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TEXT AS SPEECH: A NEW ANALYTICAL FRAMEWORK FOR COMPUTER MEDIATED COMMUNICATION

by

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Abstract:

In modern linguistics, the study of the written word has been considered outside the scope of the field. However, developments in communications, specifically in online or computer-mediated communication (CMC), are making writing more similar to speech than ever before. As writing becomes a more and more fundamental form of communication, the need for a linguistic perspective on the study of this field is made increasingly clear. The primary aim of this paper is to identify and describe emerging examples of linguistic features in CMC, so as to make clear why CMC requires further research within the field of linguistics.
What are the distinctions between speech and writing? Many linguists consider writing to be outside the bounds of natural language, and thus not within the realm of linguistics (Hinkel 2018). As language, writing, and human communication evolve, it is important to be aware of how these developments change what we are studying, and to recognize that the approaches we use to study a topic should evolve as the topic does.

The advent of the 21st century has led to countless technological revolutions in human language and communication, making the work of linguists more important than ever as we strive to map the shifting terrain of how we speak. New developments in how writing is used for day-to-day communication necessitate new ideas regarding the definition of language. As writing becomes a more and more fundamental method of communication (Mielach 2013) it is becoming increasingly important for linguists to shift their focus to this domain, so as not to neglect a vital resource for data regarding language change. In this paper, I will detail how a certain type of writing, specifically computer mediated communication or CMC, is becoming more similar to speech. Subsequently, this paper will explore the environments in which this shift is occurring, then analyze different forms of paraverbal communication occurring in these environments, focusing on attributes such as tone, mood, and register. I will also assess demographic distinctions in how these expressions of paraverbal communication are achieved. The overarching goal for this work will be to explain the need for the field of linguistics to begin incorporating the study of CMC.

**Definitions**
The first step, of course, is to define the term. CMC (Computer mediated communication) is defined simply as “any human communication that occurs through the use of two or more electronic devices” (McQuail 2005). This definition is accurate, yet incredibly broad. For the purposes of this paper, we will be focusing on CMC in the form of microblogging - short-form, highly interactive personal blogs with a focus on content-sharing - platforms, such as Tumblr or Twitter (Nations 2018), along with a small amount of SMS text message communications. SMS stands for “short message service” and refers to the text messaging service used by almost all cellular phone services (Christensson 2016).

Definitions for other relevant terms follow: Emoji are small icons that can be placed inline with text to represent an emotion or picture (Christensson 2016). Standard or non-standard writing refer to adherence to or deviance from the expected “universal” practices of written language that allow writing in a certain language to be understood regardless of region (Fisher & Boulton 2004). Paraverbal communication is how information in a conversation is conveyed beyond the content of the words used, specifically how the words are produced - for instance, factors such as volume, speed, or rhythm (Dirven & Verspoor 2004). Pragmatic particles are words that, instead of indicating their usual semantic or syntactic content, function as linguistic units that “help to structure the communication process and to embed utterances into their communicative context” (Verschueren et al 1996). A grapheme is the smallest unit of a writing system in any language (Coulmas 1996). In English, the letters of the alphabet are graphemes. Similarly, phonemes are the smallest unit of significant sound in any language (Collins Dictionary 2019). With all that in mind, we can now turn to an explanation of where and how we will be studying CMC.
Methodology

My focus will be primarily on the platform Tumblr, because it has been researched much less than larger platforms such as Twitter - if you search for articles on Tumblr with Google Scholar, only 765,000 works are found, as compared to over six million works for Twitter. I will also be writing exclusively on English language usage on the internet, because English is the most commonly used language online (Web Technology Surveys 2018), and because it is the only language I speak well enough to use in an academic context. However, similarly fascinating developments are occurring in other languages online, such as Chinese, (Gen-Yih 2010), and more research into other languages’ CMC presence would greatly benefit the field.

The focus on microblogging and social media platforms such as Twitter is due to the aspect of these networks as a public platform of communication - unless someone has stricter-than-usual privacy settings, almost anyone can view and interact with what the users say. Although email and SMS are used more than Twitter or other social media platforms (Munroe & Manning 2012), they are difficult to research due to their one-to-one nature and thus inaccessibility. The only way private correspondence can be studied linguistically is if samples are self-selected and volunteered, which unfortunately results in biased or non-representative data (Bethlehem 2010). The majority of research available on CMC is on these public platforms, as seen in fig 1.
The public nature of these platforms makes them far easier to study than private forms of communication. This aspect of openness and visibility also has also lead to the development of a common mode or style of communication that users tend to follow. This contrasts with SMS or email, which, as they occur exclusively between a set of conversational partners, follow a set of personal or professional parameters rather than a set established by an online speech community. Thus, the methodology of this paper will be predominantly primary research observing, recording, and analyzing various means paraverbal communication as expressed in the public web platforms of Twitter and Tumblr, citing primary data with screenshots and URLs. These platforms are linguistically interesting because of their user-base: 37% of Twitter users are between 18 and 29 (Aslam 2018) and almost half of Tumblr users are under 34 (Statistia 2017). As young people are known to be the driving force of language change (Birner 2012), their communication on these platforms should be a vital area of linguistic study - but the research is not happening (Coulmas 2013).
Language and Technology

Writing and orthography have not been officially classified as a branch of linguistics, like morphology or phonology, because writing is generally considered to be a form of technology instead of a form of language. Writing has been treated as such for three major reasons. First, reading and writing require tools and cannot be produced by someone completely independently (Ong 1985). Spoken language, on the other hand, can be produced by any able-bodied human being with no external assistance. This is important because of the second reason - it is widely accepted that language is inherently innate and universal. In every observed human society, language is present in some form or another (Pinker 2007) while writing is not (Kramsch 1998), although organizations such as SIL (the Summer Institute of Linguistics) are working to create writing systems for endangered or exclusively oral languages (SIL 2016).

The universality of language has given rise to the innateness hypothesis proposed by Noam Chomsky, who argues that language is hardwired into our neurological makeup.

“The speed and precision of vocabulary acquisition leaves no real alternative to the conclusion that the child somehow has the concepts available before experience with language and is basically learning labels for concepts that are already a part of his or her conceptual apparatus.” (Chomsky 1988, p. 24)

While this hypothesis has not been universally accepted, many prominent linguists have incorporated these ideas into their analytical paradigms (Horgan 2016) and work from the assumption that innateness is an essential attribute of language. As written
communication is not universal, it cannot be argued that it is innate. Its lack of innateness is also confirmed by the third reason for the separation of writing from language: speech is learned by usage, whereas reading and writing are always taught. In speech, children pick up the majority of their knowledge simply by imitation and practice; by contrast, while reading practice and writing usage are a large part of learning literacy, it still needs to be explicitly taught to be mastered (Birch 2002). Thus, it has been considered to be unlike language. In The Shifting Relationships Between Speech and Writing, Peter Elbow remarks on the way almost any utterance by a child developing speech is encouraged and rewarded, promoting speech as “pure play”. By contrast,

“Students can never feel writing as an activity they engage in as freely, frequently, or spontaneously as they do in speech. Indeed, because writing is almost always a requirement set by the teacher, the act of writing takes on a "required" quality, sometimes even the aspect of punishment.”

(Elbow 1985, p. 285)

In 1985, long before the development of CMC, teachers like Elbow viewed writing as inherently structured and unfree - almost diametrically opposed to the instinctive and spontaneous babble of a child that evolves into the language of an adult.

However, the advent of CMC has completely changed the nature of its users’ relationship to writing. Texting is as “free, frequent, and spontaneous” as writing, and that has completely changed how it is learned. No one teaches a child how to text - once they have access to the tool and a basic grasp of how it works, they will teach themselves with remarkable speed - and according to recent studies, this usage is where they are really learning writing skills (Carter 2014, Van Dijk et al 2016). A child will not acquire
literacy from simply being handed a phone, but they now develop mastery through texting and written communication online. While these distinctions between the written and spoken word have made sense in the past, new developments in the use of written speech have brought written and spoken language closer together, and thus more and more into the same field of study.

Figure 2. Popular webcomic posting illustrating the reasons behind young people’s improved writing scores. (Munroe 2014)

Although writing is not universal, it is becoming more and more prevalent both in usage and geographic spread (UNESCO 2017). Young people write and text “almost constantly” (Lenhart 2015), and figure 2 illustrates the generational difference in
experience with writing usage. While children do not write formal dissertations that demonstrate their mastery of language at all hours of the day, they are essentially practicing written language in the form of a baby’s babble. They are able to express themselves equally spontaneously with writing as with speech, allowing them to practice and explore an endless variety of language forms, learning organically if something is “correct” or not from the saturation of the written word they experience.

The basics of writing still must be taught, and literacy and texting might never be universal. However, the necessity of these qualities to the definition of language may need to be called into question. One problem with requiring language to be natural - free of tools - is that it actually excludes a significant portion of humanity. Many disabled people do not have the same “natural” or “inherent” access to language that we consider universal. Numerous disabilities and disorders, from paralysis to particular forms of autism, mean language as we know it is not inherent to certain individuals. A recent study found that people with autism are often instinctively rejected by their neurotypical peers, yet they are actually perceived as more likable and communicative in writing (Sasson et al. 2017). Something cannot be considered universal and inherent to humanity if we cannot all take part in it. In fact, because “technology is artificial but... artificiality is natural to human beings” (Ong 32), it might be fair to say that usage of tools is more inherent and universal to humanity than spoken language. The barriers between writing and language might be more permeable than anticipated, especially as writing becomes more and more like speech.

One place where writing has come to resemble spoken language is the internet. With the advent of CMC, writing has become a form of instantaneous text-based communication and conversation instead of an uninterrupted, scripted block. The
distinction to be made here between synchronous and asynchronous communication is

time - synchronous communication, such as a conversation, happens in real time,
whereas in asynchronous communication, like a series of letters, time is not a factor in
the communication process. As written CMC becomes a more and more common
method of communication, "the perceived scale of timeliness for responding to a post on
a social networking site has become increasingly compressed"(Page 2014). CMC is much
more like an actual live conversation than any form of writing has been previously, and
thus it has needed to develop more and more speechlike qualities. As CMC is used more
frequently in place of spoken conversation, users of internet language have developed
ways to convey the speech acts we perform in spoken communication. Interaction on the
internet needs to communicate tone and register shift, and the linguistic tools to do so
have been developing organically for quite some time. These developments in
paraverbal communication (in what is technically a strictly verbal form) have arisen
naturally, from no set authority. Also, while methods have been devised to accomplish
these paraverbal speech acts, different demographics have developed different ways of
doing so, which will be explored later. First, we must understand what needs to be
conveyed in spoken (and now written) conversation, and what methods are being used
to do that in CMC.

**Methods of Tone Expression**

The range of human emotions and attitudes that can be expressed in spoken
conversation seem as though they must be impossible to convey in the 94 characters
available on the average QWERTY keyboard. The first method to express feeling one
would think of might be emoji - tiny images of human expressions, sprinkled into the
text of your utterance where seemingly appropriate. However, while these are common in SMS text messages (McSweeney 2016), they are used much less in microblogging platforms like Twitter or Tumblr (McCulloch et al. 2015). It has also been suggested that emojis, despite the incredible quantity available for use, actually fail to capture certain nuances (McCulloch et al. 2015) of conversation that expression, tone, or phatic utterances - statements meant to establish rapport or communicate friendliness (al-Qina 2011) - do in spoken conversation. Another possible reason is captured by the expressively-challenged dinosaur in figure 3.

![Figure 3. The limitations of emoji explained. (North 2017)](C)2017RyanNorth

The problem this dinosaur is struggling with in Ryan North’s webcomic post shows the surprising limitations of emoji as a vehicle for paraverbal communication. One issue users find is that they are created by companies, not users, meaning you do
not get to express something the way you would like to express it - only the way a business thinks you might want to express it. For another, emoji vary from platform to platform as seen in figure 4 - the Facebook emoji to express laughter or amusement does not look like the laughing emoji on an iPhone, which does not resemble the laughing emoji on an Android device. If you are communicating across two different platforms, the emoji you use does not necessarily communicate what you think you’re saying.

Figure 4. The “eye rolling” emoji across different popular platforms. (Ong 2018)

However, just as Tyrannosaurus poses a dilemma, he also proposes a solution. Using punctuation to express tone is a widespread phenomenon, even if a specific punctuation mark to express a raised eyebrow has not yet been developed. Instead, punctuation in CMC is used in non-standard ways to express different tones or to more accurately convey how the specific utterance would sound if spoken aloud. For instance, many posts on Tumblr are written with no punctuation whatsoever, creating an unstructured stream of words, as is observed in the Tumblr post in figure 4. This style trusts the readers to know instinctively where the sentence breaks would be, but also allows the reader to “hear” the utterance as they would out loud, with no real pauses between words or sentences. In fact, dropping punctuation in CMC has become so commonplace that people are beginning to perceive text messages that end with a period as insincere (Gunraj et al 2016). If an unpunctuated stream of words and ideas is used to indicate conversational style, perhaps interrupting that comfortable flow now “sounds” like a brusque, cut-off statement with tones of impatience or dissatisfaction.
Another tone or attitude that can be expressed with use of non-standard punctuation is sarcasm or irony, which can be challenging to convey in spoken communication as well. Self-proclaimed internet linguist Gretchen McCulloch describes the use of tildes and asterisks to inflect a specific word with ironic distance - “...when I saw a friend reblog a tumblr post with the tag ~*misandry*~, I knew she was ironically distancing herself from the topic” (McCulloch 2015). This method of expressing sarcasm is arguably clearer than many forms of expression that occur in spoken conversation - it’s easy to miss an exaggeratedly deadpan stare, but it’s harder to skip over punctuation occurring in an unexpected point in the sentence. This is one of the many reasons writing has become an important form of expression for autistic individuals, as mentioned above - linguistic qualities like sarcasm, which are often missed by neurotypical speakers, are laid out clearly in CMC, allowing greater access to specific nuances of tone and feeling. Punctuation might in fact be the most complex and
commonly used paraverbal expressions in CMC, encompassing features such as exclamations points used! for! emphasis! instead of volume, question marks used to indicate uptalk instead of an actual question? or repeated to express?? indignation?? instead of a query, and commas used to end sentences to indicate, much like canned laughter in a sitcom, that the “speaker” has completed a joke and here expects to be interrupted with laughter instead of continuing their statement. The functionalities of non-standard and rules involved are many and varied, but they have all developed organically and instinctively.

As we saw above, punctuation isn’t the only thing that can be nonstandardized to convey meaning. If standard rules about capitalization don’t apply in the new, speech-like writing of CMC, how might capitalization be used instead? For most of us, the first usage that springs to mind is probably volume. You cannot make text louder or quieter the way you can make your voice; however, WHEN A SENTENCE IS READ IN ALL CAPS, WE TEND TO PERCEIVE IT AS LOUD OR EVEN SHOUTED. This convention is not unique to the internet - it often occurs in standard written English, such as in fiction novels when an exclamation point seems insufficient. CMC has borrowed that function and expanded upon it. When a written utterance uses non-standard capitalization but is not entirely capitalized, it is often to indicate emotion (as it would be conveyed by pitch in a spoken conversation) instead of necessarily volume. Figure 5 shows a Tumblr user making an observation - and the 69.5 thousand notes¹ indicate that many users concurring - that a sentence, which, instead of beginning with a capital letter and continuing with lowercase letters, begins lowercase and transfers to uppercase does not

¹ On Tumblr, “notes” signify how many users have interacted with a post, by either “reblogging” it to post it on their own blogs, or “liking” it so they can see it again later.
indicate a shift in volume. Instead of reading the first grapheme as normal-volume phoneme and the rest as raised-volume, we perceive this utterance as highly emotionally inflected. To users of speech-like CMC, this written utterance is akin to a friend telling us about something, and becoming suddenly more animated as they become more and more excited. Our friend is not suddenly shouting at us, but is perhaps talking more quickly, possibly at a higher pitch, and with much more emotional inflection than they were initially. Similarly, a SENTence wrITTEn liKE THIs does not indicate certain syllables are shouted and others are normal volume (a feat that would be possible but challenging and frankly bizarre in spoken communication), but that the speaker’s “tone” is rising and falling as they speak - again, to indicate strong emotion about the topic on which they are speaking. Thus, capitalization can be used to indicate

Figure 6. A Tumblr user remarks on the phenomenon of using capital letters to express intense emotion.
two different types of paraverbal article, but because of the innately understood usage rules, no one confuses one for the other.

It may seem as though these usage rules simply mimic spoken communication, but they actually follow their own rules. Linguists Jeffrey Lamontagne and Gretchen McCulloch presented a study on the phenomenon of lengthening, where a letter or letters in a word are repeated to indicate emphasis (Lamontagne & McCulloch 2017). As phoneme lengthening is a common way to indicate emphasis in spoken English, they hypothesized that the lengthened letters in written English would correspond to the lengthened sounds in the spoken form of that utterance. To some extent their findings followed that prediction, but with some fascinating discrepancies.

<table>
<thead>
<tr>
<th>Tendency in speech</th>
<th>Reflection in writing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vowels lengthen more than consonants</td>
<td>✓</td>
</tr>
<tr>
<td>Rhymes lengthen more than onsets</td>
<td>✓</td>
</tr>
<tr>
<td>Continuants lengthen more than stops</td>
<td>×</td>
</tr>
<tr>
<td>Nucleus lengthens more than glide in diphthongs</td>
<td>×</td>
</tr>
<tr>
<td>Silent letters don’t lengthen</td>
<td>×</td>
</tr>
</tbody>
</table>

*Figure 7. Findings on how repeated letters are used to signify emphasis. (Lamontagne & McCulloch 2017)*

Instead of always lengthening the grapheme that would correspond directly to the lengthened phoneme, CMC users developed their own rules for which letters could be elongated to indicate emphasis. While the predicted rules about vowels and rhymes being the primary subjects of lengthening, in CMC stops and silent letters are often
lengthened instead, which would be impossible or meaningless respectively in spoken communication. In fact, Lamontagne and McCulloch found that word-final silent letters were lengthened most often. This tells us that users of CMC are not consciously performing mimicry of spoken language. They follow unconsciously and naturally developed rules for paraverbal communication in this distinct language - a vital quality of natural language that develops independently in every language.

**Demographic discrepancies**

Each language has different means for expressing tone and emphasis. For example, if you tried to use English intonation to emphasize a specific word while speaking French, you would get blank stares - instead, repetition or in certain cases specific pronouns are used to indicate the specific focus of a sentence. It makes sense then that different users of the internet would develop different methods of expressing paraverbal qualities, and that when these different demographics come into contact, a language barrier arises.

One of the most notable sociolectical distinctions is that of age. There is a generational distinction between the methods people use to communicate emotion and tone while texting or typing. One of the most significant and widely observed (at least among younger users of CMC) is what the ellipsis indicates in casual written conversation. In general, people under the age of forty or so tend to interpret it as a trailing thought or indicator of dropping tone, expressing perhaps reluctance, disinterest, or doubt, as seen in figure 7.

People in that demographic thus rarely use the ellipsis in positive messages, which does not seem to be the case for the demographic above the age of forty. In figure
7, a group of Tumblr users discuss their confusion with the way their parents speak, insisting that the first context the ellipsis is used in makes the statement passive-aggressive and uncomfortable, when they know the users of the ellipsis are not trying to indicate that. Tumblr user Feynites describes a conversation with her mother in which she attempts to bridge the linguistic divide between them.

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averagefairy

Old people really need to learn how to text accurately to the mood they’re trying to represent like my boss texted me wondering when my semester is over so she can start scheduling me more hours and i was like my finals are done the 15th! And she texts back “Yay for you...” how the fuck am i supposed to interpret that besides passive aggressive.

runawaymarbles

Someone needs to do a linguistic study on people over 50 and how they use the ellipsis. It’s FASCINATING. I never know the mood they’re trying to convey.

Turns out that she’s using the ellipsis the same way I would use a dash, and also to create ‘more space between words’ because it ‘just looks better to her’. Also, that I tend to perceive an ellipsis as an innate ‘downswing’, sort of like the opposite of the upswing you get when you ask a question, but she doesn’t. And that she never uses exclamation marks, because all her teachers basically drilled it into her that exclamation marks were horrible things that made you sound stupid and/or aggressive.

So whereas I might sent a response that looked something like:

“Yay! That sounds great - where are we meeting?”

My mother, whilst meaning the exact same thing, would go:

‘Yay. That sounds great... where are we meeting?’

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feynites

I actually thought for a long time that texting just made my mother cranky. But then I watched my sister send her a funny text, and my mother was laughing her ass off. But her actual texted response?

“Ha... right.”

Like, she had actual goddamn tears in her eyes, and that was what she considered an appropriate reply to the joke. I just marvelled for a minute like ‘what the actual hell?’ and eventually asked my mom a few questions. I didn’t want to make her feel defensive or self-conscious or anything, it just kind of blew my mind, and I wanted to know what she was thinking.

And when I look at both of those texts, mine reads like ‘happy/approval’ to my eye, whereas my mother’s looks flat. Positive phrasing delivered in a completely flat tone of voice is almost always sarcastic when spoken aloud, so written down, it looks sarcastic or passive-aggressive.

On the reverse, my mother thinks my texts look, in her words, ‘ditzy’ and ‘loud’. She actu-
Figure 8. Tumblr users discuss the perceived differences in meaning of the ellipsis.

The user and her mother both see the ellipsis as a paraverbal tool, but the meanings they perceive are almost diametrically opposed. The post itself has almost 140,000 notes. Due to the demographics of Tumblr, this signifies a huge quantity of people have encountered and recognized this sociolectical divide between younger and older users of CMC.

To confirm their observations, I conducted an informal survey to determine different demographics’ responses to various forms of CMC. A summary of this survey and link to the results is available in Appendix B. I asked a variety of questions, but the first question asked users to respond to the sample sentence created by Tumblr user Feynites to demonstrate the different functions of the ellipsis. In this small-scale survey, the trends observed by the Tumblr users in the post in figure 7 remain constant, with the majority of users under 40 viewing the sentence, “Yay. That sounds great... where are we meeting?” as having negative tone and the majority of users over 40 viewing it as positively inflected. Several other questions confirmed a notable distinction in meaning between these demographics - there is a strong tendency for people under 40 to perceive different forms of CMC has having different connotations, while those above 40 tend not to make these speech-centric distinctions.

This is consistent with commonly held theories about language change and acquisition. Today’s children are encountering CMC while still in their language acquisition stage, making them much more sensitive to unspoken nuance. They are also the drivers of language change (Birner 2012), which could explain why this new form of language is developing now — younger people are the ones who are using it. While this survey shows this and many other interesting observations, it is not meant to be taken
as a body of scientific data from which to derive quantitative results. The scope and form of this paper did not allow for a quantitative analysis, but the author believes such research would greatly benefit the field of linguistics.

**Research Issues**

The purpose of this paper is a call for further research. Research on CMC comes with unique challenges, many of which are unknown in the wider field of linguistics. In this section a brief overview of these issues will be presented in hopes that they will lead to improved methods in the future. The author will also detail some challenges faced by this paper specifically and note where other researchers might make improvements.

One component of this paper was an informal survey conducted by the author within her social circle. As the main body of this paper stems from observational research, the author chose to perform an informal qualitative study instead of pursuing quantitative data, which would have taken more time and resources than were available. However, with a larger sample size and variation in participants, important quantitative data could be collected to acquire detailed information on demographic tone discrepancies. This survey would also benefit from multiple modes of distribution - as it was only shared online, it was taken primarily by subjects who are already familiar with some aspects of CMC usage. While this was useful for the purposes of an informal qualitative survey, a quantitative survey might benefit from a group of participants who are less familiar with CMC to act as a sort of control group.

Another challenge to this paper was the accelerated rate of language change in the world of CMC. Much faster than spoken language (Kleinman 2010), this paper was out of date weeks after its first presentation. Earlier in this paper, the author made
reference to the use of shifting capitalization (“I caN’T beLIEve THis”, etc.) to indicate broken or variable pitch to convey strong emotion. Not long after the first version of this paper was submitted, a meme using the same text to convey an entirely different attitude - harshly mocking sarcasm - arose and quickly saturated many online communities.

![SpongeBob meme](image)

**Fig 9.** Screenshot of the Twitter blog @TheSpongeMock, which collects instances of this particular meme.

Almost overnight, text with variable capitalization came to mean exclusively mocking tone. This is challenging enough for internet pundits to keep up with, let alone the sedate pace of academia. These issues are likely to persist, but what we might learn from a linguistic approach to CMC will almost certainly be worth it.
A New Classification for CMC

If this style of CMC is moving away from standard ideas of writing and into a new, more speechlike style, what does that make it now? Linguist John McWhorter suggests that it isn’t writing anymore. He proposes a new term or classification for it, “fingered speech” (Copeland 2013). McWhorter argues that the specific rules developing in CMC are unique and complex enough to warrant a new classification. McWhorter

“points to the changing nature of how “lol” is used. It once meant “laughing out loud,” but has a subtler meaning today as demonstrated in an exchange McWhorter plucked from some 20-something college students:

Susan: lol thanks gmail is being slow right now

Julie: lol, i know.

Susan: i just sent you an email.

Julie: lol, i see it.

There is nothing funny about Gmail being slow, nor any guffaws to be elicited from simply receiving email. “Lol” has become something far subtler. “It’s a marker of empathy of accommodation,” McWhorter says. Lol is what linguistics like

McWhorter call a “pragmatic particle," like the word “yo."” (Copeland 2013). CMC is developing and following its own rules. It is writing meant to mimic speech, but the rules it is developing are independent of those that govern our speech. While this new form of CMC is classified by many as simply lazy writing, its users are beginning to observe the rules and functions that guide their communication. These rules still develop naturally, but they are consistent and widespread enough to be observed, recorded, and explained. Figure 8 features four Tumblr users discussing these rules and some difficulties they’ve faced attempting to share them with people who are unfamiliar with these rules. One user identifies as - and 180,000 people concur - as a “native
speaker of a whole new kind of english” (fig 8). Language change is happening, on the internet and our phones, and the speakers of this newly developing form of language are excited to watch it grow.

Figure 10. Tumblr users discuss their impressions of their online language development.

Unfortunately, minimal research has been done in the emerging field of CMC study, as mentioned above (Coulmas 2013). More research must be done to understand how this written language is developing. The study of CMC is vitally important for understanding linguistic change. If teenagers and young adults are the primary creators of new language, then it makes sense to study them in the area of communication they use “almost constantly” (Lenhart 2015). The more prevalent CMC or “fingered speech” becomes, the more important it will be for linguists to integrate it into. Discounting CMC due to its technological aspect leaves us blind to a powerful force of language
change. Developments in CMC lead to developments in spoken language as well—many linguistic features that began on the internet are entering spoken language, such as the use of “because” as a preposition (Garber 2013). Frequent use of CMC also has a powerful— and some would say surprising—effect on the grammar and writing capabilities of the young people who use it. Many studies (Carter 2014, Van Dijk et al 2016) show a positive correlation between use of CMC and improved standard writing abilities. Usage of CMC affects other languages spoken by the user, and discounting it from linguistic study means cutting out the source of emerging language change. Studying this form of language will also be of tremendous benefit to individuals who find it easier to use than common spoken language— as discussed above, if we stop requiring language to be free of tools, we will open doors to those who must use tools to find their voice (Sasson et al 2017).

The benefits and need for a new linguistic framework of studying CMC are becoming clearer. The methods of expressing tone and register shift outlined in this paper, as well as the sociolectical distinction in how this expression is accomplished, are two speech-like qualities previously unseen in English writing, suggesting an evolution/progression to a new, more linguistically speechlike form of writing. CMC may never be as universal or inherent as classical standards might require, but the inclusivity it offers should make us question our definitions of universality and look to understand new forms of language that are accessible to all of humanity. As CMC becomes more and more prevalent, a linguistic understanding of this form of communication can only better our comprehension of our changing language.
Appendices

A. Appendix of screenshots and images
   a. Fig. 2 https://xkcd.com/1414/
   b. Fig. 3 http://www.qwantz.com/index.php?comic=3115
   c. Fig. 4 https://www.theverge.com/2018/2/12/17004488/samsung-experience-9-emoji-android-oreo-update
   d. Fig. 5 http://tumblingsciencetaphysics.tumblr.com/post/113810945986/tumblingsciencetaphysics-funny
   e. Fig. 6 http://madmaudlingoes.tumblr.com/post/17153634247/raisel-the-riveter-possibly-my-favorite-tumblr
   f. Fig 8 http://wizardshark.tumblr.com/post/168632699273/feynites-runawaymarbles-averagefairy-old
   g. Fig 9 https://twitter.com/TheSpongeMock/status/862355331451678720/photo/1
   h. Fig 10 http://allthingslinguistic.com/post/171535130454/diabolical-mastermind-maskedlinguist-rale

B. Appendix of Survey Results

Author’s note: This was an informal, noncomprehensive survey with a limited sample size (25). It is not meant to constitute scientific evidence, but to illustrate and quantify
some of the author’s personal observations.

Link: https://www.surveymonkey.com/r/QSWXT5T

Questions and answers, percentage of responses in bold:

1. What emotion do you associate with this sentence?
   "Yay. That sounds great... Where are we meeting?"
   a. Sarcasm - 4%
   b. Happiness - 12%
   c. Dissatisfaction - 20%
   d. Anger
   e. Excitement - 32%
   f. Sadness
   g. Brusqueness - 4%
   h. Boredom - 20%
   i. Concern - 4%
   j. Curiosity - 4%
   k. Humor

2. What emotion do you associate with this sentence?
   "How do you ~feel~ about that?"
   a. Sarcasm - 20%
   b. Happiness
   c. Dissatisfaction
   d. Anger
   e. Excitement
   f. Sadness
   g. Brusqueness
   h. Boredom
   i. Concern - 20%
   j. Curiosity - 40%
   k. Humor - 20%

3. What emotion do you associate with this sentence?
   "You sure took your time."
   a. Sarcasm - 20%
   b. Happiness
   c. Dissatisfaction - 32%
d. Anger - 32%
e. Excitement
f. Sadness
g. Brusqueness - 16%
h. Boredom
i. Concern
j. Curiosity
k. Humor

4. What emotion do you associate with this sentence?
"hah you sure took your time"
a. Sarcasm - 24%
b. Happiness
c. Dissatisfaction - 8%
d. Anger - 4%
e. Excitement
f. Sadness
g. Brusqueness
h. Boredom
i. Concern
j. Curiosity - 4%
k. Humor - 60%

5. Do these two sentences mean the same thing?
"It's whatever." vs "it's w/e"
a. Yes - 32%
b. No - 68%

6. Do these two sentences mean something different?
"It's a big deal." vs "it's like a Big Deal"
a. Yes - 68%
b. No - 32%

7. How old are you?
a. 13-19
b. 20-29 - 68%
c. 30-39 - 8%
d. 40-49 - 8%
e. 50-59 - 12%
f. 60+ - 4%

8. How much time would you estimate you spend on the internet per week?
9. At what age did you start using computers and/or the internet regularly?
   a. Younger than 10 - 32%
   b. 10-15 - 28%
   c. 15-20 - 20%
   d. 20-30 - 4%
   e. 30-40 - 8%
   f. 40-50 - 8%
   g. Older than 50

Summary:
- About a third of people under 40 interpreted Q1 as positive, while almost 85% of people above 40 viewed it as positive.
- Only one person above 40 perceived Q2 as sarcastic.
- Everyone interpreted Q3 as negative.
- Only about 20% of people under 40 interpreted Q4 as negative.
- For Q5, almost 80% of people under 40 interpreted it as distinct meanings, while only a third of people above 40 noticed a distinction. These are the exact same “words”, but clearly they are not a paraphrase.
- The majority of all people interpreted Q6 as distinct meanings.
- According to Q8, young people spend much more time on the internet than those above 40.
- According to Q9, the majority of young people began using the internet regularly when they were less than 10 – prime language development stage.
C. Statement of Faith

I grew up going to church twice a year, at Christmas and at Easter. My earliest memory is complaining about how early I had to get up to attend my newborn sister’s baptism, skipping our regular Sunday ritual of making pancakes as a family. This all changed around the time I turned eight. We began attending church weekly, and I enrolled in Sunday school. Religion became a part of our life. While I had always believed in God in a general sense, I now had to contend with all the questions about what that belief entailed. My Sunday-school theology was satisfactory enough until I turned twelve and was hit smack in the face with my family’s particular genetic lottery ticket, major depressive disorder. This came concurrently with several major life shifts, the end result of which left me isolated, miserable, and suicidal.

I grappled with the question of suicide for several years. Unlike most of my young peers, I was already very familiar with the concept. My grandfather had committed suicide when I was very young, and though I didn’t know it at the time, two more of my family members would commit suicide in my lifetime. Unfortunately the only thing keeping me from following the same path was the description of the fate of suicides in Dante’s Inferno. I had no desire to become a tree in hell, so I held off. However, I reasoned, if God did not exist, then hell probably did not either, and if God existed, why was He letting me suffer like this? I couldn’t understand it. I wrestled with this question for a while - discovering the answer was quite literally life or death. Nothing seemed satisfactory. Eventually, I found my answer - once again in a book.

In Madeleine L’Engle’s book A Ring of Endless Light, the protagonist Vicky is also grappling with the tragedy of death and meaningless suffering in the world. When
she goes to her grandfather for advice, he reads her a quotation from St. Augustine - “If you think you understand it, it isn’t God.” While this isn’t immediately helpful to Vicky, it was like a miracle for me. I was blown away by the realization that I didn’t have to understand everything - that I didn’t need an explanation for why God was “letting” me suffer. It made sense to me that God existed, that the universe had a Creator whose love for me was shown in the multitude of opportunities I would have if I just held on to life.

This understanding, borne of a peace made with not understanding, brought me to the end of a five-year depressive fugue. I suddenly felt that I had a purpose in life, which was to help people see the love of God as demonstrated through the beauty and complexity of the world. I saw scholarship and study of the sciences and arts as a form of worship. Understanding and exploring the infinite complexity of Creation was a way to glorify God and celebrate His love.

Picking a field of study was simple - language. Reading and writing had saved my life, so it seemed like a perfect choice. I considered English, but I realized I wanted to study language as a science, not as an art. I knew I had a very analytical, technical mind, meant for picking patterns and answers out of broad sets of data. What, very specifically, was going on in the language centers of the brain? What did linguistic relativism - the theory that our perceptions are tinged by the language we speak - mean for ideas of objective truth and knowledge? That idea caught my attention.

If languages are not direct translations of one another and if we all think a little differently from one another due to relativism, that meant that each language was another way to “see” the world. My favorite example is from the linguist David K. Harrison, who wrote about a particular word in Tuvan, a Turkic language spoken in
Siberia. This word, *iy*, describes the short side of a hill - the steepest side and most difficult to climb or descend from. This is not something you would necessarily notice about hills if the language you used did not share this information with you, but once Harrison knew the word *iy* he noticed it in every hill he encountered after that. Knowing this word, this small portion of a language, helped him see a part of the world he simply could not name or identify otherwise. Every language has a unique yet incomplete picture of the world, and we can flesh out our picture by learning more from other languages. It seemed to me that this could also be applied to God - each language in the world shares or tells something about God that no other language can. The implications of this became more and more fascinating as I learned more about the science of language.

Another aspect of linguistic theory that I found truly fascinating was the concept of unlimited linguistic creativity. This theory, promoted and expounded by Noam Chomsky, is that human beings can take pieces from a finite set - available words and sounds in a language - and create an infinite amount of sentences. What this means for the field of linguistics is that our subject is limitless, unbounded. We may study it until the end of time, but as long as there are sentences unsaid, concepts unexpressed, our study is incomplete. We will never *completely* understand language. While many find this idea daunting, to me it was glorious. I had found a subject that would never cease to challenge me - there would always be more to learn. In this way, I found a beautiful parallel between my love of language and my love of God. It seemed perfectly clear to me why He is called the Word.

As I continued my studies, I came across a philosopher who seemed to share my delight in a world that will never be perfectly explained or understood. Karl Popper
wrote on a broad range of subjects, from tolerance to consciousness to, of course, language. In his book *The Self and Its Brain*, co-written with neurologist John Eccles in 1978, Popper described his philosophy of science as a “research programme [that] opens many detailed questions... the main task of science is to further our understanding. But I also think that complete understanding, just like complete knowledge, is unlikely ever to be achieved.” As I did, Popper found peace in not understanding fully, but pursuing understanding on principle, without expectation of reward. The purpose of science and study is not to understand fully but to explore freely. We study not to know everything but because it is simply the right thing to do, to learn and grow without expectation of a task completed. In some ways it reminded me of Paul Farmer’s quest in *Mountains Beyond Mountains*. He does not focus his energy on determining the most efficient way to complete his task. Paul simply solves the next problem or explores the next solution. He and Karl Popper embody my favorite quote from the Mishnah, the first text of Jewish oral law - “You are not obligated to complete the work, but neither are you free to desist from it.” (Avot 2:16). We will never completely solve all the world’s problems, nor will we completely understand everything there is to know about it, but our duty is simply to pursue both those things - understanding and improving - to more fully connect with God. For me, studying language and increasing our understanding of this part of the world is how I wish to pursue these goals.

This paper aims to explore a yet unmapped linguistic territory. Historically, writing in any form has been considered “technology” and thus outside the bounds of the linguistic field. However, language is always changing, and in my career I plan to
advocate for increased study of the development of language in computer-mediated communication. I anticipate eventually doing Master’s and potentially PhD research on the topic and hope to one day be considered one of the pioneers of the field. For the foreseeable future, however, my interests are currently teaching English as a second language and language preservation work, which I see as interconnected. After I graduate I will spend a year abroad teaching English as a foreign language in Prague. Other potential career options include working with the Wycliffe Bible translators to preserve indigenous languages and share God’s work, broadening the infinite pool of linguistic options for speaking about God and the number of people who find His love in the glory of creation.
References


https://www.omnicoreagency.com/twitter-statistics/


https://www.linguisticsociety.org/content/english-changing


https://www.telegraph.co.uk/education/10895575/Texting-improves-childrens-spelling-and-grammar.html


https://mashable.com/2013/11/19/because-internet-preposition/?utm_cid=mash-com-Tw-main-link#GTP506O13mqz


Lamontagne, J. & McCulloch, G. (2017). Wayyy Longgg: Orthotactics & phonology in lengthening on Twitter. *Linguistic Society of America presentation*. https://docs.google.com/presentation/d/1dM11AM_R1gZJcN8OoeWxq2g8T4dMBvI8_wqPGPxe5c/edit#slide=id.g1a60b0ff5b_0_201


https://www.lifewire.com/what-is-microblogging-3486200


Ong, Walter J. 1985. *Writing is a Technology that Restructures Thought*. *Oxford University Press, Wolfson College Lectures 1985*

Researching Language and Social Media: A student guide. *Oxon, Routledge*.


https://www.nature.com/articles/srep40700

Sefaria. (2019). *Open Mishnah*,
https://www.sefaria.org/Pirkei_Avot.2.16?lang=bi&with=About&lang2=en

https://www.sil.org/literacy-and-education/orthography-development
https://www.statista.com/topics/2463/tumblr/

UNESCO. (September 2017). Literacy Rates Continue to Rise from One Generation to the Next. UNESCO Institute for Statistics Fact Sheet No. 45.  

http://doi.org/10.1371/journal.pone.0152409


https://w3techs.com/technologies/overview/content_language/all