

Public Apologies in India - Semantics, Sentiment and Emotion

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Abstract

This paper reports a pilot study related to public apologies in India, with reference to certain keywords found in them. The study is of importance as the choice of lexical items holds importance which goes beyond the surface meaning of the words. The analysis of the lexical items has been done using interlinked digital lexical resources which, in future, can lend this study to computational tasks related to opinion mining, sentiment analysis and document classification. The study attempts an in-depth psycholinguistic evidence of whether the apology carries further liability or is it a mere expression of regret, holding no hope of reparation for the aggrieved party.

Keywords: apology, sorry, regret, apologize, WordNet, SentiWordNet, WordNet-Affect, corporate apologies, corporate communication

1 Introduction

Public apologies, as a tool to repair damage and manage reputation, have been used by organizations and individuals frequently the world over. The dynamics of speech act of apologizing are very different from that of written apologies. Written apologies are not supported by the nonverbal elements of communication. The remorse on the face, the earnestness in the voice, the intent in the gestures are all absent in the written apologies. The words stand alone to convey the guilt, remorse, regret and forbearance. The tone and tenor of writing can thus play an important role in either leading the customers to take a forgiving stance to the organization or rejecting it as a ritualistic gimmick.

Communication researchers agree that the oral and written language differ significantly in their communication impact. While the speech act has been analyzed in detail, not much attention has been paid to the written word. Specifically, in the Indian context, there is very little research on public apologies. This paper aims at making an analysis about the semantics, sentiment and emotion of written apologies delivered digitally in India by using three inter-linked digital lexical resources, namely, WordNet¹, SentiWordNet² and WordNet-Affect³ respectively. The paper limits itself to the analyses of a set of selected keywords found in these apologies. To the best of our knowledge, this is the first such study. Our hypothesis is that the choice of lexical items plays an important role in conveying the intent of the writer in a public apology and the sentiments and emotions associated with an apology expression can go beyond the surface meaning of the word.

Roadmap

Section 2 deals with the related work. Section 3 discusses apologies in the digital media and such apologies in India. Section 4 outlines the methodology followed in the study. Section 5 presents the analysis with reference to WordNet, SentiWordNet and WordNet-Affect. Section 6 concludes the paper.

2 Related Work

Linguistic analysis of social discourse, using digital lexical resources and related software, has been an upward trend in the recent past. WordNet has been used for marking the event profile of news articles as a function of verb type (Klavans, 1998). An Adversary-Intent-Target (AIT) model has been developed which is based on an Ontology for the Analysis of Terrorist

¹ <http://wordnet.princeton.edu/>

² <http://sentiwordnet.isti.cnr.it/>

³ <http://wdomains.fbk.eu/wnaffect.html>

Attacks (Turner et al, 2011). DICTION 5.0 text analysis master variable, CERTAINTY has been used to analyze top management language for signals of possible deception (Craig et al, 2013). A viable approach to sentiment analysis of newspaper headlines has been developed by using linguistic techniques and a broad-coverage lexicon (Chaumartin, 2007).

From the point of view of communication study, most of the research on public apologies is focused on apology as a speech act (e.g. Edmondson, 1981; Fraser, 1981; Holmes 1990; Blum-Kulka et al.1989; Olshtain and Cohen 1983; Owen, 1983; Trosborg, 1987). The studies are based on two perspectives. The first is from the point of view of the offended party (Lee & Chung, 2012) and the second sees apology from the point of view of the offender (Darby & Schlenker, 1989; Goffman, 1971; Hearit, 1994, 1996, 1997, 2010; Schlenker & Darby, 1981).

Although an emphasis has been laid on the different nature and aspects of written and spoken discourse (Halliday (1989, 2007, Tillmann, 1997, Aijmer and Stenström, 2004, Wikberg, 2004, Nelson, Balass and Perfetti 2005, Biber, 2006, Miller, 2006, McCarthy and Slade, 2007 and Wichmann, 2007, Chafe, 1992), not much attention has been paid to the written word. Moreover, research on the written apology delivered via the digital medium needs further analysis.

3 Apologies in the Digital Media

The practice of tendering an apology as a means of acknowledging and compensating for failure is an ancient one. Etymologically, the word apology is derived from the Greek *apo* (away, off, absolve) and *logia* (speech) and should be differentiated from the word *apologia*.

Corporations the world over have used public apologies effectively for multiple purposes - as a tool for damage control, for defending their position in a particular situation and also for conveying their commitment to all stakeholders. Due to the advent of e-commerce companies and the increasing reach of the social media companies have their finger on the pulse of public sentiment constantly. Minor events and lapses go viral within a few minutes. The word of mouth is now faster than it was ever before.

The digital medium differs from ordinary face to face communication in many ways: it requires a select choice of words to express the apology, it can be stored and retrieved at a later date, and,

it becomes a quasi-legal document. The art of apologizing is a powerful marketing tool that can induce trust on the one hand and fuel mistrust on the other, if poorly managed.

3.1 The Indian Context

Culturally, saying sorry does not come easy to Indians and more so to Indian business and political leaders. This hesitation can perhaps be linked to the fact that in India a public apology is seen as an admission of guilt (Maddux et al, 2012). On the other hand it is a common occurrence in countries like Japan and Hong Kong, where the corporate apology is an expression of eagerness to repair damage and relationships and does not imply guilt (ibid). In the past, the speech act of apology was almost absent from the repertoire of Indian corporates and public figures (Kaul et al,2015). Even written apologies were very few and were offered only when there was a strong demand from different sections of society.

However, the new generation e-commerce companies seem to be heralding an attitudinal change in this corporate practice. The reason for this shift in attitude could be due to the increasing digital customer base for India Inc. India's internet user base has grown to 324.95 million in September 2015, a 27.73% YOY growth (TRAI, 2016). On social media platforms situations can escalate rapidly, breaking down the traditional barriers of time, location, and gatekeepers of information says Karen Freberg, Assistant Professor, Strategic Communications at University of Louisville USA (Kaul et al, 2015).

Thus, in stark contrast to the past, we see a spate of apology e-mails, tweets and blog posts being offered by e-commerce players (ibid). Since the practice of offering a public apology is relatively new for Indian businesses, it is to be understood that an apology not delivered effectively rather than mitigating the damage, can escalate the damage done. In this context, it is important to analyze the lexical choice made in these apologies and the implications thereof.

4 Methodology

The research design is qualitative and is based on an analysis of a self-built corpus. The following steps were followed as part of the methodology.

- Corpus Collection

- Keyword Selection
- Determination of POS of keywords
- Determination of the correct sense of the keywords
- Analysis using WordNet, SentiWordNet and Wordnet-Affect.

4.1 Corpus collection

The study uses a self-built corpus. Since the phenomenon of public apologies is relatively recent in India, we could only access a corpus of 15 apologies available in the digital public domain, offered during 2007-2017, comprising a total of 4,567 words. The corpus is in the English language as it is the second official language in India. It is the lingua franca spoken amongst a wide proportion of the population and has about 125 million speakers, which is, country-wise, the second highest in the world, only below United States of America⁴. We employ a close reading approach (Amernic et al., 2007) for the analysis. All apologies selected were delivered in India, by Indians so as to understand any cultural implication of the communication. All of these were offered by senior executives of the company or prominent public personalities in India. Of these four were electronic mails, five were letters, three company blog posts, two tweets related to the same event, and two company website posts. The apologies selected have been assigned a code number for easy reference. These apologies are listed below, with the name of the company, the year and a short context.

1. **Infosys (2007)** - Narayana Murthy, founder of one of India's leading technology companies, Infosys, apologized after being accused of making rude comments about India's national anthem.
2. **Satyam (2008)** - Letter written by Ramalinga Raju (the then chairman of India's IT Company Satyam Computer Services) on 30 September to the board of directors of Satyam Computer Services Limited informing them about his company's corporate fraud.
3. **Flipkart (2014)** - E-mail from Sachin Bansal and Binny Bansal founders of Flipkart, a leading retail e-commerce company in India, apologized to disgruntled shoppers after technical glitches during their 'The Big Billion Day' sale on October 7.
4. **Uber India (Dec. 2014)** - Days after it was banned following the rape of a woman by an Uber driver, in New Delhi, India, the global cab booking firm sent out apology mail to its customer.
5. **Myntra 1 (2015)** - Myntra, an e-commerce company in India, apologized to its customers via e-mail for the technical glitches faced during a mega-sale.
6. **ScoopWhoop (2015)** - Editor-in-Chief of ScoopWhoop, an internet media and news company from India, apologized after it carried an insensitive article on a massive earthquake that hit parts of Nepal and India.
7. **Lenskart (2015)** - Bansal & Chaudhary, co-founders, Lenskart, apologized on the company's behalf, when the company sent out an SMS offer which referred to the massive earthquake that struck India and Nepal in poor taste.
8. **AIB (2015)** - AIB (All India Bakchod Comedy Company), a comedy group of India, offered an unconditional apology to the Auxiliary Bishop of Bombay and the community for any offence caused to the christian community by their jokes.
9. **Myntra 2 (2016)** - An apology was posted on Myntra's blog by Shamik Sharma, CTO, Myntra, for inundating customers' phones with notifications due to technical lapse.
10. **Amazon India (2016)** - Amit Agarwal, Vice President and Country Manager, Amazon India, apologized to the Indian External Affairs Minister for hurting Indian sentiment by selling doormats with Indian tricolour on them.
11. **Axis Bank (2016)** - After two Axis Bank managers in New Delhi were accused of being involved in money laundering, Shikha Sharma, CEO Axis Bank, sent an e-mail letter by to all Axis Bank customers to address the issue.
12. **PETA (2017)** - PETA India CEO, Poorva Joshipura wrote an apology to the Indian actor, Suriya, when the latter issued a legal notice to PETA for calling his voice in favour of Jallikattu as a promotional strategy for his upcoming film 'C3'.
13. **Member of Parliament's Apology (2017)** - A Member of Parliament, Ravindra Gaikwad, courted controversy after thrashing

⁴https://en.wikipedia.org/wiki/List_of_countries_by_English-speaking_population

an Air India employee. He expressed regret in a letter to Civil Aviation minister.

14. **Tech Mahindra Layoff audio clip controversy 1 (2017)** - In an audio recording that went viral on social media, a female HR executive of Tech Mahindra, a leading IT company of India, was heard telling an employee to resign by 10 am the next day. Shortly afterwards, Vice-chairman of Tech Mahindra, Vineet Nayyar, apologized on the matter.
15. **Tech Mahindra Layoff audio clip controversy 2 (2017)** - Following the Vice-chairman's apology, Mahindra Group Chairman, Anand Mahindra and Tech Mahindra CEO CP Gurnani also came out to apologize on Twitter on the same matter.

4.2 Keyword Selection

After the selection of documents for analysis, a list of keywords was prepared independently by the authors and then compiled. It was decided to conduct a focused analysis of words directly related to the act of apologizing. The four keywords thus selected were - *sorry*, *regret*, *apologize* (*apologizes* and *apologizing*) and *apology*. These selected words were then marked in the corpus.

Figure 1 below shows the frequency of the keywords in the selected apologies. As is evident from the Figure, the adjective *sorry* has the highest occurrence (12) as compared to the other three, keywords - *apology*, *apologize* and *regret*, which are in the range of 5, 6 and 7 each respectively.

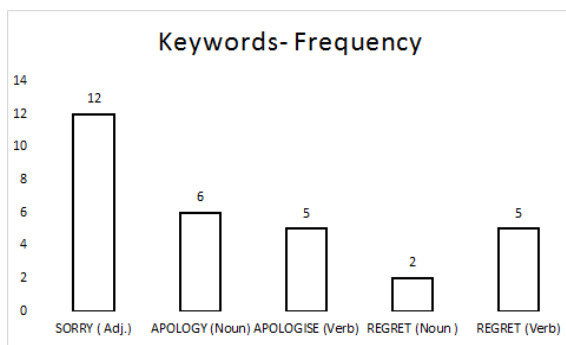


Figure 1: Keywords- Frequency

4.3 Determination of POS of Keywords

To correctly determine the part of speech of the keywords, the sentences where they occurred were put through an online Part-of-speech tagger⁵. This was found to be necessary as some keywords could belong to more than one category. The output of the tagger marked the words *apology* and *regret* as *NN1* (singular common noun), the words *apologies* and *regrets* as *NN2* (plural common noun), the words *apologize* and *regret* as *VV0* (*base* form of lexical verb), the words *apologizes* and *regrets* as *VVZ* (*-s* form of lexical verb), the word *apologizing* as *VVG* (*-ing* participle of lexical verb) and the word *sorry* as *JJ* (general adjective).

4.4 Determination of Keyword Senses

For the determination of the correct sense of the keywords, we put the sentences where the keywords occur in an online sense disambiguator⁶. Sense determination was done as the keywords were found to be polysemous. The senses thus determined were mapped to the senses in English WordNet (3.1). The selected senses are mentioned in the analysis of the keywords in section 5.

5 Analysis

A three-fold analysis of the selected keywords was done. The semantics of the words was studied by using WordNet. Further, the sentiments associated with the keywords were studied using SentiWordNet and the emotion labels were determined through WordNet-Affect. The analysis and conclusions thus drawn are presented below.

5.1 Semantic Analysis using WordNet

A semantic analysis of the selected keywords was done using WordNet (3.1). We used semantic relations such as hypernymy, troponymy and entailment (Fellbaum, 1998) to find the implications that the keywords may have, as far as their communicative goals are concerned.

⁵ Free CLAWS WWW tagger, accessed January 15, 2017, <http://ucl.ac.uk/claws/trial.html>, tag set C6.

⁶ <http://babelfy.org/>

5.1.1 Verb – Apologize and Regret

The main aspect of an apology lies in the verb that the tenderer chooses to use. We do an analysis of the two verbs, *apologize* and *regret*, using WordNet. The selected sense of the verb *apologize* is defined as *-to acknowledge faults or shortcomings or failing*. Its semantic relation of entailment is *admit, acknowledge*, which means *to declare to be true or admit the existence or reality or truth of*. The superordinate concept of this chain is the verb *think, cogitate, cerebrare* which is defined as *- to use or exercise the mind or one's power of reason in order to make inferences, decisions, or arrive at a solution or judgments*. Thus, it is clear from the semantic hierarchy that to *apologize* is to undergo a logical thought process, the natural entailment of which is to admit to a wrong. Once the wrongdoing is admitted the natural consequence should be to take responsibility and offer amends. For instance, apology number 2 says- *I sincerely apologize to all Satyamites and stakeholders*. This is a clear admission of wrongdoing.

The selected concept of the verb *regret* is defined as *to feel remorse for, feel sorry for or be contrite about*. Its inherited hypernymy is to *feel, experience*, which is defined as *to undergo an emotional sensation or be in a particular state of mind*. Thus to *regret* is to undergo a feeling, or expressing what he feels about the offended party, not bringing himself into the picture as the offender. Logically speaking, the fault has not been admitted and there is no intention of making reparations. Also, its syntactic form also excludes it from the class of explicit performative verbs (Austin, 1975), unlike the verb *apologize*, which is an explicit performative. The expression of regret sidesteps the central issue of fault and does not satisfy the aggrieved party. For example, in apology number 10, the Amazon India letter states- *To the extent that these items offered by a third-party seller in Canada offended Indian sensibilities, Amazon regrets the same*. Here the word *regret* seems to be carefully crafted to avoid liability and an effort to be seen as humble without going so far as to admit fault.

5.1.2 Adjective – Sorry

Adjectives are primarily used for modification of nouns. They have lexical organization and semantic properties that are not shared by other

modifiers and are unique to them (Miller et al, 1993). The selected sense of the adjective *sorry* in WordNet has the gloss as *feeling or expressing regret or sorrow or a sense of loss over something done or undone*. The see also relation for this is the adjective *penitent, repentant*, which means *feeling or expressing remorse for misdeeds*. Thus the underlying semantic connotation of the word restricts it to a feeling or an emotional state.

The word *sorry* bears the emotional or the affective load in a communication (Novielli et al, 2013). Also, an apology may or may not be heartfelt, i.e., a person may apologize without feeling remorseful. On the other hand, saying *I am sorry* is usually seen as being what is called a heartfelt apology as it touches an emotional chord. An example of this is the sentence in the apology number 3 which states- *We are truly sorry for this and will ensure that this never happens again*.

In our dataset, out of the 15 communications, 7 have the use of *sorry*. In these 7 letters it is used 12 times.

5.1.3 Nouns – Apology and Regret

The nouns are organized as an inheritance system in WordNet (Fellbaum, 1998). Under this system there is a sequence of levels, a hierarchy, in which the lower levels inherit the features of the top levels, plus have at least one distinguishing feature. The two semantic relations of interest in the present study are hypernymy and hyponymy (Fellbaum, 1998). The selected sense of the noun *apology* has the gloss *-an expression of regret at having caused trouble for someone*. It has *acknowledgement* as its direct hypernymy, which is defined as *a statement acknowledging something or someone*. From the communicative perspective this acknowledgment is a precursor to the expectation of some sort of reparation or compensation on the part of the offended. In the corpus, the apology number 7, has the sentence, *We would like to tender an unconditional apology to the society at large and especially to the affected families and to everyone whom we have offended*. This is an unequivocal expression of apology and shows that tenderers do not want to make any excuses for their wrongdoing.

The gloss of selected sense of the noun *regret* is *sadness associated with some wrong done or some disappointment*. The direct hypernymy of this is the concept of *sadness* which is *emotions*

experienced when not in a state of well-being. This is followed by the concept of *feeling or the experiencing of affective and emotional states.* Thus the hypernymy relation makes it clear that *regret* is a kind of feeling associated with sadness. From a communicative point of view, it is simply an expression of an emotion on the part of the tenderer of the apology and stops short of any further liability. For example, in apology number 13, the Member of Parliament states, *I write to convey my regrets for the unfortunate incident that took place on 23rd March 2017 in the Air India flight No. AI 852, seat No.1F.* Given that the writer only uses the noun *regret*, it is clear that the intent is more to get out of a sticky situation than to express sincere remorse.

5.2. Keywords in SentiWordNet

The study of the sentiment associated with the keywords is done using SentiWordNet (3.0), a lexical resource which assigns to each synset of WordNet three sentiment scores: positivity, negativity, objectivity (Stefano et al, 2010). The task of finding the sentiments of the words in an apology as expressed in online forums can be put to a rich set of applications (Esuli and Sebastiani, 2007). As for public apologies these tasks can range from tracking readers' opinions about the sincerity of the communication to customer relationship management.

The selected synsets of the keywords were searched for in SentiWordNet. The sentiment scores of each of them were recorded and the results were analyzed. Table 1 shows the sentiment scores for positivity, negativity and objectivity for each of the keywords.

Keywords	PosScore [0,1]	NegScore [0,1]	ObjScore [0,1]
Sorry (Adjective)	0.125	0.75	0.125
Apology (Noun)	0.375	0.5	0.125
Regret (Verb)	0.25	0	0.75
Regret (Noun)	0.125	0.625	0.25

Apologize/ Apologise (Verb)	0	0	1
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Table 1: SentiWordNet Scores of Keywords

In the analysis of the sentiments associated with keywords, of particular interest are the objective scores. The verb *apologize* has the highest objective score (1.0). Its negative and positive scores are zero. The high ObjScore (Objective Score) of one (1.0) implies that this verb does not convey any sentiment. In a public apology act, this could entail that when an organization or person renders an apology it distances itself from the event or issue and takes an objective position. Similarly the next highest ObjScore is for *regret* as a verb (0.75). Thus, both verbs - *apologize and regret*- do not connect with the negative sentiments associated with the act of an apology.

The highest NegScore (Negative Score) is for the adjective *sorry* (0.75), followed by the noun *regret* which has a NegScore of 0.625. The strong negative connotation of the adjective *sorry* could help the writer to convey his genuine feeling of remorse and hence should be preferred by the writer to connect with the reader at an emotional level. Since adjectives are the words that carry the most notions of sentiment, their use in the apology can carry the sentiment most effectively. This implies that the adjective *sorry* carries the highest sentimental load to convey the feeling associated with act of apology.

Interesting is the comparison between the verb *regret* and noun *regret*. While the verb *regret* has a high objective sentiment (0.75); the noun *regret* has a high NegScore (0.625). Thus, '*I regret*' and '*with deep regret*'- can have very different sentimental connotations. The verb implying neutral sentiments of the apology giver and not connecting to remorse, guilt or culpability; the noun implying a strong sentiment connect.

5.3 Keywords in WordNet-Affect

We analyzed the results related to the keywords in WordNet-Affect (Strapparava & Valitutti, 2004; Strapparava et al., 2006), a linguistic resource for the lexical representation of affective knowledge. In this the affective concepts representing emotional state are individuated by synsets marked with the a-label EMOTION. There are also other a-labels for

those concepts representing moods, situations eliciting emotions, or emotional responses.

Using version 1.1, we searched for the keywords in the resource named *a-synsets* and found out its corresponding affective category in *a-hierarchy*. The presence of the word implied an emotion and the absence implied the lack of it. Table 2 shows the output for the keywords

Keyword	WN-Affect 1.1
	a-synsets / a-hierarchy
sorry (adj)	<adj-syn id="a#01102326" noun-id="n#05602279" caus-stat="stat"/> / <noun-syn id="n#05602279" categ="regret-sorrow"/>
regret (verb)	<verb-syn id="v#01225879" noun-id="n#05602852" caus-stat="stat"/> / <noun-syn id="n#05602852" categ="repentance"/>
Regret (noun)	<noun-syn id="n#05602279" categ="regret-sorrow"/> / <categ name="regret-sorrow" isa="sorrow"/>
Apologize	no result
apology	no result

Table 2. Output of Wordnet-Affect 1.1

Since the words *sorry*, and *regret* (both as noun and verb) are present in the resource we conclude that these words bear emotion. The affective category of the adjective *sorry* is *regret-sorrow* via the noun (n#05602279) and *regret-sorrow* is a *sorrow*. The verb *regret* has its affective category as *repentance* via noun (n#05602852), which in turn is a *compunction*. The noun *regret* has the affective category *regret-sorrow* which is a *sorrow*. Both the adjective *sorry* and the verb *regret* are stative, which means that the emotion related to these words are owned or felt by the speaker. The keywords *apology* (noun) and *apologize* (verb) were not present in WordNet-Affect and hence they can be said to be devoid of any emotion.

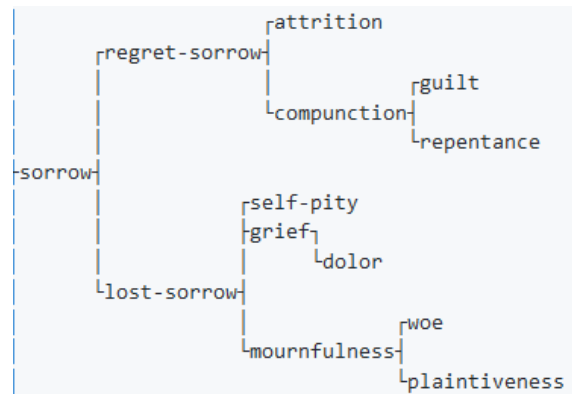


Diagram 1. Sub-tree of negative emotion *sorrow* from WordNet Domains 3.2

Thus it is clear that the emotion of the keywords found in WordNet-Affect are related to negative emotion via sadness and sorrow.

6. Conclusion and Future Work

Due to a mix of factors such as greater media vigilance, the viral nature of social media, there is certainly an increased willingness to issue public apologies in India (Kaul et.al, 2015). However, the public apologies available in the public domain are still limited. Hence no generalizations can be drawn from this limited corpus. This study aims to only suggest a direction for future studies on a much bigger corpus.

From the apology texts available in the Indian context, we posit that the written apology can be an effective tool for damage repair only when it crafted to communicate honest intent and a sincere tone. Thus, the words chosen should effectively convey the writer's intent.

The main observations drawn from our analysis of the keywords using WordNet, SentiWordNet and WordNet-Affect are:

- **Apologize** (verb) – it is an act of cogitation, with a high objective score and no emotion label, it can be used in formal communication where emotionally laden words are to be avoided.
- **Regret** (noun) – is a kind of sadness, with a high negative score and has the emotion label of sorrow. However, it is stative, hence expresses the feeling of the tenderer and holds no further promise.
- **Sorry** (adjective) – is a kind of feeling, with a high negative score and emotion label of repentance. This keyword has

the highest emotional load and can be effective in situations where emotions and sentiments are strongly involved.

- **Apology** (noun) – is a kind of acknowledgement, which has a high negative sentiment but no emotion label.
- **Regret** (verb) – is a kind of feeling, which has a high objective score but an emotion label of repentance.

Of particular interest to us were the keywords apology (noun) and regret (verb). We compare the SentiWordNet scores and the WordNet-Affect labels of these two keywords. While emotion is defined as a relatively brief episode of response to the evaluation of an external or internal event as being of major significance. (such as angry, sad, joyful, fearful, ashamed, proud, elated, desperate), a sentiment is the positive or negative orientation that a person expresses toward some object or situation (Scherer, 2000). Thus we can posit that the word *apology* which has no emotion label, has no or weak emotional connect which also aligns with our conclusion about the keyword *apologize*. In contrast, the verb *regret* helps to effectively communicate the emotion of repentance. Looking at the sentiment associated with these words, we conclude that the mental attitude of the writer is more objective to the situation in using the verb *regret* while it is highly negative in the case of the usage of the word *apology*. This further implies that a high negative sentiment score means that the writer of the apology realizes the gravity of the transgression and to some extent admits to the wrong done. However, a high objective score implies the writer taking a neutral stance to the situation and not necessarily admitting to any wrongdoing.

The adjective *sorry* bears the highest emotional or the affective load in an apology and its use makes the communication sound like a heartfelt apology. Hence, the letters which have used *sorry* can be rated as effective apologies.

A letter which uses only the verb *regret* can be a mere public relation tool to absolve responsibility and may not imply a forbearance or reparation (very essential parts of an apology).

The future plan is to make a cross-cultural analysis of written public apologies. For this purpose, the dataset will be enhanced by adding apologies from a different culture. The idea is to explore whether the linguistic aspects are affected by culture and environment. Also, we propose to validate our psycholinguistic analysis

by mapping it to the readers' perception of these keywords. It will also be interesting to do a cross-lingual analysis by studying the lexical semantics of apology related words in native Indian languages.

It is also proposed to make this study interdisciplinary by lending it to computational analysis. With an increased data set the study can be used to build a supervised sentiment analyzer using lexicons or for text categorization according to affective relevance, and opinion analysis.

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