A Comparative Analysis of Impressed by and Impressed With in Two Corpora

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Abstract—The main purpose of this paper is to demonstrate that impressed by and impressed with are low similarity synonyms. A major point to note is that impressed by and impressed with show different patterns in all genres of the COCA (10, December 2021. Online https://corpus.byu.edu/coca). It is interesting to note that impressed by and impressed with show the same pattern in the misc. genre of the BNC (10, December 2021. Online https://corpus.byu.edu/bnc), but they show a different pattern in six genres. It is significant that impressed by and impressed with show a high degree of similarity in the misc. genre, but do not show it in the academic genre. The COCA (10, December 2021. Online https://corpus.byu.edu/coca) shows that only 13.63% of forty-four nouns are collocations of both impressed by and impressed with. Similarly, the BNC (10, December 2021. Online https://corpus.byu.edu/bnc) indicates that impressed by Mr. and impressed by arguments are the most frequently used types in the UK. The BNC (10, December 2021. Online https://corpus.byu.edu/bnc) further shows that impressed with home and impressed with Mr. are the most preferred collocations in the UK. Finally, the BNC (10, December 2021. Online https://corpus.byu.edu/bnc) shows that only 2.5% of forty nouns are the collocation of both impressed by and impressed with.

Index Terms—BNC, COCA, impressed by, impressed with

I. INTRODUCTION

As Murphy (2016, 2019) points out, impressed by and impressed with are used synonymously:

1. Impressed with/impressed by something/somebody

I am very impressed with (or) by her English. (Murphy 2019, p.260)

As argued by Kang (2021), the Corpus of Contemporary American English and the British National Corpus are representative corpora that are used heavily in English learning. The main goal of this paper is to demonstrate that impressed by and impressed with are low similarity synonyms in the two corpora. As a tool to achieve this goal, we adopt the COCA (10, December 2021. Online https://corpus.byu.edu/coca) and BNC (10, December 2021. Online https://corpus.byu.edu/bnc). First, we consider the extent to which impressed by and impressed with are co-related with each other in the COCA (10, December 2021. Online https://corpus.byu.edu/coca) and BNC (10, December 2021. Online https://corpus.byu.edu/bnc). Second, we observe which type is the preferred one for Americans and for British speakers. Third, we investigate similarities between impressed by and impressed with in terms of the Euclidean distance. Finally, we investigate the collocations of impressed by and impressed with, and look into similarities between both types using the NetMiner software package. This paper is organized as follows. In section II, we show that impressed by and impressed with display different patterns in eight genres. In section II, we argue that impressed by is the furthest type from impressed with in the blog genre, whereas impressed by is the nearest to impressed with in the newspaper genre. In section III, we maintain that impressed by and impressed with show the same pattern in the misc. genre, but show a different pattern in six other genres. In section III, we maintain that impressed by and impressed with show a low degree of similarity in the academic genre, but show a high degree of similarity in the misc. genre. In section IV, we contend that impressed by Mr. and impressed with Mr. are the most preferred types in America. In addition to this, we show that in the COCA (10, December 2021. Online https://corpus.byu.edu/coca), 13.63% are collocations of both impressed by and impressed with. In section V, we argue that impressed by Mr. and impressed by arguments are the most frequently used types in the UK. We further argue that impressed with home and impressed with Mr. are the most preferred types in the UK. Finally, we show that in the BNC (10, December 2021. Online https://corpus.byu.edu/bnc), 2.5% are the collocations of both impressed by and impressed with.

II. A COMPARATIVE ANALYSIS OF IMPRESSED BY AND IMPRESSED WITH IN THE COCA

A. The Frequency of Impressed by and Impressed with in the COCA

In this section, we aim to compare impressed by and impressed with in eight genres. Table 1 shows the frequency of impressed by and impressed with in the COCA (10, December 2021. Online https://corpus.byu.edu/coca):
Table 1 clearly indicates that impressed with is widely preferred over impressed by by Americans. The overall frequency of impressed with is 4,669 tokens, whereas that of impressed by is 3,885 tokens. This in turn suggests that Americans prefer using impressed with rather than impressed by. It is thus reasonable to hypothesize that impressed with is favored over impressed by in America. Table 1 clearly shows that impressed by is the most commonly used in the magazine genre, whereas impressed with is the most widely used in the blog genre. An interesting feature of impressed by and impressed with is that they show different rankings in the magazine and blog genres. It must be noted, however, that the frequency of impressed by is much higher than that of impressed with in the magazine genre. This in turn shows that impressed by is preferred over impressed with by American journalists. Conversely, the frequency of impressed with is much higher than that of impressed by in the blog genre. This indicates that impressed with is preferable to impressed by in the blog genre.

It would be worth mentioning that impressed by is the second most widely used type in the blog genre, whereas impressed with is the second most widely used type in the web genre. Thus, they do not show the same features in their ranking in the blog and web genres, thus showing no similarity in these genres. It should be pointed out that impressed with is used more frequently than impressed by in the web genre. This amounts to saying that impressed with is preferable to impressed by in the web genre.

It is worthwhile pointing out that impressed by is the third most widely used type in the fiction genre, whereas impressed with is the third most widely used type in the newspaper genre. Thus, they do not show the same features in their ranking in the fiction and newspaper genres, thus showing a low degree of similarity in two genres. It is important to note that impressed by is used more frequently than impressed with in the fiction genre. Simply put, impressed by is widely preferred over impressed with by American writers. It is also worth noting that impressed with is used more widely than impressed by in the newspaper genre. This in turn suggests that American journalists favor impressed with over impressed by in their articles.

It is interesting to note that impressed by is the fourth most widely used type in the web genre, whereas impressed with is the fourth most widely used type in the magazine genre. Again, they both show a rather different feature in their ranking in the web and magazine genres, thus implying that both types are low similarity synonyms.

It is significant to note that impressed by is the fifth most widely used type in the newspaper genre, whereas impressed with is the fifth most widely used type in the spoken genre. Again, both types do not show the same features in their ranking in the newspaper genre and the spoken genre. It is important to point out that impressed with is used more commonly than impressed by in the spoken genre. We take this as indicating that Americans favor impressed with over impressed by in daily conversation.

It is interesting to note that impressed by is the sixth most widely used type in the spoken genre, whereas impressed with is the sixth most widely used type in the TV/movie genre. Again, both types have a different feature in their ranking in the spoken genre and the TV/movie genre, thus implying that both are low similarity synonyms. Additionally, it must be pointed out that impressed with is used more widely than impressed by in the TV/movie genre. This in turn shows that American celebrities prefer using impressed with rather than using impressed by.

It is worthwhile noting that impressed by is the seventh most widely used type in the academic genre, whereas impressed with is the seventh most widely used type in the fiction genre. Again, both types have a rather different feature on their ranking in the academic genre and the fiction genre. This in turn indicates that they both show a low degree of similarity in two genres. It should be pointed out that impressed by is used more widely than impressed with in the academic genre. This indicates that impressed by is widely preferred over impressed with in the academic genre.

Finally, impressed by is the eighth most widely used type in the TV/movie genre, whereas impressed with is the eighth most widely used type in the academic genre. Again, both types do not have the same feature in their ranking, indicating that they both show a low degree of similarity in two genres. To sum up, impressed by and impressed with show different patterns in all genres, which in turn implies that they both are low similarity synonyms.

Now let us turn to the use of impressed by and impressed with in eight genres:

Table 1

| GENRE       | ALL | BLOG | WEB | TV/MOVIE | SPOKEN | FICTION | MAGAZINE | NEWS | ACADEMIC |
|-------------|-----|------|-----|----------|--------|---------|----------|------|----------|
| impressed by| 3,885 | 606  | 541 | 227      | 367   | 551     | 710      | 528  | 355      |
| impressed with| 4,669 | 943  | 781 | 427      | 550   | 341     | 672      | 737  | 218      |
It is important to note that the magazine genre is the most influenced by *impressed by*, followed in descending order by the blog genre, the fiction genre, the web genre, the newspaper genre, the spoken genre, the academic genre, and the TV/movie genre.

It is significant to note that the blog genre is the most influenced by *impressed with*, followed in descending order by the web genre, the newspaper genre, the magazine genre, the spoken genre, the TV/movie genre, the fiction genre, and the academic genre.

**B. The Euclidean Distance**

In this section, we aim to consider similarities between *impressed by* and *impressed with* in eight genres. We adopt the following Euclidean distance:

\[ d(p, q) = \sqrt{\sum_{i=1}^{n} (p_i - q_i)^2} \]

Note that a lower figure indicates greater similarity.
Interestingly, *impressed by* is the furthest type from *impressed with* in the blog genre. It is interesting to point out, on the other hand, that *impressed by* is the nearest to *impressed with* in the newspaper genre. More specifically, the figure of the Euclidean distance in the newspaper genre is 2.19, which is the lowest. That is to say, they show a high degree of similarity in the newspaper genre. Additionally, the figure in the spoken genre is 2.33, which is the second lowest. This in turn implies that both types show close similarities in the spoken genre. We thus conclude that the Euclidean distance provides a similarity index regarding the extent to which both types are co-related with each other.

### III. A COMPARATIVE ANALYSIS OF IMPRESSED BY AND IMPRESSED WITH IN THE BNC

**A. The Frequency of Impressed by and Impressed with in the BNC**

In this section, we provide the genre frequency of *impressed by* and *impressed with* in the BNC (10 December 2021. Online https://corpus.byu.edu/bnc). Table 3 shows the frequency of *impressed by* and *impressed with* in seven genres:

| GENRE      | ALL | SPOKEN | FICTION | MAGAZINE | NEWSPAPER | NON-ACADEMIC | ACADEMIC | MISC. |
|------------|-----|--------|---------|----------|-----------|---------------|----------|-------|
| Impressed by| 749 | 30     | 110     | 80       | 110       | 112           | 84       | 223   |
| Impressed with| 377 | 44     | 39      | 56       | 69        | 43            | 23       | 103   |

Table 3 clearly shows that *impressed by* is used more frequently than *impressed with* in the UK. More specifically, the overall frequency of *impressed by* is 749 tokens, whereas that of *impressed with* is 377 tokens. This in turn suggests that *impressed by* is preferable to *impressed with* in the UK. It is thus reasonable to hypothesize that the British prefer using *impressed by* rather than using *impressed with*.

It is important to note that *impressed by* and *impressed with* are the most preferred types in the misc. genre. They both have the same features on their ranking in the misc. genre, thus showing a high degree of similarity in the misc. genre. It should be noted, however, that the British favor *impressed by* over *impressed with* in the misc. genre.

It is worthwhile pointing out that *impressed by* is the second most widely used type in the non-academic genre, whereas *impressed with* is the second most widely used type in the newspaper genre. Thus, they both show a rather different feature in terms of their ranking in the non-academic genre and the newspaper genre, hence a low degree of similarity in two genres. It should be pointed out that *impressed by* is favored over *impressed with* in the non-academic genre and the newspaper genre. This in turn implies that the British public as well as British journalists prefer using *impressed by* rather than using *impressed with*.

It is noteworthy that *impressed by* is the third most widely used type in the fiction and newspaper genres, whereas *impressed with* is the third most widely used type in the magazine genre. Again, both types show a different feature when it comes to their ranking in the fiction, newspaper, and magazine genres, thus showing a low degree of similarity in three genres. It must be noted that *impressed by* is preferable to *impressed with* in the fiction genre. This in turn shows that British writers prefer using *impressed by* rather than *impressed with*. Likewise, *impressed by* is favored over *impressed with* in the magazine genre. This comes from the fact that *impressed by* is used more frequently than *impressed with* in the magazine genre.

It is worth pointing out that *impressed with* is the fourth most widely used type in the spoken genre, but there is no rank-four in the case of *impressed by*. Thus, both types show a different feature in their ranking, thus showing no high similarity. It must be pointed out that *impressed with* is used more frequently than *impressed by* in the spoken genre. This in turn implies that the British prefer using *impressed with* rather than *impressed by* in daily conversation.

It is interesting to point out that *impressed by* is the fifth most widely used type in the academic genre, whereas *impressed with* is the fifth most widely used type in the non-academic genre. Again, the two types do not have the same features in their ranking in the academic and non-academic genres, thus implying that they are low similarity synonyms. It should be pointed out, on the other hand, that *impressed by* is preferable to *impressed with* in the academic genre.

It is interesting to note that *impressed by* is the sixth most widely used type in the magazine genre, whereas *impressed with* is the sixth most widely used type in the fiction genre. Again, both types show a different feature in terms of their ranking in two genres, thus showing a low degree of similarity.

Finally, it is worth noting that *impressed by* is the seventh most widely used type in the spoken genre, whereas *impressed with* is the seventh most widely used type in the academic genre. Again, they both show a rather different feature...
feature in their ranking in two genres, hence a low degree of similarity in two genres. To sum up, impressed by and impressed with show the same pattern in the misc. genre, but a different pattern in the other genres.

Now, let us turn to the use of impressed by and impressed with in seven genres:

![Figure 3. Use of Impressed by in Seven Genres](image)

It is worth noting that the misc. genre is the most influenced by impressed by, followed in descending order by the non-academic genre, the newspaper genre (the fiction genre), the academic genre, the magazine genre, and the spoken genre.

![Figure 4. Use of Impressed With in Seven Genres](image)

It is worth pointing out that the misc. genre is the most influenced by impressed with, followed by the newspaper genre, the magazine genre, the spoken genre, the non-academic genre, the fiction genre, and the academic genre, in that order.

B. The Euclidean Distance

In this section, we examine similarities between impressed by and impressed with in seven genres. Note that a lower figure indicates more similarity:
It is interesting to point out that impressed by is the furthest type from impressed with in the spoken genre. It is also interesting to note, on the other hand, that impressed by is the closest type from impressed with in the misc. genre. More specifically, the Euclidean distance in the misc. genre is 2.45, which is the lowest. This in turn implies that impressed by and impressed with show a high degree of similarity in the misc. genre. Interestingly, the Euclidean distance in the non-academic genre is 3.55, which is the second-lowest. This in turn suggests that both types show close similarities. On the other hand, the Euclidean distance in the academic genre is 5.11, which is the second-highest. This in turn shows that both types show a low degree of similarity in the academic genre. We thus conclude that impressed by is the nearest to impressed with in the misc. genre.

IV. A COLLOCATION ANALYSIS OF IMPRESSED BY AND IMPRESSED WITH IN THE COCA

In this section, we compare the frequency of impressed by and impressed with in the COCA (10, December 2021. Online https://corpus.byu.edu/coca). We examine similarities between impressed by and impressed with. Table 5 shows the frequency of the collocations of impressed by and impressed with in the COCA (10, December 2021. Online https://corpus.byu.edu/coca):

| Number | Collocation of impressed by | Frequency | Collocation of impressed with | Frequency |
|--------|----------------------------|-----------|-------------------------------|-----------|
| 1      | Impressed by Mr.           | 9         | Impressed with Mr.            | 14        |
| 2      | Impressed by people        | 8         | Impressed with people         | 11        |
| 3      | Impressed by Ms.           | 3         | Impressed with Dr.            | 5         |
| 4      | Impressed by deacon        | 3         | Impressed with president      | 4         |
| 5      | Impressed by power         | 3         | Impressed with arguments      | 2         |
| 6      | Impressed by president     | 3         | Impressed with Apple          | 2         |
| 7      | Impressed by things        | 3         | Impressed with CFW            | 2         |
| 8      | Impressed by celebrities   | 2         | Impressed with money          | 2         |
| 9      | Impressed by argumentum    | 2         | Impressed with coach          | 2         |
| 10     | Impressed by arguments     | 2         | Impressed with evidence       | 2         |
| 11     | Impressed by coincidences  | 2         | Impressed with GOV            | 2         |
| 12     | Impressed by money         | 2         | Impressed with athletes       | 2         |
| 13     | Impressed by evidence      | 2         | Impressed with students       | 2         |
| 14     | Impressed by designer      | 2         | Impressed with premier        | 1         |
| 15     | Impressed by design        | 2         | Impressed with portfolios     | 1         |
| 16     | Impressed by father        | 2         | Impressed with performances   | 1         |
| 17     | Impressed by nature        | 2         | Impressed with artillery      | 1         |
| 18     | Impressed by quality       | 2         | Impressed with frame          | 1         |
| 19     | Impressed by Trump         | 2         | Impressed with flair          | 1         |
| 20     | Impressed by work          | 2         | Impressed with firms          | 1         |
| 21     | Impressed by outliers      | 1         | Impressed with films          | 1         |
| 22     | Impressed by number        | 1         | Impressed with fight          | 1         |
| 23     | Impressed by novels        | 1         | Impressed with pass           | 1         |
| 24     | Impressed by neoconservatives | 1    | Impressed with parenthood     | 1         |
| 25     | Impressed by mystery       | 1         | Impressed with paradise       | 1         |

It is significant to note that impressed by Mr. is the most frequently used type in America (9 tokens). This in turn suggests that impressed by Mr. is the most preferred type in America. As illustrated in Table 5, impressed by Mr. is the most preferred by Americans, followed in descending order by impressed by people, impressed by Ms., impressed by deacon, impressed by power, impressed by president, and impressed by things. It is interesting to point out that impressed by people is the second most widely used type in America. It is also interesting to note that impressed by celebrities is the third most widely used type in America. The COCA (10, December 2021. Online https://corpus.byu.edu/coca) shows, on the other hand, that impressed with Mr. is the most widely used type in America. This in turn indicates that impressed with Mr. is the most preferred type in America. As alluded to in Table 5, impressed with Mr. is the most preferred by Americans, followed in descending order by impressed with people, impressed with Dr., impressed with president, impressed with arguments, and impressed with Apple. Most importantly, impressed by Mr. and impressed with Mr. are the most preferred types in America. It is worth pointing out that impressed by people and impressed with people are the second most widely used types in America. On the other hand, impressed by evidence is the eighth most widely used type in America, whereas impressed with evidence is the fifth most widely used type.
Finally, *impressed by arguments* is the eighth most widely used type in America, whereas *impressed with arguments* is the fifth most widely used type.

Now, let us pay attention to the similarities between *impressed by* and *impressed with*. Figure 5 shows the visualization of *impressed by* and *impressed with* in the COCA (10, December 2021. Online https://corpus.byu.edu/coca):

![Figure 5. Visualization of Impressed by and Impressed With](image)

As indicated in Figure 5, forty-four nouns are linked to the types *impressed by* and *impressed with*, respectively. To be more specific, six of forty-four nouns are linked to both *impressed by* and *impressed with*, whereas the other nouns are not. The six nouns linked to both are *evidence*, *president*, *Mr.*, *arguments*, *money*, and *people*, and these nouns are the collocations of both *impressed by* and *impressed with*. Simply put, 13.63% are the collocations of both *impressed by* and *impressed with*. It can thus be inferred that *impressed by* and *impressed with* are low similarity synonyms.

**V. A COLLOCATION ANALYSIS OF IMPRESSED BY AND IMPRESSED WITH IN THE BNC**

In this section, we examine the collocations of *impressed by* and *impressed with* in the BNC (10, December 2021. Online https://corpus.byu.edu/bnc). We investigate similarities between *impressed by* and *impressed with* in the BNC (10, December 2021. Online https://corpus.byu.edu/bnc):
Table 6

| Number | Collocation of impressed by | Frequency | Collocation of impressed with | Frequency |
|--------|-----------------------------|-----------|------------------------------|-----------|
| 1      | Impressed by Mr.           | 2         | Impressed with home         | 2         |
| 2      | Impressed by arguments     | 2         | Impressed with Mr.          | 2         |
| 3      | Impressed by aggression    | 1         | Impressed with Miss         | 1         |
| 4      | Impressed by accounts      | 1         | Impressed with stars        | 1         |
| 5      | Impressed by writers       | 1         | Impressed with Sir          | 1         |
| 6      | Impressed by waterfalls    | 1         | Impressed with recognition  | 1         |
| 7      | Impressed by unity         | 1         | Impressed with proprietor   | 1         |
| 8      | Impressed by staffing      | 1         | Impressed with obscurity    | 1         |
| 9      | Impressed by senator       | 1         | Impressed with hell         | 1         |
| 10     | Impressed by results       | 1         | Impressed with goalkeeper   | 1         |
| 11     | Impressed by professor     | 1         | Impressed with discounts    | 1         |
| 12     | Impressed by politicians   | 1         | Impressed with considerations| 1         |
| 13     | Impressed by policemen     | 1         | Impressed with club         | 1         |
| 14     | Impressed by plumes        | 1         | Impressed with chairman     | 1         |
| 15     | Impressed by pictures      | 1         | Impressed with book         | 1         |
| 16     | Impressed by people        | 1         | Impressed with admiration   | 1         |
| 17     | Impressed by Mr.          | 1         |
| 18     | Impressed by Lovat        | 1         |
| 19     | Impressed by king         | 1         |
| 20     | Impressed by Italian      | 1         |
| 21     | Impressed by humanity     | 1         |
| 22     | Impressed by horses       | 1         |
| 23     | Impressed by high-powered | 1         |
| 24     | Impressed by gaff         | 1         |
| 25     | Impressed by grandeur     | 1         |

Table 6 clearly indicates that *impressed by Mr.* and *impressed by arguments* are the most frequently used types in the UK. This in turn shows that they are the most preferred types in the UK. It is noteworthy that *impressed by senator* is the third most widely used type in the UK. It is also worth noting that *impressed by politicians* is the third most widely used type in the UK. It is interesting to point out, on the other hand, that *impressed with home* and *impressed with Mr.* are the most preferred types in the UK. More importantly, *impressed by Mr.* is the third most widely used type in the UK, whereas *impressed with Mr.* is the most preferred type in the UK.

Now, let us consider similarities between *impressed by* and *impressed with* in the BNC (10, December 2021. Online https://corpus.byu.edu/bnc):

Figure 6. Visualization of Impressed by and Impressed With in the BNC

Figure 6 shows that forty nouns are linked to *impressed by* and *impressed with*, respectively. Most importantly, one of forty nouns is linked to both *impressed by* and *impressed with* in the BNC (10, December 2021. Online https://corpus.byu.edu/bnc). Only the noun *Mr.* is the collocation of both *impressed by* and *impressed with*. That is to say, only 2.5% are the collocation of both *impressed by* and *impressed with*. From all of this, it can be inferred that *impressed by* and *impressed with* are low similarity synonyms.
VI. CONCLUSION

To sum up, we have demonstrated that impressed by and impressed with are low similarity synonyms. In section II, we have shown that impressed by and impressed with show different patterns in eight genres. We have also argued that impressed by is the furthest type from impressed with in the newspaper genre. In section III, we have maintained that impressed by and impressed with show the same pattern in the misc. genre, but show a different pattern in six other genres. In section III, we have also maintained that impressed by and impressed with show a low degree of similarity in the academic genre, but show a high degree of similarity in the misc. genre. In section IV, we have contended that impressed by Mr. and impressed with Mr. are the most preferred types in America. In addition to this, we have shown that in the COCA (10, December 2021. Online https://corpus.byu.edu/coca), 13.63% are the collocations of both impressed by and impressed with. In section V, we have argued that impressed by Mr. and impressed by arguments are the most frequently used types in the UK. We have further argued that impressed with home and impressed with Mr. are the most preferred types in the UK. Finally, we have shown that in the BNC (10, December 2021. Online https://corpus.byu.edu/bnc), 2.5% are the collocation of both impressed by and impressed with.

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