

escaLATING CAPITALIZATION: Tumblr Bloggers' Use of Multiple Letter

Cases Within a Single Word

Sierra Bienz

Swarthmore College

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Advisors: Professors Ted Fernald & Jonathan Washington

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1. INTRODUCTION

Formal and informal written English incorporate strategies for indicating intonation and tone through punctuation and typeface changes such as commas, ellipses, question marks, italics, or boldface. With the expansion of rapid internet communication, a new crop of strategies is being employed and conventionalized. These new strategies, which I have collectively termed “intonational typing”, include using multiple punctuation marks in a row, adding spaces between each letter of a word, changing the capitalization of the letters in the middle of a word, and several more expansions of formal written English’s punctuation, capitalization, and typeface conventions. These strategies are still stabilizing in their exact application and contexts deemed appropriate for use.

“Escalating capitalization” (McCulloch 2015a) is a phenomenon in which internet users choose to hit capslock or hold down the shift key¹ mid-word instead of at word breaks. This is used to convey a specific prosodic contour associated with excitement, anger, or any other emotion that might provoke emphatic speech, and it is assumed to be an outgrowth of the convention of using all-capitals to denote emphatic speech or yelling. I analyzed a collection of 132 attestations of escalating capitalization to see whether the decision of when to begin capitalization was based in the phonological or orthographic representation of the word. Although the data do not swing very strongly in one direction or the other, there is some support for users relying more on the phonological representation of the word than the orthographic representation. The strongest of the supports that I tested was that a full 55.3% of attestations switched into capital letters on the second phoneme of a word, while only 46.6% switched on the

¹ Capslock and the shift key are the options most commonly chosen by users employing QWERTY keyboards. Other input methods, such as voice-to-text, require different inputs to implement escalating capitalization.

second letter. Relatedly, users preferred switching on the second phoneme to switching on any other specific phoneme much more strongly than they preferred to switch on any specific letter (section 3.3).

Section 2 is a review of the literature surrounding intonation in spoken English, as well as the history of internet language. Section 3 includes an overview of several intonational typing strategies and my analysis of the escalating capitalization data. Section 4 provides ideas on how an acoustic analysis of video and audio clips that are transcribed using intonational typing could give insight into how users transfer their idea of what the intonation of an utterance is into written English. Section 5 contains concluding remarks, and suggestions of future directions of research.

2. BACKGROUND

2.1 Prosody and spoken language

Prosody is the study of the overarching contours of language, as they apply to intonation, emotion, and rhythm. For the purposes of this thesis, I am interested in how emotion affects and changes intonation in spoken language utterances with high emotional content versus utterances said in a neutral tone.

Teodorescu & Feraru's (2007) study aims to determine if emotions can be reliably distinguished based on formant values and fundamental frequency (F0). They achieve this by comparing the values of F0, F1, and F2 between two emotions in each possible configuration of sadness, happiness, fury, and neutral tone in utterances where the emotion changed during the utterance. Throughout the paper, Teodorescu & Feraru refer to F0, F1, and F2 as formants; I have chosen to use that term as well when describing their study. The study uses 'natural voice'

data, which was defined as having been produced by non-actor native speakers of Romanian displaying everyday levels of emotion (p. 258). The authors use four different programs to analyze formant values, in order to get the most measurements possible and compare the measurement tendencies of each program. These programs were Praat, GoldWave, Wasp, and Klatt Analyzer. They frequently differ in their automatic calculations of formant level, and in some cases, a particular program would be unable to find a formant when multiple others had. When this was the case or the values between two programs differed widely, no conclusions were drawn. Formants can be notoriously elusive in their values, so while it is frustrating that the various programs would be so divergent in their measurements, it is not wholly unexpected.

The overall conclusions drawn by Teodorescu & Feraru (2007) are that most formants are higher for happiness than they are for sadness, F0 is higher for fury than neutral tone, and fury and happiness can not be reliably differentiated based on formant values alone. These results align with the findings of two other databases on emotional prosody in Greek and German, in which many of the emotions studied in those databases were distinguishable through fundamental frequency values, but fury and happiness were very difficult to reliably differentiate based on that measure. Teodorescu & Feraru observe that German, Greek, and Romanian are all from separate branches of the Indo-European family, and posit that the lack of distinguishability between fury and happiness may be a common trait to all Indo-European languages (p. 260). They furthermore hypothesize that all Indo-European languages have similar methods of emotion representation (2007, p.260). Similarly, Bolinger (1964) states that much of emotional prosody may be common across languages, although he believes that differences between them are specific and teachable (p. 282) in a way that Teodorescu & Feraru do not suggest.

Bolinger (1964) also breaks prosody down differently than Teorescu and Feraru do, and explains prosody using an extended analogy of water movement in an ocean. To him, the ‘ripples’ are involuntary and accidental changes in pitch, as with the universal downward trend in pitch through the course of an utterance. ‘Waves’ are analogous to intra-word stress; ‘swells’ are the chunks that we organize a longer utterance into for understanding; ‘tides’ are emotions (p.283). Bolinger believes that the smallest and largest of these levels, that is, the involuntary pitch changes and the emotions, are more or less represented in universal ways (1964, p.284).

2.2 Internet language and intonational typing

To provide context and background on the phenomenon of escalating capitalization, an overview of the development and characteristics of internet language is necessary, specifically of ways of communicating emotion and intonation in written form. Much of internet communication in English-using communities (and indeed in non-English-using communities) happens via written text in formal “standard” written language. Formal written language uses punctuation, capitalization, and typeface to convey emotion and tone, and does so in ways that have become conventionalized through years of use by a large community of written language users. However, social media and chat platforms have opened the door for the development of a set of strategies to convey emotion and tone that overlay and intersperse with formal written English for use specifically on these platforms. Some of these strategies are variation in capitalization, variation in punctuation (either its deletion or its use in nonstandard ways), adding spaces between letters of a single word, deliberate misspelling of words, and deliberate variations in grammar. Each of these characteristics can be used alone or in combination to convey the writer’s tone of voice, level of seriousness, identity, facial expression and gestures,

and of course emotional state.² Because they are used for these things, I have chosen to call the group of strategies “intonational typing.”

These writing innovations are, as mentioned, mostly observed on social media and chat platforms. The majority of the user base for these platforms is 10-35 years old (Grant 2015), and especially on Tumblr, the majority is female. Women, specifically young women, have been cited as the instigators of spoken language change in multiple previous studies (see Britain, 1992; Labov, 2002). The observation of a similar demographic leading the charge of internet linguistic innovation places that innovation into a larger pattern of language change spearheaded by young women, and supports understanding intonational typing as similar to natural language despite its written format.

For some internet users, the majority of their meaningful communication happens online. To clarify: these users’ closest friends live far away from them, and so aside from a few meet-ups when schedules permit, the bulk of the relationship is maintained through online communication, whether that be looking at the friend’s posts on social media or messaging them directly (sigmastolen, 2016). Perhaps the availability of near-instantaneous exchanges on chat platforms further pushed written messaging language to resemble speech. These messaging systems opened the possibility of real-time written conversations, with faster replies and shorter formats than even email provided, as well as the possibility of engaging over longer continuous time periods. Continuous feedback in the form of sounds of assent or disagreement, or changes in facial expression, is one of the hallmarks of in-person conversations, and so the capability of a

² Emoticons, emotes and emojis are mostly linked to conveying facial expression and gestures, but they are also employed to convey the other speech features listed above. However, they have already been discussed at length by both academic research and popular media, so I will not use this thesis to wring out that towel of meaning any more than it already has been.

mechanism for quick, short replies in chat interactions allowed them to more closely parallel the dynamics of spoken or signed conversations.

Not only are internet users engaging in CMC for longer continuous time periods, they are also using CMC more overall. The amount of time millennial and Generation Z internet users invest in written communications is closer to equaling the time spent on spoken communication than it is for any previous generation. Users must fill in the gaps that writing leaves in communication, and they're pushed to develop new ways to do this because they are so frequently limited to written communication. Additionally, these users were some of the first people to have access to the internet (and with it, social media and chat platforms) in their adolescence, the period in which social skills and connections are at their most rapid and critical development (sigmastolen, 2016; Grant, 2015). They were the pilot group for learning to communicate while online, and as such, had to innovate in order to approach conveying the full range of emotion and tone that in-person interaction provides.³

Grant (2015) offers a quantitative analysis of Tumblr writing compared to speech, measuring the use of discourse markers, intensifiers, and quotative expressions, with the goal of determining how closely those items' frequency resembles their frequency in natural language. Although she ultimately concluded that Tumblr had not (yet) reached the same frequency of occurrence of these phenomena as speech, Grant does point out that the microblogging platform is closer to those frequencies than the slightly more formal environment of BuzzFeed comments (2015).

³ Familiar written communication, such as notes passed in class or letters between friends, has long made use of shorthand in a similar way to "netspeak" abbreviations and acronyms. However, the immediacy of interchange that online communication enables allows internet users to mirror in-person conversation even more closely. This timing difference may be one of the key differences in pre- and post-internet informal writing, and thus a central instigator of the larger range of tone and emotion markers observed in internet communication.

But why do all this innovating? Why not just add more clarifying utterances in informal English, as you would in an email or traditional letter? Aside from the fact that this takes much longer (and every moment counts when in a messaging conversation with multiple people), internet users who employ intonational typing strategies have come to terms with the fact that formal and informal written English are not the best way to capture the subtleties of tone and emotion that they want to convey. The chance of miscommunication, and the social fallout that can result from it, is already an issue in traditional spoken communication. Take away the visual and acoustic cues, and the probability rises immensely. Anyone who has ever been unable to figure out whether someone is being sarcastic or genuinely mean in a written message can relate; the consequences of miscommunication are just as large as, if not larger (due to the possible time delay before understanding is restored, and the emotional reactions that could accumulate during that time) than in in-person communication. Internet users feel a need to pad their odds of correctly conveying their meaning and accurately discerning the meanings desired by their interlocutors as much as they can, and that is where intonational typing comes into play.

For this thesis, I gathered examples of intonational typing from the website Tumblr, a microblogging platform founded in 2007 (Alfonso 2017) that allows users to curate a blog of videos, images, GIFs, audio files, links, and text posts. Tumblr users can follow other blogs and add other people's posts to their own blog by "reblogging"; they can also add commentary to these posts by writing a reply and/or adding tags. As mentioned previously, the majority of Tumblr users are under the age of 35, and identify as women or as non-binary. While there is a great variety of subjects blogged about on Tumblr, most of the posts in this corpus relate to social justice topics or to entertainment media.

2.3 Overview of intonational typing strategies

Infixing spaces between individual letters of a word is one of the newer intonational typing strategies frequently employed on Tumblr. Spaces can also be infixes less frequently; users sometimes infix them between only some of the letters of a word, visually splitting that word into (un)even chunks as in (1). Tumblr user elenawinchestpurr (2018) stated that space infixation to split a word into uneven chunks shows a “choked or strangled tone.” Grant (2015) believes that space infixation between every letter (as seen in (2)) is meant to imitate emphatically lengthening the sounds of a word in speech; repeating letters in a word can give the same impression.

1) LOOK AT HER EYES LOOK HOW HAPPY SHE LOOKS L O O K

(casesandspace, 2018a)

2) please im just trying to fo c usss ple . ase, (casesandspace, 2019a)

Another strategy of intonational typing is adding punctuation where it would not go in informal written English. Specifically, users will add upwards of two exclamation points or question marks after multiple words in the middle of the utterance, as in (3).

3) IF YOU ARE COSPLAYING A DISNEY PRINCESS AND YOU ARE GOING

SOMEWHERE WHERE THERE ARE GOING TO BE KIDS THAT WILL COME UP

TO TALK TO YOU

YOU!!!! CAN!!!! NOT!!!! BE!!!! ANTI!!!! SOCIAL!!!! TO!!!! THEM!!!! (McCulloch

2015b)

This strategy lends a very excited or incredulous tone to the text, depending on the particular punctuation chosen. Example (3) is representative of the recent move towards a consistent number of exclamation points between each word, and has the other notable quality of splitting up both *cannot* and *anti-social* into two chunks, each followed by the same number of exclamation points; this changes the chunks from words to morphemes. Variations of “adding punctuation” using periods or the clapping emoji have also been attested (McCulloch 2015b). More recently, multiple commas and semicolons are also employed, as in example (4), in which the poster is imagining the reaction of their pet dove to another user’s request to “tell juniper [the bird] that i [the asker] would die for him”:

(4) he was like ,,,,WAt (casesandspaces, 2018b)

A last strategy of intonational typing is more general than those described previously, but nonetheless holds many opportunities for closer examination. It is the deliberate use of nonstandard grammar and/or spellings, as in (5) and (6).

(5) “lyk w/e im happy 4 u but pls, i kno u lied 2 get that” (sigmastolen, 2016)

(6) “what i can’t even no how do air AMAZE” (sigmastolen, 2016)

The Tumblr user tangleofrainbows writing in the thread “how teens and adults text [...]” observed that from their experience, expressions of negative emotions such as bitterness tend to preserve grammar but use much more alternative spellings, while expressions of positive emotions such as awe or excitement will more often lead to (mostly) standard spellings and a nonstandard use of grammar (sigmastolen, 2016), perhaps with the aim of also conveying a lighthearted tone. tangleofrainbows devised (5) and (6) as examples of what each emotional

style looks like. Example (5) would be written as “Like, whatever, I’m happy for you; but please, I know you lied to get that” in informal English; the hypothetical user expresses their distaste at another person coming into something that person wanted through dishonest methods. Example (6) is meant to express incoherent amazement; it combines the established reaction phrases “what”, “I can’t even” (conveys speechlessness), “no”, and “how do air” (conveys breathlessness) and concludes with the emphatic all-caps “AMAZE” to summarize the reaction.

3. ESCALATING CAPITALIZATION

Escalating capitalization is an intonational typing strategy used to indicate emphatic speech. It is widely assumed that escalating capitalization an outgrowth of the more traditional strategy of using all-caps to indicate emphatic speech, particularly yelling. Tumblr user elenawinchestpurr (2018) states that escalating capitalization can also be used to indicate a sudden change to a more emotional tone. This thesis is the first systematic analysis of possible factors influencing the point at which users choose to switch letter case when employing escalating capitalization.

3.1 Construction of the dataset

The 132 attestations in the escalating capitalization dataset were collected via my scrolls through various Tumblr blogs. Most attestations come from personal blogs centered around entertainment media that the users are fans of; this provides many opportunities for users to react to gifs and pictures of the media of interest, create written or drawn scenarios involving media characters, and interact with other fans of the same media. Tumblr allows users to make text-only posts, caption posts that include videos, images, or gifs, write replies to other posts, and add tags for organizational and commentary purposes. All of these methods are opportunities for

users to employ intonational typing strategies. I created a Tumblr account and blog, casesandspaces.tumblr.com, to collect instances of intonational typing as I came across them. This blog functions as a living archive of this thesis' corpus, and can be updated as further attestations are found. Each post is tagged with the intonational typing strategies that appear in it, and if it contains intonational typing in an image, I reproduced the example in text as an addition to the original post.

For attestations of escalating capitalization, in addition to reblogging the post to [casesandspaces](https://casesandspaces.tumblr.com), I copied the text of the post into an Excel spreadsheet. This spreadsheet is the dataset that the following examples are pulled from, and the analyses of patterns and tendencies in escalating capitalization that are discussed below are based on the dataset. In addition to the text of the attestation and the characterization of its escalating capitalization, I also recorded the [casesandspaces](https://casesandspaces.tumblr.com) URL at which the post can be viewed, as well as the date the post was originally made. Attestations were originally posted at a range of dates between 2013 and April 2019.

3.2 Representative examples of escalating capitalization

Escalating capitalization is a category of intonational typing that encompasses anytime a switch in letter case is maintained within a word or phrase for multiple letters. It is similar in tone conveyed to capslock, but holds an additional air of surprise or of “rising, emotional tone” (elenawinchestpurr, 2018). Below are four examples of escalating capitalization used on Tumblr, accompanied by a description of the original context in which they appeared on the users' blogs. The examples are accompanied by full citations in the appendix. These examples were chosen because they are representative of some of the tendencies in escalating capitalization that I investigated further Sections 3.3-3.6. These examples also make use of

several other intonational typing strategies, which are described in the paragraphs immediately following each example.

Example (7) is from a “texts from _____” blog, in which text conversations between characters or people are written by the blog owner(s) based on the source media and/or suggestions from other users. The *textsfromgayswimmers* blog posts text conversations between characters in the anime *Free!*, which centers on a boys’ high school swim club. In this post, one character, Ai, is challenged by a friend to flirt with another character, Rin, to see just how oblivious Rin is to all attempts at flirting. Rin’s text in (7) is a response to Ai saying that Rin is his “whole life” (*textsfromgayswimmers*, 2014).

(7) you gotta be yoUR OWN PERSON (textsfromgayswimmers, 2014)

textsfromgayswimmers employs escalating capitalization in the word “yoUR,” choosing to change letter case in the middle of the digraph ⟨ou⟩ ([o]). Section 3.3 investigates the patterns of where in a word escalating capitalization occurs in more detail. In addition to escalating capitalization, *textsfromgayswimmers* also chooses to omit the sentence-initial uppercase letter (“you gotta be” vs. “You gotta be”) and sentence-terminal punctuation mark (“OWN PERSON” instead of “OWN PERSON.”, for example). Choosing not to include those two features is very common among intonational typing users in general.

Example (8) is the caption to a short comic that the user *joker-ace* wrote and drew. The comic is an interaction between two characters from the videogame *Mystic Messenger*, wherein one of the characters suggests getting rid of one’s emotions in order to avoid distraction, and the other character enthusiastically agrees.

(8) tHESE 2 R ARGUABLY THE MOST UNHEALTHY DUO IN THIS GAM E N
SHOULD NEVER BE LEFT ALONE (joker-ace, 2017)

It is difficult to determine whether joker-ace intended (8) to be an instance of escalating capitalization or of reverse capitalization, which is when a users activates capslock before beginning a sentence, but hits shift on the first letter out of force of habit of traditional sentence-initial capitalization, causing that letter to be lowercase. In recent years, many operating systems have disabled the function of holding capslock and shift in order to get a lowercase letter.

There is no consistent way to distinguish reverse capitalization from escalating capitalization from the reader's point of view, beyond extrapolating from the poster's broader sentence-initial capitalization (or lack thereof) habits. (8) makes use of multiple intonational typing strategies in addition to escalating capitals, namely, space infixation ("GAM E"), and abbreviations for the words *are* (using "r") and *and* (using "n"). joker-ace, like textsfromgayswimmers, chooses to omit a sentence-terminal punctuation mark in this post.

Example (9) makes use of one of the template options for a text post: a dialogue. In it, a parent asks a baby what sounds different animals make. The baby gives the expected response until the parent asks about owls, at which point the baby breaks the established pattern with their reply of "heY HEY AKAASHI". This response is a reference to an anime & manga series in which one volleyball player on the Owls team frequently speaks in this manner: he uses *hey* frequently, is very loud (as indicated by the capital letters), and often talks with a teammate named Akaashi.

(9) **Parent:** What does a cow say?

Baby: Moo!

Parent: Yes! What does a cat say?

Baby: Meow!

Parent: Great job! What does an owl say?

Baby: heY HEY AKAASHI

(ikarinobudo, 2016)

Up to the point of the “punchline” of this post, ikarinobudo does not employ any intonational typing strategies, even choosing to include sentence-initial capitalization and sentence-terminal punctuation. This makes the lack of the aforementioned features and presence of escalating capitalization stand out even more, adding to the comedic effect of the post.

Example (10), like (8), is the caption to a short comic by the artist joker-ace. The comic depicts the situation described in the caption: an alternate universe (AU) of the show *Voltron: Legendary Defenders* in which the characters Lance and Keith meet and fall in love while working at a shopping mall. The user begins the caption with the word “wh eEZES”, which is taken to mean that the user is wheezing at the start of the utterance. Typically, words denoting actions by the users will be bracketed by asterisks or double-colons (Zimmer 2013), but in this post the user chooses to omit them. “Klance” is a portmanteau combining Keith and Lance’s names and indicating their status as a couple in the comic; creating “blended” names to indicate relationships is common practice among online fan communities (Digirolamo, 2012). The use of “i” in space of “a” in the phrase “ok so i while ago” is understood to be a typo that joker-ace did not correct.

(10) wh eEZES ok so i while ago i thought about a Mall klance AU where Keith falls for a mascot working at the mall but,,, doesnt even kno who’s under the costume?? (~~its lance~~)
(joker-ace, 2017)

As in (8), the user also makes use of other intonational typing strategies, namely inserting spaces between letters of a single word (“wh eEZES”), dropping capitalization where it would conventionally occur (“i though about”; “klance”; “its lance”), capitalizing words to signal their importance (“Mall”, although in this case that could be used as the ‘title’ of the AU), using

multiple punctuation marks after a word (“but,,, doesnt even kno”; “who’s under the costume??”), omitting apostrophes (“doesnt even kno”; “its lance”), deliberate nonstandard spellings (“kno”) and strikethrough text (“~~its lance~~”). joker-ace also uses the discourse marker “ok so” at the beginning of the caption, in addition to indicating a physical action with “wh eEzes.” Interestingly, intonational typing strategies are not applied universally in this post, as the user does choose to capitalize “Keith” and include the apostrophe in “who’s”. This could be in order to disambiguate *who’s* from *whose*, in the latter case, or because the user is switching in and out of informal written English and intonational typing, either consciously or unconsciously.

3.3 Hypotheses and preliminary observations

The central investigative question of this section is what factors influence users’ decision to switch from lowercase to uppercase in a given section of a word instead of another section. There are two broad hypotheses in competition with one another. The first, “speech-centered hypothesis” proposes that users attend to the spoken representation of the word in order to determine when to switch cases. The second, “writing-centered hypothesis”, proposes that they attend to the written representation of the word. If the speech-centered hypothesis is supported, then that would further support Grant (2015)’s previously discussed observation that Tumblr (and indeed, other social media platforms) is becoming more similar to spoken language and less similar to written language. If the writing-centered hypothesis is supported, then Tumblr users as a whole are still conceptualizing their postings as more writing-like than speech-like. The writing-centered hypothesis optimistically leaves open the possibility of Tumblr language becoming more speech-centered in the future. A third likely possibility is that users’ mental representations of their internet language use lies somewhere in the middle of the two hypotheses

proposals: they may conceptualize it as writing that is simply more speech-like than informal written English.

Because users showed a much stronger preference for switching letter case on the second phoneme than on the second letter (see Figs. 1 & 2 for further discussion), which indicates support of the speech-centered hypothesis, I chose to investigate multiple other factors that depend on the spoken pronunciation of the word, as well as several that map onto its written representation. Factors that were examined include how many phonemes into the word the switch occurred; the presence of a digraph; the manner of articulation of the phoneme on which letter case changes and those surrounding it; the portion of the syllable; and the location of stressed syllables within the word. Of these factors, the data showed that users had the most definite preferences for making their decision based on (1) the number of phonemes in the word and (2) syllable stress pattern.

The speech-centered hypothesis proposes that the decision of when to switch letter case is based on the phonological segments and spoken pronunciation of the word in which the switch to capitalization occurs. If users are thinking about a word in terms of its component sounds more than its component letters, the salient form in their thought processes is the spoken one, not the written one. This focus on sounds over letters would mean that the users are attending to the spoken language form of the word over the written form, and in turn, that they are associating what they write more with spoken language than written language.

The writing-centered hypothesis proposes that users determine when to switch to uppercase based on the letters of a word, without regard to the spoken pronunciation of the word. It also assumes that there is not a phonological correlate to escalating capitalization, in terms of how users are mentally “reading aloud” the text of a post. In this case, the data suggest that users

choose to capitalize on the second letter, irrespective of what the surrounding letters are or whether a digraph is involved.

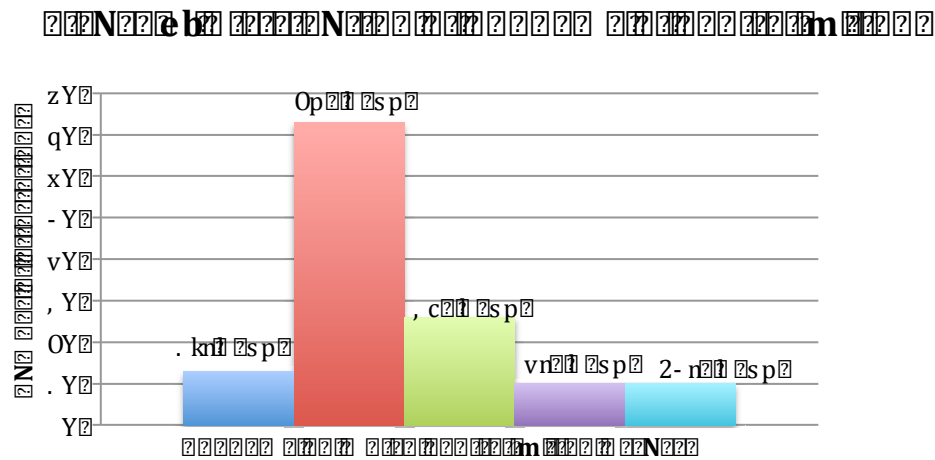
To assess whether users had a preference for how far into a word to capitalize, I broke the dataset into categories of what number phoneme or letter the switch to capitalization occurs on.

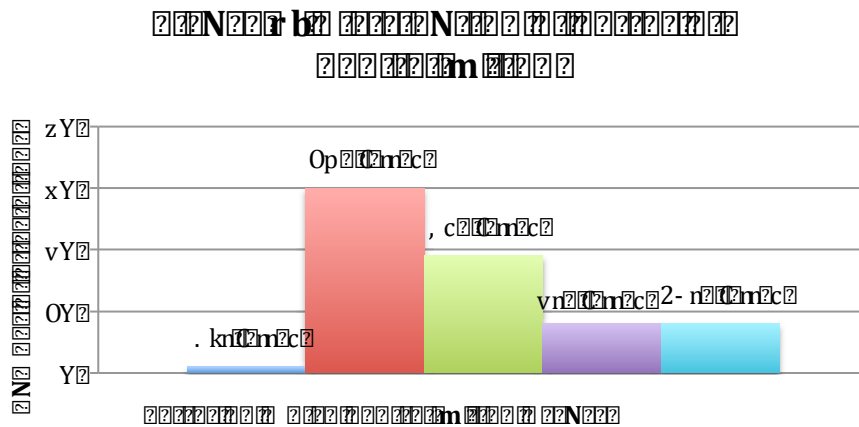
In (11) (an excerpt from a fictitious SMS conversation between the speaker and his younger sister Gou), for example, capitalization occurs on the second phoneme, and the third letter, of <what>/[wʌt].

(11) gou whAT HAVE I TOLD YOU ABOUT OBSESSING OVER MUSCLES

(textsfromgayswimmers, 2014)

Figures (1) and (2) show the distribution of how far into a word users choose to capitalize.





In all but one of the cases in which a user capitalized on the first phoneme, that phoneme is a digraph.⁴ In many cases, the first, second, and third phoneme have a 1:1 correspondence with the first, second, and third letter. It is clear that the most frequent location to switch is the second component of a word, be that phoneme or letter. However, there is a stronger preference for capitalizing on the second phoneme than there is for capitalizing on the second letter.

Capitalizing on the second phoneme (55.3%) is more than twice as common as capitalizing on the next-most-popular option, the third phoneme (19.7%). Meanwhile, while the second letter is still the most frequent choice (44.2%), the third letter is in tighter competition with it (28.0%).

In a hypothesis test for the difference of two proportions, the ratio of 2nd phoneme to 3rd phoneme was shown to be statistically significantly more different than the ratio of 2nd letter to 3rd letter at the 95% confidence level. In other words, the second phoneme is preferred over its closest competitor *more strongly* than the second letter is preferred over its own closest competitor. More consistently choosing a specific type of component—in this case, phonemes or

4. The only case where capitalization occurred on the first phoneme but not the first letter was the word "knight" (knighT). This is a digraph because the first two phonemes, /k/ and /n/, are represented by the same letter, "k".

letters—indicates attention to that type of component, in this case, phonemes or letters. Users’ stronger preference for a specific phoneme position as opposed to for a specific letter position supports the speech-centered hypothesis, because this stronger preference demonstrates that users are paying attention to the phonemic components of a word more than to its orthographic components.

There are several tendencies in escalating capitalization with regard to where in a word users choose to switch letter case that seem unexpected, especially if they are centering the spoken representation of the word as previously discussed. In many cases, users will split a digraph (a single phoneme written with multiple letters), such as in (7), (8), and (10), and sometimes a diphthong, as in (9). Boldface has been added to the exact point of escalating capitalization to make it stand out.

(7) you gotta be **yo**UR OWN PERSON (textsfromgayswimmers, 2014)

(8) **t**H~~E~~SE 2 R ARGUABLY THE MOST UNHEALTHY DUO IN THIS GAM E N
SHOULD NEVER BE LEFT ALONE (joker-ace, 2017)

(9) Baby: **he**Y HEY AKAASHI (ikarinobudo, 2016)

(10) wh **e**EZES ok so i while ago i thought about a Mall klance AU where Keith falls for
a mascot working at the mall but,,, doesnt even kno who’s under the costume?? (~~its lanee~~)

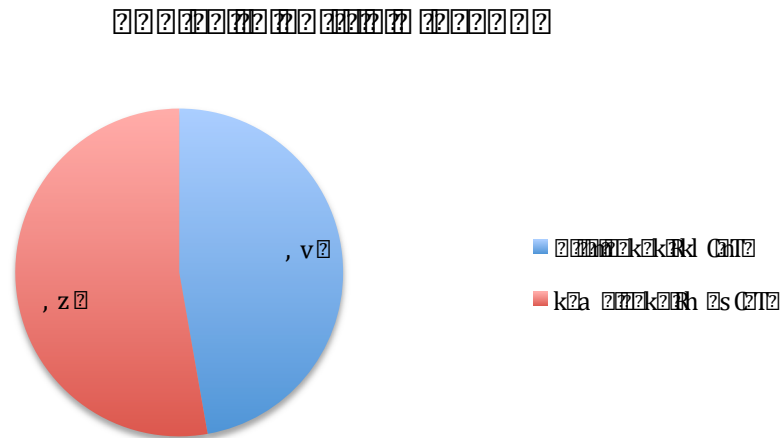
(joker-ace, 2017)

Beyond the two broad hypotheses of changing letter case based on either orthographic or phonological components, several other possible tendencies are suggested by the data. The class of sound could factor into the decision of when to capitalize: vowels are by far the most common class on which to capitalize (nearly half of the attestations capitalized on a vowel); perhaps sonorants, because of their vowel-like qualities, are more likely to be chosen as a case switch

location than obstruents. The details of my investigation of the aforementioned factors comprise Sections 3.4 through 3.6 I looked at the breakdown of how frequently users chose to split a digraph when given the opportunity, and how frequently they capitalized on a syllable that did not hold the primary stress in the word.

3.4 Splitting Digraphs

One of the first things that stood out to me about the escalating capitalization examples I encountered was that users frequently split the digraphs {wh} and {th}, as well as choosing to switch letter case in the middle of a group of written vowels. This seemed an unexpected choice, so I decided to investigate further. I hypothesized that users may be specifically drawn to splitting digraphs over switching letter case between phonemes. Figure 3 displays the total number of attestations that included a digraph; those that switched case mid-digraph (visually “splitting” it) are counted in blue, and those that switched case at another point in the word, leaving both letters of the digraph in the same case, are counted in red.



Of the 72 escalating capitals attestations in the dataset that contained one or more digraphs, users chose to split a digraph 34 times and chose to write both letters of the digraph in

the same case 38 times, as shown in Figure 3.⁵ The comparison (47.2% splitting vs. 52.8% keeping a digraph whole) shows no strong preference one way or the other, and a hypothesis test showed that neither was statistically significantly different from 50%, the proportion expected from chance, even at the 90% confidence level. Because the choice is binary, a lack of preference for splitting the digraph does also indicate a lack of preference for keeping it whole. But if users are attending to the spoken representation of words when they apply escalating capitalization, as the analysis of what phoneme and letter position in a word they begin capitalization on (Figs. 1 & 2) suggests they do, why would they choose to split a single sound into two different letter cases in nearly half of the eligible data points in the corpus? Perhaps because we think of a digraph as one sound or two closely related sounds, it is unusual to see its components so starkly contrasted in different letter cases. This unexpected contrast is attention grabbing, a feature that users seek to take advantage of when using escalating capitals, as evidenced by user descriptions of the tone it conveys (e.g. elenawinchestpurr, 2018). Narrowing the focus to vowel digraphs, it is possible to diphthongize many of the vowel sequences in which the switch occurred in the middle of a single vowel phoneme (as in (7)). In neutral speech, “your” is [joɹ]. But when emphasized, the lip rounding of [o] is more pronounced, and emphatic lengthening of the vowel and subsequent glide leads to the pronunciation [jooɹ]. More precise enunciation and longer vowels that are characteristic of words a speaker wants to emphasize can lead to this “emphatic diphthongization.” Users could be writing out emphatic diphthongization through their capitalization choice.

(7) you gotta be yo**U**R OWN PERSON (textsfromgayswimmers, 2014)

⁵ Two attestations had multiple digraphs: in one case, the user chose to split /wh/ instead of /oo/ in “whoops”, and in another, the user chose to break the second /sh/ digraph of “shush” and not the first.

(9) Baby: **heY** HEY AKAASHI (ikarinobudo, 2016)

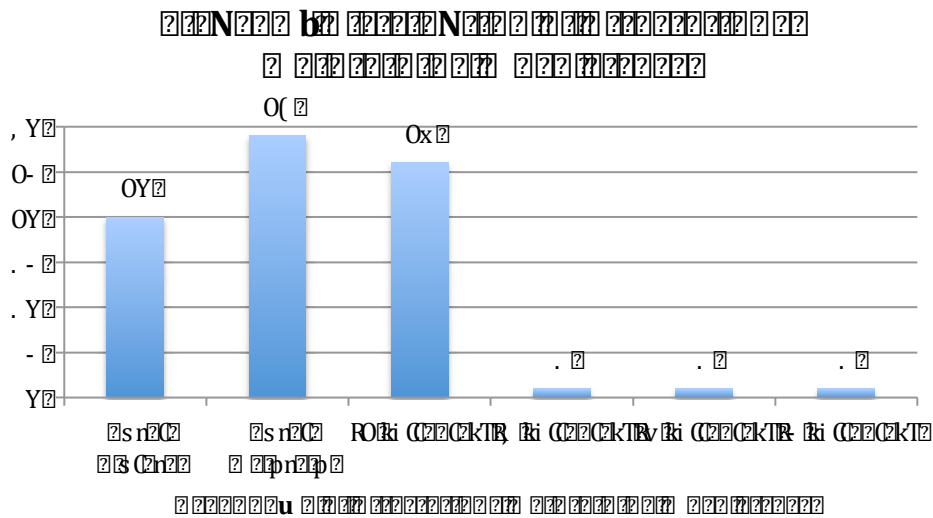
(10) wh **eEZES** ok so i while ago i thought about a Mall klance AU where Keith falls for a mascot working at the mall but,,, doesnt even kno who's under the costume?? (~~its lanee~~)
(joker-ace, 2017)

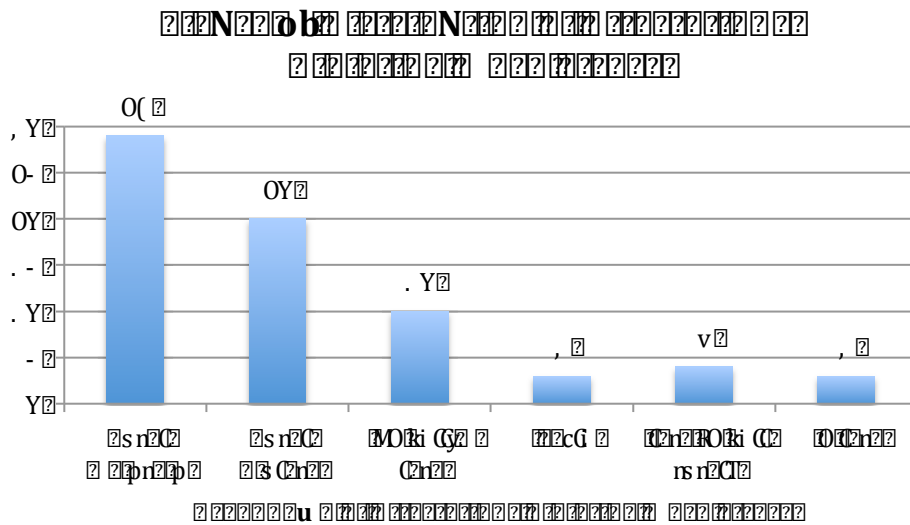
In the case of the diphthong [eɪ] In “heY” (example 7), it follows the pattern of (7)’s “**yoUR**” and (10)’s “wh **eEZES**” by switching to capitals in the middle of the vowel sequence, but because it is a diphthong even when spoken non-emphatically, the choice to switch in the middle seems to make the diphthong quality even more obvious. Splitting the diphthong in half could also indicate that it is mentally represented as two sounds, even though the [eɪ] in “hey”, “bay” or any other word-final position is commonly thought of as only one vowel.

3.5 Maintaining and Violating Stress Patterns

In my preliminary investigations, one of the factors of escalating capitalization that I began to wonder about was whether the word stress was linked to the decision of when to capitalize, in that the capitalized letter may mark the beginning of the stressed syllable. To consider the possible effect of the stress pattern of the word in which escalating capitalization begins, the 49 total multiple-syllable words in the dataset were categorized based on whether they changed case during the syllable with primary stress in the word (maintaining the original word stress) or during some other syllable (violating the original word stress). I chose to analyze the escalating capitalization attestations both in terms of what position syllable capitalization occurred on (e.g., first, second, or third syllable of the word) and how the location of capitalization was situated in relation to the syllable of primary stress in the word (e.g., immediately before, immediately following, or at least two syllables away).

Within the broad categories of maintaining or violating stress, the relative frequencies of sub-categories parenthetically mentioned above are shown in Figures (4) and (5). Figure (4) shows the set of attestations in which capitalization maintains the original word stress. Of these, 26 are two-syllable words, and there is only one each of 3-, 4-, and 5-syllable words. Figure (5) shows the set of attestations in which capitalization begins on a syllable other than that which holds the primary stress. In 10 cases, the word is more than two syllables, and capitalization occurs on the syllable directly following that which holds primary stress. In 3 cases, the primary stress falls on the second syllable, but capitalization starts “early” during the first syllable. In a further four cases, capitalization begins on the second syllable while primary stress falls on the first. Finally, in the three remaining cases, the words are at least three syllables long, and capitalization occurs two syllables after the primarily stressed one. I did not count non-words or interjections such as “hahaha” that have no clear or conventionalized stress pattern.





Of the 49 multiple-syllable attestations, 29 of them maintained the original word stress pattern by switching letter case during the stressed syllable of the word, and 20 of them violated the original word stress pattern by switching letter case during a syllable besides that with the primary stress. The percentages of words that maintained the stress pattern (59.2%) and violated the stress pattern (40.8%) indicate some preference for maintaining the stress pattern, which points to escalating capitalization’s reflection of spoken inflection. This preference did not reach the point of statistical significance, however. As for violating the stress pattern, perhaps capitalizing on a non-stressed syllable capitalizes on the reader’s surprise and subsequent reevaluation of the pronunciation of the word in order to make the escalating capitals more impactful due to their unexpected location within the word. By violating the stress pattern, it also violates readers’ expectations for how the word should be pronounced.

3.6 Proportion of the way into a word at which the switch occurs

Based on the patterns I had seen in many of the escalating capitalization attestations, as well as the conclusions drawn concerning phonemes vs. letters, digraphs, and word stress, I was

curious to see whether there were any trends pertaining to the proportion of the way through a word that users chose to switch letter case. I looked at phonemes, letters, and syllables, and compared the “proportion” of the word that is in lowercase for each attestation that started in lowercase and switched to capitals. This meant that I eliminated six data points that began in capitals and switched to lowercase, but kept the “rising emotion” associated with switching to capital letters consistent throughout the dataset. “Proportion” was calculated such that the number position component of the word that capitalization occurred on was calculated as a fraction of the total number of components in the word. Thus, “wh eEZES” (joker-ace, 2017b) capitalizes on the second of five phonemes (0.2 of the phonemic representation of the word is lowercase), the fourth of seven letters (0.57 of the written representation of the word is lowercase), and the first of two syllables (0.5 of the syllabic representation of the word is lowercase). The distributions of proportion of words that are lowercase for each component type are seen in Figs. 6-8.

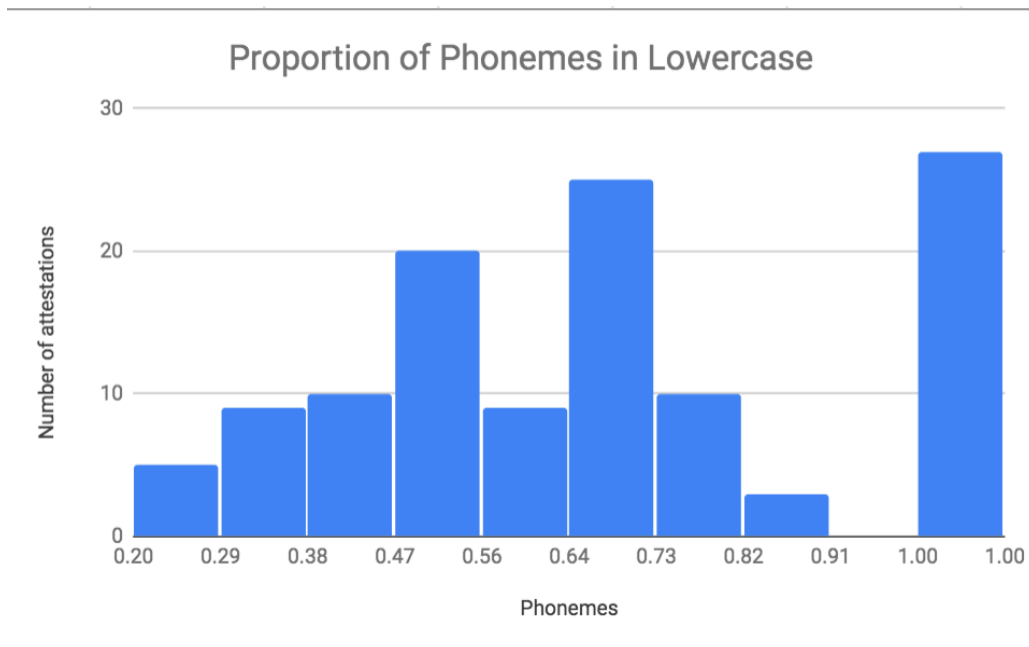


Figure 6

curious to see whether there were any trends pertaining to the proportion of the way through a word that users chose to switch letter case. I looked at phonemes, letters, and syllables, and compared the “proportion” of the word that is in lowercase for each attestation that started in lowercase and switched to capitals. This meant that I eliminated six data points that began in capitals and switched to lowercase, but kept the “rising emotion” associated with switching to capital letters consistent throughout the dataset. “Proportion” was calculated such that the number position component of the word that capitalization occurred on was calculated as a fraction of the total number of components in the word. Thus, “wh eEZES” (joker-ace, 2017b) capitalizes on the second of five phonemes (0.2 of the phonemic representation of the word is lowercase), the fourth of seven letters (0.57 of the written representation of the word is lowercase), and the first of two syllables (0.5 of the syllabic representation of the word is lowercase). The distributions of proportion of words that are lowercase for each component type are seen in Figs. 6-8.

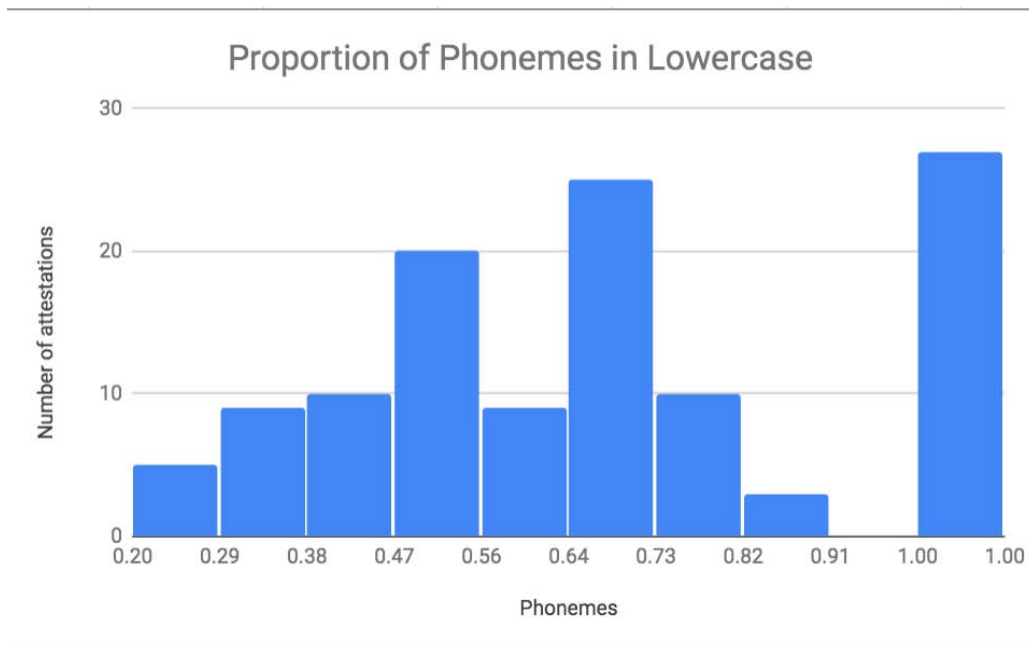


Figure 6

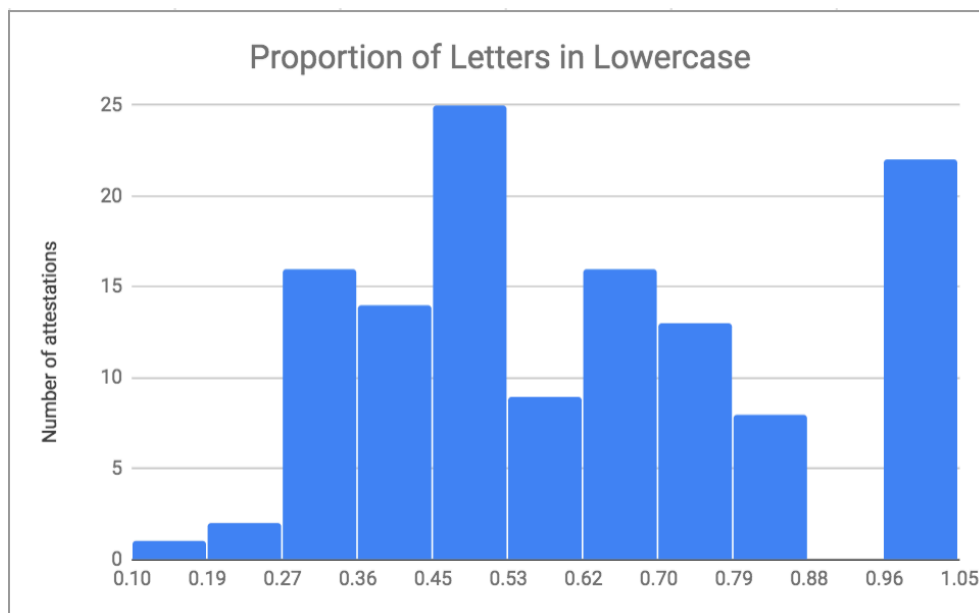


Figure 7

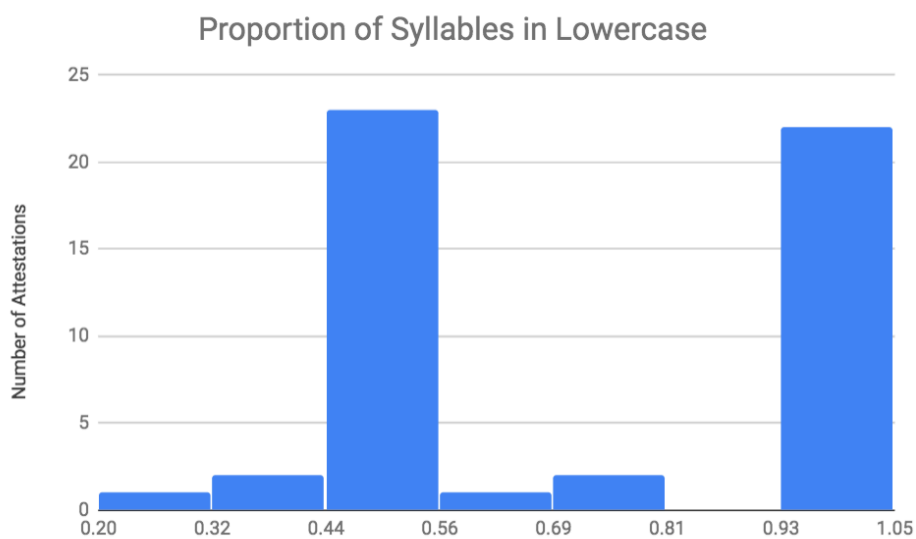


Figure 8

There were no stark differences between the three component types' distributions, and each showed a general tendency to switch to uppercase in the middle or the second half of a word. In Figure 8, the vast majority of the attestations were two syllables long, and so the only choice users were given in terms of the syllable on which to capitalize was either the first or the

last, leading to many proportions of 0.5 or 1.0 of the word in lowercase. I did not include any of the one-syllable words in the dataset when creating Figure 8, because users had no choice of what syllable to capitalize on.

4. FRAMEWORK TOWARDS FUTURE ACOUSTIC ANALYSIS OF AUDIO TRANSCRIBED USING INTONATIONAL TYPING

An acoustic analysis of the pitch contours in clips that have been transcribed using intonational typing would give clues as to what intonational and prosodic characteristics users are picking up on when they choose to transcribe video or audio clips employing intonational typing strategies. It would also show how the pitch contours compare to those found for neutral intonation and emphatically spoken utterances, or whether the typical intonational patterns seen in sentence-case or neutral intonation utterances are exaggerated, and to what extent, in utterances transcribed using intonational typing.

Internet users transcribe and caption video or audio clips for accessibility and searchability purposes. The transcriber may employ intonational typing strategies in their captions, depending on their blogging style and the content of the clip. Several such transcriptions were identified and tagged with “transcription” on casesandspaces.tumblr.com. The first of these is from “Brave Wilderness”, the YouTube channel of adventurer and educator Coyote Peterson, on which he posts nature education and wilderness adventure videos. In this clip, Coyote is pointing out a feature of the beach environment (“overhanging leaves on the shoreline”) when he spots a crab and excitedly runs towards it. A Tumblr user transcribed the speech in the video as follows:

(12) wow, look at this! the overhanging leaves.. on the shoreline are pretTHERES A
CRAB (glorywholhero, 2018)

The second audio clip is from “The Eric Andre Show”, and while the transcriptions don’t use escalating capitalization, the first makes use of sub- and superscripts to convey change in pitch, and the second employs space infixation between each letter of a word to convey how it is emphasized or drawn out in some way.

(13) HOW ‘BOUT THEM PRICES J A C K?!

(14) wHA^T DID HE ^{SAY???} (amtrax, 2017)

In the Eric Andre Show clip, a man’s head burst out of the desk and he shouts (13) right as the clip begins. (14) is the guest Jack’s reaction to that.

The central aim of an acoustic analysis would be to shed light on some of the possibilities raised in section 3.3 about what characteristics of speech intonational typing represents.

5. CONCLUSIONS

Intonational typing strategies are not merely random typos or meaningless noise in the signal of internet communication, and users of these strategies are well aware of their meaning and application. Why, after all, would one go to the effort of hitting capslock, or typing exclamation points after every word, if it added nothing to the message one was typing? These strategies are relatively new, however, and have certainly seen a rapid increase in usage thanks to the popularity of social media and chat platforms.

There is still much variation in the exact application of individual intonational typing strategies, as is evidenced by the plurality of partial patterns shown in the escalating capitalization data. These strategies have not yet been standardized or conventionalized to the extent that ‘standard’ English punctuation and emphasis markers have been—although in the latter case, I have observed debate over the appropriate use of italics, underline, and boldface

with relation to each other—so the opportunity to observe them while they are still in a state of flux is quite unique.

Escalating capitalization (and a few other strategies) are frequently employed to mark emphatic speech. My two hypotheses of when in a word the switch in letter case is most likely to occur are the speech-centered hypothesis and the writing-centered hypothesis. The distribution of phonemes on which the switch in letter case occurred was much more concentrated than the distribution of letters on which the switch occurred, and this more focused distribution for the phonemes lent support to the speech-centered hypothesis. Additionally, 59% of the escalating capitals attestations switched to capitals within the syllable that held the primary stress. Stress is not orthographically encoded in formal written English, but it is phonologically encoded, and so the fact that users are exploiting the knowledge of stress when choosing when to capitalize also supports the speech-centered hypothesis.

Intonational typing strategies expand the possible range of specific intonations available to be represented in-text to English-using writers, and the development and popularity of new strategies is still in progress. Internet users have continued to come up with more and more options of how to express their intonation beyond those ways that have already been incorporated into formal written English, and those strategies are transparent enough to be understood and picked up by other users, spreading over time and communities.

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APPENDIX A: EXAMPLES

1. LOOK AT HER EYES LOOK HOW HAPPY SHE LOOK L O O K

casesandspaces (2018a). November 18, 2018. “babyanimalgifs look at her eyes look how happy”. Originally posted by babyanimalgifs in Spring 2018.

<http://toranator.tumblr.com/post/164829711964/babyanimalgifs-look-at-her-eyes-look-how-happy>

2. **me:** please im just trying to fo c usss ple . ase,

brain: theres not a soul out there....no one to hear my

PRAAAAAAAAAAYERS

GIMME

GIMME

G I M M E

A MAN AFTER MIDNIGHT

Casesandspaces (2019a) April 11, 2019. “thatadhdfeel me please im just trying to fo c”. Originally posted by thatadhdfeel in April 2019.

<https://casesandspaces.tumblr.com/post/184117587430/thatadhdfeel-me-please-im-just-trying-to-fo-c>

3. IF YOU ARE COSPLAYING A DISNEY PRINCESS AND YOU ARE GOING SOMEWHERE WHERE THERE ARE GOING TO BE KIDS THAT WILL COME UP TO TALK TO YOU

YOU!!!! CAN!!!! NOT!!!! BE!!!! ANTI!!!! SOCIAL!!!! TO!!!! THEM!!!!

McCulloch, Gretchen, 2015b. What’s up with Exclamation!!! Marks! Between words!

Retrieved from <http://mentalfloss.com/article/69149/whats-exclamation-marks-between-words>.

4. he was like ,, ,, WAt

Casesandspaces, November 20, 2018(b). “hi please tell juniper that I would die for him”. Originally posted by dovedairy on April 30, 2018.

<https://casesandspaces.tumblr.com/post/180319911915/hi-please-tell-juniper-that-i-would-die-for-him>.

5. “lyk w/e im happy 4 u but pls, i kno u lied 2 get that”

sigmastolen, 2016. “re: how teens and adults text, I would be super interested to hear your theory!” Online Post. Retrieved from <http://allthingslinguistic.com/post/131245982882/re-how-teens-and-adults-text-i-would-be-super>.

6. “what i can’t even no how do air AMAZE”

sigmastolen, 2016. “re: how teens and adults text, I would be super interested to hear your theory!” Online Post. Retrieved from <http://allthingslinguistic.com/post/131245982882/re-how-teens-and-adults-text-i-would-be-super>.

7. you gotta be yoUR OWN PERSON

Textsfromgayswimmers, September 2, 2014. “submitted by honorablerosemary”. <http://textsfromgayswimmers.tumblr.com/post/96476218455/submitted-by-honerablerosemary> .

8. tHESE 2 R ARGUABLY THE MOST UNHEALTHY DUO IN THIS GAME N SHOULD NEVER BE LEFT ALONE

Joker-ace, 2017a. “tHESE 2 R ARGUABLY THE MOST UNHEALTHY DUO IN THIS” <http://joker-ace.tumblr.com/post/152736099414/these-2-r-arguably-the-most-unhealthy-duo-in-this>.

(9) **Parent:** What does a cow say?

Baby: Moo!

Parent: Yes! What does a cat say?

Baby: Meow!

Parent: Great job! What does an owl say?

Baby: heY HEY AKAASHI

Ikarinobudo, May 5, 2016. “Parent: what does a cow say? Baby: moo Parent:” <http://ikarinobudo.tumblr.com/post/143865953938/parent-what-does-a-cow-say-baby-moo-parent>.

10. wh eEZES ok so i while ago i thought about a Mall klance AU where Keith falls for a mascot working at the mall but,,, doesnt even kno who’s under the costume?? (~~its lance~~)

Joker-ace, 2017b. “wh eezes ok so i while ago i thought about a mall” <http://joker-ace.tumblr.com/post/157027274209/wh-eezes-ok-so-i-while-ago-i-thought-about-a-mall>.

11. gou whAT HAVE I TOLD YOU ABOUT OBSESSING OVER MUSCLES

Textsfromgayswimmers, September 2, 2014. “submitted by honorablerosemary”.
<http://textsfromgayswimmers.tumblr.com/post/96476218455/submitted-by-honerablerosemary> .

12. wow, look at this! the overhanging leaves.. on the shoreline are pretTHERES A CRAB

glorywholhero, February 3, 2018. “wow, look at this!” Online post, retrieved from
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13. wHA^T DID HE ^{SAY???}

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Retrieved from <https://amtrax.tumblr.com/post/167919480985/morbidmanatee-tripropellant-i-cannot-stop>.

14. HOW ‘BOUT THEM PRICES J A C K?!

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Retrieved from <https://amtrax.tumblr.com/post/167919480985/morbidmanatee-tripropellant-i-cannot-stop>.

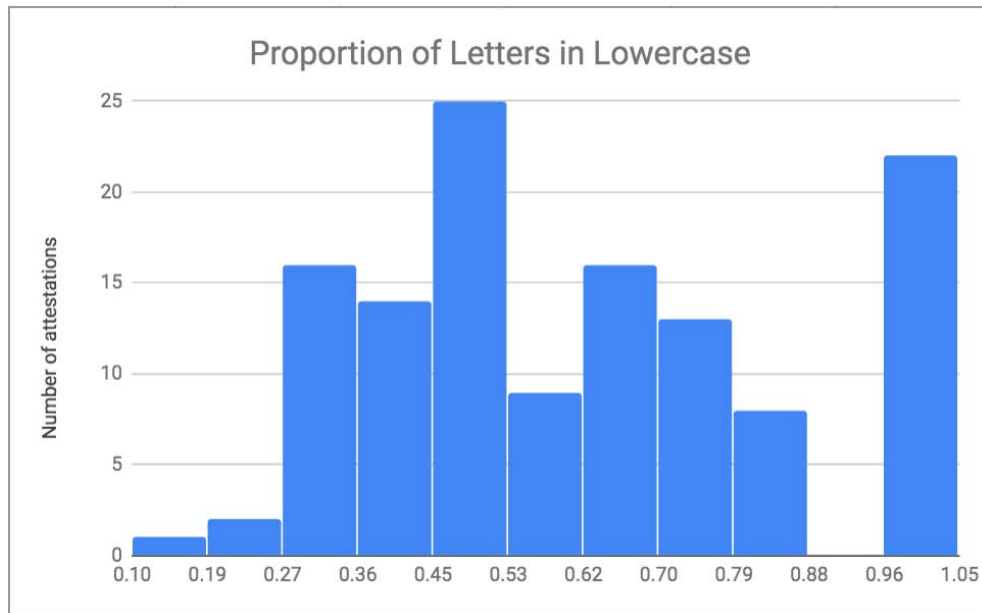


Figure 7

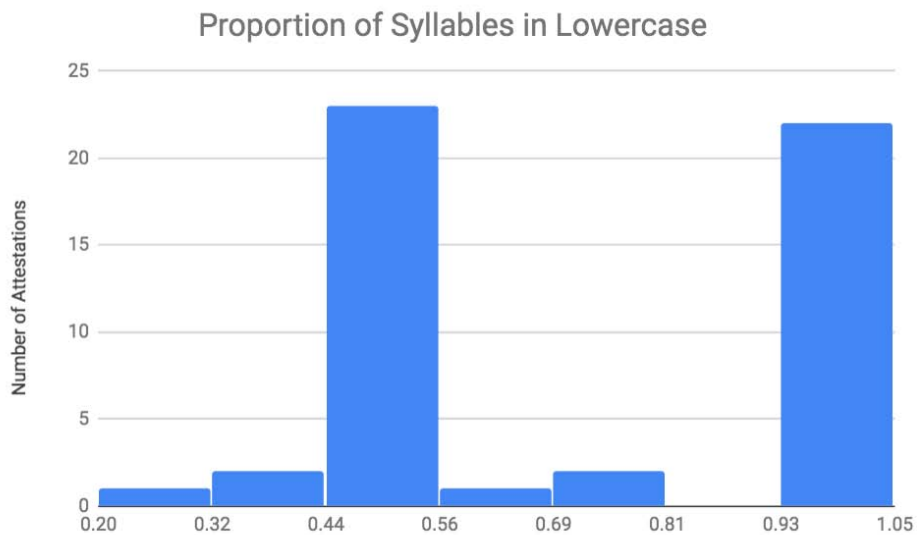


Figure 8

There were no stark differences between the three component types' distributions, and each showed a general tendency to switch to uppercase in the middle or the second half of a word. In Figure 8, the vast majority of the attestations were two syllables long, and so the only choice users were given in terms of the syllable on which to capitalize was either the first or the