

ANGRY AT AND ANGRY WITH IN THE COCA AND CHATGPT

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The ultimate goal of this paper to compare *angry at* and *angry with* in the COCA and ChatGPT. For this goal, we did several tests to see how close they are. A point to note is that *angry at* patterns with *angry with* in one genre, whereas they do not exhibit the same pattern in seven genres. Put differently, *angry at* is 12.5% the same as *angry with* in the genre analysis. A further point to note is that *angry at* and *angry with* both show the massive use in the spoken genre and the TV/movie and fiction genres. A major point of this paper is that the average frequency of *angry at* is 545 and the standard deviation of the use of *angry at* is 279, whereas the average frequency of *angry with* is 346 and the standard deviation of the use of *angry with* is 194. This leads us to assume that *angry at* and *angry with* have a low degree of similarity. When it comes to the collocation analysis of the COCA, 10 of 54 expressions are the collocations of both *angry at* and *angry with* in the top 32. This amounts saying that *angry at* is 18.51% the same as *angry with* in the collocation analysis. This paper shows, on the other hand that *angry at bosses* and *angry with behavior* was the first recommendation of the ChatGPT. However, there are no collocations that belong to both *angry at* and *angry with*. Finally, this paper argues that the COCA and ChatGPT do not have a commonality in that no collocations overlap in the COCA and ChatGPT (in the collocation analysis of the top 32).

Keywords: angry at, angry with, COCA, ChatGPT, token, type, standard deviation, genre

1. Introduction

The main purpose of this paper is to compare *angry at* and *angry with* in the COCA (Corpus of Contemporary American English) and ChatGPT. More specifically, we attempt to do several tests and compare *angry at* and *angry with* in the COCA and ChatGPT. Simply put, we aim to investigate the similarity between two types (*angry at* and *angry with*). First, we look into *angry at* and *angry with* in each genre of the COCA where the ranking of two types is examined. This analysis enables us to see how close they are. Second, we aim at considering the massive use of *angry at* and *angry with* in the COCA. We answer the following question: In which genre(s) are *angry at* and *angry with* greatly used? Third, we attempt to compare *angry at* and *angry with* by examining their average use. Fourth, we aim at inquiring into the standard deviation of the use of *angry at* and *angry with*, which tells us about the similarity between them. Fifth, we aim to examine the collocations of *angry at* and *angry with* in the COCA and ChatGPT. In the COCA and ChatGPT, we examine the similarity between these two types and see how similar they are. Also, we compare the collocations of *angry at* and *angry with* in the COCA and those of *angry at* and *angry with* in the ChatGPT. Finally, we attempt to capture the similarity between *angry at* and *angry with* in the COCA and ChatGPT in terms of the software package NetMiner.

2. The COCA

2.1. Eight genres

In this section, we aim to investigate how close *angry at* and *angry with* are in eight genres. Table 1 shows the use of *angry at* and *angry with* in eight genres:

Table 1 Use of angry at and angry with in the COCA

GENRE	All	BLOG	WEB	TV/M	SPOK	FIC	MAG	NEWS	ACAD
Angry at	4,365	549	478	676	1,068	796	319	362	117
Angry with	2,769	265	336	617	423	663	189	182	94

It is interesting to note that the overall frequency of *angry at* is 4,365 tokens, while that of *angry with* is 2,769 tokens. This in turn implies that *angry at* (4,365 tokens) is preferred over *angry with* (2,769 tokens) by Americans. It is worthwhile noting that *angry at* ranks first (1,068 tokens) in the spoken genre, while *angry with* ranks first (663 tokens) in the fiction genre. There is no similarity between *angry at* and *angry with* in rank-one. Quite interestingly, in the spoken genre, the use of *angry at* is by far higher (1,068 tokens) than that of *angry with* (423 tokens). Given the circumstances, it seems pretty clear that Americans prefer using *angry at* (1,068 tokens) to using *angry with* (423 tokens) in daily conversation. It is also worth mentioning that in the fiction genre, the use of *angry at* is slightly higher (796 tokens) than that of *angry with* (663 tokens). We presume it fair to infer that American writers like using both of *angry at* (796 tokens) and *angry with* (663 tokens) in their novels.

It is interesting to observe that *angry at* ranks second (796 tokens) in the fiction genre, while *angry with* ranks second (617 tokens) in the TV/movie genre. The type *angry at* does not pattern with the type *angry with* in rank-two, thus indicating no similarity. It must also be pointed out that in the TV/movie genre, the use of *angry at* is slightly higher (676 tokens) than that of *angry with* (617 tokens). This seems to imply that American celebs use *angry at* and *angry with* equally in the TV/movie genre.

It is worth observing that *angry at* ranks third (676 tokens) in the TV/movie genre, while *angry with* ranks third (423 tokens) in the spoken genre. Again, there is a difference between *angry at* and *angry with* in rank-three, hence no similarity.

It is noteworthy that *angry at* ranks fourth (549 tokens) in the blog genre, while *angry with* ranks fourth (336 tokens) in the web genre. Again, the type *angry at* does not pattern with the type *angry with* in rank-four, hence showing no similarity. Note that in the blog genre, *angry at* is still higher (549 tokens) than that of *angry with* (265 tokens). This could imply that American bloggers prefer to use *angry at* (549 tokens) rather than use *angry with* (265 tokens). Notice, on the other hand, that in the web genre, *angry at* (478 tokens) is favored over *angry with* (336 tokens). This stems from the fact that the use of *angry at* is far higher (478 tokens) than that of *angry with* (336 tokens).

It is worthwhile to consider rank-five. The type *angry at* ranks fifth (478 tokens) in the web genre, while the type *angry with* ranks fifth (265 tokens) in the blog genre. These two types do not exhibit the same characteristic, thus having no similarity.

It must be stressed that *angry at* ranks sixth (362 tokens) in the newspaper genre, while *angry with* ranks sixth (189 tokens) in the magazine genre. Again, in rank-six, they show the difference between them, thereby leading to no similarity. When it comes to the newspaper genre, the use of *angry at* is even higher (362 tokens) than that of *angry with* (182 tokens). This may imply that *angry at* (362 tokens) is preferred over *angry with* (182 tokens) by American journalists. Talking about the magazine genre, *angry at* (319 tokens) is favored over *angry with* (189 tokens). This may be due to the fact that *angry at* (319 tokens) was used more frequently than *angry with* (189 tokens) in the magazine genre.

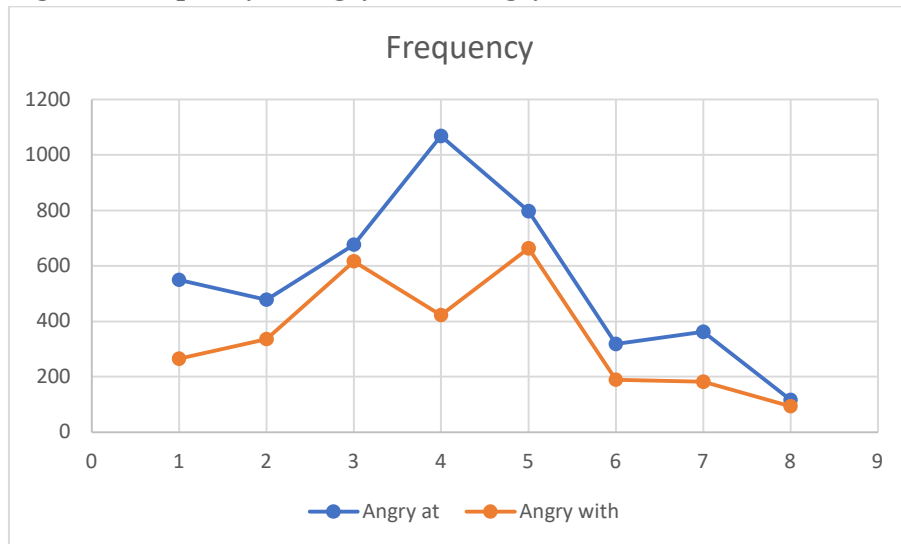
It is also appropriate to mention that *angry at* ranks seventh (319 tokens) in the magazine genre, while *angry with* ranks seventh (182 tokens) in the newspaper genre. Again, *angry at* does not pattern with *angry with*, hence revealing no similarity.

Finally, it is vital that *angry at* and *angry with* rank eighth (117 tokens vs. 94 tokens) in the academic genre. Quite interestingly, they have a commonality in rank-eight, thereby having a similarity. It should be noted, however, that in the academic genre, the use of *angry at* is much higher (117 tokens) than that of *angry with* (94 tokens). It is thus appropriate to conclude that in the academic field, Americans prefer using *angry at* (117 tokens) to using *angry with* (94 tokens). To sum up, *angry at* patterns with *angry with* in one genre, whereas they do not exhibit the same pattern in seven genres. It can thus be inferred that *angry at* is 12.5% the same as *angry with* in the genre analysis.

2.2. Similarities between angry at and angry with in the COCA

In what follows, we aim at looking into the similarity between *angry at* and *angry with* in the COCA. First, let us have a look at Figure 1:

Figure 1 Frequency of angry at and angry with



It is important to note that the massive use of *angry at* is more than 600 tokens. More specifically, number 4 refers to the spoken genre and in it, the use of *angry at* is 1,068 tokens. On the other hand, number 5 refers to the fiction genre and in it, the frequency of *angry at* is 796 tokens. Number 3 refers to the TV/movie genre and in it, the frequency of *angry at* is 676 tokens. In these three genres, *angry at* was greatly used (more than half). The overall frequency

of *angry at* in these three genres is 2,540 tokens and they account for 58.19%. Similarly, the massive use of *angry with* is more than 400 tokens. In the fiction genre, the use of *angry with* is 663 tokens and in the TV/movie genre, that of *angry with* is 617 tokens. Finally, in the spoken genre, the use of *angry with* is 423 tokens. Most importantly, the overall frequency of *angry with* in these three genres is 1,703 tokens and they account for 61.5%. It seems appropriate to assume that they (*angry at* and *angry with*) both show the massive use in the spoken genre and the TV/movie and fiction genres. We thus conclude that they have a high similarity in the massive use.

Now we compare *angry at* and *angry with* in terms of their average frequency:

Table 2 Info related to the frequency of angry at and angry with

Type	Average	Variance	Standard deviation
Angry at	545	78,243	279
Angry with	346	37,696	194

Note that the average frequency of *angry at* in the COCA is 545 tokens, while that of *angry with* is 346 tokens. In the TV/movie and fiction genres and the spoken genre, the frequency of *angry at* is more than 545 tokens and its overall frequency is 2,540 tokens, which account for 58.19%. Likewise, in the TV/movie and fiction genres and the spoken genre, the frequency of *angry with* is more than 346 tokens and its overall frequency is 1,703 tokens, which account for 61.5%. It seems thus appropriate to conclude that there is a difference in the average frequency between *angry at* and *angry with*, but they have three genres in common.

Finally, let us compare *angry at* and *angry with* in terms of the standard deviation, as illustrated in Table 2. The average frequency of *angry at* is 545 and the standard deviation of the use of *angry at* is 279. This in turn implies that the frequency of *angry at* is roughly larger than $545-279$ and smaller than $545+279$. On the other hand, the average frequency of *angry with* is 346 and the standard deviation of the use of *angry with* is 194, as indicated in Table 2. This in turn indicates that the frequency of *angry with* is roughly larger than $346-194$ and smaller than $346+194$. It can thus be concluded that these two types have a low degree of similarity.

3. The Collocations of angry at and angry with in the COCA and ChatGPT

The goal of this section is to compare *angry at* and *angry with* in the COCA and ChatGPT. For this goal, we compare the collocation of *angry at* and that of *angry with* in the COCA and ChatGPT. Also, we compare the collocations of *angry at* and *angry with* in the COCA and those of *angry at* and *angry with* in the ChatGPT. Table 3 shows the collocations of *angry at* and *angry with* in the COCA:

Table 3 Collocations of angry at and angry with in the COCA

Number	Collocation of angry at	Frequency	Collocation of angry with	Frequency
1	angry at people	32	angry with people	14

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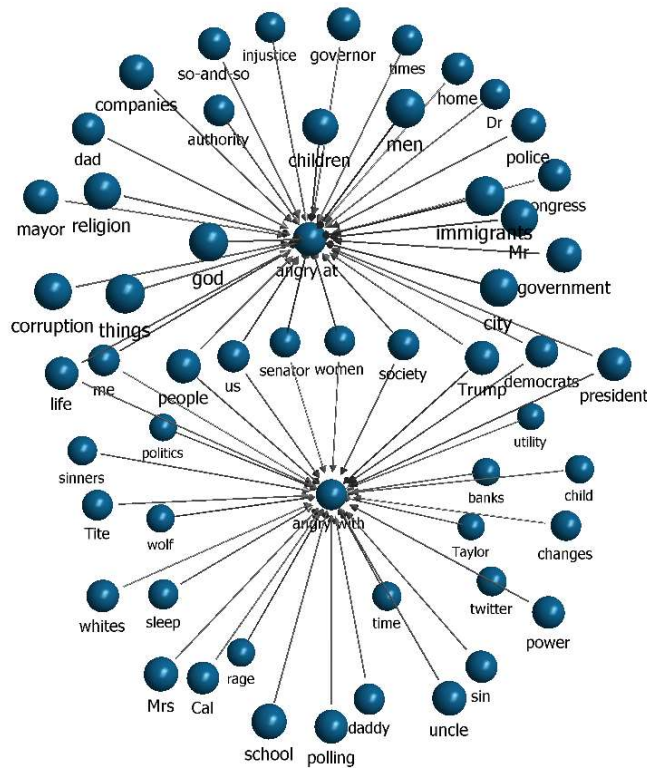
2	angry at times	26	angry with me	9
3	angry at president	15	angry with president	6
4	angry at women	12	angry with rage	3
5	angry at me	9	angry with school	3
6	angry at life	5	angry with women	3
7	angry at dad	4	angry with banks	3
8	angry at government	4	angry with changes	2
9	angry at god	4	angry with Cal	2
10	angry at Dr	4	angry with democrats	2
11	angry at injustice	4	angry with daddy	2
12	angry at Mr	4	angry with life	2
13	angry at men	3	angry with Mrs	2
14	angry at governor	3	angry with child	2
15	angry at democrats	3	angry with politics	2
16	angry at home	3	angry with society	2
17	angry at congress	3	angry with power	1
18	angry at police	3	angry with polling	1
19	angry at religion	3	angry with sleep	1
20	angry at senator	3	angry with sinners	1
21	angry at so-and-so	3	angry with sin	1
22	angry at society	3	angry with senator	1
23	angry at things	3	angry with wolf	1
24	angry at Trump	3	angry with whites	1
25	angry at us	3	angry with utility	1
26	angry at authority	2	angry with us	1
27	angry at children	2	angry with uncle	1
28	angry at city	2	angry with twitter	1
29	angry at companies	2	angry with Trump	1
30	angry at corruption	2	angry with Tite	1
31	angry at immigrants	2	angry with time	1
32	angry at mayor	2	angry with Taylor	1

It is important to mention that *angry at people* and *angry with people* obtain the highest frequency (32 tokens vs. 14 tokens). This in turn indicates that these two expressions are the most preferable ones (32 tokens vs. 14 tokens) for Americans. Quite interestingly, *angry at president* and *angry with president* rank third (15 tokens vs. 6 tokens) in the COCA. It is worth noting that *angry at life* ranks sixth (5 tokens) in the COCA, while *angry with life* ranks eighth (2 tokens). This in turn shows that *angry at* patterns with *angry with* even though their frequency is different. It is interesting to observe that *angry at democrats* ranks thirteenth (3 tokens), whereas *angry with democrats* ranks eighth (2 tokens). More interestingly, *angry at Trump* ranks thirteenth (3 tokens), while *angry with Trump* ranks seventeenth (1 token). Again,

the type *angry at* patterns with the type *angry with* in the COCA. Most importantly, 10 of 54 expressions (nouns, pronouns, or a name) are the collocations of both *angry at* and *angry with*. As exemplified in Table 3, the nouns (pronouns or a name) *people, president, women, me, life, democrats, senator, society, Trump, and us* are the collocations of both *angry at* and *angry with*. It can thus be inferred that *angry at* is 18.51% the same as *angry with* in the collocation analysis of the top 32.

Now we attempt to capture the similarity between *angry at* and *angry with* in terms of the software package NetMiner. The NetMiner provides the networks of the collocations of *angry at* and *angry with*:

Figure 2 Networks of the collocations of angry at and angry with



As exemplified in Figure 2, 32 collocations are linked to *angry at* and *angry with*, respectively. These expressions that are linked to them are their collocations. Most importantly, 10 of 54 expressions are linked to both *angry at* and *angry with* (18.51%). These ten expressions are the collocations of both *angry at* and *angry with*. From all of this, it seems evident that *angry at* and *angry with* have a low degree of similarity in the collocation analysis of the top 32.

Now we investigate the collocations of *angry at* and *angry with* obtained by the ChatGPT. We obtained 32 collocations of *angry at* and *angry with* in terms of the ChatGPT:

Table 4 Collocations of angry at and angry with obtained in the ChatGPT

Number	Collocation of angry at	of	Collocation of angry with
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ANGRY AT AND ANGRY WITH IN THE COCA AND CHATGPT

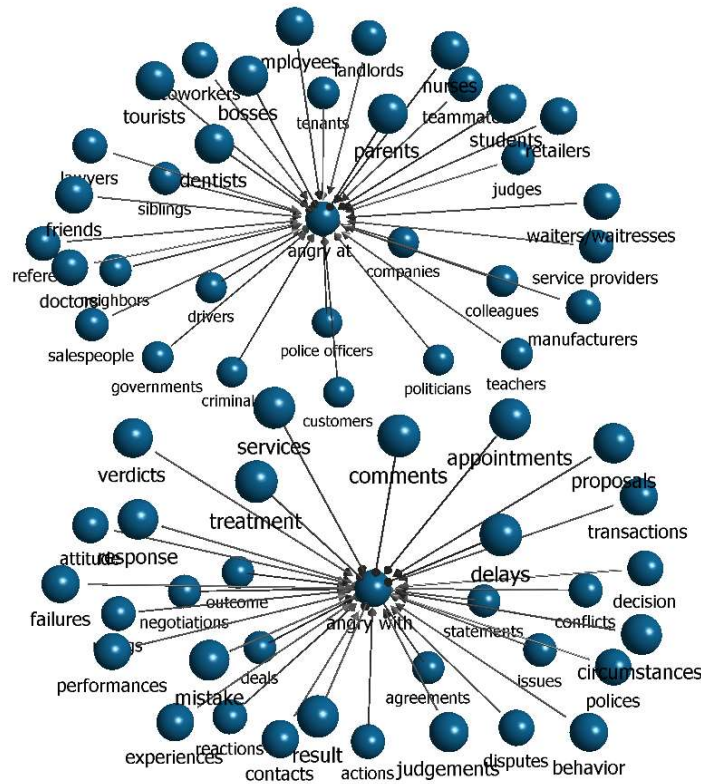
1	angry at bosses	angry with behavior
2	angry at coworkers	angry with attitude
3	angry at neighbors	angry with decision
4	angry at friends	angry with response
5	angry at parents	angry with actions
6	angry at siblings	angry with circumstances
7	angry at teachers	angry with outcome
8	angry at students	angry with mistake
9	angry at customers	angry with result
10	angry at waiters/waitresses	angry with comments
11	angry at drivers	angry with reactions
12	angry at politicians	angry with treatment
13	angry at governments	angry with polices
14	angry at companies	angry with statements
15	angry at employees	angry with disputes
16	angry at colleagues	angry with conflicts
17	angry at teammates	angry with issues
18	angry at referees	angry with judgements
19	angry at judges	angry with rulings
20	angry at doctors	angry with verdicts
21	angry at lawyers	angry with performances
22	angry at police officers	angry with services
23	angry at criminals	angry with experiences
24	angry at salespeople	angry with failures
25	angry at nurses	angry with delays
26	angry at dentists	angry with appointments
27	angry at service providers	angry with transactions
28	angry at retailers	angry with deals

29	angry manufacturers	at	angry proposals	with
30	angry at landlords		angry negotiations	with
31	angry at tenants		angry agreements	with
32	angry at tourists		angry with contacts	

It is important to note that the ChatGPT does not provide the frequency of the collocations of *angry at* and *angry with*. We cannot see which expression is the most frequently used one. However, this ChatGPT provides dynamic as well as possible expressions on the basis of train data. Quite interestingly, as shown in Table 4, there are no collocations that belong to both *angry at* and *angry with*. Put differently, *angry at* is 0% the same as *angry with* in the collocation analysis of the ChatGPT. However, this does not necessarily mean that they are not synonyms. It is important to mention that *angry at bosses* and *angry with behavior* was the first recommendation of the ChatGPT. This could imply that these two expressions are frequently used in the web. Simply put, they can be easily found in the web. A point to note is that the COCA is an eight genres-based corpus, whereas the so-called ChatGPT is AI and web-based technology. It is also interesting to point out that *angry at coworkers* and *angry with attitude* were the second recommendation of the ChatGPT. This in turn implies that these two expressions are widely used in the web and available in its train data. It should also be pointed out that *angry at neighbors* and *angry with decision* were the third recommendation of the ChatGPT. This indicates that these two expressions are also much used in the web and available in its train data. It is particularly noteworthy that there is a big difference in the collocation between the COCA and ChatGPT. That is to say, no collocations overlap in the COCA and ChatGPT. We thus conclude that the COCA and ChetGPT do not have a commonality in that no collocations overlap in the COCA and ChatGPT.

Now we attempt to capture a collocation relationship with *angry at* and *angry with* in the ChatGPT in terms of NetMiner. The NetMiner provides the networks of the collocations of *angry at* and *angry with*:

Figure 3 Networks of the collocations of angry at and angry with in the ChetGPT



As exemplified in Figure 3, 32 nouns are linked to *angry at* and *angry with*, respectively. They are the collocations of *angry at* and *angry with*, respectively. Note, however, that there are no collocations that belong to both *angry at* and *angry with*. This in turn suggests that *angry at* and *angry with* have a low degree of similarity in the collocation analysis of the ChatGPT. For the network analysis of synonyms and big data, see Kang (2022a, 2022b, 2022c, 2022d, 2023a, 2023b).

4. Conclusion

To sum up, we have compared *angry at* and *angry with* in the COCA and ChatGPT. We have done several tests to see how close they are. In section 2.1, we have shown that *angry at* patterns with *angry with* in one genre, whereas they do not exhibit the same pattern in seven genres. Put differently, *angry at* is 12.5% the same as *angry with* in the genre analysis. In section 2.2, we have argued that *angry at* and *angry with* both show the massive use in the spoken genre and the TV/movie and fiction genres. We have further argued that the average frequency of *angry at* is 545 and the standard deviation of the use of *angry at* is 279. This in turn indicates that the frequency of *angry at* is roughly larger than $545-279$ and smaller than $545+279$. We have also argued that the average frequency of *angry with* is 346 and the standard deviation of the use of *angry with* is 194. This in turn implies that the frequency of *angry with* is roughly larger than $346-194$ and smaller than $346+194$. This leads us to assume that *angry at* and *angry with* have a low degree of similarity. In section 3, we have shown that 10 of 54 expressions are the collocations of both *angry at* and *angry with* in the collocation analysis of the top 32. This

amounts saying that *angry at* is 18.51% the same as *angry with* in the collocation analysis. We have also shown that *angry at bosses* and *angry with behavior* was the first recommendation of the ChatGPT. However, there are no collocations that belong to both *angry at* and *angry with*. Finally, we have maintained that the COCA and ChatGPT do not have a commonality in that no collocations overlap in the COCA and ChatGPT in the top 32.

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