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The Face-Name Mnemonic Strategy: Learning Face-Name Pairs Using Abstract and Concrete Keywords

Morgan T. Maxwell Russell N. Carney
Erin M. Buchanan William P. Deal
Missouri State University

Abstract: *In using mnemonic techniques, such as the face-name mnemonic, individuals are often encouraged to generate concrete (vs. abstract) keywords. To examine this recommendation, we applied the face-name mnemonic strategy to learning a set of 30 face-name pairs using both abstract and concrete keywords. Participants remembered significantly more with concrete keywords.*
Keywords: *face-name mnemonic, memory strategy, abstract and concrete keywords*

In everyday life, we are often faced with the task of remembering people's names. The face-name mnemonic strategy has been shown to be effective in aiding in the recall of names when prompted with faces (McCarty, 1980). This strategy is a specific mnemonic system that deals with associating a person's face with their name by using a keyword. Traditionally, experiments involved creating a keyword that sounded like the individual's name and was typically concrete. Next, a prominent feature of the individual's face was identified. Finally, a visual image was produced that relates the keyword to the identified prominent feature (Carney, Levin, & Morrison, 1988) Take, for example, a man whose surname is Reid. A concrete keyword could be *reed*, a wooden mouthpiece that goes to a musical instrument. Next, you identify that Mr. Reid has a large mouth. Finally, you create an interactive image such as imagining Mr. Reid has a wooden reed sticking out of his big mouth.

This study investigates whether concrete keywords always provide better recall than abstract ones when employing the face-name mnemonic strategy. Surnames pose a particular memory problem because they are often meaningless and do not naturally evoke an image to aid the subject with recall. Take, for example, the surname Freedman. An abstract keyword could be *freedom*, which likely comes to mind quicker than any concrete keyword such as *fritos* because of the match in visual similarity. The abstract keyword of freedom is closer in spelling and perhaps could provide better recall for the surname Freedman.

Previous studies have found that concrete nouns are generally easier to recall than abstract nouns (Paivio & Madigan, 1970). The superior recall of concrete words is believed to be the result of additional coding at the visual level. According to Paivio's dual-coding hypothesis, concrete words are not only coded at the verbal level but they also have a visually coded component as well (Paivio, 1971). However, studies examining paired-associative memory have only used noun pairs, whereas the face-name mnemonic involves a unique pair consisting of a surname and an individual's face (picture). It is unclear whether concrete keywords will result in better recall of face-name pairs, which was examined in this study.

In addition, we sought to examine response times. That is, we examined how quickly participants responded to items that have been associated with either a concrete or abstract

Correspondence concerning this article should be addressed to Morgan Maxwell at Maxwell314@live.missouristate.edu

keyword to determine if differences existed. Past studies on paired-associative tasks using noun pairs have found that imaginal concrete mediators have resulted in quicker latency when compared with imaginal abstract mediators (Yuille & Paivio, 1967). Again, no studies have examined the face-name mnemonic concerning subjects' response time when employing abstract and concrete keywords to remember surnames.

RESEARCH METHODOLOGY

To determine the effectiveness of concrete or abstract keywords in aiding participants in learning face-name pairs, we selected 30 portraits of individuals from Google.com and paired them with 30 surnames selected from an online surname bank (names.mongabay.com). Then, both a concrete and abstract keyword were created for each of the 30 face-name pairs. Next, we constructed two versions of the test using Qualtrics, an online survey program. The Qualtrics program was chosen because it allowed us to use colored pictures of the individuals and to monitor how much time the participant spent on each item.

The tests were constructed so that each participant would receive both concrete and abstract keywords. Test 1 paired the first 15 face-name pairs with a concrete keyword and the last 15 face-name pairs with an abstract keyword. Test 2 paired the first 15 face-name pairs with an abstract keyword and the last 15 face-name pairs with a concrete keyword. The tests began with a familiarization stage where participants were introduced to the face-name mnemonic strategy. Next, the participants were shown the surnames and their keywords to be remembered at a five second interval. Following this, participants underwent a final learning stage where they were shown the 30 face-name pairs at a 20-second intervals, which included the picture of the individual, the assigned surname, keyword, and a mnemonic help (see Figure 1). After this, a ten-minute filler task (a word search puzzle) was given to reduce short term memory effects. The participants were then administered the test over the 30 face-name pairs.

Sixty-seven participants enrolled in an introductory psychology course were recruited to participate in this factorial design study. Participants registered for a testing time. At these times participants were seated at a computer. The experimenters alternated administering Test 1 or Test 2 each testing time. After each participant completed his or her assigned test they were given another online test called Operation Span Task (OSPAN). The online OSPAN has been shown to be an effective measure of working memory (Unsworth, Heitz, Schrock, & Engle, 2005).

Figure 1. Example of memory task

Bellis (bell)
Imagine that she is balancing a bell on her nose.

RESULTS

When a correlation matrix was analyzed, it was found that OSPAN scores were not correlated highly with any variables ($rs \leq 0.30$). As a result, this variable was not examined, and a paired sample *t*-test was conducted for concrete and abstract conditions (see Table 1). Participants correctly recalled more items that were paired with a concrete keyword than they did with items that were paired with an abstract keyword $t(64) = 5.07$, $p < .001$, $d = .63$. In addition, participants responded significantly quicker to the face-name pairs that were paired with a concrete keyword than they did for those paired with an abstract keyword $t(64) = -6.29$, $p < .001$, $d = .78$. Furthermore, participants responded significantly quicker to items that they eventually got right as compared to items they got wrong $t(64) = -8.15$, $p < .001$. $d = 1.01$.

Qualitative data gathered indicated subjects found it easier to remember faces that had distinct facial features. Individuals with short hair with few distinct features were harder to remember. In addition, participants noted that keywords that were close in spelling to the surname were easier to remember.

Table 1. *Variables and Descriptive Statistics*

Variables	*M*	*N*	*SD*	*SE*
Concrete-Correct	10.57	65	4.04	0.50
Abstract-Correct	8.60	65	3.98	0.49
Correct-Latency	9.18	65	3.02	0.37
Wrong Latency	22.50	65	13.98	1.73
Concrete-Latency	10.36	65	4.18	0.51
Abstract-Latency	14.31	65	5.78	0.71

DISCUSSION

In this experiment, we found that, on average, concrete keywords facilitated better recall when using the face-name mnemonic strategy than did abstract keywords. This result was consistent with Paivio's dual coding hypothesis (Paivio, 1971). Even though abstract keywords may in some instances sound or look more like to the person's name (*"Freedman", freedom*) they lack this visual component that concrete words possess. And, it was harder for participants to remember abstract keywords -- which resulted in poorer recall on the test over face-name pairs. In fact, it took subjects, on average, more time to respond to abstract keyword items than it did to concrete keyword items. Consistent with Paivio's dual coding hypothesis, concrete keywords have more encoded information (i.e., both visual and verbal cues) that ultimately results in better face-name recall.

In short, in using the face-name mnemonic strategy, it is important to use concrete keywords. This will improve ones ability to recall names given faces more accurately. In addition, it will improve the speed at which names (given faces) are recovered.

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