

Occupational titles and supposed gender-neutrality

A corpus-based diachronic study on gender-neutral occupational titles in American English

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Abstract

Traditionally, some occupational titles have been explicitly marked for the gender of the group dominating the occupation. For example, in male-dominated occupations, titles often end with *-man*. However, since the second-wave feminist movement, several of the previously gender-biased titles have been supplemented by new, gender-neutral titles. Previous research has shown a discrepancy between researchers regarding the implications of these new titles. Some argue that the gender-neutral titles are only used for female referents, whereas others claim that gender-neutral titles, especially for male-dominated occupations, tend to still presuppose maleness. In the present paper, a corpus-based study is conducted on a few selected occupational titles. The aim is to investigate whether the gender-neutral alternatives have increased in usage over time, and whether the gender-biased ones have decreased. In addition, the study aims at examining whether the gender-neutral forms tend to be used primarily for women or men. The present study is corpus-based, examining the particular terms in the TIME Magazine Corpus. The results of the study show that there has been an increase of the gender-neutral forms since their introduction to English, and that they are primarily used when there is no explicit gender referencing. Proposed explanations for these results are that it may depend on the type of work involved in the selected occupations, as well as them being male-dominated. Furthermore, the results indicate that the gender-neutral terms are opted for when gender is either unknown or irrelevant for the context.

Keywords

Occupational titles, gender-neutrality, corpus linguistics, language usage, American English.

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1. Introduction

1.1 General Introduction

The relation between language and gender has been widely studied since the 1970s, something that Bucholtz (2014), among others, attributes to the so-called *second-wave feminist movement*. Feminist language theory deals with sex differences in language, as well as sexism, or sexist language (Cameron, 1985, p. 9), making the field large and the focus of the research varied. The field has since the 1970s developed, and now includes several sub-fields and theories. There are a variety of approaches to studying language and gender, and one of them is to investigate how men and women are referred to and talked about (Lindquist, 2009, pp.150-151). The present study is based on this approach.

Another development, relevant for this study, is the concept that women, in the Western world in general and in the United States in particular, entered the labour market to a greater extent during the second half of the twentieth century (Krymkowski & Mintz, 2008, p.1). However, women are still a minority in certain occupations and lines of work, but have started to enter some of the occupations previously restricted for males, for example policing (Guajardo, 2016, p. 20), and fire fighting (Sinden et al., 2013, p.98).

Women entering the labour market to a greater extent, in combination with the introduction of *political correctness* and the notion of *gender-fair language* (further described in section 1.3) led to the introduction of gender-neutral alternatives to some traditionally gender-marked occupational titles. Some occupational titles have traditionally been marked for gender depending on the type of occupation involved and the dominating gender of those who work in the field. In addition, many occupational titles ending in *-man* have often been considered as generic terms (Doyle, 1998, p. 149), yet they have in a large extent been subjected to replacement by more inclusive, gender-neutral terms. This so-called *neutralization* includes, for example, the replacement of *chairman* with the gender-neutral *chairperson* (or sometimes *chair*), and the replacement of *spokesman* with *spokesperson* (Ehrlich & King, 1998, p. 168). However, the successfulness of this *neutralization* has been discussed. Ehrlich and King (1998), among others, argue that the gender-neutral variants seem to have lost their neutrality, as they are often used only for females (p. 168), whereas Romaine, among others, argues that gender-neutral terms tend to be “interpreted as masculine by default” (1999, p. 2). The present study examines whether gender-neutral occupational titles have in fact increased in usage, and whom they tend to be used for.

1.2 Aim and scope of the study

The purpose of this paper is to investigate a small sample of gender-marked occupational titles and their gender-neutral alternatives, in order to examine the frequency of usage over time, as well as whether the gender-neutral ones tend to refer primarily to female or male referents.

The present study investigates the usage of titles for two occupations that have traditionally been, and to a large extent still are, male-dominated. These occupations are *policing* and *fire fighting*, and the reason is to see if, in these male-dominated occupations, gender-neutral options tend to be used for males, or for females. In addition, the paper examines the usage of *businessperson* and *businesspeople*, and their gender-marked counterparts. These titles are included in the study as their biased endings are replaced with *-person* and *-people*, and the titles may therefore be used differently than those of *police officer(s)* and *fire fighter(s)*. This paper aims at answering the following questions:

- Have these gender-biased occupational titles decreased in usage and have their gender-neutral counterparts increased in usage?
- Who do the gender-neutral titles tend to refer to, males or females?

To examine the usage of these occupational titles over time, as well as to examine whom they tend to refer to, the present study is corpus-based. The material is collected from the TIME Magazine Corpus (further described in section 2.1.1), which contains texts from the 1920s to the 2000s, and thereby making it a good source for the present study.

1.3 Background

As mentioned previously, the relation between language and gender has been extensively studied since the 1970s initiated, at least in part, by the second-wave feminist movement (Bucholtz, 2014). Since then, the field has expanded into including several sub-fields, as well as including the notion of sexuality. In addition, several notable theories have emerged, among them *queer theory* and Butler's *performativity theory*. According to Baker (2008), the *performativity theory* denotes that gender is not something we are born with, but rather something we do, something we perform (p. 74).

The field of language and gender can be studied through several approaches. One of the most common approaches is to study the differences and similarities between how men and women use language. Another approach is to investigate how men and women are referred to. This is the approach applied in the present study. One aspect of this is the asymmetries between supposedly equivalent word-pairs, or male and female terms, such as *master* and *mistress* (Baker, 2008), depending on the words' gender-markings. Terms marked for males tend to, according to Cameron, "connote power, status, freedom and independence" (1985, p. 77), while terms marked for females, on the contrary, connote meanings of "triviality, dependence, negativity and sex" (Cameron, 1985, p. 77). This further enhances the difference that the genders are not simply different, but that feminine is synonymous with being non-masculine (Irigaray, 1998).

Since the second-wave feminist movement and the introduction of *political correctness* (Allan & Burrige, 2006), several changes have been introduced to make English a more gender-neutral and inclusive language. These changes have emerged as an action towards the sexist language that had, according to Doyle (1998), previously "excluded or discriminated against women" (p. 149). Sexist language includes features such as

presumed maleness as the norm, and femaleness as the exception. This has been manifested through the usage of, for example, masculine generic pronouns, the usage of terms such as *mankind* to refer to both women and men, and occupational titles ending in *-man* (Doyle, 1998, p. 149). The usage of these occupational titles has been considered as generic, and have in some extent been used as genderless, representing neither males nor females, or as inclusive, representing both males and females (Doyle, 1998, p. 150).

Partly to address this asymmetry in language, *gender-fair language* (henceforth GFL) was introduced as “part of a broader attempt to reduce stereotyping and discrimination in language” (Sczesny, Formanowicz & Moser, 2016, p. 2). According to Sczesny et al., the GFL includes two principal notions: *neutralization* and *feminization*. *Neutralization* entails replacing gender-biased terms (e.g., *policeman*) with gender-unmarked forms (*police officer*), whereas *feminization* instead entails the usage of feminine forms, or both masculine and feminine forms, to increase visibility of female referents (2016, pp. 2-3). One part of *neutralization* is the introduction of gender-neutral terms such as *chairperson* (or simply *chair*) and *spokesperson*. However, Ehrlich and King (1998) argue that “the attempt to replace a masculine generic with a neutral one has been somewhat unsuccessful” (p. 168), as these neutral terms tend to refer only to women. Ehrlich and King continue their discussion:

”[r]ather than ridding the language of a masculine generic, the introduction of the neutral generic *person* forms has (in some situations, at least) led to a sex-based distinction between forms such as *chairperson* vs *chairman*.” (1998, p. 168).

On the contrary, Eckert and McConnell-Ginet (2013) discuss that some gender-neutral terms, for example *police officer*, are still easy to interpret as ‘male’ (p. 221). Instead, gender-marked terms, such as *policewoman*, may help to highlight that women are in fact, to a higher extent, working in the particular, previously male dominated field. This is further supported by Doyle (1998), who also points out that it may in some cases be useful to highlight that some referents are female, to battle the assumption of maleness in certain male-dominated occupations (p. 153). This assumed maleness accentuates the importance of implementing GFL in everyday language usage according to Sczesny et al. (2016, p. 6), in order to establish gender-neutrality as the norm.

2. Methodology and Material

The method used in this study is corpus linguistics, which is briefly introduced in section 2.1. In section 2.1.2, the TIME Magazine Corpus, the corpus used in this study, is described. Furthermore, explanations and comments on the occupational titles examined in this study are presented in section 2.3.

2.1 Corpus Linguistics

A *corpus* is a principled and balanced collection of written and/or spoken texts, compiled for linguistic purposes (Lindquist, 2009; Biber, Conrad, & Reppen, 1998). There are large corpora, for example the *British National Corpus* (the BNC), a 100 million words corpus containing British English. There are also more specialized corpora, such as the TIME Magazine Corpus, which is used in the present study. Corpus linguistics is one approach to analyse language usage, and a corpus-based analysis is empirical as it analyses actual patterns in natural texts (Biber et al., 1998, p. 4). One of the main advantages of corpus linguistics is that it enables studies of large amounts of data, especially gathered for linguistic purposes (Biber et al., 1998, p. 4). Corpus linguistics includes both quantitative and qualitative methods. Quantitative approaches are applied for describing language usage in terms of frequencies and percentages, but both Lindquist (2009) and Biber et al. (1998) underline that all quantitative studies, to some extent, need to contain a qualitative component.

The present study is corpus-based, which entails that a corpus is used as a method for testing the hypothesis (Lindquist, 2009, p.10), or here, rather answering the question of whether the gender-neutral occupational titles have increased, and whom they tend to refer to. For the first question, a primarily quantitative approach is applied. The second question, however, is investigated with a more qualitative approach. Here, each individual example of usage of the gender-neutral terms is investigated in their context and categorized, which is further described in section 2.3. Ultimately, this approach would be combined with other linguistic approaches, for example surveys with native English-speakers. Using additional approaches could add the aspect of how people perceive these terms, as well as the terms' connotations and implications. However, due to the limited scope of this paper, the present study is based solely on corpus data.

In this study, lemmatisation of the terms is applied. Baker (2006) describes a lemma as "the canonical form of a word" (p. 55). Lemmatisation of a word, therefore, "means that all word forms which are just different inflected forms of the same word are grouped together with that word" (Lindquist, 2009, p. 27). All word classes can be *lemmatised*, and Baker exemplifies lemmatisation with the lemma WALK, which includes "the lexemes *walk*, *walked*, *walking* and *walks* (2006, p. 55). Lemmatisation in the BYU interface is achieved by putting the lemma between square brackets.

2.1.1 The TIME Magazine Corpus

The TIME Magazine was founded in 1923, and is a weekly news magazine focusing on American politics and culture. The TIME Magazine Corpus (Davies, 2007-), henceforth the TIME Corpus, is a 100 million words corpus, which is used through the BYU Interface. It contains written texts from the magazine from 1923 to 2006. Lindquist (2009) describes the corpus as "a very handy tool for studying changes in AmE in the twentieth century" (p. 22), as it is possible to specify results decade by decade. In this study, the results will be sorted by decades, ranging from the 1920s to the 2000s. The subcorpora, sorted by decade, vary in size and range between six million and 17 million words. The topics of the magazine's articles may have varied greatly over the decades,

but Rudanko (2010) argues that since the material is from the same magazine and the same text type, comparisons are still possible. Yet, as the study will be based exclusively on this particular corpus, the results presented will only represent written, American English from one specific genre in one particular magazine, which is important to keep in mind.

2.1.2 Pilot Study

A pilot study was conducted, with the aim to find if there were in fact enough instances of these gender-marked and gender-neutral terms in the corpus to conduct a larger project on the topic. Initially, searches were performed to ensure that the neutral terms chosen were the most relevant ones. On the basis of this, some occupations and professions were decided against. The occupations of *mail carriers* (with the gender-marked term being *postman* or *mailman*) and *flight attendants* (with the gender-marked terms *steward*, *stewardess*, *air hostesses*, etc.) were rejected due to the numerous terms being used for the same occupation or profession. Additionally, the initial idea was to investigate the gender distribution for *chairman*, *chairwoman*, *chairperson*, and *chair*. However, as searching the neutral term *chair* in a corpus resulted in a very large amount of tokens referring to *chair* as a piece of furniture, these titles were also rejected.

2.2 Occupational Titles: Marked or Unmarked for Gender

As stated above, only a few professions or occupations were selected for examination. Cheshire's (2008) article served as the initial inspiration, as she discusses how her "brief survey of the BBC web pages" (2008, p. 8) indicates that some of the gender-neutral titles, such as *fire fighter(s)*, are becoming more common than the old, biased ones whereas other titles, such as *police officer(s)*, do not show the same tendency. The occupational titles chosen are discussed separately in the sections below, as well as all of the variants and spellings searched.

Something important to address is the discarding of irrelevant tokens. In section 3.1, the usage of the gender-neutral and gender-marked titles over time is presented. In this section, all frequencies (both absolute and normalized) are presented as found in the corpus, with no tokens discarded. However, in section 3.2, where the results of the categorisation are presented, several tokens are discarded due to irrelevance. There are different types of discarded tokens. Firstly, some tokens are discarded, as the terms are not used in reference to professionals, but rather as part of proper names of organisations. Examples (1a) and (1b) illustrate this usage. Secondly, a few tokens of *business people* are discarded, as the term is in these instances part of the compound construction *show business people*. Example (2) is a sample of this usage.

- (1) a. Fire Officers' Association of Greater New York, and the **International Association of Fire Fighters** [...] (TIME, 1947)
- b. [...] who currently serves as counsel for the **National Association of Police Officers** (TIME, 1967)

- (2) **Show business people**, however, display a special affinity for unemployment compensation [...] (TIME, 1963).

Finally, several tokens are discarded due to duplication. Some of them have been discarded by the corpus administrators, i.e. they are marked as duplicates but they are still counted as tokens in the total frequency, and some are discarded by the author of this paper, when identifying duplicates that the corpus administrators have not yet found.

2.2.1 *Police Officer*

The first of the occupations is policing. To investigate if there has been an increased usage of the gender-neutral title *police officer* and a decreased use of the gender-biased, generic *policeman* both of these terms, as well as the gender-marked, but non-generic, *policewoman*, are examined. All of these titles are examined with a variation of spellings, including hyphenated words and multi-word units.

The gender-biased, generic *policeman* is examined as a lemma, which includes both *policeman* and *policemen*. However, both of these (*policeman* and *policemen*) are additionally checked by specific word searches to ensure the correctness of the lemma search. In addition, the hyphenated variants *police-man* and *police-men*, as well as the term as a multi-word unit, i.e. *police man*, *police men*, lemmatised as *police [man]*, are searched for. For the gender-marked, but non-generic, *policewoman* the same procedure is followed. For the gender-neutral alternative *police officer(s)*, the commonly used multi-word unit spelling is supplemented with hyphenated alternatives as well as the more unconventional *policeofficer(s)*.

2.2.2 *Fire Fighter*

The second of the occupations is fire fighting. Here, the gender-neutral title *fire fighter* is compared with the gender-biased and generic *fireman*, as well as the gender-marked, non-generic *firewoman*. As with the case of *policeman*, *policewoman* and *police officer(s)*, all of the titles regarding fire fighting are being examined as compound nouns, as multi-word units and as hyphenated words. However, in the examination of the multi-word units of *fire man/men* and *fire woman/women*, a PoS-tag is used to restrict the search to nouns only. This is to avoid instances referring to *firing* men and women, yet all tokens are checked and examples of this kind are discarded from the results, as they are not relevant.

2.2.3 *Businesspeople*

Thirdly, this study investigates the use of *businessman*, *businesswoman*, *businessperson(s)*, as well as *businesspeople*. Again, the same procedure as described above is applied, i.e., the terms are examined as compound nouns, as multi-word units as well as with a hyphenated spelling. The terms are in this case less specified for an exact occupation, and being a *businessperson* could entail many things. This is something that needs to be considered when analysing the results.

2.3 Categorisation

In addition to investigating the frequency of usage and the increases and decreases of usage, this study also aims at investigating whom the gender-neutral terms tend to refer to. To examine this, all instances of the gender-neutral terms *police officer*, *fire fighter* and *businessperson/people* are analysed (from here on all alternative spellings are implied, if not explicitly stated otherwise). The instances are divided into four categories: *Male*, *Female*, *Neither* and *Both*. The category *Male* represents examples that refer explicitly to males, and the category *Female* represents examples that refer explicitly to females. The category *Neither* represents examples where gender is not explicitly evident from, or marked in, the context, and the category *Both* represents examples that refer explicitly to both males and females. The procedure of categorising is here described briefly. First, the instances are studied in the short context presented in the concordance line. When the short context is not sufficient to complete categorisation of a token, the token's expanded context is analysed as well. To reach the expanded context, one has to click on the date of publish, to the left of the concordance list. The study has two primary contextual indicators for categorising the tokens. The first one is pronominal referencing. When a term, e.g. *fire fighter*, is used in relation to a personal, reflexive or possessive pronoun, the term is categorised according to the lexical gender of that pronoun. Example (3) is categorized as *Male*, as 'he was looking backwards' refers to the *fire fighter* whose neck was snapped. The second contextual indicator is proper names. When a term, e.g. *police officer*, is used in reference with a proper name that is easily classified as either male or female, the instance is categorised accordingly. In example (4), *police officer* is categorized as *Male* as the name of the officer in question is Samuel.

- (3) [...] **fire fighter** whose neck was snapped so badly **he** was looking backward [...] (TIME, 2001)
- (4) In New York City, **Police Officer Samuel** Lasky heard a noise at his door [...] (TIME, 1968)

However, many names are ambiguous, and can be used for both men and women. In cases when the proper names are not clearly either male or female, and there are no pronominal referencing, tokens are categorised as *Neither*. In cases where there are pronominal references to both male and female pronouns, or both male and female proper names referring to the professionals, tokens are classified as *Both*. In addition, some tokens are categorised by other contextual indicators. For example, if the person a title refers to is described as someone's *mother*, *father*, *daughter*, *son*, etc., the token is analysed depending on the gender of that noun. Example (5) expresses that the *fire fighter* is a father, and thereby, a man.

- (5) The boy's father, a fire fighter, said [...] (TIME, 1997)

When discussing pronominal referencing, something that is important to have in mind is the usage of the generic *he*. The generic *he* can, in theory, refer to both men and women, as well as be used when gender is either unknown or irrelevant. However, in this study, all gender-neutral titles that refer to a *he*, *him* or *his* are categorized as *Male*. This is due

to the difficulty in knowing when the male pronoun is used in a specific versus a generic sense. Yet, this is something that may have an effect on the results.

3. Results

3.1 The usage of gender-biased and gender-neutral titles

The aim of this paper is to investigate whether the gender-biased and/or generic usage of occupational titles ending in *-man*, has decreased since the 1920s, and whether the gender-neutral titles have increased. In this section, the results of the study are presented, and in the following subsections, the results for each occupation are presented. As mentioned in section 2.2.1, a variation of spellings has been examined and the results presented in the tables below are the total frequencies of all of these combined, for each term, including the plural forms. For all tables, including the results for all spellings, see Appendix A for Absolute Frequencies, and Appendix B for Normalized Frequencies (Instances per million words).

3.1.1 Policing

The first of the occupation is policing. Table 1 shows the results as instances per million words, whereas Table 2 shows the results as absolute frequencies.

Table 1. The total of gender-marked and gender-neutral terms for police officers. Numbers are shown in Normalized Frequency: Instances per Million Words.

Titles	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
Policeman	62.2	68.15	40.83	42.53	43.59	53.78	44.93	23.21	11.36
Policewoman	1.31	0.87	0.91	1.25	0.75	1.62	1.94	1.34	0.78
Police Officer	3.54	3.16	1.55	2.98	4.10	7.14	17.23	22.70	18.52
Total/decade	67.05	72.18	43.29	46.76	48.44	62.54	64.10	47.25	30.66

Table 2. The total of gender-marked and gender-neutral terms for police officers. Numbers are shown in Absolute Frequency.

Titles	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
Policeman	475	860	631	714	701	731	511	226	73	4922
Policewoman	10	11	14	21	12	22	22	13	5	130
Police Officer	27	40	24	50	66	97	196	221	119	840
Total/decade	512	911	669	785	779	850	729	460	197	5892

It is evident from Table 1 that the use of *policeman* has decreased in recent decades, reaching its lowest frequency in the 2000s. In contrast, the gender-neutral *police officer* has increased in frequency, with its highest usage in the 1990s. However, looking at these two titles in the 1990s, they are used almost equally frequently, both when looking at the absolute and the normalized frequencies. In the 2000s, the gender-neutral form is significantly more frequent.

The more unconventional and uncommon *policewoman* reached its peak in usage in the 1980s, but has had a continuously low frequency of usage. In Table 1, the row showing the total instances per decade of *policeman*, *policewoman* and *police officer* indicates that the magazine's coverage of policing or articles mentioning these terms have decreased in total in later decades.

3.1.2 Fire Fighting

The second occupation is *fire fighting*, where Table 3 shows the normalized frequencies, and Table 4 shows the absolute frequencies.

Table 3. The total of gender-marked and gender-neutral terms for fire fighters. Numbers are shown in Normalized Frequency: Instances per Million Words.

Titles	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
Fireman	17.94	24.33	19.48	16.68	13.99	13.10	9.76	5.44	3.89
Firewoman	-	-	-	-	-	-	-	-	-
Fire Fighter	0.39	1.11	1.68	1.37	1.32	2.28	9.23	5.34	17.89
Total/decade	18.33	25.44	21.16	18.05	15.31	15.38	18.99	10.78	21.78

Table 4. The total of gender-marked and gender-neutral terms for fire fighters. Numbers are shown in Absolute Frequency.

Titles	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
Fireman	137	308	302	280	225	178	111	53	25	1619
Firewoman	-	-	-	-	-	-	-	-	-	0
Fire Fighter	3	14	26	23	18	31	105	52	115	387
Total/decade	140	322	328	303	243	209	216	105	140	2006

As in the case of *policeman*, the occupational title *fireman* has decreased in usage. The lowest frequency of usage is in the 2000s, while the highest usage was in the 1930s. In contrast, the usage of the neutral term *fire fighter* has increased, starting in the 1980s. In the 1990s, the frequency of usage is lower, but it is also evident from the rows showing the total instances of all of the terms that the overall mentioning of the professionals in this line of work was less frequent in this decade.

In addition, it is notable that the usage of *firewoman* is non-existent. In the case of *policewoman*, the frequency of usage is very low in all of the decades examined, but there are at least some instances of the term being used. The term *firewoman*, on the other hand, appears to never have been used in the magazine.

3.1.3 Doing Business

In the case of *businessmen*, *businesswomen*, *businessperson(s)* and *businesspeople*, the tables below show a decrease in overall usage of these terms. There is an increase of the gender-neutral *business people*, but the overall usage of these terms has decreased. Yet,

this may be due to other factors such as lexical variation or variation in titles, or in more specific titles being used instead. However, these are only speculations.

Table 5. The total of gender-marked and gender-neutral terms for people in the field of business. Numbers are shown in Normalized Frequency: Instances per Million Words.

Titles	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
Businessman	79.76	92.12	105.86	134.62	145.33	115.74	78.70	42.76	24.43
Business-woman	3.54	1.34	0.97	0.78	1.05	0.88	1.32	1.33	1.87
Business-person	-	-	-	-	-	0.07	0.09	0.21	-
Business-people	0.79	0.08	0.19	0.24	0.37	1.32	2.20	1.84	4.36
Total/decade	84.09	93.54	107.02	135.64	146.75	118.01	82.31	46.14	30.66

Table 6. The total of gender-marked and gender-neutral terms for people in the field of business. Numbers are shown in Absolute Frequency.

Titles	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
Businessman	609	1166	1636	2260	2337	1573	895	426	157	11059
Business-woman	27	17	15	13	17	12	15	13	12	141
Business-person	-	-	-	-	-	1	1	2	-	4
Business-people	6	1	3	4	6	18	25	18	28	109
Total/decade	642	1184	1654	2277	2360	1604	936	459	197	11313

In the case of business-related titles, one thing to mention is that the overall usage of these terms seems to have decreased since the 1960s. If looking specifically at the difference between the gender-marked titles and the gender-neutral ones, *businessperson(s)* and *businesspeople*, there has been an increase usage of the neutral *businesspeople* (if all spelling variations are included). Yet, this is not a large increase, and as it is used to refer to a group of people rather than an individual, its relevance may be questionable. Noticeable is the fact that *businessperson* is remarkably infrequent, and only appears in three decades. The term *businesswoman* may be increasing again between the 1980s and the 2000s, after a lower usage in the preceding fifty years. It has its highest frequency of usage in the 1920s.

3.2 Categorisation - Who do gender-neutral terms refer to?

The second question this study aims at answering is whom these gender-neutral titles refer to. Therefore, all tokens of the gender-neutral titles are examined to determine if they are mainly used for women or men, or if they tend to be used when gender is either irrelevant or unknown. For full tables of the total number of tokens categorized, see Appendix C for Absolute Frequencies, and Appendix D for Normalized Frequencies (Instances per Million Words).

3.2.1 Categorisation of *Police Officer(s)*

The results for *police officer(s)* are rather interesting in that when used in the singular form (i.e. *police officer*), the term is almost as often categorized as *Male* as *Neither*. There are 170 instances that explicitly refer to male police officers, and 187 instances where there are no explicit gender-references. The figure below (Figure 1) shows that in the 1980s, there is the same number of instances per million words referring to male officers, as there are instances without a gender reference, 3.61 instances per million words each. In the 1990s and 2000s, the instances referring to male officers are slightly higher than the ones without gender referencing; yet the differences are low (in the 1990s, 37 tokens were classified as *Male*, and 35 as *Neither*, and in the 2000s, 28 tokens were classified as *Male*, and 21 as *Neither*).

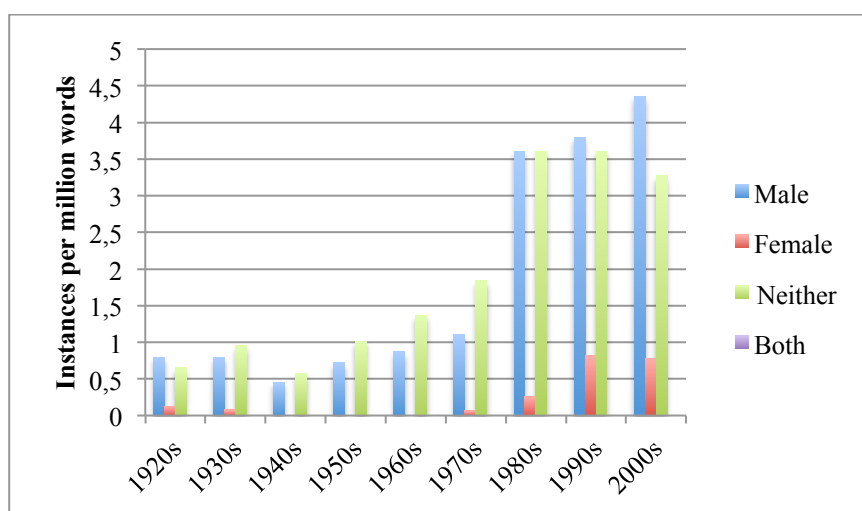


Figure 1. Categorization of singular usage of *police officer*, including alternative spellings.

An example of a token categorized as *Male* is example (6) below. In this example, the reflexive pronoun *himself* refers back to the *experienced police officer*, and thereby identifies him as male. It is also evident from the example that the text is about a specific police officer. Example (7), on the other hand, is an example of a token categorized as *Neither*. Here the identity of the police officer is unspecified, as the text's focus is on the killer and not the victim.

- (6) [...]the experienced **police officer** allows **himself** the luxury of noticing more important things [...] (TIME, 1949)
- (7) [...] on charges of illegally possessing weapons, resisting arrest and killing a **police officer** [...] (TIME, 1989)

In addition, only a total of 19 instances of the singular *police officer* refer explicitly to female officers. There is one instance of this usage in the 1920s, and one in the 1930s. There are no instances of *police officer* referring to female officers during the 1940s, 1950s and 1960s, but there is one instance in the 1970s. In the 1980s, there are three instances (0.26 instances per million words), followed by eight instances in the 1990s (0.82 instances per million words) and five instances in the 2000s (0.78 instances per

million words). Example (8) is one of the tokens from the 2000s. This instance follow the same pattern as example (6), as it refers to a specific individual, in this case *Pat Hayes*, who is described as a grandmother.

(8) [...] and her grandmother, retired **police officer** Pat Hays [...]
(TIME, 2009)

(9) In Monrovia, Liberia, **women** drive cabs. In the Congo **they** serve as paratroopers, and in Nigeria as **police officers** (TIME, 1970)

Additionally, there are only three instances of the plural usage of the term referring to female officers, one in the 1950s, the 1970s and the 2000s respectively. Example (9) is from the 1970s, and in this instance, *police officers* refer to *they* in the beginning of the sentence, which in turn refers back to *women* in the preceding sentence.

The results of the singular usage are interesting to compare to the results of the plural usage of the term, i.e. *police officers*. Here, 384 out of the total 439 tokens of the term are used without an explicit gender reference, and only 48 instances explicitly referred to males, see Figure 2. While the singular usage, *police officer*, always indicate one person, the plural usage, i.e. *police officers*, can denote everything from two officers to 5,000 officers. This may be one of the reasons that the majority of the plural instances are classified as *Neither*. In cases where a large number of police officers are discussed, they tend to be discussed in relation to their function, and their role as professionals. Example (10) illustrates this usage.

(10) [...] Up ahead nearly 50 **police officers** and Murphy, a pot-sniffing dog,
[...] (TIME, 1982)

(11) [...] rationalizations and cathartic horror stories of more than 100 **police officers** of both sexes [...] (TIME, 1985)

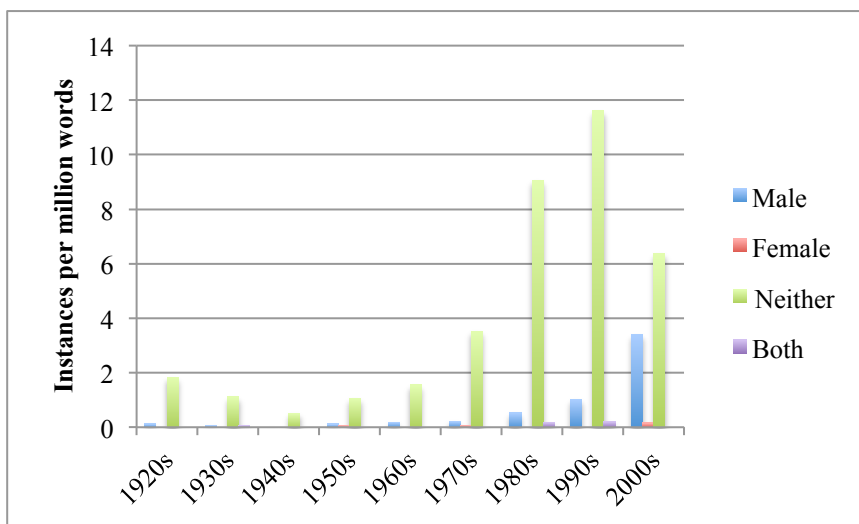


Figure 2. Categorization of plural usage of *police officers*, including alternative spellings.

Additionally, there are five instances of the plural form that refer explicitly to both male and female officers (0.47 instances per million words). One of them is example (11) above. In this example, the term, *police officers*, refers explicitly to officers of *both sexes*, i.e. both men and women.

3.2.2 Categorisation of *Fire Fighter(s)*

In the case of *fire fighter* (which henceforth include the alternative spellings *firefighter* and *fire-fighter*, if not explicitly specified otherwise), the difference in gender referencing depending on singular versus plural form is prominent. The singular form has explicit male references in 44 of the total 65 instances, and no explicit gender reference in 18 of the 65 instances. The division over time can be seen in Figure 3 below. The following two examples, (12a) and (12b), illustrate the main types of instances categorized as *Male*.

- (12) a. It's hard to keep our eyes dry, said **fire fighter Gerard Jurgens** [...] (TIME, 1992)
 b. The boy's father, a **fire fighter**, said **he** hoped the men would be executed [...] (TIME, 1997)

In the first one, the *fire fighter* is identified by his name, *Gerard*, and in the second one by pronominal reference, as well as being described as a *father*. These two tokens, therefore, clearly refer to males.

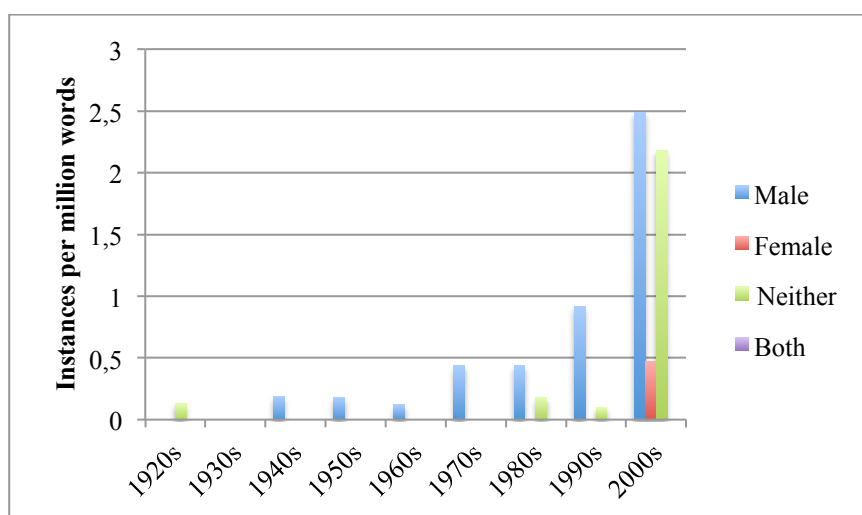


Figure 3. Categorization of singular usage of *fire fighter*, including alternative spellings.

The singular form only refers explicitly to female fire fighters in three instances, and all of these are found in the 2000s, constituting 0.47 instances per million words. One of them is example (13) below. In this example, both the proper name *Belle*, and the personal pronoun *her* is referring to *fire fighter*, making this a good example of tokens categorised as *Female*. There are no explicit references to both male and female fire fighters, i.e. category *Both*.

- (13) Today **Belle**, 23, is a fire fighter in **her** hometown department [...] (TIME, 2002)

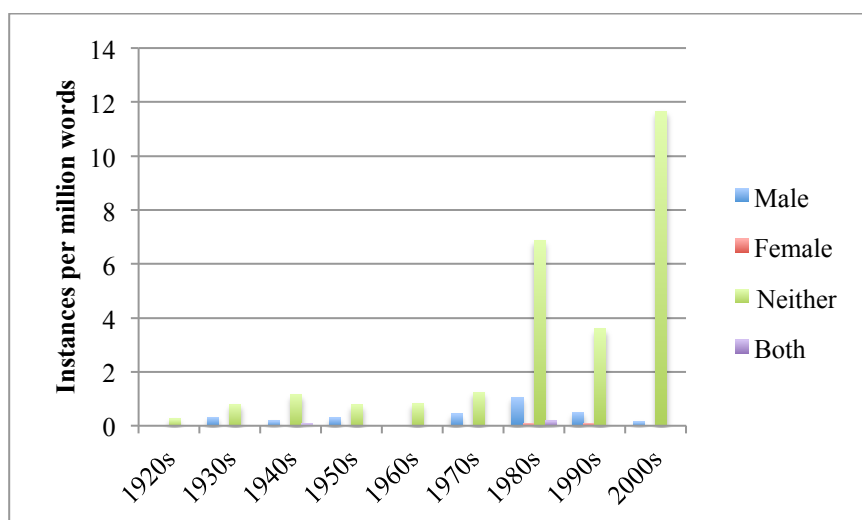


Figure 4. Categorization of plural usage of *fire fighters*, including alternative spellings.

From Figure 4, above, it is evident that the plural usage of *fire fighters* is primarily used for tokens without a specific gender reference, i.e. category *Neither*. Example (14) is an instance of this usage. In this example, the *fire fighters* are only mentioned briefly, and as their gender is not relevant in the context, it is not specified.

- (14) [...] more than 15,000 fire fighters finally had them largely contained [...] (TIME, 1990)

Only a total of 36 tokens (2.98 instances per million words) are explicitly referring to male fire fighters and in some of them, the term '*fire fighters*' is used interchangeably with *firemen*. This usage is found in example (15), where the first sentence ends with *firefighters*, but instead of starting the second one of with the pronoun *they*, it starts with the gender-marked *firemen*.

- (15) [...] a worried Fire Department official complained that TV rooftop antennas are a hazard to **firefighters**. **Firemen** not only trip over the wires, they also have their hats knocked [...] (TIME, 1950)
- (16) Meanwhile the plain hard work of the country was being done in many places with the aid of high-school **boys & girls**. In San Francisco, where it has been planned to have students trained as urban **firefighters** [...] (TIME, 1942)

With plural use, there are two instances categorised as referring explicitly to female fire fighters. These are found in the 1980s and 1990s, one in each decade. Additionally, there are a total of three instances that explicitly refer to both male and female fire fighters, one in the 1940s and two in the 1980s. One of the instances is example (16) where *firefighters* refer to the '*high-school boys and girls*'.

3.2.3 Categorisation of *Businessperson* and *Businesspeople*

First of all, as stated in section 3.1.3, there are only four instances of *businessperson* and *business person*. Out of these four, one explicitly refers to a man, one refers explicitly to a woman, and two are classified as *Neither*, where gender is either unknown or irrelevant. Analysing these instances further is therefore not of interest, as no conclusions can be drawn from this small sample.

In the case of *businesspeople* (which henceforth include the alternative spellings *business people* and *business-people*, if not explicitly specified otherwise), there are a total of 104 instances. Out of these, 97 tokens are categorized as *Neither*, where gender is either irrelevant or unknown. One example of this usage is (17), from the 1990s, where the term *businesspeople* is used as an umbrella term for other occupational terms.

- (17) And many other Anchorage **businesspeople** -- restaurateurs, hoteliers, copy-shop owners [...] (TIME, 1994)
- (18) [...]not all the ELAS **men** were Communists. Some of them were middle class **business people**, some of them were liberals and patriots who had fought the Germans [...] (TIME, 1944)
- (19) [...] last Wednesday with a few dozen other unhappy Iraqi **business people**. The 41 men and two women, representing telecom, [...] (TIME, 2004)

There are only four instances that refer to males, one of them is example (18). There are no instances that refer explicitly to females only, but there are three instances that refer explicitly to both men and women. One of these instances is example (19), from the 2000s.

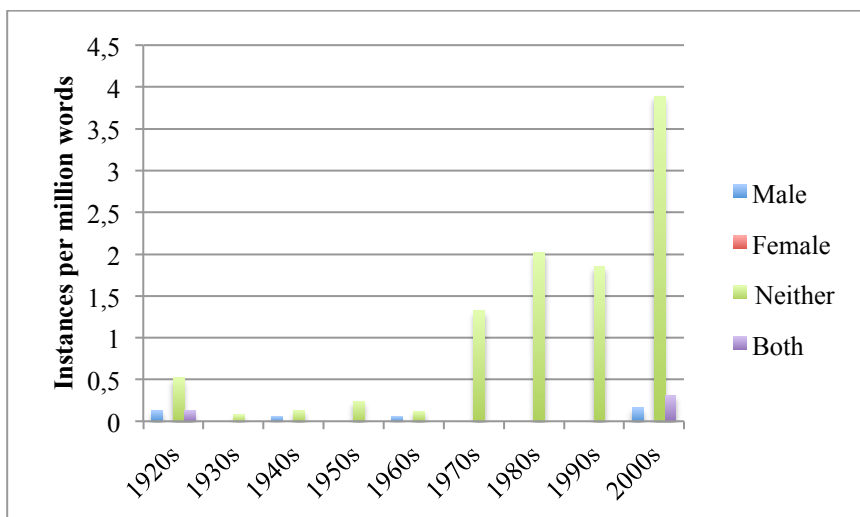


Figure 5. Categorization of singular usage of *businesspeople*, including alternative spellings.

As can be seen in Figure 5 above, there is an increased usage of the term, starting in the 1970s, with a small decrease in the 1990s. Out of the three instances that explicitly refer to both males and females, one is found in the 1920s and the other two in the 2000s. Out of the four instances that explicitly refer to males, there is one instance in the 1920s, 1940s, 1960s and the 2000s.

4. Discussion

In the following sections, the results of the study are discussed. First, in section 4.1, the results of each of the occupations are discussed separately, and secondly, in section 4.2, all of the results and their implications are discussed. It is important to have in mind that these results and their implications are limited to the language usage in the TIME Magazine Corpus, i.e. these results only reflect the usage of these titles in this particular magazine.

4.1 Gender-biased terms or gender-biased occupations?

4.1.1 Policing

When reviewing the results, it is evident that the usage of the gender-neutral term *police officer(s)* has increased since the 1940s, and with a higher increase in usage since the 1980s. The results further show that the gender-biased *policeman/policemen* has decreased in usage since the 1970s. However, it is only in the 2000s that *police officer(s)* is more frequently used than *policeman/policemen*. Thus, while the gender-neutral alternative is becoming more frequently used, the gender-biased term has not diminished. When examining the referents of the gender-neutral title, it is clear that the term is more commonly used for referring to male officers than female ones. As only 11.8 percentages of all U.S. police officers were females, in 2011, this may not be surprising (Schuck, 2014, p. 55). It does, however, contradict Ehrlich and King's (1998) notion that gender-neutral alternatives to the traditional masculine generics tend to "designate only female referents" (p. 168). Cameron (1985) mentions that when gender-neutral terms are used, the gender of the referent tend to be evident from the context (p. 85). In the case of *police officer(s)*, this is true for about half of the tokens of the singular form found in the TIME Corpus, i.e. *police officer*, from the 1980s and forward. Yet, in the remaining half, the referent's gender is not evident, which may be a result of the officers being mentioned or discussed in their professional role, and in their function as police officers

As mentioned above, only about 11.8 percentages of all U.S. police officers were females in 2011 (Schuck, 2014, p. 55), and this is, in part, reflected both in the frequency of usage of *policewoman/policewomen* and number of tokens of *police officer(s)* categorized as *Female*. However, there is also a possibility that usage of the masculine generics *he* and *policeman/policemen* have affected the results, as these

instances may have been used in a generic sense, but in this paper been interpreted in a specific sense. The low share of female police officer in the United States may also have impacted the results in another way. As the vast majority of officers are in fact male, it is possible that when speaking and writing about *police officers*, it is presupposed that the officers in question are in fact male. This particular issue is addressed by Eckert and McConnell-Ginet, who argue that gender-neutral terms, like *police officer*, are still easy to interpret as ‘male’, i.e. referring to male officers (2013, p. 221). Eckert and McConnell-Ginet continue by saying that using the gender-marked *policewoman* may in fact help highlight that more women are working in the particular, previously male dominated occupation (2013, p. 221).

4.1.2 Fighting fires

In the case of *fire fighters*, one notable thing is that there is no mention of *firewoman/firewomen* in the entire TIME Corpus. This may not be surprising as only about three percentages of U.S. fire fighters are female (Sinden et al., 2013, p. 98), and the title does not seem to be an established term. However, the term could serve as an equivalent of *policewoman/policewomen*, and thereby highlight that there are in fact some female fire fighters. However, this only reflects the usage in the TIME Magazine, and may be different in general written and spoken English.

The frequency of usage indicate that the gender-neutral form, *fire fighter(s)*, started to increase in usage in the 1970s, and continued to do so in the 2000s, after a decrease in the 1990s. The gender-biased *fireman/firemen*, instead, started to decrease in the 1970s and continued to do so for the following two decades. However, it is only in the 2000s that *fire fighter(s)* becomes more frequently used than *fireman/firemen* (as indicated by Tables 3 and 4).

The categorisation of the term shows that the singular form, *fire fighter* (including alternative spellings), is used with a male referent in almost 70 percentages of the instances. However, there is an increased usage of instances with non-gendered referents, starting in the 1980s. Yet, as there are only 65 instances of *fire fighter* in total (from the 1920s to the 2000s), these results cannot be interpreted as a reflection of the general usage of this term, except for in the magazine. Furthermore, when examining the results of the plural usage, i.e. *fire fighters* (including alternative spellings), the majority of tokens are used without an explicitly gendered referent. This may be as *fire fighters*, in similarity to *police officers*, often are described in relation to their occupation, in their role as professionals. Francis and Hester (2004) discuss that even though, most of us, are “always either male or female there are numerous occasions in our lives when our gender is simply not relevant” (p. 39). This may be the case here, implying that when we talk about fire fighters and how they serve society, gender simply is not relevant as they are talked about in their professional role. However, it may also be the case, like with *police officers*, that the term *fire fighters* presuppose maleness. One interesting finding in the results is that the gender-neutral title is sometimes used interchangeably with *firemen*, as in example (15). This usage suggests that the gender-neutral alternative may not be used to avoid gendering referent, but is rather due to some other factors.

4.1.3 The business of business

In the case of *businessman*, *businesswoman*, *businessperson* and *businesspeople*, the results are different from the other occupational titles. Here, the gender-marked *businessman* is the most frequently used term, in all of the decades examined. The term has decreased in use, which may be due to a decreased coverage of topics related to *businessmen*, or due to favouring of other lexical items. The gender-marked *businesswoman*, on the other hand, is the most frequent in the 1920s, as stated in section 3.1.3. However, the term has increased slightly in the later decades, yet the frequency of usage is still low throughout the whole time period examined.

One of the more prominent results is that the term *businessperson* (including the alternative spellings *business-person* and *business person*, as well as plural forms of all three of these) is almost non-existing. There are only a total of four tokens of the term, and these are found in the 1970s to 1990s. The reason for this may be that *businessperson* is a vague and somewhat ambiguous term, and other, more specific occupational terms may be favoured when discussing a certain individual. It may also be that either *businessman* or *businesswoman* is favoured instead, as the gender of the referent is often evident from the context and there is therefore no need to neutralize the occupational title. In a genre such as newspaper articles, it is perhaps considered important to avoid ambiguity and be as explicit as possible. However, these are only speculations.

The usage of the *businesspeople* (including alternative spellings), on the other hand, has increased since the 1970s. Yet, the term still has a low overall frequency of usage, compared to the dominating *businessman*. The term is mainly used without explicitly specifying the referents' gender, which may be due to gender not being of relevance in the context, or because it is unknown. Why the gender-neutral title is opted for is something that would be interesting to investigate in a study of a larger scope.

4.2 General discussion

There are different perspectives on gender-neutral terms, and their impact on language, language usage and neutrality. The results from section 3.1 show that the gender-biased forms have all decreased in usage in recent decades, but they are still used somewhat frequently. A possible explanation for this continued usage is perhaps that these terms have other connotations than their gender-neutral alternatives. Terms marked for males tend, according to Cameron, to connote meanings of “power, status, freedom and independence” (1985, p. 77). This implies that the gender-biased titles may carry these positive connotations, whereas the gender-neutral ones do not. Of course, this is only one of several possible explanations, and something that would be of interest to examine in further studies.

As mentioned, Ehrlich and King (1998) discuss that the gender-neutral alternatives are primarily used when referring to females, whereas the gender-biased one are still used when referring to males. Eckert and McConnell-Ginet (2013), on the other hand, argue

that gender-neutral terms can presuppose maleness, particularly in male-dominated fields. The results of the present study indicate that the gender-neutral terms *police officer(s)*, *fire fighter(s)*, *businessperson* and *businesspeople* tend to refer to male referents more frequently than to female referents. Nonetheless, it is important to keep in mind that both policing and fire fighting are male-dominated occupations (Sinden et al., 2013, p. 98), with a low share of female employees. The gender-neutral terms could therefore, as discussed by Eckert and McConnell-Ginet (2013), presuppose the male bias they were created to avoid. It could also be that the gender-neutral alternatives are favoured for other reasons than neutrality, for example professionalization or due to having other connotations than the biased ones.

The majority of tokens analysed do not have an explicit gender reference. In instances where gender is either irrelevant in the context or unknown to the author of the article, the gender-neutral alternatives may have been chosen to avoid using a generic but biased term. Another possible explanation is the notion that these professionals are mentioned or discussed in relation to their occupation, and in relation to the function they fill in society, and not as individuals. The absence of gender referencing in these cases may therefore have less to do with gender-neutrality than the societal function of these occupations.

When discussing the results, it is important to keep in mind that this study is based solely on material from the TIME Magazine Corpus. First of all, the magazine is American, implicating that the results may only reflect the usage of these terms in American English. Secondly, the data constitutes of articles, which are of a specific genre, and have presumably been peer reviewed and perhaps also revised. In addition, when gender-neutral titles have been opted for, it may be the result of language policies and guidelines for non-discriminatory language usage. However, it could be that this increased gender neutralization is not due to avoidance of discriminatory and exclusive language usage. It is possible that these gender-neutral titles have increased in usage due to other factors, such as professionalization or lexical popularity. Unfortunately, an examination of this is not within the scope of the present paper, but the topic is of interest for further studies. It would be interesting to compare the results of the present study with studies on other occupational titles, as well as studies conducted with other approaches, to see what initiated these changes and what the implications are. The results of this study does however provide a good overview of the usage of these occupational titles in the TIME Magazine, but the results cannot be interpreted as reflecting the usage of these terms in general American English.

5. Conclusion

The present study aimed at investigating the supposed increase of gender-neutral occupational titles in American English, and by answering the following questions: Have these gender-biased occupational titles decreased in usage and have their gender-neutral counterparts increased in usage? Who do the gender-neutral titles tend to refer

to, males or females? Through a corpus-based examination of a selected set of terms, the study presents results that indicate that the gender-biased forms have decreased in usage in recent decades, but that they are still used fairly frequently. In addition, the results indicate that the gender-neutral forms have increased in usage, yet they tend to be used primarily with male referents or when the gender of referents are either irrelevant or unknown. Two of the selected occupations are, and have traditionally been, male-dominated occupations, which may have impacted the outcome of the study. The results of the study cannot be seen as a reflection of the usage of these terms in American English in general, but rather serve as the basis for further studies. It is, however, important to keep in mind that the changes presented in this paper, where gender-neutral terms seem to be increasing, may not be due to gender-equality and inclusion aspects alone, but rather other factors such as professionalization of the particular terms, or lexical change due to other reasons. It would be of interest to complement the present study with further research on the topic, through other approaches and with other occupations and occupational titles.

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Appendix A

Absolute Frequencies

Police

LEMMAS	Exakt words/phrases	Total number of Tokens	Absolute Frequency									
			1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	
POLICEMAN												
Policeman	x	4887	465	849	627	712	697	728	511	225	73	
x	Police-man	10	4	4	0	0	1	0	0	1	0	
x	Police-men	7	4	3	0	0	0	0	0	0	0	
Police [man]	x	18	2	4	4	2	3	3	0	0	0	
TOTAL:		4922	475	860	631	714	701	731	511	226	73	
POLICEWOMAN												
Policewoman	x	124	10	11	14	21	12	17	21	13	5	
x	Police-woman	0	0	0	0	0	0	0	0	0	0	
	Police-women	0	0	0	0	0	0	0	0	0	0	
Police [woman]	x	6	0	0	0	0	0	5	1	0	0	
TOTAL:		130	10	11	14	21	12	22	22	13	5	
POLICE OFFICER												
Police [Officer]	x	840	27	40	24	50	66	97	196	221	119	
x	Police-officer	0	0	0	0	0	0	0	0	0	0	
x	Police-officers	0	0	0	0	0	0	0	0	0	0	
[Policeofficer]	x	0	0	0	0	0	0	0	0	0	0	
TOTAL:		840	27	40	24	50	66	97	196	221	119	

The table includes the absolute frequencies for the searched phrases, with all alternative spellings. Lemmas searched are found under 'LEMMAS', and exact words found under 'Exact words/phrases'. All numbers are absolute frequencies, with no tokens discarded.

Fire

LEMMAS	Exakt words/phrases	Total number of Tokens	Absolute Frequency									
			1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	
FIREMAN												
Fireman	x	1613	137	308	301	279	224	175	111	53	25	
x	Fire-man	1	0	0	0	0	1	0	0	0	0	
x	Fire-men	0	0	0	0	0	0	0	0	0	0	
Fire [man]	x	5	0	0	1	1	0	3	0	0	0	
TOTAL:		1619	137	308	302	280	225	178	111	53	25	
FIREWOMAN												
Firewoman	x	0	0	0	0	0	0	0	0	0	0	
x	Fire-woman	0	0	0	0	0	0	0	0	0	0	
x	Fire-women	0	0	0	0	0	0	0	0	0	0	
Fire [woman]		0	0	0	0	0	0	0	0	0	0	
TOTAL:		0	0	0	0	0	0	0	0	0	0	
FIRE FIGHTER												
Firefighter	x	53	2	10	6	5	4	4	4	3	15	
Fire [Fighter]	x	327	1	4	20	18	14	27	100	49	94	
	Fire-fighter	7	0	0	0	0	0	0	1	0	6	
	Fire-fighters	0	0	0	0	0	0	0	0	0	0	
TOTAL:		387	3	14	26	23	18	31	105	52	115	

The table includes the absolute frequencies for the searched phrases, with all alternative spellings. Lemmas searched are found under 'LEMMAS', and exact words found under 'Exact words/phrases'. All numbers are absolute frequencies, with no tokens discarded.

Business

LEMMAS	Exakt words/phrases	Total number of Tokens	Normalized Frequency - Instances per Million Words									
			1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	
BUSINESSMAN												
Businessman	x	10527	278	1061	1602	2240	2306	1565	892	426	157	
x	Business-man	1	1	0	0	0	0	0	0	0	0	
x	Business-men	0	0	0	0	0	0	0	0	0	0	
Business [man]	x	531	330	105	34	20	31	8	3	x	x	
TOTAL:		11059	609	1166	1636	2260	2337	1573	895	426	157	
BUSINESSWOMAN												
Businesswoman	x	99	7	8	9	9	15	12	15	12	12	
x	Business-woman	0	0	0	0	0	0	0	0	0	0	
x	Business-women	0	0	0	0	0	0	0	0	0	0	
Business [woman]	x	42	20	9	6	4	2	0	0	1	0	
TOTAL:		141	27	17	15	13	17	12	15	13	12	
BUSINESSPERSON												
Businessperson	x	2	0	0	0	0	0	0	0	2	0	
x	Business-person	0	0	0	0	0	0	0	0	0	0	
Business [person]	x	2	0	0	0	0	0	1	1	0	0	
TOTAL:		4	0	0	0	0	0	1	1	2	0	
BUSINESSPEOPLE												
Businesspeople	x	23	0	0	0	0	0	0	1	8	14	
x	Business-people	2	0	0	0	0	0	0	0	1	1	
Business [people]	x	84	6	1	3	4	6	18	24	9	13	
TOTAL:		109	6	1	3	4	6	18	25	18	28	

The table includes the absolute frequencies for the searched phrases, with all alternative spellings. Lemmas searched are found under 'LEMMAS', and exact words found under 'Exact words/phrases'. All numbers are absolute frequencies, with no tokens discarded.

Appendix B

Normalized Frequencies – Instances per Million Words

Police

LEMMAS	Exakt words/phrases	Normalized Frequency - Instances per Million Words									
		1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	
POLICEMAN											
Policeman	x	60.90	67.07	40.57	42.41	43.34	53.56	44.93	23.11	11.36	
x	Police-man	0.52	0.52	0	0	0.06	0	0	0.10	0	
x	Police-men	0.52	0.24	0	0	0	0	0	0	0	
Police [man]	x	0.26	0.32	0.26	0.12	0.19	0.22	0	0	0	
TOTAL:		62.2	68.15	40.83	42.53	43.59	53.78	44.93	23.21	11.36	
POLICEWOMAN											
Policewoman	x	1.31	0.87	0.91	1.25	0.75	1.25	1.85	1.34	0.78	
x	Police-woman	0	0	0	0	0	0	0	0	0	
	Police-women	0	0	0	0	0	0	0	0	0	
Police [woman]	x	0	0	0	0	0	0.37	0.09	0	0	
TOTAL:		1.31	0.87	0.91	1.25	0.75	1.62	1.94	1.34	0.78	
POLICE OFFICER											
Police [Officer]	x	3.54	3.16	1.55	2.98	4.10	7.14	17.23	22.70	18.52	
x	Police-officer	0	0	0	0	0	0	0	0	0	
x	Police-officers	0	0	0	0	0	0	0	0	0	
[Policeofficer]	x	0	0	0	0	0	0	0	0	0	
TOTAL:		3.54	3.16	1.55	2.98	4.10	7.14	17.23	22.70	18.52	

The table includes the normalized frequencies for the searched phrases, with all alternative spellings. Lemmas searched are found under ‘LEMMAS’, and exact words found under ‘Exact words/phrases’. All numbers are normalized frequencies (here, Instances per Million Words), with no tokens discarded.

Fire

LEMMAS	Exakt words/phrases	Normalized Frequency - Instances per Million Words									
		1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	
FIREMAN											
Fireman	x	17.94	24.33	19.48	16.62	13.93	12.88	9.76	5.44	3.89	
x	Fire-man	0	0	0	0	0.06	0	0	0	0	
x	Fire-men	0	0	0	0	0	0	0	0	0	
Fire [man]	x	0	0	0.06	0.06	0	0.22	0	0	0	
TOTAL:		17.94	24.33	19.48	16.68	13.99	13.10	9.76	5.44	3.89	
FIREWOMAN											
Firewoman	x	0	0	0	0	0	0	0	0	0	
x	Fire-woman	0	0	0	0	0	0	0	0	0	
x	Fire-women	0	0	0	0	0	0	0	0	0	
Fire [woman]		0	0	0	0	0	0	0	0	0	
TOTAL:		0	0	0	0	0	0	0	0	0	
FIRE FIGHTER											
Firefighter	x	0.26	0.79	0.39	0.30	0.25	0.29	0.35	0.31	2.33	
Fire [Fighter]	x	0.13	0.32	1.29	1.07	0.87	1.99	8.79	5.03	14.63	
	Fire-fighter	0	0	0	0	0	0	0.09	0	0.93	
	Fire-fighters	0	0	0	0	0	0	0	0	0	
TOTAL:		0.39	1.11	1.68	1.37	1.32	2.28	9.23	5.34	17.89	

The table includes the normalized frequencies for the searched phrases, with all alternative spellings. Lemmas searched are found under 'LEMMAS', and exact words found under 'Exact words/phrases'. All numbers are normalized frequencies (here, Instances per Million Words), with no tokens discarded.

Business

LEMMAS	Exakt words/phrases	Normalized Frequency - Instances per Million Words									
		1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	
BUSINESSMAN											
Businessman	x	36.41	83.82	103.66	133.43	143.40	115.15	78.44	42.76	24.43	
x	Business-man	0.13	0	0	0	0	0	0	0	0	
x	Business-men	0	0	0	0	0	0	0	0	0	
Business [man]	x	43.22	8.30	2.20	1.19	1.93	0.59	0.26	0	0	
TOTAL:		79.76	92.12	105.86	134.62	145.33	115.74	78.70	42.76	24.43	
BUSINESSWOMAN											
Businesswoman	x	0.92	0.63	0.58	0.54	0.93	0.88	1.32	1.23	1.87	
x	Business-woman	0	0	0	0	0	0	0	0	0	
x	Business-women	0	0	0	0	0	0	0	0	0	
Business [woman]	x	2.62	0.71	0.39	0.24	0.12	0	0	0.10	0	
TOTAL:		3.54	1.34	0.97	0.78	1.05	0.88	1.32	1.33	1.87	
BUSINESSPERSON											
Businessperson	x	0	0	0	0	0	0	0	0.21	0	
x	Business-person	0	0	0	0	0	0	0	0	0	
Business [person]	x	0	0	0	0	0	0.07	0.09	0	0	
TOTAL:		0	0	0	0	0	0.07	0.09	0.21	0	
BUSINESSPEOPLE											
Businesspeople	x	0	0	0	0	0	0	0.09	0.82	2.18	
x	Business-people	0	0	0	0	0	0	0	0.10	0.16	
Business [people]	x	0.79	0.08	0.19	0.24	0.37	1.32	2.11	0.92	2.02	
TOTAL:		0.79	0.08	0.19	0.24	0.37	1.32	2.20	1.84	4.36	

The table includes the normalized frequencies for the searched phrases, with all alternative spellings. Lemmas searched are found under 'LEMMAS', and exact words found under 'Exact words/phrases'. All numbers are normalized frequencies (here, Instances per Million Words), with no tokens discarded.

Appendix C

Categorisation tables – Absolute Frequencies

POLICE

POLICE OFFICER – SINGULAR USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total:
A	6	10	7	12	14	15	41	37	28	170
B	1	1	0	0	0	1	3	8	6	20
C	5	12	9	17	22	25	41	35	21	187
D	0	0	0	0	0	0	0	0	0	0
Total:	12	23	16	29	36	41	85	80	55	377

The table includes the absolute frequencies for the categorisation of *police officer*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

POLICE OFFICERS – PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	1	1	0	2	3	3	6	10	22	48
B	0	0	0	1	0	1	0	0	0	2
C	14	14	8	18	25	48	103	113	41	384
D	0	1	0	0	0	0	2	2	0	5
Total	15	16	8	21	28	52	111	125	63	439

The table includes the absolute frequencies for the categorisation of *police officers*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

POLICE OFFICER(S) – BOTH SINGULAR AND PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	7	11	7	14	17	18	47	47	50	218
B	1	1	0	1	0	2	3	8	6	22
C	19	26	17	35	47	73	144	148	62	571
D	0	1	0	0	0	0	2	2	0	5
Total	27	39	24	50	64	93	196	205	118	861

The table includes the absolute frequencies for the categorisation of *police officer(s)*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

FIRE

FIRE FIGHTER, FIREFIGHTER AND FIRE-FIGHTER – SINGULAR USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	0	0	3	3	2	6	5	9	16	44
B	0	0	0	0	0	0	0	0	3	3
C	1	0	0	0	0	0	2	1	14	18
D	0	0	0	0	0	0	0	0	0	0
Total	1	0	3	3	2	6	7	10	33	65

The table includes the absolute frequencies for the categorisation of *Fire Fighter*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

FIRE FIGHTERS, FIREFIGHTERS AND FIRE-FIGHTERS – PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	0	4	3	5	0	6	12	5	1	36
B	0	0	0	0	0	0	1	1	0	2
C	2	10	18	13	13	17	78	35	75	261
D	0	0	1	0	0	0	2	0	0	3
Total	2	14	22	18	13	23	93	41	76	302

The table includes the absolute frequencies for the categorisation of *Fire Fighters*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

FIRE FIGHTER(S), FIREFIGHTER(S) AND FIRE-FIGHTER(S) – BOTH SINGULAR AND PLURAL USE

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	0	4	6	8	2	12	17	14	17	80
B	0	0	0	0	0	0	1	1	3	5
C	3	10	18	13	13	17	80	36	89	279
D	0	0	1	0	0	0	2	0	0	3
Total	3	14	25	21	15	29	100	51	109	367

The table includes the absolute frequencies for the categorisation of *Fire Fighter(s)*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

BUSINESS

BUSINESSPERSON AND BUSINESS PERSON – SINGULAR USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	0	0	0	0	0	0	0	1	0	1
B	0	0	0	0	0	1	0	0	0	1
C	0	0	0	0	0	0	1	1	0	2
D	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1	2	0	4

The table includes the absolute frequencies for the categorisation of *Businessperson* and *Business person*. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

BUSINESSPEOPLE, BUSINESS-PEOPLE AND BUSINESS PEOPLE – PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	1	0	1	0	1	0	0	0	1	4
B	0	0	0	0	0	0	0	0	0	0
C	4	1	2	4	2	18	23	18	25	97
D	1	0	0	0	0	0	0	0	2	3
Total	6	1	3	4	3	18	23	18	28	104

The table includes the absolute frequencies for the categorisation of *Businesspeople*, *business-people* and *Business people*. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

BUSINESSPERSON, BUSINESS PERSON, BUSINESSPEOPLE, BUSINESS-PEOPLE AND BUSINESS PEOPLE – BOTH SINGULAR AND PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
A	1	0	1	0	1	0	0	1	1	5
B	0	0	0	0	0	1	0	0	0	1
C	4	1	2	4	2	18	24	19	25	99
D	1	0	0	0	0	0	0	0	2	3
Total	6	1	3	4	3	19	24	20	28	108

The table includes the absolute frequencies for the categorisation of *Businessperson*, *Business person*, *Businesspeople*, *business-people* and *Business people*. The phrases were searched as lemmas, but sorted by words. All numbers are absolute frequencies, with irrelevant tokens discarded.

Appendix D

Categorisation tables – Normalized Frequencies

POLICE

POLICE OFFICER – SINGULAR USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0.79	0.79	0.45	0.72	0.87	1.10	3.61	3.8	4.36
B	0.13	0.08	0.00	0.00	0.00	0.07	0.26	0.82	0.78
C	0.65	0.95	0.58	1.01	1.37	1.84	3.61	3.60	3.27
D	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.57	1.82	1.03	1.73	2.24	3.01	7.48	8.22	8.41

The table includes the Normalized frequencies for the categorisation of *Police Officer*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

POLICE OFFICERS – PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0.13	0.08	0	0.12	0.19	0.22	0.53	1.03	3.42
B	0	0	0	0.06	0	0.07	0	0	0.16
C	1.83	1.11	0.52	1.07	1.55	3.53	9.06	11.61	6.38
D	0	0.08	0	0	0	0	0.18	0.21	0
Total	1.96	1.27	0.52	1.25	1.74	3.82	9.77	12.85	9.96

The table includes the Normalized frequencies for the categorisation of *Police Officers*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

POLICE OFFICER(S) – BOTH SINGULAR AND PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0.92	0.87	0.45	0.83	1.06	1.32	4.13	4.83	7.78
B	0.13	0.08	0	0.06	0	0.15	0.26	0.82	0.78
C	2.49	2.05	1.10	2.08	2.92	5.37	12.66	15.20	9.65
D	0	0.08	0	0	0	0	0.18	0.21	0
Total:	3.54	3.08	1.55	2.97	3.98	6.84	17.23	21.06	18.21

The table includes the Normalized frequencies for the categorisation of *Police Officer(s)*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

FIRE

FIRE FIGHTER, FIREFIGHTER AND FIRE-FIGHTER – SINGULAR USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0	0	0.19	0.18	0.12	0.44	0.44	0.92	2.49
B	0	0	0	0	0	0	0	0	0.47
C	0.13	0	0	0	0	0	0.18	0.10	2.18
D	0	0	0	0	0	0	0	0	0
Total	0.13	0	0.19	0.18	0.12	0.44	0.62	1.02	5.14

The table includes the Normalized frequencies for the categorisation of *Fire Fighter*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

FIRE FIGHTERS, FIREFIGHTERS AND FIRE-FIGHTERS – PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0	0.32	0.19	0.30	0	0.44	1.06	0.51	0.16
B	0	0	0	0	0	0	0.09	0.10	0
C	0.26	0.79	1.16	0.77	0.81	1.25	6.86	3.60	11.67
D	0	0	0.07	0	0	0	0.18	0	0
Total	0.26	1.11	1.42	1.07	0.81	1.69	8.19	4.21	11.83

The table includes the Normalized frequencies for the categorisation of *Fire Fighters*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

FIRE FIGHTER(S), FIREFIGHTER(S) AND FIRE-FIGHTER(S) – BOTH SINGULAR AND PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0	0.32	0.39	0.48	0.12	0.88	1.50	1.44	2.65
B	0	0	0	0	0	0	0.09	0.10	0.47
C	0.39	0.79	1.16	0.77	0.81	1.25	7.04	3.70	13.85
D	0	0	0.07	0	0	0	0.18	0	0
Total	0.39	1.11	1.62	1.25	0.93	2.13	8.81	5.24	16.97

The table includes the Normalized frequencies for the categorisation of *Fire Fighter(s)*, including alternative spellings. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

BUSINESS

BUSINESSPERSON AND BUSINESS PERSON – SINGULAR USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0	0	0	0	0	0	0	0.10	0
B	0	0	0	0	0	0.07	0	0	0
C	0	0	0	0	0	0	0.09	0.10	0
D	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0.07	0.09	0.20	0

The table includes the Normalized frequencies for the categorisation of *businessperson* and *business person*. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

BUSINESSPEOPLE, BUSINESS-PEOPLE AND BUSINESS PEOPLE – PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0.13	0	0.06	0	0.06	0	0	0	0.16
B	0	0	0	0	0	0	0	0	0
C	0.52	0.08	0.13	0.24	0.12	1.32	2.02	1.85	3.89
D	0.13	0	0	0	0	0	0	0	0.31
Total	0.78	0.08	0.19	0.24	0.18	1.32	2.02	1.85	4.36

The table includes the Normalized frequencies for the categorisation of *businesspeople*, *business-people* and *business people*. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

BUSINESSPERSON, BUSINESS PERSON, BUSINESSPEOPLE, BUSINESS-PEOPLE AND BUSINESS PEOPLE – BOTH SINGULAR AND PLURAL USES

Categories	1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s
A	0.13	0	0.06	0	0.06	0	0	0.10	0.16
B	0	0	0	0	0	0.07	0	0	0
C	0.52	0.08	0.13	0.24	0.12	1.32	2.11	1.95	3.89
D	0.13	0	0	0	0	0	0	0	0.31
Total	0.78	0.08	0.19	0.24	0.18	1.39	2.11	2.05	4.36

The table includes the Normalized frequencies for the categorisation of *businessperson*, *business person*, *businesspeople*, *business-people* and *business people*. The phrases were searched as lemmas, but sorted by words. All numbers are normalized frequencies (Instances per Million Words), with irrelevant tokens discarded.

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