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SURVIVAL PROCESSING: Its Potential Role as a Learning Strategy

Honors College ARCH — Advanced Research and Creativity in Honors

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ABSTRACT

Two experiments comparing the efficiency of four different retention strategies for vocabulary-based learning were examined on a total 295 undergraduate students at FIU. The encoding strategy of interest was a method known as survival processing, in which the learner encodes by imagining a scenario of personal survival. Participants were shown a list of words in English-Swahili translations on a power point view board and were instructed to rate the relevance of each word-pair pertaining to their specific retention strategy. Afterwards, the participants were given a recall test of each word-pair they previously rated. The results indicated that survival processing was the best strategy to use for vocabulary based word retention.

INTRODUCTION

Human memory systems have been examined regarding the possibility of increasing learning efficiency for effective retention. Recent memory research supports the idea that improved recall occurs when the learning is relevant to survival in ancestral environments. Survival processing suggests that the function of our memory systems are based on the relative fitness value of that which is being memorized. For example, an early Homo sapien being chased by a wolf would find great fitness value in remembering the location of a cave. The current investigations of this thesis will create ways in which this idea can be applied as a modern retention strategy for word-pairing vocabulary learning.

PURPOSE

The purpose of this study is to understand how our memory processes are effected by words with survival related contexts. In doing so, this research can help better teaching strategies for teachers and learning techniques for students, specifically in foreign language courses in which vocabulary retention is constantly tested.

* Inferential statistics available upon request

EXPERIMENT 1

A total of 138 students participated . In a between-subjects design, participants were randomly faced with 1 of the 3 conditions (Grassland survival setting, pleasantness, and the city survival setting). After reading their specific instructions, subjects were shown a list of 20 Swahili words paired with the English word that translated them (the word-pairs were common nouns, chosen to minimize overlap in phonology). During this time, the subjects were instructed to rate each word-pair's relevance (according to their particular condition) with values from 1-5. Afterwards, a surprise recall test was initiated- they were instructed to match the English word translating the particular Swahili word being shown on the slide.
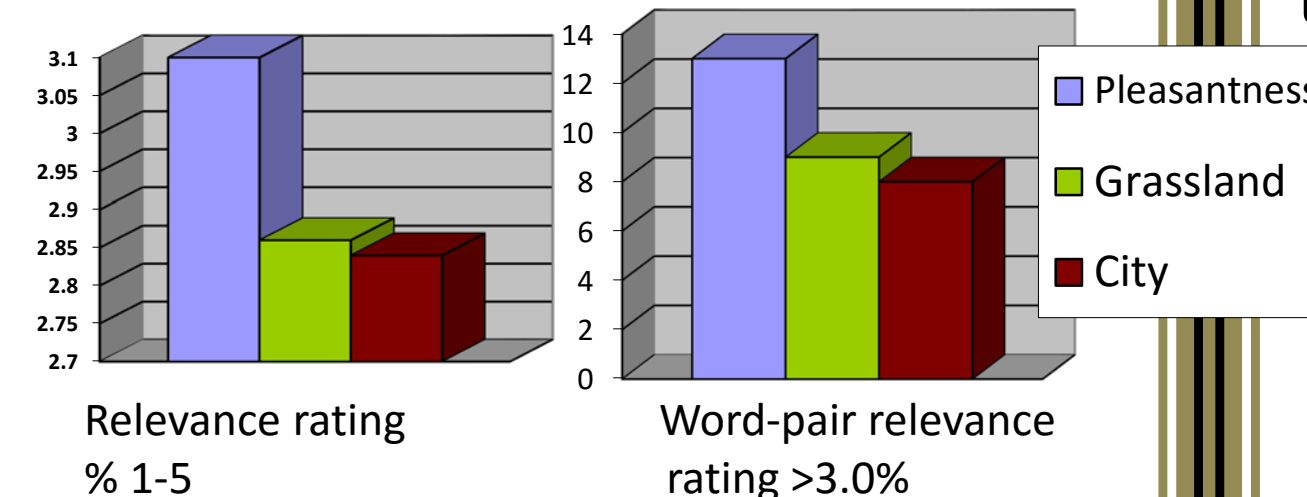

Visual Imagery: The participant rates each word-pair as to the ease or difficulty with which they arouse mental images. (on a scale of 1 to 5; 1 being very low sensory experience and 5 being very high)

EXPERIMENT 2

A total of 157 students participated in the second experiment. The testing characteristics used were equivalent to experiment 1; however, the city setting condition was replaced by a visual imagery condition as an independent variable.

1st RATING RESULTS *

Word pleasantness. The mean rating of all 20 word-pairs was 3.1%, indicating an above average relevance rating.

City Condition. The combined mean rating of all 20 word-pairs was 2.8%, indicating a average relevance rating.

Grassland Condition. The combined mean rating of all 20 word-pairs was 2.8%, indicating a average relevance rating.
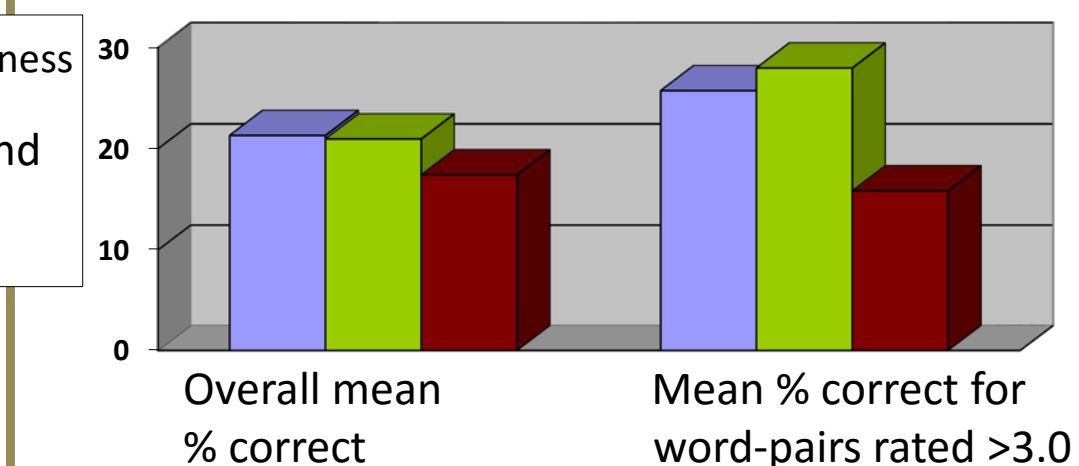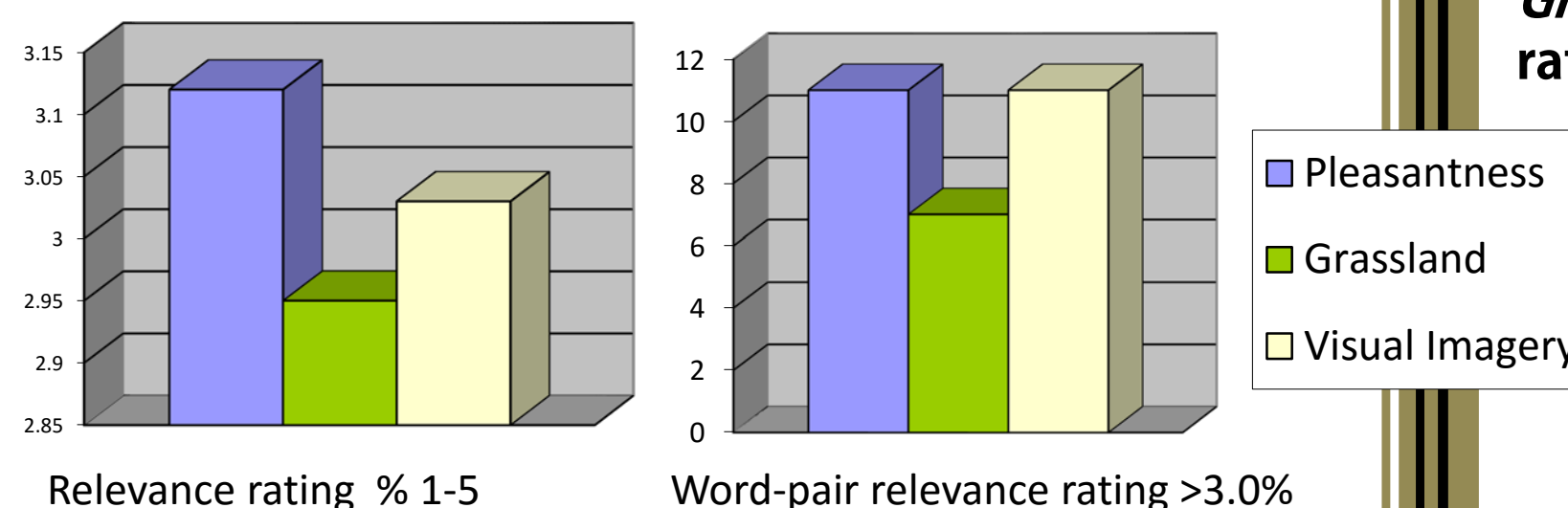

CONDITIONS USED

Word pleasantness: The task of the participant is to rate the pleasantness of each word-pair (on a scale of 1 to 5; 1 being very unpleasant and 5 being very pleasant).

Survival- grassland setting: The participant imagines being stranded alone in foreign grassland, such as the plains of Africa, with no aided materials. the participant must rate how relevant each word-pair would be in this grassland survival situation. (on a scale from 1 to 5; 1 being barely relevant and 5 being highly relevant).

Survival- city setting: The participant imagines being stranded alone in a foreign city with no survival materials. He or she must rate how relevant each word-pair would be in this city survival situation (on a scale of 1 to 5; 1 being barely relevant and 5 being highly relevant).

2nd RATING RESULTS *

Word pleasantness. The combined mean rating of all 20 word-pairs was 3.12%- an above average rating.

Visual Imagery. The combined mean rating of all 20 words was 3.03%,- an above average relevance rating.

Grassland Condition. The combined mean rating of all 20 word-pairs was 2.95%,- an average relevance rating.
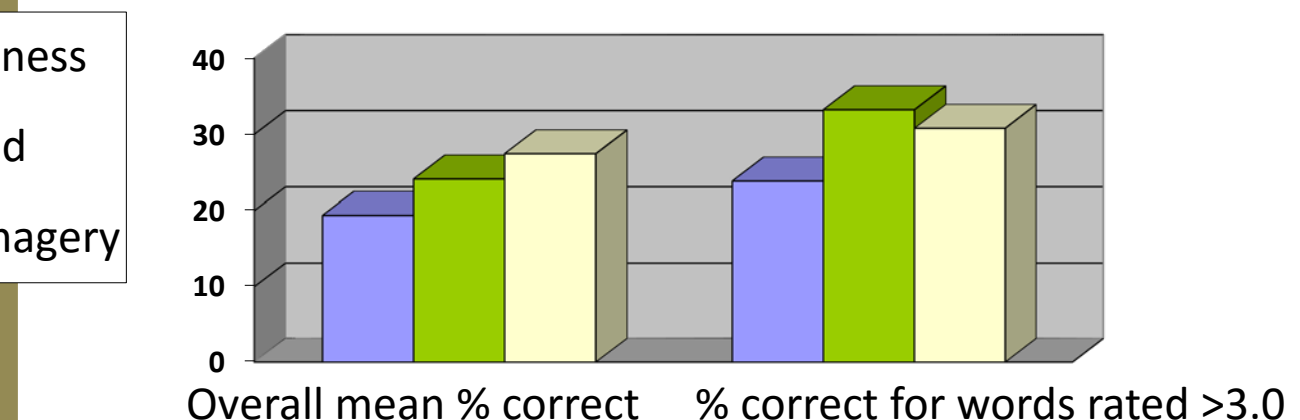

1st RECALL RESULTS *

Word pleasantness: 21% correct recall. By using a rating buffer of 3.0 relevance (word-pairs rating below a 3 in this condition were ignored), the correct recall mean was 25%

City Condition: 17% correct recall. By using a rating buffer of 3.0 relevance, the correct recall mean was 15%

Grassland Condition: 21% correct recall. By using a rating buffer of 3.0 relevance, the correct recall mean was 28%.

2nd RECALL RESULTS *

Word pleasantness: 19% correct recall. Using a rating buffer of 3.0 relevance (where words rating < 3 were discarded), the correct recall mean was 23%.

Visual Imagery: 27% correct recall. Using a rating buffer of > 3.0, the correct recall mean was 30%.

Grassland Condition: 24% correct recall. Using a rating buffer >3.0, the correct recall mean was 32%.

DISCUSSION

The focus of both of these experiments was to see how well the recall scores were for word-pairs correlating with a high relevance rating. Survival processing was no better than visual imagery when all items were considered, but that survival processing was particularly useful for encoding survival-relevant words (rated above 3 on the scale). Survival processing with the grassland scenario finished first in recall advantage in both experiments. However, the survival advantage falls short when applied to a contemporary basis, such as the city scenario (it finished last in both recall scoring sums). The experimental outcome provides evidence that cognitive functions of survival processing in vocabulary based word-pair learning, although advantageous, are more primitive than adaptive. They do not ultimately produce the same results beyond instinctive mannerisms in the natural wild, such as in a sociologically evolved environment. The survival encoding procedure in this study points to our brain being prone to fitness relevant information as a product of evolution. In this case, the evidently advantageous use of survival processing can be beneficial to exercise during vocabulary based retention, learning, and teaching.

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