Figurative Language in Emotion Expressions

Sophia Yat Mei Lee

Department of Chinese and Bilingual Studies

The Hong Kong Polytechnic University

ymlee@polyu.edu.hk

Abstract

This paper examines the use of figurative language in expressing emotions in social media. Based on the analysis of 300 posts from Weibo.com, we argue that there is a close interaction between figurative language and emotion. It is found that 27% of the posts contain figurative devices such as metaphor, simile, rhetorical questions, and irony. Among the five basic emotions, the emotion of *anger* has the greatest tendency to be expressed via the figurative devices, followed by *sadness*, *fear*, *surprise*, and *happiness*. In addition, the data shows that rhetorical questions are the most frequently used figurative device for evoking negative emotions, i.e. *anger* and *sadness*. We believe that the linguistic account of figurative language in emotion expressions will significantly enhance the existing automatic emotion classification system.

1 Introduction

Figurative language is the use of words or expressions with a meaning different from their literal interpretation. It is generally believed that emotion expressions are rich in figurative language. However, previous studies mostly focus on the perception of the emotion bearer rather than the textual representation of the figurative devices in emotion expressions. Unlike literal language, figurative expression makes use of linguistic devices such as metaphor, irony, and rhetorical questions to project more complex meanings. This poses a real challenge for emotion detection and classification modelling in the field of Natural Language Processing (NLP). This paper offers a linguistic account of the use of figurative language in expressing emotions in social media, aiming to enhance the robustness of the existing automatic emotion classification systems. It aims to address the following questions:

1) How frequently is figurative language used in expressing emotions in social media posts?
2) What types of emotion are more commonly expressed through figurative devices?
3) How are figurative devices used to express emotions?

Section 2 gives an overview of the previous studies in relation to figurative language and emotion. Section 3 describes the methodology of the present work including data collection and annotation. It also presents the analysis and results. Section 4 discusses the frequently used figurative devices in emotion expression in social media. Section 5 concludes the paper.

2 Related Work

Previous studies suggested that figurative language is commonly used for emotion expressions (Kövecses, 1990, 2002, 2003; Lakoff & Johnson, 1980; Fussell & Moss, 1998; Gibbs et al., 2002). Fainsilber and Ortony (1987) proposed that metaphor was more frequently found in the descriptions of their emotional states than the descriptions of behaviors. Gibbs et al. (2002) also agreed that figurative language such as irony and metaphor is especially useful in emotional communication. This phenomenon may be due to the properties of emotions. First, figurative language is used because of the complexity and abstractness of emotion. Ekman & Davidson (1994) noted that emotions are complex as they are made up of affective responses, physiological reactions, cognitions, behavioral responses, and the like. Fussell and Moss (1998) considered metaphor and other figurative expressions as devices that may capture these diverse components of emotion.

Following Lakoff & Johnson (1980)'s theory of metaphor, emotion concepts are largely constituted by metaphor which is often used to conceptualize abstract entities. Kövecses (1990) also suggested that the abundant use of figurative language (in particular metaphor) in expressing emotions is due to the abstractness of emotion. This is further supported by Fussell and Moss (1998: 113) who claimed that "the subjective nature of emotional experiences appears to lend itself to figurative expression". Without denying the role of figurative language in conceptualizing emotion, Foolen (2012: 359) emphasized the need for expressivity. He suggested that figurative language possesses expressive value due to the property of "strong images" by exemplifying an example as follows: "the word *explosion*→ image of an explosion→ feeling of fear→ impulse to run away".

Apart from complexity and abstractness, the level of emotional intensity is another reason for the use of figurative language. Fainsilber and Ortony (1987) found that figurative language was more often used to express intense emotions than milder emotions. Williams-Whitney et al. (1992) expanded on the findings proposed in Fainsilber and Ortony (1987) by examining the metaphor use in terms of writers' experience. They suggested that both experienced and inexperienced writers used more metaphor for feelings than for actions. However, experienced writers used more metaphor to talk about others' emotion states than those inexperienced ones. Fussell (1992) demonstrated a significant increase in the use of figurative language when describing intense emotions than mild ones, in particular for happiness and sadness. This proves that one of the functions of figurative language is to convey intensity. However, Gibbs et al. (2002) indicated that figurative language conveying intensity may be understood differently from literal expression with intensifiers. For example, the literal phrase *get very angry* is not equivalent to the idiom *blow your stack* since the former fails to capture the subtle nuances of people's experience of being angry. "Thus, an important reason why figurative language is special in emotional communication is because it reflects something about people's ordinary conceptualizations of their complex emotional experiences (Gibbs et al. 2002: 136)".

Fussell & Moss (1998) investigated how people describe others' emotions by showing them movie scenes in which the characters were sad or depressed. Literal phrases such as *sad*, *angry* or *depressed* were used when talking about all the movie clips, but metaphor and idiom were tailored to specific scenes to capture the specific emotions of the characters. Data shows that figurative language can be used to differentiate a single emotion between complex variations and it may be one way to reduce potential ambiguities in the conventional affective lexicon, such as *depressed* which is loosely used.

As for the relationship between irony and affective responses, Dew & Winner (1995) proposed the "tinge hypothesis", suggesting that ironic criticism automatically reduces the amount of condemnation that listeners experience. However, Colston (1997) argued that ironic criticism actually enhances condemnation and criticism in some cases. Leggitt & Gibbs (2000) examined the particular patterns of emotions that are communicated and evoked by different ironic statements, namely sarcasm, rhetorical questions, satire, understatement, overstatement, irony not directed at the addressee, and non-ironic statements. Gibbs et al. (2002) indicated that people feel different emotions on hearing various types of ironic statements. Sarcasm, rhetorical questions, and overstatement all evoked similar and quite negative reactions whereas understatement and satire evoked relatively neutral reactions. Nonpersonal irony evoked a lower degree of negative and hostile emotions than the other statements. In addition, speakers of sarcasm and rhetorical questions appeared to feel relatively neutral emotions while the participants perceived more positive intentions and a lower degree of negative intent with non-personal irony, and a greater desire to evoke positive emotions with satire. Sarcasm and rhetorical questions were perceived as having very negative intent.

Although the figurative uses of language have been found to have a strong correlation with emotion, figurative expressions represent a great challenge in automatic emotion classification system. A growing body of Natural Language Processing (NLP) research has attempted to process the relationship between sentiments classification and different figurative devices, such as simile (Qadir, 2016), idioms (Citron et al., 2016), and irony (Reyes, 2012). The results seem to be largely encouraging. Nonetheless, these studies almost exclusively focus on English and other European languages. Emotion analysis with figurative expression in Chinese has been under-investigated.

3 Corpus Data

3.1 Dataset and Annotation

The dataset was retrieved from *Weibo.com*, one of the more popular social media platforms in China. After removing posts that contained noise and advertisements, we extracted 4,195 posts for emotion annotation (Lee et al., 2015). Examples (1) and (2) are considered noise posts in that (1) does not convey any emotion and (2) is an advertisement of the cosmetic brand 'Benefit'. Additionally, we also removed short posts that contained less than 10 words.

(1) 我参与了"你最喜欢的明星团体投票"，投给了"SHINee"这个选项。
　　(I participated in "favorite star combination election" and voted for "SHINee")

(2) benefit 贝玲妃˘泡沫洁面膏˘推荐的洗面奶
　　(Benefit is a recommended foam facial cleanser)

Following Lee et al. (2013), five basic emotions were annotated in each post, namely *happiness*, *sadness*, *fear*, *anger*, and *surprise*. We then randomly selected 300 posts for the figurative analysis. Annotators identified the use of figurative language, imagery, and symbolism in the posts. Figurative language is the language that uses words or expressions with a meaning that is different from the literal interpretation. A number of types of figurative language that were identified in the posts include rhetorical questions (as in (3), a question that does not require an answer); metaphors (as in (4), where 果实 (fruit) is metaphorically used to indicate accomplishment); simile (as in (5), where an explicit comparison is made between 我 (I) and 狗 (dog)); personification (as in (6), in which 病魔 (sickness) is attributed with human qualities); hyperbole, as in (7), where the fatigue of the eyes is exaggerated to the degree of blindness; and irony (as in (8), a statement that is contrary to an intended meaning).

(3) 为什么人的年龄就不能刷新呢?
　　(Why can people's age not be refreshed?)

(4) 收获生命中最美的果实
　　(Harvesting the most beautiful fruit in life)

(5) 我又得被骂的像狗一样!
　　(I've been scolded like a dog again!)

(6) 积攒了许久的病魔把我打倒了
　　(The long-hidden sickness has taken me out)

(7) 眼睛都要逛瞎了!
　　([My] eyes are almost blind because of [on-line] shopping!)

(8) 你他妈真对得住我。我真的爱死你了
　　(You are so damn nice to me. I really love you to death)

It is not uncommon that a post is expressed through the use of different figurative devices. For example, (9) involves the use of rhetorical questions, irony and hyperbole.

(9) 你 是 要 笑死 我? 堂堂七尺 男儿 这么 兴师动众 把 我 喊 出来 绕 这么 大 一 圈 就 为了 送 这个 给 我
　　(Do you want me to die of laughter? You have done all this and gone to such great lengths to ask me out just to give me this?)

Another type of figurative language, namely imagery, has also been annotated. It uses language that engages the five senses: sight, hearing, smell, taste, and touch. For instance, in (10), the depiction of sunshine, warmness, and dancing snowflake create an atmosphere of happiness.

(10) 大年三十，既有温暖阳光，又有飞舞雪花，好兆头啊 !
　　(On New Year's Eve, there is warm sunshine and dancing snowflakes, what good omens!)

Finally, symbolism is the use of a term or a sign that possesses specific connotations in addition to its literal meaning, as in (11), where 汗水 (sweat) represents the efforts that one exerts.

(11) 要付出多少汗水才能走到这一步
　　(How much sweat [effort] do we need to give to get to this stage?)

3.2 Data Analysis

Of the 300 posts analyzed, the total number of emotions identified is 380. This indicates that more than one emotion may be involved in a post. Figure 1 shows the distribution of emotions in the dataset. The *happiness* emotion has the highest frequency (35%) among the five emotions, followed by *sadness* (23%), *fear* (22%), *anger* (14%), and *surprise* (6%).
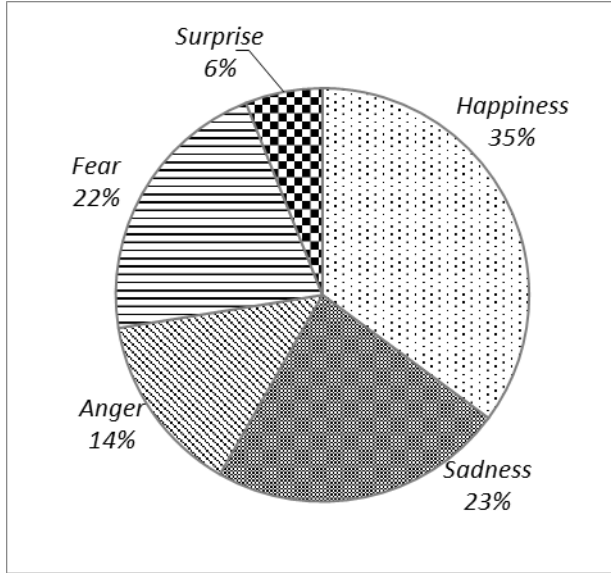

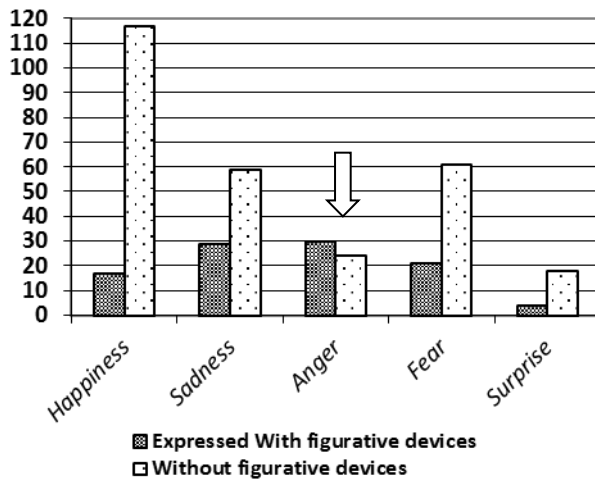Figure 1. Distribution of Emotion Types in All Posts

Figure 2. Emotion Using Figurative Devices

Emotion Type	No. of Emotion		Total
	Expressed with figurative devices	Expressed Without figurative devices	
Happiness	17 (13%)	117 (87%)	**134**
Sadness	29 (33%)	59 (67%)	**88**
Anger	31 (57%)	23 (43%)	**54**
Fear	21 (26%)	61 (74%)	**82**
Surprise	4 (18%)	18 (82%)	**22**
Total	**102**	**279**	**380**

Table 1. Emotion Using Figurative Devices

Figure 2 and Table 1 show that the *anger* emotion is the only type of emotion that the majority uses figurative devices. From Table 1, we can see the tendency of figurative devices being used in posts for each emotion in descending order range from *anger* (57%), *sadness* (33%), *fear* (26%), *surprise* (18%), to *happiness* (13%). Overall, 27% of the total emotions contain figurative devices.

It is also observed that rhetorical questions are the most frequently used figurative device (over 37%, or 38 out of 102) for emotion expression. It is particularly productive in evoking negative emotions, i.e. *anger* (39%) and *sadness* (29%). Metaphor is the second most common figurative device in expressing emotion; it, however, does not show any preference for a specific emotion type, as can be seen in rhetorical questions. In the next section, we will examine the types and distribution of rhetorical questions and features of metaphors used in the posts.

4 Emotion and Figurative Language

4.1 Rhetorical Questions (RQ)

Rhetorical question is a question that is asked without the expectation of an answer. Results show that rhetorical question is the most commonly used figurative device for evoking emotion. It can be roughly classified into two major types – closed question and open question. In Chinese, closed questions can be represented in the form of A-not-A structure, particle, alternative, and echo types. On the other hand, open questions are questions with wh- words such as what, who, and how.

	Idiom	Irony	Personification	Simile	Hyperbole	Metaphor	Rhetorical Questions	Total
Happiness	1	1	3	3	1	7	1	17 (17%)
Sadness	0	1	4	2	3	6	13	29 (28%)
Anger	0	4	0	0	4	11	12	31 (30%)
Fear	2	0	0	3	3	5	8	21 (21%)
Surprise	0	0	0	0	0	0	4	4 (4%)
Total	**3 (3%)**	**6 (6%)**	**7 (7%)**	**8 (8%)**	**11 (11%)**	**29 (28%)**	**38 (37%)**	**102 (100%)**

Table2. Distribution of Each Type of Figurative Device

	Close Class Question				Open Class Question						
	A-not-A	Alternative	Echo	Particle	How	How many	What	Who	Why	Series of Q	Total
Happiness				1							**1**
Sadness	1	2		1	1		1	2	5	2	**15**
Anger	1		3	2			1		1	2	**10**
Fear	3			3	1	1					**8**
Surprise			1	2			1				**4**
Total	**4**	**2**	**4**	**7**	**2**	**1**	**3**	**2**	**6**	**4**	**38**

Table 3. Distribution of Types of Rhetorical Questions Used

Table 3 shows the distribution of the types of rhetorical question used in the data. As mentioned in Section 3, rhetorical questions tend to be more associated with negative emotions such as *anger* and *sadness*. This association is weakened by the polarity of the emotion. Our observation is that the more negative the emotion is, the greater the tendency to use rhetorical questions, as indicated in Figure 3.
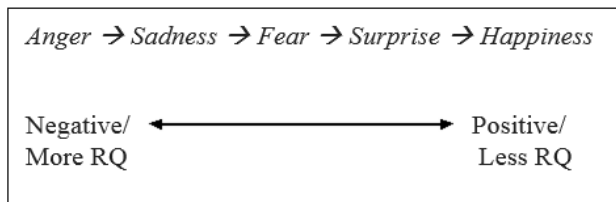

Figure 3. The Interaction between Emotion Polarity and the Use of Rhetorical Questions

This finding is in line with Roberts and Kreuz (1994) who argued that the discourse goal of the use of rhetorical questions is to show negative emotion. It is also suggested in Gibbs et al. (2002), rhetorical questions were perceived as having very negative intent. Burnkrant and Howard (1984) suggested that rhetorical questions have the potential to motivate an audience to more intensively process the message content. Howard (1990) proposed that rhetorical questions have the potential to enhance the pro-cessing of message content to a greater extent. This explains why rhetorical questions are used more frequently when stronger emotion intensity is involved. Previous research also pointed out that one of the most valuable functions of rhetorical questions is that they enable speakers to make stronger statements, with greater implications than straightforward assertions. (12a) is an example of a rhetorical question collected from the dataset. The same semantic content could be formulated in a statement as in (12b). Comparing (12a) and (12b), it is obvious that the (12a) expresses a stronger intensity of *sadness* emotion than the statement in (12b), by way of raising a rhetorical question.

(12) a. 哪里还有时间和朋友们聊天呢?
　　 (How can [I] still have time to chat with friends?)
　　 b. 沒有时间和朋友们聊天
　　 ([I] do not have time to chat with friends)

Studies which investigated the effects of the use of rhetorical questions versus statements generally agreed that rhetorical questions often engaged people's minds more than straightforward statements, and it can enhance audience elaborations on a given message (Ahluwalia and Burnkrant, 2004; Howard and Burnkrant, 1990; Petty et al., 1981; Swasy and

Munch, 1985). It has been suggested that rhetorical questions are one of the most effective tools for persuasion (Frank, 1989)

Some instances use a series of rhetorical questions to increase the emotion intensity, as in (13). They tend to indicate the existence of *sadness* and *anger*. Frank (1989:734) mentioned the use of clustering of rhetorical questions as "…in each case the question is re-stated for emphasis, in slightly different form. This makes for a stronger impact on the hearer; a strategy that most likely would be unnecessary if these were simply informational questions, but is a highly effective device for persuasion…". To apply the above observation in our data, rhetorical questions were used intentionally by the writers to draw readers' attention to their strong emotions. The purpose of using a cluster of rhetorical question is clearly for affective, rather than informational, effect.

(13) 老天让我来到这个世界上演悲剧的吗？我投降还不行?! 拜托. 我承受不了那么戏剧化的生活! 能让我正常地活下去吗？

(Did God bring me into the world to act out a tragedy? Can I surrender? Please. I cannot stand such a dramatic life! Can't I live a normal life?)

In terms of question type, all basic emotions tend to be expressed through closed types, except for *sadness*. Over 70% of rhetorical questions used to express the *sadness* emotion are open types. This is particularly obvious with the use of the *why* question word (which comprise one-third of the rhetorical questions for *sadness*). Of the five *why* rhetorical questions expressing *sadness*, four appear in the structure of 'why + negation'. Examples are given in (14)-(16):

(14) 为什么信宜没有 pizza hut!
    (Why is there no Pizza Hut in Xìnyi?)

(15) 为何连答案都不确定正确与否?
    (Why can't [we] even decide whether the answer is correct or not?)

(16) 为什么人的年龄就不能刷新呢?
    (Why can people's age not be refreshed?)
    Results show that the *surprise* emotion is highly correlated with the use of rhetorical question. In the dataset, *surprise* emotion has the least tendency to

be expressed with figurative devices; and rhetorical question is the only figurative device that being used to express this emotion. It is found that some adverbs such as 难道 and 居然 repeatedly appeared in the instances with *surprise* emotion, as in (17) and (18). The adverb 难道 has been recognized as a "rhetoric interrogation" marker that serves to manifest the speaker's emotion in a discourse (Alleton, 1988; Jing-Schmidt, 2008). The connotations of these adverbs typically indicate *surprise*. The high frequency uses of these adverbs lead to a strong correlation between *surprise* and rhetorical question.

(17) 难道有很多韩国人去那游览˘?
    (Don't tell me that there are many Korean visiting that place?)
(18) 我爹居然听过 mr.simple!?!?!?!?
    (Surprisingly, my father listens to Mr. Simple !?!?!?!?)

4.2 Metaphor

The second most commonly used figurative device in our dataset is metaphor (28%). Metaphor refers to an implicit comparison between two dissimilar objects. Unlike rhetorical questions, metaphor is more evenly used in evoking different emotions, as in (19) showing *sadness*; *happiness* in (20) and *anger* in (21). Studies suggested that people often have a conventionalized metaphorical expression for emotions, such as ANGER IS HEAT and UP IS HAPPINESS (Lakoff and Kövecses, 1987). Yu (1995) found that Chinese text tends to use more body parts, especially internal organs, in its metaphor in expressing emotional states. Fainsilber and Ortony (1987:247-248) mentioned that the metaphors produced by their participants on the whole "were disappointingly banal. They used eight times as many frozen, or dead, metaphors as novel ones". However, these observations do not apply in our data. Most of the metaphorical instances found in this study are novel rather than conventional, such as in (19), which makes a comparison between affection and luxury goods to imply that affection is something valuable to the writer but cannot be easily obtained; (20), where the writer compares himself to an athlete with boundless energy in being able to stay out talking with a partner until very late; and (21), where monks are likened to a gold-panning thief in order to express the writer's negative feel-

ings towards them. One potential reason for the difference may be the source of the data. The data from previous studies were mainly drawn from conversations or monologues, while the data in this study were collected from social media. Speakers might tend to produce novel metaphors in conversation due to the time pressure. The written modality in social media allows its users to have sufficient time to formulate metaphorical expressions in a more creative way.

(19) 感情才是我的奢侈品，而物质只是我的日用品。

　　(Affection is my true luxury good. Material goods are just daily necessities.)

(20) 我是能量满分选手，我们又聊到这么晚才回家。

　　(I am such an energetic athlete, we talked until very late again before going home.)

(21) 这两天街上的和尚特别多，都赶上年底出来淘金的小偷了，看到开车的停下就走过去搭讪。

　　(There are particularly large numbers of monks on the streets these two days, the same number as the gold-panning thieves that appeared at the end of the year and struck up a conversation with every stopping car.)

In addition to the above, it was found that punctuation can also function to intensify the emotions expressed through figurative devices. First, the repetition of exclamation marks, question marks, or the mix of two in conjunction with rhetorical questions, as shown in (18), expresses a strong emotion of *surprise*. Second, when the punctuation is placed in the middle of a word or phrase, i.e. in an inappropriate position, it is usually for emphasis or more intense emotion, as in (22). The idiom 狗眼看人低 'such a snob' is separated with extra exclamation marks in between each character to show a higher intensity of *anger*.

(22) 不就是有钱么，狗！眼！看人低！
　　(It's all money. Such! A! Snob!)

5　Conclusion

This paper explores the use of different figurative devices in expressing emotions in social media. Results show that there is a close interaction between figurative language and emotion. We find that about one-third of the posts contain figurative devices such as metaphor, simile, rhetorical questions, and irony. Among the five basic emotions (i.e. happiness, sadness, anger, fear, and surprise), the *anger* emotion has the greatest tendency (54%) to be expressed via the figurative devices, followed by *sadness*, *fear*, *surprise*, and *happiness*. In addition, the data shows that rhetorical questions are the most frequently used figurative device (over 30%) for evoking negative emotions, i.e. *anger* and *sadness*. We believe that this linguistic account of figurative language in emotion expressions will enhance the existing automatic emotion classification systems.

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