

THE INFLUENCE OF EXPLICIT INSTRUCTION ON FAILURE TO ACQUIRE
A PHONOLOGICAL RULE DUE TO ORTHOGRAPHIC INPUT:
THE CASE OF NATIVE ENGLISH SPEAKERS
LEARNING GERMAN

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PREVIEW

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ABSTRACT

Recent research indicates that knowledge of words' spelled forms can affect the underlying phonological forms in second language learners. Notably, the research suggests that second learners can use orthographic input to infer information about the phonological forms of words. A familiar orthography with grapheme-phoneme correspondences inconsistent with those of the first language may cause learners to create nontarget-like lexical representations.

In German, word-final obstruents are systematically devoiced. Word-final devoicing (WFD) is not represented orthographically. For example, <Rat>, 'advice' and <Rad>, 'wheel', are both pronounced [rat]. Research suggests that access to spelled forms delays native English speakers' acquisition of this phonological pattern. Other research has found that phonetic training about phonological patterns may help learners' productions become more target-like. This study investigates whether phonetic training helps learners overcome the delay in acquiring WFD by giving explicit instruction on pronunciation.

Native English speakers were randomly assigned to one of four groups: Spell-Instruction; Spell-No Instruction; No Spell-Instruction; and No Spell-No Instruction. They were taught six German nonword minimal pairs, differing in the voicing of the final consonant (kreip/kreib). Learners in the spell groups saw spelled forms of the words and

learners in the instruction group saw instructions about pronunciation (“a ‘b’ at the end of a word is pronounced ‘p.’”).

Words spelled with voiced final consonants were more likely to be produced with voiced final consonants than those whose final consonants were spelled voiceless.

Participants in both Spell conditions were less likely to devoice targets with voiced final consonants than those in the No Spell conditions, confirming a relationship between seeing spelled forms and not acquiring WFD. Finally, learners in the Instruction conditions (NI and SI) devoiced voiced final consonants at no greater rate than learners in the No Spell conditions, suggesting that instruction provided no clear benefit for acquiring WFD.

PREVIEW

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CHAPTER 1

INTRODUCTION

Recent research in second language acquisition has begun to investigate the link between orthographic input and the development of underlying phonological forms in second language (L2) learners. Notably, the research indicates that L2 learners can use orthographic input to infer information about the phonological forms of words (Bassetti, 2006; Escudero, Hayes-Harb, & Mitterer, 2008; Hayes-Harb, Nicol, & Barker, 2010; Showalter & Hayes-Harb, 2013).

Learning new words via a familiar orthography can sometimes cause learners to create nontarget-like lexical representations when the spelled forms do not follow the conventions of the learners' first language (L1) (Hayes-Harb et al., 2010). In addition, learners may also make incorrect inferences about phonological forms based on spelling (Bassetti, 2006). Access to spelled forms in the input can help learners perceive difficult contrasts absent in their L1s (Escudero et al., 2008) even when some of the orthographic information they receive is unfamiliar (Showalter & Hayes-Harb, 2013).

In addition to learning new L2 contrasts, second-language learners must often learn new phonological patterns. Young-Scholten (2002) hypothesized that orthographic input may block the acquisition of a new phonological rule when the spelling of a word is contrary to its auditory form. Brown, Hayes-Harb, and Smith (2013) found this

hypothesis to be supported in the case of native English speakers acquiring the phonological rule of word-final devoicing in German. Results from this study indicated that learners who had access to spelled forms of German nonwords were significantly more likely to produce words with word-final voiced obstruents even though all auditory information ended with voiceless consonants.

The present study seeks to further investigate the relationship between orthographic input and the acquisition of phonological rules. Explicit instruction about phonological rules has been demonstrated to help learners produce more target-like forms (Moyer, 1999; Simon, 2010). Therefore, this study will investigate whether explicit instruction about a phonological rule, word-final devoicing in German, will cause learners to produce more target-like forms with voiceless word-final consonants in spite of access to spelled forms that contain voiced word-final consonants. In this study, explicit instruction is operationalized by telling participants at the beginning of the experiment that German words are often not pronounced as they are spelled and giving examples, such as “A b at the end of the word is pronounced ‘p.’” Learners are given information about each voiced final consonant; therefore, they are told that a at the end of a word is pronounced [p], a <d> at the end of a word is pronounced [t], and a <g> at the end of a word is pronounced [k].

CHAPTER 2

LITERATURE REVIEW

2.1 Studies of the interaction of phonological representations and orthographic input

L2 learners frequently rely on their L1 grapheme-phoneme correspondences when reading in a second language if the orthography is familiar (Bassetti, 2006). Bassetti (2006) found that this leads learners to make assumptions about the phonological forms of words. Pinyin is the Romanization of the pronunciation of Chinese words, usually written in *hanzi* characters, which represent morphemes but are unreliable phonologically (Shu, Anderson, & Wu, 2000). Pinyin is used both in L2 classrooms (Bassetti, 2006) and in Chinese schools with native Chinese speaking children (Shu et al., 2000) to aid in learning the pronunciation of words. Bassetti's (2006) study focuses on three rimes in Chinese: [uei], [iou], and [uen]. When preceded by a consonant, the rimes are spelled 'ui,' 'iu,' and 'un,' respectively. When word initial, however, they are spelled 'wei,' 'you,' and 'wen.' Eighteen first-year Chinese learners were presented with Hanzi characters and asked to pronounce each character and then count the number of sounds in the word. Bassetti (2006) then computed the number of phonemes counted in each rime. Learners often reported more phonemes in the rimes whose pinyin representation included the main vowel than those whose pinyin representations did not, indicating that

learners were using their knowledge of spelled forms to help them identify separate phonemes. To confirm these results, a new group of participants was asked to orally segment the same words into phonemes instead of only counting the number of separate sounds. The results confirmed those of the first experiment. Namely, rimes tended to be segmented into the same number of phonemes represented orthographically via pinyin. For example, when spelled <you>, the rime was segmented as three phonemes but when spelled <liu>, it was only segmented as two.

L2 learners can also use orthographic input to help them encode auditory contrasts which do not exist in their native languages into their underlying representations of L2 words (Weber & Cutler, 2004; Escudero et al., 2008). Weber and Cutler (2004) found that L2 learners appeared to be able to lexically encode novel contrasts even when they seemed unable to perceive them in an online task. The study focused on the English contrast of /æ/ and /ɛ/, which is noted for being difficult for Dutch speakers to perceive. Dutch speaker participants heard auditory forms of English words like ‘panda’ ([pændə]) and ‘pencil’ [pensɪl], which contain the /æ/ and /ɛ/ contrast, and were asked to select the correct image for each word while their eye movements were tracked with an eye tracker. Results indicated that learners had an asymmetric lexical activation when hearing these words. They fixated longer on distractor images if the auditory stimuli contained /æ/ than if it did /ɛ/. For example, when participants heard the word ‘panda’ ([pændə]), they fixated longer on the image of a pencil than they would the image of a panda if they heard the word /pencil/. There are several possible explanations for this, including the native status of the category /ɛ/, which may cause Dutch speakers to be more biased towards it. In a follow up study, however, Cutler et al. (2006), suggest that Dutch learners