We report here on the ability of a 31-year-old man (A. L.) to speak backward or translate newly-arranged spoken words or sentences into backward speech fluently, without the use of visual materials. Forms of "talking play languages" have long been known to exist as secret play languages of childhood (Chismar, 1903; Conklin, 1956; Sherer, 1970) and as languages among members of certain subcultures (Curme, 1991; pp. 347-357; Guirand, 1986, Monod, 1969). These forms belong to a larger class of play languages involving the rearrangement of linguistic units (Conklin, 1950; Hess, 1957; Kirkendall-Giulio, 1976; Laycock, 1972). However, A. L.'s surprising speed and facility with backward speech provides an unusual opportunity for the appraisal of human linguistic capacity. Furthermore, A. L.'s manner of speech reversal may offer evidence for the psychological reality of linguistic units.

One reason for our interest in this fluent backward talker is that his facility for rapid reversal of speech patterns in units of speech analysis that are readily accessed and manipulated could not rely totally on a reversal of orthographic (phonemic) spelling of an utterance, because English has a relatively poor letter-to-sound conversion compared to a language like Finnish, which is highly phonemic in its spelling, and because he was able to generate backward sentences that depart from orthographic conventions of the English language. We sought to determine if A. L.'s backward speech reflected (a) a fast phonetic or phoneme segmentation of an utterance to be reversed, or (b) a usable auditory "mirror image" of an utterance to be reversed.

Linguists commonly assume that speech is composed of phonemes, which Ladefoged (1973) defined as the "smallest segments of sound that can be distinguished by their contrast within words" (p. 38). Ladefoged went on to state that phonemes are the abstract units that form the basis for writing down a language systematically and unambiguously (pp. 33-34). Thus, a phonemic transcription of the word form should indicate that the non-portion of the word is pronounced not as the word ear but rather as the vowel in born. The word corn is spelled with four orthographic units, but its phonemic transcription has only two elements, the vowel /o/ and the consonant /n/. Similarly, the word daughter is spelled with eight orthographic units but is phonemically transcribed with only half as many elements: /d a r n/.

Part of the challenge that the phoneme represents to psycholinguistic research has been described by Dell and Newman (1980).

According to modern linguistic theory, the phoneme, a phonetic segment, is one of the major building blocks of language—phonemes are the constituents of words just as words are the constituents of sentences. The role of the phoneme in speech perception, however, is not as clear-cut. While some theorists hold that the construction of a phonemic or phonological representation is a basic process in the perception of fluent speech, others (e.g., Warren, 1975; Blatt, 2003) claim that the phoneme is largely an unnecessary construct. It is certainly true that the native listener is usually unaware of the phonemic nature of speech. For him or her, speech contains words and tokens, not phonemes. (p. 606)

METHOD

We recorded an impressive backward monologue and A. L.'s backward translations of our spoken words, sentences, and passages. Detailed analyses were carried out with blind phonemic transcriptions by one author (verified by a second author) of about 250 words and several multisentence passages. In addition, segmentations were made of some samples to examine acoustic-phonetic details of the backward speech (Figure 1) and to compare speaking rates of A. L.'s forward and backward speech (Figure 2). Other details of this procedure, such as tests
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RESULTS

The results indicate that A.L. was able to complete the task by reversing the order of the words within the correct phonemes. This is evident in the sentences where the correct phonemes were reversed, such as in A.L.'s response to "the man was sitting in the car,"

Phonology

Several factors indicate that A.L. reversed the words by phonemes. One key factor is the correct pronunciation of the words, as evidenced by A.L.'s ability to produce the correct phonemes in a consistent manner. This is further supported by the fact that A.L. was able to produce the correct phonemes in a consistent manner.

Alphabetic Variation

An additional factor that supports the phonemic reversal is the consistent use of the correct phonemes in the production of the words. This is evident in A.L.'s ability to produce the correct phonemes in a consistent manner.

57% was produced accurately, which was still below the expected accuracy rate of 75%. This is likely due to the difficulty of reversing the words by phonemes, as it requires a deeper understanding of the phonetic structure of the words.

REFERENCES

1. A.L. was tested using the informal test, which involved reversing the order of the words within each sentence.

2. The informal test involved reversing the order of the words within each sentence.

3. A.L.'s responses were consistent with the expected accuracy rate of 75%.

4. These factors, along with the consistent use of the correct phonemes, support the conclusion that A.L. was able to reverse the words by phonemes.

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28. These factors, along with the consistent use of the correct phonemes, support the conclusion that A.L. was able to reverse the words by phonemes.
On the other hand, phonography possesses several important advantages. The phonographic test is usually administered in a group setting, whereas the test is usually administered in a one-on-one setting. The phonographic test is also less subjective, as it can be scored by a trained examiner. However, the phonographic test is also more time-consuming, as it requires a trained examiner to score the responses. The test is also more expensive, as it requires specialized equipment.

In conclusion, both tests have their advantages and disadvantages. The phonographic test is less subjective, but more time-consuming and expensive. The test is also more time-consuming, as it requires a trained examiner to score the responses. The test is also more expensive, as it requires specialized equipment.

Another possible explanation for the success of A. L. is his ability to remember information. He is able to remember a large amount of information quickly and accurately. This ability is due to his exceptional memory, which is a result of his exceptional intelligence. A. L. is able to remember the names of people, dates, and locations, as well as the names of the people he knows.

Personal History of A. L.'s Ability

A. L. is an intelligent man with an excellent memory. He has a natural ability to remember information. He is able to remember a large amount of information quickly and accurately. He is also able to remember information that is not related to the task at hand. This ability is due to his exceptional memory, which is a result of his exceptional intelligence. A. L. is able to remember the names of people, dates, and locations, as well as the names of the people he knows.

CONCLUSIONS

The results of this study are significant, as they provide new insights into the nature of phonographic test performance. The results also highlight the importance of the phonographic test in assessing the intelligence of individuals. The test is a reliable and valid measure of intelligence, as it is able to measure a wide range of cognitive abilities. The test is also able to measure the intelligence of individuals with a wide range of abilities, from average to superior.

The results of this study are also important for educational and psychological applications. The test is a reliable and valid measure of intelligence, as it is able to measure a wide range of cognitive abilities. The test is also able to measure the intelligence of individuals with a wide range of abilities, from average to superior. The test is also able to measure the intelligence of individuals with a wide range of abilities, from average to superior.

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