mcpp_taller9_Laura_Becerra

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1 Taller 9

Métodos Computacionales para Políticas Públicas - URosario

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1.1 Instrucciones:

- Guarde una copia de este *Jupyter Notebook* en su computador, idealmente en una carpeta destinada al material del curso.
- Modifique el nombre del archivo del *notebook*, agregando al final un guión inferior y su nombre y apellido, separados estos últimos por otro guión inferior. Por ejemplo, mi *notebook* se llamaría: mcpp_taller9_santiago_matallana
- Marque el *notebook* con su nombre y e-mail en el bloque verde arriba. Reemplace el texto "[Su nombre acá]" con su nombre y apellido. Similar para su e-mail.
- Desarrolle la totalidad del taller sobre este *notebook*, insertando las celdas que sea necesario debajo de cada pregunta. Haga buen uso de las celdas para código y de las celdas tipo *markdown* según el caso.
- Recuerde salvar periódicamente sus avances.
- Cuando termine el taller:

  1. Descárguelo en PDF. Si tiene algún problema con la conversión, descárguelo en HTML.
  2. Suba todos los archivos a su repositorio en GitHub, en una carpeta destinada exclusivamente para este taller, antes de la fecha y hora límites.

NLTK Book (http://www.nltk.org/book/), Exercises: - Chapter 1: 22, 26, 28 - Chapter 2: 2, 4, 11

```
In [5]: import nltk
        from nltk.book import *
        import matplotlib.pyplot as plt
        %matplotlib inline
```

```
*** Introductory Examples for the NLTK Book ***
Loading text1, ..., text9 and sent1, ..., sent9
Type the name of the text or sentence to view it.
```

```
Type: 'texts()' or 'sents()' to list the materials.
text1: Moby Dick by Herman Melville 1851
text2: Sense and Sensibility by Jane Austen 1811
text3: The Book of Genesis
text4: Inaugural Address Corpus
text5: Chat Corpus
text6: Monty Python and the Holy Grail
text7: Wall Street Journal
text8: Personals Corpus
text9: The Man Who Was Thursday by G . K . Chesterton 1908
```

1.2 Language Processing and Python

2. Find all the four-letter words in the Chat Corpus (text5). With the help of a frequency distribution (FreqDist), show these words in decreasing order of frequency.

```
In [6]: punto2 = sorted([w.lower() for w in text5 if len(w) is 4 if w.isalpha()])

In [7]: fdist2 = FreqDist(punto2)
        fdist2.most_common()

Out[7]: [('part', 1022),
         ('join', 1021),
         ('that', 284),
         ('what', 201),
         ('here', 185),
         ('have', 171),
         ('like', 160),
         ('with', 154),
         ('chat', 146),
         ('your', 142),
         ('good', 132),
         ('lmao', 128),
         ('just', 128),
         ('know', 104),
         ('room', 103),
         ('this', 98),
         ('from', 96),
         ('well', 91),
         ('hiya', 85),
         ('yeah', 85),
         ('they', 84),
         ('back', 79),
         ('dont', 77),
         ('want', 71),
         ('love', 63),
         ('guys', 59),
         ('some', 59),
```

```
('been', 58),
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('nice', 54),
('time', 52),
('haha', 46),
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('then', 41),
('much', 40),
('over', 40),
('were', 39),
('does', 38),
('work', 38),
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('seen', 36),
('come', 36),
('damn', 36),
('only', 36),
('more', 35),
('nick', 33),
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('tell', 29),
('hell', 29),
('last', 29),
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('said', 23),
('life', 22),
```

```
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('else', 14),
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('than', 12),
```

```
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('http', 1),
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('sext', 1)]
```

26. What does the following Python code do? sum(len(w) for w in text1) Can you use it to work out the average word length of a text

```
In [8]: (sum([len(w) for w in text1])) / len(text1)

Out[8]: 3.830411128023649
```

28. Define a function percent(word, text) that calculates how often a given word occurs in a text, and expresses the result as a percentage.

```
In [9]: def percent(word, text):
            return "{:.2%}".format(text.count(word) / len(text4))

In [10]: percent('part', text4)

Out[10]: '0.07%'
```

1.3 Accessing Text Corpora and Lexical Resources

2. Use the corpus module to explore austen-persuasion.txt. How many word tokens does this book have? How many word types?

```
In [11]: p2 = nltk.corpus.gutenberg.words('austen-persuasion.txt')

In [12]: len(p2)

Out[12]: 98171

In [13]: len(set(p2))

Out[13]: 6132
```

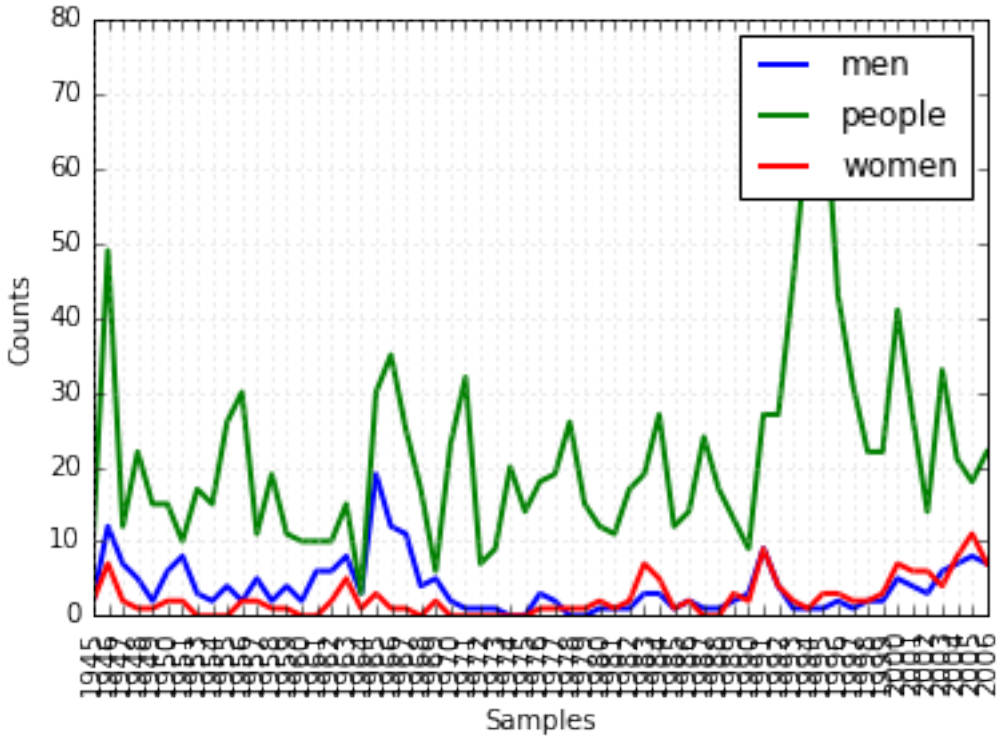
4. Read in the texts of the State of the Union addresses, using the state_union corpus reader. Count occurrences of men, women, and people in each document. What has happened to the usage of these words over time?

```
In [14]: from nltk.corpus import state_union

In [15]: cfd = nltk.ConditionalFreqDist((target, fileid[:4])
                                        for fileid in state_union.fileids()
                                        for w in state_union.words(fileid)
                                        for target in ['men', 'women', 'people']
                                        if w.lower() == target)
         cfd.tabulate()
```

```
        1945 1946 1947 1948 1949 1950 1951 1953 1954 1955 1956 1957 1958 1959 1960 1
   men     2   12    7    5    2    6    8    3    2    4    2    5    2    4    2
people    10   49   12   22   15   15   10   17   15   26   30   11   19   11   10
 women     2    7    2    1    1    2    2    0    0    0    2    2    1    1    0
```

```
In [16]: cfd.plot()
```



6. In the discussion of comparative wordlists, we created an object called translate which you could look up using words in both German and Italian in order to get corresponding words in English. What problem might arise with this approach? Can you suggest a way to avoid this problem?

```
In [17]: from nltk.corpus import swadesh
         de2en = swadesh.entries(['de', 'en'])
         it2en = swadesh.entries(['it', 'en'])
         translate2 = dict(de2en)
         translate2.update(dict(it2en))
         len(translate2)
```

```
Out[17]: 411
```

```
In [18]: translate2['bianco']
```

```
Out[18]: 'white'

In [19]: translate2['Hund']

Out[19]: 'dog'
```
