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Waldron, S. and Wood, C.

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University at Albany, State University of New York, USA

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Textism Use and Language Ability in Children

Sam Waldron
Coventry University, UK

Clare Wood
Coventry University, UK

INTRODUCTION

Textisms, textese and text speak are all different ways in which current literature refers to the phenomenon of writing in shorthand within the confines of a text message or SMS (Crystal, 2008; Plester, Wood and Bell, 2008; Wood, Kemp & Plester, 2013.) Originally this developed as a way to save space in order to fit more information within an SMS to save on the cost of sending multiple messages (Mose, 2013). With the popularity of contract phones increasing (Ofcom, 2013) the cost of sending individual texts has decreased, yet textism use is still popular due to the social affordances it offers such as social belonging (Thurlow, 2003), the ability to express oneself (Plester, Wood & Joshi, 2009) and fun from 'playing' with language (Crystal, 2008). The popularity of texting has been declining in the UK since the beginning of 2012 (Ofcom, 2013) however, textism usage is apparent in other media such as instant messaging, e-mails and social networking (Ling & Baron, 2007). Due to the increase in smartphone ownership usage of these media is also increasing (Ofcom, 2013.) Thus, despite the receding popularity of texting, it seems that textism usage is here to stay.

When we look at the way in which texting shorthand is written we find that it is often likened to spoken casual language (Thurlow, 2003). Thurlow (2003) examined a corpus of teenager's text messages and found that not only did texting reflect spoken language but that some also followed differing language conventions. Thurlow (2003) created a coding scheme to describe the differences between textism types, this included:

- Shortenings, where word ends are omitted e.g 'Mon' for 'Monday',
- Contractions, where vowels are omitted from the middle of words e.g. 'txt' for 'text',
- G-clippings, where the 'g' is left off word endings e.g. 'goin' for 'going',
- Other clippings, where other letters are left off word endings e.g. 'hav' for 'have',
- Initialisms, where sentences are shortened to the first letter of each word e.g. 'lol' for 'laugh out loud',
- Acronyms, these are similar to initialisms, but are considered acceptable in formal English e.g. 'BBC' for 'British broadcasting',
- Letter/number homophones, these use numbers or individual letters to represent sounds in words e.g. '2night' for 'tonight,' or 'u' for 'you',
- Non-conventional spellings, these are words with differing orthography to the formal version of the word, but with intact phonology e.g. 'nite' for 'night',

- Misspellings/'typos', are words which appear to have been attempted correctly, but do not have either the correct orthography or phonology e.g. 'rember' for 'remember',
- Accent stylization, this refers to a word which is written in the same way as one would speak it out loud e.g. 'gonna' for 'going too'.

From the above list we can see that accent stylization is the category that most represents casual spoken language. Initialisms and acronyms however, follow conventional English language rules which have been popular throughout history (Baron, 2003; Crystal, 2008). Contractions, shortenings and clippings all rely on an understanding of how conventional English works also, for instance you must know the whole word correctly before you can begin to take parts out. Letter/number homophones and non-conventional spellings are some of the most common types of textism children use (Plester, Wood and Joshi, 2009) and they both rely heavily upon phonetic knowledge. These phonetic textisms rely heavily on English language ability; in order to decode these words, or create them; you must first have good knowledge of letter-to-sound mappings.

Dr. Crispin Thurlow (2003) and Dr Beverly Plester (2008) were pioneering scholars when it came to looking at how and why people use textisms. Since then, there have been several researchers that have come to the forefront in research examining the impact of texting upon language, these include Dr Nenagh Kemp, Dr Richard Ling, Prof Clare Wood, Dr Larry Rosen and Dr Michelle Drouin.

OVERVIEW

As textisms rely heavily on language conventions (even if they are untraditional) it seems that they could cause problems for individuals who have trouble understanding language or who have not yet developed in their own understanding of language in terms of grammar, word structure and phonetics. Textism usage has been repeatedly debated in the media (Crystal, 2008) in terms of its effect on reading, spelling and grammatical abilities; this in turn has prompted several researchers to look at the effects objectively. Much of the research has been conducted with children and teenagers as this age group appears to text most frequently (Lenhart, Ling, Campbell & Purcell, 2010) and they are still acquiring written language competency (Snow & Marian, 1978.)

Being able to use textisms can be likened to learning a second language (Berger & Coch, 2010); it has been found that when fluent texters read textese, similar parts of the brain are activated as when bilinguals read in their second language. This suggests that frequent textism users may be similar to bilinguals, for example they may be better at code switching between languages (Heredia & Altarriba, 2001). Evidence supporting this comes from Grace, Kemp, Martin & Parrila (2013) who found that undergraduates were knowledgeable of which situations textism use was appropriate in, and that they could code switch as needed dependent upon the message recipient.

Past research has failed to show any consistent negative effects of textism usage on children's written language abilities; for instance Plester, Wood and Bell (2008) examined 11-12 year olds in terms of their textism densities and cognitive ability scores. Those who texted the most had poorer ability scores, however when textism use was looked at instead of frequency of text messaging, the relationship disappeared. Textism density was related to both better verbal reasoning and spelling abilities. It was theorized that these positive relationships arise from several factors, the first is 'exposure to print' (Wood et al. 2011); as children text more, they engage more with language and become more familiar with it. For instance a child may not read a book at home, but if they are texting frequently then they are at least being exposed to more written words. However, subse-

quent research by Wood, Jackson, Hart, Plester & Wilde (2011) could find no evidence to support an exposure to print argument. Positive attributes are also considered to arise from the added practice with phonic skills that textisms give; despite many textisms having altered orthography, their phonology is intact e.g. 'rite' for 'right.' There is no standard texting lexicon (Baron, 2003) thus the more you text the more likely you are to be exposed to the same word written in multiple ways (e.g. 'tomorrow' '2moz' '2morrow',) this in turn should strengthen phonologic knowledge through practice of decoding skills. Plester et al (2009) examined this by including a phonological measure in their study. They looked at 10-12 year olds textism use (written in response to a hypothetical situation) and found that those who used most textisms had better word reading, vocabulary and phonology. This supports the idea that phonology is linked heavily to the decoding and creation of words in textisms. Wood, Meacham, Bowyer, Jackson, Tarczynski-Bowles and Plester (2011), furthered this point from their longitudinal study with 8-12 year olds. They found that after controlling for phonological ability, verbal IQ and spelling ability at the start of an academic year, by the end of the same year textism use could predict differences in spelling growth. This finding was one-directional, meaning that textism use improves spelling but good spelling does not increase textism usage. Evidence also suggests that exposing children to texting who have never used it before experience a benefit in terms of spelling ability (Wood, Jackson, Hart, Plester & Wilde, 2011.)

CURRENT SCIENTIFIC KNOWLEDGE IN TEXTISM USE

Due to the fact that textism use is so pervasive in children's everyday lives, it is important to also consider how it affects those who are not developing typically.

Good vs. Poor Readers

As discussed in the overview, it seems that children who are better at verbal reasoning skills find it easier to create and decode textisms. Another important factor that needs to be considered is reading. Perea, Acha & Carreiar's (2009) eye tracking study found that even for individuals who were familiar with textisms, there was a cost associated with reading in this style, in comparison to traditional English. Textisms when read, were less likely to be skipped (in comparison to the traditional form of the word), took longer to read and were more likely to be subject to forwards/backwards fixations; this leads to the conclusion that textisms are harder to read. The reason for this difficulty could be due to extra demands on phonological processing as individuals are not able to recognize words as easily by sight, or due to the fact they must work out which letters are being missed (in the case of contractions, shortenings and clippings.) Phonological abbreviations had higher costs than orthographic abbreviations; this may be due to interference from similar orthographic forms. If textisms are harder to read despite levels of textism knowledge, this suggests that poor readers will struggle significantly with this form of communication. Coe and Oakhill (2011) examined 10-11 year olds, and found that better readers unsurprisingly were significantly faster at reading text messages than poorer readers. These students were also given a scenario in which they had to construct text messages as they would in real life. Good and poor readers did not differ significantly in terms of the number of messages received and sent, but better readers used significantly more textisms than poorer readers. This is likely to be due to the fact that better readers can use the linguistic rules that textisms follow, thus can code and decode words more easily. If poor readers struggle with textisms, then it is likely that students who suffer from developmental language problems will suffer more so.

Dyslexia and Texting

Dyslexia is characterised by poor reading, spelling and writing. As seen from the previous sections, those who are poorer readers (Coe & Oakhill, 2011) and those who are poorer at spelling (Plester et al, 2008) find texting harder. Dyslexia can be characterised using a dual route model of reading (Coltheart et al, 2001), which states that individuals have two routes to access word knowledge, either via orthographic representations or phonological representations; dyslexic individuals can have a deficit in either one or both of these routes. Texting relies heavily on phonological knowledge, which means that dyslexic individuals with phonological deficits will struggle to create and understand certain types of textisms, mostly those which fall into the categories of letter/number homophones and non-conventional spellings. Dyslexic individuals who experience problems with orthographic representations are also likely to have difficulty accessing textisms which are 'sight read' such as symbols and initialisms. This suggests that children who experience dyslexia will have more difficulty with textese as a language in comparison to typically developing children. Veater et al, (2011) examined 10-13 year olds with dyslexia and compared them to two control groups; one reading age matched group and one chronological aged matched group. All three groups sent similar amounts of text and had broadly similar textism ratios. However, within these ratios, there was a clear preference for dyslexic children to use non-phonetic textisms, opting for initialisms and symbol use. This suggests that this group will not benefit from the additional phonological practice afforded by phonetic textism use. This is further supported by the fact that Veater et al (2011) found positive correlations within both control groups between textism use and phonologic awareness. Only one textism type was significantly correlated with literacy outcomes for the dyslexic group ('other clippings'); we theorise that dyslexic individuals have difficulty with this style of writing due to the fact that it relies on the omission of letters that provide no extra phonological information. Thus those dyslexic students with more phonological ability can remove redundant letters more easily. A problem however arises from this study due to the fact we cannot be sure if the dyslexic students intended to spell words incorrectly in a way which may be interpreted as a textism, or if they reflect the poor spelling ability of this group.

A French study by Simoës-Perlant, Thibault, Lanchantin, Combes, Volckaert-Legrier & Largy (2012) attempted to overcome this problem. A repeated measures dictation task was used on typically developing children and dyslexic children. They were required to write down two paragraphs, one in a formal style and one in a textese style, these were then compared to see if errors were intentional or not. For this sample typically developing writers used more textisms than dyslexic individuals; the reason that Veater et al (2011) may not have found this result is due to the fact they could not determine the difference between intentional and unintentional textisms. Further analysis of Simoës-Perlant et al (2012) revealed that typically developing individuals were significantly more likely to use contraction textisms than dyslexic individuals; this can be explained by the fact dyslexic individuals have trouble playing with word sounds and phonetically reducing the number of characters.

Overall, while it seems that there is currently no evidence of a negative effect of textism use on dyslexic individuals, it does seem that dyslexic individuals do not gain any positive benefits from playing with phonology. With regards to Coltheart et al's (2001) dual route model of reading, it seems in terms of texting it is the phonologic route which causes most disruption for dyslexic individuals. However, this may be because neither of the above studies explored the different types of dyslexia which may have been present within their samples. Schneps, Thomson, Chen, Sonnert & Pomplun (2013), have also shown that dyslexic individuals can benefit from reading on a smaller screen such as a phone in comparison to paper-based alternatives. Due to the fact that dyslexic

individuals have a diminished visual attention span, the small screen on these devices presents information in manageable chunks improving both speed and comprehension. It seems that digital devices could help dyslexic individuals in the future.

Specific Language Impairment (SLI) and Texting

SLI refers to the developmental disorder where individuals have difficulties with language which cannot be explained by IQ, sensory impairment or neurological damage. Conti-Ramsden, Durkin & Smith's (2010) study found that SLI adolescents were much less likely to text than their typically-developing counterparts. Durkin et al (2011) followed up this study by examining SLI adolescents with expressive and/or receptive language problems. They found that once again adolescents with SLI were less likely to reply to SMS messages than age matched peers; those with SLI that did respond had higher reading abilities, but these messages were still shorter and contained fewer textisms than those sent by their typically developing peers. Punctuation usage across groups was similar, suggesting that it is textism usage that these individuals have trouble understanding rather than grammar. Once again research suggests that this subgroup of children do not suffer negative consequences due to texting, but do not get the same benefits from it as typically developing children. Due to the fact that SLI children do not text as often they are exposed to less print. Also, as they prefer to use fewer textisms they play less with phonology, thus these representations are not being strengthened in the same way as their peers. The reason this group may reply to SMS messages less frequently could be due to a lack of understanding. However, it has been suggested by some that new-media communication is easier for those with language impairments in comparison to face-to-face situations, due to the reduced pressure of immediate speech and processing (Durkin, Conti-Ramsden & Walker, 2010.) It is

suggested that carers advocate a joint approach to new-media (Durkin & Conti-Ramsden, 2013) where they engage with both the child and technology at the same time, in order to motivate and facilitate learning in new environments. There is much potential for new-media such as texting to provide a gateway into language learning in a fun and applicable way for these children, which is something future research needs to consider.

Non-Developmental Disorders and Texting

Texting is also used by adolescents with non-developmental language disorders, such as deafness. Okuyama (2013) analysed a corpus of sent messages by deaf students and found that they used several textisms similar to hearing adolescents, including initialisms, accent stylization, contractions and letter/number homophones. Grammatical structure in deaf SMS messages also represented the same grammar structure used in American Sign Language. This study shows not only that texting can be used by children with language disorders easily for communication, but it also shows that the way in which we originally learn grammar impacts upon our later grammatical choices when texting (rather than vice versa); as can be seen from differences in structure between deaf and hearing individuals. This is supported by other research which has shown texting to have no significant links with grammatical ability in children (Wood, Kemp, Waldron & Hart, 2014). Text messaging can also benefit others who suffer from speech and language disorders, such as those with Broca's Aphasia (Beeson, Higginson, Rising, 2013). A case study of an adult with this condition found that training in texting on a phone keypad helped to improve spelling and word naming abilities, further showing that those with non-developmental disorders are not harmed by texting, but can in fact use it as a tool to access language when non-traditional methods have failed.

FUTURE RESEARCH DIRECTIONS

We have relatively consistent evidence that texting, and use of texting slang in particular, does not harm children's language abilities. Children are also highly motivated to engage with this technology; for this reason we believe that texting and textese are here to stay. Due to the increase in using textese in other formats such as instant messages, Facebook, Twitter and other social networks (Drouin, 2011) it is important that future research considers the impact across media, to see if these are all used for the same purposes and if language use in different digital media has any impact upon formal language abilities. Future research should also address the impact of device type: individuals who type on a traditional numerical keypad tend to use more letter/number homophone, less punctuation and are more likely to make misspelling errors, although they still use other textisms (Kent & Johnson, 2012). This means that differences in phone type could change the way in which children write in not only text messages but also other media which they access via their phones such as Twitter.

Future research also needs to build on the idea of using text messaging as a tool to help improve language. Not only has mobile learning been shown to be an effective tool for learning foreign languages (Thornton & Houser, 2005) and helping those with speech disorders (Beeson, Higginson, Rising, 2013) but, also where children have been given a mobile phone for the first time there has been some evidence of impact on spelling ability (Wood, Jackson, Hart, Plester & Wilde, 2011). Use of mobile phones also has the potential to help dyslexic individuals with their reading, due to the reduced visual attention required for screen reading (Schneps et al, 2013.) These studies all show the potential for text messaging and textese to help individuals with language. We need further controlled studies in order to examine the full benefits this medium may offer.

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KEY TERMS AND DEFINITIONS

Dyslexia: A developmental disorder which is characterised by poor reading, writing and spelling.

Orthography: The representation of sounds via written letters.

Phonics: The auditory sounds that letters or groups of letters make.

Specific Language Impairment: A developmental disorder where individuals have difficulties with language which cannot be explained by IQ, sensory impairment or neurological damage.

Textese: The short hand way an individual writes, within the context of a text message.