Does grapho-phonemic systematicity in Korean hangeul assist learning?

Do naive participants notice the intended systematicity and utilize it for better learning?

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Hangeul, the Korean writing system

- Artificially made in 1443 by King Sejong the Great and his scholars
- Shallow orthography with one-to-one letter–sound relation
- Currently 14 consonants and 10 vowels
- Written in syllable level: 1,608,628 legitimate syllables possible

“Even fools can learn in a week and the clever will learn for a half day.”
(By Jeong-jin-ji, 14c)

Chosen as the orthography system of

- Bahasa CIA-CIA, an Indonesian tribe in 2009
- The Solomon Islands in 2012

Quantified grapho-phonemic systematicity

- Mapping between graphemes and phonemes of hangeul [2-4]
- Similar letters have similar sounds (r = .35, p < .003)

Consonants, visualized articulation

- "'r/" represents the tongue touches the hard palate
- 's/" represents the airflow between the teeth.
- 'ng/" represents the throat

Vowels, cultural reference point

- Combination among /human/, /earth/, and /sky/.
- Harmony between the human and nature.

People could learn ANY type of orthography system! Limitations :: 1. Possible ceiling effect 2. Multi–lingual effect 3. Exposing individual letters, not the whole set If replicating :: 1. Exposing the whole set of letters 2. Focus on mono–lingual participants

Result 1. Did the veridical group learn better and faster?

*U* = 354, *p* = .16

Unexpected Results 1. Learning consonants is easier than vowels (*U* = 2, *p* = .04)

Result 2. Did the veridical group learn more easily?

*U* = 405, *p* = .40

Unexpected Results 2. The nasals are the easiest to learn.

Unexpected Results 3. The vowels without jaw–opening are difficult to learn.

Fig 2.3. The percentage of correct answers (left) and reaction time (right). (D1=18.20 correct consonants; 0.3=18.24 random consonants; 0.D=12.26 correct vowels; 0.1=17.11 random vowels)

Fig 2.4. The number of the tests the participants repeated for consonants (left) and vowels (right). Many participants passed the first test when learning consonants but had to repeat multiple times for vowels.

Fig 2.5. The distribution of the first languages of the performers who scored below average (left) and the scores within Chinese participants (right)