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Motivation and Confidence

Priming Memories: Effects on Motivation and Confidence

Leanna De Lucia

Huron College

Abstract

Previous research has indicated that increasing self-esteem before an exam actually hinders one's performance (Forsyth et al., 2007). Furthermore, Woodman, Akehurst, Hardy & Beattie (2010) have indicated that one’s self-confidence is decreased, on-task effort is increased. The purpose of the current study was to determine if priming an individual’s memory of an academic success or failure would alter one's confidence and motivation to complete a task. Specifically, it was assumed that individual’s who are primed of a past academic failure would have lower confidence going into a task, but show greater motivation in completing a task. Conversely, those who are primed of a past academic success will have high confidence going into a task but low motivation in completing the task. The task at hand was completing as many easy or hard anagrams as one liked. Thirty-two participants attending the University of Western Ontario and its affiliates participated in the study. When analyzing participants’ motivation, the findings although not significant, did indicate a trend in the predicted direction. Whereby, participants spent more time and completed more anagrams in the failure/hard condition than in the success/hard condition. However, the results indicated no significant difference in participants’ self-confidence ratings between primed conditions, thus refuting the original hypothesis that confidence would be lower when participants were asked to think of a past academic failure in comparison to when participants were asked to think of a past academic success. The implications of these findings are discussed.

Keywords: Primed, Memory, Motivation, Confidence, Anagram

Over the history of mankind, people have varied in how they choose to pursue a goal. This difference, in part, can be explained by an individual’s self-efficacy beliefs. Self-efficacy is described as an individual’s perceived ability in performing a particular task (Woolfolk, Winne & Perry, 2012). In educational settings, students who believe that they are competent at performing a specific task have been shown to work longer, and
demonstrate increased motivation on that task, than individuals who have low-self efficacy beliefs (Multon, Brown, & Lent, 1991; Schunk, 1995)

Bandura (1986) described self-efficacy and situation specific self-confidence as terms that can be used interchangeably when referring to academic tasks. And in Bandura’s (1997) self-efficacy theory, he hypothesized that there was a positive relationship between self-confidence and performance. Although a great deal of literature supports this position, including Vealey’s (2001) sport confidence model, there are many noteworthy studies that dispute this theory.

Chandler (1994), is one of the many researchers who have demonstrated that confidence does not equate to high performance. In fact, based on the results of Woodman, Akehurst, Hardy & Beattie’s (2010) study, they indicated that a reduction in self-confidence leads to an increase in both effort and performance. Furthermore, Vancouver & Kendall (2006) demonstrated that when students’ self-efficacy increased when receiving a high grade, their study time decreased and thus students’ exam performance decreased. Vancouver et al.’s (2002, 2001) complacency model suggests that when someone is overconfident, he or she believes that they do not need to put in any effort when completing a task. The converse of the complacency model, which was demonstrated by Woodman et al. (2010), is when someone’s self-confidence is decreased, the difference between their current performance standard and their goal standard is increased, and thus leads them to increase on-task effort.

The overconfidence phenomenon states that people who overemphasize the reliability of their beliefs, are generally more confident than they are accurate (Myers, Spencer, & Jordan, 2012). Forsyth, Kerr, Burnette, & Baumeister’s (2007) study
demonstrated the overconfidence phenomenon, by showing that students’ whose self-esteem was increased before the final did worse on the final than the other students. The researchers suggested that the students whose self-esteem was increased were overconfident in their abilities and therefore they probably felt less need to study for the exam. But would the students still demonstrate this overconfidence if they were asked to think of a past academic success?

Priming someone’s memory, can demonstrate how one thought, can guide another thought, and can even influence an individual’s actions (Myers et al., 2012). In a study conducted by Bargh, Chen & Burrows (1996) participants who were asked to complete sentences that included words like “wise”, “retired”, and “old”, were later reported walking slower to an elevator than the participants who were not primed of words that were associated with old age. Even though individuals were unaware that they were being primed to think of aging, their actions were reflected by that primed event. Moreover, Ludvig, Madan, & Spetch (2015), demonstrated that when individuals’ memories are primed of past wins, risk seeking is induced. It can thus be assumed that when people are reminded of past successes, their self-confidence is increased and consequently they believe that they can perform a task easily. Therefore, the present study is designed to determine if priming memories of a past academic success vs. past academic failure, has an impact on the motivation to perform an easy vs. hard task.

Motivation can be described as an internal disposition that stimulates, guides and sustains behavior (Woolfolk et al., 2012). Therefore, an individual’s intrinsic motivation to complete a task would be directly affected by a past academic success or failure. The task at hand will be completing as many easy or hard anagrams that one can in 30
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minutes. Motivation will be measured by the amount of time that is spent trying to complete the anagrams. It is assumed that individuals who spend more time working on the task will complete more anagrams, and thus they will do better on the task. Based on Foley, Foley, Wilder & Rusch (1989) easy anagrams will be any word in which the first and last letters are in correct positions and the middle letters are scrambled, and the hard anagrams will be any word in which all letters are scrambled. The researcher will create a list of 150 words for each condition. Both conditions will have the same words to reduce any confounds, however, participants will be randomly assigned to priming conditions - success or failure.

It is hypothesized that individual’s who are primed of a past academic failure will have lower confidence going into a task (completing anagrams), but show greater motivation in completing a task. Conversely, those who are primed of a past academic success will have high confidence going into a task (completing anagrams) but low motivation in completing a task. Therefore, in both priming conditions (failure vs success), participants in the easy task will complete a high number of anagrams. However, participants in the failure condition will complete more anagrams than participants in the success condition, because they will have a greater motivation to complete a more difficult task.

Method

Participants

A total of 32 undergraduate students attending the University of Western Ontario as well as its affiliate colleges participated in this study. Eight students were placed in each of the four test conditions. Both age and gender were not contingent factors to this
study, and thus the researcher made no efforts to acquire this information. Although such information is lacking, it is rational to assume that the age range of participants was likely between 17-21. The participants were selected at random, where the researcher approached students at the University asking them to participate in a student run study.

**Materials**

Each participant was given a letter of information and consent form; one out of four questionnaires and; a written debriefing form. The four questionnaire conditions were: 1) failed memory and easy anagrams 2) failed memory and hard anagrams 3) successful memory and easy anagrams and 4) successful memory and hard anagrams (which can be found in appendixes A, B, C and D, respectively). In each questionnaire, the participant was asked to think of a memory of either a failed or successful academic task, for approximately one minute. They were then asked to rate that primed event on a 5-point scale to assess how vivid their image was, where 0 represented *no image at all* and 4 represented *vivid as normal vision*. Following the vividness rating, participants were informed that they would be asked to complete as many anagrams as they could in the next 30 minutes. Before beginning the task, they were asked to rate how confident they were in completing anagrams on a 5-point scale, where 0 represented *not confident at all* and 4 represented *extremely confident*. The participants were then given an example of what an anagram is, and instructions to complete as many anagrams as they wanted to in 30 minutes, and they could stop at any time that they please, but were asked to inform the researcher when they began and when they were done. In both the easy and hard conditions there were a total of 150 four to five lettered anagrams that could be solved. The same words were used in both conditions to reduce any confounds; the only
difference was how the word was scrambled. The easy anagrams were any word in which the middle letters were scrambled and the first and last letters were kept in their original positions, and the hard anagrams were any word in which all of letters were put in a different position.

**Procedure**

The researcher approached students on campus at random, and asked them to take part in a psychological study that involves better understanding individual’s motivation and confidence levels when a previous memory is primed. If they were interested, then the researcher presented them with the consent form and reiterated that their name would remain absolutely confidential and that they could choose to stop at any given time in the study. They were then given the questionnaire, and once they indicated that they were done, they were given a debriefing form outlining the hypothesis of the study and related article that they could read.

**Results**

A 2x2 between-subjects ANOVA was conducted with time (in minutes) to complete anagrams as the dependent variable and primed memory (failure/success) and task difficulty (easy/hard) as the independent variables. The results indicated primed memory was marginally significant $F(1, 28) = 3.38, p = 0.08$, partial $\eta = 0.11$, where those asked to recall a time when they failed an academic task ($M = 14.38, SD = 11.20$) spent more time working on the anagrams then participants who were asked to recall a time when they succeeded at an academic task ($M = 8.77, SD = 7.60$). There was also a significant main effect of task difficulty $F(1, 28) = 6.43, p = 0.02$, partial $\eta = 0.19$, where participants who were working on hard anagrams ($M = 15.44, SD = 12.32$), worked on
the task longer than participants who were working on easy anagrams ($M = 7.71, SD = 4.06$). The results indicated that there was no primed memory x task difficulty interaction $F (1, 28) = 1.51, p = 0.13$, partial $\eta = 0.08$. However, the results were trending in the direction of the proposed hypothesis. Participants in the failure x hard condition ($M = 20.66, SD = 12.67$) spent more time than participants in the success x hard condition ($M = 10.22, SD = 10.11$) completing anagrams. While, both the participants in the failure x easy condition ($M = 8.096, SD = 4.25$) and the success x easy condition ($M = 7.32, SD = 4.12$), spent roughly the same amount of time working on the anagrams. Figure 1 shows the mean time participants spent working on anagrams in all four conditions.

A 2x2 between-subjects ANOVA was conducted with number of anagrams completed as the dependent variable and primed memory (failure/success) and task difficulty (easy/hard) as the independent variables. The results indicated that there was no significant main effect of primed memory $F (1, 28) = 2.45, p = 0.13$, partial $\eta = 0.08$, however, participants who were asked to think of a time when they failed an academic task ($M = 90.3, SD = 39.41$) completed more anagrams than participants who were asked to think of a time when they succeeded at an academic task ($M = 66.69, SD = 44.85$). No significant main effect of task difficulty was found $F (1, 28) = 0.01, p = 0.92$, partial $\eta = 0.00$, but rather both participants’ in the easy task ($M = 79.31, SD = 43.63$) and hard task ($M = 77.69, SD = 44.25$) completed around the same number of anagrams. There was also no significant main effect of primed memory x task difficulty interaction $F (1, 28) = 1.35, p = 0.26$, partial $\eta = 0.05$, however, there was a trend in the predicted direction.
Figure 1. Mean time spent completing easy and hard anagrams, across the failure and success primed events.
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Participants in the failure x hard condition ($M= 98.25$, $SD = 36.22$) completed the greatest amount of anagrams, and participants in the success x hard condition ($M= 57.13$, $SD = 43.78$) completed the least amount of anagrams. And the participants in the failure x easy condition ($M= 82.38$, $SD = 43.27$) and the success x easy condition ($M= 76.25$, $SD = 46.75$) completed a lot of anagrams. Figure 2 shows the mean number of anagrams completed by participants in all four conditions.

A One-Way between Subjects Analysis of Variance (ANOVA) was conducted to determine if participants’ confidence varied based on the memory that was primed. The results indicated that the primed memory conditions did not alter participants confidence levels, $F (2,30) = .22, p = 0.89, n^2 = .23$, Tukey’s post hoc procedure indicated that there was not a significant difference in the confidence ratings of participants between the Failure/Easy ($M = 2.38$, $SD = 0.52$), Failure/Hard ($M = 2.5$, $SD = 0.93$), Success/Easy ($M = 2.25$, $SD = 0.71$), or Success/Hard ($M = 2.34$, $SD = .34$) conditions. Appendix A displays the raw data of confidence ratings.

A paired samples $t$-test, indicated that participants vividness ratings of a failed academic event ($M = 2.81$ $SD = 0.66$) were not significantly different from participants vividness ratings of a successful academic event ($M = 2.94$, $SD = .57$), $t (15) = 0.62, p = 0.59, d = 0.16$.

**Discussion**

Despite the results indicating no significant difference in self-confidence ratings between primed conditions, and thus refuting the original hypothesis that confidence would be lower when participants were asked to think of a past academic failure than when participants were asked to think of a past academic success. When analyzing
Figure 2. Mean number of anagrams completing easy or hard anagrams, across the failure and success primed events.
participants’ motivation, the findings did indicate a trend in the predicted direction. Figure 1 demonstrates the likelihood of an interaction, whereby; participants in the failure/hard condition spent a great deal of more time working on the anagrams than individuals in the success/hard condition. Although no significance was reported from the interaction, it was found that participants in the easy condition spent significantly less time working on the anagrams than individuals in the hard condition. As well, marginal significance was found in the primed memory condition, in that, participants who were asked to recall a time when they succeeded at an academic task spend less time working on the anagrams than participants who recalled a time when they failed an academic event. Sadly, the results indicated no significant main effect of number of anagrams completed between test conditions, however, there was trend in the predicted direction. Whereby, participants in the failure/easy and success/easy condition completed a lot of anagrams, likely due to the difficulty of the task. And participants the success/hard condition completed fewer anagrams than individuals in the failure/hard condition, as seen in Figure 2. Furthermore, the manipulation check of vividness ratings produces no significant difference when comparing individuals who were primed in the failure condition to participants who were primed in the success condition. Suggesting that participants’ ability to imagine a primed event did not affect the results of the study.

Referring back to the initial premise of the study, it was stated by Woodman et al. (2010) that when self-confidence is decreased an individual’s on-task effort would increase. Although the findings did demonstrate an increase in on task effort when participants were exposed to the primed failure event for the hard condition, the same participants did
not demonstrate a decrease in confidence ratings. There is reason to believe that certain
*methodological factors could have factored into why this outcome was not supported.*

First and foremost, the researcher created the 5-point scale used to assess confidence ratings on task performance, therefore, the test itself only held face validity. Moreover, the participants could have been demonstrating the central tendency bias that is common when using a Likert scale, whereby; participants tend to respond toward the middle of the scale. The reliability of the scale could be in question considering all of the participants completed the questionnaire in different locations. Some of which were quiet locations, and other locations were loud central areas on campus. It can therefore be assumed that if the researchers were to have done a test-retest reliability check, there is reason to believe those participants who were completing the questionnaire in loud and crowded locations would have different ratings if they were to do it again in a quiet room. Therefore, future studies should ensure that all participants complete the questionnaire in the same laboratory room. As well as including an internal consistency check, and create another item that would allow the participants to rate their confidence in a different way.

Although participants’ confidence ratings did not differ by condition - as was expected - if the above mentioned methodological changes were made it is assumed that the predicted results would have been found. In hindsight, however, the researchers could have measured need for achievement rather than confidence. According to Weiner (1965), repeated failure discourages high achievers but motivates high achievers. Furthermore, Atkinson (1957) also demonstrated that success motivates high achievers on hard tasks but discourages high achievers on easy tasks, whereas, the opposite is true for low achievers. Therefore, it could have been the case that participants’ in the
failure/hard condition had a higher need for achievement than individuals in the successful/hard condition. Future investigators should make a point to measure need for achievement to see if this theory is valid.

Furthermore, the sample size of each condition was relatively small, and therefore to increase the power of the results, future researchers should also try to increase the number of participants. As was noted, the number of anagrams completed did not differ by condition significantly, however they were trending in the predicted direction. It is postulated that no significance was found due to the relatively large standard deviations that were reported in each condition. Consequently, including a larger sample size would potentially decrease the standard deviation in each condition and thus make the results significant.

While participants’ time to complete the anagrams varied significantly by condition, there were circumstances in which there was more than one participant doing the study at the same time. Accordingly, in these situations, the researcher had some of the participants record the amount of time they spent doing the task. Although it is reasonable to assume that most participants gave accurate timings – seeing as participants reported their self-time down to seconds – it could have been the case that some participants just gave an estimate. While the estimates did not likely make a significant difference in the results of the study, future research should make an effort to only test one participant at a time.

In the failure/hard condition, individuals went over the allotted time frame of 30 minutes to finish the anagrams (see Table 1). Although in a test situation individuals would be cut off at 30 minutes, ultimately the premise of the study was to determine
individual’s motivation to complete a task. If individuals were stopped at 30 minutes when their motivation was being measured based on how much time they spent on the task, then the results of the study would have been compromised. Therefore, the researcher decided to allow participants to go over the allotted time frame, because stopping them would have hindered the validity of the study.

Overall, the results from the study did support that individuals in the failure/hard condition had more intrinsic motivation to complete the task than the other conditions. It can therefore be assumed that when an individual’s memory is primed of a negative academic event and they are asked to work on a difficult task, they will spend more time trying to complete the task and thus learn more than individuals whose memory is primed of a successful academic event. This research directly applies to education and how a negative event can actually be advantageous. Similar to Forsyth et al., (2007) paper, future studies should prime students memory of a past academic failure before a test and see if those participants marks are better than individuals who are primed of a past academic success. If this is found, then this theory can be applied more directly into education. For instance, if some individuals were struggling in school then perhaps trying this method would increase their motivation to persevere at difficult material. As mentioned earlier, high or low need for achievement may impact individual’s motivation. Consequently, this theory perhaps would only be relevant for students with high need for achievement. However, future research would need to validate this supposition.

Although there were limitations to the present study, the results ultimately demonstrated that recalling a past academic success or failure impacts an individual’s motivation to succeed on a forthcoming task. Such implications could make a drastic
difference in a student’s academic performance. And if these findings were to be validated, then they could be directly applied to intrinsic motivation in educational settings. It is therefore the hope that this study aided as a beneficial guideline that will lead into more research done on the implications of primed memories and task difficulty.
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References


Ludvig, Elliott A., Christopher R. Madan, and Marcia L. Spetch. 2015. Priming memories


<table>
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<tr>
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<td>Failed/Hard Questionnaire</td>
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<td>D</td>
<td>Successful/Easy Questionnaire</td>
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<tr>
<td>E</td>
<td>Successful/Hard Questionnaire</td>
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</table>
Appendix A:

Raw data for Failure/Easy (FE), Failure/Hard (FH), Success/Easy (SE), Success/Hard (SH) Conditions

<table>
<thead>
<tr>
<th>Participant Completed</th>
<th>Confidence Rating&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Time on Anagrams</th>
<th>Anagrams</th>
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<tr>
<td>Participant 1- FE</td>
<td>2</td>
<td>15</td>
<td>79</td>
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<tr>
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<td>2</td>
<td>5.42</td>
<td>50</td>
</tr>
<tr>
<td>Participant 3- FE</td>
<td>2</td>
<td>3.15</td>
<td>35</td>
</tr>
<tr>
<td>Participant 4- FE</td>
<td>3</td>
<td>9.44</td>
<td>145</td>
</tr>
<tr>
<td>Participant 5- FE</td>
<td>3</td>
<td>10</td>
<td>76</td>
</tr>
<tr>
<td>Participant 6- FE</td>
<td>2</td>
<td>5.09</td>
<td>80</td>
</tr>
<tr>
<td>Participant 7- FE</td>
<td>3</td>
<td>12.36</td>
<td>149</td>
</tr>
<tr>
<td>Participant 8- FE</td>
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<td>45</td>
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<tr>
<td>Participant 9- FH</td>
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<tr>
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<tr>
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<tr>
<td>Participant 32- SH</td>
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Note:
<sup>a</sup> Scores were rated on a 5-point scale in the confidence rating column: 0 = not confident at all; 4 = extremely confident.
Appendix B - Priming Memories: Effects on Motivation and Confidence
(Failed/Easy Questionnaire)

Before you begin, please think about a time when you failed at an academic task. Once you have an event in mind, please think about this memory for approximately one minute.

1. When you were remembering the event, how vivid was your image?

   0                1                2                3                4
   No image at all  Vague            Dim              Perfectly clear  Vivid as normal vision

On the next page you will be asked to complete as many anagrams as you can in the next 30 minutes. On a 5-point scale, please indicate how confident you are in completing this task.

2. How confident are you in completing a task right now?

   0                1                2                3                4
   Not confident at all  Somewhat confident  Extremely confident
An anagram is a word formed by rearranging the letters of another: “Angel” is an anagram of “glean”. In the next 30 minutes, complete as many anagrams as you can. Please notify the researcher before you begin, and inform the researcher when you are done.

1. hrie = ______________
2. wehn = ______________
3. hsoe = ______________
4. soht = ______________
5. bsuh = ______________
6. cion = ______________
7. ieda = ______________
8. cihn = ______________
9. snik = ______________
10. tmie = ______________
11. jtes = ______________
12. lsut = ______________
13. lkae = ______________
14. kene = ______________
15. lnik = ______________
16. ksis = ______________
17. lmab = ______________
18. lmap = ______________
19. lsat = ______________
20. saly = ______________
21. dael = ______________
22. ifet = ______________
23. lair = ______________
24. leid = ______________
25. mlie = ______________
26. lpis = ______________
27. lsit = ______________
28. lsot = ______________
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29. ocne = ______________
30. ntoe = ______________
31. tary = ______________
32. thus = ______________
33. vsae = ______________
34. vien = ______________
35. waek = ______________
36. wnad = ______________
37. beark = ______________
38. argee = ______________
39. bbay = ______________
40. bsae = ______________
41. case = ______________
42. ctcab = ______________
43. cihd = ______________
44. cealr = ______________
45. cpoy = ______________
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56. icnh = ______________
57. iorn = ______________
58. ltae = ______________
59. lsot = ______________
60. lweor = ______________
61. mrak = ______________
62. mybae = ______________
63. twon = ______________
64. mlik = ______________
65. mntoh = ______________
66. mutoh = ______________
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76. seids = ______________
77. sikh = ______________
78. seelp = ______________
79. sfot = ______________
80. siol = ______________
81. stouh = ______________
82. seapk = ______________
83. seepd = ______________
84. hared = ______________
85. satr = ______________
86. setp = ______________
87. sorte = ______________
88. strett = ______________
89. tuhs = ______________
90. tirp = ______________
91. uint = ______________
92. hard = ______________
93. woshe = ______________
94. wsih = ______________
Motivation and Confidence

95. idea = ______________
96. wotre = ______________
97. aera = ______________
98. bdris = ______________
99. buli = ______________
100. bluid = ______________
101. baot = ______________
102. bluit = ______________
103. crae = ______________
104. crray = ______________
105. cechk = ______________
106. cslas = ______________
107. drak = ______________
108. bset = ______________
109. dinog = ______________
110. esay = ______________
111. else = ______________
112. fcat = ______________
113. fsat = ______________
114. flet = ______________
115. fleid = ______________
116. fine = ______________
117. face = ______________
118. frie = ______________
119. game = ______________
120. gsals = ______________
121. geos = ______________________
122. glod = ______________________
123. gnoe = ______________________
124. haret = ______________________
125. havey = ______________________
126. hled = ______________________
127. hold = ______________________
128. hrsoe = ______________________
129. huor = ______________________
130. kept = ______________________
131. laset = ______________________
132. lavee = ______________________
133. lsit = ______________________
134. mian = ______________________
135. mind = ______________________
136. wdie = ______________________
137. msiuc = ______________________
138. psat = ______________________
139. pecie = ______________________
140. pnalt = ______________________
141. pweor = ______________________
142. qitue = ______________________
143. rian = ______________________
144. rael = ______________________
145. rveir  = ______________________
146. raod  = ______________________
147. rcock  = ______________________
148. rnoud  = ______________________
149. salhl  = ______________________
150. sihp  = ______________________
Appendix C - Priming Memories: Effects on Motivation and Confidence
(Failed/Hard Questionnaire)

Before you begin, please think about a time when you failed at an academic task. Once you have an event in mind, please think about this memory for approximately one minute.

3. When you were remembering the event, how vivid was your image?

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<th>3</th>
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<td></td>
<td>No image at all</td>
<td>Vague</td>
<td>Dim</td>
<td>Perfectly clear</td>
<td>Vivid as normal vision</td>
</tr>
</tbody>
</table>

On the next page you will be asked to complete as many anagrams as you can in the next 30 minutes. On a 5-point scale, please indicate how confident you are in completing this task.

4. How confident are you in completing a task right now?

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</thead>
<tbody>
<tr>
<td></td>
<td>Not confident at all</td>
<td>Somewhat confident</td>
<td>Extremely confident</td>
<td></td>
<td></td>
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</table>
An anagram is a word formed by rearranging the letters of another: “Angel” is an anagram of “glean”. In the next 30 minutes, complete as many anagrams as you can.
Please notify the researcher before you begin, and inform the researcher when you are done.

1. rihe = ______________
2. henw = ______________
3. oesh = ______________
4. hots = ______________
5. hubs = ______________
6. icno = ______________
7. deai = ______________
8. icnh = ______________
9. ksin = ______________
10. iemt = ______________
11. ejst = ______________
12. utsl = ______________
13. kael = ______________
14. enek = ______________
15. knli = ______________
16. sisk = ______________
17. abml = ______________
18. amlp = ______________
19. atls = ______________
20. ylas = ______________
21. aeld = ______________
22. eflt = ______________
23. aril = ______________
24. iedl = ______________
25. liem = ______________
26. pils = ______________
27. ilst = ______________
28. ostl = ______________
29. esno = ______________
30. toen = _______________
31. ytra = _______________
32. stbu = _______________
33. save = _______________
34. ienv = _______________
35. kawe = _______________
36. adnw = _______________
37. kreba = _______________
38. greae = _______________
39. aybb = _______________
40. abes = _______________
41. saec = _______________
42. tcahc = _______________
43. ihldc = _______________
44. elcra = _______________
45. pyco = _______________
46. ddier = _______________
47. deeg = _______________
48. ihetg = _______________
49. marf = _______________
50. altf = _______________
51. efer = _______________
52. srsag = _______________
53. werg = _______________
54. arhi = _______________
55. teha = _______________
56. cihn = _______________
57. rnoi = _______________
58. aelt = _______________
59. tslo = _______________
60. woerl = _______________
61. krma = _______________
62. bmyae = _______________
63. wnot = ______________
64. limk = ______________
65. hnomt = ______________
66. uhmot = ______________
67. rgwo = ______________
68. hrotn = ______________
69. aneco = ______________
70. npla = ______________
71. anlep = ______________
72. aerhc = ______________
73. tsne = ______________
74. vnese = ______________
75. hpeas = ______________
76. ssdei = ______________
77. kins = ______________
78. eples = ______________
79. fots = ______________
80. lios = ______________
81. usoht = ______________
82. pakse = ______________
83. eespd = ______________
84. ahedr = ______________
85. rtsa = ______________
86. pets = ______________
87. roets = ______________
88. etrtes = ______________
89. suth = ______________
90. iptr = ______________
91. ntiu = ______________
92. adrh = ______________
93. hwseo = ______________
94. ihsw = ______________
95. edai = ______________
96. oetrw = _____________
97. raae = _____________
98. dbisr = _____________
99. uelb = _____________
100. libdu = ______________
101. atob = ______________
102. ublti = ______________
103. reac = ______________
104. rcayr = ______________
105. cehkc = ______________
106. slsac = ______________
107. kard = ______________
108. sbet = ______________
109. niogd = ______________
110. seya = ______________
111. eels = ______________
112. aftc = ______________
113. staf = ______________
114. eltf = ______________
115. lfide = ______________
116. nife = ______________
117. aecf = ______________
118. rfei = ______________
119. meag = ______________
120. sgsla = ______________
121. sgeo = ______________
Motivation and Confidence

122. dlgo = ____________________
123. egon = ____________________
124. rateh = ____________________
125. vayeh = ____________________
126. lhed = ____________________
127. odlh = ____________________
128. ohres = ____________________
129. rhuo = ____________________
130. pket = ____________________
131. sltae = ____________________
132. elaev = ____________________
133. slit = ____________________
134. nmia = ____________________
135. nndi = ____________________
136. deiw = ____________________
137. smciu = ____________________
138. tasp = ____________________
139. cieep = ____________________
140. lptna = ____________________
141. epwor = ____________________
142. iquet = ____________________
143. arni = ____________________
144. lare = ____________________
145. virre = ____________________
146. odra = ____________________
147. crok = ____________________
148. nuodr = ____________________
149. lhlas = ____________________
150. phsi = ____________________
Appendix D - Priming Memories: Effects on Motivation and Confidence
(Successful/Easy Questionnaire)

Before you begin, please think about a time when you were successful academic task. Once you have an event in mind, please think about this memory for approximately one minute.

5. When you were remembering the event, how vivid was your image?

0 1 2 3 4
No image at all  Vague  Dim  Perfectly clear  Vivid as normal vision

On the next page you will be asked to complete as many anagrams as you can in the next 30 minutes. On a 5-point scale, please indicate how confident you are in completing this task.

6. How confident are you in completing a task right now?

0 1 2 3 4
Not confident at all  Somewhat confident  Extremely confident
An anagram is a word formed by rearranging the letters of another: “Angel” is an anagram of “glean”. In the next 30 minutes, complete as many anagrams as you can. Please notify the researcher before you begin, and inform the researcher when you are done.

1. hrie = _______________
2. wehn = _______________
3. hsoe = _______________
4. soht = _______________
5. bsuh = _______________
6. cion = _______________
7. ieda = _______________
8. cihn = _______________
9. snik = _______________
10. tmie = _______________
11. jtes = _______________
12. lsut = _______________
13. lkae = _______________
14. kene = _______________
15. lnik = _______________
16. ksis = _______________
17. lmab = _______________
18. lmap = _______________
19. lsat = _______________
20. saly = _______________
21. dael = _______________
22. lfet = _______________
23. lair = _______________
24. leid = _______________
25. mlie = _______________
26. lipis = _______________
27. lsit = _______________
28. lsot = _______________
29. ocne = _______________
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63. twon = ______________
64. mlik = ______________
65. mntoh = ______________
66. mutoh = ______________
67. gorw = ______________
68. nrtoh = ______________
69. oeacn = ______________
70. paln = ______________
71. panle = ______________
72. raceh = ______________
73. snet = ______________
74. sveen = ______________
75. saphe = ______________
76. seids = ______________
77. skhn = ______________
78. seelp = ______________
79. sfot = ______________
80. siol = ______________
81. stouh = ______________
82. seapk = ______________
83. seepd = ______________
84. hared = ______________
85. satr = ______________
86. setp = ______________
87. sorte = ______________
88. sreett = ______________
89. tuhs = ______________
90. tirp = ______________
91. uint = ______________
92. hard = ______________
93. woshe = ______________
94. wsih = ______________
95. idea = ______________
Motivation and Confidence

96. wotre = __________
97. aera = __________
98. bdris = __________
99. bule = __________
100. bluid = ______________
101. baot = ______________
102. bluit = ______________
103. crae = ______________
104. crray = ______________
105. cechk = ______________
106. cslas = ______________
107. drak = ______________
108. bset = ______________
109. dinog = ______________
110. esay = ______________
111. else = ______________
112. fcat = ______________
113. fsat = ______________
114. flet = ______________
115. fleid = ______________
116. fine = ______________
117. face = ______________
118. frie = ______________
119. game = ______________
120. gsals = ______________
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146. raod  = ______________________
147. rcok  = ______________________
148. rnod  = ______________________
149. salhl = ______________________
150. sihp  = ______________________
Appendix E - Priming Memories: Effects on Motivation and Confidence
(Success/Hard Questionnaire)

Before you begin, please think about a time when you were successful academic task. Once you have an event in mind, please think about this memory for approximately one minute.

7. When you were remembering the event, how vivid was your image?

0 1 2 3 4
No image at all Vague Dim Perfectly clear Vivid as normal vision

On the next page you will be asked to complete as many anagrams as you can in the next 30 minutes. On a 5-point scale, please indicate how confident you are in completing this task.

8. How confident are you in completing a task right now?

0 1 2 3 4
Not confident at all Somewhat confident Extremely confident
An anagram is a word formed by rearranging the letters of another: “Angel” is an anagram of “glean”. In the next 30 minutes, complete as many anagrams as you can. Please notify the researcher before you begin, and inform the researcher when you are done.

|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
Motivation and Confidence

31. ytra = ______________
32. stbu = ______________
33. save = ______________
34. ienv = ______________
35. kawe = ______________
36. adnw = ______________
37. kreba = ______________
38. greae = ______________
39. aybb = ______________
40. abes = ______________
41. saec = ______________
42. tcahc = ______________
43. ihldc = ______________
44. elcra = ______________
45. pyco = ______________
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48. ihetg = ______________
49. marf = ______________
50. altf = ______________
51. efer = ______________
52. srsag = ______________
53. werg = ______________
54. arhi = ______________
55. teha = ______________
56. cihn = ______________
57. rnoi = ______________
58. aelt = ______________
59. tslo = ______________
60. woerl = ______________
61. krma = ______________
62. bmyae = ______________
63. wnot = ______________
64. limk = ______________
65. hnomt = ______________
66. uhmot = ______________
67. rgwo = ______________
68. hrotn = ______________
69. aneco = ______________
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72. aerhc = ______________
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85. rtsa = ______________
86. pets = ______________
87. roets = ______________
88. etrtes = ______________
89. suth = ______________
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91. ntiu = ______________
92. adrh = ______________
93. hwseo = ______________
94. ihsw = ______________
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106. slsac = ______________
107. kard = ______________
108. sbet = ______________
109. niogd = ______________
110. seya = ______________
111. eels = ______________
112. aetc = ______________
113. staf = ______________
114. elft = ______________
115. lvide = ______________
116. nife = ______________
117. aecf = ______________
118. rfei = ______________
119. meag = ______________
120. sgsa = ______________
121. sgeo = ______________
122. dlgo = ______________
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<td>125. vayeh = ____________________</td>
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149. lhlas = ____________________
150. phsi  = ____________________