

Just Text Me: The Mutually Shaped Story of the Short Messaging Service (SMS)

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The more people text message, the better phone keyboards become; the more messages texters can send, the more they will write. This article demonstrates this mutual shaping phenomenon through a socialized history of text messaging communication from 1970 until now. While texting provides excellent benefits—including social connectivity and a platform for immediate, direct exchanges—it also raises concerns. Texting while driving, dining, and socializing are now all commonplace, and yet often frowned upon if not actually illegal. This essay explores several questions: how has text messaging changed our culture? How were cell phones developed, culturally integrated, and upgraded? How have mobile hardware and software been molded to consumer needs? Who uses the short messaging service (SMS) and for what? Through a close analysis of a series of texting's critical elements—like the medium of choice, user demographics, billing, message content, and social implications—this essay will demonstrate how societal and technological influences have worked together to develop and continue to shape the text messaging phenomenon as we know it today.

People love to text, and love to do so for more reasons than demographic or usage statistics can account for alone. Zhenghao and Liu conducted intensive in-depth semi-structured interviews with exchange students in China on why they use SMS text messaging in 2010, and thereby provide qualitatively descriptive insights into text messaging use. Their participants came from a variety of Western backgrounds and yet shared common perspectives in their answers. Text messaging was found to be used for many reasons. For example, low costs make the service affordable, while the capability for simultaneous mass texting makes it convenient. The handheld quality and pervasive ownership drives messaging flexibility, while the character limit invites directness with minimal small talk. Study participants also described text messaging as a great form of recreation when bored and the perfect written record to reference for important conversations. Although not all operators report

their usage figures, Hillebrand, Trosby, Holley, and Harris (2010) were able to compile a global estimate based on available traffic and revenue statistics. In 2008, 3.55 billion mobile users sent an average of 70 text messages each, per month. In other words, texters sent 250 billion short messages per month, or 3 trillion per year.

While text messaging has no age restrictions, it appeals more to younger populations, which was the case even in its early days (Hillebrand et al., 2010). The Pew Internet & American Life project surveyed a nationwide representative sample of teenagers aged 12-17 and their families in 2010 and revealed how culturally widespread texting has become across the U.S. population. A typical American teen sends or receives 50 text messages a day while the average adult sends or receives 10. An overwhelming 88% of teen cell phone users text messaged in 2010 compared to 51% who texted in 2006. 54% of all teens reported text messaging daily, with 31% reportedly sending more than 100 text messages a day (3000 texts a month) and 15% sending more than 200 (6000 texts per month) (Lenhart, 2010). In contrast, only 8% of adults reported sending more than 100 text messages per day and only 15% reported sending more than 200. Even so, the average number of daily texts for adults rose from 29.7 to 39.1 from September 2009 to May 2010, suggesting that adult usage may eventually catch up to the teenage rates.

Regardless of the users' ages, the societal attitude toward text messaging has taken a negative turn. For example, Katie Hafner discusses some of the potential ramifications of teens' extensive text messaging in a 2009 article in the *New York Times*. She draws attention to statistics, such as the average 2,272 texts that American teenagers send per month, and teens' resulting constant distractibility and trouble concentrating. She considers such problems as potential trouble sleeping with such incessant disturbances and how teachers struggle with their students' frequent text messaging in class. Through a family's anecdotal story, she even introduces potential remedies that parents can implement, such as setting texting hours. She sends the message that ultimately something needs to be done about this SMS-craze, and urges the growing group of similarly text-active parents to set an example. However, her article portrays teens (and parents) as blind consumers ignorantly caught up in some type of addiction. Should texters really be seen as victims fallen to a trend?

Another *New York Times* article by Jennifer Steinhauer and Laura M. Holson (2008) frames text messaging as a societal problem needing to be addressed through policy. This article recognizes the benefits of text messaging, quoting several users' delight at its speed and directness, but then calls for regulatory action. The authors touch on the common themes of danger and addiction that accompany frequent text messaging. Vivid stories of car accidents and train crashes demonstrate how multi-tasking with SMS can lead to tragedy. They also report on several government initiatives to pass bills and bans that would limit the use of mobile devices in cases of operating a moving vehicle. These two articles highlight the

potential ramifications of inaction if text messaging continues to permeate our social worlds. But is SMS really such an unstoppable juggernaut? While the consequences of excessive text messaging are real, these articles overlook an underlying premise that is critical to the story. Text messaging became popular because of a socialized process. Phones are now designed well enough to text with one hand. Voice recognition features encourage people to talk out their messages. Capabilities like these make more texting even easier, and yet their contribution to these consequences of increased texting is largely ignored.

The text messaging that we know today developed out of over a century's worth of mutual shaping. The service took on several mediums, speeds, and purposes, before finding its niche in our casual day-to-day mobile use. The first form of text messaging is often considered to be Morse telegraphy, which transmitted messages via radio signals before the 1900s. Radio amateurs in Canada then built on the packet radio networks and used the technology for text and data communications in 1978. Meanwhile, Telex, or Teleprinter Exchange, implemented the first public, worldwide text communication network in the 1930s. The network facilitated direct dialogue between teleprinters via a directory of numbers of all the other printers available. Once a connection was established, messages were carried at 50-bit per second speeds and could easily be sent overseas to different countries or even traveling ships. By 1979, Telex had 1.1 million users in 155 countries. While the benefits of text-based communication were evident, its adoption still faced barriers. Telex's success was stunted by expensive printers and installation costs, slow traffic time, and minimal market penetration. In addition, Hillebrand et al. explain how "the need to realize higher data rates for comfortable text communication led to new developments" (p. 3).

This desire for *comfortable* text communication continued to drive developments for just the right SMS medium. In the 1970s, the growing field of facsimile technology introduced the fax machine. After establishing a connection through a directory similar to the teleprinter's, text messages could be received and printed. Extremely successful in Japan, fax machines were heavily used in the 1980s and 1990s until the rise of personal computing created a new set of needs. Editing software like Microsoft Word became prevalent enough for users to set expectations. Faxes suddenly became "dead documents" because they could not be digitally edited any further. Users gradually preferred exchanging Word documents, because this option better suited their newly realized needs (Hillebrand et al., 2010). This early development of texting shows that consumers do not blindly adopt everything thrown their way. User preferences for speed, affordability, and even editing have evidently helped shape the service as its developers continually tried to broaden their market reach.

Texting has in recent years become the primary and most common form of interaction for teenagers and their friends—surpassing phone

calls, social networks, instant messaging, and even talking face to face (Lenhart, Ling, Campbell, & Purcell, 2010). Yet when the idea for short text messaging was first introduced, many established service providers (including large fixed networks) showed no interest (Hillebrand et al., 2010). After analyzing the length of messages sent via postcards and Telex, and discovering that most messages were around 150 characters, Hillebrand imposed a 160-character limit. Fixed network service providers thought these message length restrictions were too severe and did not want to impose them on their customers. Yet mobile phone users welcomed short messaging and even slightly adjusted their language to suit the SMS character restrictions.

The success of text messaging was as unexpected as the cellular phone boom. Expensive and clunky, the mobile phone was once considered just a “rich man’s toy.” However, today, the person without a mobile phone is the exception. The first fully automatic mobile communication network started in the early 1980s. Hillebrand et al. notes that by 2002, mobile telephony overtook fixed telephony in the number of subscribers worldwide (U.S. children today typically have their own mobile device before they even turn thirteen). By 2004, the 3.55 billion mobile subscribers far outnumbered the 1.5 billion internet subscribers, making more people likely to use SMS than email simply because of accessibility. The first short message as it exists today was sent in 1992. A mobile communications executive then infamously wondered, “Why would you message anyone you could just talk to?” (Hillebrand et al., 2010, p. 126). Hillebrand et al. describe how SMS traffic grew exponentially in the late 1990s, requiring critical redesigns that could process messages at rates faster than ever needed before, even running up to thousands of messages per second. The rapidly growing SMS usage provoked the rethinking of SMS network topography (Hillebrand et al., 2010), again showing social influences in shaping technology. More users meant the service needed an organizational structure that could both handle and stimulate higher traffic.

Although text messaging had already been developed as a known telecommunications service, it had not yet been standardized across countries or devices in the early 1980s. In 1982, the Global System for Mobile Communication started as a pan-European cooperation determined to delineate the needs, restrictions, and standards for mobile communication services. Anticipating the popularity of the Short Message Service (SMS), the GSM committee specified many of the service features from February 1985 to the end of 1986 (Hillebrand et al., 2010). Fundamental features, such as an alphanumeric alphabet, availability on a mobile (not fixed) network, and under-ten-second transmission times were largely contributed by representatives from France and Germany, and then built upon from 1987 onward by people from other countries as SMS gradually experienced surges of users. Hillebrand (sometimes referred to as the “father of SMS”) and the GSM committee designed the

architecture of the network and the basic technology, along with a decree requiring all cellular carriers and mobile phones to support text messaging (Hillebrand et al., 2010). The figure below highlights the milestone developments that followed for SMS in the market.

Table 2.2 Development of SMS in the market

Milestone	Achievements
1992	First acceptance tests by various operators in Europe
1993	First SMS point-to-point mobile-terminated-enabled phones available First uses by network operators for alerting of received voice mails
1994	Every new terminal was capable of SMS point-to-point mobile-terminated
1995	Every network was capable of SMS International roaming for SMS available
1995	Discovered by youngsters, and began to become a part of the youth culture
1996	Every new terminal was also capable of SMS point-to-point mobile-originated National interworking between operators was in place between most operators Substantial traffic
2008	3–4 trillion short messages sent, with a revenue of \$80–100 billion worldwide

FIGURE 1. (HILLEBRAND ET AL., 2010., PG 21)

During this time, cell phones became more than tools to make mobile phone calls. The devices now facilitated two primary functions: voice and *text* communication. As a result of short messaging’s growing popularity, the mobile device’s keyboard underwent progressive changes. The first SMS-enabled phones had numeric keyboards with 3-4 letters assigned to each digit; pressing a number repeatedly would cycle through the button’s options. Although young users quickly developed an “admirable skill” for text messaging on these first types of keyboards, adults often struggled with the multi-letter assignments, tiny buttons, and small displays. Since then, cell phone manufacturers have incorporated user feedback into their models’ full-keyboard/large-screen designs. Predictive text, or T9, was another one of the mobile sector’s first efforts to improve text messaging for its users. Successfully speeding up the input process and helping texts’ spelling accuracy, T9 was the precursor to the “autocorrect” feature of today’s iPhone. Both features depend on complex algorithms and previously used words to help improve text communication. Thus, cell phone technology and users’ needs mutually reinforced each other. In one of the finest demonstrations of mutual shaping within the genre of mobile messaging, the original cell phone alphanumeric pad has today transitioned into a full touch screen QWERTY keyboard.

The easier it got to send a text message, the more often texters would send them. This obvious development has been surprisingly unacknowledged by the media, which tends to analyze more of the present circumstances of technology and not its origins. For example, a *New York Times* article by David Carr (2011) comments on the common tendency of people turning to their mobile phones at inappropriate times, while still

recognizing that what is considered inappropriate is somewhat ambiguous. He describes the cultural behaviors that are now mainstream—for example, text messaging while waiting in line, in the front row of a talk, and at dinner—and suggests the behavior may now be so ingrained that it is practically subconscious. He regards the prevalence of such behavior as striking, especially as he describes how “every meal out with friends or colleagues represents a negotiation between connectedness to the grid and interaction with those on hand.” He notes the positive aspects of constant connectivity, but given the variety of options for quality interactions, he laments that many miss real life experiences because they remain glued to their digital screens. Although this article addresses the newly popular discussion on text message etiquette, it fails to recognize the social shaping process behind this texting phenomenon.

With such widespread adoption, it is easy to overlook that text messaging has never been free. However, in their early days, texts were cheaper than phone calls (Hillebrand et al., 2010). This financial advantage may have actually encouraged users to try text messaging, which could then have led to its preference over phone calls. Either way, the framework of standards for billing was in itself a social process. Mobile network operators set up a Memorandum of Understanding and formed the Billing Accounting Regulatory Group (Hillebrand et al., 2010). With no precedent, this group brainstormed how to monetize short messages sent and received within and between the various networks. Their decisions included separate rates for commercial senders, and message (not character)-based pricing. Since then, the variations between carriers’ pricing for the exact same service continue to reflect how arbitrary such pricing can be. A web wiki compared the text messaging rates of the top five telecommunications companies in March 2010 and found the following: T-Mobile, Verizon, and Sprint charge 20 cents per text message, while Virgin Mobile and AT&T charge 10 cents. Sprint and AT&T charge \$20 for unlimited texting, while Virgin Mobile charges \$10, T-Mobile charges \$14.99, and Verizon does not even offer an unlimited option (Klug, 2010). The availability of these options and range of their prices may contribute to the varying rates of text messaging. Additionally, while adults may text less, they seem to indirectly express their support for SMS by funding their children’s mobile plans. Only 10% of teens with cell phones have their own individual contract. 69% of teen cell phone users are reportedly under a contract that covers all of their family’s cell phones; more than half of these family plans are paid for by someone other than the teen (Lenhart et al., 2010).

Parental sponsorship, lower prices, and unlimited plans reportedly stimulate more frequent texting. A Lenhart et al. research study (2010) shows that teens with unlimited texting plans typically send and receive 70 texts per day, compared to an average of 10 texts sent per day by teens with limited plans and 5 texts per day by the teens paying per message. This study also shockingly reveals that 75% of teen cell phone users have

unlimited texting (Lenhart et al., 2010), which makes the prevalence of teen texting less surprising.

The more teens text, the more society criticizes their technology-tethered generation. Concerns over antisocial tendencies carry over from playing video games to mobile messaging. Both are considered socially interactive technologies (SIT) and are often analyzed for their influences on adolescents' offline and online social networks. Bryant, Sanders-Jackson, & Smallwood (2006) set out to find whether adolescents were making more, but weaker, connections through activities like instant messaging chat and text messaging. They were also curious about how much real-world and tech-mediated networks overlap and if SIT relationships were more important to those with fewer offline friends. The researchers surveyed middle-schoolers on their social networks and SIT use, and found that more than 65% of their 11 to 13-year-old respondents had been using instant messaging on their computers and text messaging on their phones for at least a year before the survey. Despite popular media's concerns, Bryant et al. found that these interactive technologies actually seemed to support social behavior as an extension of adolescents' existing friendly communications. 90% of the participants indicated having "lots of friends," and 95% reported having a few or lots of *close* friends as well. A close analysis of the participants' messaging networks found an average 8.63 texting partners per adolescent. The teens did not seem to use SITs to find new friends or seek out social support in the case of social isolation. Rather, mobile messaging seems to facilitate and strengthen the friendships that had previously only been mitigated by phone calls and in-person conversations.

David Crystal's work, *Txting: the Gr8 Db8* (2008), furthers the discussion on the social history of text messaging by analyzing news media articles and commentary highlighting societal attitudes toward SMS use. A common concern with teen adoption of SMS seemed to be worries over the "text-slang" that ignores conventional rules of written English. A rapidly spreading written language full of "C U L8R" and "LOL"s frightened academics and parents nationwide. Crystal's work explores texters' grammar and spelling, as well as the demographics and common conversation topics of the heavy users. He suggests that both children and adults use SMS language but argues that it actually provides people with more opportunities to engage in reading and writing English. He points out that less than 10% of words are abbreviated in text messages, and oftentimes in ways that actually predated the short messaging service. He asserts that students' abbreviations do not usually translate to their homework, seemingly aligning his ideas with those of Crispin Thurlow, a Communications Professor at the University of Washington. Thurlow (2003) conducted a study in hopes of uncovering exactly how young people use text-messaging and to what extent they're experimenting with conventional English in their wording. In the study, 135 students transcribed a total of 544 of their text messages in response to a survey.

Thurlow then categorized common text message types and analyzed their language, realizing that the media's common representations of text messages may not be entirely representative. Although young people's text-messaging language does incorporate abbreviations, emoticons, and varied spelling, Thurlow argues that claims attacking SMS language for its impenetrability and exclusivity are not only exaggerated but also missing the subtlety and contextuality of SMS dialogue.

Despite some societal reservations, the rising prevalence of text messaging has fostered its acceptance as a mainstream social practice and started the ongoing formation of its related social norms. Just as in-person conversations have unspoken rules on, for example, the distance between speakers and greeting formalities, the relatively new SMS users are just starting to recognize and acknowledge their own judgments of appropriate texting behavior. Joan Hakkila and Craig Chatfield (2005) surveyed 119 university students and interviewed an additional 10 to explore the reasons for owning a mobile phone and gain an understanding of users' perceptions of privacy. In the study, 71.4% of participants cited social reasons for having a cell phone, and 82.3% explicitly described it to be a private device. Users described texts as facilitators of social interaction—making contact more frequent and flexible. Most participants said that they would not pick up a stranger's ringing phone or want someone else to answer theirs. Similarly, participants described opening others' SMS messages as a "violation of privacy." The study demonstrated one of the first widely held, but largely unspoken, social norms relating to text messaging use—opening someone else's text message is as much a violation of privacy as opening someone else's letter.

Text etiquette today is still new enough to have many gray areas. Questions abound, such as: when is it okay to text and when isn't it? Whom can you message, and how long or short should your note be? Should you write back immediately, or is taking an hour to respond acceptable? The problem is that despite the billions of text messages sent, there is still no shared common understanding of the answers to these questions. Christopher Null, a MacWorld Business Center contributor, has contributed to the movement toward texting etiquette with a list of tips on how to avoid annoying others with text-messaging (2009). His tips include keeping text conversations light, simple, brief, and not too frequent. He reminds texters not to forget the people they are actually with and to consider how the bright phone light affects the surroundings at events and theaters. As adults and teens continue to send more texts, the mutually shaping social process discussed in this essay will likely soon contribute to a new code of standards for appropriate texting.

Texting has become both ubiquitous and controversial in modern society. Widespread societal concerns range from text-slang ruining the English language to avid messaging alienating individuals from social interactions. Additionally, texters are often portrayed as ignorant victims of an addictive technology. This essay argues instead that mobile

technology and its texters shape each other's development in ways far less one-sided than usually depicted. Awareness of this bidirectional, mutually shaping social process will hopefully lead to effective double-pronged solutions to future controversies related to social technology—today's text etiquette ambiguity is just the beginning.

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