a higher degree of intention to complete Property Preparations than those in the 40-49 or 50+ brackets, and women reported a higher degree of intention to complete Property Preparations than men. When examining the interventions, there was a main effect for the Interpretation. Importantly, those residents who were asked to think about their preparedness to date in terms of commitment reported a higher intention to complete Property Preparations than those who were asked to think about their preparedness to date in terms of progress.

- When it comes to predicting Psychological Planning at Wave 2, those who had completed more Psychological Planning actions at Wave 1 had also completed more Psychological Planning actions at Wave 2. When examining demographics there were no main effects. When examining the interventions, there was a main effect for Interpretation on Preparedness through Planning at Wave 2. Those residents asked to think about their preparedness at Wave 1 in terms of how much progress they had made reported a higher proportion of Psychological Planning actions completed at Wave 2 than those who had been asked about their commitment to being prepared.
- When it comes to predicting Property Preparations at Wave 2, those who had completed more Property Preparations at Wave 1 also completed more actions at Wave 2. When examining demographics, there were no significant main effects. Finally, none of the three interventions we tested (i.e. Difficulty, Comparison, and Interpretation) had a significant effect on Property Preparations either.

## Introduction

Bushfires form a yearly recurring threat in many Australian communities. Residents who live in these at-risk communities can prepare their households and properties to mitigate the risk of bushfires negatively affecting them. It is therefore important to find out how fire safety authorities and local governments in bushfire prone areas can best motivate residents to increase their preparedness. Despite frequent campaigns about the adverse consequences of not preparing for bushfire, and being aware of the need to prepare, many people living in fire prone areas continue to be underprepared for bushfire. One reason could be that people generally have many goals competing for their attention, time, and resources, and other goals may simply be getting priority over the bushfire preparation goal. The current study expanded on research conducted in a laboratory setting (McNeill et al., 2013) and applied social psychological research to develop three different communication based interventions aimed to increase intentions to prepare and actual preparedness. Since the current research tests hypotheses very similar to those reported by McNeill et al. (2013), we repeat their literature review and hypotheses below, with minor adjustments to the current study.

### ***Commitment vs. Progress***

Previous studies have demonstrated that people's choice of goal pursuit can be influenced by two different goal representations- a commitment representation or a progress representation (Fishbach et al., 2009). Commitment to a goal can be defined as valuing that goal (Liberman & Forster, 2008) whereas progress can be defined as a desire to reduce the discrepancy between the current goal state and the desired goal state (Carver & Scheier, 1998). Fishbach et al. (2009) indicate that these action interpretations are competing representations. In other words, an action can only be interpreted in relation to one of the two representations at the time, thus being perceived in terms of commitment or perceived in terms of progress.

People who interpret their completed goal-related actions as expressing commitment towards that underlying goal tend to infer from this that they value the goal, thus increasing its motivational priority (Feather, 1990). Therefore, they are more likely to pursue the partially accomplished goal through a dynamic called 'highlighting' by prioritising it over other goals. However, people who interpret their

completed goal-related actions as making progress towards the underlying goal tend to put less effort into continued pursuit of this goal, as it provides a sense of reduced discrepancy between the existing goal state and the desired goal state (Carver & Scheier, 1998). Thus, they are more likely to switch to the pursuit of other goals through a dynamic called 'balancing'.

For example, in a series of studies, Fishbach and Dhar (2005) demonstrated this effect of interpretation of past behaviour by asking participants to focus on either their goal commitment or goal progress towards their academic goal, health goal, and financial goal. Half of the participants who were in the goal commitment condition were asked to evaluate their level of commitment towards the three goals after thinking about the extent to which they had been pursuing each of these three goals. Similarly, those in the goal progress condition were asked to evaluate their level of goal progress towards all three goals after thinking about the extent to which they had been pursuing each of these three goals. For example, participants in the goal commitment condition were asked to indicate how committed they felt towards their academic goal after spending all day studying, whereas those in the progress condition were asked to indicate if they felt that they had made a lot of progress in their studies after spending all day studying. They were then asked to rate the likelihood of switching to a different goal, namely socialising with their friends, an incongruent goal action towards their academic goal. Their findings showed that those who perceived themselves as having a high level of commitment towards the three goals deferred from choosing incongruent goal actions whereas those who perceived themselves as having made substantial progress towards these three goals had a greater inclination to engage with incongruent goal actions, such as socialising in the case of the studying goal. We wanted to test whether the same mechanisms would apply to the goal of preparing for bushfires. Thus, based on previous findings, the first hypothesis for this study was that:

**Hypothesis 1a:** When people perceive that they have *done a lot* of preparing for bushfires already and interpret their behaviours in terms of *commitment* towards their bushfire preparedness goal this *increases* the likelihood of highlighting the same goal by engaging in more bushfire preparatory behaviours compared to if they perceive that they have *done very little* preparing so far and interpret their behaviours in terms of *commitment*.

**Hypothesis 1b:** When people perceive that they have *done a lot* of preparing for bushfires already and interpret their behaviours in terms of *progress* towards their bushfire preparedness goal this *decreases* the likelihood of highlighting the same goal by engaging in more bushfire preparatory behaviours compared to if they perceive that they have *done very little* preparing so far and interpret their behaviours in terms of *progress*.

## **Task Difficulty**

### *Commitment*

People have many goals in their lives, and reality imposes substantial constraints on the kind of goals and the number of goals that people can attain simultaneously. Therefore, people tend to select those goals that they value and can attain relatively easily (Moskowitz & Grant, 2009). However, there is mounting evidence that demonstrates that people with high commitment continue to pursue goals despite the goals being more difficult to attain (Moskowitz & Grant, 2009). The reasoning behind this is that when people are asked about their commitment towards their goals, they tend to focus on the importance and the value of those goals and thus are more motivated to pursue the goals based on their perceived high value, regardless of the difficulty of the pursuit. In fact, many researchers use this characteristic of 'goal pursuit regardless of the task difficulty' to define commitment (e.g., Tubbs & Dahl, 1991).

In line with the above, research by Tyszka (1998) has demonstrated that for decision tasks that are seen as important or valuable, the effort required is less of an issue than for decision tasks that are seen as not so important or valuable. Similarly, Billings and Scherer (1988) demonstrated that people are more willing to exert extra effort for tasks that are associated with outcomes that are seen as valuable. On the other hand, when tasks are associated with outcomes that are seen as less valuable, people are then less willing to exert extra effort. Locke and Latham (1990) have demonstrated that goal commitment is a potential moderator for the relationship between goal difficulty and task performance. In other words, when the goal is more difficult, high level of goal commitment leads to an increase in effort exertion, which leads to higher task performance. When goal commitment is low, however, then

difficult goal pursuit no longer leads to extra effort, and task performance goes down. Finally, Klein et al. (1999) also showed that people with high (compared to low) goal commitment are more likely to stay motivated to exert more effort to increase task performance despite the tasks being more difficult.

### *Progress*

On the other hand, when people are asked about their progress in their goal pursuit, their motivation is to reduce the discrepancy between the existing goal state and the desired goal state. Thus, their attention shifts from the overall value of that goal to what needs to be done to reduce the discrepancy. Lewin (1951) suggested that the perceived discrepancy between current goal state and desired goal state motivates people to reduce the discrepancy through the experience of psychological arousal, where medium levels of arousal lead to optimal performance. More specifically, when there is a small discrepancy between the current and desired goal state, this creates a low level of arousal that does not motivate people to reduce the discrepancy as much. As the arousal level increases with the discrepancy between the existing goal state and desired goal state, it motivates people to make more progress towards their goal in order to reduce the discrepancy. However, when arousal levels become too high, then they start to demotivate again. When task difficulty increases, the discrepancy between current goal state and the desired goal state is perceived as larger than when the task is relatively easy. Thus, the arousal level that people experience is predicted to increase with goal difficulty to a point where it becomes intolerable and becomes detrimental for performance.

Indeed, Locke et al. (1981) have showed that the pursuit of difficult goals creates anxiety that has detrimental effect on people's task performances. Bandura (1977) suggested that as the goal pursuit becomes more difficult, the probability of failure also increases. This in turn increases the anticipation of failure and heightens the arousal level to a dysfunctional state. Thus, it can be expected that people who are already motivated by discrepancy may be less motivated to reduce the discrepancy between the current goal state and desired goal state when task difficulty increases, as the arousal level passes the optimal point of motivation. However, for those who were experiencing little arousal due to discrepancy, increased task difficulty may increase arousal to a more optimal level, thereby



increasing motivation. Hence, based on past research findings, the second hypothesis for this study was that:

**Hypothesis 2a:** Increased task difficulty will have no effect on the influence of a commitment interpretation as described in Hypothesis 1a.

**Hypothesis 2b:** Increased task difficulty *will* have an effect on the influence of a progress interpretation as described in Hypothesis 1b. More specifically, when people perceive that they have *done a lot* of preparing for bushfires already and interpret their behaviours in terms of *progress* towards their bushfire preparedness goal, increased task difficulty will increase arousal to a moderate level, thereby *increasing* the likelihood of highlighting the same goal by engaging in more bushfire preparatory behaviours. On the other hand, when people perceive that they have *done very little* preparing for bushfires so far and interpret their behaviours in terms of *progress* towards their bushfire preparedness goal, increased task difficulty will increase arousal to a very high level, thereby *decreasing* the likelihood of highlighting the same goal by engaging in more bushfire preparatory behaviours.

## Method

The research reported in the current report refers to the first two waves of a 3-wave longitudinal study conducted in the 2012-2013 bushfire season. The third wave was used to validate a measure of preparedness, and is reported in a separate paper.

### ***Participants and Design***

***Participant pool.*** Participants were selected from a national pool of members of an online panel company unit to participate in a three wave longitudinal study conducted over the 2012/13 Bushfire season in ACT, NSW, SA, TAS, VIC, and WA. To ensure all participants lived in bushfire prone areas, they received a screener survey at the start of Wave 1, which assessed their proximity to bushfire risk areas. Only participants who lived on a property that was less than 100m away from the closest bushland, who were at least 18 years old, and who were at least moderately

involved in bushfire safety related decisions in their household were [invited](#) to participate in the study.

*Wave 1.* Timing of the first wave survey was such that all participants received a unique Internet link to complete the first survey two weeks after the announcement of the bushfire danger period in their local area. Fire agencies and emergency services websites were consulted to find out when local councils and governments were declaring the bushfire danger period (during which properties were most at risk of bushfire). Within some states there was variability in the degree to which local councils and government officially announced the commencement of bushfire danger across Australia. State Departments in South Australia, Victoria and Tasmania staggered the commencement date for the bushfire danger period across local councils according to their proximity to bushfire risk. The first surveys for these states were launched on October 29<sup>th</sup> (S.A.), November 15<sup>th</sup> (Vic) and December 17<sup>th</sup> (TAS). For NSW and WA no differentiation was made according to regions, and all participants received the Wave 1 survey on October 24<sup>th</sup> and December 17<sup>th</sup> respectively.

The first wave contained 8 different survey versions in a 2(Difficulty: Easy vs. Difficult) by 2(Comparison: Low vs. High) by 2(Interpretation: Commitment vs. Progress) design. Descriptions of these intervention conditions are listed in the measures section below. Residents completed five different sections within the Wave 1 survey. These sections asked residents to provide information about themselves and their household (Section 1), their bushfire response and expectations surrounding the possibility of bushfire (Section 2), their experiences, motivation and feelings both in general, and in relation to bushfire (Section 3), the current state of their bushfire preparedness (Section 4) and finally their intentions with respect to completing preparedness activities in the future (Section 5). The different interventions were presented in Section 4. The sections relevant for the present report were the general demographics measured in Section 1, the already completed actions reported in Section 4, and the reported intention levels in Section 5.

In total, 12,663 Screener Surveys were sent out to participants in bushfire prone areas. Of these, 2,582 respondents were not screened out and were invited to start the Wave 1 survey. Finally, 2,103 respondents who were invited to start the

Wave 1 survey completed it, equating to a response rate of approximately 81%. We screened out all cases where it appeared that multiple surveys had been filled out within the same household, and were then left with 1176 useable cases.

Of the 1176 final Wave 1 responses that were received, 570 were Male and 879 were Female. Residents had lived on their current properties for an average of 10.4 years ( $SD = 10.5$ ) and had lived in their current town/suburb for an average of 14.2 years ( $SD = 13.5$ ). The majority of residents lived on a house on a residential block (67.3%), 13.2% lived on a house on a hobby farm, 11.8% lived in an apartment or unit and 3.4% lived on a house on a large farm. Finally, 4.3% listed their accommodation as 'other'. The majority of residents (73.5%) also indicated that they owned their current property, and 96.4% of respondents resided on their property on a full time basis. State and Age distributions are shown in Figures 1 and 2 respectively.

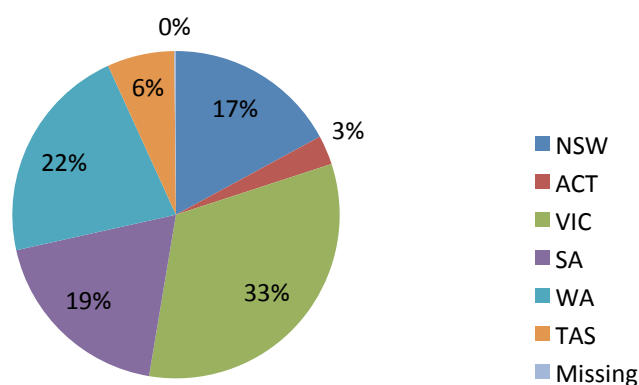


Figure 1. *Distribution of responses to W1 by State.*

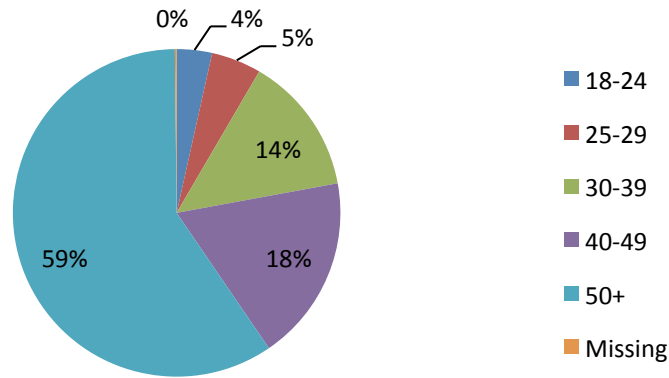


Figure 2. *Distribution of responses to W1 by Age.*

Wave 2. Participants who indicated they were prepared to receive a follow up questionnaire received the Wave 2 survey approximately 10 weeks after receiving the Wave 1 survey. Residents completed six sections in the Wave 2 survey, again reporting information about themselves (Section 1), their experiences, motivations and feelings (Section 2/4), their likely response to bushfire (Section 3), the current state of their preparedness (Section 5) and finally their intentions to maintain levels of preparedness (Section 6). The main section relevant for the present report was Section 5 (levels of preparedness at Wave 2).

Wave 2 surveys were sent out to the 1176 people who completed the Wave 1 survey. Of these, 624 participants were successfully matched between waves. For the purposes of this report, 42 responses were removed as they did not complete all the measures of interest.

Again for W2 data we screened out all cases where it appeared that multiple surveys had been filled out within the same household. This resulted in a final N of 465 cases (194 males, 271 females). Distribution by State is represented in Figure 3. Finally, the minimum reported age was 19 and the maximum reported age 83. Across all respondents, the average age was 54.22 (Standard Deviation=13.42).

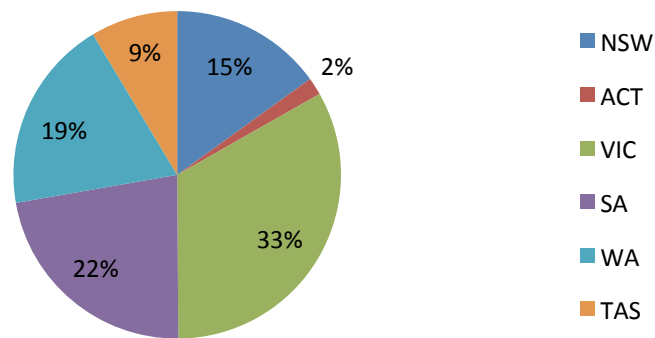


Figure 3. Distribution of responses to W2 by State.

A majority of residents lived in a house or unit on a residential block (69%), 12.5% lived in a House on a hobby farm or small acreage block, 10.5% lived in an apartment or unit on a residential block and 2.4% lived in a house on a large farm or other large property. 5.6% reported other property types. Residents had lived in their properties for an average of 11.8 years ( $SD=11$ ) and in their neighbourhood for an average of 15.6 years ( $SD=14.28$ ). Most residents reported owning the property that they lived on (79%), and 97.2% of residents lived on their properties full time. State distributions are indicated in Figure 3.

### ***Measures (in order of appearance)***

*Preparedness at Wave 1.* First, we measured two distinct types of preparedness: Property Preparation (24 items) and Psychological Planning (8 items), both based on the work of McNeill et al. (2013). Participants were asked to indicate whether each bushfire preparedness item was either “Currently true for me/my household”, “Currently not true for me/my household” or “N/A” (if a particular action was not applicable to a participant given their current situation and/or property). Property preparation included items such as “Fine fuels (e.g., leaves, twigs and long grass) are cleared for a distance of at least 20m around the house” and “All of your roof coverings fit tightly so that there are no openings for sparks”. Psychological Planning included items such as “You have formed a household bushfire emergency

plan” and “You have thought carefully about what each person in your household would need to do in the event of a bushfire”.

*Difficulty.* Next, participants received a list of those actions they indicated as ‘Currently not true for me/my household’. To manipulate task difficulty, we asked them to rank either the top-3 *easiest* things they hadn’t done yet, or the top-3 *most difficult* things they hadn’t done yet.

*Comparison.* To manipulate whether participants believed they had done very little versus a lot already, they were then presented with a fictional statement indicating that most Australian households had completed around 25% (low benchmark leading to perceptions of having done a lot already), or 75% (high benchmark leading to perceptions of having done relatively little thus far) of the preparedness actions listed earlier. To ensure that they paid attention to the benchmark information, they were then asked to indicate whether they would have estimated more or less than the figure provided in the statement on a 5 point scale, with anchors “Much less than 25%/75%”, “Somewhat less than 25%/75%”, “Around 25%/75%”, “Somewhat more than 25%/75%”, “Much more than 25%/75%”.

*Interpretation.* Finally, participants were asked to indicate whether they agreed/disagreed on a 7 point scale (response anchors “Strongly disagree”, “Moderately disagree”, “Slightly disagree”, “Neither agree nor disagree”, “Slightly agree”, “Moderately agree” and “Strongly agree”) with one of two alternative statements. To activate a Progress interpretation, they were asked to indicate to which extent they agreed with ‘I have made a lot of progress towards being prepared for bushfires’. To activate a Commitment interpretation, they were asked to indicate to which extent they agreed with ‘I am very committed to be prepared for bushfires’, representing the progress and commitment conditions respectively.

*Intentions to Prepare at Wave 1.* After receiving the Difficulty, Comparison, and Interpretation interventions, participants again received the list of those bushfire preparedness actions they had not yet completed. At this point, they were asked to indicate their intention to complete these actions within 4 weeks of receiving the survey. They started with their intentions to complete the three actions they had listed as most difficult vs. easiest, and then continued with the other actions they still needed to complete. Intentions were recorded on a 7 point scale, with response

anchors “Definitely Not”, “Very Probably Not”, “Probably Not”, “Possibly/Possibly Not”, “Probably”, “Very Probably”, “Definitely will do (but have not yet done it)”. In addition they were able to indicate that a particular action was “Not Applicable/Already done this”. The latter served as a control for accuracy of responding to the initial preparedness questions. The above resulted in two variables: Psychological Planning Intentions and Property Preparation Intentions.

*Preparedness at T2.* During the Wave 2 survey, participants were again presented with the complete list of bushfire preparedness actions as they had received at the start of W1, and were again asked to indicate whether each bushfire preparedness item was either “Currently true for me/my household”, “Currently not true for me/my household” or “N/A” (if a particular action was not applicable to a participant given their current situation and/or property)

## **Results**

### ***Preliminary Analyses***

For the analyses, different ‘select cases if’ rules were used according to the variable of interest. All analyses concerning actual Wave 1 preparedness only used residents who had completed Wave 1 ( $N = 1176$ ). The analyses concerned with intentions at Wave 1 used  $N = 1044$  for Planning Preparedness and  $N = 1123$  for Property Preparedness. This was the result of selecting only those residents who had listed at least one item as uncompleted for that type of preparedness at Wave 1. In addition multiple responses from the same household were screened out. For Wave 2 we screened out the cases that did not complete the Wave 2 questionnaire. This resulted in a sub-sample of  $N = 419$  for Psychological Planning actions at Wave 2 and a sub-sample of  $N = 453$  for Property Preparations at Wave 2.

Table 1 shows the correlations between W1 Psychological Planning and Property Preparation intentions, and W1 and W2 actual Psychological Planning and Property Preparations. A few correlations are worth noting. First, actual preparedness at W1 was strongly correlated with actual preparedness at W2 for both types of preparedness. Also, there was a moderate relationship between W1 Psychological Planning Intentions and W2 Psychological Planning Actions

Completed ( $r=.32$ ,  $p<.05$ ) and between W1 Psychological Planning Intentions and W2 Property Preparation Actions ( $r=.26^{**}$ ,  $p<.01$ ).

*Table 1. Mean, Standard Deviation, and Correlations of Preparedness actions at Wave 1 and Wave 2, and Preparedness Intentions at Wave 1.*

	<i>M (SD)</i>	1	2	3	4	5
1. Psych W1	.42 (.35) N=1146	-				
2. Prop W1	.55 (.23) N=1158	.41** N=1044	-			
3. Psych Int W1	4.35 (1.48) N=1036	.16** N=1036	.20** N=1036	-		
4. Prop Int W1	3.26 (1.21) N=1082	.10** N=1081	.03 N=1082	.49** N=1016	-	
5. Psych W2	.51 (.35) N=451	.61** N=413	.40** N=413	.32* N=412	.15** N=408	-
6. Prop W2	.56 (.22) N=456	.30** N=445	.70** N=448	.26** N=413	.10* N=436	.52** N=451

N.B. \* $p < .05$ , \*\* $p < .01$

In the following analyses we used several control variables. More specifically, we controlled for psychological planning at W1 in our analyses on intentions regarding psychological planning at W1 and on psychological planning at W2. Similarly, we controlled for property preparations at W1 in our analyses on intentions regarding property preparations at W1 and on property preparations at W2.

### ***Predicting Psychological Planning Intentions***

**Age.** To test the influence of Age category on Psychological Planning Intentions, a Univariate GLM was conducted with Age Category as an independent fixed factor, Psychological Planning at Wave 1 as a covariate, and Wave 1 Psychological Planning Intentions as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning Intentions,  $F(1, 1029) = 25.67$ ,  $p < .001$ ,  $r = .15$ , with those having done more planning having higher



intentions to complete uncompleted planning activities. There was no effect of Age Category,  $F(4, 1029) = .257, p = .906, r = .03$ .

*State.* To test the influence of State on Psychological Planning Intentions, a Univariate GLM was conducted with State Location as an independent fixed factor, Psychological Planning at Wave 1 as a covariate, and Wave 1 Psychological Planning Intentions as the dependent variable. Again Psychological Planning at Wave 1 significantly predicted Psychological Planning Intentions,  $F(1, 1028) = 25.53, p < .001, r = .15$ . There was no additional effect of State Location,  $F(5, 1028) = 1.45, p = .204, r = .08$ .

*Gender.* To test the influence of Gender on Psychological Planning Intentions, a Univariate GLM was conducted with Gender as an independent fixed factor, Psychological Planning at Wave 1 as a covariate, and Wave 1 Psychological Planning Intentions as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning Intentions,  $F(5, 1033) = 26.35, p < .001, r = .16$ . Additionally, there was a significant main effect of Gender,  $F(1, 1033) = 17.91, p < .001, r = .13$ . Women reported a significantly higher degree of intention to complete Psychological Planning activities ( $M = 4.51, SD = .058$ ) than Men ( $M = 4.12, SD = .072$ ).

*Interventions.* To test the influence of the interventions (Difficulty, Comparison, and Interpretation) on Psychological Planning Intentions, a Univariate GLM was conducted with Difficulty (Easy vs. Difficult), Comparison (25% vs. 75%), and Interpretation (Commitment vs. Progress) as independent fixed factors, Psychological Planning at Wave 1 as a covariate, and Wave 1 Psychological Planning Intentions as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning Intentions,  $F(1, 1027) = 24.17, p < .001, r = .15$ . Additionally, there was a significant main effect of Difficulty,  $F(1, 1027) = 4.22, p < .05, \text{partial } \eta^2 = .004$ . Those residents who were asked to list the three easiest uncompleted preparatory actions reported a greater intention to complete uncompleted actions ( $M = 4.45, SD = .062$ ) than those who were asked to list the three most difficult uncompleted preparatory actions ( $M = 4.26, SD = .07$ ). No effects were found for Comparison, Interpretation, or any of the 2-way and 3-way interactions (all  $F$ 's  $< 2.70$ ).

### ***Predicting Property Preparation Intentions***

**Age.** To test the influence of Age on Property Preparation Intentions, a Univariate GLM was conducted with Age as an independent fixed factor, Property Preparation at Wave 1 as a covariate, and Wave 1 Property Preparation Intentions as the dependent variable. Property Preparation at Wave 1 had no effect,  $F(1, 1075) = .01, p = .91$ . There was a significant main effect of Age,  $F(4, 1075) = 4.68, p < .05$ . Respondents in the 18-24 age bracket reported a significantly higher degree of Property Preparation intentions ( $M = 3.84, SD = .20$ ) than those in the 40-49 ( $M = 3.14, SD = .09$ ) and 50+ ( $M = 3.20, SD = .05$ ) brackets.

**State.** To test the influence of State on Property Preparation Intentions, a Univariate GLM was conducted with State Location as an independent fixed factor, Property Preparation at Wave 1 as a covariate, and Wave 1 Property Preparation Intentions as the dependent variable. Property Preparation at Wave 1 had no effect,  $F(1, 1074) = .97, p = .32$ . Likewise there was no main effect of State Location,  $F(5, 1074) = 1.734, p = .12$ .

**Gender.** To test the influence of Gender on Property Preparation Intentions, a Univariate GLM was conducted with Gender as an independent fixed factor, Property Preparations at Wave 1 as a covariate, and Wave 1 Property Preparation Intentions as the dependent variable. Property Preparation at Wave 1 had no effect,  $F(1, 1079) = .69, p = .41$ . There was a significant main effect of Gender,  $F(1, 1079) = 5.83, p < .05$ . Women reported a higher degree of Property Preparation intentions ( $M = 3.34, SD = .05$ ) than Men ( $M = 3.15, SD = .06$ ).

**Interventions.** To test the influence of the interventions (Difficulty, Comparison, and Interpretation) on Property Preparation Intentions, a Univariate GLM was conducted with Difficulty (Easy vs. Difficult), Comparison (25% vs. 75%), and Interpretation (Commitment vs. Progress) as independent fixed factors, Property Preparations at Wave 1 as a covariate, and Wave 1 Property Preparation Intentions as the dependent variable. Property Preparations at Wave 1 did not significantly predict Property Preparation Intentions,  $F(1, 1073) = 1.16, p = .28$ . There was a main effect of Interpretation,  $F(1, 1073) = 7.70, p < .05$ . Those residents who were asked to think about their preparedness towards bushfires with respect to their degree of

commitment reported a higher degree of Property Preparation intentions ( $M = 3.37$ ,  $SD = .06$ ) than those who were asked to think about it in terms of their progress ( $M = 3.17$ ,  $SD = .05$ ). No effects were found for Difficulty, Comparison or any 2 way or 3 way interactions (all  $F$ 's  $< 2.55$ ).

### ***Predicting Psychological Planning at Wave 2***

*Age.* To test the influence of Age on Psychological Planning at Wave 2, a Univariate GLM was conducted with Age as an independent fixed factor, Psychological Planning at Wave 1 as a covariate, and Wave 2 Psychological Planning as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning at Wave 2,  $F(1, 407) = 223.90$ ,  $p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was no main effect of Age Category,  $F(4, 407) = 1.25$ ,  $p = .29$ .

*State.* To test the influence of State on Psychological Planning at Wave 2, a Univariate GLM was conducted with State as an independent fixed factor, Psychological Planning at Wave 1 as a covariate, and Wave 2 Psychological Planning as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning at Wave 2,  $F(1, 406) = 224.81$ ,  $p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was no main effect of State,  $F(5, 406) = .60$ ,  $p = .70$ .

*Gender.* To test the influence of Gender on Psychological Planning at Wave 2, a Univariate GLM was conducted with Gender as an independent fixed factor, Psychological Planning at Wave 1 as a covariate, and Wave 2 Psychological Planning as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning at Wave 2,  $F(1, 410) = 237.51$ ,  $p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was no main effect of Gender,  $F(1, 410) = 3.45$ ,  $p = .06$ .

*Interventions.* To test the influence of the interventions (Difficulty, Comparison, and Interpretation) on Psychological Planning at Wave 2, a Univariate GLM was conducted with Difficulty (Easy vs. Difficult), Comparison (25% vs. 75%), and Interpretation (Commitment vs. Progress) as independent fixed factors, Psychological Planning at Wave 1 as a covariate, and Wave 2 Psychological

Planning as the dependent variable. Psychological Planning at Wave 1 significantly predicted Psychological Planning at Wave 2,  $F(1, 404) = 236.98, p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was a main effect of Interpretation,  $F(1, 404) = 4.67, p < .05$ . Those residents who were asked to think about their preparedness at Wave 1 in terms of how much progress they had made reported a higher proportion of Psychological Planning actions completed at Wave 2 ( $M = .50, SD = .02$ ) than those who had been asked about their commitment to preparedness at Wave 1 ( $M = .44, SD = .02$ ). No effects were found for Difficulty, Comparison, or any 2 or 3 way interactions (all  $F$ 's  $< 1.65$ ).

### ***Predicting Property Preparation at Wave 2***

**Age.** To test the influence of Age on Property Preparations at Wave 2, a Univariate GLM was conducted with Age as an independent fixed factor, Property Preparations at Wave 1 as a covariate, and Wave 2 Property Preparations as the dependent variable. Property Preparations at Wave 1 significantly predicted Property Preparations at Wave 2,  $F(1, 442) = 390.20, p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was no effect of Age,  $F(4, 442) = .39, p = .82$ .

**State.** To test the influence of State on Property Preparations at Wave 2, a Univariate GLM was conducted with State as an independent fixed factor, Property Preparations at Wave 1 as a covariate, and Wave 2 Property Preparations as the dependent variable. Property Preparations at Wave 1 significantly predicted Property Preparations at Wave 2,  $F(1, 441) = 418.19, p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was no effect of State,  $F(5, 441) = .06, p = 1.00$ .

**Gender.** To test the influence of Gender on Property Preparations at Wave 2, a Univariate GLM was conducted with Gender as an independent fixed factor, Property Preparations at Wave 1 as a covariate, and Wave 2 Property Preparations as the dependent variable. Property Preparations at Wave 1 significantly predicted Property Preparations at Wave 2,  $F(1, 445) = 421.52, p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. There was no effect of Gender,  $F(1, 445) = .12, p = .73$ .

*Interventions.* To test the influence of the interventions (Difficulty, Comparison, and Interpretation) on Property Preparations at Wave 2, a Univariate GLM was conducted with Difficulty (Easy vs. Difficult), Comparison (25% vs. 75%), and Interpretation (Commitment vs. Progress) as independent fixed factors, Property Preparations at Wave 1 as a covariate, and Wave 2 Property Preparations as the dependent variable. Property Preparations at Wave 1 significantly predicted Property Preparations at Wave 2,  $F(1, 439) = 433.54, p < .001$ , with those having completed more actions at Wave 1 completing more actions at Wave 2. No effects were found for Difficulty, Comparison, Interpretation, or any 2 or 3 way interactions (all  $F$ 's < 3.65).

## **Discussion**

This report covers two phases in a study conducted during the '2012-2013' fire season, which tested the influence of three different interventions. First, the study looked at the influence of having people focus on the three easiest versus most difficult uncompleted preparatory actions first. It showed that focusing on the three easiest actions first leads to greater intentions to complete uncompleted psychological planning actions than focusing on the three most difficult uncompleted actions first. However, it did not show any effects on actual psychological planning actions over time, nor on property preparations. This intervention thus requires more research before it can be applied by practitioners. This research could focus on increasing the overall effectiveness of the intervention, for example by delivering it more frequently over time.

Secondly, this study looked at the influence of perceiving oneself to have done more or less than most Australians, which was expected to interact with the third intervention, namely the influence of interpreting preparedness to date in terms of commitment versus progress to the goal of being prepared. The study showed that thinking about one's bushfire preparedness to date in terms of commitment to the goal of being prepared led to significantly higher intentions to complete uncompleted property preparations than thinking about one's bushfire preparedness to date in terms of progress to the goal of being prepared, but it led to fewer psychological planning actions completed by the end of the bushfire season. This study thus

provides mixed support for the effectiveness of asking people to consider their commitment versus progress towards being prepared. First, based on past research, the influence of these framings should have depended on how much people felt they had already done compared to others, with those feeling like they had done very little in comparison to others being influenced in a different way than those feeling like they had done a lot in comparison to others. However, no such interaction was found in the current study. Second, the influence of the framings should have been the same for both property preparations and psychological planning, but it was not. In conclusion, more research would be needed, at the very least, to increase our understanding of how and why these framings influence preparedness.

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## Appendix A

PR marked items measure Property Preparedness

PSY marked items measure Psychological Planning

Which of the following are <u>currently</u> true (i.e. true when you started filling out this survey) for you/your household?	Currently true for me / my household	Currently not true for me / my household	N/A
PR. Fine fuels (e.g., leaves, twigs and long grass) are cleared for a distance of at least 20m around the house.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR All of your roof coverings fit tightly so that there are no openings for sparks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY You have formed a household bushfire emergency plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR There is a minimum two metre gap between your house and tree branches or shrubs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Your external house timbers all have a sound coat of paint.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR There is metal flywire mesh on all vents to keep sparks and embers out.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY You have considered how your actions could depend on the situation on the day (e.g., some members not being at home, the Fire Danger Rating, etc.) and have integrated this into your bushfire emergency plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Flammable and combustible materials such as firewood, boxes, gas cylinders, and wooden garden furniture are stored away from the house.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR There is gutter protection installed on your house.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY You have thought carefully about what each person in your household would need to do in the event of a bushfire.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Your home and contents insurance is adequate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR All gaps and vents are covered in order to reduce the risk of embers entering the house or cavities (e.g. floor spaces, in the roof space, under eaves, external vents, skylights, evaporative air conditioners, chimneys, and wall claddings).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Leaf litter and twigs under trees are raked.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY All household members are aware of the fire plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Underfloor spaces are covered so as to prevent embers and flames from entering.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Which of the following are <u>currently</u> true (i.e. true when you started filling out this survey) for you/your household?	Currently true for me / my household	Currently not true for me / my household	N/A
PR Roof gutters and valleys are clear of leaves and bark.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Seals and/or draft protectors have been installed around windows and doors.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR You have installed a roof-mounted sprinkler system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Long grass and dense scrub is cut and well-watered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR A sprinkler system is installed around the property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Shutters to all external windows are installed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Bushes and plants overgrowing and growing under fences have been removed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY You have listed important things to do and remember in case of a fire (written or typed on computer, phone, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR All the trees on or near your property are away from overhead utility lines / lines are buried and not susceptible to fire.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY All household members are comfortable with the intended fire plan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Vegetation along the boundary of your property is clear such that it creates a fire break.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY Your neighbours know about the intended fire plan of your household.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR A fire-resistant roof is currently installed on your house (e.g. metal, tile, composition).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Shrubs and small trees under and between larger trees have all been removed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR Tree branches up to 2m off the ground are pruned.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PR There is no timber, rubbish, or old junk lying around your property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PSY Your relatives know about the intended fire plan of your household.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>