ANOIKTO ПАNEПIГTHMIO KҮПРОУ

EXOAH
ANOPתПILTIK $\Omega$ N KAI KOIN $\Omega N I K \Omega N$ EПILTHM $\Omega$ N

#  «EПIKOINתNIA KAI $\triangle$ HMOLIOГРАФIA» 

METAПTYXIAKH $\triangle$ IATPIBH
«Gender, Language and Power in the Public Sphere Surrounding Online News: A Cross Cultural Comparison»

ANNA ПPODPOMOY

ЕПІВЛЕПОҮГA КАӨНГНТРIA: Dr. Jahna Otterbacher

#  <br>  

##  $\sigma \tau \eta \nu$ Eтıкоıv $\omega v i ́ \alpha$ к $\alpha \iota \Delta \eta \mu о \sigma ı о \gamma \rho \alpha \varphi i ́ \alpha$



Gender, Language and Power in the Public Sphere Surrounding Online News: A Cross Cultural Comparison

## 'Avvа Пробро́ $\mu \mathbf{~}$

Етı $\beta \lambda \varepsilon ́ \pi о \cup \sigma \alpha$ K $\alpha \boldsymbol{\theta} \eta \gamma \eta \tau \rho \iota \alpha$ Jahna Otterbacher

#   

# Gender, Language and Power in the Public Sphere Surrounding Online News: A Cross Cultural Comparison 

## 'Avva Проб $\rho o ́ \mu о v$


Jahna Otterbacher


$\mu \varepsilon \tau \alpha \pi \tau \cup \chi เ \alpha \kappa о$ т тít $\lambda$ ov бтоибผ́v
$\sigma \tau \eta \nu$ Eтıкоı $\omega \omega v^{\prime} \alpha$ к $\alpha \iota \Delta \eta \mu о \sigma ı о \gamma \rho \alpha \varphi i ́ \alpha$



## Пгрі́入ך廿ך



 $\theta \alpha \mu \pi о \rho о и ́ \sigma \varepsilon ~ v \alpha$ $\theta \varepsilon \omega \rho \eta \theta \varepsilon i ́ ~ \eta ~ \alpha \cup \xi ŋ \mu \varepsilon ́ v \eta ~ \sigma \cup \mu \mu \varepsilon \tau о \chi \eta ́ ~ \tau \omega v ~ \pi о \lambda เ \tau \omega ́ v ~ \sigma \tau \eta ~ \delta ı \alpha \delta เ к \alpha \sigma i ́ \alpha ~$



















 $\tau \eta \varsigma ~ \varepsilon ́ \rho \varepsilon u v \alpha \varsigma ~ \alpha \nu \varepsilon ́ \delta \varepsilon ı \xi \alpha \nu ~ \varepsilon \pi i ́ \sigma \eta \varsigma ~ \pi \omega \varsigma ~ \eta ~ \alpha \pi o ́ \sigma \tau \alpha \sigma \eta ~ \alpha v \alpha ́ \mu \varepsilon \sigma \alpha ~ \sigma \tau \alpha ~ \delta u ́ o ~ \varphi u ́ \lambda \alpha ~ \pi \alpha \rho \alpha \mu \varepsilon ́ v \varepsilon ı$
 $\gamma \varepsilon \nu \iota \kappa \eta$ т $\alpha \sigma \eta ~ \gamma \iota \alpha ~ \varepsilon \pi \iota \lambda о \gamma \eta ́ ~-~ \sigma u v \varepsilon ı \delta \eta \tau \alpha ́ ~ \eta ́ ~ \alpha \sigma u v \varepsilon i ́ \delta \eta \tau \alpha-$ ovó $\mu \alpha \tau о \varsigma ~ \chi \rho \eta ́ \sigma \tau \eta ~ \tau о ~ о \pi о i ́ o ~ v \alpha ~ \mu \eta \nu$







 $\sigma u v \varepsilon \chi i ́ \zeta o u v v \alpha \varepsilon \pi เ \kappa o ı v \omega v o u ́ v ~ \sigma \alpha v ~ " \gamma u v \alpha i ́ к \varepsilon \varsigma " . ~$

## Summary

The development of Internet technologies and their increasing influence on everyday life has greatly changed the way citizens inform themselves. Perhaps the most interesting difference has been the increasing participation of citizens in the news process, brought about by the use of Web 2.0 features on news sites. Many have described such technologies as bringing about a new, online public sphere, where citizens can openly engage in dialog. This thesis explores gender differences in participation and use of online news commenting forums, arguably one of the most popular participatory features of modern news sites.

We consider three online news sites, one American, The New York Times, and two Greek, Ta Nea and To Vima, analyzing the comments that follow their online published articles. We compare the ratio of men to women who are participating by posting their comments and we also examine whether gender differences in participation can be explained by differing levels of interest across news topics. Finally, we analyze the linguistic style that men and women participants use in their comments, in order to determine whether certain linguistic characteristics and/or behaviors that are traditionally associated with each gender are traceable in the comments examined.

Results show that the gender gap is a reality in the online news commenting forums examined. The gender divide in participation was quite evident in both the American and Greek news sites while clearly more pronounced in the Greek news sites. Our results also showed that this divide is present regardless of the article's topic. A clear finding was also the general trend of choosing - knowingly or not - an ambiguous user name. The linguistic, stylistic analysis of the Greek comments showed that gender differences in communication are profoundly visible; men and women use the stereotypical language of their gender group. Nevertheless, we observe interesting deviations to the norm. While men continue to express themselves linguistically "like men" they do often adopt women's language behaviors. Meanwhile women continue to maintain their gender's stereotypical communication style, in other words communicating like women.

## Euz $\alpha \rho ı \sigma \tau i \varepsilon s$

I would like to express my deep gratitude to Dr. Jahna Otterbacher, my research supervisor. I'm extremely thankful and indebted to her for sharing her expertise, her sincere and valuable guidance and enthusiastic encouragement throughout this research work.

I would also like to thank my family and friends for their support and encouragement.

## Table Of Contents

1 Chapter 1 Introduction ..... 1
A male technology? ..... 3
Technology and inequality in access ..... 4
Plausible explanations of the gender gap ..... 5
News and the Internet ..... 7
Online news consumption in the U.S. ..... 8
Online news consumption in Greece ..... 9
Goals of the current study ..... 10
2 Chapter 2 Literature review ..... 12
Gender: A social construction ..... 12
Communication about men and women - Communication between men and women ..... 14
Gendered computer-mediated communication (CMC) ..... 15
Gender and power differences in CMC ..... 15
3 Chapter 3 Method ..... 17
Data ..... 17
Analysis 1: Cross cultural comparison of participation in comment forums ..... 21
Analysis 2: Linguistic analysis of Greek comments ..... 22
4 Chapter 4 Analysis - Results ..... 23
Analysis 1: Cross-cultural comparison of participation in comment forums ..... 23
Analysis 2: Linguistic analysis of Greek comments ..... 31
5 Chapter 5 Discussion ..... 34
6 Chapter 6 Conclusion ..... 42
Bibliography ..... 44
A Annex A ..... A-1
A. 1 Content codes used with definitions and literature \& data examples ..... A-2
A. 2 List of articles ..... A-7
A.2.1 The New York Times ..... A-7
A.2. 2 Ta Nea \& To Vima ..... A-8

## Chapter 1 Introduction

Information technology (IT) has become prevalent in the last century and the Internet has become an integral part of everyday life. The Internet is, for millions of people, the medium to information. More and more people seek information online. As such, this increasing demand for online information could not leave the news corporations unaffected. Thousands of mainstream newsmedia maintain websites. This is true not only for media corporations in countries with billions of readers such as, for example, the U.S and Russia, but is a practice spread through out Europe.

Interactivity is arguably the most intriguing aspect of the Internet (Deuze, 2003, p.204), clearly differentiating it from older communication technologies. People participate in social networking sites, forums, message boards and/or many virtual communities and, of course, seek information online. Moreover, the interactive characteristics of modern Web technologies allow people to escape their traditional role of being a passive audience, transforming them into producers of information by modifying and/or adding information according to their own interests and views. Evidence of that is "citizen
journalism" where readers, whose role was traditionally limited to being "just the audience," now employ various digital tools - from hardware including smart phones to blogs and social networking sites - as press tools, in order to inform one another. Some scholars (e.g., Dan Gilmor and Jay Rosen cited in Jurrat, 2011, p. 8) even suggest that the digital era has democratized the media.

Therefore, given that the Internet has become an integral part of everyday life, and given its profound influence on the production and consumption of news, it is timely to pose the following question: has the Internet really become a part of everyday life for men and women equally? Patterns of gender stereotyping, discrimination and division are present without doubt in the offline world, in many aspects of our lives. Do we find that they are also alive and well online?

Many researchers who have examined the issue of gender differences online have concluded that the online world is simply a projection of the offline world. Women are under-represented in a variety of fields; for example, women are under-represented in politics (Visvanathan, 2012); also low percentages of women holding upper management positions is a noticeable reality (Hoobler et als 2011). As a result the absence of women's views and experiences from policy debates and deliberations is a reality as well as the divide in earnings. Likewise studies of gender representation in STEM, ${ }^{1}$ note a "significant under-representation of women". Moreover the "relatively few women who receive STEM degrees are concentrated in physical and life sciences, in contrast to men, who are concentrated primarily in engineering" resulting one more time in an earnings gap between men and women.

The obvious implication is that women are under-represented in the educational and professional spheres that design and build new technologies. Given this, it is arguably not surprising to find that, under-representation of women is noted by researchers in the use of such technologies and more specifically, in online communities (Vasilescu et al., 2012). Furthermore, studies on online communication such as cybertalk suggest that "gendered power differentials in communication style transcend the medium." (Sussman \& Tyson, 2000, p.381)

[^0]In the current work, we examine a specialized online environment, in order to understand whether we are still facing the same gender issues. As will be discussed, we examine whether or not men and women take advantage of a key interactive feature at news sites - the commenting forum - in order to exchange views with other readers, thus participating in the creation of a new public sphere. By reexamining the gender gap and moreover by approaching it through a cross-cultural perspective, we consider that the findings will be a valuable contribution in the effort of reducing it.

## A Male Technology?

Technology, as a concept, doesn't have a very long history. In fact it appeared soon after World War II and the term itself originated from the Greek words tekhne which means art, and/or craft and -logia, a suffix denoting a subject of study or interest (Oxford online dictionary, n.d.). In its earlier days it was defined as "the exclusive knowledge of domain engineers, best embodied by machines as the measure of men" and also as "any means or activity by which man seeks to change or manipulate his environment" (Oldenziel, 1999, p.15). The above reference to the definitions of technology is beneficial in understanding firstly how the term technology has been associated from the beginning with men (Oldenziel, 1999, p. 14) and how technology is presented as being prohibitive for women.

A more recent definition (Oxford online dictionary, n.d.) defines technology as "the application of scientific knowledge for practical purposes, especially in industry" and also as "machinery and devices developed from scientific knowledge". Moreover it is interesting to refer to the term computer (Webster's College Dictionary, n.d.) which is defined as "a programmatic electronic device designed for performing prescribed operations on data at high speed, especially one housed with or linked to other devices for inputting, storing, retrieving, and displaying the data".

Also the definition of the word computer can possibly lead to assumptions as to the "neutrality" of the machine. This characteristic of the computer - the absence of "neutrality" - is argued by Bertram Bruce (1993, p.15) on the basis that a computer is not just a machine created by people to meet specific purposes but should be also viewed "as a process in which relations among people are realized". Jan Zimmerman
(1983, p.3) in her book The technological woman: Interfacing with tomorrow, also states that the machine itself cannot be separated from its creators, a machine is determined by those who make it and all their expectations. In other words, the creators' values, political, sociological and cultural backgrounds are ingrained in the technology. Introna and Nissenbaum (2000, p. 61) also refer to the sociopolitical but also moral values that technological systems may embed or embody and Bijker and Law (1992, p.4) go even further, stating that "the processes that shape our technologies go right to the heart of the way in which we live and organize our societies", mirroring our societies.

What is interesting to note is that the idea of the computer being a "man's" tool and creation, is not entirely historically accurate. In fact, in the early days of computer programming, women with a background in mathematics were assigned roles as programmers, as it was perceived as being an 'easy' task and less important than the development of hardware, which was exclusively done by men. Nevertheless, once programming proved to be both profitable and prestigious women were sidelined and men took over (Ensmenger, 2012; Eveleth, 2013; Sydell 2014). The fact that women were, unfortunately, sidelined and silenced, with their contribution only recently being acknowledged, reinforces the notion that computing is indeed a man's creation and tool.

## Technology and Inequality in Access

Research shows that with the majority of new technologies, one can observe important differences when it comes to initial users or adopters, and those who are waiting for the new technology to gain a firm position in order to adopt it. Early adopters of new technologies usually are young urban males with a high level of education, and not racial or ethnic minority members (Rogers 1995; Norris 2001 as cited in Ono \& Zavodny, 2003, p. 111) and one can easily add women as a minority group among early adopters.

The Internet is no exception to this trend. Previous studies concluded that women were less likely than men to use personal computers during the mid 90's declaring though, that these differences disappeared or even reversed by 2000 (Ono and Zavodny, 2004, p. 112; Information Resources Management Association, 2012, p. 1052). Nevertheless, inequality in Internet access is a reality and is in part a result of socioeconomic and
demographic differences (Ono and Zavodny, 2004, p.111). The gender gap though, according to Bimber (2000, p. 868) on a study evaluating gender differences in Internet presence, in an effort to trace gender-specific causes explaining differences in Internet use, is not limited in access but also in use. Bimber notes that differences in access are a result of socioeconomic differences (education, employment, income) between men and women, differences that most probably will be surpassed with time since there are already signs that they are decreasing. At the same time, the same study notes that while the gender gap in Internet use can be partially attributed in socioeconomic factors, it is, interestingly enough, also a result of underlying gender-specific phenomena. Specifically, Bimber (2000, p. 874) suggests that "[f]or some reason or a combination of reasons that are gender specific, and that have yet to be explained, women are less intensive Internet users than men. [...] The reasons that women are less intensive Internet users may involve stereotyping, inherently 'gendered' technology, embodying male values, content that favors men, sex differences in cognition or communication, or other factors - in addition to socioeconomics."

## Plausible explanations of the Internet gender gap

In summary, going beyond socioeconomic factors, other plausible explanations of the gender gap in Internet use include the following:

## 1. The nature of the computer itself

As already mentioned, Bertram Bruce (1993) argued that the technology itself is not something static but evolves with its creators and the relations between them. Also Jan Zimmerman (1983, p.3) states in a very lively way that "sexism, racism, classism, and a host of other values [run] as rapidly as electrons through the micro circuitry of tomorrow." Technology, in other words, and thus the computer, is an artifact that bolsters society's preexisting social, economic, sociological and cultural bias. Based on this stance the computer could be characterized as gendered and we would expect to find that participation in computer-mediated communication might be difficult or undesirable for women participants.

## 2. Internet as a male designed and oriented tool

Many argue that the Internet as a particular technology is biased towards the interests and styles of men. Of course, men reign professionally in the Internet domain. A consequence of this fact is that advertisers, creators of computer games and many websites consider men as their main audience and adapt their material to the male consumer's needs and tastes. Two observations clearly illustrate this notion. First, pornography oriented toward heterosexual men is a big market hit. In addition, online sexual harassment is a known problem; its assuming presence in online environments mirrors the male-dominant work environment (Bimber, 2000). While one must admit that the above issues are very complicated, it is likely that such factors might discourage or inhibit the full participation of women in Internet communication.

## 3. Gender differences in cognition and communication

Many studies have documented differences in cognition and communication styles between men and women (Kramarae, 1974; Lakoff, 1975; Herring 2004; Tannen 1984; Grossman \& Wood, 1993). For instance, studies have classified certain linguistic features such as tag questions, rising intonation on declarative statements and hedges, as occurring more in women than in men (Lakoff, 2004, pp. 78-81). On the other hand, men are said to write more opinionated messages, use fact-oriented language, do more calls for action, are less self-disclosing as women and make fewer attempts at tension reduction (Sussman \& Tyson, 2000, p.383; Williams \& Mendelsohn, 2008, p.279). Although these studies have been made on natural language spoken or written, it is possible that these linguistics features can be found online. As Internet technology has developed and become popularized, it has transitioned into a sphere for communication and information exchange. Therefore, given that men and women think and communicate differently, it is logical to expect to see differences in Internet use (Bimber, 2000, p. 874).

This thesis considers the third explanation, using the previous work on gender differences in communication as our point of departure. As will be explained, the Internet has become an important medium for participation in the public sphere and gender differences in Internet access have already been observed. In addition, there are likely to be salient differences in the way that men and women participate online across
different cultures. There have been few efforts to make such comparisons, perhaps owing to the significant methodological challenges presented by such studies. We make a first attempt at examining cross-cultural, cross-gender differences in online participation in news forums in the current work.

## News and the Internet

## Online news commenting forums, interactivity, and the new public sphere

The emergence of Internet technologies has inevitably had a significant impact on the news environment. The Internet as a news provider is slowly being transformed into a truly strong competitor of television and undoubtedly now enjoys a larger audience than newspapers and the radio (Eurobarometer, 2014; PEW, 2010). Its infrastructure creates boundless possibilities for interaction affecting not only the way news are published, and thus available to consumers, but also the relationship between news producers and news consumers. Specifically, this shift has transformed the second into new hybrid prosumers (Deuze, 2003 p.213). Alternatively, Pryor (2002) refers to this new type of news audience as "high end-users".

These unique characteristics of the Internet and its infrastructure enabled a new kind of journalism: online journalism. According to Deuze (2003, p. 207) this "new journalism" is "produced more or less exclusively for the World Wide Web" and its content is being published on news sites that can be characterized as 'open' and 'closed' depending on "the level of participatory communication offered" by them. A news site, in other words could be considered as 'open' when it allows users to share comments, posts, upload files (i.e. content) without moderating or filtering intervention and 'closed' if readers have participatory rights but "their communicative acts are subject to strict editorial moderation and control" (Deuze, 2003). Moreover Deuze divides news sites depending on their distinctive characteristics, into four types: Mainstream news sites, Index and category sites, Meta-and comment sites and share and discussions sites (2003, pp. 206211).

Both American (The New York Times) and Greek (Ta Nea and To Vima) sites are considered "Mainstream news sites". Mainstream news sites have a quite similar approach on how they present their stories, how they engage with their readers, and encompass more or less the same values as print or broadcasting journalism. Mainstream news sites are one of the most popular form of news media production "offering a selection of editorial content and a minimal, generally filtered form of participatory communication" (Deuze, 2003, p. 208). Thus, this type of site is considered to be more "closed". Despite this, it is quite significant to acknowledge that as Deuze (2003, p. 208) states "no single type of (online) journalism exclusively fits on one end of a continuum; any given type of journalism will involve characteristics or elements of several domains in this model".

Nevertheless, the aforementioned possible limitations being posed by news sites cannot erase the fact that online news sites are no longer limited to Web-based places where citizens are being informed of stories spurred by news media. The increasing participation of news consumers and the opportunity for interaction has brought with it the hope for social change. The Internet in a more general sense is described as facilitating the creation of "a virtual reincarnation of the public sphere [...] a domain of social life in which public opinion is expressed by means of rational public discourse and debate" (Papacharissi, 2009, pp. 231-232). Furthermore it could be suggested that online news sites, with their commenting forums are, or seem to be, emerging as well as a new online public sphere where people exercise their civic rights, exchange knowledge and information; a place where connectivity and public communication flourishes.

## Online news consumption in the U.S.

Earlier research (PEW, 2010) has shown that 61\% of American adults get their everyday news from online and offline sources, although only $2 \%$ get their news exclusively via the Internet. An even more recent research (PEW, 2013a) has shown that $50 \%$ of Americans use the Internet as a main source for news, at least for national and international news. However, local television news and national cable television news continues to be the primary source of news (PEW 2010, 2013a).

Some characteristics of the population consuming online news are:

- It consists of younger people ( $68 \%$ are under the age of $50,29 \%$ are under the age of 30 (PEW, 2010)
- $71 \%$ of those 18-29 years old cite the Internet as a main news source; this is significantly more than the percentage that cites television which is $55 \%$ (PEW, 2013a)
- Online news consumers tend to be employed full time (50\%) (PEW, 2010)
- They have at least some college education (67\%) (PEW, 2010)
- Their "household income trends higher than American adults in general" (PEW, 2010)

While Americans tend to consume a variety of news topics online (PEW, 2010) the most popular are the weather (81\%), national events (73\%), health or medicine (66\%), business, finance or the economy (64\%), international events (62\%), science and technology ( $60 \%$ ), developments in one's state (58\%), sports (52\%), developments in one's local community (51\%), arts and culture (49\%), celebrities or entertainment (47\%), traffic (32\%).

## Online news consumption in Greece

According to a research study conducted in 2014 by the Hellenic Statistical Authority "[r]eading news online in websites, newspapers and magazines tops the list of Internet activities carried out by $84.9 \%$ of Internet users, recording an increase of $10 \%$ compared to 2013," (El-STAT, 2014; EU Digital Agenda for Europe). Moreover, according to the Eurobarometer (Autumn 2014) 40\% of the population claimed to read newspapers only two or three times a month.

According to the Hellenic Statistical Authority research, some characteristics of the online news consuming population of Greece are:

- The majority is employed (56.9\% are employed, $11.9 \%$ are students, $16.1 \%$ are unemployed, $15.1 \%$ are not in labor force either retired, inactive etc.)
- It consists of younger people (87.1\% are under the age of 55, 42.7\% are under the age of 35 ).

Some additional interesting information from the same research concerning computer use is:

- From the total percentage of individuals that use the computer, which is $63.28 \%$ of the entire Greek population, a percentage of $50.80 \%$ are men and $49.20 \%$ are women, which demonstrates an insignificant gender gap in computer and/or Internet use.
- $47.92 \%$ have a medium educational level ( $49.13 \%$ of men, $50.87 \%$ of women computer users) and a lower percentage of $37.65 \%$ have high educational level (51.25\% of men, $48.75 \%$ of women computer users).

When it comes to using the Internet:

- $63.21 \%$ of the population use the Internet, $50.63 \%$ of Greek men and $49.37 \%$ of Greek women.
- A percentage of $47.92 \%$ of those who use the Internet have medium educational level ( $49 \%$ of men, $51 \%$ of women Internet users) and a $37.64 \%$ have high educational level ( $51 \%$ of men, $49 \%$ of women Internet users).

It is of note that more detailed statistics on gender and participation in technologies designed to support an online public sphere - such as news commenting forums - are not available.

## Goals of the Current Study

In the present study, focus will be given to online newspapers and more precisely to the comments that follow the articles published on online newspapers websites. We examine the American New York Times and two Greek online news sites: Ta Nea and To Vima. All three are considered mainstream news sites. The two Greek news sites offer
unlimited access to their articles while in the case of The New York Times only print subscribers get free access and visitors can view only 10 free articles a month.

We will examine:

1. The ratio of men to women who are participating. Do men comment more on articles published on online newspapers websites as compared to women? Is there an observable gender difference in rates of participation in comments/forums? Do we find similar trends in participation at The New York Times and the Greek sites, Ta Nea and To Vima?
2. Given that we find significant differences in participation between men and women participants, can these differences be explained by the topic of the articles? In other words, do women comment on different subjects than men?
3. Gender differences in communication modes on the Internet. As will be explained, women tend to express themselves differently than men. Our research will focus on examining whether these linguistics features can be found online. Furthermore if the previously mentioned possibility of absence and/or less participation of women on the Internet could be the result of the huge incorporation or adoption of male styles in Internet communication?

In order to ground the study, the next chapter reviews the literature on gender differences in communication style and linguistic patterns. Chapter 3 presents the empirical analysis, while Chapter 4 places our findings into context. Chapters 5 and 6 present our conclusions on the present study as well as areas for suggested future work.

## Chapter 2

## Literature Review

Over the past several decades, researchers have documented systematic differences in the ways in which men and women communicate, and in particular, in the stylistic differences of their language patterns. We first explain the stance taken by many scholars, in approaching gender as a social construction rather than a biological reality, which we also adopt. Following that, we summarize some of the key differences described in previous research, concerning the communication patterns and language styles stereotypically adopted by men and women.

## Gender: A social construction

In this work, we refer to sex as a biological category and gender as a social construct. Gender is for many scientists a social construction acquired through family, reinforced by society and learned and expressed through language (Epstein, 1986, pp. 27-28;

Spaynton, n.d., pp. 182-183). According to Epstein (1986, p.44) gender division is universal, does not confine in the barriers of a specific society or culture and is the main outset "of division of labor and of hierarchy and social inequality". In other words, societies indicate and/or categorize work, status, appearance (e.g., dress codes), manners of expression and emotions as masculine or feminine (Epstein, 1986, p.28; Cross \& Markus, as cited in Beall \& Sternberg, 1993, pp. 55-98). Subsequently, men and women belong to different sociolinguistic subcultures that are internalized and projected through male/female language, body language, facial expression and behavior (Tannen, 1984). Lakoff (2004, p.45) also rejected the idea that linguistic behavior differences are biologically rooted and argued that linguistic behavior is a social construction. Hence, language as the primal means of communication plays a key role in perpetuating the gender division.

Recent studies focusing on the modern ways of communication, such as computermediated communication (CMC) ${ }^{2}$ examine the possibility of the presence of stereotyped gender linguistic behavior online. According to Carstarphen and Lambiase (1988) as cited in Sussman \& Tyson (2000, p.383), language does play a significant role in the erection of gender barriers in cyberspace and these barriers are patterned according to the dominant 'outernet' power structures and hierarchies. Also Matheson (1991) as cited in Sussman \& Tyson (2000, p.390) states that "the mere expectation of the gender of one's communication partner influenced computer-mediated social behavior".

However, it should be borne in mind that not only gender, but also a variety of factors such as social class, religion, ethnicity, age, occupation and personality, influence and/or affect linguistic expression. Moreover, in analyzing linguistic characteristics and/or patterns it is essential to take into consideration the context and the topic of conversation as well as the roles and power dynamics of the communicating parties (Epstein, 1986, p.34).

[^1]
## Communication about men and women - Communication between men and women

According to Ivy \& Backlund (2000, p.4), gender communication is "communication about and between men and women". Communication about women could generally be described as biased against them. The generic 'he' who dominated and can be highly argued that still dominates the language is a strong evidence of that bias (Epstein, 1986, p.38). In addition, the terminology used to define what men and women do even when they do the same thing demonstrates the same bias against women: men are chefs but women are cooks (Spaynton, n.d., p.188), men who work the land are called farmers but women who do so usually define themselves as farmer's wives (Boulding 1980 as discussed in Epstein, 1986). Of course, efforts have been made in minimizing sexism in language but it certainly hasn't been eliminated.

One of the earliest studies on gender and linguistic behavior is that of Lakoff in 1975. Lakoff (2004) classified certain linguistic features such as tag questions (i.e. "Isn't it?"; "Right?"), empty adjectives (i.e. "sweet"; "divine"), rising intonation on declarative statements and hedges (i.e. "If I'm not mistaken"; "I'm not sure"), as occurring more in women than in men. According to Lakoff (2004, p.48) the rising intonation at the last syllable, when a statement is transformed into a question, and verbal hedges observed in women's language is a sign of tentativeness, a characteristic theorized by Wood (cited in Spaynton, n.d., p.191) as a strategy to maintain communication and connection. This style of verbal expression "represents a lack of power, self-confidence, or assuredness on the part of the speaker" (Spaynton, n.d., p.191) and it mirrors women's powerlessness in the culture (Lakoff, 2004, p.50). Women's language is described as more 'polite', 'proper', (Lakoff, 2004, p.50) and is often described as being less effective than the speech of men, as it is too emotional, vague, euphemistic, sweetly proper and mindless (Kramarae, 1974). Men are said to write more opinionated messages, use factoriented language, elicit more calls for action, are less self-disclosing than women, make fewer attempts at tension reduction (Sussman and Tyson, 2000, p. 383; Herring as cited in Savicki \& Kelley, 2000, p. 818; Lingenfelter and Kelley as cited in Williams \& Mendelsohn, 2008, p.279) and also interrupt women more frequently (Tannen, 1994). Men according to Maltz and Borker (1993, as cited in Maldonado et als, 2001, p.3) tend to use conversation as a mean to establish control

## Gendered computer-mediated communication (CMC)

According to Sussman \& Tyson (2000, p.381), gender differences in linguistic expression usually observed in face-to-face communication extend to the Internet as well. Poynton (1989 as cited in Maldonado et als., 2001, p. 2) stated that women are more talkative about their selves, revealing more information about their thoughts and feelings. According to Maltz and Borker (1993, as cited in Maldonado et als 2001, p.2) women are establishing relationships through conversations, and they tend to write longer statements in an effort to prolong the conversation. Women in CMC are more supporting than confrontational, write shorter messages which express doubt, make suggestions (Baron, 2005, p. 5) and their arguments are based on intuition and experience rather than on facts. On the contrary, according to Herring (1993, 1994, 1996) as cited in Maldonado et als (2001, p.3) men in their CMC are more prone to confronting others, tend to write longer messages (Truong, 1993; Savicki and Kelley, 2000; Ferris, 1996 as cited in Maldonado et als., 2001, p.3) are often sarcastic and critical, introduce new topics for discussion, use factual arguments and assume more frequently a leadership role in mixed-sexed groups (Sussman and Tyson 2000, p.390; Walker et al., 1996). Also, women use more iconic emotional expressions (emoticons) than men (Katzman, 1994; Witmer and Katzman, 1997 as cited in Maldonado et als, 2001, p.10) probably due to the lack of non-verbal cues, which women tend to use more intensively than men in their face-to-face communication.

Despite this, Sussman and Tyson (2000, p.390) interestingly state that in their work, when the topic of discussion was oriented toward women's interests, women initiated discourse. The researchers interpret that as an attempt to show expertise rather than power.

## Gender and power differences in CMC

According to Sussman and Tyson (2000, p.381) "gendered power differentials in communication style transcend the medium". They suggest that cyberspace is maledominated and it reflects, through language, the male-dominant structure of this new mode of communication (Sussman and Tyson, 2000, p. 384). Male dominance in other words is reflected and expressed through language perpetuating the masculine higher status in society.

It is quite interesting to note that, according to Lakoff (2004, p.44), in face-to-face communication men's language is usually adopted by women and not vice-versa. This reinforces the notion that the powerful group -men in this case- imposes its own linguistic rules and behavior.

## Chapter 3

## Method

In order to observe the authentic participation and language behaviors of citizens in news commenting forums, an observational method was used. Specifically, following Herring (2004), we conducted a computer-mediated discourse analysis (CMDA). CMDA approaches the analysis of online behaviors "through the lens of language, and its interpretations [and is] grounded in observations about language and language use" (Herring 2004, p.339). Therefore, CMDA could also be described as language-focused content analysis, although as will be shown our interests pertain more to stylistic rather than content features of participants' comments.

## Data

We created a corpus of 79 online news articles published in the second half of September 2014. The study is cross-cultural; American and Greek newspapers were
included in the sample. The New York Times was chosen as the American newspaper for the study, as one of the most extensive news sites with a very active user base. In fact, the PEW Research Center's 2013 State of the News Media report (PEW, 2013b) finds that NYT is the second most popular online newspaper worldwide, trailing only the UK's Mail Online.

In order to determine which Greek news sites had sufficient commenting activity from the readership, such that a comparison to NYT would be meaningful, a preliminary examination of six online newspapers was conducted. In some cases, we observed very low rates of participation in the comment forums (Ta Nea and To Vima). In one case (Kathimerini) the commenting section was deactivated in the majority of the articles and only permitted commenting in the opinions section, and in the cases of Eleftherotypia, Ethnos and Avgi no option for commenting was given. From these observations, it was determined that Ta Nea (T $\alpha$ N $\varepsilon \alpha$ ) and To Vima (To Bท́ $\mu \alpha$ ) were the most comparable news sites, and thus, more appropriate for the study. A sample of 23 articles was collected from the New York Times (NYT) comprising 8,853 comments, while 56 articles were collected from Ta Nea (T $\alpha$ N $\varepsilon$ ќ ) and To Vima (To B $\dot{\mu} \mu \alpha$ ) comprising 1,243 comments. In total, 10,096 participant comments were collected and analyzed.

Articles for the corpus were manually selected, primarily on the basis of the number of comments attracted by articles, but also in terms of article content [Chart $3.1 \& 3.2$ ]. A variety of articles were chosen including the following news categories: politics, world, local news, science, opinion, culture, society, economy, Europe, health, technology, sports and magazine. In the case of NYT, the articles were randomly selected, taking into consideration their category/content. The news categories at the three online newspapers do not always coincide [Figures 3.1-3.3], nevertheless an effort has been made to include the most common ones.


Chart 3.1: The New York Times: Articles by category ( $\mathrm{n}=23$ articles)


Chart 3.2: Ta Nea \& To Vima: Articles by category ( $\mathrm{n}=56$ articles)


Figure 3.1: Screenshot of The New York Times homepage on Wed, March 42015



International Edition । BHMagazino । BHMAgourmet । BHMAdeco । BHMAdonna I BHMAmen । BHMA FM


Figure 3.2: Screenshot of To Vima homepage on Wed, March 42015


Figure 3.3: Screenshot of Ta Nea homepage on Wed, March 42015

## Analysis 1: Cross-cultural comparison of participation in comment forums

In order to compare the rates of participation between men and women in the Greek and US news sites, it was first necessary to classify participant gender, according to his or her chosen screen name. In other words, the goal was to manually examine each screen name, classifying it into one of the following four categories: traditionally masculine name, traditionally feminine name, ambiguous (i.e., participant's chosen name does not suggest a gender) and anonymous (i.e., participant did not use a screen name). In order to first ensure the reliability of this classification process, we computed the inter-rater agreement on a random subset of the screen names in the corpus; the author, as well as one additional judge, independently labeled 180 screen names with one of the above four categories. The raters agreed on 110 names (62\%). Cohen's Kappa (1960) interrater agreement, which quantifies the extent to which the level of agreement is better than expected by chance is 0.422 , suggesting a moderate degree of agreement.

In order to improve the labeling process, the names on which the two judges did not agree were studied. While the judges tended to agree as to which names were traditionally feminine, the first judge tended to assign the "ambiguous" label more than the second judge, who more often used the category of traditionally masculine names. The author labeled the remainder of the names using this process, erring on the side of "ambiguous" for names leaving any room for doubt. It's essential to clarify that we have no means of knowing each participant's offline gender. In other words, we analyze their choice of username, which we presume reflects their true gender.

Next, simple quantitative analysis was conducted in order to measure:

1. Rates of participation in news commenting of men, women, ambiguous and anonymous users across the entire corpus. The result of these counts enabled us to examine the question of inclusivity at news commenting forums (RQ1).
2. Rates of participation between men, women, ambiguous and anonymous users within individual news topics. That allowed us answer the question (RQ2): to what extent are rates of participation of each gender correlated to news topic?

## Analysis 2: Linguistic analysis of Greek comments

An analysis was conducted solely on the comments posted on the online Greek news sites. We are not aware of any previous attempts to characterize gender-based stylistic differences in the language used in Greek news commenting forums and therefore, we decided to focus effort on the Greek language comments rather than the English language contributions. Thus, this is a crucial step toward a more thorough crosscultural study, in which we could compare both participation rates and readers' manners and expressions across the US and Greek data we have collected.

Following previous research discussed in Chapter 2, which attributes certain linguistic features to each gender, we identified and quantified the linguistic as well as paralinguistic (e.g., emoticons) features that women and men utilize when they post online. Specifically, comments were coded for the presence/absence of particular linguistic features. We then compared the frequencies with which men and women use markers of gendered language.

## Chapter 4

## Analysis - Results

## Analysis 1: Cross-cultural comparison of participation in comment forums

As mentioned, the first analysis conducted enabled us to address the first research question (RQ1): Do men comment more on articles published on online news sites as compared to women?

## The New York Times case

The majority of the users commenting in NYT (51\%) choose, knowingly or not, to conceal their gender identity when commenting, by choosing a user name that was ambiguous with respect to gender (e.g., Birdie, Lanche). Men (i.e., users choosing traditionally masculine screen names) dominate the remaining percentage with a $36 \%$
participation, limiting women's participation to only 13\%. More specifically, Figure 4.1 presents the proportion of unique users in the NYT corpus, attributed to each of the four gender categories. It should be noted that we assume that each unique screen name represents one participant (i.e., that participants have unique names). It may be the case that some common names (e.g., "Maria," "Jack") are chosen by more than one user if permitted by the news forums. Unfortunately, it is impossible to tell if this is permitted or not at the sites we examined. If it is case that multiple users share a given name, it would change the total number of unique users at each site. However, it would not affect our analyses of the distribution of comments made by women versus men.


Figure 4.1: Participation in news commenting at NYT, by Gender

## The Greek newspapers: Ta Nea \& To Vima

In the case of the Greek online newspapers, the majority of the users commenting (49\%) did not disclose their gender identity, followed closely by the percentage of users using masculine names (43\%). Interestingly, in this case we record the extremely low percentage of $6 \%$ in participation by women [Figure 4.2]. In other words, in the Greek corpus, only $6 \%$ of participants chose a screen name that is clearly feminine.


Figure 4.2: Participation in news commenting on Greek sites, by Gender

## A cross cultural comparison - US (NYT) Versus Greek (TN \& TV) news sites

A comparison of the two corpuses of news comments in terms of participation by gender [Figure 4.3] evoked the following:

1. The majority of online users commenting are not disclosing their gender identity (NYT: 51\%, TN\&TV: 49\%) by choosing a gender-ambiguous name (e.g. NYT: Casual Observer, Charlie B, ACW, A Professor, blueberryintomatosoup, Citizen, Motherhawk; TN \& TV: Byzantine, Derkon, Lone Greek, Koıvós Nou̧, $\Sigma \alpha v \Sigma \varepsilon \rho i ́ \varphi \eta \varsigma$, $\Sigma \tau о \chi \alpha \sigma \tau \iota \kappa$ ós). It is evident that non-disclosure of one's gender is the trend in both American and Greek news sites.
2. The remaining percentage is dominated by men (i.e., users with a clearly masculine screen name) in both cases (NYT: 36\%, TN\&TV: 43\%).
3. A significant gap is observed in regards to participation by women. While $13 \%$ of the commenters in NYT were women that percentage is only $6 \%$ in TN \& TV. The Z test for comparing two population proportions reveals that this difference is highly significant ( p -value $<0.01$ ).


Figure 4.3: Participation in news commenting on US and Greek news sites, by Gender

The next question of interest (RQ2) is whether the observed differences in participation between women and men might be attributed to the varying levels of interest across news topics? In other words, are the trends in participation consistent across news topics?

## The New York Times case

Examining gender participation under the subject/category [Table A.2] lenses we notice the following [Figure 4.4]:

1. The gender gap (i.e., difference between participation by men and women) in the majority of the categories is the same; we observed a mean gender gap of $26 \%$.
2. The smallest difference in gender participation is observed in the N.Y Region Category (Male 35\% - Female 17\%) and the greatest in the Sports Category (Male 46\% - Female 8\%).
3. A higher percentage of women's participation (27\%), compared to men's, (24\%), is solely observed in the Magazine category, although this difference is small in magnitude and not statistically significant. The assumption could be made that the results are not surprising because this is a category stereotypically of greater interest to women and moreover designed to appeal to women; its content is related to beauty, fashion spreads, celebrity news exercise etc. (American Press Institute, 2014). However the articles analyzed, could not be classified as stereotypically of women's interest.

With respect to ambiguous users' participation, we note the following interesting observations:

In the Sports category both men and ambiguous users contribute $46 \%$ of the total comments made on the articles. The highest percentage in participation of ambiguous users is in Politics and Technology category, with a $56 \%$ share of the comments contributed in both. It is reasonable to conclude that when talking about politics people are more likely to keep their identities and political affiliations undisclosed.


Figure 4.4: Participation in news commenting at NYT, by category

## The Greek Newspapers Ta Nea \& To Vima

Examining gender participation [Figure 4.5] in the Greek online sites by news categories we note the following:

1. As compared to the NYT, there is an even bigger gender gap in participation, with a mean gap of $36 \%$.
2. The lowest gender gap in participation is observed in the Politics Category (Men 34\% - Women 7\%) and the greatest in the Opinion Category (Men 56\% - Women $3 \%)$.

With respect to ambiguous users' participation, we note the following interesting observations:

1. Though generally non-disclosing one's gender identity is the norm, nevertheless there are interesting differences by news category. Greece and Sports show minor differences when comparing ambiguous users to men (Greece: Ambiguous 47\% VS Male 46\% and Sports: Ambiguous and Male 44\% respectively). In that respect we could assume that more men are disclosing their gender when commenting on these subjects.
2. Economy and Opinion show the reversed trend. In Economy we see $48 \%$ of the participation is by men and $41 \%$ of ambiguous users while in the Opinion Category we see $39 \%$ of ambiguous participants and a $56 \%$ of male participants.


Figure 4.5: Participation in news commenting on Greek news sites, by category

## Ratio of gender participation by category - A comparison

As previously mentioned, each online site categorizes its articles in a different way [Figures 3.1-3.3]. Only five categories, among those examined coincide, which are: Opinion, Politics, Sports, World and U.S for the NYT, which is related to Greece from TN \& TV. Consequently we have five categories from the NYT (Technology, Europe, N.Y. Region, Magazine, Health) and four from TN \& TV (Society, Economy, Culture, Science), which cannot be compared.

Some findings from the comparable categories are [Figure 4.6]:

1. Opinion category has an interesting difference in participation. It is evident that there is a much lower participation of men commenters in Opinion articles in the NYT, which is $35 \%$, when compared to a $56 \%$ of male commenters in TN \& TV. Moreover, those percentages reverse when it comes to women commenters, which are $14 \%$ in NYT and $3 \%$ in TN \& TV. The Z test again conforms that these differences are statistically significant.
2. The Politics category at both Greek and US news sites shows significant similarities in male participation with a percentage of $34 \%$ and a small different in female participation (NYT 10\%, TN \& TV 7\%) and the same applies to Sports with male participation at (NYT 46\%, TN \& TV 44\%) and female participation NYT 8\%, TN \& TV 9\%. World category shows significant similarities in male participation with a percentage of $41 \%$ and $42 \%$ for the NYT and TN\&TV respectively while the differences in female participation are minor also (NYT 8\%, TN \& TV 5\%)
3. We observe a lower interest in domestic affairs (US/Greece category) from men participants in NYT (35\%) compared to $46 \%$ in TN \& TV. The numbers reverse when it comes to female commenters with a $13 \%$ in female participation in the NYT and 7\% female participation in TN\& TV.

Generally speaking, it is clear that the gender divide is more pronounced in the Greek news sites, as compared to the NY Times.


Figure 4.6: Participation in news commenting on US and Greek news sites, by category

## Analysis 2: Linguistic analysis of Greek comments

Thus far, we have seen that indeed, both the US and Greek news sites studied exhibit evidence of a gender gap, with men being more active participants in commenting forums. We now turn to analyzing how participants in the Greek commenting forums express their views.

The corpus of Greek comments was subjected to a manual analysis, which was aided by keyword search, where this was possible [Table A-1]. The intent was to identify in each
comment the use of certain linguistic features, and to see if their use was attributed to men or women respectively. The linguistic features examined with the use of keywords are: opinionated language, tag questions, hedges, empty adjectives, emoticons and longer statements. For these features, certain key words and phrases tended to be used repeatedly, as illustrated in the Table A-1. Therefore, we were able to search for such words in identifying comments exhibiting the features. This likely result in a process with high precision (i.e., the comments identified indeed do exhibit the feature) but lower recall (i.e., it is possible that we may have missed some comments manifesting a given feature using unusual words and phrases.) Manually examined were the following features: fact-oriented language, sarcasm, critical, self-disclosing, language variation, and improper language. Because the patterns of words and phrases used to manifest these features is unpredictable, the process was carried out entirely manually.

The analysis of the comments yielded the following insights [Figure 4.7]:

1. Characteristics that are attributed traditionally to men - opinionated, factoriented, critical, sarcastic, use of improper language and longer statements in CMC - appeared extensively in the comments analyzed. More precisely, 61\% of comments contributed by men contained "opinionated language", $54 \%$ "improper language", 48\% "fact oriented language", 44\% were being critical, $42 \%$ were being sarcastic and $50 \%$ wrote longer statements. Whereas we observe that the percentages of comments contributed by women using those characteristics are much lower ranging from $4 \%$ to $7 \%$.
2. Surprisingly enough, we observe men adopting linguistic styles that have been described as "women's language." For example, "tag questions" and "hedges" were found solely in men's comments and not in those written by women, whereas "empty adjectives" were equally found in both gender's comments (50\%). Men were also found to be more 'self-disclosing" in their comments (52\%) compared to women (4\%).
3. Finally, men were more prone to using non-standard language (36\%) and emoticons (33\%) than women; only $6 \%$ of the women used non-standard language and none of them used emoticons.

Ta Nea \& To Vima


Figure 4.7: Linguistic analysis on Greek news sites comments. Percentages of gender participation by linguistic feature

## Chapter 5

## Discussion

## Participation in the public sphere: News commenting by gender

The question firstly addressed in this research was whether the Internet has become an integral part of everyday life for men and women equally, in the context of online news. As discussed in the introduction, both Americans and Greeks are avid consumers of online news; the Internet is without a doubt a key source of information on current events, particularly among younger, working people. The current research considered not simply whether or not people read online news, but in particular, the extent to which women and men engage with news sites and others. To this end, our research focused on a key feature of news sites that has become popular internationally - the commenting forum - which fosters interactivity, adding the possibility for interpersonal communication between readers (Deuze, 2003, pp. 203-230). In other words, the
question at hand is the extent to which women and men take advantage of this opportunity to discuss their views, participating actively in the (potential) creation of an online public sphere.

Our findings are in line with previous researchers such as Bimber (2000, p. 870) who argues that there is a gender gap in Internet use and men are profoundly more intensive users of the Internet. It is evident that the gender gap is a reality in the online public sphere surrounding news sites where the gender division of the off-line world seems to be projected on the online one. Our results revealed that in both American and Greek online news commenting forums, the gender divide in participation was quite evident while clearly more pronounced in the Greek news sites. For example, in NYT we find that $36 \%$ of participants are men (i.e., over one-third of the participants were using an unambiguously male name) versus only $13 \%$ for women. Furthermore, in the Greek news sites case we observe that men make up $43 \%$ of participants, versus only $6 \%$ participation of women. This finding is quite interesting baring in mind the recent research on Internet use in Greece (EL. STAT., 2014) that suggests no significant gender divide in Internet use more generally (i.e., men make up 50.63\% of the Greek Internet user population, and women 49.37\%). As previously noted, we are not aware of any detailed statistics on participation in online communities and/or technologies designed to support an online public sphere in Greece. However, our data in this case are suggesting that women news consumers are more passive observers and not active players in the online sphere, as compared to men.

We also addressed the question of whether the gender differences in participation are a result of differing levels of interest across news topics. In other words, we wondered if the differences in participation by women and men could be explained by topic, based on the notion of audience fragmentation (Tewksbury, 2005 pp. 332-348; Jankowski \& Heuvelman, 2004 pp. 363-382). For instance, it is known that women news consumers often prefer topics of an interpersonal or social nature, while men tune into those having to do with success or achievement (Knobloch-Westerwick \& Alter, 2007, pp. 739-758). This explanation could not be justified by the findings of our research in either American or Greek online news sites. For example, in the NYT we observe an average of $26 \%$ higher participation from men in all categories while this percentage rises to $36 \%$ in the Greek news sites case. The gender divide in participation is sometimes more
pronounced than others across topics. For instance, in the NYT, we observe a relatively large gender gap in the "Sports" topics ( $46 \%$ men and $8 \%$ women), and a relatively smaller gender gap in "N.Y. Region" (35\% vs. 17\%). In the Greek sites, we note a larger gender gap in the "Sports" articles ( $44 \%$ men and $9 \%$ women) as compared to those concerning "Politics" ( $34 \%$ vs. 7\%). Nevertheless, despite the differences in the size of the gender gap, the data clearly suggest that the divide is indeed present across all news topics.

A clear finding of the current study is the general trend of choosing - consciously or subconsciously - an ambiguous user name; there is a pronounced trend in both American and Greek online news sites that transcends all categories. In most news categories, around $50 \%$ of the total comments are contributed by users with ambiguous names (the remaining $50 \%$ is divided among anonymous participants, women and men), with only a few but interesting exceptions such as the «Sports» and «Politics» categories. The "Sports" category draws attention in both the American and Greek sites in view of the fact that it is the only category in the NYT and the Greek sites in which men and ambiguous users share the same $46 \%$ and $44 \%$ respectively. This could be an act of openness and/or an urge on behalf of men users to affirm their gender identity to manifest their masculinity. In fact, more generally, sports is considered a means for expressing and "reproducing dominant conceptions of masculinity [...] among middle class men, and for their part the mass media foster this process by providing visual cues to audience members-the kinds of cues that Messner, Dunbar, and Hunt (2000) cited as part of the 'televised sports manhood formula'" as Hatty (2000) has noted, cited by Smith in Sociology of Sport and Social Theory (2010). Moreover "sport is also an ambiguous site of visible and marked [gendered] embodied identities [...] thus sport can be criticized as being the last great bastion of homophobia [...] within contemporary western society." (Carmichael, 2007, p.12)

On the contrary, when examining the 'Politics' category in the Greek online news sites we observe an increase in ambiguous user names. This suggests a tendency, to keep one's identity undisclosed when participating in public news commenting forums. This idea has been examined by previous researchers who argue that "anonymity enables political expression online [though that] does not always result in discussion of greater substance or political impact" (Akdeniz, 2002; Jones, 1997; Poster, 1995; Schement and

Curtis, 1997 as cited in Papacharissi, 2009 p. 235). For instance, one likely scenario is that women, who want to engage in political debate in a commenting forum, are more likely to hide their gender, fearing that they might be attacked by others and/or that their views might not be taken seriously.

## Linguistic style in comments: gendered patterns?

Another question addressed in this research is whether we can still trace in each group of participants, those having chosen names suggesting that they are men and women, linguistic characteristics and/or linguistic behaviors that are traditionally associated with each gender. Tannen (1984) suggested that each gender acts according to the sociolinguistic subculture to which it belongs. Moreover, Lakoff (2004, p.45) strongly suggested that just as gender is a social construction, so is the so-called "women's" and "men's" language. Even though the findings of this study reinforce in several ways the idea that a stereotyped gender linguistic online behavior does exist we do observe some interesting derogations.

Men were found to "behave as men" in the way that earlier researchers such as Herring (1993, 1994, 1996), Sussman \& Tyson (2000) and Walker (1996) claimed; through their comments posted in response to news articles, they write opinionated messages, use fact-oriented language, write longer messages, are often sarcastic and critical and use "improper" language. All these characteristics were found extensively in men's comments, while only a few women's comments were found incorporating such characteristics. Examples of these characteristics from the corpus are shown in Table 5.1 and 5.2.

|  | User name | Translated comment | Original comment as posted |
| :---: | :---: | :---: | :---: |
| Opinionated comments | $\mu$ иточитои́коऽ | "What nonsense is this? Not that I don't believe it, I'm sure. But why are they not telling us who "they" are anyway [...] Come on, I'm not going to have a headache with your sensitivities. If you want to say something just say it. This guy called and asked for this. And this is the best picture you have for an executive manager?" |  <br>  $\alpha \cup \tau o i ́ ~ \tau \varepsilon ́ \lambda o s ~ \pi o ̛ ́ v \tau \omega \nu ~[. .] ~. A \sigma \varepsilon ~ \rho \varepsilon ~ \varphi i ́ \lambda \varepsilon ~ п о u ~ Ө \alpha ~ \mu \varepsilon ~$ <br>  <br>  <br>  <br>  |
| Fact-oriented | ЕגєuӨと́pıos гк $\lambda \alpha \beta \varepsilon v i ́ \delta \eta \varsigma$ | "In 1707, British threats to freeze trade and free movement on English - Scottish borders led to the signing of the Act of Union in 1707 between the two governments and the creation of the Kingdom of Great Britain." | "To 1707, $\alpha \gamma \gamma \lambda เ \kappa \varepsilon ́ \varsigma ~ \alpha \pi \varepsilon เ \lambda \varepsilon ́ \varsigma ~ \gamma เ \alpha ~ \pi \alpha ́ \gamma \omega \mu \alpha ~ \tau о ט ~$ $\varepsilon \mu \pi о \rho$ íou каı тŋऽ $\varepsilon \lambda \varepsilon u ́ \theta \varepsilon \rho \eta \varsigma ~ \delta ı \alpha к i ́ v \eta \sigma \eta \varsigma ~ \alpha \pi o ́ ~ \tau \alpha ~$ бúvop $\alpha$ A $\gamma \gamma \lambda i ́ \alpha \varsigma ~-~ \Sigma \kappa \omega \tau i ́ \alpha \varsigma, ~ o \delta \eta ́ \gamma \eta \sigma \alpha v ~ \sigma \tau \eta v ~$ <br>  $\tau \omega \nu$ киßعрvŋ́бє $\omega \nu$ т $\omega \nu$ ठио крат $\omega v$ к $\alpha \iota ~ \sigma \tau \eta ~$ <br>  |
|  | Гıớvvŋs - Прஸ́ŋข Nautıкós | "Antonio Yeah right!! Fridays and Saturdays all Londoners are using the metro after being out in the pubs; and the trains are full of drunk people, pukes, blood from fights, broken beer bottles, spaced out junkies, vandals that are destroying the trains and many more magnificent spectacles. Have you travelled with the metro and had someone throwing up on you? Cause I have [...]" | "ANTONIO N $\alpha \iota, \sigma \omega \sigma \tau \alpha ́!!~ П \alpha \rho \alpha \sigma \kappa \varepsilon \cup \varepsilon ́ \zeta ~-~ \Sigma \alpha ́ \beta \beta \alpha \tau \alpha, ~$ <br>  <br>  <br>  <br>  ко́бно тоия, $\beta \alpha v \delta \alpha ́ \lambda о u \varsigma ~ \pi о ч ~ к \alpha \tau \alpha \sigma \tau \rho \varepsilon ́+J 582 \varphi о и v ~$ тous $\sigma \cup \rho \mu$ ои́s к $\alpha \iota ~ \alpha ́ \lambda \lambda \alpha ~ \tau \varepsilon ́ \tau о \iota \alpha ~ о ́ ~ \mu о р \varphi \alpha ~ \theta \varepsilon \alpha ́ \mu \alpha \tau \alpha . ~$ ЕХદıऽ $\tau \alpha \xi \iota \delta \varepsilon ́ \psi \varepsilon \iota ~ \pi о \tau \varepsilon ́ ~ \sigma \tau о ~ \mu \varepsilon \tau \rho o ́ ~ к \alpha \iota ~ v \alpha ~ \xi \varepsilon \rho \nu \alpha ́ ~$ ко́тоьоৎ $\mu \varepsilon Ө \cup \sigma \mu \varepsilon ́ v o \varsigma ~ v \varepsilon о \lambda \alpha i ́ o s ~ \pi \alpha ́ v \omega ~ \sigma o u ~ ? ? ? ~ E \chi \omega ~$ غ́ $\chi \omega \tau \alpha \xi \iota \delta \varepsilon ́ \psi \varepsilon \iota[. . .]^{"}$ |

Table 5.1: Examples of comments

| Critical | $\Delta ı \alpha \gamma o ́ \rho \alpha ¢$ | "Are you offended, you half Scottish, half Pakistani, half African? I do not permit you to talk like that for Greece. Stop the clichés on developed and non-developed and 'rotten' countries. Greece my dear is an idea and one of the best countries to live, ask your mom when she came for holidays and eventually stayed. P.S. Screw your development; while visiting the UK for several times I've seen your houses, outside a doll, inside a plague." |  <br>  <br>  $\alpha \nu \varepsilon \pi \tau \tau \gamma \mu \varepsilon ́ v \omega \nu \kappa \alpha \iota \mu \eta \kappa \rho \alpha \tau \omega ́ v \kappa \alpha \iota \sigma \alpha ́ \pi t \omega \nu \kappa \rho \alpha \tau \omega ́ v$. <br>  <br>  <br>  <br>  <br>  $\sigma \alpha \varsigma ~ \varepsilon \sigma \omega \tau \varepsilon \rho เ \kappa \alpha ́ \alpha, \alpha \pi o ́ ~ \varepsilon ́ \xi \omega$ кои́к $\lambda \alpha$ к $\alpha$ เ $\alpha \pi$ о́ $\mu \varepsilon ́ \sigma \alpha$ $\pi \alpha v o u ́ \kappa \lambda \alpha$." |
| :---: | :---: | :---: | :---: |
| Sarcastic | Iolaos | "'like' an archaeologist or 'as' an archaeologist? Is she not an archaeologist? Is she pretending to be one? Why don't you check." |  <br>  |
|  | $\Sigma \tau \alpha \dot{\theta} \boldsymbol{\eta} \varsigma \Pi^{\square}$. | "There was, once, the futurology from 'Chrysi Avgi' members on the Parliamentary elections. Then for the European elections. After that for the Municipal elections. Now for those of the Medical Association. A noticeable downward trend maybe?" |  <br>  <br>  $\alpha \cup \tau \varepsilon ́ s ~ \tau о \cup ~ I \alpha \tau \rho เ к о и ́ ~ \sigma u \lambda \lambda o ́ \gamma o u . ~ \Delta \iota \alpha к \rho i ́ v \omega ~ \mu ı \alpha ~$ $\pi \tau \omega \tau \iota \kappa \mathfrak{\tau} \tau \alpha ́ \sigma \eta ; "$ |
| Improper |  | "Wuss/asshole" | "XELTHГ/MA^..KA" |
|  | B $\alpha \sigma^{\prime} \lambda$ ¢ııos | "Brothel state" |  |
|  | Avtóvทs | "bullshit" | "Bullshit" |

Table 5.2: Examples of comments

On the other hand, in some cases, we observe that men are adopting linguistic behaviors traditionally associated with women. Lakoff $(1975,2004)$ described linguistic features such as tag questions and hedges as being markers of "women's language" as they occurred in her studies more often in women's speech. In our data, these markers were found in men's comments. More over, no occurrence of hedges such as "I don't think so"
 tag questions like "isn’t it?" (GR: "'ETбı $\delta \varepsilon v$ عíval;"), "No?" (GR: "'O $\mathrm{\chi}$;") were found in our women's comments. According to Lakoff such features demonstrate tentativeness, while Grossman \& Wood (1993) claim they are used to prolong and maintain communication.

Emotional expressions (emoticons), a characteristic that, according to Katzman (1994) and Witmer (1977), is associated with women's language rather than men's, was also solely found in men's comments in our data. Likewise, men were found to be selfdisclosing, a characteristic attributed by Poynton (1989 as cited in Maldonado et als 2001, p.2) to women. For example "I'm Marios and I'm 20 years old" (GR:"ع́́ $\mu \alpha \iota$ о $\mu \alpha ́ \rho \iota o \varsigma$ $\kappa \varepsilon \mu \mu \iota 20 \chi \rho o v \omega \nu$ "), "I live at Patisia, my wife is from Kokkinia" (GR: " $\Sigma \tau \alpha \Pi \alpha \tau \eta{ }^{\prime} \sigma \alpha \mu \varepsilon ́ v \omega$,
 characteristic of men commenters with a very low percentage of women adopting these variations. Men were found to be using a combination of capital and lower case letters in their comments, Greeklish and/or English and Greek language. In addition "empty adjectives" were found equally in men's and women's comments.

In summary, for the most part, we observe women and men using the stereotypical language of their gender groups in their comments on news articles. However, there are a few deviations. We observe very few instances of women using markers of men's language in their comments (e.g., opinionated, fact-oriented, critical, sarcastic, use of improper language, longer statements). For instance, only $6 \%$ of the "opinionated" comments in the Greek language corpus can be attributed to women participants (Figure 4.7). In addition, characteristics that are usually considered women's linguistic markers, like tag questions, hedges, use of emoticons, are found solely in men's comments with the exception of empty adjectives, and self-disclosure, which are found in men's and women's comments. Given these points can we conclude that men are still generally "writing like men" while at the same time adopting women's language characteristics in
their communication style whereas women are still in some sense communicating like women (using standard language and empty adjectives, exhibiting self disclosure).

## Limitations

As previously discussed, the current study was observational in nature; the data collected provide insight into the naturalistic commenting behaviours of news readers of the New York Times, Ta Nea and To Vima, since we did not manipulate the setting in any way. However, as in any research design, with benefits there are also limitations, and our results should be interpreted with those limitations in mind.

- One is that we have no control over who participates - we have got a good deal of data from men in our corpus but much less so from women. This means that we should be careful when drawing conclusions about how women participants write.
- The linguistic style analysis on Greek language news comments was conducted manually by the author, given the need to identify characteristics such as opinionated language, which is not yet feasible to automate. This has laid the groundwork for future study, in which additional analysts can be employed in order to first ensure the validity of the approach, in order to eventually develop a computer-aided approach, which would allow us to increase the size of the corpus, in order to study the linguistic behaviors of a wide range of demographics.


## Chapter 6

## Conclusion

In the introduction, we suggested that in order to reduce the gender gap in the online world, we first need to understand it by re-examining it. The results of the current study suggest that this gender gap in the online public sphere is indeed alive and well, although we are still left with many questions as to why.

The fact that we found parallel trends between the American and Greek online news commenting forums is in line with Epstein's (1986, p. 44) claim on the universality of gender division. Nonetheless, we found an even more pronounced gender gap in the Greek context. This suggests that exploring the role of culture would contribute to a deeper understanding of the reasons why women participate less. For example, it would be interesting to see if the differences in participation could be explained in the differences in the lifestyle of women in the U.S. and Greece respectively; their responsibilities, professionally and at home, how they spend their free time, if they have any.

To date, there is a large body of work examining gender differences in the English language context but much less is known about such differences in other languages. The present examination of gender differences in Greek language news comments thus contributes valuable information to this field and paves a new avenue for future work. Our linguistic analysis on the Greek comments documented an unexpected observation with respect to men's linguistic style - a departure from linguistic features traditionally associated with masculine language. Here, we might propose two explanations. First, it could simply mean that "masculine language," or linguistic markers of masculinity, differs significantly in the Greek and English contexts. Alternatively, it could represent a change in men's linguistic style. Men, while they continue to express themselves 'as men' interestingly also adopt linguistic features from 'women's language'. Regardless, men participants' use of features previously cited as being "feminine" language markers certain warrants further investigation.

Though the disappointing fact of women's under-representation has resulted in a lack of valuable information on their online linguistic behavior it has nevertheless pointed a direction for the necessity of a future research. It would be quite intriguing to have a look at how women actually communicate online and also to investigate why are they not participating more. In particular, is it due to a lack of interest in engaging with unknown others? Is there a negative perception of online discussions that precedes the actual participation?

Our findings provide valuable information to academics exploring the online gender gap but also to professionals such as journalists and on-line news sites providers and developers as to question their current practices. Are they engaging only men? Is this a problem? If so the role of technology itself has to be re-examined; can new designs of the technologies and/or new practices surrounding their uses change this gender imbalance? The study clearly shows that such questions are worth considering, given that the new interactive technologies are seen as holding the potential to promote engagement in a new online public sphere.

## Bibliography

[01] American Press Institute (2014) Young people are active news consumers, with particular attentiveness to breaking news, Retrieved from the Internet: http://www.americanpressinstitute.org/publications/reports/survey-research/social-demographic-differences-news-habits-attitudes/
[02] Baron S. N. (2005) Instant Messaging by American College Students, A Case Study in Computer-Mediated Communication, Presented in Session 301 "Language on the Internet", American Association for the Advancement of Social Annual Meeting, February 17-21, Washington, DC
[03] Beall E. A. \& Sternberg J. R. (Eds.) (1993) The psychology of gender, Guilford, New York
[04] Bertram B. (1993) Innovation and social change In Network-based classrooms: Promises and realities, Cambridge University Press, New York
[05] Bijker W. and Law J. (1992) Shaping Technology/Building Society: Studies in Sociotechnical Change, The MIT Press
[06] Bimber B. (2000) Measuring the Gender Gap on the Internet, Social Science Quarterly, 81(3):868-876
[07] Carmichael A. C. (2007) Sport \& Gender Identities, Masculinities, Feminities and Sexualities, Gender, sport and identity, Introducing discourses of masculinities, feminities and sexualities, Routledge, Taylor \& Francis e-library
[08] Cohen, J. (1960) A coefficient of agreement for nominal scales. Educational and Psychological Measurement 20, 37-46.
[09] Deuze M. (2003) New Media \& Society, The Web and its Journalisms: Considering the Consequences of Different Types of Newsmedia Online, New Media Society, 2003 5: 203
[010] EL. STAT. (2014) Hellenic Statistical Authority, Digital Library, Retrieved from the Internet: http://www.statistics.gr/portal/page/portal/ESYE/PAGEthemes?p param=A1901\&r param=SFA20\&y param=2014 00\&mytabs=0
[011] Epstein, F. C. (1986) Symbolic Segregation: Similarities and Differences in the Language and Non-Verbal Communication of Men and Women, The Eastern Sociological Society, 1986, SF Volume 1, Number 1
[012] Ensmenger, N. (2012) Women were first computer programmers, We.news, Retrieved from the Internet: http://womensenews.org/story/books/120323/women-were-first-computer-programmers
[013] EU Digital Agenda for Europe, Retrieved from the Internet: http://ec.europa.eu/digital-agenda/en/scoreboard/greece\#3-use-of-internet
[014] Eurobarometer, Standard 82, Automne 2014, Les habitudes médiatiques dans l’U. E.
[015] Eveleth R. (2013) Computer programming used to be women's work, Smithsonian.com, Retrieved from the Internet: http://www.smithsonianmag.com/smart-news/computer-programming-used-to-be-womens-work-718061/?no-ist
[016] Grossman, M., \& Wood, W. (1993) Sex differences in emotional intensity: A social role explanation, Journal of Personality and Social Psychology, 65, 1010-1022
[017] Herring, S. C., Barab, S., Kling, R., \& Gray, J. (2004) An Approach to Researching Online Behavior. Designing for virtual communities in the service of learning, 338376.
[018] Hoobler M. J., Lemmon G. and Wayne (2011) Women's underrepresentation in upper management: New insights on a persisted problem, Retrieved from the

Internet:
http://www.uky.edu/Centers/iwin/RTOCT12/HooblerWomeninManagement.pdf
[019] Information Resources Management Association, (2012) Regional Development: Concept, Methodologies, Tools and Applications, Volume I
[020] Introna, L. \& Nissenbaum, H. (2000) Defining the Web: The Politics of Search Engines, article in Computer, Feb 2000, Retrieved from the Internet: http://www.researchgate.net/profile/Lucas Introna/publication/2955191 Defining the Web the politics of search engines/links/00463528ce2435fa6a0000 00.pdf
[021] Ivy, D.K., \& Backlund, P. (2000) Exploring gender speak: Personal effectiveness in gender communication (2nd ed.), McGraw Hill, Boston
[022] Jurrat N. (2011) Mapping Digital media: Citizen journalism and the Internet, Open Society, Reference Series No. 4, April 2011
[023] Katzman, S. (1994) Quirky Rebuses: ‘Graphic Accents’ in Telecommunication. Arachnet Electronic Journal on Virtual Culture, 2(4). Retrieved from the Internet: http://infosoc.uns-koeln.de/etext/text/katzman.94txt
[024] Knobloch-Westerwick, S., \& Alter, S. (2007) The Gender News Use Divide: Americans' Sex-Typed Selective Exposure to Online News Topics. Journal of Communication, 57(4), 739-758
[025] Kramarae C. (1974) Stereotypes of Women's Speech: The Word from Cartoons, Journal of Popular Culture 8, winter 1974, 622-638.
[026] Lakoff R. (2004) Language and Woman's Place, Text and Commentaries, Revised and expanded edition, Ed. Bucholtz M., Studies in Language and Gender, Oxford University Press
[027] Maldonado G. J., Mora M., Garcia S., Edipo P. (2001) Personality, sex and computer-mediated communication through the Internet, Anuario de Psicologia. 2001, vol. 32 (2), 51-62
[028] Мт $\alpha \mu \pi เ \nu เ \omega ́ \tau \eta \varsigma ~ Г . ~(2008) ~ \Lambda \varepsilon \xi ъ к o ́ ~ \tau \eta \varsigma ~ N \varepsilon ́ \alpha \varsigma ~ E \lambda \lambda \eta \nu \iota \kappa \eta ́ \varsigma ~ Г \lambda \omega ́ \sigma \sigma \alpha \varsigma, ~ K \varepsilon ́ v \tau \rho o ~$ $\Lambda \varepsilon \xi$ וкодоүі́ $\alpha$
[029] Oldenziel R. (1999) Making Technology Masculine: Men Women and Modern Machines in America 1870-1945, Amsterdam University Press, Amsterdam
[030] Ono, H., Zavodny, M. (2003) Gender and the Internet, Social Science quarterly, Volume 84, Number 1, March 2003
[031] Oxford online dictionary: http://www.oxforddictionaries.com/us/definition/american english/technology?q=tec hnology
[032] Oxford Learners Dictionary: http://www.oxfordlearnersdictionaries.com
[033] Papacharissi Z. (2009) Routledge Handbook of Internet Politics, Edited by Andrew Chadwick and Philip N. Howard, The Virtual Sphere 2.0, The Internet, the Public Sphere, and beyond, Routledge
[034] PEW Research Center (2008) Center for the People \& the Press, Key News Audiences Now Blend Online and Traditional Sources, August 2008, Retrieved from the Internet: http://www.people-press.org/2008/08/17/key-news-audiences-now-blend-online-and-traditional-sources/
[035] PEW Research Center (2010) Research Journalism Project, The News
Environment in America, March 2010, Retrieved from the
Internet: http://www.journalism.org/2010/03/01/news-environment-america/
[036] PEW Research Center (2013a) 12 trends shaping digital news, October 2013, Retrieved form the Internet: http://www.pewresearch.org/fact-tank/2013/10/16/12-trends-shaping-digital-news/
[037] PEW Research Center (2013b) The State of the News media 2013, Retrieved form the Internet: http://www.stateofthemedia.org/2013/newspapers-stabilizing-but-still-threatened/newspapers-by-the-numbers/
[038] Pryor, L. (2002) The Third Wave of Online Journalism, Online Journalism Review, 18, April, Retrieved from the Internet: http://www.ojr.org/ojr/future/1019174689.php
[039] Savicki V. Kelley M. (2000) Computer Mediated Communication: Gender and Group Composition, CyberPsychology and Behavior, Volume 3, Number 5
[040] Smith E. (2010) Sociology of Sports and Social Theory, Human Kinetics, USA
[041] Spaynton A. (n.d.) Survey of communication study, Chapter 13 - Gender Communication, Retrieved from the Internet:
http://www.saylor.org/site/wp-content/uploads/2012/05/COMM001 Wikibooks -Survey-of-Communication-Study_Chapter-13_5.11.2012.pdf, retrieved 10/01/2014
[042] Sussman, N. M., \& Tyson, D. H. (2000) Sex and power: Gender differences in computer-mediated interactions. Computers in Human Behavior, 16(4), 381-394
[043] Sydell L. (2014) The forgotten female programmers who created modern tech., npr.org, Retrieved from the Internet: http://www.npr.org/sections/alltechconsidered/2014/10/06/345799830 /the-forgotten-female-programmers-who-created-modern-tech
[044] Tannen, D. (1984) Gender and conversational interaction, Oxford University Press, New York
[045] Tewksbury, D. (2005) The seeds of audience fragmentation: Specialization in the use of online news sites. Journal of broadcasting \& electronic media, 49(3), 332-348
[046] Vasilescu B., Capiluppi A., Serebrenik A. (2012) Gender, Representation and Online Participation: A Quantitative Study of StackOverflow, 2012 International Conference on Social Infomatics
[047] Visvanathan M. (2012) A Sociocultural Analysis of Underrepresantation of Women in the U.S. State Legislatures, Retrieved from the Internet: https://polisci.ucsd.edu/ files/undergrad/Honors\%202012\%20A\%20Sociocultural \%20Analysis\%20of\%20Underrepresentation\%20of\%20Women\%20in\%20US\%20S tate\%20Legislatures.pdf
[048] Walker, H. A., Ilardi, B. C., \& Fennell, M. L. (1996) Gender, interaction and leadership. Social Psychology Quarterly, 59, 255-272
[049] Webster's College Dictionary: Random House, http://www.kdictionariesonline.com/DictionaryPage.aspx?ApplicationCode=18\#\&\&DictionaryEntry=compute r\&SearchMode=Entry
[050] Williams J. M., Mendelsohn A. G. (2008) Gender Clues and Cues: Online Interactions as Windows into Lay Theories about Men and Women, Basic and Applied Social Psychology, 30:278-294
[051] Witmer, D. And Katzman, S. (1977) On-Line Smiles: Does Gender Make a Difference in the Use of Graphic Accents? In Fay Sudweeds, Marget Mc Laughlin and Sheizat Rafaeli (eds.) Network and Netplay: Virtual Groups on the Internet. Menlo Park, CA:AAAI/MIT Press, Retrieved from the Internet: http://www.ascusc.org/icmc/vol2/issue4/witmer1.html
[052] Zimmerman J. (1983) The technological woman: Interfacing with tomorrow, Praeger Publishers, Westport

## Annex A

## Tables

## A.1: Content codes used with definitions and literature \& data examples

| Content scale | Definition | Literature keywords examples | Data keywords examples |
| :---: | :---: | :---: | :---: |
| OPINIONATED <br> LANGUAGE | - Opinion according to Webster's College dictionary is defined as "indicating a belief, view, sentiment, conception". <br> - Measured comments that contained keywords from the literature keywords list translated in Greek and also own keywords as shown on the data keywords examples column <br> - This scale was adapted into a 1 point scale; $0=$ opinionated language was not present, $1=$ opinionated language was present | - "Гعvเкล́ $\pi เ \sigma \tau \varepsilon u ́ \varepsilon \tau \alpha \iota " ~$ <br> - "Пıбтєú 0 ótı" <br> - "عívaı $\lambda \cup \pi \eta \rho o ́ ~ o ́ \tau \alpha v " ~$ | - "हí $\mu \alpha$ б́ $\gamma$ oupos" <br> " $\varepsilon$ í $\alpha$ ı $\beta$ ह́ $\beta \alpha \iota o \varsigma " ~$ <br> "тıбтعú $\omega$ " <br> "عí $\mu \alpha \iota \pi \varepsilon \pi \varepsilon \iota \sigma \mu$ v́vos" <br> " $\alpha \iota \sigma \theta \alpha ́ v o \mu \alpha \iota \pi \omega \varsigma "$ <br> " $\delta \iota \alpha \omega v \omega ́ "$ <br> " $\sigma \cup \mu \varphi \omega v \omega$ " <br> "тодú $\sigma \omega \sigma \tau \alpha ́ "$ <br> " $\mu \pi \rho \alpha ́ \beta o "$ <br> " $\pi \rho \varepsilon ́ \pi \varepsilon$ ", " $\theta \alpha$ ह́т $\rho \varepsilon \pi \varepsilon$ " |
| FACT-ORIENTED LANGUAGE | - Measured comments that contained specific factual arguments <br> - Examined manually all comments <br> - This scale was adapted to $0=$ no statements of fact, $1=$ one or more statements of fact. |  |  1ov) H K. $\Delta$ oúpou $\varepsilon$ เка́ $̧ \varepsilon \tau \alpha \iota$ ótı $\theta \alpha$ $\pi \alpha ́ \rho \varepsilon \iota ~ \alpha u \tau \eta ́ ~ \tau \eta ~ \theta \varepsilon ́ \sigma \eta . ~ 2 o v) ~ T o ~$ <br>  бтоия OTA. Oı $\mu$ о́vıцотоıпцє́voı $\mu \varepsilon$ то vó $\mu$ о Паи入óточдоu то 2004 $\varepsilon \lambda \varepsilon ́ \gamma \chi Ө \eta \kappa \alpha \nu \alpha \pi$ то АЕЕП $\varepsilon \pi i ́ l$ 1,5 रоóvo. каı то 2006 ह́үıve $\eta$ ногцнотоі́ $\sigma \eta[. . .]^{\prime \prime}$ <br>  $\varphi \omega \varsigma ~ \delta \eta \mu$ оои $\gamma \dot{\theta} \theta \eta к \varepsilon$ ПPIN $\alpha \pi$ о́ $\tau \alpha$ <br>  $\alpha \pi$ र́ тo vepó." |


| SARCASM | －1．＂The use of irony to mock or convey contempt＂（Oxford Online dictionary）2．＂A way of using words that are the opposite of what you mean in order to be unpleasant to somebody or to make fun of them＂（Online learners dictionary）3．＂H үаıрء́кккๆ عı $\rho \omega v \varepsilon i ́ \alpha$, ， <br>  （Mтацлtví́tทs，2008） <br> －Examined manually all comments <br> －This scale was adapted to $0=$ no use of sarcasm， $1=$ use of sarcasm |  |  | －＂［．．．］Koup $\alpha \varphi \varepsilon ́ \xi \alpha \lambda \alpha$ ！Tı Meкะסovıкós <br>  <br>  <br> －＂Apa oтıৎ $\mu$－Еuk <br>  <br> －＂Фаүои́рєऽ ото Kopuঠ $\alpha$ о́；＂ <br> －＂［．．］＂$\sigma \alpha v "$ архоıo $\lambda$ óyos ท́＂$\omega \varsigma$＂ $\alpha \rho \chi \alpha \iota \circ \lambda o ́ \gamma o s ? \Delta \varepsilon v$ вívaı $\alpha \rho \chi \alpha \iota \circ \lambda o ́ \gamma o s ?$ Tŋv $\pi \alpha \rho ı \sigma \tau \alpha ́ v \varepsilon เ ? ~ \Gamma ı \alpha$ סءऽ［．．．］＂ |
| :---: | :---: | :---: | :---: | :---: |
| CRITICAL | －1．＂Expressing disapproval of somebody／something and saying what you think is bad about them＂ （Online learners dictionary） 2．＂Н $\varepsilon \kappa \varphi \rho \alpha \sigma \eta ~ \gamma \nu \omega ́ \mu \eta \varsigma ~ \gamma \iota \alpha$ （ка́тоьov／ка́тı），бuvŋ́ $\theta$ ． 0 عขтотı $\sigma \mu$ о́s $\tau \omega v$ Ө $\theta \tau \iota \kappa \omega ́ v$ к $\alpha \iota$ $\alpha \rho \vee \eta \tau \iota \kappa \omega ́ v$ тоט $\sigma$ то七хદí $\omega v^{\prime \prime}$ （М $\pi \alpha \mu \pi \iota \nu เ \omega ́ \tau \eta \varsigma, ~ 2008) ~$ <br> －Examined manually all comments <br> －This scale was adapted to $0=$ no use of criticism 1 ＝use of criticism |  |  | －＂$\alpha \pi \varepsilon \iota \rho \eta ~ \eta ~ \beta \lambda \alpha к \varepsilon i ́ \alpha ~ о \rho เ \sigma \mu \varepsilon ́ v \omega v, ~$ ќ $\pi \varepsilon \iota \rho \eta . . . "$ <br> －＂$\Theta \alpha$ бuv $\theta$ íб $\varepsilon \iota \varsigma ~ \kappa ı ~ \varepsilon \sigma u ́ ~ \alpha \pi o ́ ~ \delta \omega ~ к \alpha \iota ~$ <br>  ขтакои́s otous vópous．Ot 〒̧á $\mu \pi \alpha$ $\mu \alpha \gamma к เ \varepsilon ́ \varsigma ~ \tau о \cup ~ \pi \alpha \rho \varepsilon \lambda$ Өóvтоऽ каı о $\sigma \cup v \delta \iota \kappa \alpha \lambda о \pi \alpha \tau \varepsilon \rho \iota \sigma \mu$ о́s $\quad \alpha \pi о \tau \varepsilon \lambda$ ои́v орıбтьк⿱㇒木 $\pi \alpha \rho \varepsilon \lambda$ Өóv．＂ <br> －＂$\gamma \iota \alpha \tau \iota ; . . \gamma \iota \alpha \tau \iota \rho \varepsilon \beta \eta \mu \alpha \tau \alpha \kappa \iota$ ס $\delta v \pi \varepsilon \iota \theta \varepsilon \iota \varsigma ;$ $\gamma \iota \alpha \tau \iota ; \Delta \iota \alpha \beta \alpha \zeta$ оvт $\alpha \varsigma ~ \tau \alpha \pi \rho о \eta \gamma о \cup \mu \varepsilon v \alpha$ <br>  Мторєıऽ v $\alpha \mu \alpha \varsigma \varepsilon \xi \eta \gamma \eta \sigma \varepsilon \iota \varsigma ; \Theta \alpha$ боט $\pi \omega$ <br>  عוб⿱亠 $\sigma \alpha \nu$ tous סoбı入oүous，oтı <br>  тои入ทбоиv $\delta \eta \mu о к \rho \alpha \tau เ \alpha ~ \mu \varepsilon \tau \alpha ~ \tau \eta \nu$ $\pi \tau \omega \sigma \eta \tau \omega \nu \chi 0 \cup \nu \tau \alpha \iota \omega \nu$ ！$N \alpha \gamma \iota \alpha \tau!$ ！＂ |


| TAG QUESTIONS | －Measured comments that contained keywords from the literature keywords list translated in Greek and also own keywords as shown on the data keywords examples column <br> －This scale was adapted into a 1 point scale； $0=$ no tag questions were present，1＝tag questions were present． | －＂סev عíval；＂ <br> －＂$\delta \varepsilon v$ vouỉદıヶ；＂ <br> －＂б <br> －＂evסıaبépov \＆；＂ | －＂$\varepsilon$ ；＂ <br> －＂Oхц；＂ <br>  |
| :---: | :---: | :---: | :---: |
| HEDGES | －Measured comments that contained keywords from the literature keywords list translated in Greek and also own keywords as shown on the data keywords examples column <br> －This scale was adapted into a 1 point scale； $0=$ no hedge indicators were present， $1=$ one or more hedge indicators were present． | －＂$\delta \varepsilon v \xi \varepsilon \dot{\varepsilon} \rho \omega$＂ <br> －＂voцi弓 $\omega^{\prime}$ <br> －＂סev عí $\mu \alpha \iota \beta \varepsilon ́ \beta \alpha ı \eta / o \varsigma " ~$ <br> －＂$\delta \varepsilon v$ عíر $\alpha$ бхЕтเкท́／ós＂ <br> －＂$\alpha v \delta \varepsilon v \kappa \alpha ́ v \omega \lambda \alpha \dot{\alpha} \theta o s "$ | －＂$\Delta \varepsilon v$ vou $\zeta \omega$＂ <br> －＂voцí̧ o o七＂ <br> －＂$\alpha \nu \kappa \alpha \iota \delta \varepsilon \nu \varepsilon є \mu \varepsilon \sigma \chi \varepsilon \tau เ \kappa о \varsigma "$ <br> －＂$\delta \varepsilon v \xi \varepsilon \rho \omega \alpha \lambda \lambda \alpha$＂ |
| EMPTY ADJECTIVES | －Measured comments that contained keywords from the literature keywords list translated in Greek and also own keywords as shown on the data keywords examples column <br> －This scale was adapted into a 1 point scale； $0=$ no empty adjective was present， $1=$ one or more empty adjectives were present． | －＂$\gamma \lambda$ икó＂ <br> －＂甲орєдато́кı＂ <br> －＂к $\alpha \tau \alpha \pi \lambda \eta \kappa \tau \kappa к o ́ "$ <br> －＂$\tau \rho \varepsilon ́ \lambda \alpha$＂ | －＂$\pi \alpha \iota \delta \alpha \kappa \iota \alpha "$ <br> －＂$\alpha \delta \varepsilon \rho \varphi \alpha \kappa "$ |


| SELF DISCLOSING | - Measured comments where personal info were disclosed <br> - Examined manually all comments <br> - This scale was adapted into a 1 point scale; $0=$ no self-disclosing element was present, $1=0$ ne or more self-disclosing elements were present. |  |  $\varepsilon \pi i ́ \sigma \eta \varsigma \mu \varepsilon ́ v \omega ~ \gamma \alpha \lambda \alpha ́ \tau \tau \sigma "$ <br> - " $\mu \dot{v} v \omega$ ota $\beta$ ópetı $\pi \rho 0 \alpha ́ \sigma \tau \varepsilon เ \alpha, ~ ह ́ \chi \omega ~$ <br>  бє 4 ү $\lambda \omega \dot{\sigma} \sigma \varepsilon \varsigma ~ \kappa \alpha \iota ~ к о \mu \pi t о и ́ \tau \varepsilon \rho ~ к \alpha \iota ~$ $\gamma v \omega \rho i \zeta \omega$ к $\alpha \lambda \alpha ́$ тך $\mu \eta \tau \rho เ \kappa \eta$ $\mu о v$ $\gamma \lambda \omega \sigma \sigma \alpha, \tau \eta v \varepsilon \lambda \lambda \eta v t \kappa \eta^{\prime \prime}$ <br> - " $\Delta \varepsilon v$ عí $\mu \alpha \mathrm{X.A."}$ <br>  عívat $\alpha \pi o ́ ~ \tau \eta v$ Kоккıvıа/Eтíons $\pi \lambda \eta \rho \dot{\omega} v o \mu \alpha \mathrm{~L} \quad \mu \varepsilon$ тобоото́ $\varepsilon \pi i ́$ $\pi \omega \lambda \eta{ }^{\circ} \sigma \varepsilon \omega \nu^{\prime \prime}$ |
| :---: | :---: | :---: | :---: |
| EMOTICONS | - Measured comments containing emoticons using references from the Internet. <br> - This scale was adapted to $0=$ no emoticons, $1=$ one or more emoticons in the comment | http://cool-smileys.com/textemoticons <br> https://support.skype.com/en /faq/FA12330/what-is-the-full-list-of-emoticons? | - ;) <br> - : j$)$ <br> - :-) <br> - :-J) <br> - :-D :-) <br> - $\lambda_{0} \lambda$ |
| LONGER STATEMENTS | - At first a word count for the body of each textual comment was conducted. Next, comments were classified by length, relative to all other comments posted. <br> - This scale was adapted to $0=$ equal to or less than the $75^{\text {th }}$ percentile length; 1=greater than the 75th percentile length. |  |  |


| LANGUAGE <br> VARIATION | - Measured statements that were not written with the use of standard Greek characters. <br> - Examined manually all comments <br> - This scale was adapted into a 1 point scale; $0=$ comment written in standard Greek, 1=comments were written in Greek, English and/or Greeklish capital characters; a combination of small and capitals characters has been used; comments included a web link |  | - CAPS: <br> "[...]OTI OEAEI AYTO O HAIOIOE METADIAOYN TA BOPEIKOPEATIKA M.M.E [...]" <br> - CAPS + SMALL CRTRS <br>  EYAILOHZIA...!!!A A $\lambda \alpha \dot{\alpha}$ ol $\varepsilon$ ह́ $\lambda \eta \nu \varepsilon \varsigma, ~(\tau \iota ~ к \rho i ́ \mu \alpha), ~$ <br>  кацє́ [...]" |
| :---: | :---: | :---: | :---: |
| IMPROPER <br> LANGUAGE | - Measured comments that contained improper language <br> - Examined manually all comments. No keywords have been used. <br> - This scale was adapted into a 1 point scale; $0=$ no improper language was present, $1=$ improper language was present. |  | - " $\alpha \gamma \rho \alpha \mu \mu \alpha \tau о \tau \alpha \tau \varepsilon "$ <br> - " $\alpha \mu \alpha \theta$ ńs" <br> - " $\alpha v i ́ k \alpha v \varepsilon "$ <br> - " $\alpha$ vó $\boldsymbol{\text { - }}$ to" <br> - " $\dot{\pi} \lambda \cup \tau о \varsigma "$ <br> - " $\alpha \rho \gamma o ́ \sigma \chi о \lambda о$ " <br> - " $\alpha \sigma \chi \varepsilon \tau о \tau \alpha \tau \varepsilon ", ~ " \varepsilon i ́ \sigma \alpha \iota ~ \alpha ́ \sigma \chi \varepsilon \tau о \varsigma$, $\pi \alpha \nu \alpha \sigma \chi \varepsilon \tau \varepsilon "$ <br> - "Autŋ́ $\delta \varepsilon v \beta \lambda \varepsilon ́ \pi \varepsilon \tau \alpha!$ !" <br> - " $\alpha \chi \rho \eta \sigma \tau \varepsilon "$ <br> - " $\beta \lambda \alpha \kappa \omega ́ \delta \eta ", ~ " \beta \lambda \alpha \kappa \omega \delta \omega ́ s "$ <br> - " $\gamma \alpha \mu \omega ́ ~ \tau o v ~ M o u \chi \alpha \mu \varepsilon ́ \tau \eta ~ \sigma \alpha \varsigma " ~$ <br> - " " $\lambda$ ú $\varphi \tau \varepsilon \varsigma$ " <br> - "غ́бхатоऽ" <br> - " $\zeta \omega$ " <br> - " $\eta \lambda$ í $\theta$ ıos" <br> - "KABANIKEMENOYг" <br> - "к $\propto \eta \mu \varepsilon ́ v \varepsilon$ " |

## A.2: List of article titles

## A.2.1 The New York Times

| NYT | Europe’s Anti-Semitism Comes Out of the Shadows | Europe |
| :--- | :--- | :---: |
| NYT | Exile in Brooklyn, With an Eye on Georgia | Europe |
| NYT | Ebola Cases Could Reach 0.4 Million Within Four Months, C.D.C. Estimates | Health |
| NYT | San Francisco Official Says He Takes Truvada to Prevent H.I.V., and More Gay Men Should, Too | Health |
| NYT | A Mother in Jail for Helping Her Daughter Have an Abortion | Magazine |
| NYT | The Ultimate Cuban Comfort Food: Picadillo | Magazine |
| NYT | De Blasio's Fault or Not, Fatal or Not, Groundhog Had an Early Fall | N.Y./region |
| NYT | Taking a Call for Climate Change to the Streets | N.Y./region |
| NYT | How to Stop Time | Opinion |
| NYT | The Indian Diaspora Mostly Embraces Mr. Modi Without Reservations | Opinion |
| NYT | Death on a Bike | Opinion |
| NYT | Eric Holder Resigns, Setting Up Fight Over Successor | Politics |
| NYT | Bill Simmons Suspended by ESPN for Tirade on Roger Goodell | Sports |
|  | Divided U.S. Team Uncorks Tension in Defeat. After Another Ryder Cup Loss, Phil Mickelson and <br> NYT <br> Tom Watson Share Icy Exchange | Sports |
| NYT | Derek Jeter Takes In, and Provides, a Memorable Final View at Shortstop | Sports |
| NYT | Ex-Employees Say Home Depot Left Data Vulnerable | Technology |
| NYT | Holder Backs Suit in New York Faulting Legal Service for Poor | U.S. |


| NYT | U.S. Ramping Up Major Renewal in Nuclear Arms | U.S. |
| :--- | :--- | :---: |
| NYT | In Colorado, a Student Counterprotest to an Anti-Protest Curriculum | U.S. |
| NYT | Weeks of U.S. Strikes Fail to Dislodge ISIS in Iraq | World |
| NYT | Obama Acknowledges U.S. Erred in Assessing ISIS | World |
| NYT | Lockdown Begins in Sierra Leone to Battle Ebola | World |

## A.2.2 Ta Nea \& To Vima

| Ta Nea |  | Greece |
| :---: | :---: | :---: |
| Ta Nea |  | World |
| Ta Nea |  | Greece |
| Ta Nea |  | Politics |
| Ta Nea |  | World |
| Ta Nea |  | Politics |
| Ta Nea |  | World |
| Ta Nea |  <br>  | Greece |
| Ta Nea |  $\alpha \sigma \varphi \alpha \lambda \iota \sigma \tau \iota \kappa \varepsilon ́ \varsigma ~ \varepsilon เ \sigma \varphi о \rho \varepsilon ́ \varsigma$ | Economy |
| Ta Nea |  | Greece |
| Ta Nea |  | World |
| Ta Nea |  | Economy |


| Ta Nea |  | Greece |
| :---: | :---: | :---: |
| Ta Nea |  | Politics |
| Ta Nea |  | World |
| Ta Nea |  $\lambda \eta \xi_{n}{ }^{\prime}$ » | Economy |
| Ta Nea |  | World |
| Ta Nea |  | Greece |
| Ta Nea |  | Greece |
| Ta Nea |  | World |
| Ta Nea |  | Culture |
| Ta Nea |  | Greece |
| Ta Nea |  | Politics |
| Ta Nea |  | Economy |
| Ta Nea |  | World |
| Ta Nea |  | World |
| To Vima |  <br>  | Culture |
| To Vima | $0 \lambda \alpha v \delta \rho \varepsilon$ ¢́ou | Opinion |
| To Vima |  | Politics |
| To Vima |  | Sports |
| To Vima |  | Society |
| To Vima |  | Society |
| To Vima |  <br>  I $\sigma \pi \alpha v_{i ́ \alpha}$ | Sports |


| To Vima |  | Culture |
| :---: | :---: | :---: |
| To Vima |  | Opinion |
| To Vima |  <br>  | Politics |
| To Vima |  <br>  | Politics |
| To Vima | Н ко́ккıvๆ Pغ́va... | Opinion |
| To Vima |  | Society |
| To Vima |  | Society |
| To Vima |  | Culture |
| To Vima |  | Science |
| To Vima |  | World |
| To Vima |  | World |
| To Vima |  | Society |
| To Vima |  | World |
| To Vima |  | Science |


[^0]:    ${ }^{1}$ STEM: Science, Technology, Engineering and Mathematics

[^1]:    ${ }^{2}$ The term CMC according to Baron (2005, p.2) is used in referring to a range of written messaging systems that provide the ability to a multiple number of people to communicate at a distance with the use of computer-based technology. Although CMC can be synchronous and/or asynchronous in reality the borders cannot be as clearly defined (Baron, 2005, p.6).

