

9 'Texting makes you illiterate'

As social beings, humans are deeply invested in communicating with each other. As a result, we shouldn't be surprised that many technological developments are related to communication, and more specifically to language. Some language-related technologies are so old that we hardly think of them as technology at all – writing itself, for example. At the other end of the spectrum, we're highly sensitive to the newest technologies, such as various forms of electronic media.

When we use some technology to transmit language, its form isn't neutral: it shapes *how* we say things, and therefore also potentially *what* we say. It matters, for example, that writing (but not speech) is permanent, that it can be revised and edited, and that it carries only limited information about tone of voice. Telephone and radio transmit audio but not video; the listener has access to the voice but not to nonverbal cues. Telegrams used to be priced by the word, which encouraged senders to use as few words as possible in what became the classic 'telegraphic' style.

When a technology becomes widespread enough, it's theoretically possible that it could influence people's language even when they're not actively using the technology. In other words, a society might adopt a particular technology and find that its use of language in general changes as a result. In this chapter, we will explore popular worries along these lines related to technologies old and new. In a modern context, we'll focus particularly on text messaging, for three reasons: at the time of this writing, texting is a source of considerable public angst; many of the linguistic phenomena associated with text messages are actually characteristic of digital communication more generally; and there exists a body of scholarly literature on the topic. We will conclude with a look at several studies that investigate whether there's a connection between text messaging behavior and literacy skills.

9.1 Reactions to new and old technologies

Any new technology will be met with a mix of enthusiasm and trepidation. Baron (2009) describes how writing itself, which today we take for

granted, was greeted with suspicion in many quarters: Plato, for example, worried that the written word was incapable of the kind of back-and-forth that characterized face-to-face communication, and that those who relied on writing would not properly exercise their memories. Clanchy (2013) documents medieval England's reliance on memory and living witnesses instead of written documents, especially in an age when it was extremely difficult to distinguish authentic from fake documents and most people were illiterate anyway. Technical means of writing, too, have evolved over time, and not every innovation is immediately embraced. The humble pencil is in fact a feat of engineering, and Petroski (1989, 178–179) notes that pencils with erasers attached were criticized by some who argued that students would have no motivation to avoid mistakes if they could correct them easily.

None of this means that we should embrace every new technology uncritically. Rather, it's useful to remind ourselves that both wild enthusiasm and abject fear are natural reactions to new and disruptive ways of communicating. The only sure way to discover the true effects of a particular technology, for good or for bad, is to go out and observe what happens when people actually use it.

9.1.1 The telegram

The electric telegraph was the first technology that let people transmit written messages quickly over long distances; it came into widespread use in the second half of the nineteenth century. Someone who wanted to send a telegram would write out the desired message, which was then transmitted via Morse code by a series of telegraph operators to its intended destination. Because telegraph companies charged by the word, users quickly learned to economize. Messages were phrased to be as short as possible; social formalities (use of titles, opening address as in a letter, and so on) were reduced or dropped entirely; function words (such as *the*, *a*, *be*) were omitted whenever possible. Entire industries developed codes so that common messages could be represented by a single word.

As a characteristic 'telegraphic style' became established, and as large numbers of people started using it regularly, concerns began to arise that language as a whole might be affected. O'Brien (1904), for example, worries that a person might be reluctant to send uncommon words by telegraph for fear that they would be misinterpreted somewhere along the line.

He will not, for example, send the word "prevision," because somebody who handles the word on its journey would be almost sure to change it to the more familiar "provision." Whenever two words are thus closely alike, one in common use and the other rare, only

the former can with thorough safety be sent by telegraph. The wires are thus constantly shrinking the popular vocabulary....

O'Brien (1904, 468)

(See Liberman 2011 for more examples.) Naturally, not everyone agreed with this negative view of the telegraph; we can also find praise for the way the telegraph encouraged brevity and precision. An anonymous writer argued in 1848 that telegraphic language would improve literature:

Now the *desideratum* of the Telegraph – the great question most important to all who have any connection with it, is this – *How can the greatest amount of intelligence be communicated in the fewest words?* Is not this the very question which has been for centuries theoretically proposed by scholars as the ultimatum of language?... Every useless ornament, every added grace which is not the very extreme of simplicity, is but a troublesome encumbrance....

When a half column or more of every paper in the Union is filled with Telegraphic despatches; when these reports form a large part of the daily reading of thousands; when correspondence is hourly prepared and revised, throughout the whole extent of the United States, with a view to telegraphic transmission, is it too much to expect that this invention will have an influence upon American literature; and that that influence will be marked and permanent, and withal salutary?

'Influence' (1848, 411–412)

In retrospect, of course, we know that the telegraph was a herald neither of doom nor of utopia. (The essay just quoted, in fact, ends with such an over-the-top vision of the telegraphic future that one suspects it is a work of satire.) The telegraph is an especially instructive example because it's similar in several ways to the modern abomination of text messaging. Both encourage brevity – telegrams because each word represented an additional charge, text messages because each character requires a non-trivial amount of effort and space is limited. Indeed, many of O'Brien's fears wouldn't look out of place if we replaced the word 'telegram' with 'text message', especially when he refers to it as a 'new system of abbreviated writing' (467).

Today, of course, telegrams are no longer widespread; due to competition from more convenient forms of communication, many telegram services have stopped operating entirely. Given its similarity to the dreaded text messaging style, has the decline of the telegram led to general rejoicing and sighs of relief? Not at all. When Western Union sent its last telegram in 2006, there was an outpouring of nostalgia for a lost era and the distinctive style of telegrams.

Along the way, the telegram created a new and innovative form of communication, concise and heavily reliant on abbreviated phrases and punctuation in order to save cost. The best of them read like poetry.

Buncombe (2006)

Stories of famous telegrams are repeated as examples of ingenuity, including the probably apocryphal example of a writer who inquired about the sales of his latest book with the telegram ? and received a / in reply.

Despite early worries, few people today would argue that the telegraph had a revolutionary effect on general language use – certainly not an impact on the scale feared by modern skeptics of text messaging. What is feared in one generation may be revered in the next.

9.1.2 Text messaging

Ya got trouble, right here in River City,
With a capital T, and that rhymes with P, and that stands for Pool.

'Ya Got Trouble', *The Music Man*

The modern technology most similar to the telegraph is text messaging: sending short messages of written text between mobile phones. In its earliest days, a number of factors conspired to encourage abbreviations in text messages:

- Text messages were limited to 160 characters; abbreviations allowed the user to fit more words into a single message.
- Many mobile phone plans charged by the text message, giving users an incentive to condense their conversations into as few messages as possible.
- Typing a text message was laborious and time-consuming; most letters, and all non-alphanumeric symbols, required several keystrokes. Phones' small screens made it hard to see more than a few words of the message at a time.

Many developments since the earliest days of text messaging have reduced the 'cost' of each character in a text message in terms of space, price, or labor: larger keyboards, predictive software, and so on. Nevertheless, abbreviation remains a device that is firmly associated with text messaging, and a person with a new phone and an unlimited texting plan may use abbreviations even when they're not strictly necessary.

As documented by Thurlow (2006), reactions to text messaging – at least in the popular media – are overwhelmingly negative and often practically apocalyptic in tone. Like Harold Hill, commentators warn that there's trouble in River City – with a capital T, and that rhymes with P, and that stands for *Phone*. 'Textese' is described as a new language of young people, one so riddled with shorthand that it's impossible for non-initiates to decipher. This new language has no intellectual or literary value; Sutherland (2002) describes it as 'bleak, bald, sad shorthand' and says that it 'masks dyslexia, poor spelling, and mental laziness'. Newspaper articles regularly feature teachers who are disturbed

to see texting abbreviations showing up in their students' writing. If the trend continues unchecked, future generations will be unable to write properly or read more than a few sentences at a time.

Has text messaging doomed us all, or is it destined to leave hardly a trace on the broader language – or does the truth lie somewhere in between? There are at least two ways we can go about investigating this question. The first is to examine what text messaging actually looks like in practice. What exactly are these abbreviations that are the cause of so much concern? Are they qualitatively or quantitatively different from existing modes of abbreviation in speech or writing? Are they obviously reduced and inadequate representations of language, or is there reason to believe they might involve linguistic sophistication and creativity in their own right?

The second way to study the effects of text messaging is much more direct. If texting harms your language skills, then it should be possible to verify experimentally what is reported anecdotally: people who text more often, or use more abbreviations, should be worse readers and writers. After a survey of some of the linguistic features of text messages, we will turn to real-world studies of the connection between texting and literacy.

9.2 Text message abbreviations

Linguistically, text messaging practices offer a rich field of study. Researchers might ask questions about the linguistic organization of text messages at all levels: word choice, sentence structure, use of features from standard vs. non-standard dialects, similarity to speech vs. writing, discourse organization, and so on. Popular discussion of the language of text messaging, however, is overwhelmingly concentrated on abbreviations; this will be our focus here.

9.2.1 Types of abbreviations

When applied to text messaging, the term *abbreviation* actually covers a wide range of things. What these phenomena generally have in common is that the 'abbreviated' form is shorter (i.e., has fewer characters) than the same message would have if it were written in formal orthography. The following list is a general overview of abbreviatory techniques that are frequently associated with text messaging; it isn't the only way to classify these techniques, and of course not every texter uses abbreviations of every (or any!) type.

Abbreviations aren't unique to text messages; there are plenty of standardized abbreviations that are common even in formal writing, and style guides and dictionaries frequently include lists of common abbreviations and their uses. Even abbreviations that aren't currently accepted in formal contexts

aren't necessarily exclusive to texting; many of these abbreviations originated elsewhere and are found in a much broader range of domains (digital or not). Chapter 3 of Crystal (2008) documents how many of the abbreviations that are associated with texting today are actually quite old. In this chapter, we will continue to refer to these abbreviations as *texting abbreviations* or *textisms*, keeping in mind that they're actually much more widespread. Much of our discussion would apply equally well to instant messaging or social networking sites, and is likely to remain relevant to future forms of digital communication as well.

Acronyms

One of the most-discussed methods of abbreviation found in text messages is the use of acronyms, of which the most famous is probably *LOL*, for *laughing out loud*.¹ Other well-known examples include *OMG* for *oh my god*, *IDK* for *I don't know*, and *TTYL* for *talk to you later*. Most or all of these acronyms are not exclusive to text messaging; they can be found in emails, online discussion boards, instant messaging, and so on. Acronyms are almost never written with periods and don't have to be capitalized, especially on mobile phones where entering all capital letters requires extra keystrokes.

Acronyms are an especially opaque type of abbreviation; unless the context makes it absolutely clear, it's virtually impossible to guess the meaning of a form like *IDK*. If you use an acronym that your reader doesn't happen to know, there's a good chance that you will be misunderstood. One argument against using acronyms, then, is that they put an undue burden on the reader and increase the odds of miscommunication.

But acronyms occur in formal writing too. Plenty of acronyms are so common that they require no explanation, particularly for names of institutions (*UN* for *United Nations*, *MIT* for *Massachusetts Institute of Technology*). Many standard English abbreviations come from phrases in other languages: e.g. for *exempli gratia* 'for example'; *Q.E.D.* for *quod erat demonstrandum* 'I have proven my point'; *R.S.V.P.* for *répondez s'il vous plaît* 'please tell me whether or not you will come to this event'. (The fact that these acronyms abbreviate Latin or French phrases makes them even more opaque than the standard texting examples.) Some English-based acronyms have become ordinary words (*laser* for *light amplification by the stimulated emission of radiation*, or *scuba* for *self-contained underwater breathing apparatus*) or are well on their way toward doing so (*asap* for *as soon as possible*, *awol* for *absent without leave*).

¹ Examples like these are also called *initialisms* or *alphabetisms*; some writers reserve each of these terms for a particular subtype of abbreviation. We will use the well-known word *acronym* here to cover a range of subtypes.






The argument against texting acronyms, then, can't just be that acronyms are ambiguous and should always be avoided. Nor can it be that texting acronyms aren't understood by all English speakers. When writing for a specialist audience, it's perfectly acceptable to use acronyms that are specific to the field; linguists, for example, expect each other – but not non-linguists – to understand *NP* (*noun phrase*), *PIE* (*Proto-Indo-European*), and *VOT* (*voice onset time*). The guiding principle, of course, is to know your audience: if there's a good chance that your readers don't know the acronym, then the best practice is to spell it out in full the first time you use it. This principle applies just as much in the digital world as it does in the analog world: if *IMHO* (*in my humble opinion*) is firmly established in a particular online discussion board, there is no sense in spelling it out (and doing so would probably be odd) – but you wouldn't use the acronym in an email to your great-grandmother who has just gotten her first computer. This principle applies not just to acronyms but to technical or specialist vocabulary in general.


Thus, there's no reason to characterize texting acronyms as 'assaults on the English language' (Deacon 2009). The real objection is that *these particular* acronyms happen not to have become generally accepted in formal contexts; there's nothing wrong with acronyms in general.





Names of letters and numbers






Perhaps the most salient texting abbreviation is the use of single letters and numbers to represent, not the ordinary sound of the letter or the quantity represented by the number, but the sound of the name of that character. Thus, *b* might represent the word *be*, *u* might stand for *you*, *2* for *to*, or *4* for *for*. Characters used in this way can stand alone or as part of a larger word: *2day* for *today*, *b4* for *before*. This type of abbreviation is especially noticeable because, unlike the use of acronyms, it is *not* a technique used in standard written English. Perhaps for this reason, these abbreviations are a favorite target of critics of text messaging, who frequently raise the specter of Hamlet texting *2B* or *not 2B*.

Although the principle of using a symbol to represent the sound of its name is not found in standard written English, it does appear in other writing systems. Hieroglyphic writing of ancient Egypt used this technique in ways that are remarkably similar to modern text-messaging practices. Example (1) illustrates how this works in English. By itself, the symbol 8 represents a particular quantity, which is also represented by the English word *eight*. In *gr8*, the 8 no longer has anything to do with number; it now represents only the sound of the word *eight*, which also happens to be the last part of the word *great*. Thus, in *gr8*, the letters *gr* are read with the sounds they represent (their ordinary use in written English), while 8 is read with the sound of the word it ordinarily represents.




- (1) The rebus principle in English textisms
 - a. 8
'eight'
 - b. gr8
'great'
- (2) The rebus principle in Egyptian hieroglyphs
(Mercer 1926, 6)
 - a. 
hr
'face'
 - b.    
hryt
'terror'





Example (2) shows a parallel example with hieroglyphs. The symbol  in (2a) represents the word *hr* 'face'.² Example (2b) is a depiction of the word *hryt*

'terror'; here, the symbol  represents not 'face' but the sound *hr*; the sound *y* is represented by  and the sound *t* by . The function of  in example (2b) is exactly parallel to that of 8 in example (1b): it represents, not the idea usually associated with the symbol, but rather the sound of the word for that idea.

Abbreviations of this type also exist in a 'mixed' usage, both in hieroglyphic writing and in modern English texting. An alternative way of abbreviating the word *great*, shown in example (3b), is *gr8t*. The final *t* here is, strictly speaking, unnecessary; the word *eight* already ends in a *t* sound. We see a parallel example in (4). In (4a), the symbol  represents the word *pr* 'house'. In (4b),  represents the sound *pr*; however, the representation includes the additional symbol , which also – redundantly – represents the *r* sound. The , as before, represents the sound *t*, completing the word *prrt* 'procession'. The  is a special type of symbol known as a *determinative*: it indicates something about the meaning of the word it's attached to; here, the stylized image of walking legs is clearly consonant with the idea of human movement. Thus, like *gr8t* in (3b), the representation of 'procession' in (4b) is redundant; in both

² Although linguists have reconstructed the consonants of ancient Egyptian with a fairly high degree of certainty, much less is known about vowels, which in any case weren't represented in the writing system, as is typical for Semitic languages. Vowels are therefore usually omitted in representations of ancient Egyptian.

cases, extra characters (*t* and , ) reinforce the intended reading of 8 and  according to their sound, not their meaning.

- (3) The rebus principle in English textisms: mixed use
 - a. 8
'eight'
 - b. gr8t
'great'
- (4) The rebus principle in Egyptian hieroglyphs: mixed use (Collier and Manley 1998, 154)
 - a. 
pr
'house'
 - b.   
pri
'procession'

Despite the similarity between some types of hieroglyphic writing and some types of text message abbreviations, I have yet to hear a modern commentator decry hieroglyphs with the same fervor that is applied to texting. It's hard to avoid the impression that these abbreviations are condemned, not because they're inherently bad, but because they simply do not happen to be part of standard written English.

In fact, there's an argument to be made that abbreviations like these actually require a *higher* level of linguistic sophistication than the standard orthography. The writer has to be able to identify the part of a word that happens to sound like the name of a letter or number and isolate the letters associated with that sound, replacing them with the appropriate symbol. The reader must be aware of the new possibilities associated with each letter; in order to interpret an expression such as *cya soon* 'see ya soon', the reader has to figure out that *c* is supposed to be read as its name but *ya* is supposed to be pronounced according to the conventions of ordinary English spelling. Far from being a simplified or lazy form of writing, these abbreviations ask a great deal of both writer and reader.

Representation of speech

Another class of textisms alters the conventional spelling of the word in favor of a spelling that more closely reflects its pronunciation. Silent letters,

which are abundant in English, are frequently dropped: *luv* for *love*, *nite* for *night*. Note that *nite* actually involves *adding* a silent *e*, in addition to dropping the *gh*. A writer who does this obviously knows that one of the functions of a final *e* in English is to indicate something about the quality of the preceding vowel; according to standard orthographic conventions, *nit* wouldn't have the intended pronunciation. Thus, even in the process of 'breaking' the rules, people who use these abbreviations actually demonstrate a thorough understanding of the general principles of English orthography.

Other alterations attempt to represent non-standard pronunciations. Some of these are extremely widespread, such as *wanna* and *gonna* for *want to* and *going to*, respectively; others represent a regional pronunciation, such as *anuva* for *another* in parts of Great Britain. As with other 'phonetic spellings', the writer has to understand how to use the resources of English spelling conventions to create an alternative representation of the word that the reader will be able to decode.

One interesting feature of both 'phonetic spellings' and examples like *2day* is the fact that their abbreviatory benefit is minimal: *luv* and *nite* are each just one character shorter than the standard spellings; *2* for *to* saves only one character, and *4* for *for* saves only two. A spelling like *wuz* for *was* saves no characters at all. These savings are far smaller than those of acronyms such as *LOL* or *TTYL*. Not only that, but on many phones entering a number requires extra keystrokes – either because the user has to open a separate menu or keyboard to access numeric characters, or because numbers are located at the end of the multipress cycle (e.g., the user presses the '2' key once for *a*, twice for *b*, three times for *c*, and four times for *2*). The fact that these abbreviations may not actually save very much time or space suggests that they are being employed as much for their sociolinguistic function as for their economic utility.

9.2.2 How many abbreviations does the average text message contain?

Popular accounts of texting typically give the impression that messages are so heavily abbreviated they're impossible for non-initiates to read. Written articles often include examples that are intended to show just how exotic and foreign this new form of communication is:

- (5) An example of 'textese', Cabagnot (2000)
Mst f d tym dey usd ds knd f lng'ge 2 tlk 2 1 anthr nt 1ly n txt bt evn n wrting ltrs 2.
 'Most of the time they used this kind of language to talk to one another, not only in text, but even in writing letters, too.'

This example, which was constructed by the author of the article, does indeed look very different from standard written English. But do real text messages look like this, where every single word is abbreviated? A few studies have explored this question, and the answer is clearly 'no'.

- Thurlow and Brown (2003) asked 135 students at the University of Cardiff to transcribe five text messages they had sent the previous week. Across all the text messages they collected, 18.75% of words were abbreviated, an average of 3 per message.
- Lyddy et al. (2014) asked 139 Irish college students to transcribe up to 10 of their own text messages each: 24% of the words in these messages were abbreviated or used non-standard spelling; of these, a fifth just lacked capitalization.
- Ling and Baron (2007) collected texting diaries from 22 American college women. In the 191 texts that were transcribed, 3.2% of all words were abbreviated and only .005% were acronyms.
- Drouin and Driver (2014) asked 183 American college students to transcribe the last five text messages they had sent: 24% of words in these texts were coded as abbreviations; of these, nearly 40% were merely uncapitalized.
- Grace et al. (2014) obtained similar transcriptions from 150 Canadian and 86 Australian college students; under 20% of the words in these samples used textisms.
- Wood et al. (2011b) collected two weekends' worth of text messages from each of 119 British children between 8 and 12 years old. About 40% of the words in these messages were abbreviated; the rate of abbreviation varied by grade level.
- Wood et al. (2011a) lent mobile phones to 56 9- and 10-year-old British children and transcribed their text messages. Across the entire set of text messages, 15.6% of words were abbreviated. (See section 9.3.4 for more on this study.)

These figures suggest that abbreviations constitute a non-trivial proportion of many text messages, but more than half of texted words are fully written out: examples like (5) are *not* typical. There may well be individual texters who do this sort of thing, but the overall picture is not one in which text messages are uniformly dense and impenetrable.

9.3 Case study: Does text messaging hurt literacy skills?

The preceding discussion gives us serious reason to doubt that text messaging is destroying language and culture. Many of the abbreviations associated with

text messages are no different in kind from abbreviations used in Standard English; none, not even the non-standard abbreviations, are unique to text messages. Some techniques, particularly the use of a letter or number to represent the sound of its name, actually require a degree of linguistic sophistication that could be helpful in developing literacy skills. And, at any rate, the available evidence suggests that abbreviations are used much less frequently than the popular press tells us.

We are left with two reasonable-sounding hypotheses about the actual effects of texting. On the one hand, stereotypical texting clearly involves an informal writing style, and it's logically possible that intensive exposure to this style could lead texters to forget some of the conventions of standard written English, or lack the necessary practice to follow them in formal writing. On the other hand, studies that have investigated this question systematically (as opposed to news articles on creeping textese in student work) regularly find that young people are aware of the informal nature of texting; the college students surveyed in Drouin (2011), for example, reported that they were more likely to use textisms with friends than with professors. Moreover, the argument that using abbreviations takes away from a person's exposure to the standard written language assumes that someone who is texting would otherwise be reading *War and Peace*. For some people, though, texting represents time that would otherwise not be spent reading or writing at all. In cases like these, text messaging could be beneficial simply by increasing a person's exposure to written language.

Given that there are plausible arguments on both sides, and in the face of the great diversity of texting practices, the only way to determine the truth of the matter is to go out and observe texting in the real world. As it turns out, there is now a sizeable body of literature on how text messaging affects students, particularly their literacy skills. We turn now to some of the studies that explore particular aspects of text messaging and how they are related to reading and writing standard English.

9.3.1 Brief exposure to textisms: Powell and Dixon (2011)

Powell and Dixon (2011) began with an observation established by previous research on spelling: when a person is exposed to an incorrect spelling of a word, that person is more likely to misspell the word later on. Since many textisms involve unconventional spellings, which are therefore incorrect in the context of standard written English, it's theoretically possible that texting abbreviations could have the same effect. Powell and Dixon designed an experiment to compare the effects of seeing a texting abbreviation versus seeing an ordinary misspelled word.

Table 9.1 *Pre- and post-test spelling scores by group and exposure type. D. Powell and M. Dixon, Does SMS text messaging help or harm adults' knowledge of standard spelling?, Journal of Computer Assisted Learning 2011, Table 2. Reprinted by permission of John Wiley & Sons, Inc.*

Baseline condition	Exposure type	Testing occasion	
		Pre-exp (of 15)	Post-exp (of 15)
Textisms Group (<i>N</i> = 44)			
No exposure baseline (<i>N</i> = 20)	No exposure	12.55 (1.73)	12.70 (1.34)
Correct spelling baseline (<i>N</i> = 24)	Exposure to textisms	12.50 (2.16)	13.10 (1.29)
	Exposure to correct spellings	12.70 (1.33)	13.17 (1.76)
	Exposure to textisms	12.29 (1.90)	12.54 (1.82)
Misspellings Group (<i>N</i> = 44)			
No exposure baseline (<i>N</i> = 18)	No exposure	12.39 (1.69)	12.33 (1.91)
Correct spelling baseline (<i>N</i> = 26)	Exposure to misspellings	11.61 (2.12)	11.22 (2.02)
	Exposure to correct spellings	12.00 (1.60)	12.96 (1.22)
	Exposure to misspellings	12.62 (1.20)	12.15 (1.83)

The study involved 30 words (such as *accurate*), each of which has a common misspelling (*accurrate*) and is also susceptible to texting-style abbreviation (*aQr8*). The subjects, 94 British undergraduates, took a pre-test in which they spelled all 30 words. Subjects returned one week later and were divided into two groups: one group saw texting abbreviations on a computer screen for half of the words on the list, while the other group saw common misspellings for half of the words. Within each group, half of the subjects saw the correct spellings of the remaining words, while the other half didn't see the remaining words at all. Immediately afterwards, subjects took a post-test in which they spelled all 30 words again.

Table 9.1 summarizes the scores for students in each group, broken down further according to whether students saw a correct spelling of the word during the experimental phrase, an incorrect spelling, or no spelling of the word at all. Unsurprisingly, students' pre-test scores are all very similar, indicating that the groups all had roughly the same level of spelling ability to start with. What we want to know, of course, is whether scores went up or down in the post-test.

Within the Textisms Group, subjects performed significantly better on the post-test ($p < .01$); their improvement was not affected by how they had seen a given word during the exposure phase (not at all, as a textism, or with the

correct spelling; $p = .38^3$). This pattern suggests that subjects were not more likely to misspell a word simply because they had just seen an abbreviated version of it; in fact, their spelling of these words improved just as much as their spelling of words whose correct spelling they had just seen! These results provide no evidence that simply seeing a texting abbreviation makes someone a bad speller.

The results for the Misspellings Group tell a different story. Here, not surprisingly, subjects scored better on words when they were exposed to the correct spelling; however, when they were exposed to an incorrect spelling, they scored worse. (The difference between the effects of correct and incorrect spellings was significant at $p < .05$.) In other words, what we see here is a difference between textisms and ordinary misspellings: the latter interfered with subjects' ability to remember the standard spelling of a word, while textisms did not.

The obvious interpretation of these results is that texting abbreviations are something other than conventional misspellings: readers are affected by one but not the other. This is an argument that using text message abbreviations may not be harmful after all. However, it's important to treat these results with a healthy dose of caution, asking how well they represent real-world texting behavior. For one thing, subjects saw each incorrect spelling (whether a textism or not) only once during the exposure phase, and they took the post-test immediately afterwards. It's worth asking whether seeing a misspelling of any kind just once is the same as seeing it regularly over an extended period of time; in other words, could it be that texting abbreviations appear harmless here simply because subjects weren't exposed to them enough?

Another concern is the nature of the textisms used in the study. A few were common abbreviations (e.g., *2moro* for *tomorrow*) that are widely known. But many others were much less common and may have been unfamiliar to a substantial number of subjects (*mLOD* for *melody*, *LMNt* for *element*). The experimenter read each word out loud as it was shown during the exposure phase, so there is little worry that subjects simply didn't recognize what the abbreviations were supposed to stand for. However, there is still the very real possibility that subjects essentially ignored these examples because they were so unfamiliar, and that this is why the textisms had so little effect on post-test spelling scores. In addition, Powell and Dixon consistently used capitalization to indicate letters that were supposed to be pronounced with their letter name, not their ordinary sound; however, it isn't clear that their subjects used the same convention. The result is that the textisms used in the study are visually very different from the ordinary spellings of the words; perhaps this different

³ The authors do not provide a precise p -value for this effect, but it is possible to calculate one from the other statistics they report.

'look' allowed subjects to avoid interference between the abbreviated words and their conventional spellings.

Despite these misgivings, we can take these results as promising evidence that texting abbreviations aren't exactly the same as ordinary misspellings – clearly, the subjects in this experiment responded to the two very differently. This study suggests that texters are able to do exactly what they say they do: distinguish between the standard written language that is appropriate in formal contexts and the orthographic creativity that is appropriate elsewhere.

9.3.2 Texting and literacy among schoolchildren: Kemp and Bushnell (2011)

Powell and Dixon's study involved college students, but much of the popular anxiety about text messaging has to do with whether it harms the reading ability of younger students. To address this concern more directly, Kemp and Bushnell (2011) investigated the texting practices and literacy of 86 Australian fifth- and sixth-graders.

The students in this study completed two groups of tasks. The first was a series of standardized literacy tests of reading and spelling. The second involved reading and writing text messages on a phone provided by the experimenter. Each subject read two messages out loud from the phone, one in standard English and one in 'textese'; and translated two text messages provided by the experimenter by typing their translations into the phone, one from standard English into textese and one from textese into standard English. The text messages were deliberately designed to include a large number of words that could be abbreviated.

- (6) Example of a text message from Kemp and Bushnell (2011, 26)
- a. Conventional form:
Thanks for your great text message. Everyone forgives you and would like you to be here at basketball today.
 - b. Textese:
Thx 4 ur gr8 txt msg. Every1 4gives u and wood like u 2 b here at bsketbal 2day.

Kemp and Bushnell also asked students whether they used texting in their daily lives, and if so, whether they used the multi-press method (press the '2' key once for *a*, twice for *b*, and so on) or predictive software. For our purposes, the most interesting question is whether texters and non-texters had different scores on the literacy tests. As summarized in Table 9.2, all three groups of students (predictive texters, multi-press texters, and non-texters) had very similar scores. There's a trend for the non-texters to have slightly higher scores, but

Table 9.2 Means and standard deviations of students' scores on three standardized literacy tests. N. Kemp and C. Bushnell, *Children's text messaging: Abbreviations, input methods and links with literacy*, Journal of Computer Assisted Learning 2011, Table 2. Reprinted by permission of John Wiley & Sons, Inc.

	Spelling	Reading	Non-word reading
Predictive texters (<i>n</i> = 45)	106.13 (8.17)	101.67 (7.76)	102.56 (9.31)
Multi-press texters (<i>n</i> = 29)	104.10 (17.87)	102.03 (12.72)	101.00 (11.15)
Non-texters (<i>n</i> = 12)	112.25 (18.20)	105.75 (12.03)	105.75 (12.03)
Overall	106.30 (13.76)	102.06 (10.28)	102.48 (10.33)

Kemp and Bushnell report that these differences are not statistically significant for any of the three tests.

This study provides us with no evidence that text messaging has any effect on a student's basic literacy skills, either for good or for bad. In addition, students' performance on the reading and writing tasks provides the tantalizing suggestion that using textisms actually involves linguistic *sophistication*. Kemp and Bushnell report that students with higher test scores also tended to be faster at reading and writing messages (both in standard English and in textese), and they were more accurate in interpreting the textese messages. These results suggest that using common text message abbreviations truly is a skill; if it were simply the product of laziness, we would expect the students with lower literacy scores to abbreviate more. Moreover, students produced very few abbreviations when translating messages into standard English: only 3% of all words were textisms, indicating that texters are fully capable of switching between formal and informal styles.

The most obvious weakness of this experiment is the fact that the texting task was artificial. Students did all of the reading and writing on an unfamiliar phone (although this is an improvement over previous studies in which students wrote text messages on paper), and of course translating a message into textese is very different from composing an original message on the fly. The textese messages composed by the researchers may also have been unrealistic, since they contained proportionally more abbreviations than the typical, real-world messages discussed in section 9.2.2. (I would also be interested to know how many 10-year-olds have ever wanted to tell a friend 'Thanks for your great text message.') The students may have recognized the artificial nature of the task and responded by using more textisms than they ordinarily would, especially since it was clear that the adults who administered the experiment *wanted* them to abbreviate. (Notably, the non-texters produced just as many

abbreviations during the translation task as the texters.) Within the limits of the task, though, this study provides evidence that texting simply doesn't affect a person's overall literacy very much one way or the other.

9.3.3 Textisms and phonological knowledge: Plester et al. (2009)

As discussed above, many texting abbreviations challenge the writer or reader to reflect on the relationship between how a word is spelled and how it is pronounced. Plester et al. (2009) investigated whether a person's texting behavior is related to his or her ability to analyze the sounds of words, in addition to literacy skills and general cognitive abilities.

The subjects were 88 British sixth- and seventh-graders. To assess students' literacy and cognitive skills, Plester et al. administered a series of standardized tests, which measured vocabulary, spelling, reading, general cognitive ability, and phonological knowledge (i.e., ability to analyze the sounds of a word). Students also completed a questionnaire with demographic information and a summary of their texting habits. Finally, the students were given 10 real-world scenarios and asked to compose an appropriate text message (on paper) for each one; examples of these scenarios are given in (7).

(7) Examples of scenarios from Plester et al. (2009, 160–161)

- a. It is Tuesday. You just got home from school, and you have so much homework to do that you don't think you will be able to go to the club you usually go to on Tuesday nights, but you know one of the others in the club will be coming by to pick you up. [You decide what kind of club: swimming, judo, tennis, music, scouts, guides, and the local youth club.]
- b. You've just had a text from your Mum. She's in the middle of the supermarket and wants to know what you'd like for dinner. She's also forgotten to feed the dog and you know he's out of food.

Table 9.3 summarizes the relationships among the various measures taken by the researchers; some of these (such as the 'Composite cognitive score') are aggregates of several related tests. The number in each cell is the correlation coefficient (r) for the relevant two measures; a plus or an asterisk after that number indicates that the relationship is (at least marginally) statistically significant. Unsurprisingly, there are significant positive correlations among many of the ability scores: students with better phonological scores tended to have better spelling scores, students with higher cognitive scores tended to have higher reading scores, and so on.

The measure most directly relevant to our question is the age at which the student acquired his or her first phone, which is presumably a decent proxy

Table 9.3 Correlation coefficients among demographic variables, texting behavior, and test scores; '+': $p < .10$, '*': $p < .05$, '**': $p < .01$. Beverly Plester, Clare Wood, and Puja Joshi, *Exploring the relationship between children's knowledge of text message abbreviations and school literacy outcomes*, British Journal of Developmental Psychology 2009, Table 2, adapted. This material is reproduced with permission of John Wiley & Sons, Inc.

	Age	Age of first phone	Composite cognitive score	Composite phonological score	BAS II spelling ability score	BAS II word reading ability score
Age	.366*					
Age of first phone	.038	-.136				
Composite cognitive score	-.068	-.293**	.593**			
Composite phonological score	-.166	-.212+	.463**	.475**		
BAS II spelling ability score		$p = .073$.701**	
BAS II word reading ability score	-.139	.273*	.414**	.732**	.135	.298*
Ratio of textisms to total words in scenarios	.100	-.189	.016	.213+		
				$p = .076$		

for how long the student has been texting. Interestingly, age at first phone is *negatively* correlated with two of Plester et al.'s three literacy measures (phonological score and spelling ability score, but not word reading ability score). In other words, the students who received their first phone at a younger age (and therefore presumably had more experience with text messaging) had higher literacy scores on some of the tests. Here, then, we have evidence that not only does texting not cause any harm, but it might actually be beneficial.

Students' responses to the text messaging scenarios provide further support for this idea. To estimate the number of textisms different students were using, Plester et al. calculated the proportion of textisms in each message out of the total number of words in the message. Students' use of textisms was weakly correlated with phonological score and significantly correlated with reading ability: students with better phonological and reading ability tended to produce *more* textisms than students with weaker abilities in those areas. This pattern suggests a possible explanation for the relationship between students' literacy skills and the age at which they acquired their first phone: reading and writing textisms is a skilled and demanding task.

There are, of course, alternative explanations for this pattern of results. As in the previous study, it could be that students with better literacy abilities produced more textisms, not because this was their everyday behavior, but because they were skilled test-takers and recognized that the adult experimenters wanted them to do so. The relationship between literacy and students' age when they acquired their first phone could be mediated by socioeconomic status: maybe wealthier parents were both more likely to buy their children a phone at a younger age *and* better able to support their developing literacy skills (for example, by paying for tutors if necessary). This means that, as always, we should treat these results with an appropriate degree of caution: there's no reason yet to run out and buy a mobile phone for every child in hopes of raising literacy scores. At the very least, though, we can say pretty confidently that this study gives us one more reason not to panic that the rise of text messaging will bring about an apocalypse of illiteracy.

9.3.4 A randomized intervention: Wood et al. (2011a)

There are two major problems with all of the above studies. The first is that they rely on indirect means of assessing subjects' texting behavior. The ideal, of course, would be to assemble a large collection of real-world text messages and analyze those. But the practical obstacles to this approach are obvious: going into subjects' phones raises serious privacy concerns, especially for children; asking subjects to transcribe their own messages is tedious, and they probably

won't keep it up for very long. There have nevertheless been some attempts to collect actual text messages, but unsurprisingly researchers have found this to be a difficult and frustrating approach.

The second problem with most studies of texting and literacy is that they're observational in nature: some people text and some don't, and researchers investigate whether these two groups are different in any way. The problem, of course, is that texters and non-texters are self-selected, and some of the same factors that affect whether or not a person chooses to text could also influence that person's literacy skills. In discussing the results of Plester et al. (2009), for example, we observed that a student's age when he or she acquires a first phone could be a proxy for how long the student has used text messaging, but it could also be related to the student's socioeconomic status, which in turn affects literacy. Alternatively, suppose we study another group of students and find that frequent texters have lower test scores. It could be that texting actually harms students; alternatively, it could be that people who consider high academic performance an important part of their identity are less likely to text (or less likely to admit how much they text) because this informal register isn't part of the image they want to project.

The perfect experiment to avoid some of these confounds would be a randomized intervention study: one where researchers take subjects without mobile phones, give phones to half of them, and observe whether the two groups have different literacy skills after some period of time. This approach wouldn't necessarily answer the question of whether different types of people choose to use textisms, but it would go a long way toward addressing other confounds such as socioeconomic status.

The logistical, financial, and ethical difficulties inherent in a study like this are obvious – but, amazingly, it's actually been tried. Wood et al. (2011a) studied 114 British schoolchildren between 9 and 10 years old who didn't have access to a mobile phone. With permission from parents and schools, they randomly assigned half of the students to receive phones for one 10-week school term. The students were allowed to keep their phones over the weekend and during one week-long break; during the school week, the researchers took the phones back and transcribed all the text messages that the students had sent or received. Both groups of students were given weekly reading and spelling tests; these tests were analogous to the way participants in a drug trial are monitored so that the study can be stopped immediately if the drug turns out to be harmful. In this case, the students with mobile phones didn't suffer any obvious harm, and the study ran for the full 10 weeks.

Not only did the students with mobile phones suffer no harm, they appeared to be hardly different from the control group at all: Wood et al. found no significant differences between the two groups at the end of the study on any

Table 9.4 *Correlation coefficients between literacy measures and number of text messages sent and received at various points in the study. C. Wood, E. Jackson, L. Hart, B. Plester, and L. Wilde, The effect of text messaging on 9- and 10-year-old children's reading, spelling and phonological processing skills, Journal of Computer Assisted Learning 2011, Table 3. Reprinted by permission of John Wiley & Sons, Inc.*

	Week 1 sent	Week 1 received	Week 5 sent	Week 5 received	Week 10 sent	Week 10 received
Improvement in reading and spelling	0.242	0.171	0.149	0.096	0.132	0.074
Improvement in phonological awareness	0.057	0.059	-0.076	-0.060	0.324*	0.142
Improvement on fluency measures	0.158	0.225	-0.009	-0.053	0.408**	0.390**
Improvement in rapid naming	-0.219	-0.154	0.157	0.100	-0.243	-0.145

of the literacy tests. Variation within the mobile phone group was relatively uninteresting too; as summarized in Table 9.4, the number of text messages students sent or received at the beginning of the study (Week 1) or in the middle (Week 5) was not related to how much students improved on various literacy tests. There is, however, the suggestion of a relationship at Week 10: students who were sending more text messages at the end of the study improved more on tests of phonological awareness and fluency; the latter included tasks such as listing alliterative or rhyming words. Thus, it appears that texting may have had a small beneficial effect. Wood et al. also found that students who used more textisms tended to improve more on tests of phonological awareness.

This study provides the clearest evidence yet that text messaging doesn't harm a person's literacy, and it may even have a slight benefit. Its primary weakness is the fact that it was very short, less than three months; maybe it takes more exposure before the effects of texting show up. The students in the study also sent relatively few text messages – partly because they had their phones only on the weekends, and partly because their enthusiasm for texting declined over time. (Students sent an average of 45 messages during the first week of the study but only 6 during the last week.) More intensive, long-term use of texting might have had a greater effect on students' literacy skills. Despite these concerns, it's clear that – contrary to the dire predictions in the media – the students in this study who took up text messaging remained just as literate as their peers.

9.3.5 General conclusions

Several experimental studies have explored whether texting often, or using more abbreviations, affects a person's literacy. The answer appears to be 'not really': most researchers have found that texting either provides a small benefit or has no effect at all; only occasionally does a study find a negative effect of texting. In this context, the panicked reaction to texting in many quarters starts to look a bit overblown. No study of texting is perfect, but researchers using a variety of methods have found that texting simply doesn't matter very much. If textisms were truly destroying the language and rendering young people unable to articulate simple thoughts, surely we wouldn't be in a situation where study after study finds that text messaging has little or no effect on reading and writing.

This is not, of course, a reason to embrace texting uncritically. People may like or dislike texting for any number of reasons, and the role of technology in society is certainly worth a serious discussion. What we have learned is that the purely *linguistic* argument against texting – that it interferes with a person's ability to use the standard written language – is wrong.

9.4 Summary

- Like all forms of technology, new communication technologies are usually greeted with a mix of enthusiasm and anxiety; electronic modes of communication are no exception.
- The abbreviations popularly associated with text messaging are not unique to that medium; most are common in many digital domains and are much older than texting itself.
- Many texting abbreviations are no different in kind from phenomena that appear in standard written English. Others require readers and writers to think carefully about the relationship between symbols and sounds, and to use their writing system in a creative way.
- Despite popular fears, there is no evidence that texting or using text message abbreviations harms a person's literacy skills.

For further reflection

- (1) Collect 20 examples of text messages with abbreviations that you have sent or received. What kinds of abbreviations do you observe in these messages? Overall, what proportion of the words in these messages are abbreviated? What, if any, are places where you could have used an abbreviation but didn't (e.g., words with common abbreviations that

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were fully spelled out, use of punctuation even where there was no danger of ambiguity, and so on)?

- (2) There are many online 'dictionaries' of text message abbreviations. Find one such dictionary and analyze the abbreviations it lists. How many of these abbreviations, if any, do you use on a regular basis? How many are you familiar with but don't use regularly? How many are completely new to you? Reflect on the impression of text messaging that this dictionary might give to a non-texter. Does it suggest that abbreviation in text messages is more common than it actually is, less common, or about right?
- (3) Talk to four people you know who regularly send text messages and ask them about how and why they use abbreviations (if at all). What do they want to say about themselves when they abbreviate a word (or not)? Does their style depend on the person they're communicating with? Reflect on your interviewees' responses: describe the reasons people choose to use or not use abbreviations, and how (if at all) text message style depends on the larger social context. Do your interviewees' responses suggest that they use a single style when texting, or that they are actively controlling how they present themselves to other people?
- (4) Learn what you can about text-messaging practices in a language other than English. Do texters in that language use abbreviations or non-standard conventions? How are those conventions similar to, or different from, the kinds of abbreviations that are common in English text messages? What are some of the social attitudes toward text messaging among speakers of that language – is it perceived as a good thing, a bad thing, or both/neither?
- (5) Other studies of whether texting affects literacy include Drouin and Davis (2009), Drouin (2011), Kemp (2010), and Coe and Oakhill (2011). Read one of these studies and evaluate it critically. How did the researchers design their experiment, and what did they find? Are you convinced by their results?

Further reading

Crystal (2008) describes text messaging in its historical and modern contexts, and is written for a popular audience. Wood et al. (2009) is a brief and accessible summary of some of the research on texting and literacy. Thurlow (2006) documents attitudes toward text messaging in the popular media.

Another topic of popular concern is technology's potential to help (or hinder) language learning. See Howard Gola et al. (2011) for a review of the role of electronic media in first-language acquisition, and DeWaard (2013) for an evaluation of the Rosetta Stone software.

Other studies of whether and how texting affects literacy include Massengill Shaw et al. (2007), Plester et al. (2008), Kemp (2010), Bushnell et al. (2011), Coe and Oakhill (2011), and De Jonge and Kemp (2012).

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