



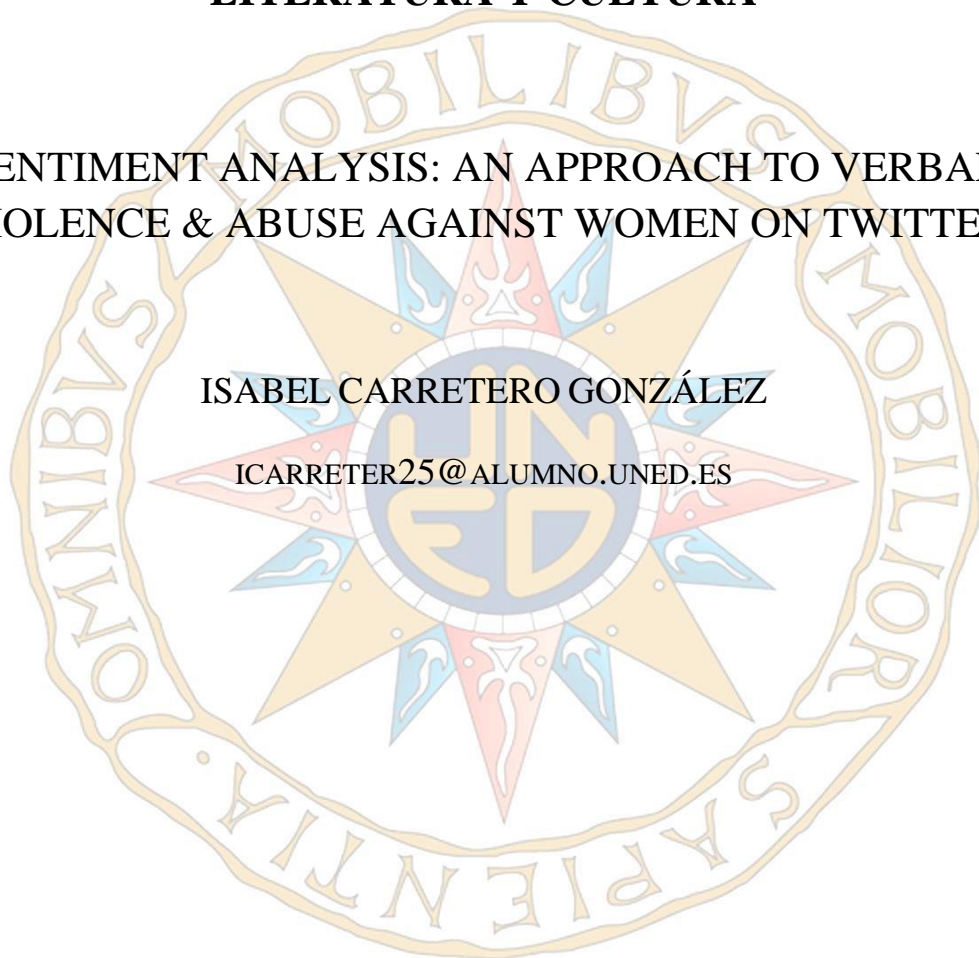
TRABAJO FIN DE GRADO

**GRADO EN ESTUDIOS INGLESES: LENGUA,
LITERATURA Y CULTURA**

**SENTIMENT ANALYSIS: AN APPROACH TO VERBAL
VIOLENCE & ABUSE AGAINST WOMEN ON TWITTER**

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Abstract

Recent research shows that violence against women on social media occurs on a daily basis. Yet, little action has been taken on this issue. This dissertation is about exposing verbal violence and abuse directed at women on the micro-blogging site Twitter and how, by means of sentiment analysis software, problematic tweets could be efficiently pinpointed in consonance with their lexical content and syntactical structure. This piece of work is based on user knowledge of the platform as well as background research on feminism. Finally, it contains real-life instances of abusive tweets, a survey aimed at Twitter female users and a selection of scientific articles on the practical application of sentiment analysis software on various fields.

Key words: Sentiment analysis, women, Twitter, violence, abuse

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'You can't easily fit women into a structure that is already coded as male; you have to change the structure.'

Mary Beard

1. Introduction and goals

1.1. Introduction

It comes to reason that the English Studies bachelor's degree curriculum is chiefly oriented towards its application in education, translation and creative writing. However, I focused my dissertation on its usefulness in nowadays society from a linguistic perspective. The topic of this paper, 'Sentiment Analysis', falls within the field of Linguistics and is particularly related with the subjects of "English Syntax" and "Linguistic Theory", which are studied throughout the English Studies bachelor's degree. But at the same time, the research here conducted includes a gender perspective further developed thanks to the knowledge acquired in subjects such as "Gender & Literature in English-Speaking Countries" and "Literary Commentary of Texts in English Language".

We will provide a more extensive definition in the second section of this paper but for now we can define Sentiment Analysis as a line of research that studies the polarity of a text in order to determine what people may think about products, services, topics or experiences (Aste et al., 2015). Sentiment Analysis falls within the scope of computational linguistics. "Linguistic Theory" has human language as its core area of study, the latter being part of the so-called cognitive sciences. Sentiment Analysis techniques employ natural language as the main tool through which to study the way we express feeling and opinion.

Further, a decisive part along the process of studying people's opinions is determining whether those are positive, negative or neutral. To this effect, not only is it the lexicon taken into account but also the syntax. People employ syntactic structures to describe feelings or talk about facts, and for that reason the contents of the subject of "English Syntax" are particularly relevant for this dissertation.

It comes without saying that sentiment analysis techniques developed within the field of computational linguistics are being constantly applied to the challenges of our rapidly changing society in one way or another. Yet, there is a lot of work and research to be carried out, especially in the case of micro-blogging (i.e. Twitter). Twitter is a social network that opens up unprecedented possibilities

both for users who can disclose, communicate and read other users opinions up-to-the minute, but also for organizations concerned with micro-blogging contents or interested in knowing about people's thoughts. From the linguistic perspective, it certainly appears that understanding lexical and syntactical trends when expressing opinions is key to grasping the evolution of language in the modern world.

Sentiment Analysis has become a rather useful tool nowadays to gather extremely useful data about population trends and, what is more, from people of diverse backgrounds (i.e. audiences belonging to different sex, age, ethnicity or career groups, including celebrities, politicians, company representatives as well as the general population). Additionally, it provides access to data in many different languages.

The beginning of the twenty-first century seems to mark the rise in popularity of sentiment analysis techniques. Since then, countless articles have been published on the matter and cutting-edge sentiment analysis algorithms continue to be created ceaselessly. Indeed, recent work has put the spotlight on the study of emoticons, abbreviations, sarcasm and irony, humour, metaphors, point of view, etc. Not only that, it is said that the use of sentiment analysis research and algorithms had a lot to do in the results of major historic events of our time, such as Obama's and Trump's electoral successes as well as the outcome of the Brexit referendum (Brexit: The Uncivil War (TV), 2019).

As of late, a considerable amount of research has been carried out in the issue of verbal violence addressed to the women community on Twitter. Likewise, it is well-known, especially among female users, that posts with this kind of content have negative effects on recipients, be them psychological, professional, social, etc. Yet, so far little has been done to prevent this from happening.

With regards to negative repercussions at the professional level, the field of journalism is worth mentioning. The study "Attacks and Harassment: The Impact on Female Journalists and their Reporting", carried out by the International Women's Media Foundation (2018), found out that roughly two-thirds of female respondents had been subjected to some kind of harassment, both physical and digital. But there is even more; nearly one-third of female journalists surveyed contemplated leaving their profession as a result of harassment and those early in their careers are twice as likely to give up

journalism and try to find a job in a different professional sector. Besides, more than one third of active female journalists admit avoiding writing about certain subjects, out of fear of receiving abuse. In other words, the contents of their work may be biased as a result of the harassment these women receive.

But why does this form of violence continue to occur? There might be a number of reasons. The first of these could be the social fact that any form of violence suffered by women - by the mere fact of being women - seems to be belittled. This has a direct impact on the importance Twitter or even the police give to their reports. The second may be the lack of reliable data in order to conduct a high-quality scientific research and maybe present a solid legal case against Twitter. In the specific case of this online platform, not only has the company failed to investigate this form of violence but also to provide accurate data that would facilitate this kind of research (Amnesty International, 2018a).

Thirdly, the kind of language employed in this kind of tweets as well as the employment of humour in the form of irony and/or sarcasm can create ambiguity. This in turn can further complicate the spotting of abuse by sentiment-analysis software or make the online platform potentially reject a report.

1.2. Rationale

There is no getting away from the fact that we live in a technological world where social networks play a crucial role in many aspects of society; ranging from the interpersonal relationship level, to business advertising, including professional development. My motivation when choosing sentiment analysis as this dissertation's topic was twofold: Firstly, to learn about how our feelings and opinions about a topic are reflected on the syntax and lexicon we employ to convey them. Further, I find this knowledge can be a double-edge sword. On the one hand, sentiment analysis techniques can prove very convenient for business organizations or for politicians. But, on the other hand, as part of the general population and as Internet users, we have to be aware of the fact that our network movements may be monitored and we must act accordingly. Finally, as educators, I think it equally important that we inform our students

about the advantages, but also potential dangers, of technology and social networks.

Secondly, the research conducted in this paper intends to contribute to the existing studies about verbal violence against women on Twitter as well as about uses of sentiment analysis techniques as a means of tackling this issue. What is more, this dissertation also aims at giving visibility to verbal violence against the female community on Twitter and raising awareness on this social issue while providing further evidence of its existence and magnitude.

1.3. Hypothesis and goals

The hypothesis set out in this paper is that women endure more verbal abuse than men on Twitter merely because of being women. Hence, the main goal is to determine the veracity of the initial hypothesis. In the same way, this study has two secondary goals that have to be met in order to reach the global one.

The first one is to identify the most commonly used terms in abusive tweets against women, in the English and Spanish languages, with a view to include those words in a potential lexicon to be developed for a sentiment analysis software. The second aim is similarly practical and it entails getting to know whether there is a syntactic pattern in the abusive tweets towards women.

Now let us look at some real-life instances in which sentiment analysis techniques have been employed.

1.4. Literature Review

1.4.1. TAKMI (Text Analysis and Knowledge Mining) and Sentiment Analysis (NASUKAWA, 2006)

TAKMI is an opinion-mining engine that was first applied with customer records from the IBM PC help centres, at the Tokyo Research Laboratory. One of its applications consisted on analysing phone conversations in Outbound Call Centres, between customers and company agents. Information was mined from successful sales patterns, records of successful agents and good potential customers. The main goal of analysing these documents was to benefit from

data stored in the Marketing Strategy Management database to boost productivity of marketing operations.

1.4.2. Toxic Twitter – A toxic place for women (AMNESTY INTERNATIONAL, 2018a)

This article from Amnesty International notes the large presence of offensive content towards women on Twitter despite it going against the platform's policy. NGO Amnesty International employed artificial intelligence and machine learning software, such as Element AI, in order to gather data that proved that 7.1% of the annual tweets that women-owned accounts receive are abusive in content. This software also detected that the target of these attacks were mainly women journalists or politicians, but also women belonging to other social groups and that a tweet of this sort is published as often as every 30 seconds. The study concluded that, as a consequence, many women felt the urge to close their accounts or censure their publications and replies to other Twitter users.

1.4.3. Toxic Twitter – Triggers of violence and abuse against women on Twitter (AMNESTY INTERNATIONAL, 2018b)

The research behind this article from Amnesty International aims at determining the most common reasons behind verbal abuse against women on Twitter. When interviewed, women noted race, sexual orientation and belonging to minority groups were the most common triggers, on top of their sex. They also pointed out the increasing abuse received when posting about sensitive topics such as race, gender, rape, and politics or simply because of writing highly opinionated pieces. It is observed that the probability of being the target of abuse further increased for women who are public figures, such as politicians, journalists, bloggers or any sort of leading figure, particularly if they work in fields of expertise traditionally reserved to men. Finally, they highlighted the 'influencers' great impact on this matter; if a person with a lot of followers starts the abuse, a lot more of it will come from his/her followers.

1.4.4. The Road to the White House: A Correlational Analysis of Twitter Sentiment and National Polls in the 2016 Election Cycle (PELLETIER, 2017)

This PhD thesis addresses the use American politicians make of sentiment analysis tools during their political campaigns. In particular, it shows how, during the 2016 Presidential Election, American candidates used social networks to analyse electorate's opinion and sentiment and focus more on issues that were relevant to them in order to win votes.

1.4.5. VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text (GILBERT and HUTTO, 2014)

VADER (Valence Aware Dictionary for sEntiment Reasoning) is a rule-based prototype for standard sentiment analysis whose productivity is compared in this article to other similar algorithms as well as individual human raters. This model is composed of a combination of a guidepost lexicon specialized in sentiment expression in micro-blog contexts and grammatical and syntactical rules that people employ to convey feelings. Not only does VADER perform better than other similar models but also than human raters, particularly when having to accurately classify tweet sentiments into positive, negative or neutral.

1.4.6. Rethinking Sentiment Analysis in the News: from Theory to Practice and back (BALAHUR and STEINBERGER, no date)

This article tackles the need to apply redefined sentiment analysis techniques when it comes to the news domain. It stands to reason that in news articles we find that authors express their opinions more indirectly than in other sorts of text. For instance, authors may highlight or discard facts to show their support or criticism towards them. This tailoring would include target definition, the classification of content separating good and bad news from the content related to good or bad sentiment expressed on the target, and the study of explicitly marked opinions. In addition, in the case of newspaper articles, it would be

essential to differentiate, as well as analyse separately, the views of the author, reader and text, particularly the author's intention and the reader's perception.

1.4.7. Twitter as a Corpus for Sentiment Analysis and Opinion Mining (PAK and PAROUBEK, no date)

This paper shows how to automatically create an English-language corpus using micro-blogging platforms, and more specifically Twitter, with a view to applying it to sentiment analysis and opinion mining research. The authors then examine the aforementioned corpus from a linguistic perspective and develop a three-category classification that takes emoticons into account, finding positive, negative and neutral or objective sentiments. Finally, they prove their methodology is productive, saves human effort and can be applied to any language.

1.4.8. Sentiment analysis using support vector machines with diverse information sources (COLLIER and MULLEN, no date)

The sentiment analysis approach presented in this article employs support vector machines (SVMs) as a means to gather various sources of possibly important information. It aims to produce a prototype for the classification of texts according to the semantic value assigned to designated words and phrases. The study proves that the context in which terms appear changes their positive or negative condition.

1.4.9. Structured Models for Fine-to-Coarse Sentiment Analysis (MCDONALD et al., 2007)

This article presents a globally structured sentiment analysis method that proves to cut down classification error in prototypes developed in isolation. The model presented is set for jointly classifying texts according to the level of granularity of their texts: the document level, sentence level, phrase level and speaker level in debates. In other words, it aims at labelling the overall sentiment of the document as well as of its components. This seems, indeed, to

be a complex task, since sentiment analysis of text units at one level are dependent on neighbouring text units (i.e. phrase level analysis is dependent on neighbouring phrases, and so on), following a hierarchical model.

1.4.10. Combining Lexicon-based and Learning-based Methods for Twitter Sentiment Analysis (DEKHIL et al., 2011)

The authors of this paper put forward an entity-level sentiment analysis method for Twitter content based on a lexical approach. Accordingly, their method depends on the opinion words forming the lexicon to decide the sentiment orientation of tweets.

The major asset of this method is that it delivers accurate results. However, it has a low recall, due to the fact that users sometimes employ other codes (i.e. emoticons, abbreviations, etc.) to express their opinions and that information may be repeated due to “retweets”. To improve on this weakness, additional opinionated indicators are automatically labelled using the outcome of the lexicon-based initial approach and bearing the sentiment context in mind, so that more opinionated tweets can be singled out. For that, a classifier is trained to designate whether the newly identified tweets are positive, negative or neutral (i.e. sentiment orientation) using the lexicon-based approach examples. This method seemingly boosts both recall and precision while outperforming some cutting edge baselines since it has the ability to automatically respond to neologisms as well as new trends in language.

1.5. Methods

The research carried out in this dissertation was based on three major data sources: (1) a set of hand-annotated real-life problematic tweets containing verbal violence and abuse against women, both in English and in Spanish; (2) data collected by feminist scholars and activists and; (3) the following survey, conducted online using Google survey tool, both in English and Spanish¹:

¹ The Spanish version of the survey can be found in the Annex section

1. Have you ever received an unpleasant tweet? (Keep answering the survey only if the answer to question number 1 is “Yes”.)
2. Do you remember the content of that tweet / those tweets? If so, please briefly describe it.
3. If that unpleasant tweet was in response to a previous tweet of yours, what was the topic(s) of your initial tweet?
4. Do you feel you are the target of those unpleasant tweets because you are a woman?
5. Do you often receive unpleasant tweets?
6. (Answer to this question if you answered “Yes” to question 5) What are the most common insults you get told in Twitter?
7. Do you think there is any other reason why people behind those accounts may feel like attacking you? (i.e. occupation, sexual orientation, ethnicity, faith, etc.)
8. Have you ever felt unsafe or upset because of this kind of tweets?
9. Do you think Twitter does enough to stop this verbal abuse?
10. Would you like to add any further comment?

The target population of the survey were female Twitter users from any nationality and a total amount of 289 Twitter users completed the survey, as will be discussed later on. Regarding the methodology adopted to address the objectives of this dissertation, both a quantitative and a qualitative approach were taken.

2. Discussion

2.1. Sentiment Analysis: A definition

Sentiment analysis is the process in which the feelings and opinions expressed in a text are studied in order to decide whether they are negative, positive or neutral. Within the field of computational linguistics sentiment analysis methods have been recently developed in order to help both identify and extract subjective data from digital content such as web pages, forums, social networks, etc. Sentiment analysis is also referred to as ‘opinion mining’.

Sentiment analysis techniques consist of studying the feelings conveyed in a text by means of a thorough analysis of its lexicon and syntax. To this end, there are three main ways of tackling a sentiment analysis: a lexical approach, a machine learning approach or a hybrid approach. The first one, also referred to as “lexicon-based approach”, could be defined as the methodology through which the polarity of the text content is determined analysing the polarity of the microphrases composing it. In this approach, each term is manually assigned a discrete sentiment rate that can be positive, negative or neutral (Rajput and Solanki, 2016, MonkeyLearn, 2018). The machine learning approach, also called “automatic system” use machine learning techniques to gather information (MonkeyLearn, 2018). Lastly, a hybrid approach integrates both, a lexical approach and a machine learning approach (MonkeyLearn, 2018).

But when do we use each of these approaches? A manual scan or lexical approach is preferred in cases where the meaning of key words might vary significantly in different contexts. E.g. when the name of a brand is the same as a proper name. On the other hand, in an automatic scan or machine learning approach, texts are classified on a massive scale by an automatic sorting system, according to their positive or negative undertones. In this process, keywords or phrases are established, so that any text containing that word or phrase is directly classified as part of a category previously defined or excluded from all categorization whatsoever. E. g. “I would not recommend” or “I did not like” are typically negative opinion messages and “great service”, “great purchase” or “highly recommended” are typically positive. An automatic scan is also useful to spot behaviour patterns.

However, an automatic scan is unable to generate a 100% accurate sentiment analysis since algorithms cannot identify humour or irony, set a standard length for a comment or figure out the exact intention of a word. In other words, they are unable to infer an accurate assessment from semantic relationships. E.g. a Twitter user may employ words such as *felices* (tr. glad) and *maravillosas* (tr. wonderful) using sarcasm in a post such as

Ay no puede ser!!! Ya muchos estábamos felices de pensar que iba para alcaldesa con esas ideas tan maravillosas que se le ocurren. #Sarcasmo (tr. Oh, it can't be! Many of us were happy with the idea of her being mayor, with those wonderful ideas of hers. #Sarcasm)

From: Liliana A Saavedra S @lili_asaavedra7

Published: 29th December 2018

in a context where readers would understand it, but an automatic scan would not be able to appreciate this shade of meaning.

But no matter which approach we pick, it seems clear that Internet, and especially social networks, is a very rich source in order to find documents. Once the concerned sought-after documents have been located and found, we need to analyse them in terms of their subjectivity and we must classify them according to their origin or nature.

Indeed, the most popular structure for the purpose of organizing data is the sorted binary tree, in which texts can be classified according to the three consumer behavioural patterns: positive, negative and neutral. Once enough data has been collected, an algorithm will provide a percentage that will help predict a particular behaviour.

Sentiment analysis is a very useful tool since it enables us to extract real and first hand value from data, determine a text's true aim and find out whether it contains positive or negative undertones about a product or a brand. Nowadays, social networks provide every facility to Internet users for openly voicing their opinions. Accordingly, it is of vital importance for companies to keep track of what users think of their brands, products and services, as well as weighing up their impact on the market (i.e. positive, negative or neuter). It is, after all, their image that is at stake. This updates companies on what Internet

users think about their brand or product, which, in turn, informs them of their strengths and weaknesses and gains them competitive advantages in a number of areas.

Furthermore, it is essential for business organizations to gain quick access to high-quality data through sentiment analysis methods. This data is of particular relevance in decision-making processes when predicting future consumer behaviours and developing corporate strategies. It also allows for real-time decision-making, contributing toward preparing an efficient online marketing strategic plan and facilitating online reputation management in cases where, for instance, it is necessary to defuse an online reputation crisis.

2.2. Results

Once the information was gathered, the hypothesis was tested and then the lexicon and syntactic structure were analysed in order to identify recurring patterns. The main goals of this analysis were to determine the linguistic patterns of the verbal abuse and to collect data with a view to creating potential lexicon-based software in future research using sentiment analysis techniques. The tweets were grouped following different criteria: language in which they were posted as well as possible factors triggering, or escalating the level of violence of, the attacks, such as: ethnicity, sexual orientation, religious faith or subject matter, among others.

In the case of the subject matter, especially noteworthy is the topic of feminism, which appears to trigger a myriad of attacks, as we will see in the data collected below, both in the tweets and the survey results. But this occurrence is not something recent. Not just today, but in the course of history, women who do speak out have been subjected to abuse and “Twitter threats of rape and decapitation” are reflections of it (Beard, 2017, pp. 6-8). In the same way, it appears that another trigger for receiving attacks on Twitter, or any social media platform for that matter, is talking about a field of expertise traditionally male (i.e. football, IT, etc.). As Beard reports:

(...) if you venture into traditional male territory, the abuse comes anyway. It is not *what* you say that prompts it, it's simply the fact that you're saying it. And that matches the detail of the threats themselves. They include a fairly predictable menu of rape, bombing, murder and so forth (this may sound very relaxed; that doesn't mean it's not scary when it comes late at night). But a significant subsection is directed at silencing the woman. 'Shut up you bitch' is a fairly common refrain. Or it promises to remove the capacity of the woman to speak. 'I'm going to cut off your head and rape it' was one tweet I got. (...) In its crude, aggressive way, this is about keeping, or getting, women out of man's talk (Beard, 2017, pp. 31, 36-37).

We are now going to illustrate this by means of some recently collected examples of aggressive tweets directed at women. Here it is important to mention that while the date of publication of most of these tweets is included below, in some cases it was not possible to determine. This is because in some cases they were reported and deleted, such as those against British MP Diane Abbot.

2.2.1. Violent and abusive tweets triggered by: misogyny and being a feminist

Let us start, first of all, with the following selection of tweets, in Spanish, containing violence and abuse against Spanish journalist, feminist and activist Anna Prats Marín:

Todos los periódicos van a saber que @annaprats es una transfoba de mierda...si la podéis denunciar y avisar a periodistas mejor que mejor!! (tr: every newspaper will know that @annaprats is a transfobic piece of shit... and if you can denounce her and let journalists know, even better!!).

From: Chalice @TraedTerfs
Published: 14th July 2018

Hagamos misgendering a las TERFs y reivindicemos el 'TERF, pardillo, tu boca en un bordillo. (tr: Let's do misgendering to TERFs and claim 'TERF, yoken, your mouth against the curb).

From: transcony @asgoodasdead_
Published: 29th March 2018

(...) Pero ya te lo digo yo, ojalá os hagan comer bordillo a todas las terfs que dais asco :) (tr: But I can tell you, I wish someone will make you all eat the curb, how disgusting you terfs are :))

From: Lu la patata @LuPawn
Published: 29th March 2018

Y sigues con el liberalismo de mierda, no es que tú discrimines en primer lugar, no, venga, adios basura. Tu cara en el bordillo TERF. (tr: And you keep going with the fucking liberalism. It's not that you discriminate in the first place, ok, bye trash. Your face against the curb, TERF.)

From: Médica Oscura @MakkMD98

Published: 27th May 2017

Uno de mis sueños es ver a gladiadora reventar contra el bordillo a una TERF. Sería tan bonito. (tr: One of my dreams is to see 'gladiadora' smash a TERF against the curb).

From: Vel @SimonadaYT

Published: 27th may 2017

Chicas, cuando salgan las TERFS famosas haciendo lo mismo en España, va a haber que ir a matar. (tr: girls, when the famous TERFS come out doing the same in Spain, we will have to get killing).

From: Nav @Koolasuchus

Published: 20th February 2015

Sabéis lo que mola meter en una licuadora? Terfs (tr: Do you know what is nice to have inside a blender? Terfs)

From: era @themonkkind

Published: no date

Anna prats cuando te cosen a tiros por la calle y te dejan hecha un colador como la rata asquerosa que estas hecha pedazo de cerda hija de la grandisima puta (tr: Anna prats when you are shot dead in the street, you will be made into a colander like the filthy rat you are, you ugly, disgusting whore)

From: tona @tonxcion

Published: 27th February 2019

Planta un arbol mata a una terf (tr: plant a tree kill a terf)

From: tona @tonxcion

Published: no date

Espera no me digas que esa deficiente mental es terf encima (tr: wait, don't tell me that mentally handicapped woman is a terf on top of that)

From: tona @tonxcion

Published: no date

Buen día para matar a una terf. (tr: Today is a good day to kill a terf).

From: bola @galletadetw

Published: 30th January 2018

Yo no digo nada pero a las terfs se las reforma pisandoles el cuello (tr: I'm just saying you get to reform terfs by walking on their necks)

From: tona @tonxcion

Published: no date

TERFS y transfobos en general dadme unfollow ya me dais vergüenza un asco horrible y os deseo lo peor en la vida ojalá pudiera estamparos la cabeza contra un bordillo vosotros. (tr: TERFS and transbobic people in general unfollow me, I feel ashamed, terribly disgusted and I wish you the worst in life. I wish I could smash your heads against the curb).

From: poli @PutacalvaJdr

Published: 23rd May 2018

We can notice a number of common characteristics at a quick glance of these tweets. First of all, at a lexical level, the repetition of the term “terf” (short for

“trans exclusionary radical feminist”), which is a derogatory term used to refer to radical feminists. Secondly, the recurrence of death threats, notably by means of “the curb” and the repetition of the word “*matar*” (tr: to kill), “*estampar*” or “*reventar*” (tr: to smash), as well as the use of terms implying death, such as “to be made into a *colander*” (as a consequence of being shot). Also from a lexical level it could be inferred that the lexicon used to threaten the target is aimed at cutting off her capacity to speak out (i.e. different ways to kill her, alluding to the target’s mouth or neck in numerous instances).

From the syntactic point of view, we could say there is no atypical characteristic and that no syntactic structure is particularly repetitive throughout these tweets. There is a tendency towards the use of the imperative mood and the structure “*ojalá*” (tr: I wish) before making a provocative and/or violent statement. However, in many cases, there is an omission of verbal content in the syntactic structure or a similar idea is expressed through a different construction. This could hinder research from a sentiment analysis point of view. For example, we find verbs in imperative mood in “*hagamos*” (tr: let’s do), “*reivindiquemos*” (tr: let’s claim) or “*mata*” (tr: kill). Yet, in cases such as “*va a haber que ir a matar*” (tr: we will have to get killing), although the syntactic structure is not the one of an imperative, the utterance is conveying a collective suggestion/command. Likewise, “*uno de mis sueños es (...)*” conveys the same meaning as “I wish”. Secondly, the following are a few examples of tweets containing verbal violence posted in English from and towards different Twitter accounts. The recipients were yet again feminists.

A TERF told me that real women bleed so I stabbed her in the face and she bled to death, :(
From: FullyAutomated @SidewaysView
Published: no date

Confession, I’m a transgirl and I like the piss all over the women’s toilets seats just to fuck with the Cis.
From: unknown account
Published: no date

I’m so glad in 2016 we finally did the right thing and just started murdering terfs congrats to every other trans for this accomplishment.
From: chARlizard @moondinosaurs
Published: no date

I’m going to shoot every terf in the back of the head.
From: T. F. Chirurgie @surgicaltheatre
Published: no date

If you are a terf I literally want you to take a knife and stab it directly into your throat and twist it around.
From: buttercups @pastel_doge
Published: no date

From a lexical point of view, we can perceive the threats and violence present in these tweets through terms like “stab”, “bleed”, “death”, “throat” or “knife”. However, particular words that could facilitate a lexicon-based approach most likely are “cis”, “trans” and, again, “TERF”. From a syntactic point of view, the fact that all these tweets are statements in declarative mood and the presence of the pronoun “I” in every tweet stands out.

2.2.2 Violent and abusive tweets triggered by: misogyny, racism and working in politics, a traditionally male field

A study conducted by Amnesty International (2018a) found that hate speech tweets were most frequently addressed to black female journalists and politicians than to other groups. In fact, Diane Abbott, British Labour Member of Parliament, is reportedly the main target of these attacks among female politicians in the UK, her team having to spend a considerable amount of time deleting abusive tweets and blocking problematic accounts. Then again, though she has not been silenced, in Mary Beard’s words (2017, p.8), she still has “to pay a very high price for being heard”. Here are some of the tweets that Diane Abbott has received in her Twitter account:

Diane “friend of violent criminals” Abbott.
From: Politica @PoliticaGorilla
Published: 11th December 2018

One minute you abuse them, the next you praise them. Mental health is a real issue.
#mentalhealthmatters
From: 1234 @IBqdu6jFVhAvb46
Published: no date

I would rather hit you in the face with a large sledgehammer you white hating racist bitch.
Retire NOW!!!!!!
From: unknown account
Published: no date

You are dumb, dumb and DUMBER. Go back to Cuba.
From: unknown account
Published: no date

This fat retarded black bitch thinks you should be forced to feed and house a bunch of violence foreign invaders. I strongly disagree.

From: unknown account

Published: no date

Piss off you disgusting useless fat bitch! You're a parasite alien looking to silence native people for your power.

From: unknown account

Published: no date

She speaks!

From: Mark Forrest @forrest_mark

Published: 5th March 2019

In other news, it's been denied that a lack of water in Africa is the reason people are thirsty. Good job we've seen this as we'd never have worked it out!

From: Neil Tomlinson @ndanetomlinson

Published: 5th March 2019

She's not a commander

From: md @ach_1409

Published: 5th March 2019

You scumbag, you maggot. You shagged Dianne Abbot.²

From: Constantine 2 @tim88643746

Published: no date

As we can see in these highly conflicting tweets, we can find a recurrent use of swearwords and insults, as well as of threatening and violent content. The terms that would probably stand out in this case are “bitch” and “fat”. However, other reiterate insults that we could probably have found in this search had tweets not been removed by Diane Abbott’s staff might have been “dumb”, “retarded”, “black” (used with racist connotations), “disgusting”, “alien” or “racist”, among others. Concerning syntax, we notice again a major presence of statements in declarative mood among these tweets. Also, we find three cases of imperative mood; “retire now”, “go back to Cuba” and “piss off”.

All told, there is no getting away, from what can be gathered from these tweets, that these attacks against Diane Abbot specifically target her sanity (‘mental health is a real issue’), intellectual or general abilities (‘dumb’, ‘she speaks!’, ‘she’s not a commander’, ‘retarded’) and supposed lack of competence due to her being a black woman (‘you disgusting useless fat bitch’, ‘this fat retarded black bitch’). So we could say that including terms such as “black”, “bitch” or “fat” in a lexicon could be useful to find tweets attacking black women, with a view to detecting this kind of violence using algorithms. Notwithstanding, the

² To this tweet were enclosed some degrading retouched pictures of Dianne Abbot and a man

use of irony could hinder the detection of some tweets, such as this one, casting doubt on Diane Abbot's intellectual capacity:

In other news, it's been denied that a lack of water in Africa is the reason people are thirsty. Good job we've seen this as we'd never have worked it out!
From: Neil Tomlinson @ndanetomlinson
Published: 5th March 2019

2.2.3. Violent and abusive tweets triggered by: misogyny, homophobia, being a feminist, working in the police force, a traditionally male field, and reporting on irregularities

Amnesty International's study (2018b) showed that both being a woman and a lesbian were triggering factors for becoming the target of verbal attacks in social networks. Two of the demonstrative tweets of this kind that the survey provided had been addressed against US writer and presenter Sally Kohn and, though being answers to a previous tweet of hers, were unrelated to the topic being discussed. These tweets were: "Are you a boy or a girl" and "Are you – are you just really a man?" (Amnesty International, 2018b).

The tweets below were posted against Sonia Vivas Rivera, a national policewoman, the Head of the Hate Crimes Unit of the local police unit of Palma de Majorca, a writer and a lesbian. She has also entered into the political scene recently. As she herself stated, if you are a woman, a feminist, a lesbian and an active policewoman, if you start talking about male chauvinism inside the Security Forces and Authorities you start to receive violence of all kinds (Vivas Rivera, 2018). Her case is therefore "unique", due to the fact that she is a policewoman, in that she does not receive explicit verbal violence or threats on her Twitter account, though she does receive verbal abuse on this online platform. However, the violence and threats she does receive come mostly from former police officers, male criminals and abusers when she arrests them and from fellow police officers at her work place as well as in the form of judicial complaints.

The following tweets are some of the ones she received as answers to her posts:

Qué makina...sin pruebas médicas? Qué makina, riéte tú de Holmes. Enhorabuena. (tr: What an ace you are...without medical tests? What an ace, dare to laugh at Holmes. Congratulations.)

From: Propugnator @PropugnatorDei
Published: 1st February 2019

Es conveniente que te informes antes de hacer el ridículo. (tr: It would be advisable to be well informed before making a fool of yourself.)

From: asr2 @antesandres
Published: 3rd February 2019

Con esa cara que me llevas es normal que seas feminazi y lesbiana, a ti en todos tus años no te han tocado ni con palos. Tu pones hasta huevos. (tr: With that face you have it is only normal for you to be a feminazi and a lesbian, in all your life nobody has touched you, not even with clubs. You can even lay eggs.)

From: Hemoal @Elcalvodelabo
Published: 5th February 2019

Eres una joyita chica, o joyito chico o como se diga. (tr: You are a veritable treasure trove of a girl, or a veritable treasure trove of a boy, or whatever.)

From: Juan Carlos C. @JuanCar20171962
Published: 5th February 2019

Y el asco que das tu? (tr: Have you thought about how disgusting you are?)

From: MUSKERRA @MUSKERRA
Published: 5th February 2019

Este continuo baboseo y escupitajos a la policía de quien dice formar parte así como ese odio visceral a los hombres le acarrea una legión de seguidores y así se siente alguien, porque en el fondo creo que se siente muy sola. Pero quede claro, a ellos les engaña, a ella misma no. (tr: This continuous slobbering and spitting up in the police, to which she says she belongs, as well as that visceral hatred towards men leads to a legion of followers so that she can feel she is actually somebody, because ultimately I think she is very lonely. But remember, she deceives them, but she doesn't deceive herself.)

From: Heresy @robparadox
Published: 6th February 2019

La gente como tú es un peligro para España y su democracia, me preocupa mucho que seas como dices PN y espero que pronto se den cuenta del peligro que eres y te investiguen en profundidad. Por favor deja de generar odio. (tr: People like you is an ever-present danger for Spain and its democracy, I am very worried that you are like they say PN and I hope they will soon realise the danger you are and you will be investigated in depth. Please, stop rising hatred.)

From: Roberto Freire @Soyrobertof
Published: 6th February 2019

No te preocupes que no lo hará. Es una buitres. Lo triste es la legión de borregos (y lo digo en sentido metafórico, que nadie se ofenda) que se alimentan de su carnaza, a l@s que confunde, intimida e incomoda. (tr: Don't worry, she won't do it. She is a vulture. What is sad is that her legion of sheep (and I say this metaphorically speaking, I don't want to offend anybody) who feed on her bait, whom she confuses, intimidates and discomforts.)

From: Heresy @robparadox
Published: 6th February 2019

Bueno, si llamas asesino al hombre que perdió a su mujer en un accidente de tráfico mientras él la esperaba en casa... No es muy normal. Si engañas y manipulas con tus tuits, es lógico que pasen esas cosas. Libertad, no engaño y manipulación. (tr: Well, if you call murderer a man who lost his wife in a car accident while he was waiting for her at home... It is not quite normal. If you deceive and manipulate with your tweets, it is only logical that these things happen. Freedom, but no deception or manipulation.)

From: El Profesor Fake @ElProfesorFake

Published: 6th February 2019

A parte del odio que generas hacia los hombres en general. El ataque continuo hacia nosotros, haciéndonos culpables de todos los males de esta sociedad. Y me pregunto yo: ¿Habremos hecho algo bueno en algún momento de la historia? (tr: On top of the hatred you generate towards men in general. The on-going attack towards us, making us guilty of all ills of this society. And I wonder: Have we ever done any good at any point in history?)

From: El Profesor Fake @ElProfesorFake

Published: 6th February 2019

Pobrecita igual necesita un abrazo. (tr: Poor her, she may need a hug.)

From: Roberto Freire @Soyrobertof

Published: 6th February 2019

Pues yo no la creo en absoluto. Es más, solo es leer algunos mensajes y “chirrían” por todos lados. Ahora que si...la carnaza, el morbo tipo “Sálvame” y lo absurdo proporciona una legión de seguidores. Esta es la consecuencia: mente infantil. (tr: I don't trust her at all. What is more, suffice it to read some messages for them to “squeak” everywhere. Now if... the bait, the ghoulish fascination of the kind of “Sálvame” and the absurd provide a legion of followers. This is the consequence: childish mind-set.)

From: Heresy @robparadox

Published: 6th February 2019

Cansina de los cojones (tr: Fucking tiresome woman)

From: Nicolás Carleti @AndrsIn16466651

Published: 6th February 2019

La descripción en su perfil lo dice todo. Le falta ondear el trapo. (tr: Her profile description says it all. She's just missing to wave the rag)

From: Isadearizaleta @ Isadearizaleta

Published: 6th February 2019

Deja de inventar historias absurdas anda. (tr: Stop making absurd stories up)

From: PEPENATAS @PEPE34904884

Published: 6th February 2019

¿Hay algún hombre que te caiga bien Sonia? (tr: Do you like any man, Sonia?)

From: Un tio super-normal @UnTioNormal5

Published: 14th February 2019

We observe in these tweets that Sonia does not receive explicit threats or violence as such. The abuse she receives comes in the form of irony, accusations, implications of her being insane, patronizing her, calling her “disgusting” and, as it is common against lesbians, making homophobic jokes about whether she is a girl or a boy. The fact that these features are hardly sortable into lexical or syntactical categories hinders their introduction into a lexicon-based software. It can be concluded that in a case like this it would be

complex to use sentiment analysis software to detect this kind of verbal abuse and thus it would be more feasible to detect it by means of human tools.

Having said this, it seems clear, once again, that most of the attacks Sonia Vivas receives on Twitter target her brainpower as a woman, in order to discredit her. In Mary Beard's words:

(...) unpopular, controversial or just plain different views when voiced by a woman are taken as indications of her stupidity. It is not that you disagree, it is that *she* is stupid: 'Sorry, love, you just don't understand.' I've lost count of the number of times I've been called 'an ignorant moron' (2017, p. 33).

Put another way: since the attackers feel they cannot use explicit violence against her or threaten her in order to silence her, they opt for making her sound not only stupid and insane but also blameworthy.

2.2.4. Survey findings

As previously indicated, the sample for conducting the survey consists of 289 Twitter users from different nationalities, out of which 287 completed it in Spanish and only 2 in English. Of the total sample size, 75 respondents answered negatively; one of them inferring that she did not use Twitter frequently enough as to be a potential target and another one explaining that while she had been attacked on Facebook, she had not on Twitter. Two respondents clarified that they did not use Twitter. Thereby the actual sample was reduced to 287 respondents (i.e. taking account of the respondent who did use Twitter though not often).

In addition, as far as the remaining answers are concerned, media 'trolls'³ likely gave 13 of them, which represent an approximate 4.5% of the sample. "VIVA VOX" (tr: long life to VOX), "ni sí, ni no" (tr: neither yes or no), "sí, el tuyo" (tr: yes, yours), "016" (i.e. care phone number for victims of gender violence in Spain), "no sé" (tr: I don't know), "no, todos es todos" (tr: no, everyone is everyone), "do", "di" and "sí, de tu parte" (tr: yes, on your side) were some of their questionably serious responses to the first question of the survey. One of

³ See annexed Glossary

them even left all sections blank. Additionally, these 'trolls' were considered as such for different reasons, notably; trying to sow discord, giving rise to the suspicion that they were male, answering ironically, not replying to what they were being asked and using the survey as a tool to verbally attack the interviewer (i.e. myself).

These so-called trolls were counted as part of the sample for two main reasons. Firstly, since the survey was anonymous, it was not possible to know respondents' sex and therefore answers had to be accepted unless there had been clear evidence they came from a male. Secondly, because these 13 answers could also be counted as verbal violence and abuse against a woman (i.e. myself), they had relevance for this study.

In the case of the positive answers, a total of 199 respondents replied they had been subjected to problematic tweets, an amount that represented an approximate 69% of the total sample, just over two thirds. It is evident that, according to these results, there were a considerable proportion of female Twitter users subjected to verbal abuse. Nonetheless, while it was difficult to assess if results were likely to be biased, there was a possibility that users who were not concerned with the topic or who had never experienced this kind of violence and, as a consequence, were not aware of it, did not complete the survey when they received it. This phenomenon could therefore account for the minority of negative replies.

Since respondents to the survey who answered the first question in the negative were required not to answer the rest of the survey, let us now consider what 'positive' respondents answered to the remaining questions. Regarding the issue of whether or not they felt that the fact of being women made them the target of the abuse (question 4), out of a total of 199 respondents, 135 answered 'yes'. Answers like 'of course', 'often' 'sometimes' or 'yes and for more reasons' fell into this affirmative category. Furthermore, 2 respondents answered they were not sure and 62 answered negatively. It should be mentioned that answers of dubious seriousness were also included in this last category.

In this line, to the question about whether or not respondents received unpleasant tweets often (question 5), 111 answered positively and 88 answered negatively. Suffice it to say that within the 'yes' category, answers like 'daily',

‘sometimes’, ‘twice a week’ or ‘a lot’ were included. Here it should be noted that some respondents answered ‘yes’ and clarified that they became targets of verbal violence when tweeting about certain topics like their mothers, feminism, politics, football, or just trying to have their say about a topic or enter into a debate with males. Other women responded that they had been subjected to more attacks during periods in which they used Twitter more actively. Likewise, in the category of ‘no’, dubiously serious answers were included along with others like ‘not anymore because I block accounts’, ‘not anymore because I keep a low key profile’ or ‘not many, but I do receive some’. Let’s now analyse what respondents answered to the rest of the survey.

Let us now turn to question 7, which inquired about whether there could be other possible triggers, besides being a woman, for these attacks. Table 1 provides an overview of the different answers respondents provided.

Table 1

Women respondents feel they might receive attacks also due to other reasons (i.e. ethnicity, faith, sexual orientation) (Question 7)	
Yes	134
No / I don't think so	42
I don't know / Maybe / My Twitter is anonymous	23

As shown in the table, 42 respondents answered ‘no’ or ‘I don’t think so’, 23 answered ‘I don’t know’, ‘maybe’, ‘it’s difficult to know since my Twitter is anonymous’ or might be media trolls and, lastly, 134 answered positively. In this latter group, several reasons were given, among which, the most common ones were: lack of education, politics, racism, feminism, lesbophobia, different ideology, being from Catalonia or the Basque Country or religion, among others. Nevertheless, the topic respondents felt was the most frequent and repeated cause of their attacks was male chauvinism and the fight for women’s rights, respondents trying to be silenced for speaking out about any matter, but even more frequently when commenting on or working in a professional field traditionally male.

Further, question 3 inquired about sensitive themes. To this end, respondents were asked about the themes they were tweeting about when they were verbally attacked on Twitter. Table 2 presents their answers.

Table 2

Triggering themes (Question 3)	
Feminism women rights, gender-based violence, male field of expertise, politics, etc.	168
Attacks were unprovoked or unmotivated / they did not remember	18

According to respondents, the themes that most commonly provoked problematic replies to tweets were: feminism, women rights, denouncing gender-based violence, talking about a traditionally male field of expertise (notably football) and speaking out about politics. In numeric terms, 168 respondents claimed that the verbal abuse was triggered because of a previous tweet they posted while 18 respondents answered that either the attacks were ‘unprovoked’ or ‘unmotivated’ or that they did not remember whether or not they had previously brought up a particular topic. Additionally, the answers the 13 suspected trolls gave were dubiously serious and they were accordingly not taken into account in this question.

Another significant aspect is the kind of insult, slur or impertinence respondents received and the kind of topics, if any, which they were posting about when the abuse started. Table 3 shows the answers the 199 respondents who did receive verbal attacks answered to questions 2 and 6 of the survey. On the left column we can find the insult or the kind of insult received and on the right one, the amount of respondents that received it. The last cell shows the 6 respondents that took the survey as a means of verbal abuse against the interviewer (i.e. myself). Indeed, it was the first time I received this kind of message so we may infer the topic triggering it was feminism and women’s rights. Also, I completed the survey myself and thus the insults I received were included in the data collected and analysed down below.

Table 3

Most common insults received by respondents (Questions 2 & 6)	
Feminazi / Terf	89
Whore, slut, etc.	89
General condescending misogynist comments: insulting physical appearance, age, body hygiene, etc.	86
Madwoman, hysteric, ignorant, moron, etc.	63
Threats (notably death threats or threats of rape)	39
Respondents did not remember / did not specify	38
Puritanical / suggest to go practice oral sex on a man or get laid	28
Political ideology	25
Suggest to stay home / in the kitchen / washing up / having babies	16
Lesbian	8
Other kinds of verbal harassment	6
Abuse of different kinds addressed to the interviewer	6
Received a picture of male genitals without their consent	5
Black woman, latina, etc.	4

Looking at the table we see that, in 89 cases respondents were called “terf” or “feminazi” (pejorative terms for “feminist”) or misogynist names such as “whore” or “slut”. Still on the subject of the most frequent insults, 86 respondents were called condescending names or received insults related to their physical appearance (i.e. ugly, lad, filthy, etc.) and 63 were called “mad” or “ignorant”. In addition, 39 respondents received death threats or threats of rape and 5 received pictures of masculine genital organs without their consent.

Moving on now to consider the question of whether respondents felt unsafe or upset after receiving abusive tweets, table 4 summarizes what respondents answered to question 8 of the survey.

Table 4

These attacks make respondents feel unsafe or upset (Question 4)	
Yes	118
No	81

As shown, a majority of 118 answered they did feel unsafe or upset while 81 did not, the latter group containing the supposedly ‘trolls’. Suffice it to say that among respondents who maintained these tweets did not contribute to create a perception of insecurity or uneasiness, 5 clarified that they felt shielded because they had anonymous Twitter accounts. Among the women who responded affirmatively to this question, several had changed their avatars, used pseudonyms and blocked problematic accounts as measures to prevent these attacks. Other actions taken by respondents were: keeping a low profile, being careful with what they wrote, calling their lawyers and reporting tweets at the police station. It is worth mentioning that some women also admitted to having felt anxious and scared, notably victims of death threats or threats of rape, even in those instances where the attackers’ place of residence was far away. Some also claimed they did not feel free to say what they wanted on Twitter and that these attacks made them feel haunted.

Having presented the data collected by the survey related to the violence women suffered on the micro-blogging site Twitter, I will move on now to put forward respondents thoughts about measures taken by Twitter on the matter. Table 5 summarizes the replies provided to question 9 of the survey.

Table 5

Measures taken by Twitter (Question 9)	
Twitter does not take action to prevent this violence from happening	161
Twitter does enough	20
Varying views	13
I’m not sure / More or less	5

A majority of 161 respondents answered Twitter did not take action to prevent this violence from happening, 20 replied it did and 5 answered either they were not sure or “more or less”. Lastly, 13 respondents gave a different kind of answer to this question, such as: “I guess it is Twitter’s intention”, “It is complicated because people who enjoy this kind of harassment, create new accounts with the sole purpose of doing this, and when their accounts get blocked they have 20 other ready”, “Twitter should not do anything. If I cannot

endure something, the one who needs to leave is me instead of restricting others”, “Twitter does what it can, I guess” or “I do not think Twitter must do much. Disrespectful people depict themselves”.

What is more, women who answered negatively went on to state that; “even though I received death threats, Twitter claimed we need to bear the context in mind”, “Twitter is a platform that, because of the way it is done, bolsters mass harassment” or “in comparison with other social networking sites, these heinous attacks are more accepted by the community”.

Finally, respondents answered a range of different things to the last question of the survey, which pertained to any comments they might wish to make about the issue. Table 6 presents these data.

Table 6

Further comments (Question 10)		
No further comment		109
Gave feedback		90
Thank you so much / This is important/necessary	26	
Verbal abuse against women is normalized	14	
Attacks against the interviewer	13	
More education is needed	10	
This violence makes me live with fear	6	
The police did not cooperate when I reported someone	1	

Out of the 199 people who completed the survey, 90 replied to this last question and 109 answered ‘no’ or refrained from answering. The most repeated answer, given 26 times, was: “thank you so much for doing research on this topic, it is important / necessary”, “thank you and good luck on your dissertation” or “I would love to know the results of this study”. Respondents also stated Twitter did not take enough measures to stop these attacks or that Twitter had prejudices in 20 answers given while 14 respondents said that verbal abuse against women was rather normalized and that these attacks came for the mere fact of being women. Apart from that, 10 respondents said that more education was needed, 6 answered this violence made them live with fear, limited what they wrote and affected them and 1 said the police did not cooperate when

these attacks were reported. As might be expected, the 13 trolls used this last question to call me names, make misogynistic jokes or threaten me by means of the survey.

2.3. Analysis of results

The two previous subsections have demonstrated that women are indeed subjected to verbal violence and abuse on Twitter. It is now necessary to evaluate the data. As stated above, this study has found that, in addition to being a woman, talking about feminism and women's rights activism makes you more likely to be verbally attacked. With this in mind, we may pick some of the recurring lexical and syntactical structures used against Anna Prats Marín to illustrate this occurrence. At the lexical level, "Terf", "*mata*" (tr: to kill) or "*reventar*" (tr: to smash), were some of the reiterated terms used to attack her, while, pertaining to syntax, a widespread use of the imperative mood was a common approach in which perpetrators of this harassment urged others to follow suit.

Another significant aspect shown by the above selection of tweets is that other common triggers of violence and abuse are: gaining access to male traditional professional fields and racism. Taking a look at the tweets addressed to Diane Abbot from a lexical point of view, we observe a recurrent use of terms like "black", "fat", "retarded" or "bitch", to name but a few, while from a syntactical perspective, the most repetitive pattern was a form of statement in declarative mood. In this line, a study interviewed women who suffered attacks in their blogs and experienced posttraumatic stress reactions after years of uninterrupted harassment. This study sustains that males practice the so-called *gender trolling*; the online harassment addressed specifically to women as their target victims. They do this as a reaction to the fact that women question their authority by entering into fields traditionally occupied by them (Mantilla, 2015). This echoes Beard's words "if you venture into traditional male territory, the abuse comes anyway" (2017, pp. 36). These may be particularly applied to the harassment received by Diane Abbot and Sonia Vivas Rivera, but also to the one experienced by Anna Prats Marín or any other woman who receives abuse after voicing something on Twitter about football, IT or videogames.

To conclude with the commentary of our tweet selection, we cannot forget to mention that, on top of all the already mentioned triggering factors, being a lesbian causes you to suffer all possible forms of verbal violence, abuse, harassment, repudiation, etc. on social media, especially from men. In the case of Sonia Vivas Rivera, her being a lesbian adds to other violence-prompting factors, previously discussed, as being the first woman to hold office in a traditionally male field and being a feminist. The fact of being a policewoman prevents her from receiving threats or explicit verbal violence on Twitter. She does receive, though, homophobic jokes, comments implying she is insane or she is making false accusations and she should be sent to prison, etc. The tweets she receives probably have no traceable features from a lexical or syntactical perspective.

On the whole, the tweets here analysed appear to have a common goal: silencing women's voices. In the first scenario, mainly by means of death threats (notably by harming the areas of the neck and the mouth), intimidation and insults, while in the second and third cases, the perpetrators of the abuse attempted to discredit women by means of targeting their intellectual capacities, calling their sanity into question or implying that something was wrong with them because of their sexual orientation or ethnicity.

Having discussed the patterns found in problematic tweets targeted at women, I will now move on to examine the survey findings. Firstly, two things can be observed at first glance when looking at the respondents' answers: the fact that a 69% of them, or over two thirds, did suffer verbal attacks and that because of carrying out this study, the interviewer (i.e. myself) received verbal attacks for the first time. Indeed, I felt targeted because of being a woman, receiving insults such as 'whore', and as a result of carrying out research on a feminism-related topic. Several of the so-called trolls openly expressed they wished my account were closed and I stopped conducting this kind of research.

What is more, given the high frequency with which respondents mentioned feminism and women's rights activism as triggers of the abuse they received, the 69% positive response of this survey could be contrasted to the results of the study carried out by Amnesty International (2018b). They seemingly obtained an 88% affirmative response from female respondents who debate about feminism on Twitter on a regular basis. Additionally, 135 respondents (out

of the 199 previously mentioned) answered they felt the target of these problematic tweets because of their female condition and 111 said they received these kind of tweets on a regular basis. Concerning the triggers of this abuse, women said that talking about feminism or about a traditionally male field of expertise (e.g. football), or just voicing their opinion about any topic, such as politics, made them more likely to become the target of abusive tweets. Besides, this survey found that the more women used Twitter, the more verbal abuse they received. Notwithstanding, one might expect that females were allowed to speak out about “women matters”. Mary Beard (2017, p.24) suggests that, broadly speaking, women’s opinions are tolerated “in support of their own sectional interests, or to parade their victimhood”. She goes on to provide examples of women who were allowed to speak out in public on this basis; Sojourner Truth, Emmeline Pankhurst or Hillary Clinton. Besides, Beard affirms that, for centuries women’s public expression has been permitted exclusively in order to support female causes. In that case, it could come as a surprise that women’s rights activism triggered so much as physical threats.

Research shows, however, that in recent years a male chauvinist current has become apparent in different forms within social networks, according to which, gender equality has already been achieved. Some of the arguments of the advocates of this trend of thought are the denial of the existence of the gender-based violence against women, sustaining violence is “neutral”, and presenting feminism as a dangerous current, both extremist and devalued, which generates feelings of disdain against women who defend gender equality. Hence supporters of this trend believe feminists' demands are disproportionate and display a patriarchal reaction to them (Donoso et. al, 2015).

Another significant fact reflected in the survey results is the recurrence of specific categories⁴ of insults addressed to women. These attacks could be essentially subdivided in two main groups: (1) hatred insults for the mere fact of being women (e.g. whore, feminazi, lesbian) and attempts at silencing women who speak out or who “invade” traditionally male territory (e.g. death threats and threats of rape, condescending insults, “ignorant”, “madwoman”, advising to stay in the kitchen). Having said that, it should not be overlooked that

⁴ See Table 3

homophobia and racism are, among others, factors that increase heinous attacks. In the year 2014 a project using sentiment analysis software was carried out in this respect. It implemented word-monitoring procedures targeting problematic words such as “rape”, “slut” and “whore”. It was found that proportionally women were more subjected to online bullying, abuse and linguistic hatred than men were. It also served to bring to light a sexist truth on the online world (Barlett et. al, 2014).

Another significant aspect found by the survey is that 118 of the respondents who did receive violent tweets, which amounts to a 59%, answered that receiving problematic tweets made them feel unsafe and/or uneasy. As a result, respondents opted for censoring their posts to prevent being targeted, were less active on Twitter or, in some cases, even resorted to legal action.

3. Conclusions

This dissertation has shown the existence of verbal violence addressed to women on Twitter, its consequences and how useful it would be if sentiment analysis software were developed and implemented in order to tackle this social issue.

Be that as it may, two confronting opinions clash on this matter. On the one hand, we find advocates of Twitter users' total freedom of speech since it is a platform originally designed for humour and satire purposes. They make the case that one must be allowed to joke about no matter what subject and, accordingly, Twitter users must be aware of what happens on Twitter is not real. Not surprisingly, however, some of the advocates of this position prefer to maintain the anonymity on their Twitter accounts since they have suffered real-life cases of harassment coming from other Twitter users (Abro Hilo, 2019).

On the other hand, there are those who would prefer Twitter employed software in order to detect conflicting and potentially dangerous behaviour so that every user can feel safe and respected without harming other users. In this respect, while it seems apparent that Twitter could and should do more to protect its users and create a safer online environment, it should also be taken into consideration that, if they intended to implement measures, it would not always be easy to track problematic tweets. Linguistic features such as the indeterminacy of language or ambiguity when using a word can make it difficult for algorithms to distinguish pragmatic aspects of language. Likewise, the use of irony, as we have seen in several of the examples of tweets above, can prove unnoticeable for machines. In these cases, the exercise of sentiment analysis might need to be carried out by human workforce rather than by an automatic scan. Either way, Twitter has the financial means to, if not completely stop, cut down these attacks that are targeted at a particular group of users. It would be important that measures are taken in this regard, for freedom of speech ends when people censor what they say due to feeling in danger because of others' actions.

What is more, the common solution advised to women who are subjected to any sort of harassment, either in the form of violence or abuse, is to bear it, not to complain about it and to block the perpetrators (Mary Beard, 2017). Not

surprisingly, this is Twitter's suggestion to users when they report this kind of behaviour but, to my mind, this is not a solution. Question 10 of the survey carried out in this study allowed respondents to provide any feedback they wished to make. Respondents answered in 26 of the cases thanking the interviewer for carrying out research on this topic and/or adding it was important/necessary. They also claimed, in 20 cases, that Twitter was prejudiced and did not take enough measures to prevent these attacks from happening and, in 14, that misogynistic attacks were normalized. On top of that, 10 respondents said improvements on education were needed and 6 that these attacks made them live with fear. As I already indicated above, I was myself for the first time subjected to verbal attacks as a result of this study.

By and large, I believe this reflects how violence against women is rooted in society. Mary Beard (2017) points to culture as well as language and millennia of history as the reasons behind it. She also mentions the fact that more males than females are its perpetrators, and that these attacks are addressed to women far more frequently than to men. Be that as it may, if we do not report these actions and do nothing to address the current situation, it will most likely never change.

I hope these data show the severity of this social issue that daily affects the lives of many women and that this research helps bringing it to light and starting to enforce measures to address it. I have very much learned and enjoyed writing this paper, collecting information, analysing results and, especially, conducting the survey. Moreover, I was pleasantly surprised particularly with the words of thanks on the part of a good number of respondents. All in all, much remains to be done on developing and implementing the uses of sentiment analysis software for problem-solving purposes as well as on the field of violence against women.

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5. Annex⁵

5.1. Survey in Spanish

1. ¿Alguna vez has recibido un tuit desagradable?
(Sigue contestando la encuesta solo si la respuesta a la primera pregunta es “Sí”)
2. ¿Recuerdas el contenido de ese tuit / esos tuits? Si la respuesta es sí, por favor, descríbelo brevemente.
3. Si el tuit desagradable en cuestión lo recibiste en respuesta a un tuit tuyo, ¿cuál era el tema(s) de tu tuit original?
4. ¿Sientes que eres el blanco de esos tuits desagradables porque eres mujer?
5. ¿Recibes tuits desagradables a menudo?
6. (Responde a esta pregunta si contestaste “Sí” a la pregunta 5) ¿Cuáles son los insultos más habituales que recibes en Twitter?
7. ¿Crees que puede haber alguna otra razón por la que las personas detrás de esas cuentas te ataquen? (i.e. profesión, orientación sexual, etnia, religión, etc.)
8. ¿Alguna vez te has sentido insegura, amenazada o afectada de alguna manera por este tipo de tuits?
9. ¿Crees que Twitter hace lo suficiente para detener este abuso verbal?
10. ¿Te gustaría añadir algún comentario?

⁵ See Glossary in attached file