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Sentiment analysis of weather news in British online newspapers

Сентимент-аналіз новин про погоду у британських електронних газетах

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Abstract

The advancement of modern technologies has influenced the way news is presented and consumed, particularly online. Weather is an important topic for the public as it relates to the human experience and addresses current societal issues. In this paper, we introduce a systematic approach to conduct sentiment analysis of weather news stories, to specify the emotional tone and examine the role of subjectivity in online news reporting. This research falls within the scope of a lexicon-based (unsupervised) approach to sentiment analysis, which involves finding the sentiment polarity of words. The analysis is predominantly based on sentence-level sentiment analysis. Two popular online web services, MonkeyLearn and SentiStrength, were applied to automatically detect human emotions. We compared the efficiency of each tool and found that MonkeyLearn provided better final results in comparison to SentiStrength, which tended to misclassify negative sentiments into neutral ones. The final results of frequency calculation showed the dominance of weather news stories with negative sentiment polarity over positive and neutral ones, with neutral sentiments being in the minority. Based on the empirical findings, we observed an objectivity-to-subjectivity shift in online news reporting.

Анотація

Розвиток сучасних технологій вплинув на процес подання та сприйняття новин, передусім онлайн. Тема погоди має велике значення для населення, оскільки вона резонує з людським досвідом і зачіпає актуальні суспільні проблеми. У цій статті пропонуємо системний підхід до проведення сентимент-аналізу новин про погоду для визначення емоційної тональності/навантаження досліджуваних текстів та вивчення ролі суб'єктивності у висвітленні онлайн-новин. Це дослідження підпадає під сферу застосування лексикографічного підходу до аналізу сентиментів/оцінки, який полягає у визначенні полярності (позитивної, негативної чи нейтральної) слів. Дослідження переважно базується на аналізі сентиментів на рівні речення. Два популярні онлайн-сервіси, а саме MonkeyLearn та SentiStrength, були застосовані для автоматичного виявлення людських емоцій (сентиментів). Крім того, ми оцінили ефективність кожного інструменту, порівнявши отримані результати. Виявилось, що MonkeyLearn дає кращі кінцеві результати порівняно з SentiStrength, хоча останній схильний помилково класифікувати негативну оцінку як нейтральну. Остаточні результати підрахунку частоти показали домінування новин про погоду з негативною оцінкою над позитивними та нейтральними. Новини з нейтральною оцінкою

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Keywords: text, emotion, natural language, negative/positive sentiment, polarity, sentiment analysis, subjectivity, weather news.

виявилися найменш численними. Спираючись на емпіричні дані, ми спостерігаємо зміщення акцентів від об'єктивності до суб'єктивності в онлайн-новинах британських газет про погоду.

Ключові слова: Ключові слова: текст, емоція, природня мова, негативний/позитивний sentiment, полярність, sentiment-аналіз, суб'єктивність, новини про погоду.

Introduction

Sentiment analysis, also known as opinion mining, is one of the most common methods in computational linguistics. The method is used to identify and/or extract subjective information in text data as well as research person's attitude towards the topic described. Sentiment analysis tools determine whether data is positive, negative or neutral, thus specifying the emotional tone/load of the text. This study focuses on sentiment analysis of weather news in British online newspapers based on a lexicon-based method.

The presentation of news has changed considerably over the last decades in the light of technological advances. The new electronic environment determined the emergence of a new electronic form (apart from written and oral forms) of communication, where the information is conveyed across time and borders (Bhatia et al., 2022; Blake, 2019, Yates & Orlikowski, 1992) and is manifested in the combination of interaction and communication.

Changes brought about by innovative technologies have also transformed the consumption and perception of the news content. Greater accessibility of news for the users, its increasing importance, and ubiquitous presence in a new medium (electronic one) induced linguistic research and predetermined the material for our scrutiny. As such we have chosen online British newspapers: two quality papers (The Times, The Guardian) and two mass ones (The Sun, The Daily Mail) as these four are the most powerful newspapers in the UK and can best demonstrate the use of a language in the current time.

The increasing number of weather disasters over the last years in most parts of the world cannot be ignored. Frequent hurricanes, floods, droughts, and long heatwaves causing bushfires, started the list of news on extreme weather events over the last years. The idea of weather extremes has become widely synonymous with that of global warming and anthropogenic climate change. Climate controversy is becoming a key issue, as

well as a growing consensus for scientists, political bodies, media, and general public. Moreover, the weather topic has an anthropocentric focus as everything happening in the weather domain has a direct impact on people. Abnormal weather events, weather catastrophes and climate changes leading to the destruction of the environment, mutilation, and death of people immediately become hard news.

On the one hand, weather news is a piece of writing the structure, topic, and language use of which is strictly governed by the requirements/conventions for news reporting. It should be objective, include facts, and be concise with stable clichés typical for newspaper style. The information is to be communicated with a standard set of lexis which makes the text recognizable and identifiable as a member of a specific genre and enables the reader to better comprehend, process, and interact with the text. On the other hand, it is a product/creation of the journalist with his own stock and choice of vocabulary, attitude towards the events/facts he describes, opinions, a peculiar style of writing (Bondarchuk & Bekhta, 2021), the use of emotional appeal and/or persuasion techniques to gain credibility of the reader (Al-Omari et al., 2019; Bekhta & Hrytsiv, 2021; Wiebe & Riloff, 2005), which altogether affect the reception of such news.

The lexical choices, selection of events and their formulation in the news have a persuasive intent, and display idiosyncratic features of writer's style and culturally-specific conventions governing the behavior and attitude of people. In this context, any news text can be approached from three different perspectives – the author, reader and text itself. In this paper we aim to identify whether weather news stories are predominantly objective or subjective, and whether subjective type includes more positive or negative segments, thus focusing on text perspective.

According to the rules and norms of news writing, news stories should report factual news

or events without clearly stating the opinion or attitudes to facts, i.e. in an unbiased and depersonalized manner. However, in the daily news practice it can be observed that traditional boundaries of journalism (especially in online news environment) are crossed and the separation of facts and personal opinion is blurred. In addition, the journalists write from a first person perspective mainly and perceive the information through the prism of their “subjective sensory-emotional consciousness” (Zhou, 2021). This explains the rationale behind the difficulties in differentiating the public experience from the private (journalist’s) one.

Theoretical Framework

While the issue of binary opposition fact/opinion in the news has been analysed in a number of studies (Boesman & Costera, 2018; Höller, 2021; Alhindi, Muresan, & Preotiu-Pietro, 2020) the application of sentiment analysis to news texts needs commensurate attention.

Sentiment analysis is a field of Natural Language Processing that focuses on discovering techniques to decipher the sentiments hidden in

text comments from reviews or opinions posted online (D’Aniello et al., 2022). Thus, the goal of sentiment analysis is to identify, study or categorize the emotions/opinions of people that are expressed in a written text. There are two generally accepted ways to approach sentiment analysis: lexicon-based (unsupervised) and machine learning (supervised) methods. The lexicon-based method lies in the use of specific lexicons containing the words which have been tagged as being positive, negative, or neutral to automatically detect the sentiment polarity and further classify the sentiments. Machine-learning approach deals with the automated calculation of the sentiment scores within a particular text based on trained data and test data.

Normally, sentiment analysis can be performed on three different classification levels which are presented in Figure 1. Sentence-level classification is based on sentiment detection of individual sentences, in turn, document-level classification means to recognize the sentiment of the whole document (Wiebe et al., 2002; Mahmood et al., 2020). Aspect-level classification is related to the detection of sentiments on entities and their features.

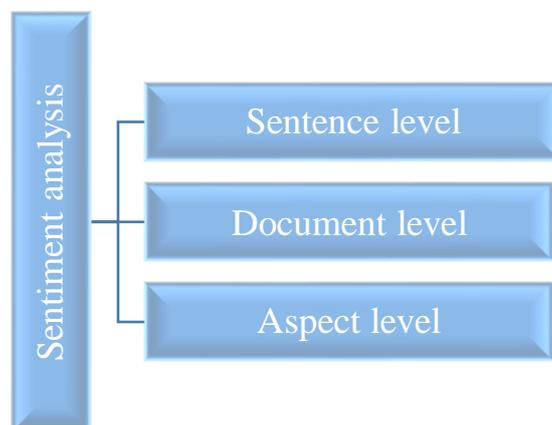


Figure 1. Classification levels of sentiment analysis

Much work on news sentiment analysis has been carried out using both lexicon-based (Hota et al., 2021, Dharmale et al. 2023, Gupta & Urvashi., 2023, Beigi & Moattar, 2020, Bonta et al., 2019, Mutinda et al., 2020) and machine learning approaches (Garay et al., 2019, Dagar et al., 2021, Jurafsky & Martin, 2021, Mahmood et al. 2020, Amin et al. 2021, D’Aniello et al., 2022). In recent research on news subjectivity (Wilson et al., 2019) sentiment computation was conducted using a Naive Bayes classifier (basic classifier in machine learning). The focus of another survey carried out by Chaturvedi et al., (2018) was subjectivity detection based on word embeddings. The issue of climate change

sentiment analysis on social media platforms has been analyzed by performing a comparative evaluation of different sentiment analysis techniques, namely lexicon-based, machine learning, and hybrid approaches (Mohamad Sham & Mohamed, 2022). This research showed that hybrid approaches outperformed both lexicon and machine learning approaches.

Methodology

Manual identification of either positive or negative sentiments would be a very challenging and time-consuming process. Our analysis of subjectivity and opinion is automatic and utilizes

the lexicon-based (unsupervised) method, which consists in finding sentiment polarity of the words.

The automatic processing of texts to identify positive, negative and neutral sentiments was conducted using online web services MonkeyLearn (<https://monkeylearn.com/>) and SentiStrength (<http://sentistrength.wlv.ac.uk/>). The results obtained by applying both the SentiStrength algorithm and MonkeyLearn have been compared to evaluate the performance of each tool in this study. We hypothesize that sentence-level sentiment analysis best fits the aim of the survey, as it would be problematic to detect subjectivity (subjective sentences) on a document level since weather news stories can include not only topics related to weather but also other ones. Document-level classification may be applied when analyzing, for instance, reviews or comments, i.e. texts on one topic.

The dataset contains 125 news stories (which should be enough for granting the

representativeness of the results) related to the topic of weather collected on the dates between 2014 and 2018 from four official websites of British quality and mass newspapers (www.thetimes.co.uk, www.theguardian.com/uk, www.thesun.co.uk, www.thedailymail.co.uk). The news stories have been queried by using the keyword “weather”.

To compare the performances of MonkeyLearn web service and SentiStrength program for sentiment analysis, different pre-processing steps have been used. For sentiment analysis, pre-processing methods are of crucial importance and their proper use increases the accuracy of the results. Therefore, two datasets, which are composed of 6000 sentences each, have been formed.

We have registered an account in MonkeyLearn. For MonkeyLearn dataset weather news stories have been captured in a CSV file (Figure 2).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U																						
5	The	bout	of	warm	weather	which	had	everyone	reaching	for	a	cold	drink	was	caused	by	a	continental	air	mass	that	had	formed	in	France	and	Spain	over	the	last	few	weeks	Residents	in	Cambridge	making	the	most	of				
6	The	balm	y	mass	drifted	north	and	settled	over	the	UK	for	the	last	seven	days	with	Brize	Norton	in	Oxfordshire	recording	a	sweltering	33.5C	last	Tuesday	,	the	hottest	anywhere	in	the	country	.								
7	Cooler	temperatures	are	expected	over	the	next	few	days	and	next	week	with	the	mercury	rising	as	high	as	28C	.																						
8	The	south	of	the	UK	is	set	for	the	best	of	the	conditions	with	weather	maps	showing	rain	and	cloud	in	the	north	as	well	as	thundery	downpours	in	north-west	Scotland	.											
9	A	COOL	FRONT	This	poor	bloke	just	did	the	entire	weather	forecast	live	on	TV	with	his	FLIES	OPEN																								
0	SKIRT	SLEEVE	ORDER	Teenage	boys	go	to	school	wearing	girl's	clothes	in	protest	at	ban	on	them	wearing	shorts	in	hot	weather																					
1	BABY	WARNING	This	is	the	reason	you	should	NEVER	put	a	blanket	over	your	child's	pram	in	hot	weather																								
2	HEAT	RAVE!	Bookies	slash	odds	on	the	UK	experiencing	the	hottest	weather	EVER	recorded	ENJOYING	PRE-BREXIT	WEATHER'																										
3	Paloma	Faith	makes	the	most	of	'pre-Brexit	weather'	with	an	exercise	session	in	the	park																												
4	BOILING	POINT!	Brits	can't	cope	with	the	hot	weather...	so	they're	reacting	to	the	heatwave	with	hilarious	memes																									
5	Luke	Miall	,	a	meteorologist	at	the	Met	Office	,	said	that	today	was	likely	to	see	"some	outbreaks	of	rain	in	Scotland	with	thicker	cloud	extending	across	much	of	the	west	of	the	country	and	towards	Northern	Ireland	.			
6	"Some	of	that	cloud	is	also	infringing	on	parts	of	western	Wales	and	the	south-west	of	England	as	well	.	The	further	south	you	go	,	the	less	rain	you'll	find."												
7	He	said	that	the	rest	of	the	country	would	be	largely	dry	with	hot	sunshine	expected	in	the	south-east	of	England	with	the	mercury	expected	to	push	as	high	as	28C	in	London	.									
8	St	Michael's	Mount	in	the	distance	from	the	National	Dahlia	Collection																																
9	"A	wide	swathe	through	the	midlands	and	southern	England	could	see	temperatures	in	the	mid-20s	with	the	odd	shower	possibly	breaking	out	in	the	lat	afternoon."																	
0	He	explained	that	tomorrow	would	see	rain	developing	in	the	south-west	of	Britain	that	is	likely	to	move	northwards	over	the	day	into	Wales	and	Northern	Ireland	.															
1	By	the	evening	the	rain	could	also	arrive	in	northern	England	and	western	Scotland	.	He	said	:"Some	of	the	rain	could	be	heavy	at	times	but	for	many	it	is	just	going	to	be	a	generally	cloudier	day	with	some	showery	o
2	The	south	and	south-east	are	likely	to	see	some	decent	spells	of	sunny	weather	with	brighter	conditions	also	expected	in	East	Anglia	too	.	Today's	forecast	shows	sunshine	mainly	in	the	south	and	east	of	England	Tom						
3	Temperatures	there	are	likely	to	nudge	27C	while	the	north	and	west	of	Britain	are	likely	to	feel	cooler	with	the	mercury	remaining	around	the	high	teens	.															
4	"Overall	not	too	bad	a	weekend	,	some	rain	at	times	,	but	the	best	of	the	dry	and	fine	weather	will	be	found	further	south."																	
5	Monday	is	expected	to	see	rain	in	the	northern	and	western	areas	of	Britain	with	"sunny	spells	and	showers	around	on	a	day	that	is	expected	to	be	mostly	cloudy"	.												
6	Similar	conditions	are	also	expected	on	Tuesday	as	well	with	rain	expected	in	Northern	Ireland	and	western	Scotland	by	the	evening	.																					
7	Tuesday	is	likely	to	see	similar	conditions	with	some	westerly	showers																																
8	It's	also	likely	to	feel	cooler	next	week	in	comparison	with	the	balm	y	temperatures	of	the	last	few	days	as	the	hot	continental	air	mass	which	had	everyone	reaching	for	a	cold	drink	moves	away	towards	the	east	.			

Figure 2. MonkeyLearn dataset in CSV format

Pre-Processing stage

Every weather news story underwent the following pre-processing procedures to lessen the noise of the text:

- 1) All words were changed into lower case using python string lower() method.

Example: Why do cars slide into each other when in Sweden you are required by law to change to your snow tyres on national snow-tyre day.

Outcome: why do cars slide into each other when in sweden you are required by law to change to your snow tyres on national snow-tyre day.

- 2) All stop words were obtained from Natural Language Tool Kit (hereinafter –NLTK) and further removed to provide more accurate results.
- 3) Lemmatization and stemming were performed using NLTK.
- 4) All punctuation marks, numeric values and unnecessary spaces have been removed.

Example: Ash rain – such a common sight now it feels strange to think it needs an explanation – is caused as the rain picks up the smoke, the filth, the charred debris floating over cities.

Outcome: ash rain such a common sight now it feels strange to think it needs an explanation is caused as the rain picks up the smoke the filth the charred debris floating over cities.

For SentiStrength dataset, there are 4 separate input text files necessary for the algorithm to work properly which are;

- Emoticon LookUp Table – contains a list of emoticons with a strength 1 to 5 or -1 to -5
- Idiom Lookup Table - includes idiomatic phrases and sentiment strengths.
- Negating Word List - a list of negation words which reserve the polarity
- Booster Word List - a list of sentiment intensity modifiers

Table 1.
Classification results using MonkeyLearn

Sentiment score	Total
why can't our trains cope with snow when Japanese trains can and by the way while we're here they are also much faster	negative
And this chorus of self-immolation is taken up countrywide: why non-Londoners ask, is the capital brought to a standstill by a little snow?	positive
The weekend will start with a bang today as Scotland is engulfed by violent storms	positive
The Met Office has said winter had begun to bite after an unseasonably warm December, with large parts of the UK facing snow, ice and frost	negative
In fact, our miserable, grey weather is all the fault of the jet stream	negative
So next time some pub bore tells you that this cold month is caused by the extensive melting of arctic sea ice last summer ask him if the same thing happened in	negative
The grey mass appears to show the outline of mainland Great Britain as the sun begins to break through the dark clouds on the horizon	neutral
On the canal bridge just behind Kings Cross, a policeman took a huge snowball full in the face and – I couldn't quite believe this was happening – giggled delightedly (it must have really hurt)	negative
With a little luck, the freeze will come just in time to deliver a near universal white Christmas	positive
The sky is streaked with the world's highest type of cloud, visible only in summer after the sun has set	negative
My God, I told myself as I walked through a heavenly avenue with snow-laden branches bejewelling my steps, this is the most beautiful city in the world	positive
My soul was swooning (there, I admit it) yesterday as I stood and saw the snow falling, not on Joyce's Ireland, but on dirty old London, reborn as a thing of beauty"	positive
With a little luck, the freeze will come just in time to deliver a near universal white Christmas	positive
On Tuesday afternoon the air seemed to grow colder, the sky turned dark, and then came a surprise – big beefy snowflakes came tumbling down like large white butterfly	positive
In November the skies can be slate-grey and sullen, high and blue, or illumined by low, lemony winter light.	negative
It felt as though it was never going to end, but the „Beast from the East" will seem a distant memory this week	negative
Residents braced themselves for further flooding as the wettest December since records began continued to deluge the region	negative
Warned to expect at least two more days without electricity following the weekend's floods, Lancaster's hardy residents faced the darkness with sunny stoicism.	negative

In SentiStrength dataset we have split a text document into sentences and made it into Excel file. We have mainly been interested in capturing the polarity of the sentences in which the sum of polarities of individual words comprise the polarity of a sentence.

Frequency analysis was used to calculate the frequency of positive, negative and neutral sentiments to identify a general tendency characteristic of weather news stories. Some failures of automatic detection of sentiments have also been observed and described with illustrative examples.

Results and Discussion

Having used Monkeylearn web service, the sentences have been further classified into 3 types: positive, negative and neutral. Table 1 shows some of the examples of such classification and Figure 2 exemplifies the code used to perform such classification.

```

HTTP/1.1 200 success
content-length: 246
content-type: application/json
x-query-limit-limit: 1000
x-query-limit-remaining: 999
x-query-limit-request-queries: 1

[
  {
    "text": "why can't our trains cope with snow, when
japanese trains can and by the way while we're here they
are also much faster. ",
    "external_id": null,
    "error": false,
    "classifications": [
      {
        "tag_name": "negative",

```

Figure 2. Example code used for classification

The program SentiStrength gives sentiment score to the words with a range -5, -4, -3, -2, 2, 3, 4, 5 showing not only the polarity of words but

strength of the opinion. Table 2 presents some results of such classification.

Table 2.
Classification results using SentiStrength

Sentiment score	Positive	Negative	Total
why can't our trains cope with snow when Japanese [proper noun] trains can and by the way while were here they are also much faster and this chorus of self-immolation is taken up countrywide why non-londoners ask is the capital brought to a standstill by a little snow the weekend will start with a bang today as Scotland is engulfed by violent storms	1	-1	0
the met office has said winter had begun to bite after an unseasonably warm december, with large parts of the uk facing snow ice and frost	1	-1	0
In fact, our miserable grey weather is all the fault of the jet stream	1	-3	-2
so next time some pub bore tells you that this cold month is caused by the extensive melting of arctic sea ice last summer ask him if the same thing happened in	1	-1	0
the grey mass appears to show the outline of mainland Great Britain as the sun begins to break through the dark clouds on the horizon	1	-2	-1
on the canal bridge just behind Kings Cross, a policeman took a huge snowball full in the face and – I couldn't quite believe this was happening – giggled delightedly (it must have really hurt).	1	-2	-1
With a little luck, the freeze will come just in time to deliver a near universal white Christmas	3	-1	2
The sky is streaked with the world's highest type of cloud, visible only in summer after the sun has set	4	-4	0
My God, I told myself as I walked through a heavenly avenue with snow-laden branches bejeweling my steps, this is the most beautiful city in the world	3	-1	2
My soul was swooning (there, I admit it) yesterday as I stood and saw the snow falling, not on Joyce's Ireland, but on dirty old London, reborn as a thing of beauty"	1	-1	0
On Tuesday afternoon the air seemed to grow colder, the sky turned dark, and then came a surprise – big beefy snowflakes came tumbling down like large white butterfly	3	-1	2
In November the skies can be slate-grey and sullen, high and blue, or illumined by low, lemony winter light	2	-2	0
It felt as though it was never going to end, but the „Beast from the East" will seem a distant memory this week	1	-2	-1
Residents braced themselves for further flooding as the wettest December since records began continued to deluge the region	1	-1	0
Warned to expect at least two more days without electricity following the weekend's floods, Lancaster's hardy residents faced the darkness with sunny stoicism	2	-1	1

We have also computed and annotated a list of most common adjectives in terms of positive

and negative polarity which is presented in Table 3.

Table 3.
List of adjectives in terms of positive and negative polarity

<i>Positive evaluation</i>	<i>Negative evaluation</i>
cool, balmy, natural, decent, bright, calm, delightful, excellent, exceptional, fair, favourable, fine, glorious, good, great, ideal, light, lovely, mild, nice, clear, pleasant, promising, superb, perfect, clear, suitable, improved, gentle, fantastic, delightful, amazing)	extreme, severe, chilly, dirty, ugly, unfavourable, bad, failed, vicious, apocalypti unpleasant, adverse, shocking, awkward, odd, unseasonable, miserable, relentless, appalling, awful, freak, rotten, beastly, brutal, frightful, terrible, difficult, depressing, disgusting, disturbed, dull, foul, deteriorating, poor, gloomy, grey, grim, hard, harsh, fierce nasty, overcast, rough, filthy,

Our last step was to calculate the frequency of positive, negative, and neutral sentiments in the corpus under research. The results are presented in Figure 3 where negative sentiments comprise

3276 (55 %), positive – 2345 (39%) and neutral – 379 (6 %). We consider that neutral sentiments denote objectivity in weather news reporting.

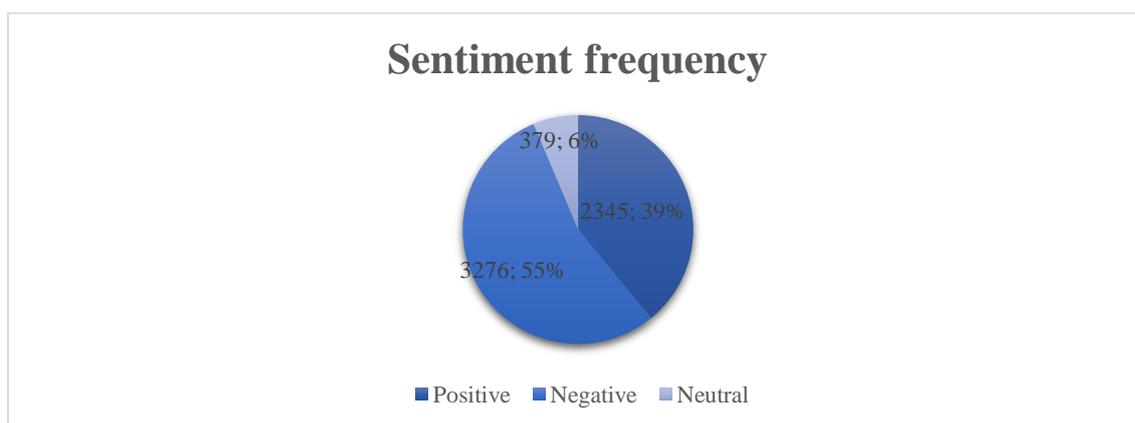


Figure 2. The results of sentiment frequency calculation

From the above analysis, it can be observed that the majority of weather news stories are with positive or negative sentiment polarity with negative sentiments prevailing over the positive and neutral ones, thus testifying to the general tendency towards negativity and subjectivity of weather news stories. The results of the automated sentiment analysis have also been compared with the manual linguistic analysis of texts. Therefore, some limits of the study must be emphasized. Remarkably, the most challenging

for both web services was to detect the sentiment scores in the studied corpus when the opinion was integrated on events and conveyed implicitly.

An examination of the data revealed some inaccuracies and failures in the automatic detection of sentiments when metaphorical expressions, irony, and sarcasm were employed. For example, the following two examples with irony created ambiguity and were incorrectly

identified by SentiStrength (unlike MonkeyLearn) as being positive (3 – positive sentiments, -1 – negative; and 2 – positive sentiments, -1 – negative respectively). However, the second example was correctly classified by MonkeyLearn as being negative.

“Why do schools close, when in Finland they use the inclement weather to teach children about the unending miracle of nature’s beauty – and that, give or take a bit of screen time, is why their children are so much happier than ours?”

„GET those thermals out — the country will feel like a fridge, if not the freezer, this month”.

Let us consider some other errors/inaccuracies:

- SentiStrength incorrectly classified the sentence as being neutral (2 – positive sentiments, -2 – negative):

“The heaviest snow in March for 50 years – felt like a crushing iteration of the coalition government, its endless austerity Narnia, always winter, never Christmas, the feeling of sun on your skin a distant memory from a better age, like free tertiary education or a humane social security system”.

- Failures in differentiating the polarity when ironic juxtaposition of contexts or metaphor was used. The following examples illustrate such failures when sentences were incorrectly typified as being: 1) positive (MonkeyLearn) and neutral (SentiStrength); 2) negative (MonkeyLearn) and positive (SentiStrength);

1) *“And the cry is international too: as I walk through the St Pancras Eurostar terminal, a French couple consulting the warnings about the tube, roll their eyes as one”*

2) *“In Britain, a flurry of the white stuff makes everything pretty for about five minutes, but then we’re smothered by a blanket of national humility”*

- Errors happened when allegedly positive statements have a negative meaning, such as in the following examples:

„We are overdue a genuine heatwave and you know that when one late bus arrives it’s often followed by two or three”

“On the canal bridge just behind Kings Cross, a policeman took a huge snowball full in the face and – I couldn’t quite believe this was

happening – giggled delightedly (it must have really hurt)”.

Conclusions

The technological innovations brought about transformations in the structure and content of newspapers. This article details the methodology and results of sentiment analysis of weather news stories carried out with the help of two web services (MonkeyLearn and SentiStrength) to detect/classify positive, negative and neutral sentiments, thus specifying emotional tone of the texts and examine the role of subjectivity in online news reporting. Such automatic detection turned out to be quite efficient, apart from some inaccuracies when the opinion was not clearly marked (implicit) or figurative language was used. It can also be concluded that SentiStrength has the tendency to mistypify negative sentiments into neutral. In this sense, MonkeyLearn gave better classification results in comparison with SentiStrength. Moreover, we can conclude that there is a general tendency towards negativity the news, even though the frequency of positive sentiments is quite high.

The application of computer software to the analysis of opinion and subjectivity of weather news stories falls within the scope of computational linguistics and may contribute to the understanding of the role of emotions in newspaper discourse, furthermore, findings obtained from this research outline the tendency towards the objectivity to subjectivity shift in news reporting. The method presented in this research provides more options for further content analysis of weather news stories in the British press. Future scrutiny may also include the comparative analysis of both lexicon-based and machine learning approaches. We also intend to investigate additional web services/programs and their efficiency in detecting the sentiments of weather news stories. Such a survey may shed light on the issue of customizing the news by the readers.

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