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Learning to Spell Phonologically: Influences of Children's Own Names

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ABSTRACT

Young spellers must learn to symbolize the sounds in words with phonologically appropriate letters. Do children use their knowledge about their own names to do this, performing better on sound–letter correspondences in their name than expected on the basis of other factors? According to some theories, children learn the spelling of their name as a rote form and do not derive conceptual knowledge from the name that transfers to other items. Analyzing data from studies in which 565 U.S. 3- to 6-year-old children spelled words or nonwords, however, we found that children who had begun to represent some sounds in their spelling used the initial sound–letter correspondence of their first name in an appropriate manner more often than otherwise expected. The results shed new light on the role of personal names in spelling development and have implications for early literacy instruction and assessment.

Spelling is an important skill for children to master. Early on, children may know that written words are sequences of letters but may not know how the letters represent the sounds in words' spoken forms. For example, a 4-year-old who is asked to write *doll* may produce ‹eef›, stringing letters along a line but not using letters that are phonologically plausible representations of the sounds in the spoken word (Pollo, Kessler, & Treiman, 2009). According to phase theories of literacy development (e.g., Ehri, 1986, 2015), such a child has not yet grasped the alphabetic principle and is in the prealphabetic phase of literacy development. Later, children learn that the spellings of words reflect their sounds and become able to symbolize the sounds with letters that are used for them in words of the language. For example, a 5-year-old might write *doll* as ‹dl›, representing both consonant phonemes with phonologically plausible letters but omitting the vowel, or as ‹dol›, representing all three phonemes. Spellings like the former are typical of the partial alphabetic phase, according to Ehri's theory, and spellings like the latter are typical of the later full alphabetic phase. As these examples show, children need to move toward phonologically motivated spelling to progress in their literacy development. In the present study, we asked how children do this. Specifically, we asked whether learners of English use knowledge gained from their own names as they begin to spell phonologically. If so, a child named Dave may produce spellings that are higher in phonological quality for words like *doll* and *dig* than for words like *rope* and *run*, while Rob may show the opposite pattern.

Many studies show that children in the U.S. and other countries begin to learn about the spelling of their own name from an early age (Bloodgood, 1999; Levin, Both-De Vries, Aram, & Bus, 2005; Puranik & Lonigan, 2011). Our question here is whether knowledge about the spelling of the name influences a child's spelling of other words. On one view, children learn their name by rote, not analyzing how the letters in the names written form symbolize sounds in its spoken form (Campbell, Chen, Shenoy, & Cunningham, 2019; Milburn et al., 2016). According to this *rote view* of name

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learning, knowledge about the name does not help children use its letters in a phonologically appropriate way when spelling other words. Another view (Both-de Vries & Bus, 2008, 2010), which we call the *analytic view* of name learning, is that children gain conceptual knowledge from the name that helps them use name-letters in a phonologically appropriate way when spelling other words. That is, learning the spelling of the names helps children progress in use of alphabetic skills.

Most of the existing evidence relevant to the question of whether the name is learned by rote or analytically is indirect, coming from studies of whether children whose name starts with a given letter are better at providing the sound of that letter when it is presented in isolation than are children whose name does not begin with the letter. Mixed evidence has been found with learners of English. Treiman and Broderick (1998) did not find a significant own-name advantage in the letter sound task with either U.S. or Australian children, and Piasta, Phillips, Williams, Bowles, and Anthony (2016) found very limited effects in a large study of U.S. children. In two other studies, however, children whose name began with a letter were significantly better at providing the sound of that letter than children whose name did not begin with the letter (Huang, Tortorelli, & Invernizzi, 2014, for U.S. children; Treiman, Stothard, & Snowling, 2019, for British children). Even if children can provide the sound of an isolated letter, though, this does not mean that they can use the letter to spell the corresponding sound when it occurs in a word. We turn to the few previous studies that have looked for an own-name advantage in spelling before presenting our study.

Treiman and Broderick (1998), in a study of U.S. 4- and 5-year-olds who were familiar with at least the first letter of their name, included a task in which children were asked such questions as whether the spelling of *doll* begins with *d* or *p*. Children whose first name or commonly used nickname began with *d* did not perform significantly better on such a question than children whose names began with other letters. This result supports the rote view of name learning: children do not gain conceptual knowledge from their name that helps them use name-letters in a phonologically appropriate way when spelling other words.

In studies of Dutch children, however, Both-de Vries and Bus (2008, 2010) found evidence that children derive phonological information from the name that they use in spelling other words. In their 2010 study, Both-de Vries and Bus reported that Dutch 4- to 5 ½ -year-olds used the initial letter of their first name more often when spelling words that contained this letter than words that did not. This result suggests that the children possessed some conceptual knowledge about the letter's sound-symbolizing function that they used to benefit their spelling of other words. In other work, Both-de Vries and Bus (2008) examined the benefit that children derived from their name in relation to the children's phonological spelling ability. Children who showed no or almost no use of phonology in spelling used letters as often when spelling words that contained the letters and words that did not contain the letters. This held true for the first letter of the name, later letters of the name, and non-name letters. Children who were beginning to use phonology in their spelling showed more correct than incorrect use for the first letter of their name but not for later name-letters or non-name letters. Both-de Vries and Bus (2008) interpreted these findings as evidence that the initial letters of children's names were the first letters to be used in a phonologically appropriate manner. Relatively advanced phonological spellers showed a different pattern of performance, being more likely to use the first and later letters of their name and non-name letters correctly more often than incorrectly. Both-de Vries and Bus (2008) interpreted this latter observation to suggest that the period during which children use only the first letter of their name in a phonologically appropriate manner is relatively brief. As children's phonological spelling becomes more advanced, their ability to use letters to represent phonemes quickly generalizes to letters other than the first letter of the name.

Why did the children studied by Both-de Vries and Bus (2008, 2010) take advantage of their names to produce phonologically based spellings of other words whereas the children studied by Treiman and Broderick (1998) did not? The apparent discrepancy might reflect the fact that Dutch, the writing system being learned by the children in the Both-de Vries and Bus studies, has simpler and more regular links between spellings and sounds than English (Borgwaldt, Hellwig, & de Groot, 2004; Martensen, Maris, & Dijkstra, 2000). This consistency might encourage Dutch children to use

a sound–spelling correspondence found in one word, their name, in other words. Children might be less likely to show such transfer in the case of English.

To determine whether learners of English show a rote or an analytic approach to name learning, we used an approach similar to that of Both-de Vries and Bus (2008) with learners of English. We did so in a way that was designed to address some weaknesses of this and the other prior studies (Both-de Vries & Bus, 2010; Treiman & Broderick, 1998). One weakness is that the numbers of participants and of words in the studies were fairly small. For example, the conclusions of Both-de Vries and Bus (2008) about relatively advanced phonological spellers were based on analyses of just seven such children. The present study used data from 565 children who had participated in nine previous studies of spelling that were conducted in our laboratory, each of which included at least 20 items.

Another weakness of the Both-de Vries and Bus (2008) study was that children's ability to represent phonology in spelling was treated as categorical rather than continuous, with fairly arbitrary boundaries between the categories. The present study used a continuous measure like that introduced by Pollo et al. (2009), calculating a spelling score for each child that reflected the degree to which the phonological quality of the child's spellings exceeded that expected by chance. We asked how children's phonologically appropriate use of name correspondences and other correspondences varied as a function of their spelling score.

Given the relatively inconsistent nature of English sound-to-spelling correspondences, we coded information about children's names and letter use in a somewhat different way than Both-de Vries and Bus (2008). Instead of coding the first letter of each child's name, we coded the first sound–letter correspondence in the name. For each sound–letter correspondence in the set of participants' names (e.g., /k/–‹c›), we computed for each child a proportion of *plausible use*, or how often the child used the letter when spelling items that contained the sound. Consider a child who spelled six words that contained /k/ (e.g., *book, castle*, and *volcano*) and used ‹c› in the spellings of two of the words. The child's proportion of plausible use of /k/–‹c› was 2/6, .33. We also computed a proportion of *implausible use*, or how often a child used a letter for items that did not contain the corresponding sound. For example, the same child included ‹c› in the spellings of two of 18 words that did not contain /k/, including *ant, bear*, and *waterfall*. The child's proportion of implausible use of /k/–‹c› was 2/18, .11. Because plausible use of a sound–letter correspondence is higher than implausible use, the child seems to have used the letter to represent its sound rather than in a way that was not phonologically motivated. We asked whether the difference between the proportions of plausible and implausible use of a correspondence (e.g., /k/–‹c›) was higher for children whose name began with the correspondence (e.g., Campbell) than for children whose name did not begin with the correspondence (e.g., Dylan). Such a difference would suggest that the presence of a sound–letter correspondence in the first position of a child's name helps the child to use the correspondence in a phonologically appropriate manner when spelling other words. We also examined whether any such influence of children's first names on their appropriate use of correspondences differs in children with different spelling scores.

To summarize, we asked whether U.S. preschoolers acquire knowledge about the first sound–letter correspondence in their name that benefits their spelling of other words and, if so, at what point in spelling development these benefits are seen. If learning about the name is a rote process for learners of English or for children more generally (Campbell et al., 2019; Milburn et al., 2016), then we would not expect to find such benefits. If we do, this would support the analytic view of name learning: that names play a role in learning about how letters symbolize sounds and that children do not learn them as isolated orthographic forms.

Method

Participants

We used data from 565 preschool children (277 girls) who had participated in one of the nine studies conducted in our laboratory between 2003 and 2016. Data from an additional 14 children who

Table 1. Information about children in present study.

Measure	Mean	*SD*	Range
Age	4;7	0;7	3;2–6;3
Spelling score	.11	.21	–.10–.92
Number of items spelled that contained first phoneme of child's name	3.53	2.89	0–13
Number of items spelled that did not contain first phoneme of child's name	19.49	5.96	1–36

Table 2. Information about data sets analyzed in present study.

Data set	Number of items spelled	Type of items	Number of children
Pollo et al. (2009)	36	Mono- and disyllabic words and nonwords	51
Treiman et al. (2015)	24	Monosyllabic words	58
Zhang & Treiman (2015)	24	Words ranging from 1 to 4 syllables	73
Zhang & Treiman, unpublished	24	Same as Zhang and Treiman (2015)	76
Treiman et al. (2016), Experiment 1	20	Monosyllabic words	50
Treiman et al. (2016), Experiment 2	20	Mono- and disyllabic words	61
Treiman and Boland (2017)	24	Mono- and disyllabic words	119
Treiman & Boland (unpublished)	24	Monosyllabic words and nonwords	52
Treiman & Rosales (unpublished)	24	Monosyllabic words	25

participated in one of the studies but who did not produce any spellings with letters were not included in the analyses. The children lived in the St. Louis, Missouri, area. They attended preschool classes or daycare centers that did not offer formal instruction in reading or writing but that exposed children to storybooks and other written materials. We did not have access to information about family income or race, but the median household income of the zip codes in which the preschools or daycare centers was located was on average $68,101 for 2006 to 2010, higher than the national average of $50,938 (Michigan Population Studies Center, 2019). The schools served primarily White populations. The first line of data in Table 1 presents information about the children's ages. Although five of the children were 6;0 or older, none had yet started kindergarten.

Information about the original studies in which the children participated is presented in Table 2. We used data from both published and unpublished studies so that publication status would not bias the results. Studies in which children spelled both real words and nonwords were included because, if knowledge gained from the name influences the spelling of other items, the effects should be found for both words and nonwords. The studies were designed to test hypotheses other than the ones of interest here. Therefore, it is highly unlikely that children's use of letters from their names in spelling was influenced by possible expectations of researchers during stimulus selection or testing.

Parental informed consent and child assent were obtained at the beginning of the studies. Ethical review and oversight was provided by the Human Research Protection Office of Washington University in St. Louis, which conforms to U.S. Federal Policy for the Protection of Human Subjects.

Procedure and stimuli

In each study, children were tested individually in a quiet location of their school. Children were asked to try to write words and/or nonwords that were aurally presented to them. They were told not to be concerned if they did not spell like grown-ups do. An experimenter pronounced each item and asked children to repeat it and then try to write it. Children wrote with a large pencil on white paper. After they had finished writing an item, children were asked which letters they had produced. Letters that children verbally reported were used as their spelling responses. We used this procedure because children did not always produce well-formed letters and some of the letters they produced might not be recognized as the ones they intended to write. In most of the studies, children spelled one item at a time. In several studies (Treiman, Decker, Kessler, & Pollo, 2015; Treiman, Kessler, Decker, & Pollo, 2016; Treiman & Rosales, unpublished), children spelled words in pairs, writing the second word of a pair while their spelling of the first word was visible.

As shown in Table 2, each study included between 20 and 36 spelling items that were presented over the course of either two or three sessions. The words were ones that would generally be familiar to children in their spoken form but were not words like *mom* or *cat* that are among the earliest learned printed items. The last two lines of data in Table 1 provide information about the number of items spelled per child that did and did not contain the first phoneme of the child's first's name. Cases in which a child did not produce a spelling response to an item were not included in the analyses.

Coding and analysis

Computation of a child's spelling score

To measure the extent to which a child's spellings represented the phonemes of the target items, we used the Automated Measure of Phoneme Representation scoring system (Treiman & Kessler, 2004), which accepts phonologically plausible spellings of phonemes (e.g., ‹c›, ‹k›, and ‹q› for /k/) and letters that are phonologically justifiable on the basis of sounds in letters' names (e.g., ‹y› was accepted as a spelling of /w/ because its begins with /w/). The scoring procedure does not penalize extraneous letters, nor does it require letters to be in correct sequences. Using the computer program Ponto (Kessler, 2009), we counted one unit of distance for each letter addition that would be needed to transform a child's spelling to a phonologically plausible spelling of the item. The program computed the distance between a spelling response and each of its phonologically plausible spellings and used the lowest distance score. For example, the spelling of *bowl* as ‹bol› received a distance score of 0 because no addition is needed to make the spelling phonologically plausible. The spelling of *bowl* as ‹bli› received a score of 1 because it would require 1 addition to make the spelling phonologically plausible; the extraneous ‹i› did not change the score. The distance scores across all spellings a child produced were summed. In a Monte Carlo test, the program randomly rearranged the pairings between target words and the child's spellings 1,000 times. The program then recomputed the distance scores for the spellings as responses to these randomly paired words, which served as a measure of chance-level performance. The program computed the proportional difference between a child's original distance scores and the rearranged scores. This served as the child's spelling score for the study. As Table 1 shows, the children were on average about 11% better than would be expected by chance in representing the phonemes of the item. As would be expected, there was a positive correlation between children's age and their phonological spelling score ($r = .35$, $p < .001$, one tailed). Table 3 presents examples of spellings produced by children with different spelling scores.

Coding of use of first sound–letter correspondence in name

We coded the first sound–letter correspondence in each child's personal name or commonly used nickname. For instance, /æ/–‹a› was the first sound–letter correspondence in Abby and /k/–‹c› was the first sound–letter correspondence in Campbell. When a name began with a digraph (e.g., ‹th› in Theo), we coded the first letter of the digraph and the first sound of the name as the first correspondence (/θ/–‹t›) given that young children are likely to link the first letter of a digraph with the sound conventionally associated with the digraph (Treiman, 1993). A total of 44 sound–letter correspondences were obtained from the names of the participating children. Our subsequent coding and analysis were done at the level of sound–letter correspondences.

For each sound–letter correspondence (e.g., /k/–‹c›), we counted the number of items attempted by each child that contained the sound of the correspondence (/k/). Out of such items, we counted the number for which the child's spelling contained the letter of the correspondence (‹c›). We then computed a proportion of plausible use of the correspondence, that is, the proportion of items that included the phoneme (/k/) in which a child produced the letter of the correspondence (‹c›). We also calculated a proportion of implausible use of a correspondence, that is, the proportion of items that did not contain the sound in which the child used the letter of the correspondence (e.g., the proportion of items that did not contain /k/ in which the child used ‹c› for the /k/–‹c› correspondence).

Table 3. Examples of spellings produced by children with different spelling scores.

Child (first correspondence in name)	Spelling score	Stimulus	Response
Child 1 (/w/–‹w›)	.00	bite	‹wwww›
		dice	‹wiiwi›
		pony	‹wivi›
		pray	‹ow›
		try	‹woe›
		vote	‹willl›
Child 2 (/m/–‹m›)	.12	bug	‹mn›
		drop	‹i›
		macaroni	‹mo›
		motorcycle	‹mci›
		teacher	‹tm›
		thermometer	‹bam›
Child 3 (/l/–‹l›)	.26	bite	‹bes›
		daily	‹darlh›
		light	‹laeenei›
		nose	‹namic›
		tree	‹givr›
		pray	‹ken›

Analytic procedures

We conducted mixed-effects analyses using the R packages lme4 (Bates et al., 2014) and lmerTest (Kuznetsova, Brockhoff, & Christensen, 2015). The outcome variable was proportion of letter use, which was log transformed to make the distribution more normal. In our main model, presence of a phoneme–letter correspondence at the beginning of a child's first name (1 for first correspondence in child's name, 0 for other correspondences), presence of the phoneme in an item to be spelled (1 for presence, 0 for absence), child's spelling score, and all possible interactions between these variables were entered as fixed-effects variables. Child's spelling score was treated as a continuous variable and was centered to the grand mean. Because our research questions about differences among children involved their ability to represent phonemes in spelling and not their age, we did not include age in our models. A random intercept for the study in which the child originally participated was included to model variation in letter use across studies. Random intercepts for subject and by-subject random slopes for presence of correspondence at the beginning of child's name were also included in the model. There were random intercepts for correspondence and by-correspondence random slopes for presence of phoneme in an item. The inclusion of random intercepts for correspondence allows us to account for differences among sound–letter correspondences as a function of other factors, including the frequency of the correspondences and the letter's position in the alphabet. We can determine whether, once intrinsic differences among correspondences are taken into account, children who have a correspondence at the beginning of their name show a different pattern of letter use than children who do not. We determined the random effects structure by first fitting a model with all possible random effects parameters and then fitting models with successively fewer random effects parameters. We tested whether each such simplification was justified using likelihood ratio tests and used the model with the simplest random effects structure that was justified (Baayen, Davidson, & Bates, 2008).

Results

Table 4 shows the beta values, standard errors, and *p* values for our main model. The significant effect of presence of correspondence at the beginning of a child's name on proportion of letter use indicates that children who had a correspondence at the beginning of their first name (e.g., /k/–‹c› in Campbell) used the letter (e.g., ‹c›) more frequently than children who did not have the

Table 4. Results of mixed-model analysis.

Predictor	*b*	*SE*	*p*
Intercept	.114	.012	< .001
Correspondence at beginning of name	.136	.010	< .001
Presence of phoneme in item	.043	.008	< .001
Spelling score	−.014	.012	.249
Correspondence at beginning of name × spelling score	−.331	.049	< .001
Presence of phoneme in item × spelling score	.417	.008	< .001
Presence of phoneme in item × correspondence at beginning of name	.017	.012	.152
Presence of phoneme in item × correspondence at beginning of name × spelling score	.283	.057	< .001

correspondence at the beginning of their name (e.g., Daniel). This tendency to use the first letter of the name when spelling other words was less pronounced among better spellers than among poorer spellers, as reflected in the significant interaction between presence of a correspondence at the beginning of child's name and spelling score.

As the table shows, there was also a significant effect of presence of phoneme in an item. As a group, children used a letter (e.g., ‹c›) more often if its corresponding sound was present in an item (e.g., *castle*) than if its sound was not present (e.g., *bear*). Although the main effect of spelling score was not statistically significant, the interaction between presence of phoneme in an item and spelling score was significant. Children with higher spelling scores were more likely to use a letter (e.g., ‹c›) in a phonologically appropriate manner – that is, using the letter when its corresponding sound was in an item (e.g., *castle*) but not when its corresponding sound was not in an item (e.g., *bear*) – than children with lower spelling scores. This result suggests that our spelling score worked as intended to reflect the extent to which a child used phonologically appropriate letters to represent the sounds in the items.

The interaction between presence of phoneme in an item and presence of a correspondence at the beginning of a child's name was not significant. Critically, however, the three-way interaction involving presence of phoneme in an item, presence of a correspondence at the beginning of a child's name, and spelling score was significant. According to this interaction, the tendency to use a sound–letter correspondence appropriately more often when the correspondence was at the beginning of the name than when it was not present was stronger in better spellers than in poorer spellers.

Figure 1 illustrates the three-way interaction as predicted by the model. It depicts the effects of presence of correspondence at the beginning of a child's name and presence of phoneme in an item for three different spelling scores, 0, .11, and .22. These three specific spelling scores were used for the purpose of illustrating the effects. The spelling score of 0 was chosen for the illustration because a child with this score would be one who used letters that represent the sounds in words in a phonologically plausible manner no more often than expected by chance. The score of .11 was the mean spelling score of our sample of children. As Figure 1 shows, children with a spelling score of 0 were more likely to use the letter in the first correspondence of their name than other letters. However, the proportion of plausible use of a correspondence was similar to the proportion of its implausible use. This pattern held true for both the first correspondence of the name and other correspondences. Children with spelling scores of .11 and .22 were also more likely to use the first letter of their name than other letters, although this tendency was smaller in these children than in children with a spelling score of 0. These children tended to use a correspondence more often when its sound was present in items than when it was not, and this tendency was stronger in children with a spelling score of .22 than in children with a score of .11. Importantly, among these children with higher spelling scores, children who had a correspondence at the beginning of their names (e.g., /k/–‹c› in Campbell) were more likely to use the letter in a phonologically appropriate manner than children who did not have the correspondence at the beginning of their names (e.g., Daniel). As the figure shows, and as supported by the significant three-way interaction, this name advantage in appropriate use of

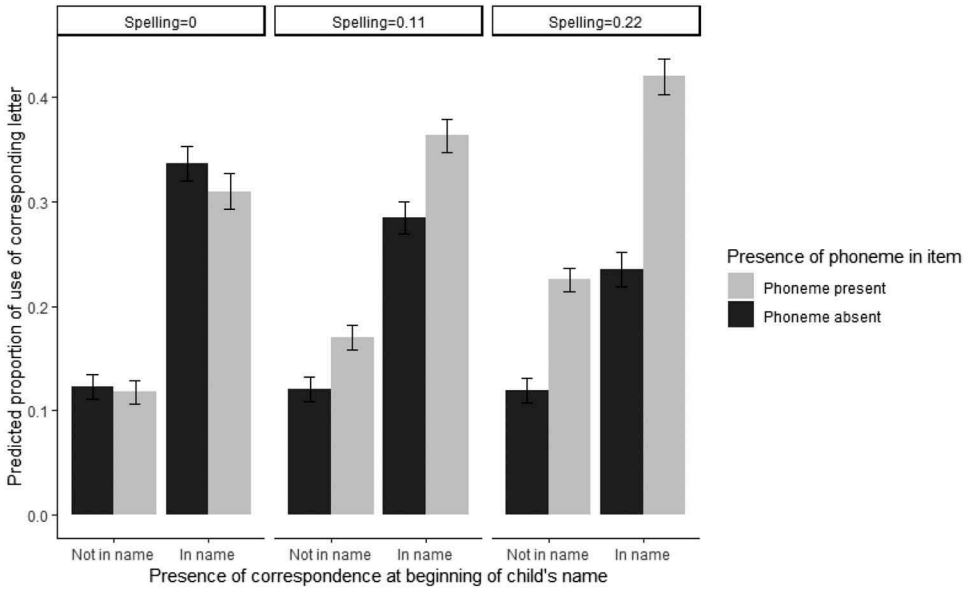

Figure 1. Predicted proportion of use of letter as a function of presence of correspondence at the beginning of a child's name and presence of phoneme in an item for children with spelling scores of 0, .11, and .22.

a correspondence was greater in children with a higher spelling score than in children with a lower spelling score.

To test the possibility that the increase in the advantage of name-correspondences in plausible letter use levels off in children with more advanced phonological spelling skills, we examined possible effects of the quadratic term of spelling score in a secondary analysis in a secondary analysis. We entered as fixed effects linear spelling score, quadratic spelling score, presence of phoneme–letter correspondence at the beginning of a child's name (1 for first correspondence in child's name and 0 for not first correspondence in child's name), presence of the phoneme in an item (1 for presence of phoneme in item and 0 for absence of phoneme from item). We also included all possible interactions between each of the two spelling score terms (linear and quadratic) and the other fixed-effects variables. The random effects structure was the same as in our main model. The estimates for the main effects and interactions involving presence of correspondence at the beginning of name, presence of phoneme in item, and linear spelling score were similar to the ones reported for our main model. The most critical result of this secondary analysis is that the three-way interaction between presence of a correspondence at the beginning of a child's name, presence of phoneme in an item, and quadratic spelling score was not significant ($b = -.264$, $SE = 0.244$, $p = .280$). Together, the linear and quadratic effects of spelling score show that children's tendency to use a sound–letter correspondence appropriately more often if the correspondence was at the beginning of their names than if it was not at the beginning of their name was larger if their ability to spell phonologically was more advanced. The increase was similar across the range of spelling scores that we examined; even our particularly advanced spellers showed a name advantage in appropriate use of sound–letter correspondences.

Discussion

Children in the U.S. and many other countries learn about the spellings of their first names or commonly used nicknames from an early age. According to the rote view of name learning, children

learn about the name in a rote, mechanical manner (Campbell et al., 2019; Milburn et al., 2016), not learning sound–letter correspondences from the name that they can apply to other words. That is, learning the spelling of the name is isolated from the learning of other words and does not help children with the alphabetic principle that, according to theories of literacy development (e.g., Ehri, 1986, 2015), is so important in learning to read and write. Although the results of Treiman and Broderick (1998) with U.S. preschool children are consistent with the rote view of name learning, work with Dutch children by Both-de Vries and Bus (2008, 2010) supports the analytic view: that children gain knowledge about sound–letter correspondences from their name and use this knowledge to help spell other words.

Do the different results that have been reported for learners of Dutch and learners of English reflect the simpler sound-to-spelling links of the Dutch writing system? To find out, we conducted analyses similar to those of Both-de Vries and Bus (2008) with a large sample of U.S. preschoolers. For the most part, our results with learners of English were similar to the results of Both-de Vries and Bus with learners of Dutch. The less skilled spellers in our sample, with spelling scores of around zero, did not show a name advantage in use of sound–letter correspondences. These children appeared to use correspondences plausibly as often as implausibly, and this was the case both for the first sound–letter correspondence in their name and for other correspondences. Children who scored higher on our measure of phonological spelling showed a different pattern of performance. Among these children, those who had a correspondence at the beginning of their name (e.g., /k/–‹c› for Campbell) used the correspondence appropriately more often than children who did not have the correspondence at the beginning of their name (e.g., Daniel). This name advantage was greater in children with higher scores on our measure of phonological spelling than in children with lower spelling scores. These results suggest that, as U.S. children begin to represent some of the sounds in words in their spelling attempts, they show an advantage for the sound–letter correspondence at the beginning of their name. Even in English, with its complex writing system, children show some transfer of sound–letter correspondences from the name to other words. Learning the name, it appears, is not purely a rote process.

Although the present results with learners of English were largely similar to those of Both-de Vries and Bus (2008) with learners of Dutch, there was one important difference. In our study, children's tendency to use the first sound–letter correspondence in their name more appropriately than other correspondences increased as a function of spelling score. It did not level off as children's phonological spelling got more advanced, as the results of Both-de Vries and Bus suggest. The group of relatively advanced phonological spellers examined by Both-de Vries and Bus was quite small, however. The present study, with its larger sample size and its continuous measure of spelling ability, suggests that the first correspondence in the name influences use of sound–letter correspondences throughout preschool.

Why did the present study find support for the phonological view of name learning for U.S. children whereas the study by Treiman and Broderick (1998) did not? We cannot be sure, but there are several possibilities. One possibility is that the relatively small number of participants in the spelling task of Treiman and Broderick, 47, did not allow the researchers to see significant name-related effects but that such effects would have emerged with a larger sample of children. It is also possible that the informal literacy instruction that children receive at home or in preschool influences their ability to use the sound–letter correspondences of their name. Huang et al. (2014) related the name-letter advantage that they found in the letter-sound task of their study to the fact that the preschools their participants had attended gave children many opportunities to associate the first letter of their name with its sound. Transfer of sound–letter correspondences from the name to other words may be less likely if parents and teachers treat name writing as a mechanical skill.

Although the main questions of the present study concerned children's ability to use name-letters in a phonologically appropriate manner, we also found that children whose name began with a letter were more likely to use that letter in their spelling attempts than children whose name did not begin with the letter. For example, as Table 2 shows, a child whose name began with ‹w› wrote ‹wilwi› for

dice, ‹woe› for *try*, and ‹willl› for *vote*. The child's spelling attempts did not represent the sounds in words beyond the level expected by chance, but the child frequently used the letter ‹w›. Such overuse of name-letters among young children is consistent with previous reports (Bloodgood, 1999; Kessler, Pollo, Treiman, & Cardoso-Martins, 2013; Pollo et al., 2009; Treiman, Kessler, Boland, Clocksin, & Chen, 2017). Our results suggest that the tendency to overuse the first letter of the name is smaller among children with better phonological spelling skills than among children with poorer phonological spelling skills, consistent with the findings of Both-de Vries and Bus (2008) and Treiman, Kessler, and Bourassa (2001). However, this tendency is still present among more advanced preschool spellers.

Some limitations of the current study must be considered before drawing conclusions. One limitation is that the study was cross-sectional. Future studies could test children longitudinally to examine how their experiences with their names influence their use of sound–letter correspondences as their phonological spelling ability improves. Another limitation of the present study is that most children did not spell many words that contained the first sound–letter correspondence of their name. The large number of participants helps mitigate this concern, but future studies might ask children to spell items tailored to their names, as Both-de Vries and Bus (2010) and Treiman and Broderick (1998) did. It would also be useful to collect information about parents' and teachers' practices surrounding children's names and to examine later sound–letter correspondences in children's names and correspondences in the names of close friends or family members. Effects are likely to be smaller than for the first correspondence of the name, given the personal importance of the name and the salience of its initial letter (e.g., Both-de Vries & Bus, 2008; Huang & Invernizzi, 2014; Treiman & Broderick, 1998), but some effects might be found.

Conclusions

The present results shed new light on early literacy development and how it is influenced by children's experiences with a word that is highly important to them, their own first name. The findings suggest that children who are at different points in the development of phonological spelling ability have different types of knowledge about name-letters and that this knowledge influences their spelling of other words in different ways. Children who have not yet begun to use letters in a phonologically appropriate manner are often familiar with the shape and the name of the first letter of their name. They are likely to use this letter when writing other words, regardless of whether such use is phonologically appropriate. Children who have begun to grasp the alphabetic principle and use it in spelling learn about the sound-symbolizing function of the first letter of the name. This helps them to produce phonologically motivated spellings of other items that contain the sound and to produce more advanced spellings of these items than of others. These differences among items are important for assessment, for one may get a different idea of Dave's ability to represent phonemes in spelling if one examines his spellings of words like *doll* and *dump* than if one examines his spelling of other words. The differences are also important theoretically, for they provide one reason for the variation in phonological quality that is often observed among a child's spellings at a given point in time. Such variations are acknowledged in phase theories of literacy development (e.g., Ehri, 1986, 2015), but there has been little study of the reasons behind them. Learning the spelling of the name is thus not a rote process that is isolated from the learning of other words. Learning the name can help children learn and apply sound-to-letter correspondences, and parents and early childhood educators can take advantage of children's names to foster literacy development.

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