



Analysing the Meaning of Tone Indicators by Neurodivergent Community in Twitter

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Abstract

Miscommunication happens often in social media, especially in text-based environment where tone can be non-existent for the readers. Tone indicators are introduced to help ease the process of message interpretation by indicating the tone or context delivered in text. The neurodivergent community has found this tool to be beneficial and utilise it in their day-to-day communication in social media, especially Twitter where the majority of content comes in text. This study presents a qualitative analysis of how the community define tone indicators through computer-mediated communication theory. The result indicated that tone indicators not only helped clarify the tone or context in text, but also emphasized the expression or emotion conveyed as well as minimizing the misinterpretation of messages. Tone indicators is a tool to complement the text with context and clarity of intention during communication online and provide an inclusive digital space. Result has provided insights on the community and tone indicators in social media.

Keywords: *Tone Indicators; Neurodivergent Community; Twitter*

Introduction

Tone often gets lost in text and caused miscommunication, it happens as a result of poor message interpretation, yet it's a common phenomenon due to message interpretation may vary between the sender and the receiver. The original intentions of a message may not be conveyed or interpreted properly with the lack of tones. Even in social media like Twitter and Facebook, where the majority of public posts come in the form of texts, could still trigger misinterpretation within the audiences due to the lack of paralinguistic cues.

As we all know, nonverbal communication plays a significant role in interpretation of meaning in Face-to-Face (FtF) communication, yet most of it is excluded from Computer-mediated Communication (CMC) as message interpretations in digital media carries a different patterns and new challenges (Edwards, Bybee, Frost, Harvey, & Navarro, 2016). Social presence theory claims that CMC has different

methods in conveying verbal and nonverbal messages (Walther, 2011) and social media users found that nonverbal cues can be conveyed through emoticons or emojis.

Emoticons can be utilized as a form of nonverbal communication and raise the intensity of an argument while also helping in articulating the ambiguity of a message and expression of sarcasm if used properly (Derks, Bos, & Grumbkow, 2008). However, the presence of emoticons and emojis are still considered not as effective as FtF (Rainey, 2000) given the fact that “slightly smiling emoji” (☺) can either have negative connotations as some people perceive it as an expression of passive aggressive based on emojiopedia description.

In the middle of 2020, Twitter users introduced “Tone Indicators” that serve as tone signifiers to help readers interpret the tone of the message. The purpose is to serve as a form of textual paralinguistic cues in a text-only environment, especially in Twitter where users would often encounter sarcastic texts that can be taken out of context. One can simply put the tone tag “/s” (short for “sarcasm”) at the end of their tweet to indicate what they said is not sincere and merely a form of irony. This solution helped many in reducing misunderstandings online by aiding the ability to interpret the context of a message. However, the variety of abbreviations that exist in the list of tone indicators has shown to be a problem, as users could end up mistaking one tone tag with the other.

While tone indicators have proven to be useful in certain social situations, there are arguments emerging about the meaning and value of tone indicators especially for individuals with neurodivergent, who find significant benefits and meaning of the tool in digital communications. Scholars have not yet studied this form of paralinguistic signifier hence this research was done to analyse the meaning of tone indicators by the neurodivergent community and how it applied to them in digital society.

Miscommunication in Twitter

Statista Research Department (2021) has published a report that Twitter has grown popular as of July 2021 where the microblogging site had an audience reach of 73 million users from the United States, with Japan and India coming second and third with 55.55 and 22.10 million users respectively. Twitter allows its users to create ‘tweets’ that are the user’s own messages created to share information, opinions, and socialize with other users and may include text, pictures, videos, or GIFs (Negrete & McManus, 2021). Users may also turn their tweets into a ‘thread’; a collective continuous tweets, mainly to elaborate their opinion or information. Twitter has grown popular as a platform to connect with other people without requiring FtF contact. People who use social media are free to communicate and share information or news without thinking about facing obstacles such as cost, distance, and time (Soliha, 2015).

However, Twitter as a social media has a characteristic: the message conveyed is not only for one person but can be for many people (Fuchs, 2017). Miscommunication due to misinterpretation of messages is a common occurrence whether it’s in FtF communication or CMC. A public post in social media where other people could engage without understanding the initial intention behind the messages may lead to conflict, what the reader perceived and what the sender tries to convey sometimes doesn’t connect with each other. Certain messages may appear to have double meaning to others, the lack of context and cues appears to diminish the intention and meaning of a message conveyed through text. Grundy (2000) stated that a sentence with interrogative form can be taken not only as a question, but also as an indirect request/order or as an indirect assertions, this explains how a sentence could be interpreted differently. It should be added that the process of message interpretation depends on the level of awareness and comprehension of the participants involved.

Twitter users would avoid miscommunication, such as failing to understand a sarcastic remark or missing the point of a joke or even differentiating a sincere/serious text from sarcasm. Sarcasm especially

poses a major challenge in message interpretation in text-based environments due to it relying heavily on tone and expression as it normally represented in a form of ironic speech (Tunghamthiti, Shirai, & Mohd, 2016). However, even with limitations of paralinguistic cues, users still find creative ways to articulate sarcasm through text. Unfortunately, a study found that Twitter's context-poor and unstructured nature is not always possible to easily identify the targets sarcastic comments are aimed at (Davidov, Tsur, & Rappoport, 2010), as sarcasm utterance typically has a target, hence the interpretation by others sometimes may failed to be perceived correctly by anyone who reads it.

Tone Indicators as Textual Paralinguistic Signifiers

Initially, previous studies were skeptic regarding the efficiency of communication through text-based CMC due to the absence of nonverbal cues shown. A research conducted by Kiesler and Sproull (1992) created a model known as the Reduced Social Cues (RSC) model. This model focuses on the loss of social cues in text-based communication, Walther and Parks (2002) call it as 'cues filtered out'. The main focus in the RSC model is the loss of nonverbal cues due to the limitations of communication technology that can't fully convey nonverbal visuals such as expressions, gestures, tone and intonation. Without these nonverbal cues, interaction between individuals and groups through CMC can be difficult to execute, the conversation becomes less fluid, difficult to manage, and requires more effort than FtF communication.

However, various studies and personal experiences of digital audiences have proven than online communication contradicts these statements. Communication technology, especially internet, has developed language and symbols enhance and facilitate online interaction so that the barriers can be reduced.

Several previous studies have proven the existence of nonverbal cues in text-based communication, Lea and Spears (1992) stated that the use of paralinguistic signs such as ellipsis (...), comma (,), quotation marks (“ ”) and exclamation mark (!) can affect the perception of the message recipient in CMC. Symbols and punctuations have communicative value as a form of nonverbal messages, but there is a broader conceptualization of textual paralinguistic that has been studied. Luangrath, Peck & Barger (2016) described the concept as textual paralinguistic (TPL) which is defined as written manifestation of nonverbal audible, tactile, and visual elements that supplement or replace written language and that can be expressed through words, symbols, images, punctuation, demarcations, or any combination of these elements.

It can be acknowledged that nonverbal cues as a form of textual paralinguistic stimulate the imagination of recipients to interpret symbols and texts as representations of movements, sounds, or facial expressions in order to make the received message more concrete and realistic (Borst & Kosslyn, 2010). While nonverbal cues such as olfaction (scent) can hardly be conveyed in text, however the paralinguistic element such as tone can be articulated through tone indicators.

There's also a term known as Netspeak, short for internet speak, introduced by David Crystal (2001) as a new media in linguistic communication. It is one of the example of language developed on the internet. The existence of this concept shows that digital audiences find imaginative ways to fill the void of social cues that are absent from written texts. By using netspeak, users can achieve a way to get the message across as quickly as possible but still appear friendly enough. It is called internet 'speak' due to the writing resembles the way we speak when we communicate in FtF. The use of netspeak helps emphasize prosodic and paralinguistic cues through the text by using excessive spelling and punctuation, capitalization, spaves, and special symbols to indicate emphasis (Crystal, 2001).

Tone indicators appear as a combination of slash (/) and followed with abbreviation of words that are used to convey the intonation of tone in text, such as: /s for 'sarcasm', /j for 'joke', /srs for

‘serious’ and so on. There are plenty of sources scattered in Twitter threads or small blogs that were made for the purpose of educating others regarding the communication tool. It has grown its popularity in 2020 through Twitter, an article published by The New York Times journalist Ezra Marcus (2020) explained that tone indicators are paralinguistic signifiers used at the ends of statements to help readers interpret tone in text, it could also convey sender’s intent and emotion.

The use of tone indicators are particularly popular with individuals diagnosed with neurodivergent – a term used for individuals who are neurologically different or not the same as neurotypicals such as autism, asperger syndrome, ADHD, dyslexia, OCD, or tourette syndrome (Heasman & Gillespie, 2019). Some neurodivergents have difficulty interpreting nonverbal cues during interactions, such as subtle cues in sarcasm or flirtation can be hard to pick up. While text-based communication can provide inclusive space, it can be overwhelming for neurodivergents due to the lack of nonverbal cues, the possibility of misunderstanding and miscommunication can occur and stimulate high stress during interaction.

Neurodivergent Community and Tone Indicators

Mark Poster (2018) in his book quoted Weber’s statement who argues that the community will develop into a “non-place community” where the existence shall exceed geographic boundaries. Through his opinion, it is explained that the traditional concept of a community bound by geographical factors will change to the concept of “communities of accessibility” or communities with easier access for members and prospective members who want to be involved. The development of digital media communication helps create a network and access between individuals with the same interest or similarities, this includes the neurodivergent community.

Access to social media sites using modern technology provides various opportunities for people with disabilities who are often excluded from society (Ellis & Kent, 2017). The internet can offer potential and opportunities for the community in terms of social interaction and support. In addition to providing information regarding their experiences to internet audiences, neurodivergents can build a community based on their solidarity and work together to create a safe digital space and understanding between each other through communication.

Text-based communication through CMC often overwhelms neurodivergents due to the non-existence of paralinguistic cues, the possibility of misunderstanding that could cause a conflict and stimulate high-level of stress. The existence of tone indicators as a communication tool is believed to help the process of message interpretation. An understanding on the use of tone indicators in the community is based on solidarity and agreement of the members. This form of solidarity is known as intersubjectivity, where individuals come together to create a common understanding (Gillespie & Cornish, 2010). How intersubjectivity is formed depends on the social situations, groups, norms, and cultures encountered where the members of a community have to create some creative ways in order to adapt and communicate with the surroundings (Gillespie & Zittoun, 2010). For this research study, the formation of tone indicators by the neurodivergent community is a form of intersubjectivity through communication in CMC.

Methods

This study uses a qualitative approach with participative observations and in-depth interviews as data collection methods. To complete this study, an online research method of symbolic netnography is conducted in order to find meaning and values from online social practice (Kozinets, 2015). In this research’s case, a study aimed to understand the value and the benefits gained from utilizing tone

indicators as a communication tool is executed to find answers to the main research question: what are tone indicators?

From June 2021 to July 2021, researchers have observed, interacted, and engaged with tone indicator users on Twitter as a participant observer. Researchers attempted to become part of the community by utilizing tone indicators and interacting with other users, in this stage researchers had familiarized themselves with the technical aspect of tone indicators: the appropriate way and the right time to use it. In terms of data collection, the data was collected with three approaches: (1) screen captures of interaction and discussion regarding the use of tone indicators (threads, general interactions), (2) interpretive written recordings of the discussion from researcher's perspective, and (3) in-depth interviews with seven willing participants of tone indicator user regarding their experience in using it. During the process, the identity of the researcher as well as the purpose of the research was explained, and as for interview participants, anonymity was guaranteed.

Participants

Participants for the interview were chosen through purposive sampling technique. It is a sampling technique for data sources where participants are determined through certain criteria and considerations that fit the topic of research (Sugiyono, 2017). The criteria determined for this research are individuals between the age ranges 15-20, actively using tone indicators in Twitter, and willing to be interviewed. Anonymity is guaranteed throughout the process as well as their comfort during the interview. The population was chosen due to the majority of tone indicators users are teenagers who have trouble interpreting messages in texts yet willing to make an inclusive space for all individuals regardless of their conditions. In addition, this population would be most familiar with the social media platform Twitter.

During the interview, participants were given exploratory and in-depth questions regarding the meaning of tone indicators; they were also notified that some questions are not required to be answered if it made them uncomfortable. The interview was conducted in private chat to provide safety and comfort to help reduce the social anxiety and they were advised to take their time in answering each question. The length of the answers varied but most elaborate regarding the meaning of tone indicators as a communication tool in text-based communication. All answers gained will be analysed for this study to answer the main question: what are tone indicators?

Data Analysis and Results

To begin with, this research used Computer Mediated Communication (CMC) theory to help refine and establish better understanding of tone indicators by the neurodivergent community on Twitter. Susan Herring (1996) explain that CMC is a communication that happens between humans through computer as an instrument. This definition leans more towards the application and impact of digital communication, but in practice CMC is more related to the topic of interpersonal communication via internet and web.

Once the data had been gathered through interviews, researchers analysed the answers and set each of them to a corresponding theme, which had naturally emerged as a result of the data set. Next, once the data had been placed in each significant theme, researchers compared and collected similar data to merge and combine into a new set of labels to be specified. This process will help the researcher to theorize the result from the similarities and distinction of each theme and ensure the triangulation process by comparing it with previous studies and theories.

After the data went through the process of summarization, researchers conducted a member-check technique as a data validity method. The member-check technique is the process of checking the

data obtained by the researcher to the data provider (Sugiyono, 2017). The purpose of this technique is to see how far the data had been collected and whether or not it is still in accordance with the data provided by the participants. This is done by asking participants to provide input and re-checking the reports of the research that has been carried out (Bandur, 2019). As it stated, this technique involves participants in the process and the data will be declared reliable or valid if the result is agreed by the data provider. If the results of the interpretation are not agreed upon, the researcher must conduct another discussion to find the appropriate data.

Results

Through observations and in-depth interviews, results had been collected and organized into four different themes based on how participants define tone indicators. Statements for each theme are provided as an answer from participants to the questions: “What are tone indicators?” The three themes based on the answers are *tool for clarifying the tone/context of the message*, *tool for emphasizing expression in text*, and *a tool minimizing misinterpretation of messages*.

Theme 1: Clarifying the Tone/Context of the Messages

Statements from participants show that tone indicators are defined as a tool that helps improve message interpretation, the use of tone indicators helps clarify the tone or context of the message conveyed through the abbreviations that serve as paralinguistic cues. As shown below, a participant defined tone indicators as such:

They're used to indicate the tone of your texts/ tweet since people with neurodivergent, or communication issues, can have harder times understanding messages over social media. They can be used by those who aren't neurodivergent too! It makes fandoms and communities a safer, and more comfortable space.

Another participant diagnosed as neurodivergent expressed that tone indicators helped them in message interpretation. The context of the message can be clarified clearly with the help of the paralinguistic signifier:

As a neurodivergent person myself, I know how much using them can help others interpret tone too. I would hate to make something come off the wrong way so it also helps clarify what I meant.

Some participants stated that tone indicators are defined as a form of reassurance and clarity. It provides a safe and comfortable space during discussion by preventing confusion:

...it's a form of reassurance and clarity. Text can be hard to understand without any vocal tone so using tone indicators is a good way to clear up confusion from both parties!

The clarity of tone and context in a message helped reduce the level of anxiety while communicating online, one can tell if someone is joking or bringing a serious topic in a form of irony. As participant stated in their answer how tone indicators help reduce their anxiety online:

I use it because I know how helpful it is for me personally in understanding what people are saying, it reduces a lot of anxiety I feel being online and knowing if someone is being serious or joking.

Theme 2: Emphasizing Expression in Text

While emojis and emoticons serve as visual cues of emotion conveyed in text, participants expressed that certain emojis can have different meanings that trigger confusion instead. A smiling emoji

can be interpreted as passive-aggressiveness and make a message seem rude or unapproachable and a crying face emoji can convey tears of joy. How readers interpret the use of emoji in text depends on their awareness of the context of the messages. A participant elaborated that the use of tone indicators could help complement emojis in expressing emotions and intentions in text:

I feel like one is better than the other in different contexts. I think of it this way: if I were to use the 🤔 can be interpreted as crying or laughing like crazy! But if I were using tone indicators on a sad message, I could use /srs or /g I couldn't pick one over the other. Both are great! Tone indicators could also add onto the expression of emojis.

In certain cases, emotions can be difficult to convey in text. A participant expressed in their statement that tone indicators can help clarify their feelings with low possibility of getting misunderstood, while also adding that the use of tone indicators leave an emotional impact on themselves:

The benefits for me are that it makes me happy in a way:] it also helps me explain my feelings when I'm not sure how to! They actually help me in a lot of way:]

List of tone indicators has shown that some tone tags can serve more than just paralinguistic signifiers, some can be used as a form of expression. A participant added that certain tone indicator like /p (stands for 'platonic') and /r (stands for 'romantic') helps in articulating emotions carried in text:

In a sense yeah, there's tone indicators for platonic and romantic feelings, and i think ones like those are good for communicating feelings as well:]

This is also supported by another participant's statement that shows tone indicators can serve as a tool of expression:

They are mostly just used to show emotions and such, /lh can either be interpreted as laughing or light hearted, personally I use tone indicators to usually joke around or to show emotions.

Theme 3: Minimalized Misinterpretation of Messages

As clarity becomes the key of efficient communication, tone indicators help minimize the chances of message misinterpretation and avoid triggering conflict. Through observations, it has been found that tone indicator is a popular concept in certain fandom communities on Twitter and applying it has helped improve the communication process and understanding between people involved. A participant elaborate in their statement:

I then noticed more people in the mcyt (minecraft youtuber) community using them to better communicate with each other. Especially for those, like me, who are neurodivergent. It helps us tell the tone of tweets since some tweets can come off as tone deaf, and on social media you may not be able to differentiate sarcasm!

A participant expressed that by knowing the tone conveyed in a message can help avoiding miscommunication and arguments through their statement:

I think it's easier to understand what people mean when they use them, and it kinda makes people avoid miscommunication and arguments about what someone did or didn't mean if that makes sense :)

Another participant added that the use of tone indicators helps differentiate the context of messages such as a joke or a serious statement. It affects how participants involved will react and engage to the message without deriving from the main topic just to understand the intention conveyed.

...It helps me understand when people are joking or if something is actually wrong and there's a serious conversation that needs to happen. It basically just helps me to understand what people are saying without having to ask a million questions and stops me from overthinking everything.

Participants understand that not everyone can interpret the intention conveyed in text due to the lack of nonverbal cues. From a participant's experience, it shows through their friend who had troubles understanding the delivery of their messages due to the lack of tone. False impressions made messages seem rude and dismissive, hence tone indicators help minimizing the misinterpretation of text.

...She had told us on multiple occasions that our way of speaking was very blunt and rude. Not in a mean way, she just wasn't understanding our tone so we started using them for her and it turns out it helps out in general since our audience consists of neurodivergent people and given our recent autism diagnosis, it just helps us as a system as well!

Tone indicators are commonly more popular and recognized by the neurodivergent community. Some participants diagnosed with neurodivergence stated that the uses of tone indicators are more popular amongst the community despite its general use and benefits. One participant elaborate how ADHD affect how they interpret and process a message:

Some jokes sound serious and some serious things sound like jokes and a very common thing for me and people I know who also have ADHD or autism is overthinking EVERYTHING including texts, I prefer texting to speaking over the phone personally but it's so easy to misunderstand people over text because there's no vocal or facial expression/body language indicators or a tone change which the tone indicators are used for in place of the absence of the vocal and expressive stuff.

Conclusion

Using qualitative netnography research method and CMC theory, the purpose of this study is to analyse and understand how the neurodivergent community define tone indicators. Each answer from participants shows their personal experience of using it in social media and knowledge regarding the paralinguistic cues. The community felt the urgency for the use of tone indicators to be normalized due to the fact that tone indicators could help improve digital communication and avoid miscommunication.

It can be concluded that neurodivergent community define tone indicators as a useful communication tool that helps indicate the tone in text. It offers clarity on the context and the purpose of the message to prevent any misunderstandings between the participants involved.

This study was exploratory in nature with the themes emerging naturally and CMC theory approach helps understanding the logic behind the definition of tone indicators by the community as well as exploring the use of it within the community and individuals outside the community react to it. As it has been found through the observations, members of the community do not have the same level of need or understanding regarding utilizing tone indicators, but they adapt as much as possible because the use of tone indicators has become a part of the culture and a way of communicating in the community. Thurlow (2004) wrote in his book that similar way of communication in a community can create a greater sense of togetherness. This might seem contradictory to the reality considering each neurodivergents doesn't have the same need or experience, hence there are no obligations to have a similar way of communication, but there is always an attempt to understand each other better.

Tone indicators help the interaction process in the community to become more comfortable, especially for users who in general have a difficulty in capturing social cues in text-based environment. The uncertainty and ambiguity that sometimes appear during interactions can create dissonance and

discomfort that will lead to trigger social anxiety and panic attacks. Through research and understanding, it can be concluded that tone indicators are a form of netspeak developed by the neurodivergent community as a result of intersubjectivity within. The indicators are meant to be symbols that help fill in the blanks of paralinguistic cues in text. As we know, internet users tend to construct various ways as a substitute for nonverbal cues in CMC in order to improve the dynamics of communication. Such as the use of capitalization to emphasize a word or indicate shouting (example: PLEASE STOP THAT), excessive use of vowels (example: Hiiii bestiiiiiee!!), as well as excessive use of punctuation (example: how r u??????).

While it helps conveying expressions and emotions in text, the range of meanings and cues conveyed is limited. In netspeak, this form of texting can only emphasize limited expressions of confusion, surprise, or anger. In times, it might become irrelevant as of now we see that the use of capital letters can indicate enthusiasm depending on the person they're talking with. Depending on who is delivering the message and the context behind the statement, sometimes what is meant by a joke can be perceived as aggression and vice versa. The use of tone indicators at the end of the statement can help provide context and clarification regarding the purpose of the message.

The variety of tone tags for certain (or even highly specific) occasion listed in tone indicators might be able to broaden the scope of paralinguistic cues in text, but based on the observations and use, these symbols serves more on clarifying the context rather than providing space for imagination to simulate the tone. The text can be read the way you want it according to your perspectives and preferences as the reader, tone indicators are just a clarification on the context of the message. A sarcasm message may not be read with sarcasm tone, after all everyone has different imagination how sarcasm is said, but a message can still be considered as sarcasm when the tone indicator '/s' is placed, thus providing context that the text is sarcasm.

This research contributes to the digital communication and social media field, but there are some limitations to consider. While this study may benefit from the netnography method and in-depth interview, we did not collect any statistics data that might help digging this topic deeper. This study mainly focused on defining tone indicators from the neurodivergent community's perspectives especially on Twitter. Future research is advised to analyse deeper regarding the topic such as the effectiveness of tone indicators in delivering the message or the benefits coming from utilising the tool.

In conclusion, this study provides an introduction to paralinguistic cues known as tone indicators and how it can be a helpful tool during online communication where nonverbal cues are almost non-existent.

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