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Comparing Grief as a Negative Emotion to Survival for Memory Enhancement
Sarah Pate
Senior Thesis
University at Albany, State University of New York

Abstract

The survival memory effect tested using a comparison of a survival scenario to the strong negative emotion of a grief scenario. The main hypothesis was that strong, negative emotions allow one's self to relate to the scenario as it seems to do in the survival scenario. Strong negative emotions may outperform survival in a free recall memory task due to deeper levels of processing. Grief and survival scenarios were compared to a moving scenario that was used as a control condition. The three scenarios were each followed by a list of separate words to be rated on their relevancy to the paired scenario. A distracting math task was given, followed by an unexpected free recall task. The current study found significant higher recall performance of survival recall over the control scenario and the grief scenario. This may be due to an overly strong emotional reaction from the grief scenario which diminished processing as a protective factor. Instead of heightening arousal and awareness as survival is predicted to do, grief may have hindered it.

Introduction

The survival memory effect is a fairly new finding that processing and memory are improved when participants are asked to imagine themselves within a survival scenario. This stems from the application of evolutionary theories of adaption and survival to account for recall performance after engaging in the survival scenario (Nairne, Thompson, & Pandeirada, 2007). Like other strong emotions, it is thought that survival increases sensitivity to relevant stimuli as an evolutionary adaptation in humans. Through evoking this thought pattern. Nairne et al. have found survival memory enhancement to be superior to any other variations of scenarios thus far.

These scenarios allow the person to better recall irrelevant information than when any other type of situation is evoked. These situations in previous research have included burglary scenarios and others similar. Survival processing has been assumed to be a function of reproductive fitness in human ancestry which has persisted into the present (Tse & Altarriba, 2011).

Initial studies into this phenomenon included a survival scenario, a control moving scenario and a pleasantness rating task (Nairne et al., 2007). The moving scenario was used as a control to allow stressors or specific emotional triggers to remain neutral while also maintaining the aspect of a foreign location. The survival and moving scenarios maintained some similarity while having very different emotional associations. Their initial procedure was presented on personal computers in 30-minute sessions. The design was a between-subjects using 30 stimulus words. All participants rated the same words in random ordering during one of the three rating scenarios. After the rating task, the participants were then instructed to perform a short-digit memory recall task to act as a filler task. The last section of the experiment was to issue a free recall task to all participants.

The survival scenario used involved asking the participant to imagine themselves in a grassland setting where they must find their own shelter, food, clothing, and protection. The moving scenario also asked the participant to imagine themselves in a place that was foreign to them. Participants would have to find their housing and other necessities as they planned to move to a new setting. The third scenario was a simple rating task in which participants were asked to rate each of the presented words on how pleasant they found them. To see the original text, please see table 2.

Each word was presented for five seconds on the center of the computer screen and rated on a 5-point scale. This scale was set with 1 indicating completely irrelevant (or unpleasant) to 5 indicating extremely relevant (or pleasant). This rating task has been the standard format for subsequent survival effect studies. Nairne et al. found that survival greatly enhanced the recall of the presented words. Even though pleasantness was believed to also enhance memory, recall performance, survival recall was much higher than both the control and the pleasantness rating task.

Different modifications to the basic survival task have since been made to attempt to determine the underlying cause for the survival effect. The superiority of memory from the survival scenario has remained unchallenged despite the use of several different scenarios and tasks, as seen in the following examples. One such study, by Burns, Hwang, and Burns (2011), attempted to see if multiple processing schemes, such as relational processing or item-specific processing, together would be more effective than survival memory. Relational processing is more in depth and automatic when two items are highly interrelated, such as what may be evoked through the survival scenario and specific relevant words. Item-specific process is less in depth and can enhance relational processing through activities such as rating the pleasantness of a target. The authors maintained the pleasantness rating task and survival scenario but added a category sorting task. The sorting task was performed by having the participants decide whether a word belonged to a specific category, such as kitchen utensils, professions, fruits, and other common neutral categories. The words used were irrelevant to the survival task. This task was thought to evoke relational process whereas the pleasantness task was thought to evoke item-specific processing. The comparison of types of fruits and their corresponding category were hypothesized to be better remembered due to their higher level processing. The pleasantness ratings did not allow for such connections to be made and therefore did not provide a basis for deep processing, limiting the memorability of the words. The authors predicted that the survival

scenario would evoke both types of processing, allowing it to outperform the other scenarios. Survival produced a much greater recall than either the emotion or control conditions. Survival processing had a more dramatic effect than past research, as shown by 23 out of 30 participants achieving perfect performance on the sorting task. Burns et al.'s (2011) results suggest that survival processing enhances memory to such a great extent due to a lack of trade-offs in processing which is normally seen with other tasks. When compared directly to the pleasantness rating scenario, there was no recall advantage for the survival processing task. The authors attributed this to the possibility that higher pleasantness ratings than relevancy ratings in the survival scenario may have improved the participants' recall rates to that of the survival scenario. It may be that emotion effects play a more significant role than what was previously thought, since the survival effect was not as prevalent as it has been in the past.

Emotion versus Survival Processing

Emotion effects. Before the development of the survival memory paradigm, emotional stimuli were best known to enhance memory. The processing of emotional stimuli led to advantages on cognitive tasks. Traditionally, stronger emotion effects have been obtained when using negative emotion stimuli. Many techniques have exemplified this phenomenon, such as visual search, dot probe, emotional Stroop, and recall experiments. Visual search is a technique which the participant is asked to find a target among non-target objects. This is thought to mimic everyday situations, such as finding a specific item within your home. In these experiments, the participant is asked to locate a target among distractors as quickly as possible. These are usually presented in a grid pattern and are different enough where they "pop out" at the participant (Frischen, Eastwood, & Smilek, 2008).

In Frischen et al.'s (2008) experiment, they tested whether the location of emotional faces are influenced by the emotional state of the person. The authors had also believed that by altering this state, the participants would be susceptible to preattentive search, enabling them to be more sensitive to that particular mood state. Their findings corresponded with previous research that the reaction times for anxious individuals finding the negative face is lower than in average individuals. Similarly, those who are classified as depressed typically have higher reaction times when finding the positive face (Frischen et al., 2008).

Brosch and Sharma (2005) also used this technique using fear-relevant stimuli. The experimenters compared stimuli which they believed to be either classified as phylogenetic or ontogenetic. Phylogenetic items were those seen as having developed through evolution, such as fear of a snake or spider. Ontogenetic items were those which were developed by the individual throughout their lifetime, such as a fear of guns or syringes.

Brosch and Sharma (2005) tested this by using a stimulus grid of pictures within the categories of spiders, snakes, flowers, mushrooms, guns, syringes, cups, and mobile phones. The authors found that there was a lower reaction time for phylogenetic nonthreatening stimuli and a higher reaction time for nonthreatening ontogenetic stimuli. This difference between the two nonthreatening stimuli was hypothesized to be due to phylogenetic stimuli being inherent in most people while ontogenetic stimuli are learned by each individual. The higher reaction times support the authors' hypothesis that there is not as much sensitivity to nonthreatening stimuli due to its lack of importance in self-preservation (Brosch & Sharma, 2005).

Another technique used to examine the effects of emotional stimuli on memory is the dot probe task. This task is performed by showing a picture of interest as the probe and then showing a dot

on the screen afterword in various locations (such as right, left, top, or bottom) on the screen. The theory behind this technique is that stimuli from the preceding pictures will increase attention and cause a decrease in reaction time when indicating the location of the dot (Lipp & Derakshan, 2005). Lipp and Derakshan used this technique to test whether fear relevant stimuli caused a lowered reaction time than non-fear relevant stimuli. In their results they had found that those who indicated that they were afraid of spider did have lowered reaction times following a spider probe. The trait-anxiety and fear levels of the participants had no effect on the reaction times of the fear relevant or non-fear relevant probes.

To specifically illustrate the impact of negative emotions, an experiment performed by Sutton, Altarriba, Gianico, and Basnight-Brown (2007) used an emotional Stroop task. The standard Stroop task involves color words typed either in the same or differing color. The participants of the task are asked to indicate the color of the word, and not what the word itself says. For the experimental Stroop task, participants were randomly shown 16 emotional words (e.g., anger, jealousy) and 16 neutral words (e.g., carrot, boat) and their response time for indicating the color (e.g., blue, green) each word was recorded. The experimenters had found that the negative emotion words were responded to slower than neutral words, which suggested emotion words received higher attention and led to interference on the color identification task. This has been suggested to be due to the automatic processing of emotional stimuli, as had also been indicated in the study by Burns, Hwang, and Burns (2011).

Another example of a technique used to analyze the effects of emotion on memory is a recall task. This is also most commonly used in the survival memory literature. This typically involves altering the emotional state of the participant in some way and then showing them a series of words. After the participants are typically given an unexpected free recall task to allow assessment of which words were better remembered.

Boggiano and Hertel (1983) tested whether negative and positive emotions would affect reward based on expectations. The results were that the participants who completed the “boring” task remembered more negative words than their counterparts. Likewise, those who completed the “interesting” task remembered more positive words. This supports the hypothesis that emotion enhances memory on relevant emotion-based words (Boggiano & Hertel, 1984).

Rubin and Friendly (1986) also used recall testing as their main format for analyzing memory enhancement. In their experiment, they tested whether the availability, emotionality, goodness, pronouncability, and probability of words influenced recall. Availability was measured by the ease of recall and frequency by how often those target words were remembered. The main findings were that meaningfulness, frequency and pronouncability were not as important in recall performance as emotionality, availability and imagery. Those words which were rated higher on the latter three were also the best recalled (Rubin & Friendly, 1986).

Altarriba and Bauer (2004) used a variety of the above mentioned techniques to investigate whether emotion words have the same properties in memory as abstract and concrete words. To test this, the authors used word lists created using multidimensional scaling of arousal and valence components. Words which could be rated as pleasant or unpleasant (valence) and low, medium or high arousal were considered to be emotion words. Words that were material objects were classified as concrete words and words which could not be defined as a material object or an emotion were considered abstract words. Altarriba and Bauer (2004) found that emotion words were recalled more than concrete or abstract words in a free recall task. The underlying cause of this was hypothesized by the authors to be due to differences in processing between the three word-types. This may also be the underlying cause in the survival memory advantage and

emotion words may be equally as salient during free recall. With much research into the advantages for recall using emotion words, it may be that survival taps into primitive emotions or a similar form of processing.

Another experiment which utilized recall as the main technique for memory enhancement involved a study of bilinguals by Anooshian and Hertel (1994). The main focus of the experiment was to discover if the effects of emotionality were to differ between a person's native or secondary language. They asked the participants to rate the emotionality, pronouncability, and inherent activity on a seven point scale, as seen in the study by Rubin and Friendly (1986). The participants were then administered an unexpected free recall task. The findings of this study were that emotional words were better recalled than neutral words, as seen in previous research. The differential finding was that this was only the case for words in the person's native language (Anooshian & Hertel, 1994).

Emotional and survival scenarios. Further research by Nairne and Pandeirada (2011) added a new robbery scenario to test the impact of negative emotions. A new robbery scenario was used so that the participants would more easily imagine themselves in a modern survival situation. The experiment focused on whether the survival scenario would have similar effects on memory to the robbery scenario. The words were rated for relevancy to the robbery situation, survival situation, or neither by participants. Only words which were irrelevant to their assigned situation were used in the study. All words were equated for each list according to frequency, length and being imaginable. Nairne and Pandeirada (2011) again found the survival scenario had a recall advantage for both the common irrelevant words and scenario-dependant words.

Another interesting result was that the robbery scenario had more hits for relevant words than the survival scenario. However, the survival scenario still had a greater recall rate than the robbery scenario (Nairne & Pandeirada, 2011). From these findings, it may seem that negative emotions may be more competitive with improved cognition as seen from survival memory enhancement than originally found. It is still somewhat surprising that the memory effects observed due to the modern robbery scenario did not equate to the effects seen by the more primitive survival scenario.

An experiment by Bell and Buchner (2011) compared the memory enhancement effects of survival to cheating scenarios. Rather than eliciting fear, the cheating scenario was designed to elicit trustworthiness and skepticism. This experiment was designed to investigate the hypothesis that there is also an adaptive memory advantage for cheaters. The way this was tested was by showing a series of photographs of males with a caption underneath relating to trustworthiness, cheating, or irrelevant to either, and later having them rate the likeability of the faces without captions. The photographs were split by facial expression (smiling or angry).

The behavior descriptions were split into three conditions; cheater, neutral and cooperator. An example of the cheater was described as "K.S. is a secondhand-car dealer. Regularly, he sells restored crash cars as supposedly accident-free and conceals serious defects from the customers." The neutral behavior was described in the example "J.L. is a gardener. He is extremely interested in orchids and owns a collection of some very rare and expensive exemplars." Lastly, the cooperator was described as "N.G. is a mechanic. He is always eager to provide spare parts as cheap as possible for his clients and to fulfill his jobs efficiently."

The results of the experiment by Bell and Buchner (2011) were that the behavioral history of an individual did affect the likeability of that person. The authors also found that they were successful in minimizing the emotional reaction towards those who were cheating by creating a high trustworthiness passage for some and a low cheating passage for others. They

also showed that the participants were more likely to guess that they had encountered a face before under the context of trustworthiness despite associating the cheaters with being disliked. In their results, they had found source-memory was much higher for cheaters whose pictures had shown them smiling than a smiling cooperator. There was no difference in recall between the scenarios of cheaters and cooperators when exhibiting an angry facial expression (Bell & Buchner, 2011).

This raises questions about the possible effects which intrusions may play during the free recall task from the survival scenario. In their original study, Nairne et al. (2007) had noted that the additional effort which the survival task seemed to require did not make a difference when looking at retention of information. However, they did note that while the number of items recalled was greater within the survival scenario, the number of intrusions was also greater. The survival scenario's recall effect was found to be more significant than the pleasantness scenario, but the same when compared to the moving scenario (Nairne et al., 2007).

Otgaar and Smeets (2010) tested the hypothesis that survival processing could decrease one's susceptibility to false memories. The experimental design used words which would allow for the detection of false memories. They used semantically related words while leaving out the critical lure for each scenario and had the participants rate these words according to the relevance or pleasantness. Their results had shown that survival processing had allowed for an overall increase in correct recall rates but also an increase in false recall rates as well. Due to the higher generation of words being recalled during the recall task in general for the survival scenario, the authors concluded that this also made the participants more prone to recall words never seen during the test (Otgaar & Smeets, 2010).

It could be speculated that the increase in both accurate and inaccurate memory may be related to the effort required within the tasks and the negative emotions which they related to. While moving and survival are both different in their severity, it could be thought that each may elicit thoughts involving stress, sadness, and anger; all negative emotions. Further focus should be placed on intrusions as the more meaningful scenarios may elicit more of both accurate and inaccurate responses. Continued investigation may reduce the gap in knowledge of what differs between survival memory enhancement and emotion memory enhancement through mental memory processes.

In a more recent experiment, Klein (2012) investigated the possible memory enhancement of a death scenario. The primary hypothesis was that death and survival act as opposing forces within one's cognitions. Without death, survival would not exist and vice versa. From an evolution perspective, it would be believed that mental processes for survival evolved much earlier than death, which is seen only in higher animals. While survival is a more proactive cognition, it may be that the thought of death when thinking of the self can cause proactive cognition. Through this analysis, it may be that death would elicit the same memory enhancements which have previously been seen through the survival paradigm. The results were that the death task did not differ from the pleasantness task (Klein, 2012).

This result may be from differing cognitive processes between survival and death but the procedure itself must also be brought into question. The standard set of scenarios developed by Nairne et al. (2007) were each two sentences long and used some detail to provoke one to imagine that they were in that particular situation. While maintaining the original format, Klein used a scenario which was only one sentence and was void of any detail. Leaving out the instruction, participants received the information as follows: "In this task, I would like you to imagine that you are about to die."(p. 7). This may not cause the participants to imagine or

elaborate further on their own death and not cause any heightened processing as was desired.

The Current Study

The present study also investigated the effects death may have on memory enhancement. While the experiment performed by Klein (2012) focuses on the self, the current experiment instead used a scenario which related to the death of a loved-one. The scenario used within this study was also more detailed to elicit a specific emotion during that situation. The main hypothesis is that such a strong negative emotion may increase attention as an evolutionary adaptation just as the survival scenario seems to have. By making the scenario about another person, the evoked emotion is less related to fear and self-preservation and more related to the emotions of grief and anger. An enhancement in memory may occur due to the heightened emotional response and survival cues involved from death.

The current experiment predicted to find results similar to what was found in previous research involving negative emotion, such as that of cheaters in the Bell and Buchner experiment (2011). Suspicious behavior or negative events have been shown to cause heightened memory for specific people involved. The current hypothesis is that this memory would extend to other information surrounding the scenario, such as grief increasing the recall for both related and non-related words.

Methods

Participants

Two hundred undergraduate students from the University at Albany, State University of New York, voluntarily participated and received course credit for the current experiment. All were randomly assigned to one of nine conditions, only differing in the order of presentation of scenarios and word lists. All participants viewed each of the three scenarios (survival, moving, and grief).

Materials. In the survival and moving scenarios, participants were given instructions identical to that created by Nairne et al. (2007).

Survival. “In this task we would like you to imagine that you are stranded in the grasslands of a foreign land, without any basic survival materials. Over the next few months, you’ll need to find steady supplies of food and water and protect yourself from predators. We are going to show you a list of words, and we would like you to rate how relevant each of these words would be for you in this survival situation. Some of the words may be relevant and others may not—it’s up to you to decide.”

Moving. “In this task we would like you to imagine that you are planning to move to a new home in a foreign land. Over the next few months, you’ll need to locate and purchase a new home and transport your belongings. We are going to show you a list of words, and we would like you to rate how relevant each of these words would be for you in accomplishing this task. Some of the words may be relevant and others may not—it’s up to you to decide.”

For the third scenario, a grief passage was used pertaining to the death of a loved one. The general length was kept consistent and instructions following were the same.

Grief. “In this task we would like you to imagine someone close to you has died. You are asked by friends and family to speak at the funeral expressing the relationship you had with them. Imagine yourself at their casket as you say goodbye to them for the last time. We are going to show you a list of words, and we would like you to rate how relevant each of these words would

be for you in accomplishing this task. Some of the words may be relevant and others may not-it's up to you to decide."

The experiment was displayed on Dell Optiplex 760 personal computers using Eprime version 1.2 to control the presentation and time the study. The word lists used were similar to that used by Nairne et. al (2007) and were intended to be from various daily situations and scenarios. There were a total of 63 words presented with 21 being displayed after each scenario.

Procedure. The experiment was conducted as a group study with a maximum of 5 participants per single session in a quiet computer lab. Each participant was seated with an unoccupied computer between them to limit distractions. The experiment consisted of four main sections: a scenario word rating section, a filler section, a surprise free recall section, and a final emotion rating section. Participants all received verbal instruction at the start of the experiment at the same time and were then asked their age and gender on the computer.

After viewing a given scenario, the participants were asked to rate the relevancy of words presented on the screen on a scale of (1) 'very irrelevant' to (5) 'very relevant'. Each set of words was displayed following one of the three scenarios; moving, survival and grief. The order of the words and scenarios were counterbalanced across varying trials.

The participants would select to continue by pressing the space bar to continue to the rating task at their own pace. Each word was presented for five seconds in which they had to rate the relevancy. If they did not respond within this time the next word would automatically appear. The scenarios and word sets were in counterbalanced across participants to protect against the influence of practice, primacy, and recency effects.

Once the rating phase had been completed, the participants were given a filler task involving a series of mathematical problems of varying difficulty to be completed by hand. Participants were given instructions to complete as many as possible within two minutes. This time period was monitored by the computer program and initiated by the experimenter. Once the time had ended, the screen changed to bright blue to alert the experimenter and participant that the task was complete. Immediately after the filler task, the participants were given a ten minute surprise free recall test. They were instructed to write down as many of the words from the three rating tasks as they could remember, in any order and from any scenario. Again this time was monitored by the computer program and initiated by the experimenter.

After completion of this task, the screen automatically changed to a scale which asked how often each participant had watched survival-oriented television shows. This was rated on a scale of (1) never to (3) always. The final task was done on paper and administered by the experimenter. This asked the participants to rate their experience of the emotionality of each scenario on a scale of 1 (not at all emotional) to 7 (highly emotional). Once this was completed the participants were thanked for their involvement and given the debriefing forms.

Results

Word ratings. Words not rated within the given time or responded too quickly to have processed the material were not included in the present analyses. A one-way repeated measures analysis of variance (ANOVA) was conducted to compare the three scenarios and a significant effect was found, $F(2, 396) = 152.61, p < .0005$. The averages for recall and their accompanying standard deviations can be seen in Table 1.

A series of planned comparisons revealed several significant effects. These were performed to assess which scenarios improved recall. The survival rating was significantly higher than the moving scenario ratings, $t(198) = 2.68, p < .01$. This shows that participants found the words

more relevant to the survival scenario than the moving scenario.

The relevancy word ratings of the survival scenario were significantly higher than those compared to the words rated in the grief scenario, $t(198) = 15.60, p < .0005$. Comparisons between the ratings of the grief and the moving scenarios were also significant, $t(198) = 14.03, p < .0005$. The ratings of words viewed following the grief scenario were significantly lower than those viewed after the moving scenario.

Recall performance. Analysis for recall performance was measured using a repeated measures one-way ANOVA using the three conditions. A significant of scenario on recall was found, $F(2, 392) = 29.36, p < .0005$. For report of recall means under each scenario see Table 1.

A series of planned comparisons was also performed to compare the three scenarios and had shown a significant difference between them. Recall of words were significantly higher under the survival scenarios than the moving scenarios, $t(196) = 1.12, p = .27$. A significant effect for the recall of words following the survival scenario compared to the grief scenario was also found.

The recall of words following the survival scenario was significantly higher than those following the grief scenario, $t(196) = 7.80, p < .0005$. A significant effect for the recall of words following the moving scenario was significantly higher than the grief scenario, $t(196) = 6.18, p < .0005$. It was found that survival had the highest overall recall rates while the moving scenario had the least overall recall rates, similar to previous research.

These results show a similar effect to previous research patterns. The survival scenario exhibited a recall advantage of unrelated words over both the moving and grief scenarios as has been found through the work of Nairne et al., and others.

Discussion

The results of this experiment differ from previous research. The data are not as drastic between the survival and moving scenarios as was originally predicted. While survival still elicited a higher recall rate, this effect was slight but significant. Contrary to the original hypothesis, the grief scenario did not outperform the control. This may be attributed to the Yerkes-Dodson law of arousal (Diamond, Campbell, Park, Halonen, & Zoladz, 2007). It may be that the scenario of death caused too much arousal or was too emotional and hindered the ability to recall the presented words. This may also be an evolutionary adaptation to protect one's self and allow resources to be used for more important tasks and inhibit potentially damaging cognitions. This effect may also be the underlying factor for the results of Bell and Buchner's (2011) work. The fact that low priori cheaters were better remembered than high priori could be attributed to the same level of arousal involved.

The findings of Brosch and Sharma (2005) may also be relevant to the current study. Their test utilized phylogenetic and ontogenetic items believed to either have a developed fear or an inherent fear as a species. It may be that the cognitive resources devoted to phylogenetic items are also the same as those utilized during the survival scenario. The scenarios such as were used for moving and grief are more modernized, and therefore may have played a more ontogenetic role. Grief and the setting of a funeral is a very culturally learned situation, causing some to react very differently depending on how one was raised. It may be that the associations of death and grief for many of the participants did not perform for the same reasons found in Brosch and Sharma's (2011) work. The funeral scenario was ontogenetic, using different cognitive faculties and did not directly affect self-preservation.

The results of this study also appear to be similar to those found from the experiment by Sutton et al. (2007). The slower processing of negative emotion words may have also led to a diminishment in depth of processing, causing it to be insufficient to outperform survival memory

processing. For future studies, it may be of interest to study survival memory in aspects where it is not simply paired with irrelevant words. Photographs, similar to how they were used in the study by Bell and Buchner (2011), may show a further enhancement or no effect on the survival memory effect. The use of photographs accompanying words may elicit better imagery than simple scenarios or at least cause the participants to consider them more. Other studies may continue to examine the use of negative words, but perhaps using a less severe or alternative scenario than grief. It may be that for some, the scenario was too emotional, causing a distraction in attention and diminished processing leading to the results of this study.

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Table 1.

Means and Standard Deviations of the Three Scenarios used in Experiment 1.

	Recall	Rating		
Scenario	Mean	Standard Deviation	Mean	Standard Deviation
Survival	6.82	2.5	2.93	0.61
Moving	6.55	2.72	2.8	0.6
Grief	5.24	2.13	2.15	0.63

Note. Rating scale used from (1) not relevant to (7) very relevant.

Table 2.

Scenario Task Descriptions used in Experiment 1.

	Task
Survival	In this task we would like you to imagine that you are stranded in the grasslands of a foreign land, without any basic survival materials. Over the next few months, you'll need to find steady supplies of food and water and protect yourself from predators. We are going to show you a list of words, and we would like you to rate how relevant each of these words would be for you in this survival situation. Some of the words may be relevant and others may not-it's up to you to decide.
Moving	In this task we would like you to imagine

	<p>that you are planning to move to a new home in a foreign land. Over the next few months, you'll need to locate and purchase a new home and transport your belongings. We are going to show you a list of words, and we would like you to rate how relevant each of these words would be for you in accomplishing this task. Some of the words may be relevant and others may not-it's up to you to decide.</p>
Grief	<p>In this task we would like you to imagine someone close to you has died. You are asked by friends and family to speak at the funeral expressing the relationship you had with them. Imagine yourself at their casket as you say goodbye to them for the last time. We are going to show you a list of words, and we would like you to rate how relevant each of these words would be for you in accomplishing this task. Some of the words may be relevant and others may not-it's up to you to decide.</p>