

```
In [ ]: import analyze as a
```

```
In [ ]: titles = ["Bible", "BUG", "GAP", "Moby Dick"]

bibleNEmbeds = a.embeds('NvectorsBible.txt')
bibleGEmbeds = a.embeds('GvectorsBible.txt')

bugNEmbeds = a.embeds('NvectorsBUG.txt')
bugGEmbeds = a.embeds('GvectorsBUG.txt')

gapNEmbeds = a.embeds('NvectorsGAP.txt')
gapGEmbeds = a.embeds('GvectorsGAP.txt')

mobyNEmbeds = a.embeds('NvectorsMoby.txt')
mobyGEmbeds = a.embeds('GvectorsMoby.txt')

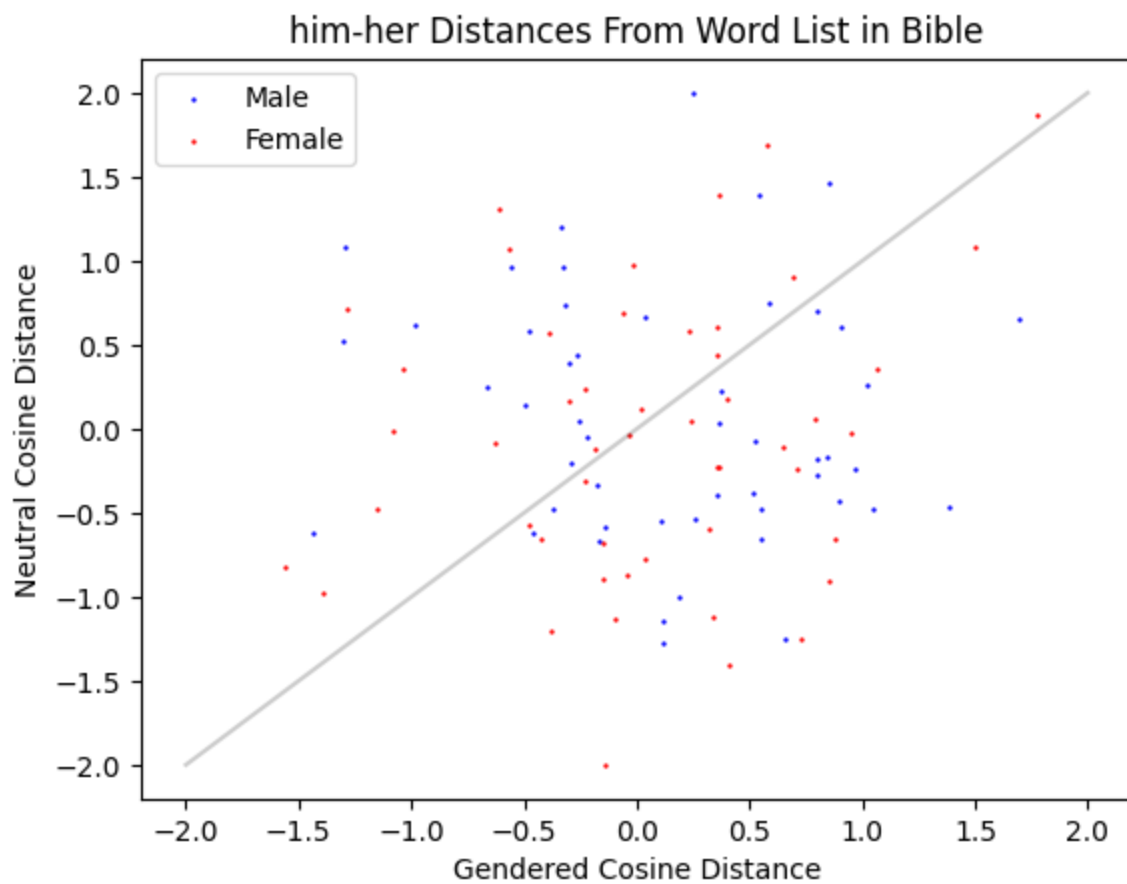
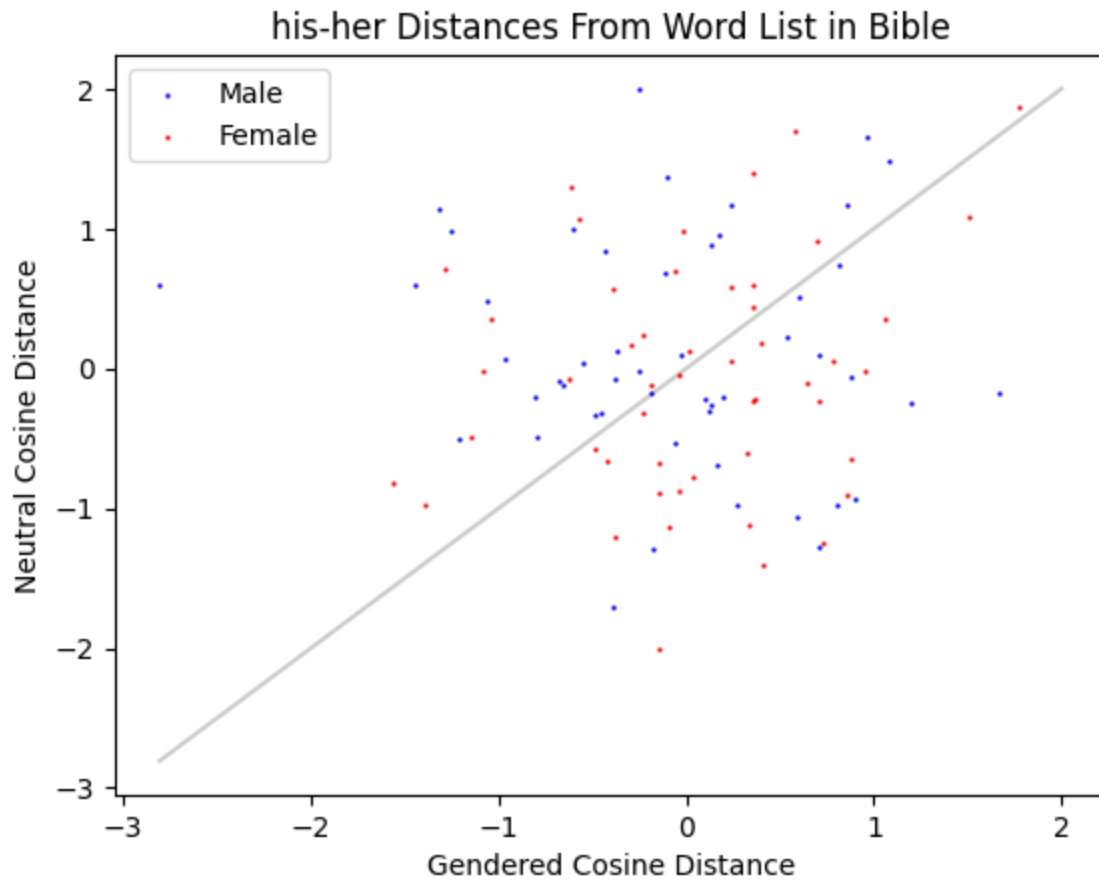
neutralEmbeds = [bibleNEmbeds, bugNEmbeds, gapNEmbeds, mobyNEmbeds]
genderEmbeds = [bibleGEmbeds, bugGEmbeds, gapGEmbeds, mobyGEmbeds]

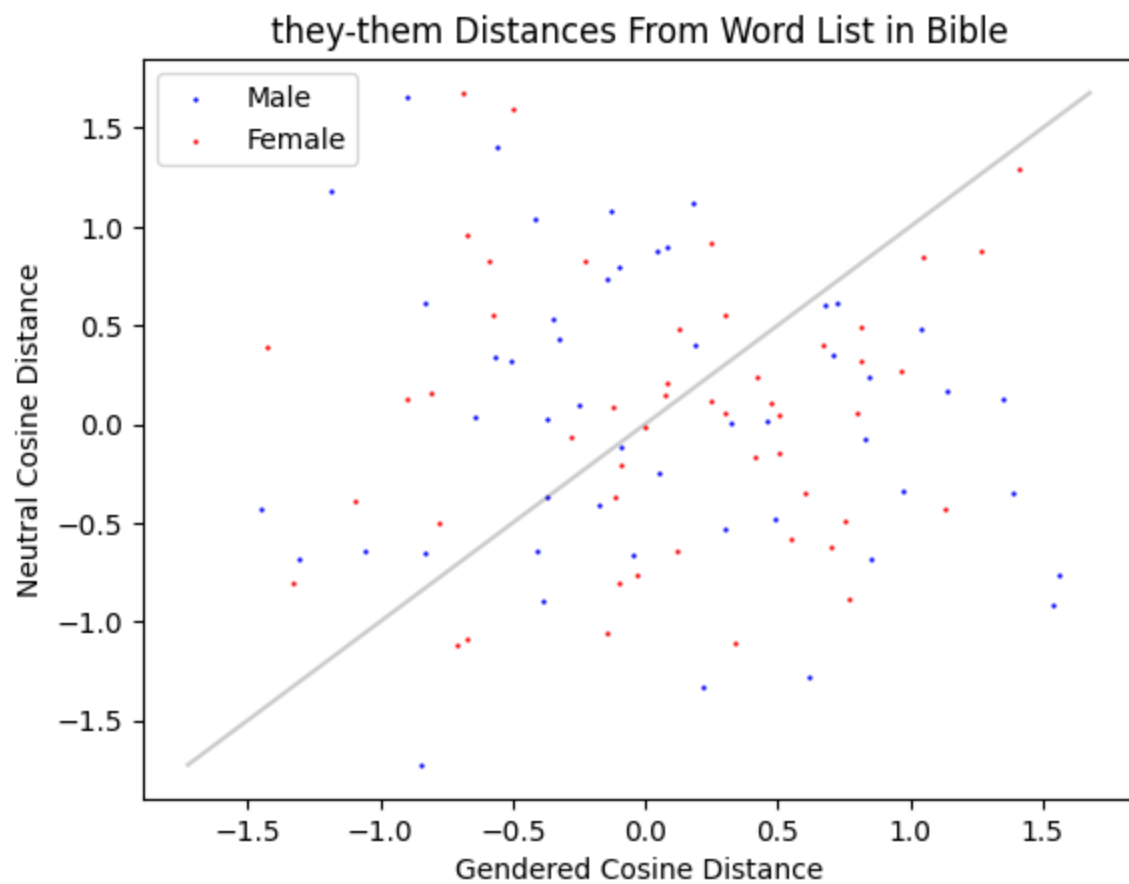
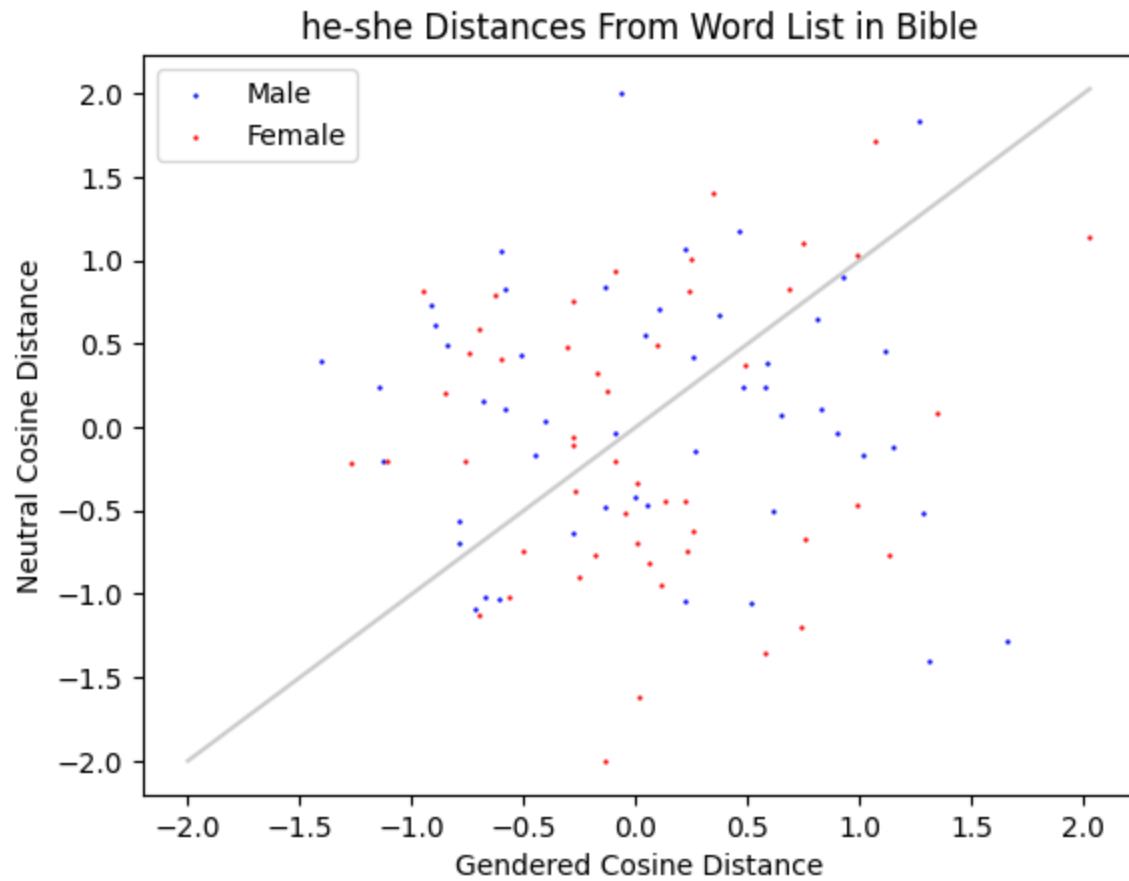
genderPairs = a.genderPairs('GenderPairs.csv')
spotlightWords = a.spotlightWords('Spotlight.csv')
```

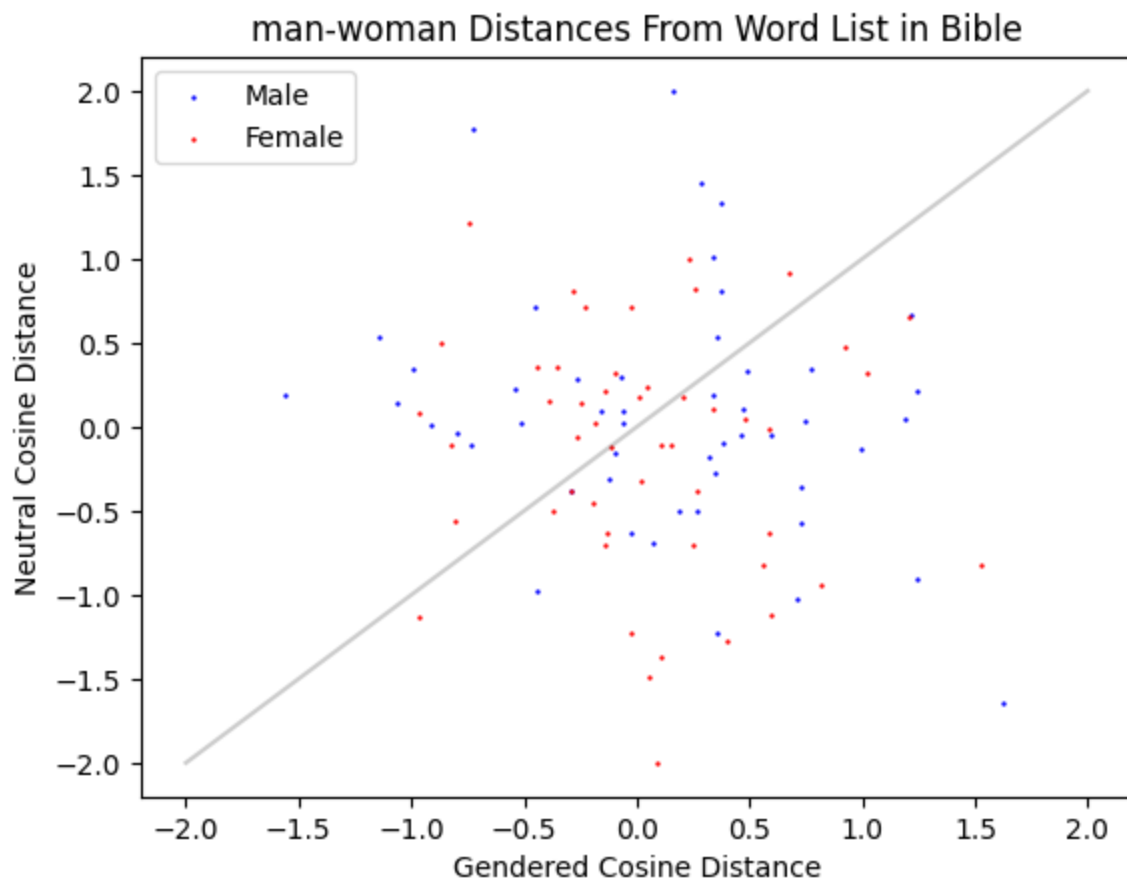
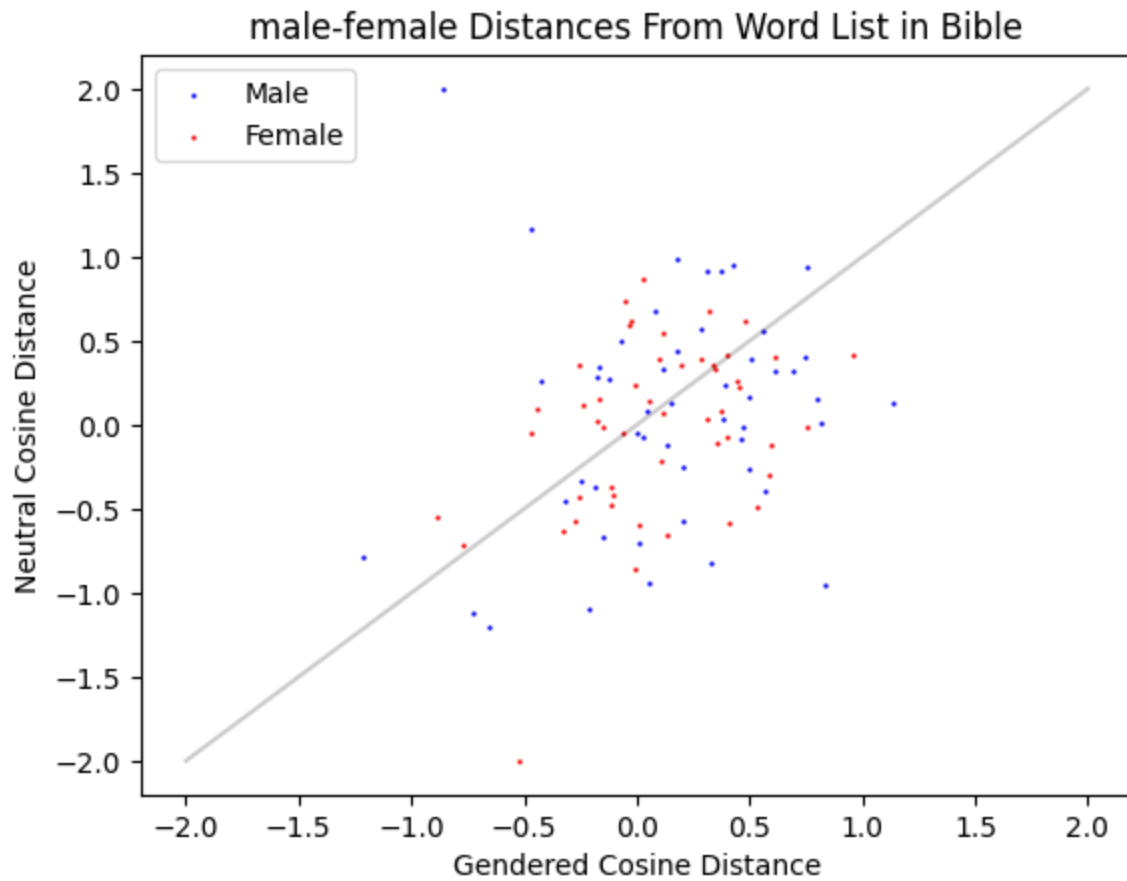
```
In [ ]: """for i, title in enumerate(titles):
    print("_____")
    a.plotter(genderPairs, spotlightWords, neutralEmbeds[i], genderEmbeds[i], title
#delete quotes for all graphs - takes up a lot of space
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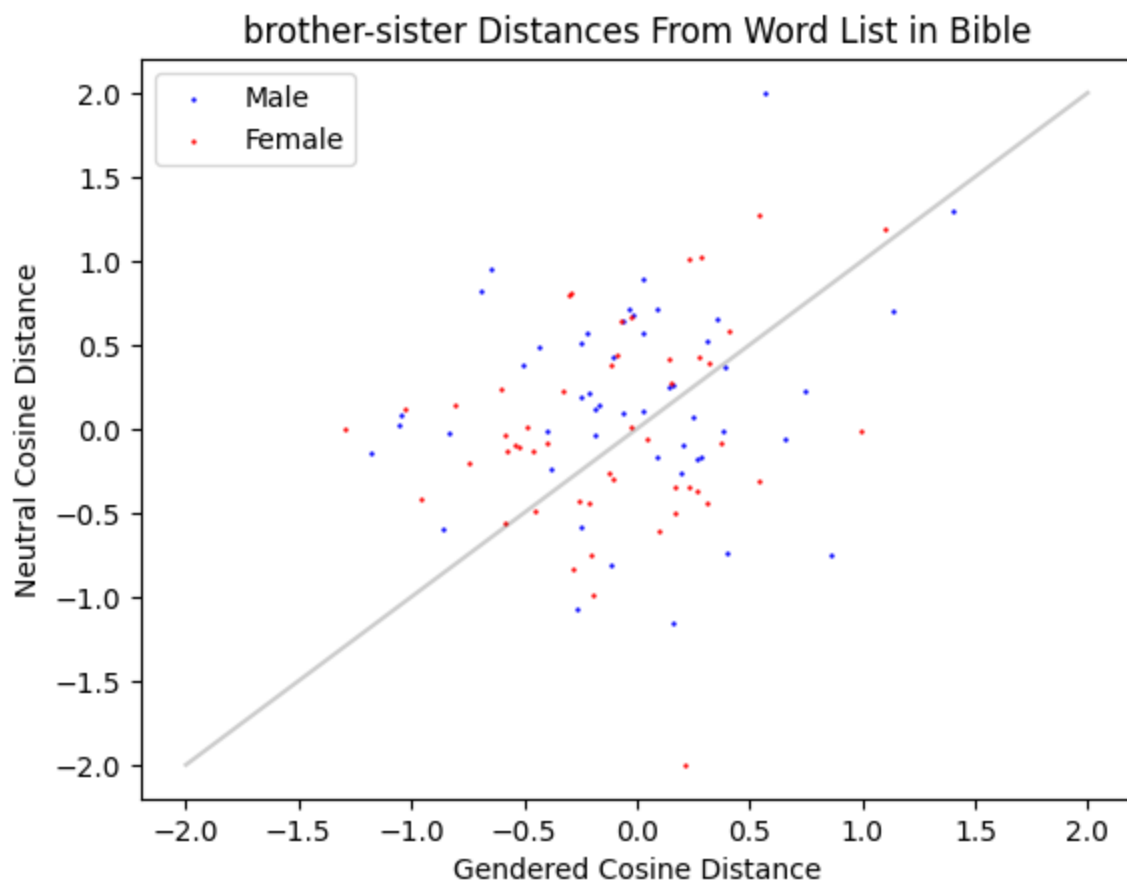
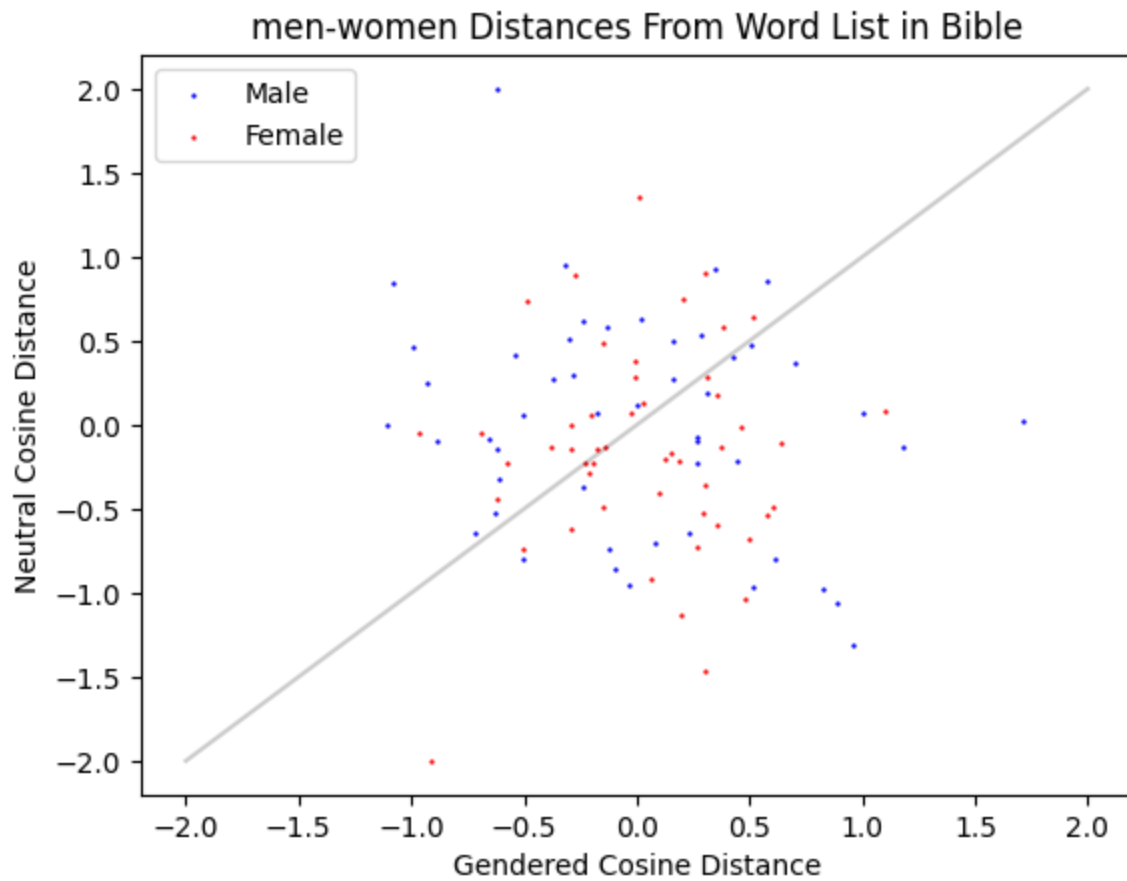
```
Out[ ]: 'for i, title in enumerate(titles):\n    print("_____\n    a.plotter(genderPairs, spotlightWords, neutralEmbeds[i], genderEmbeds\n[i], title)'
```

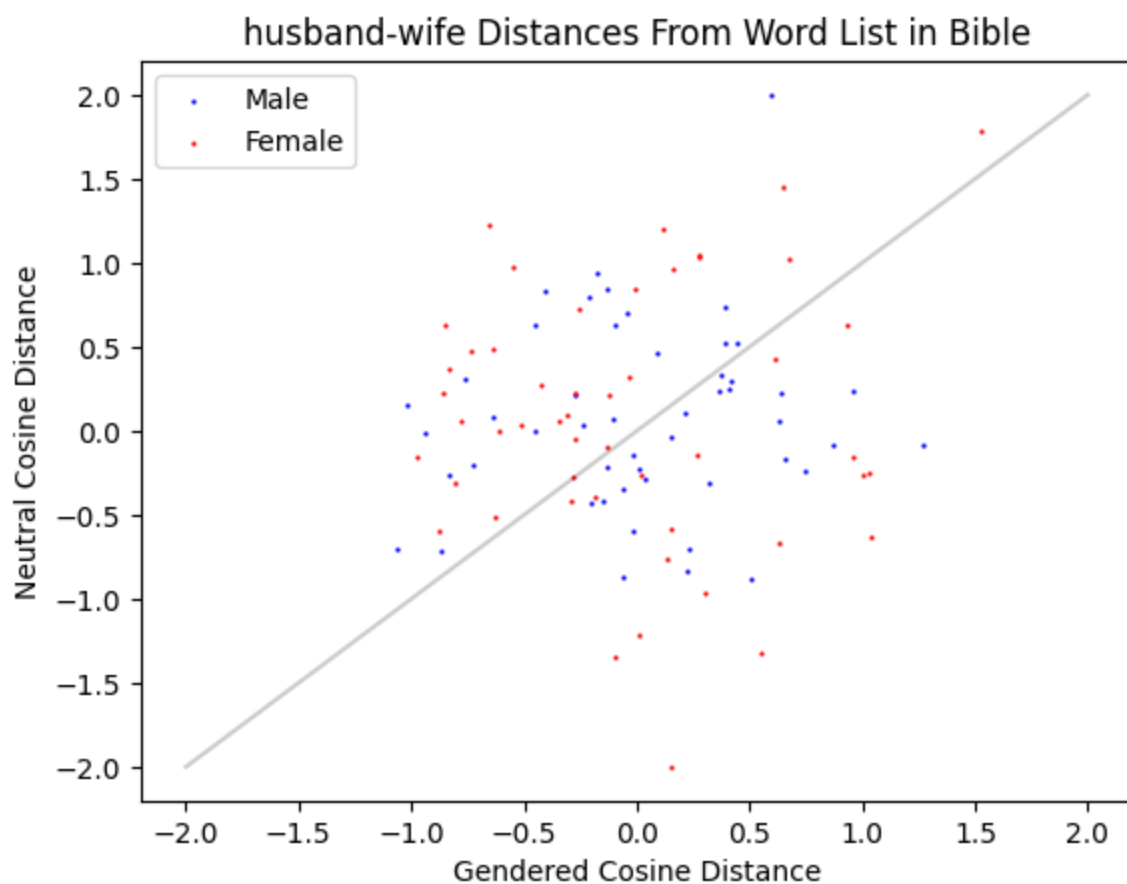
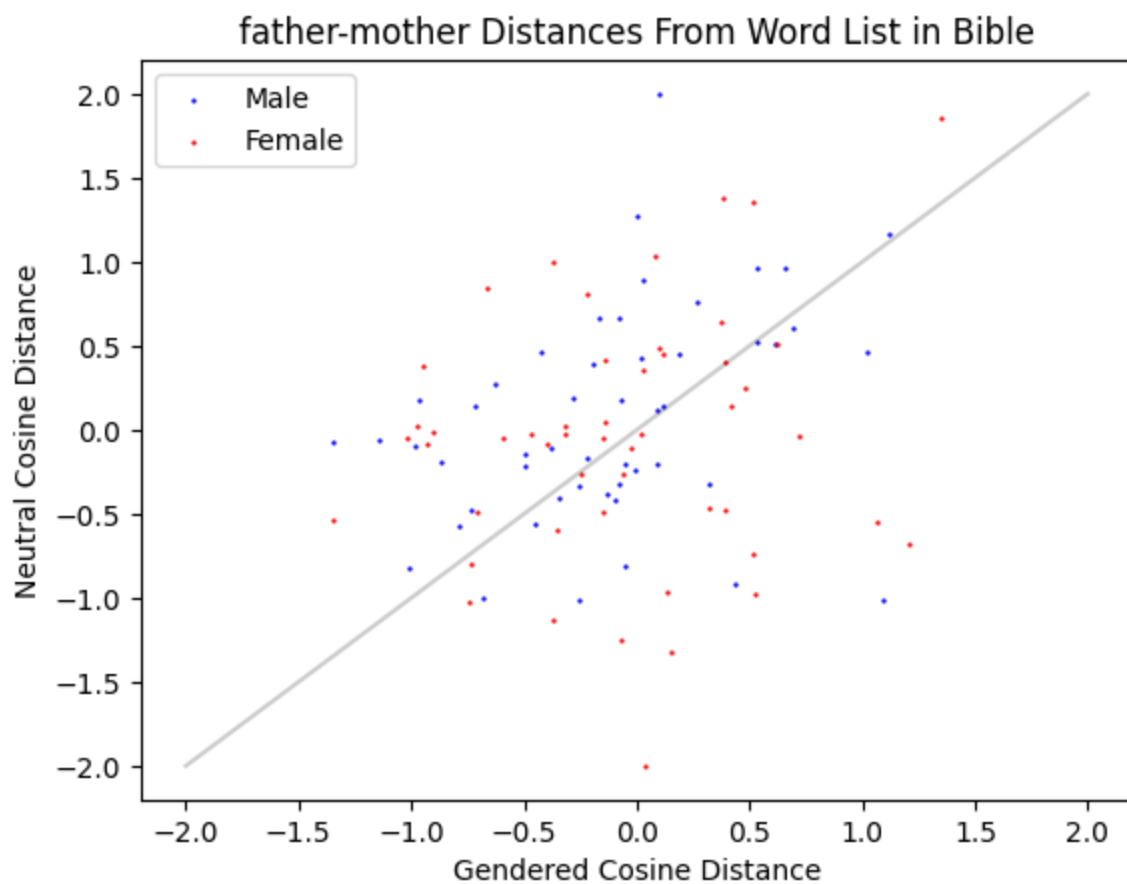
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In [ ]: a.plotter(genderPairs, spotlightWords, bibleNEmbeds, bibleGEmbeds, titles[0])
```



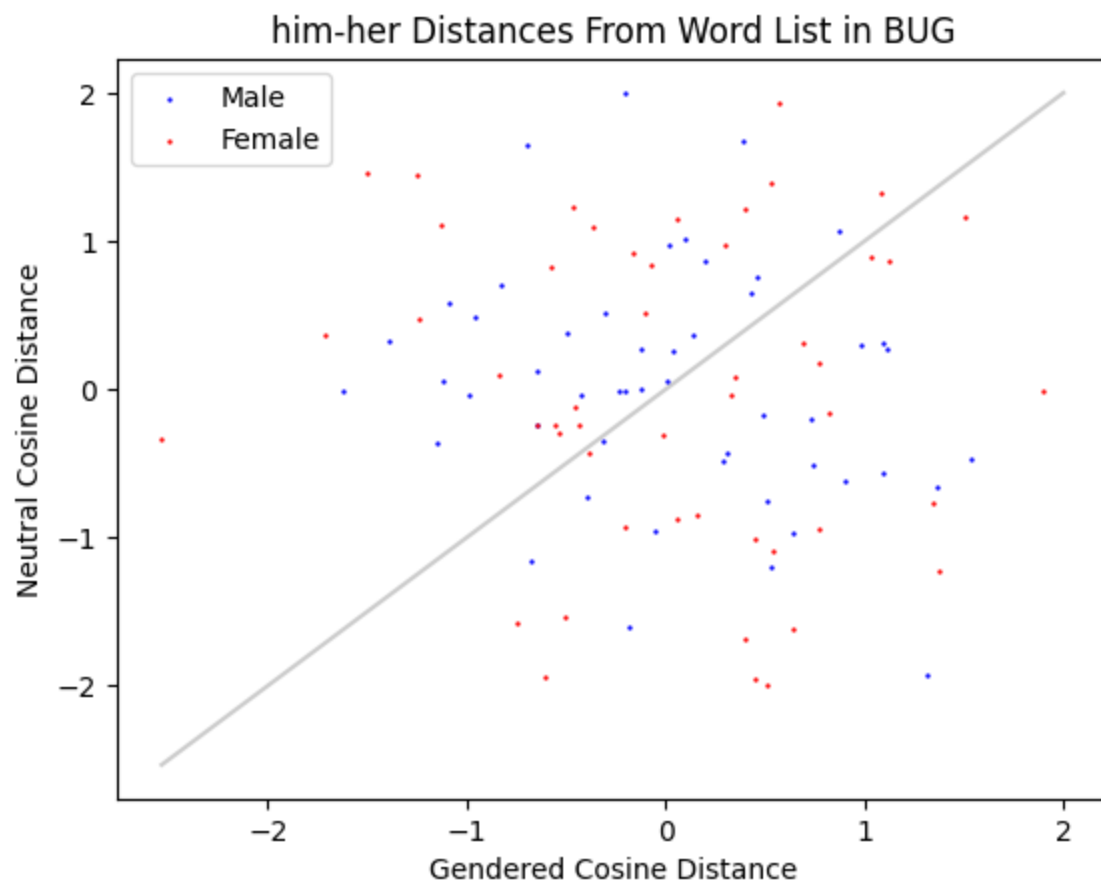
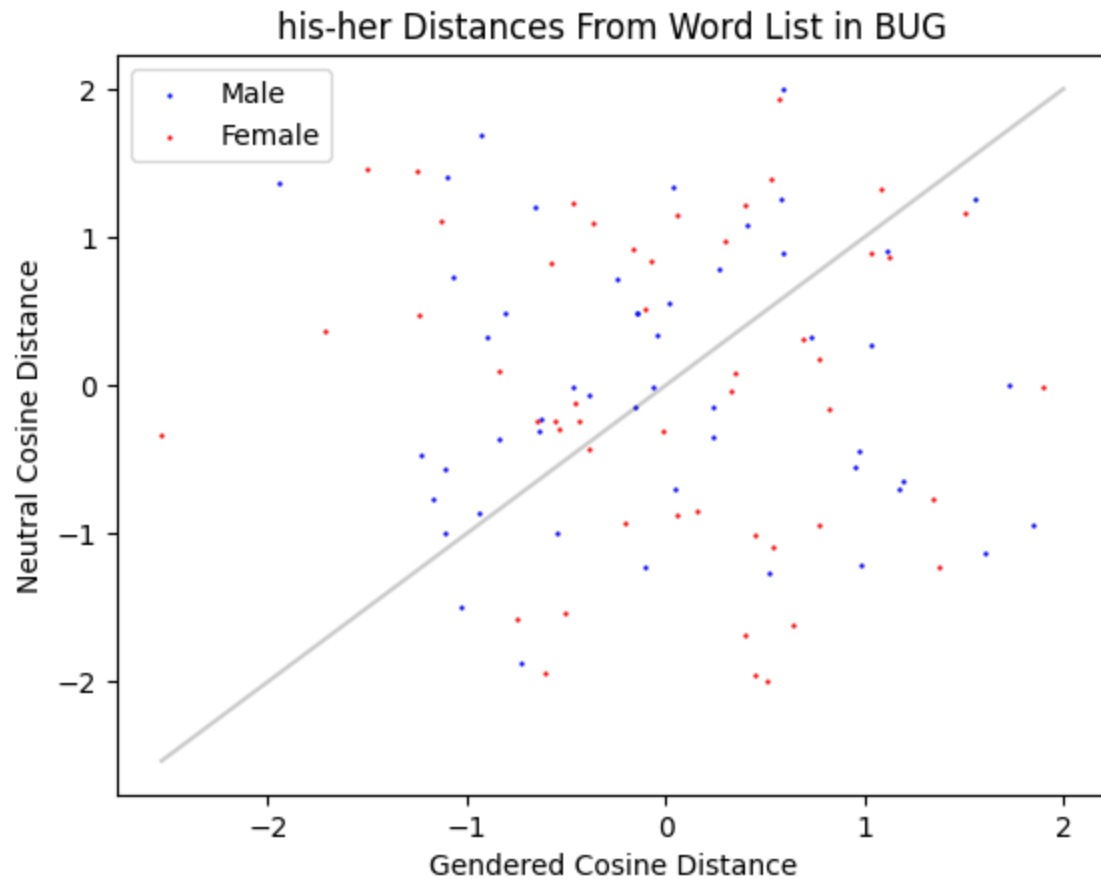


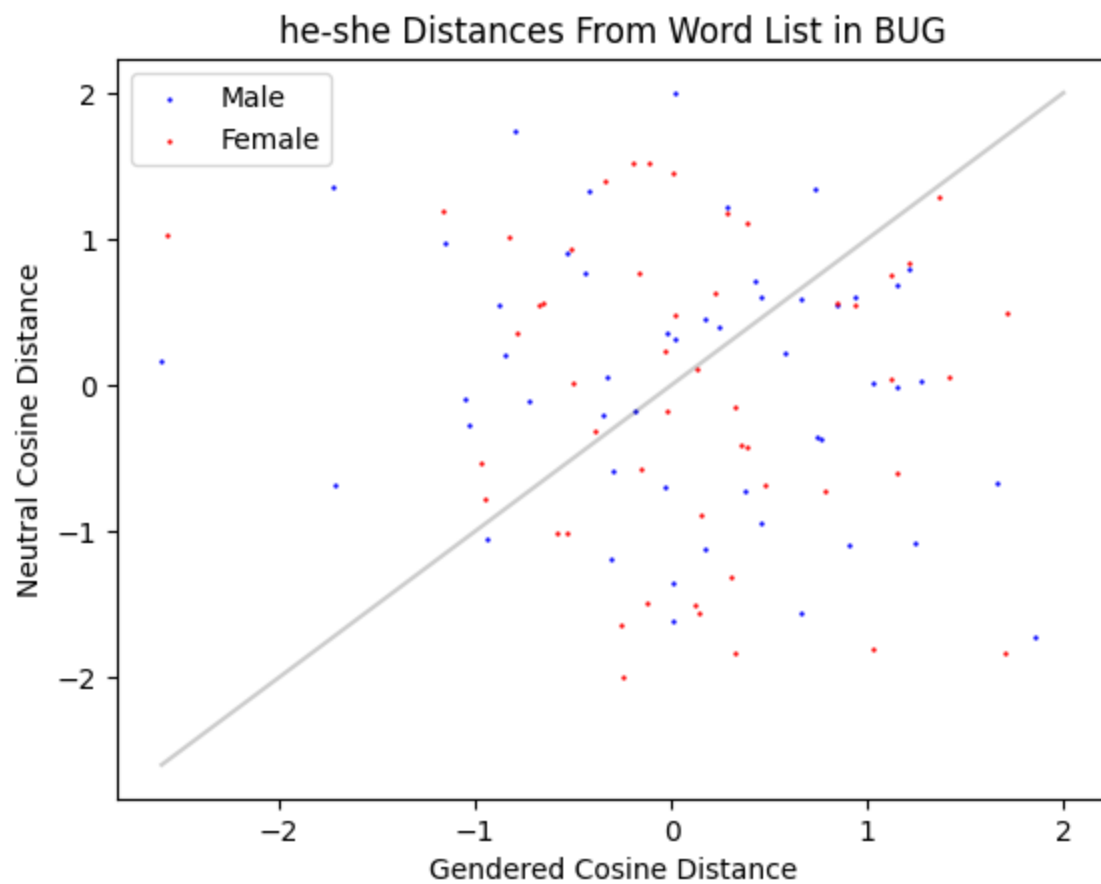
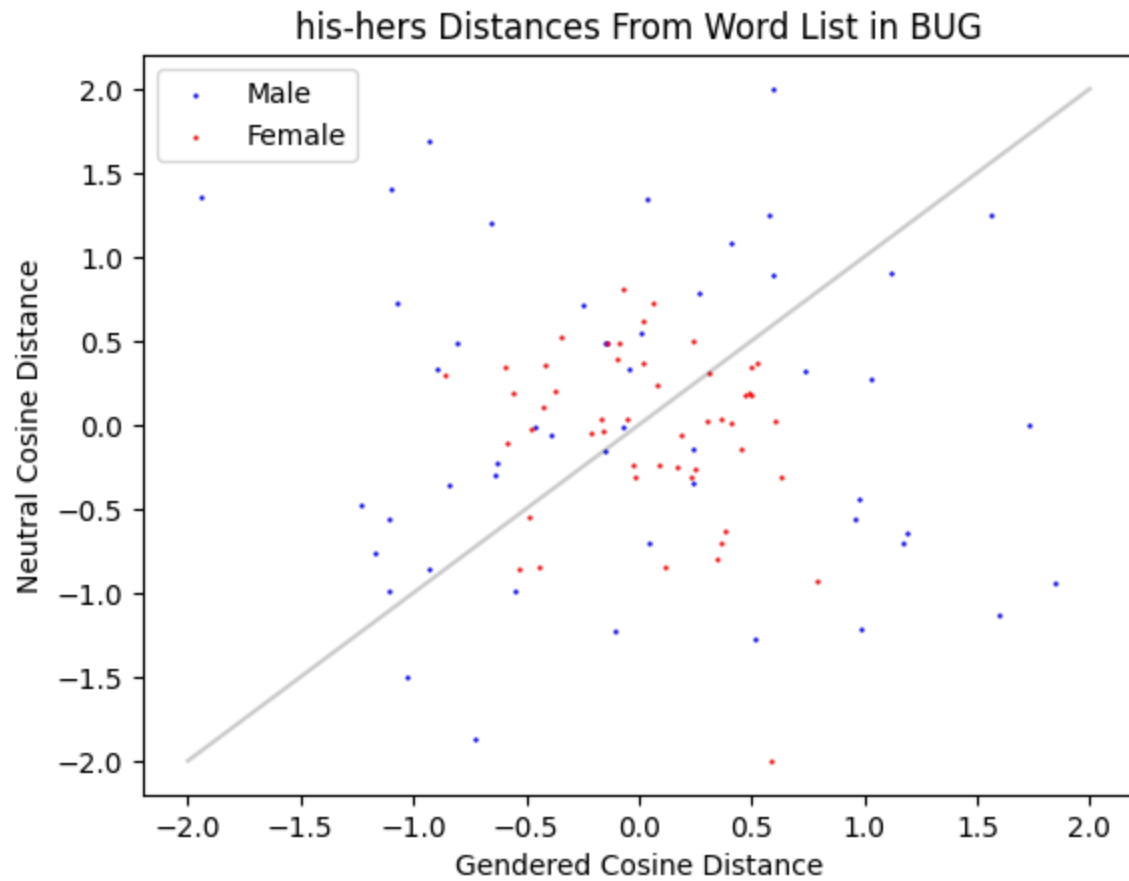




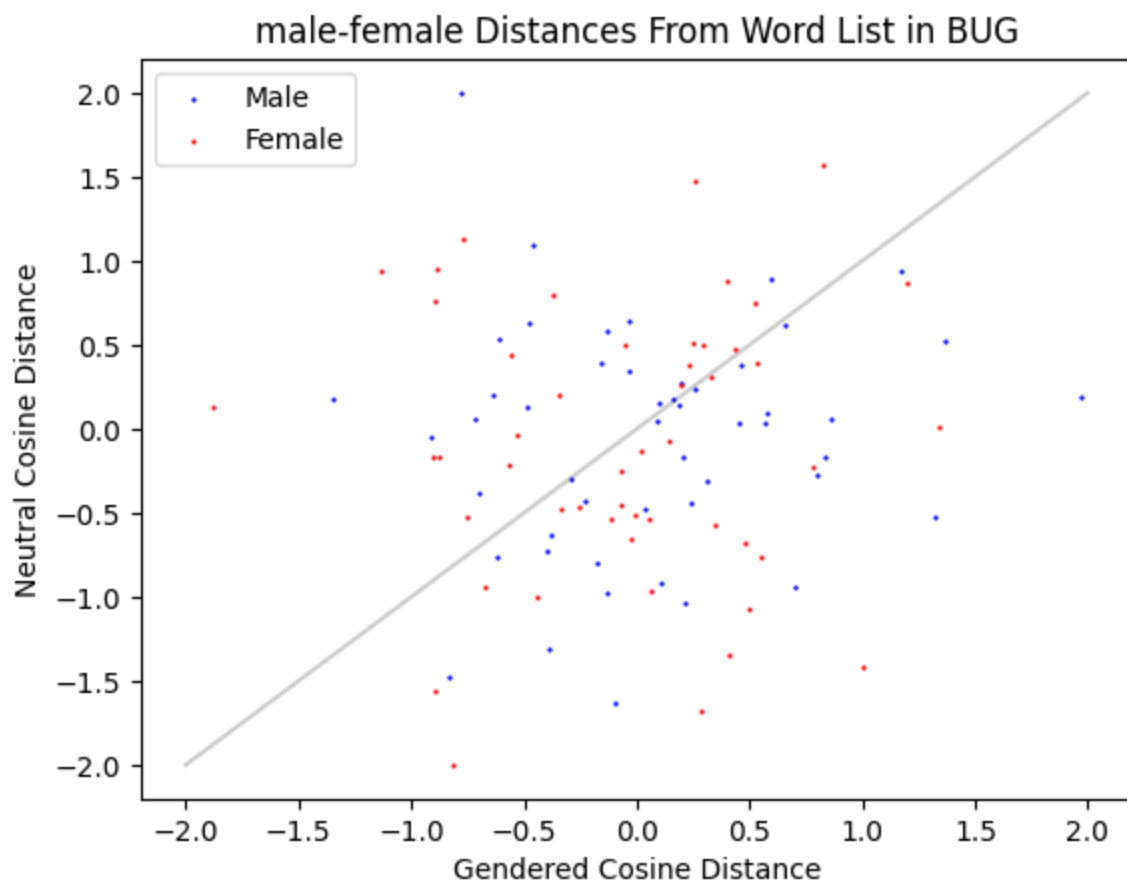
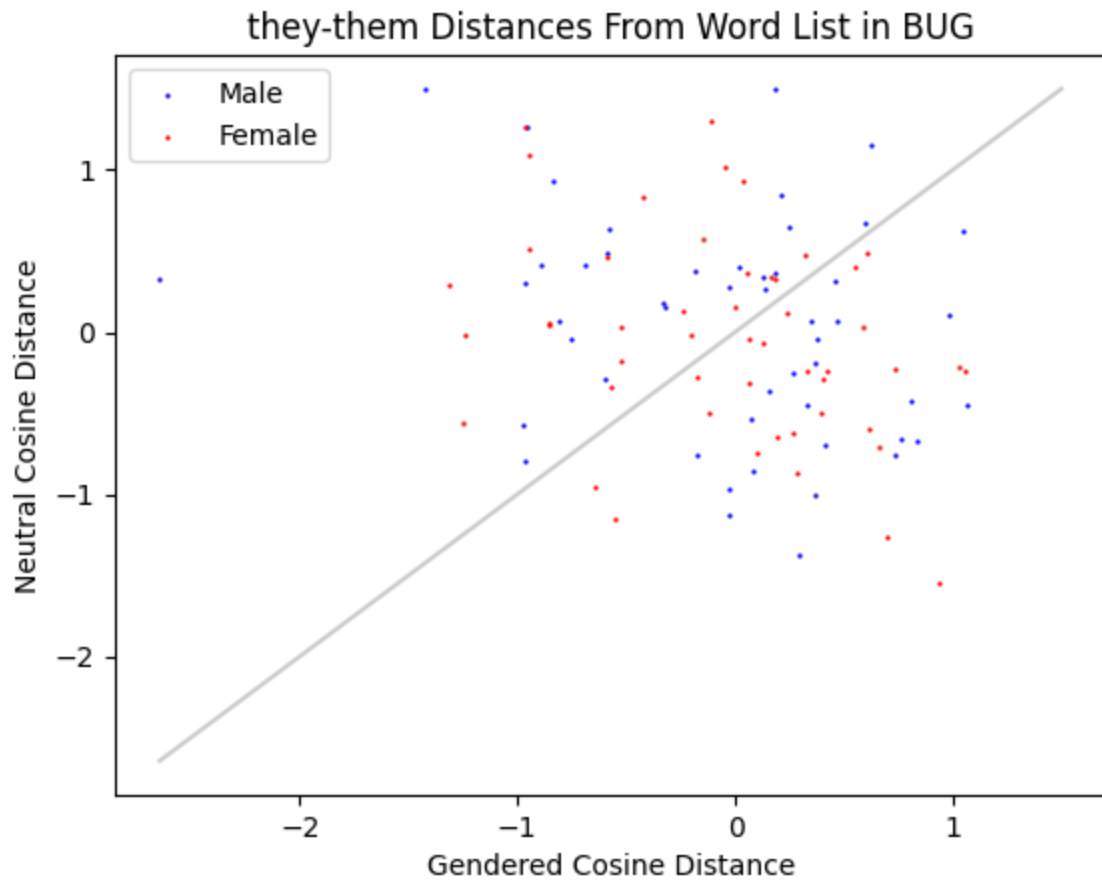


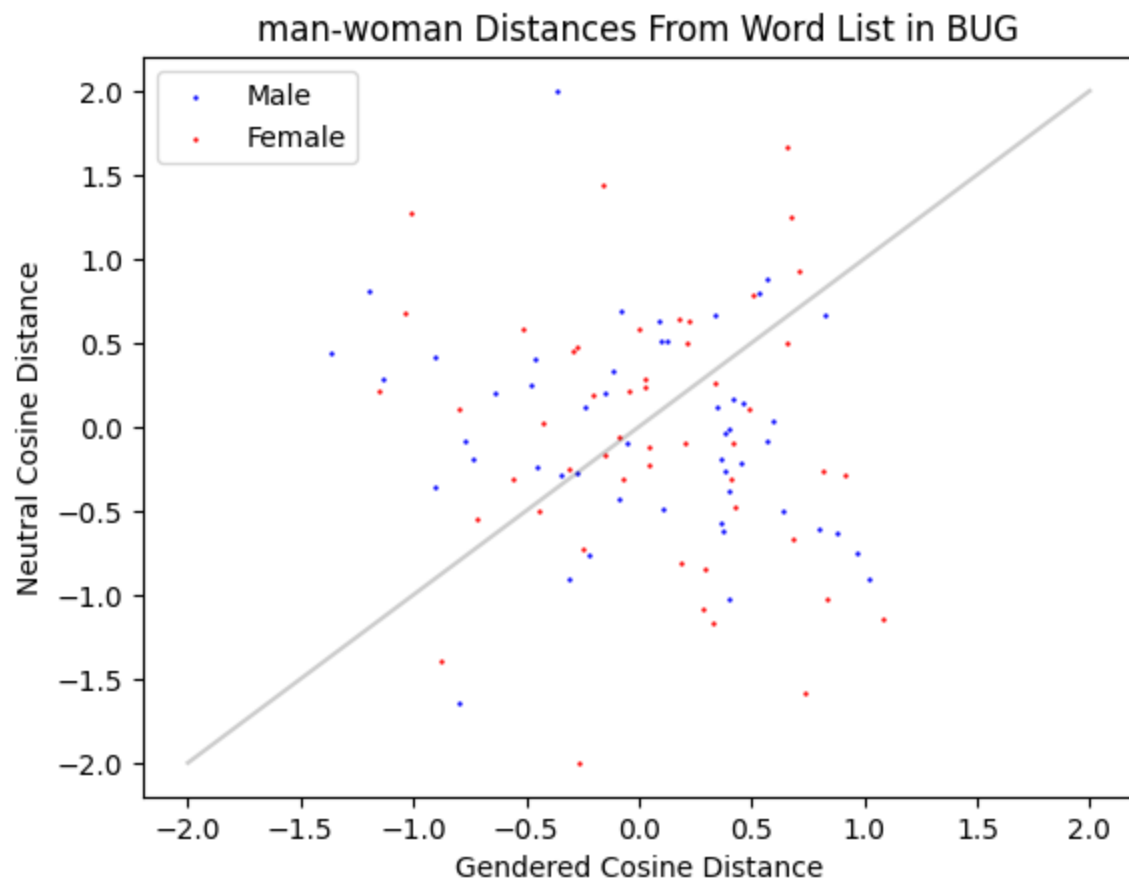
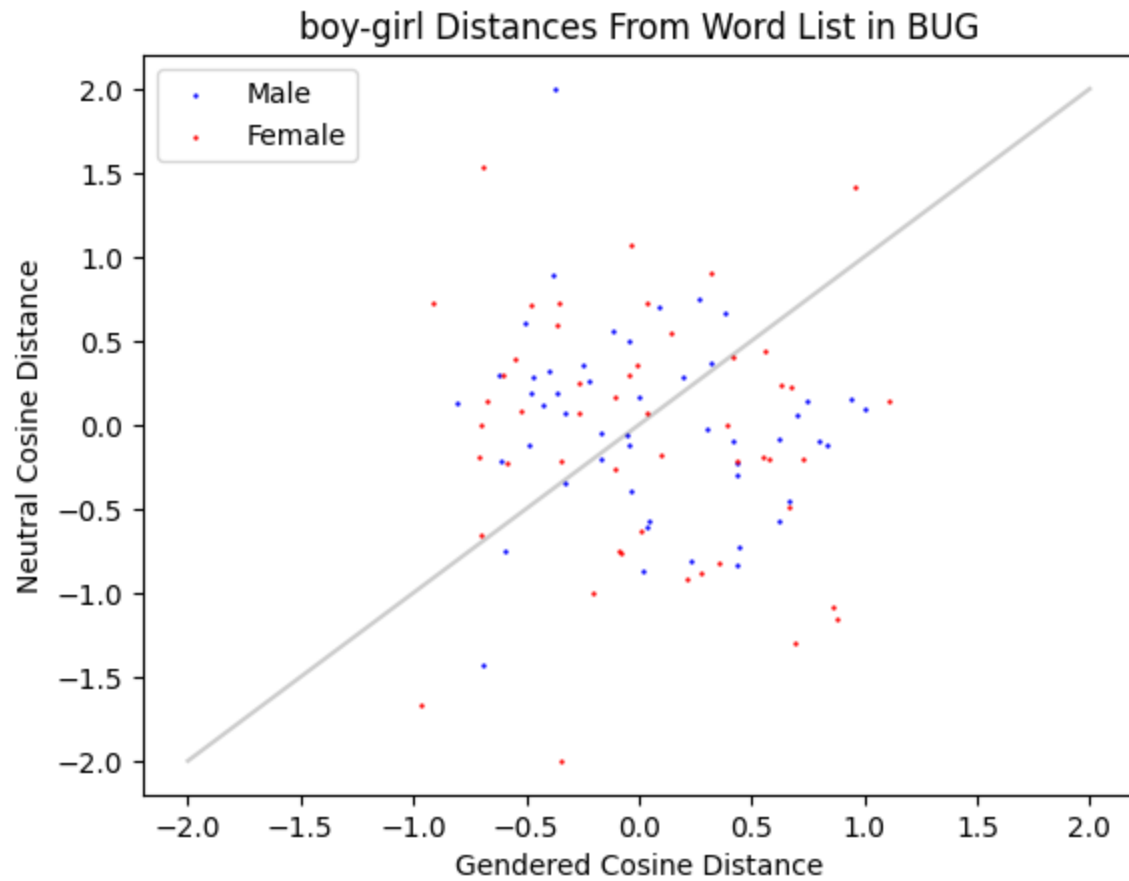
```
In [ ]: a.plotter(genderPairs, spotlightWords, bugNEmbeds, bugGEmbeds, titles[1])
```

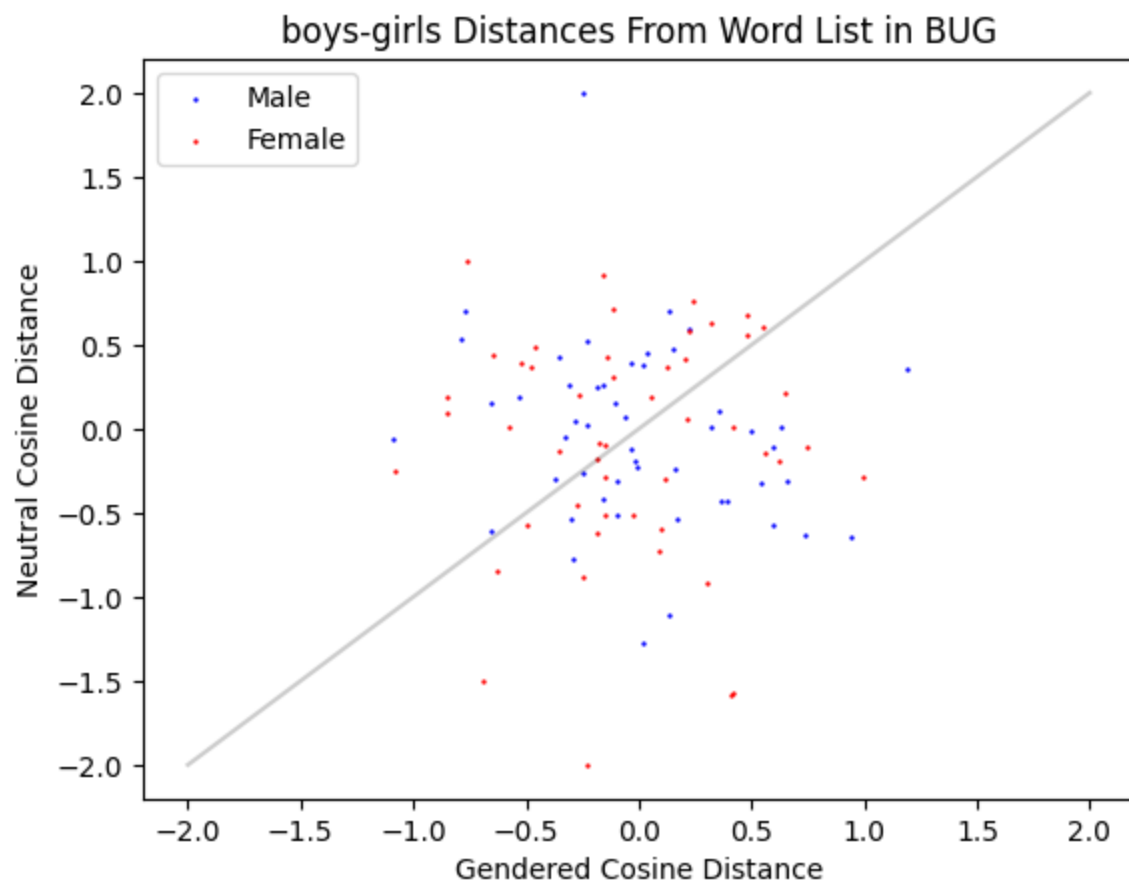
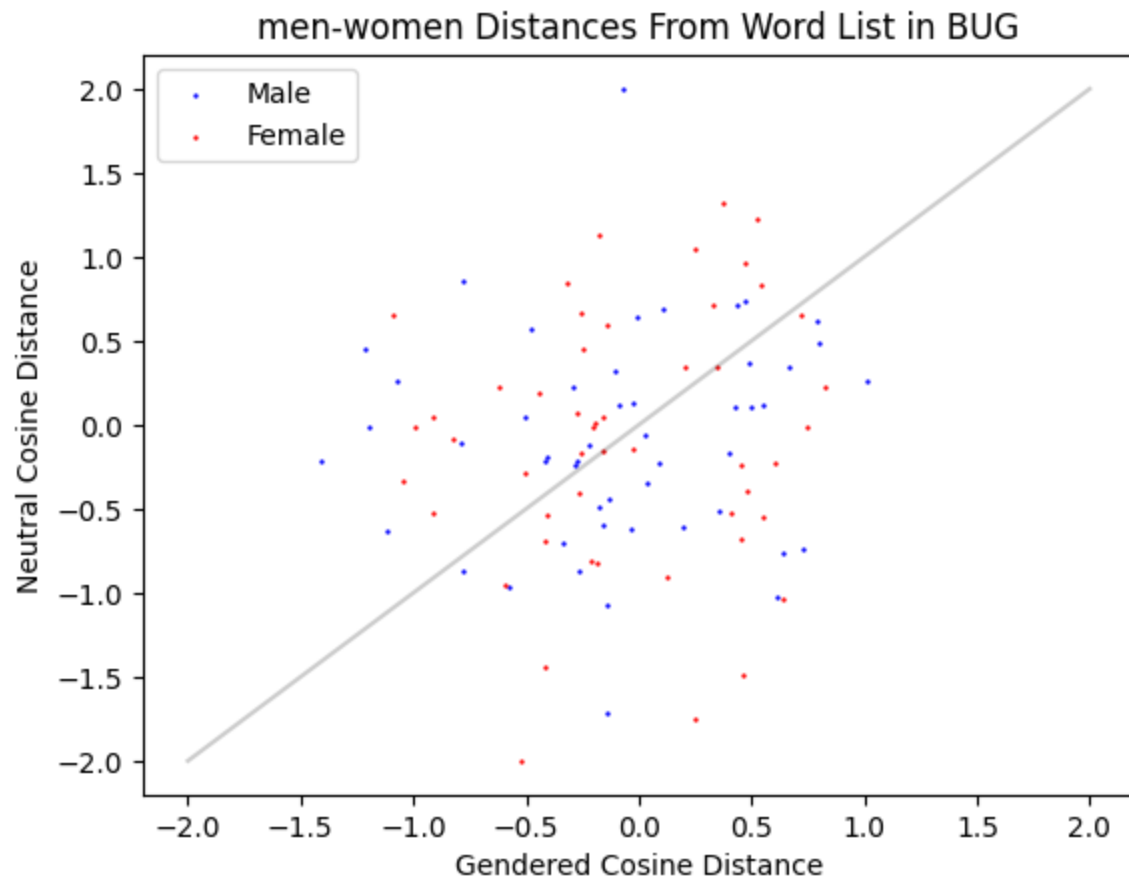


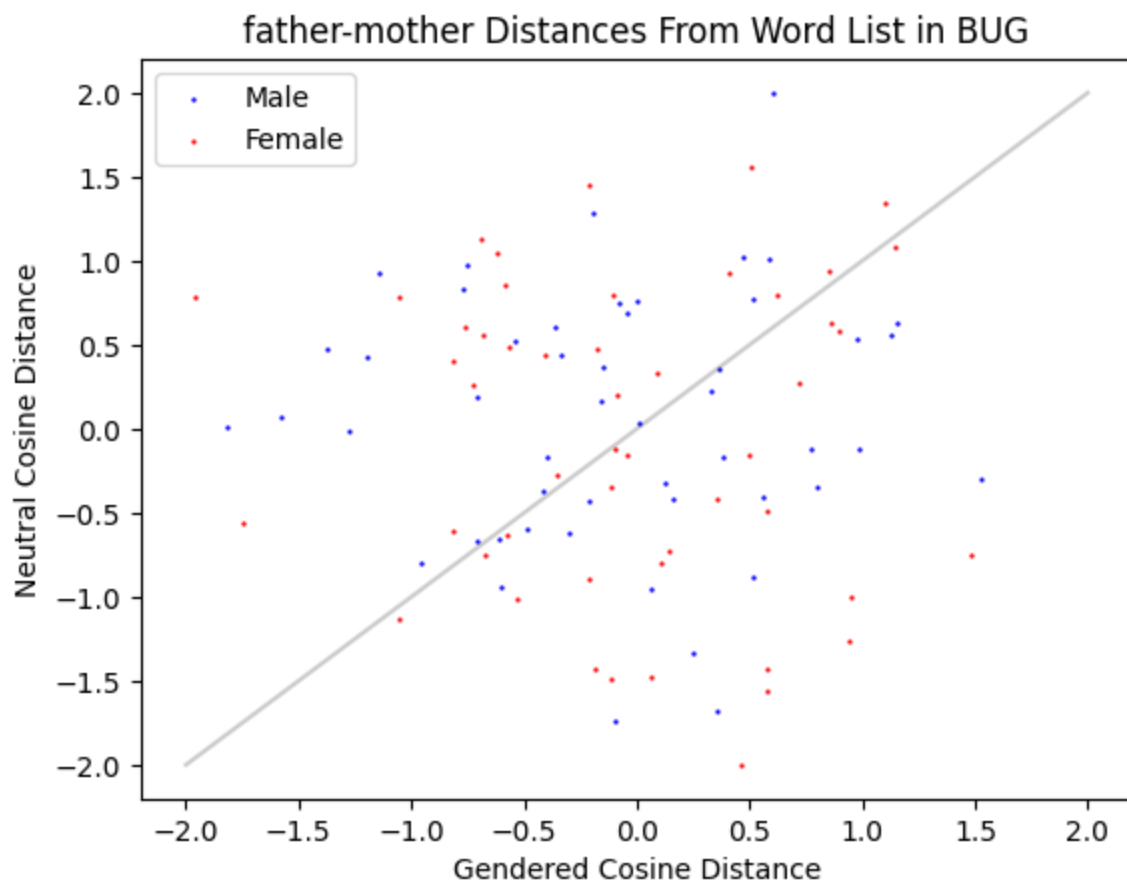
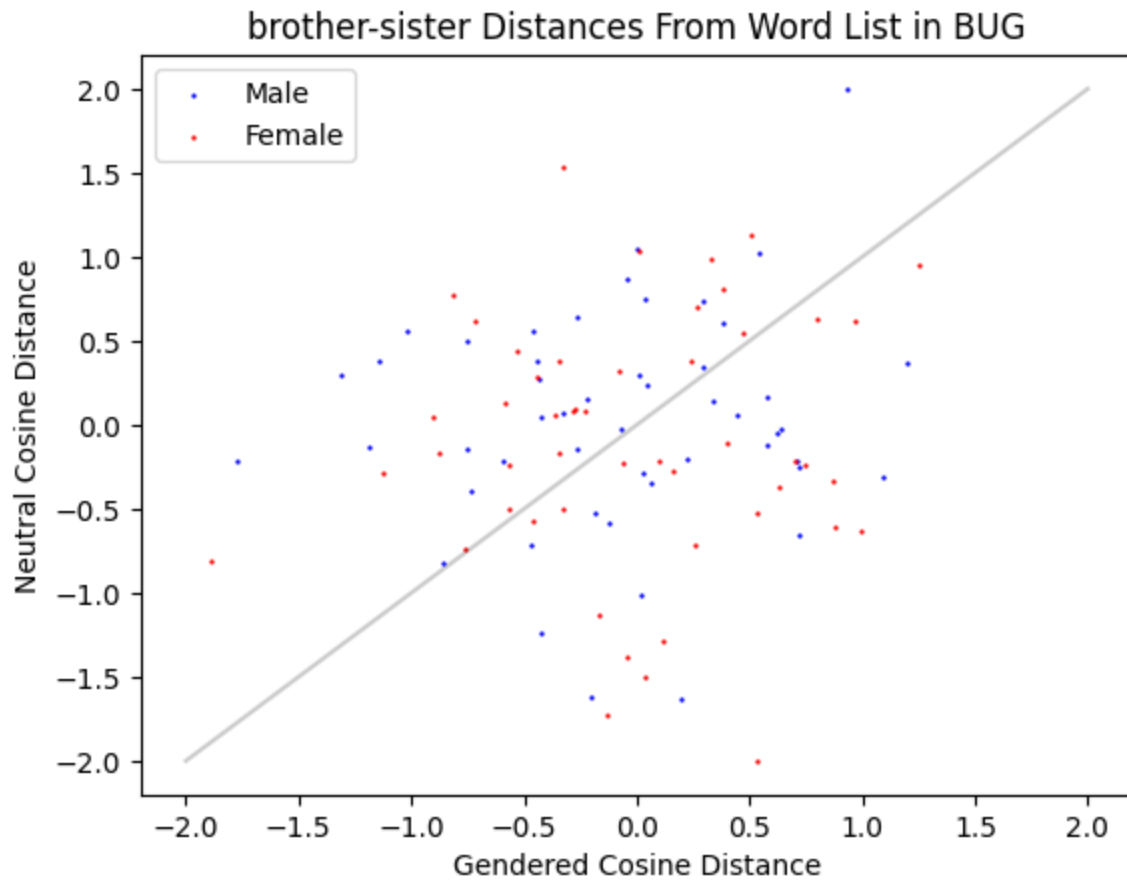


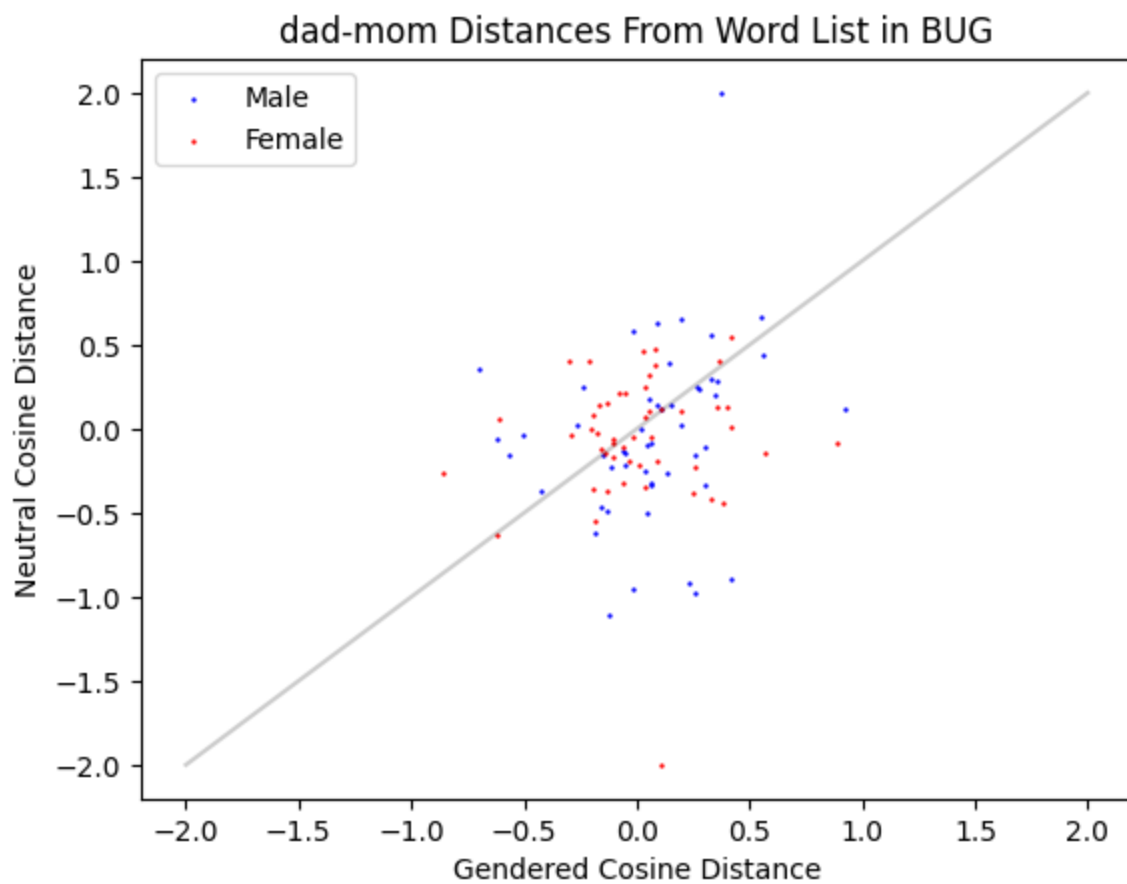
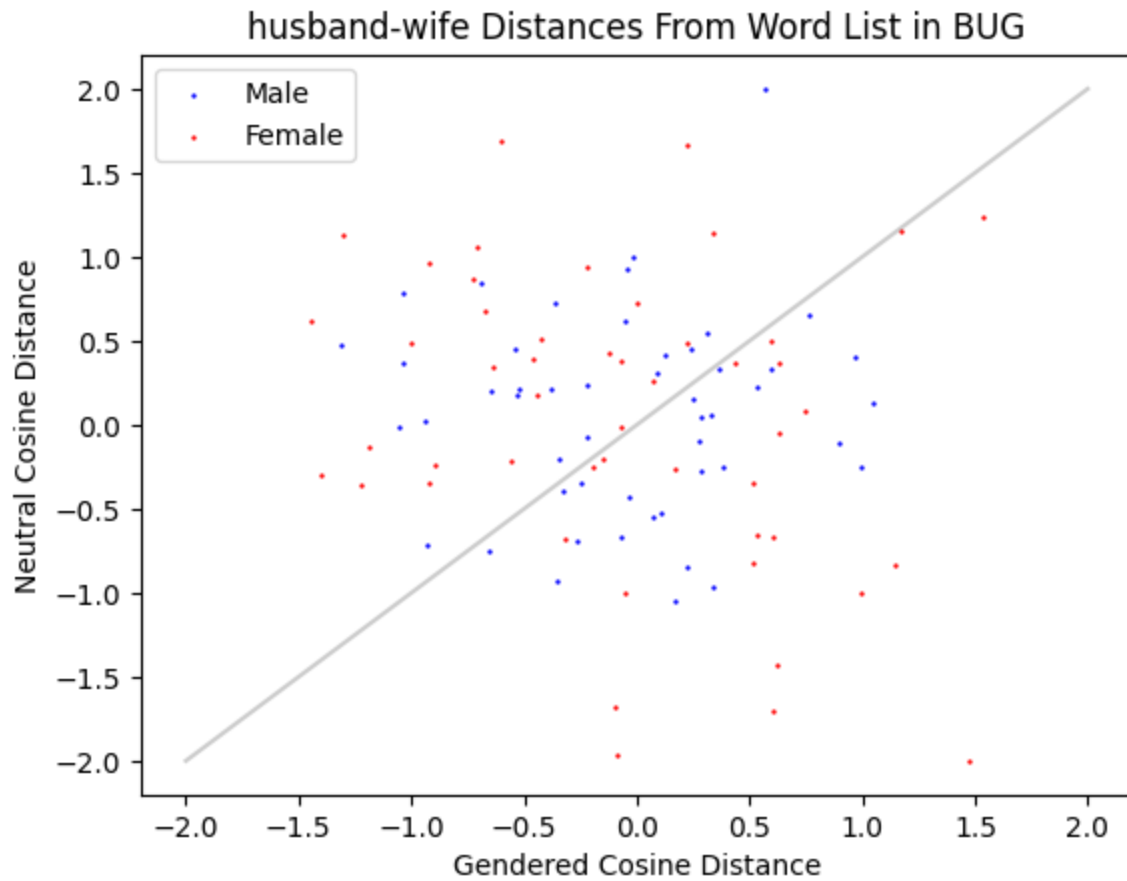


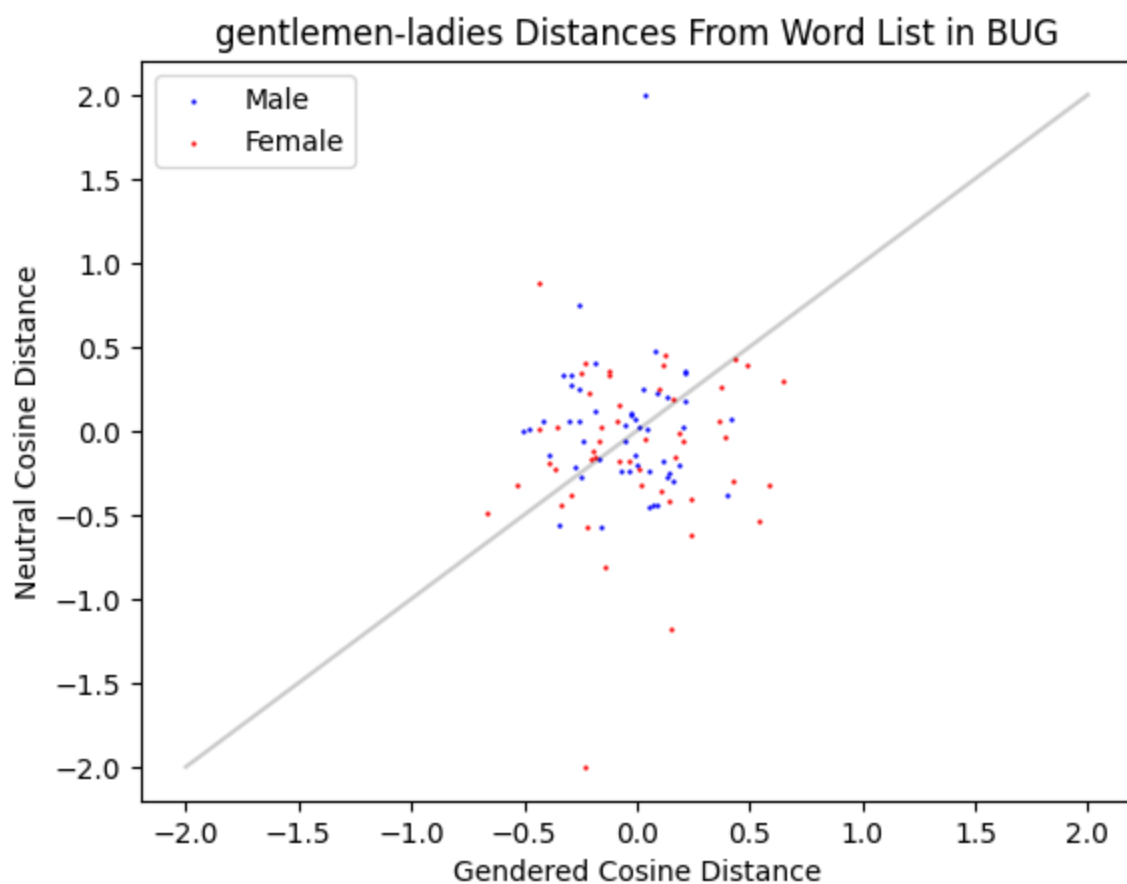
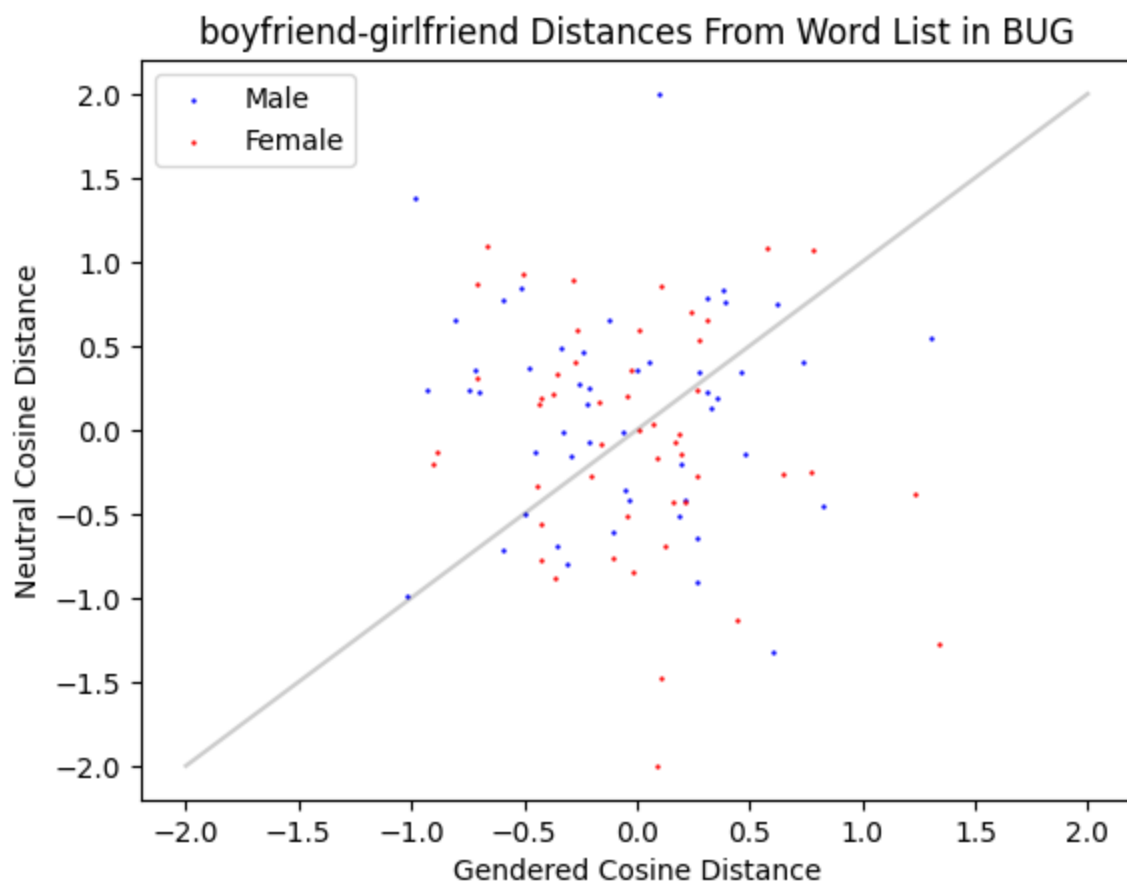




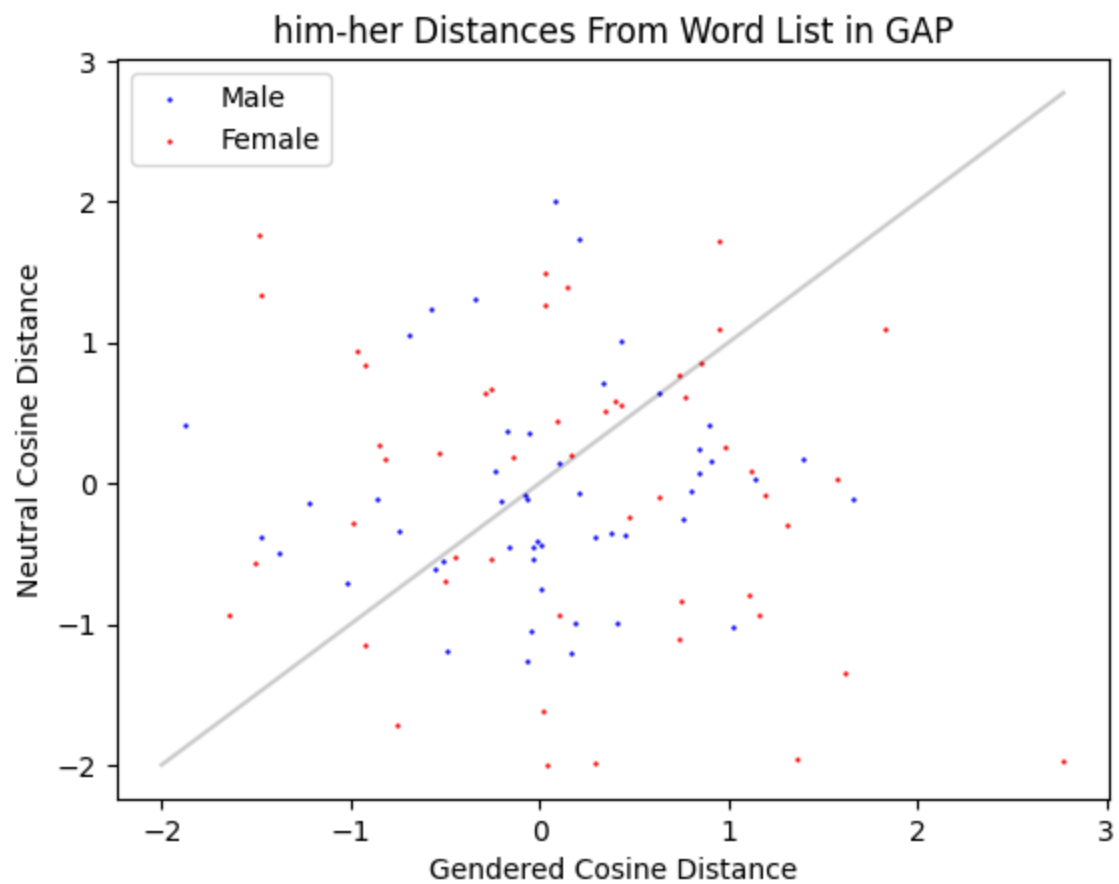
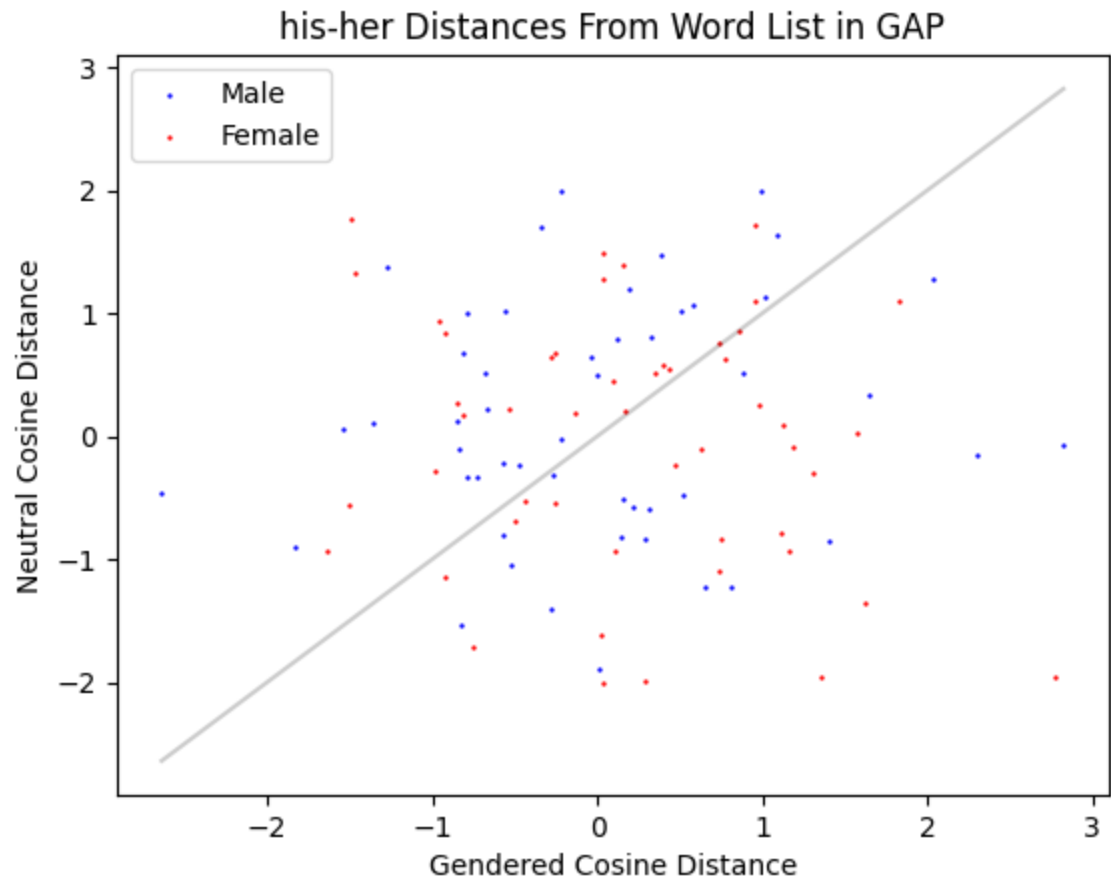


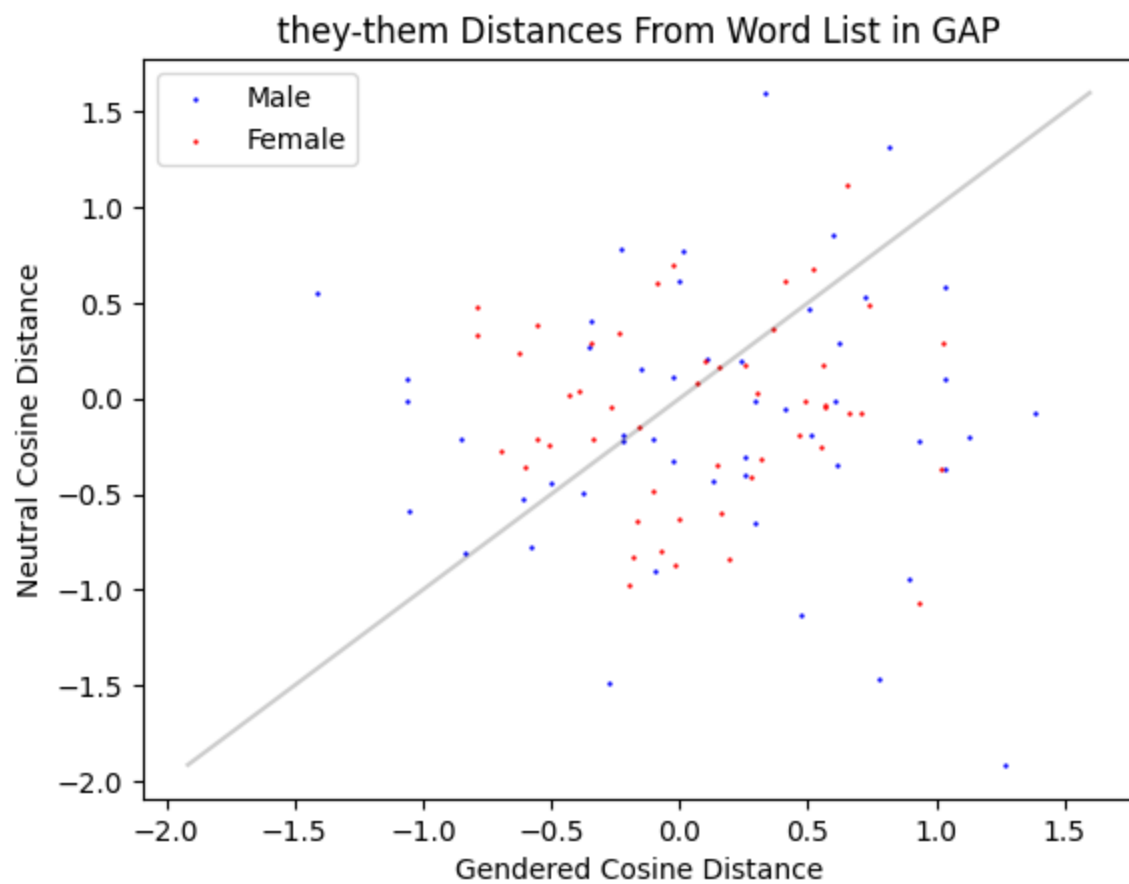
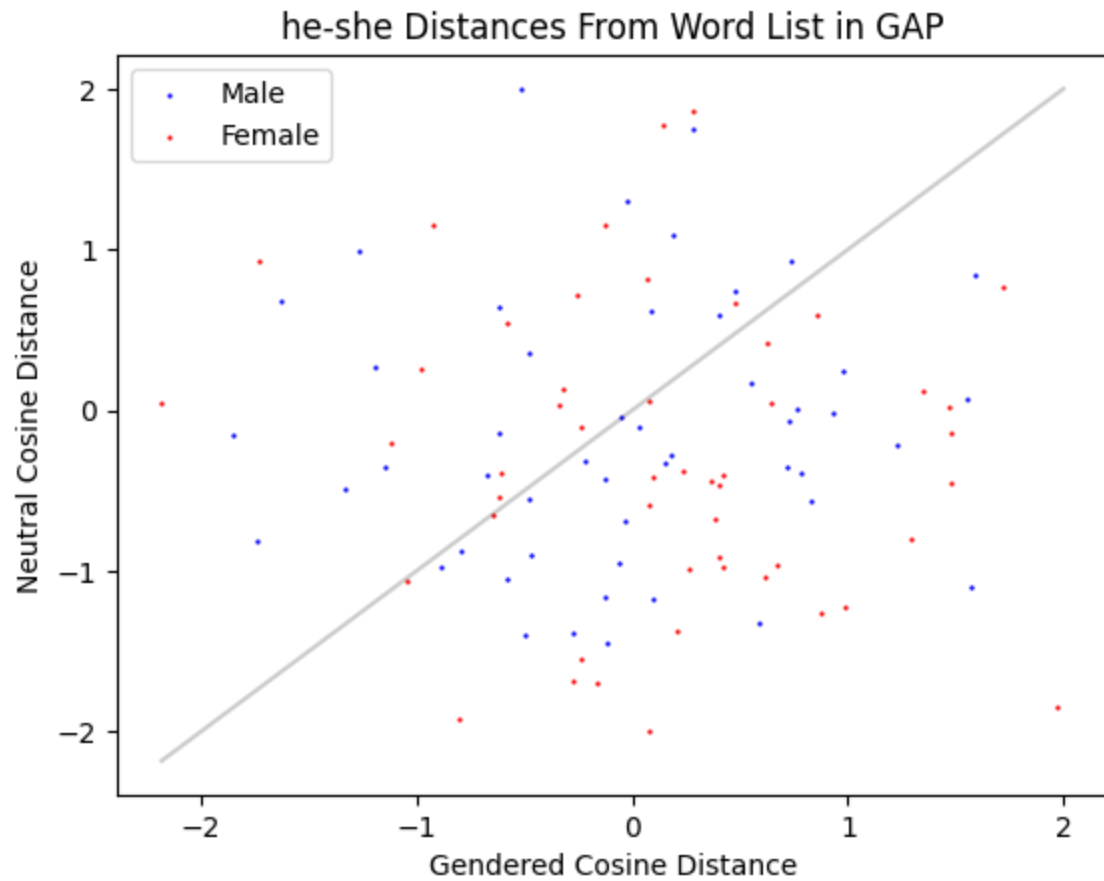




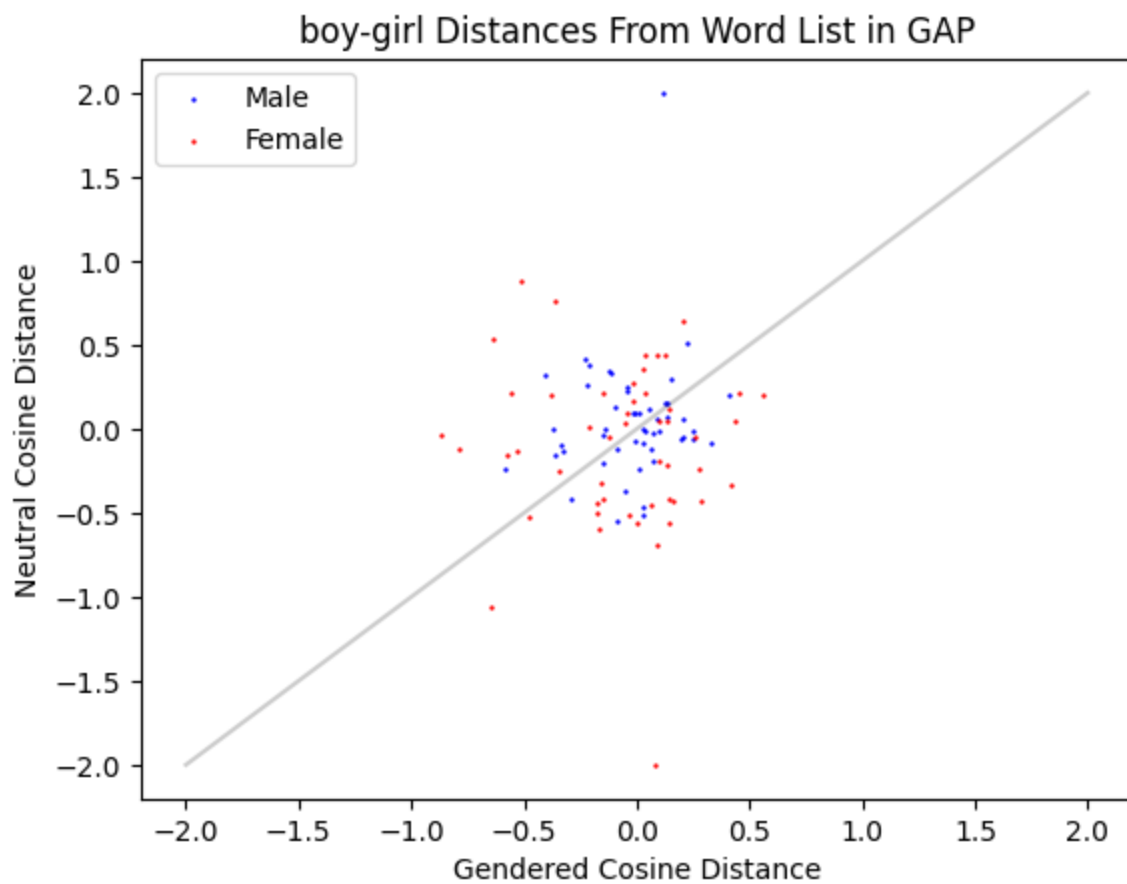
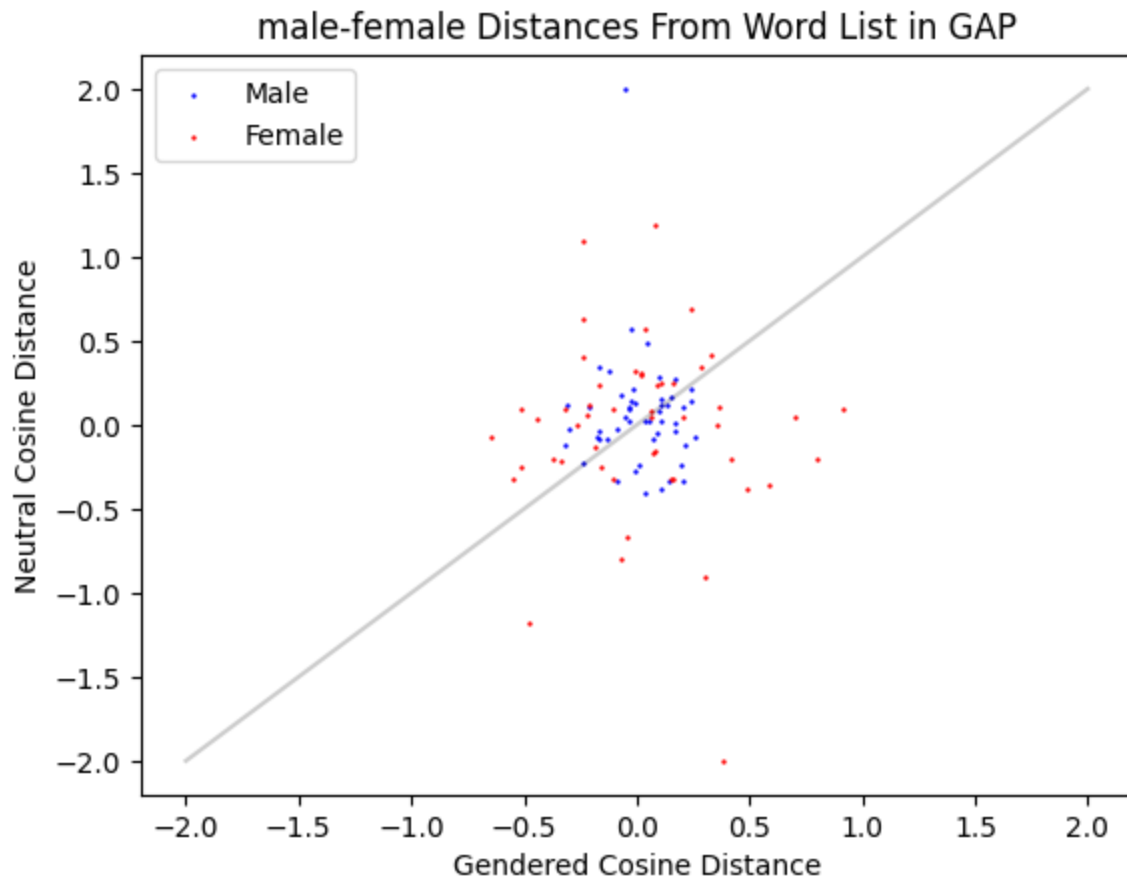


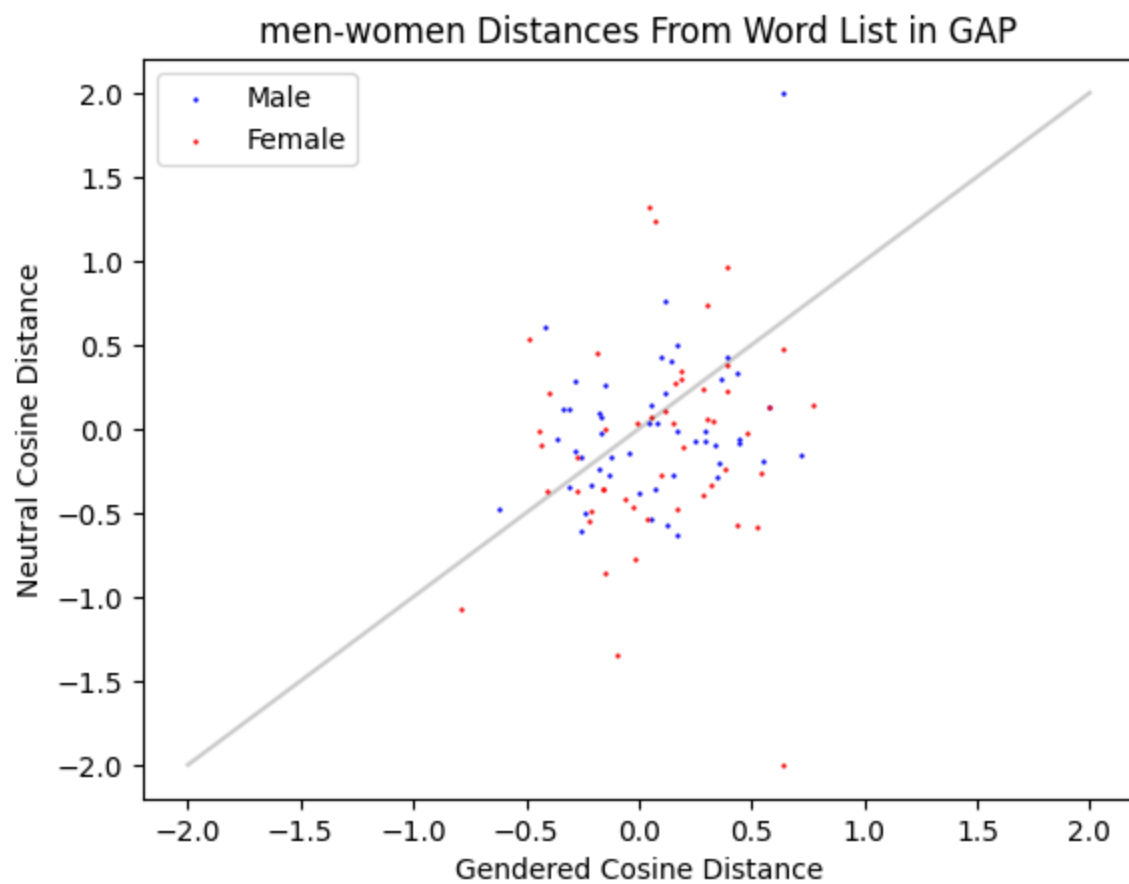
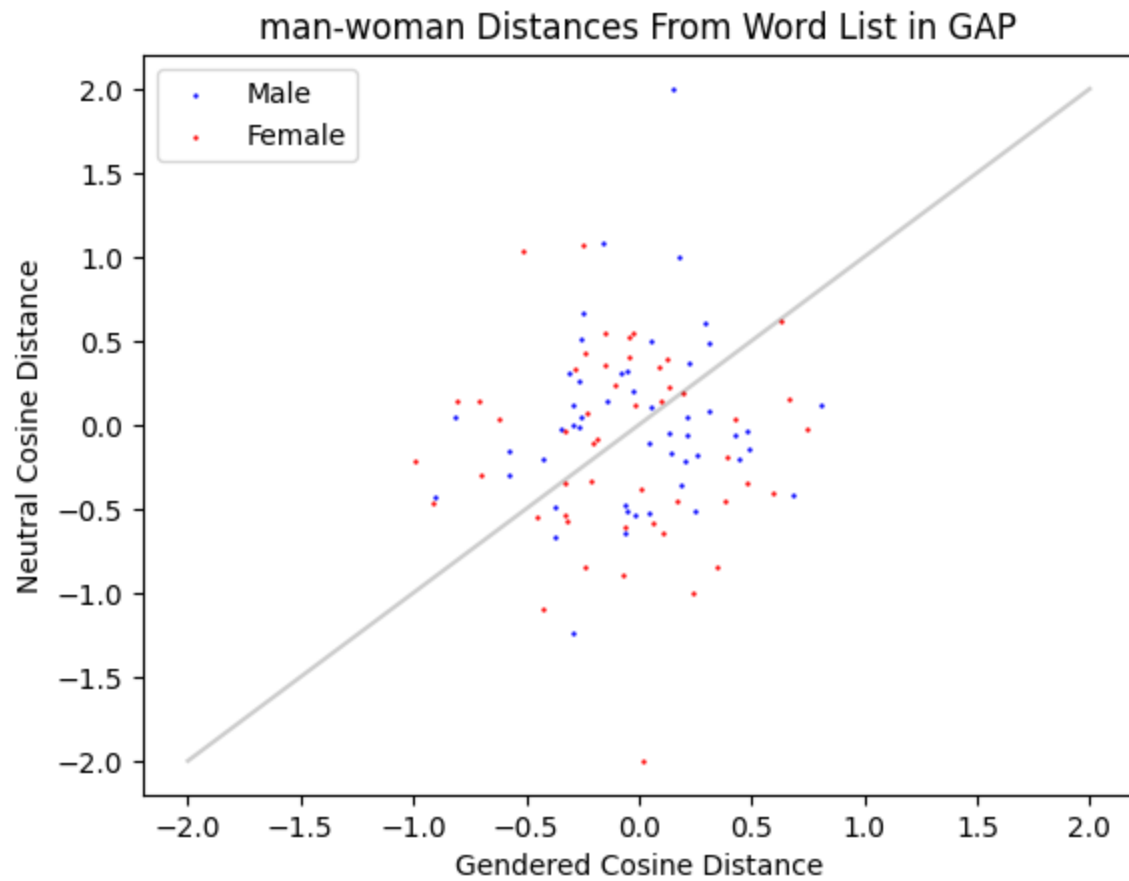
```
In [ ]: a.plotter(genderPairs, spotlightWords, gapNEmbeds, gapGEmbeds, titles[2])
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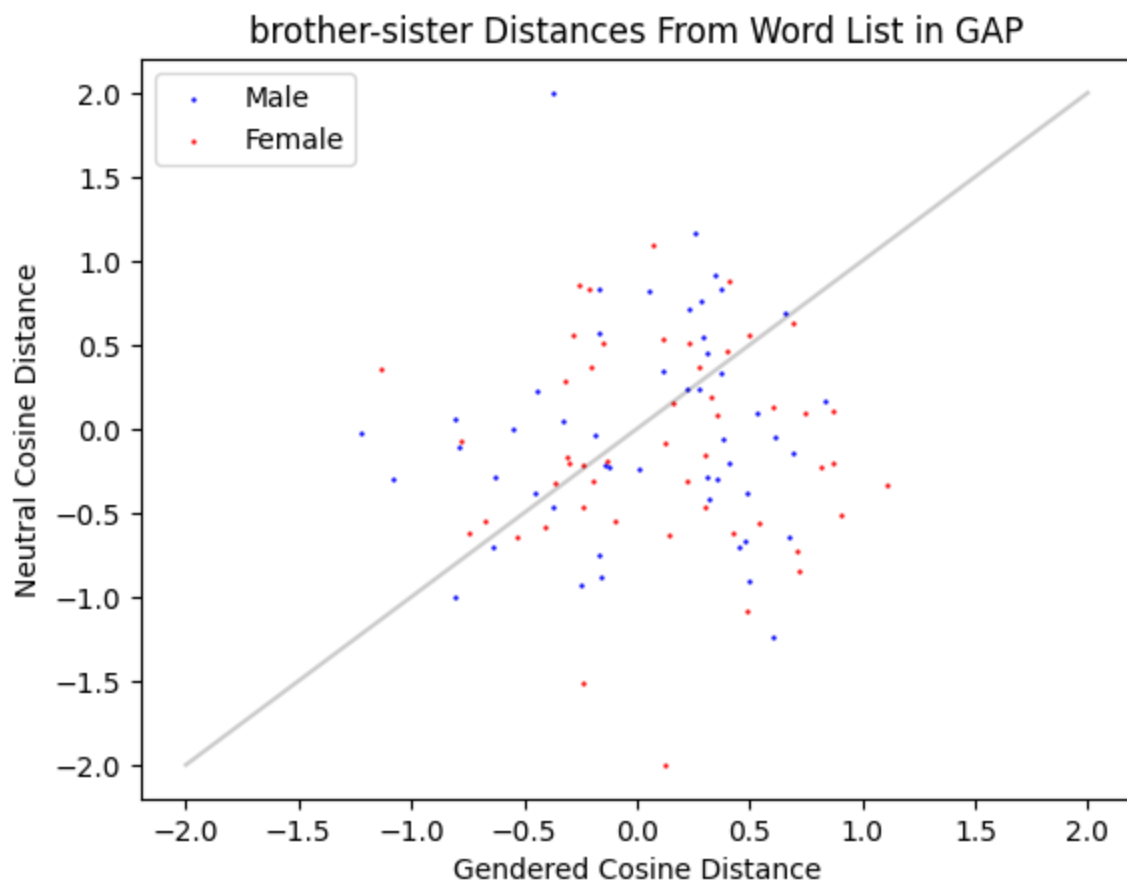
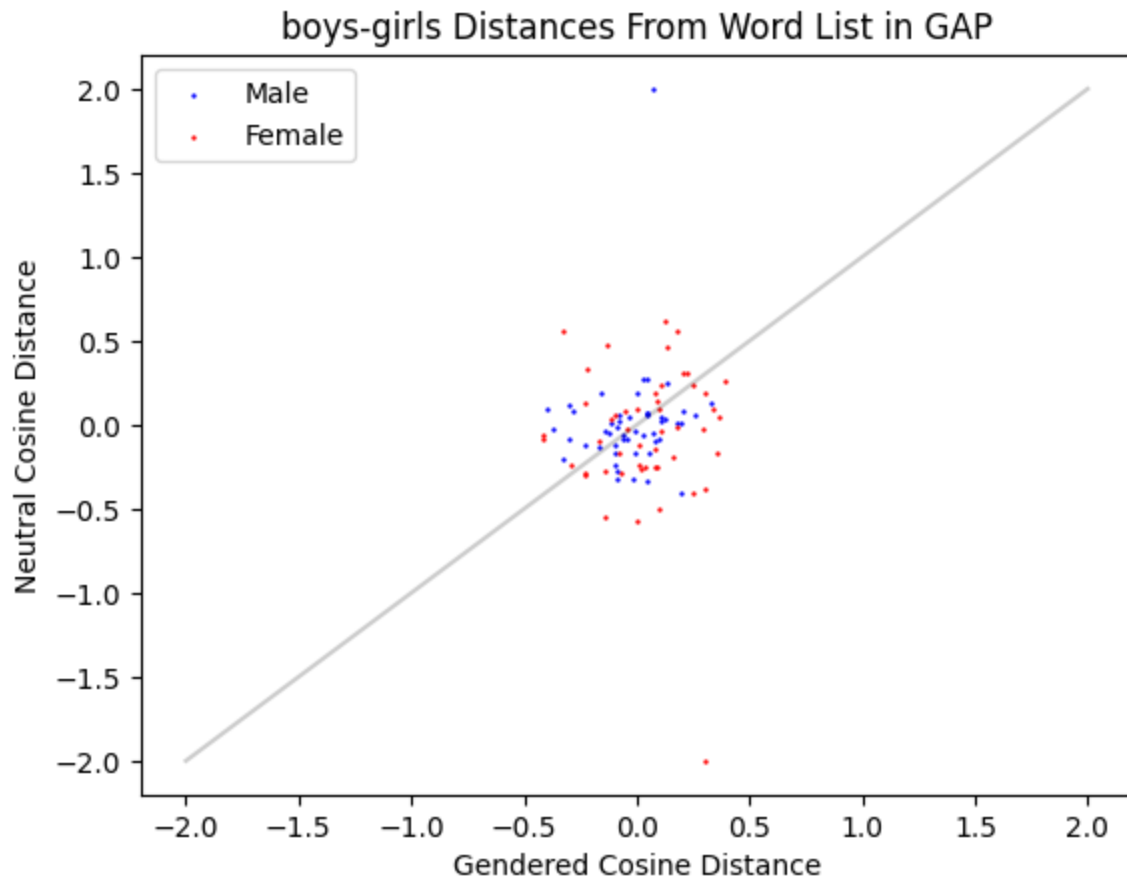


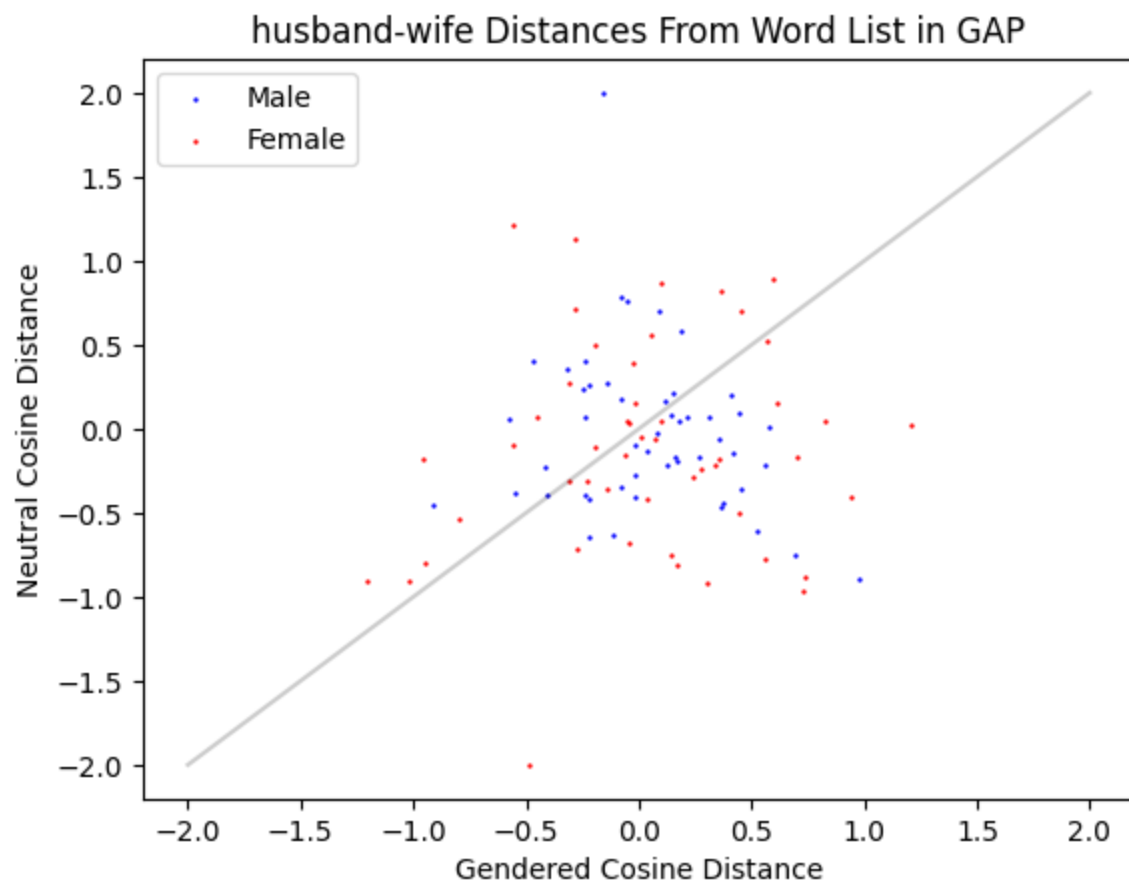
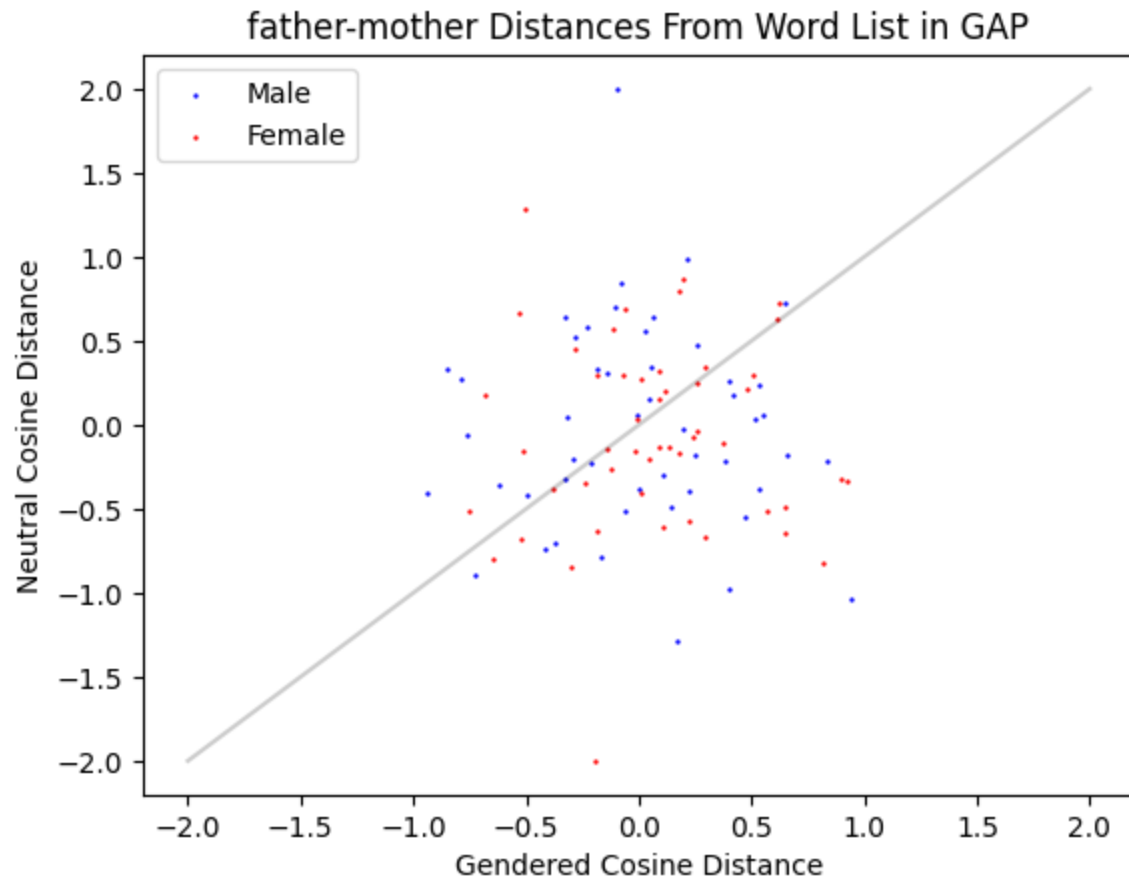


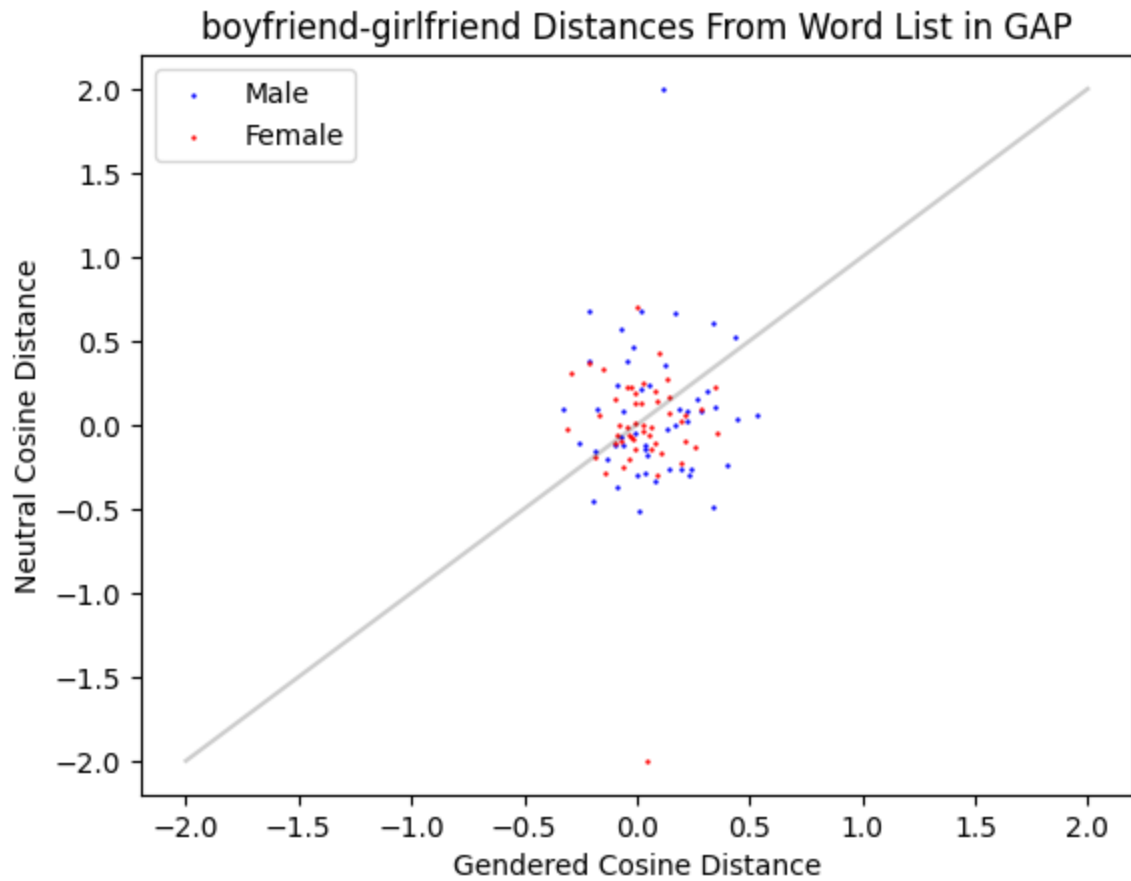




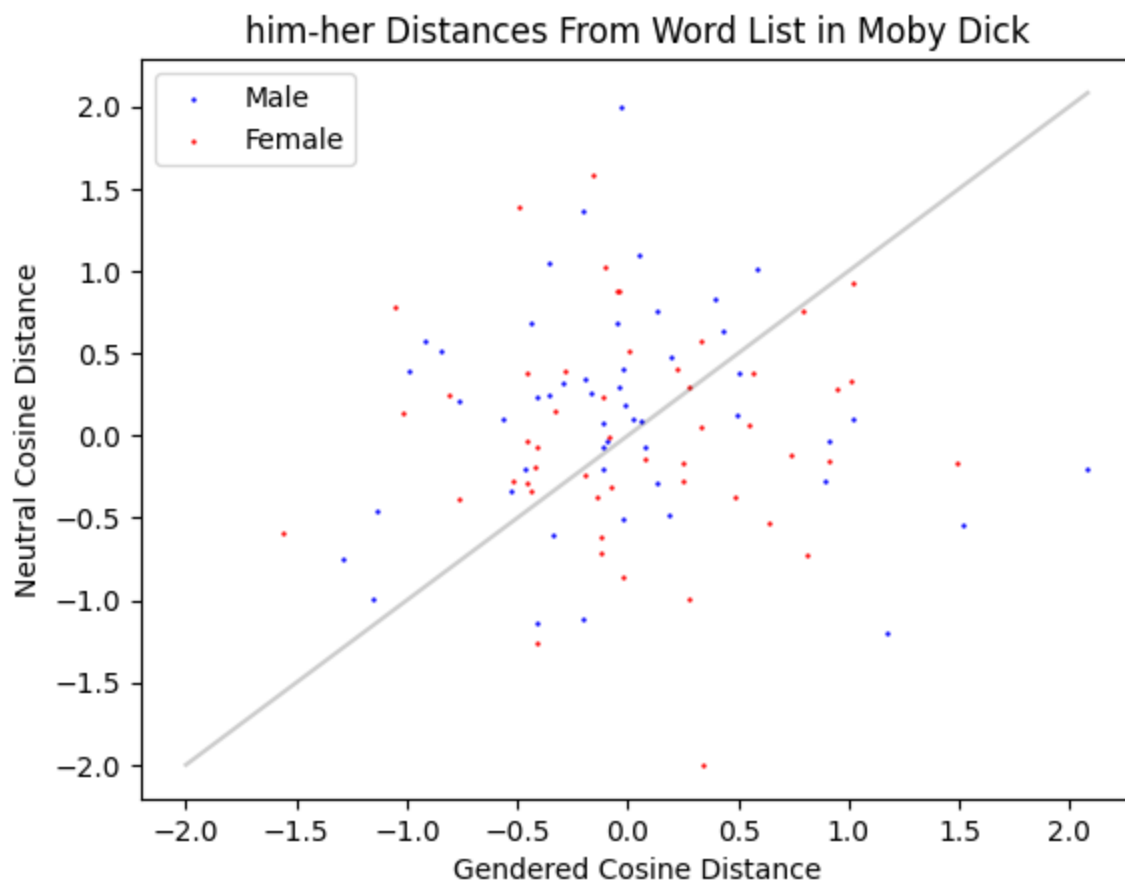
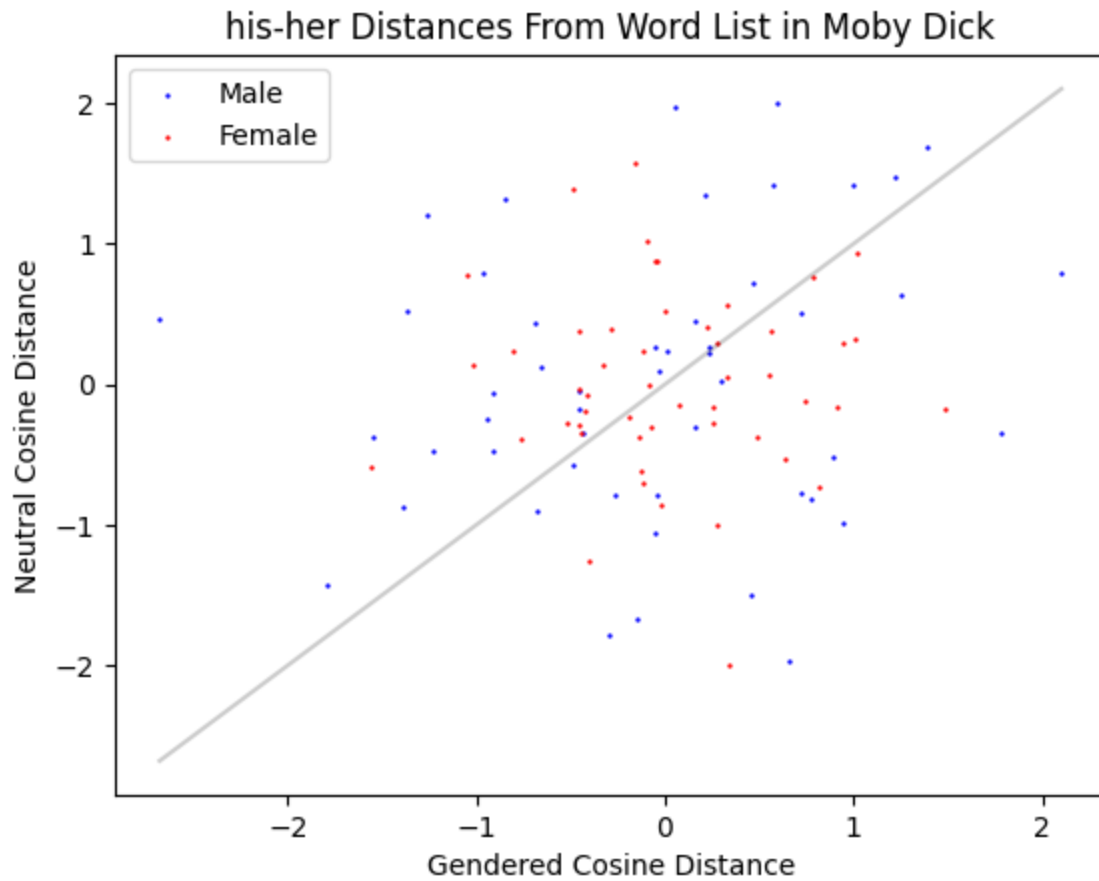


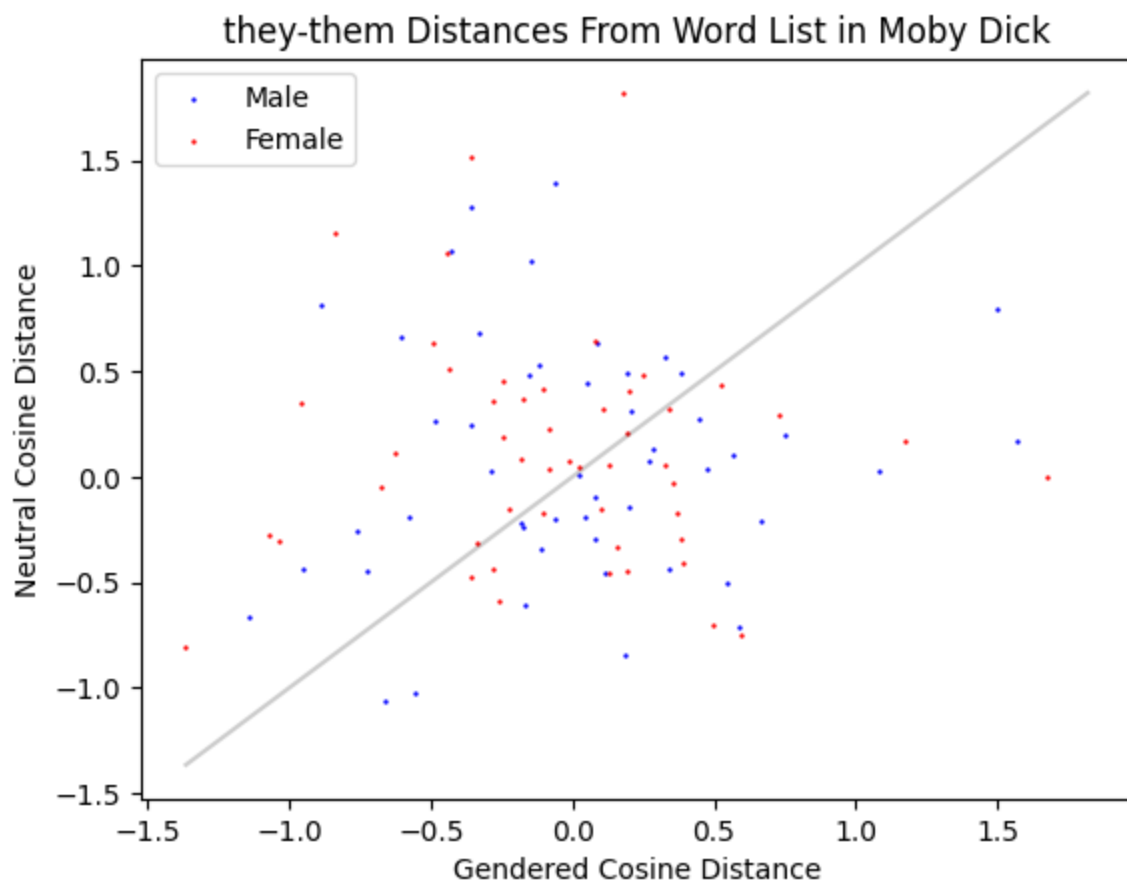
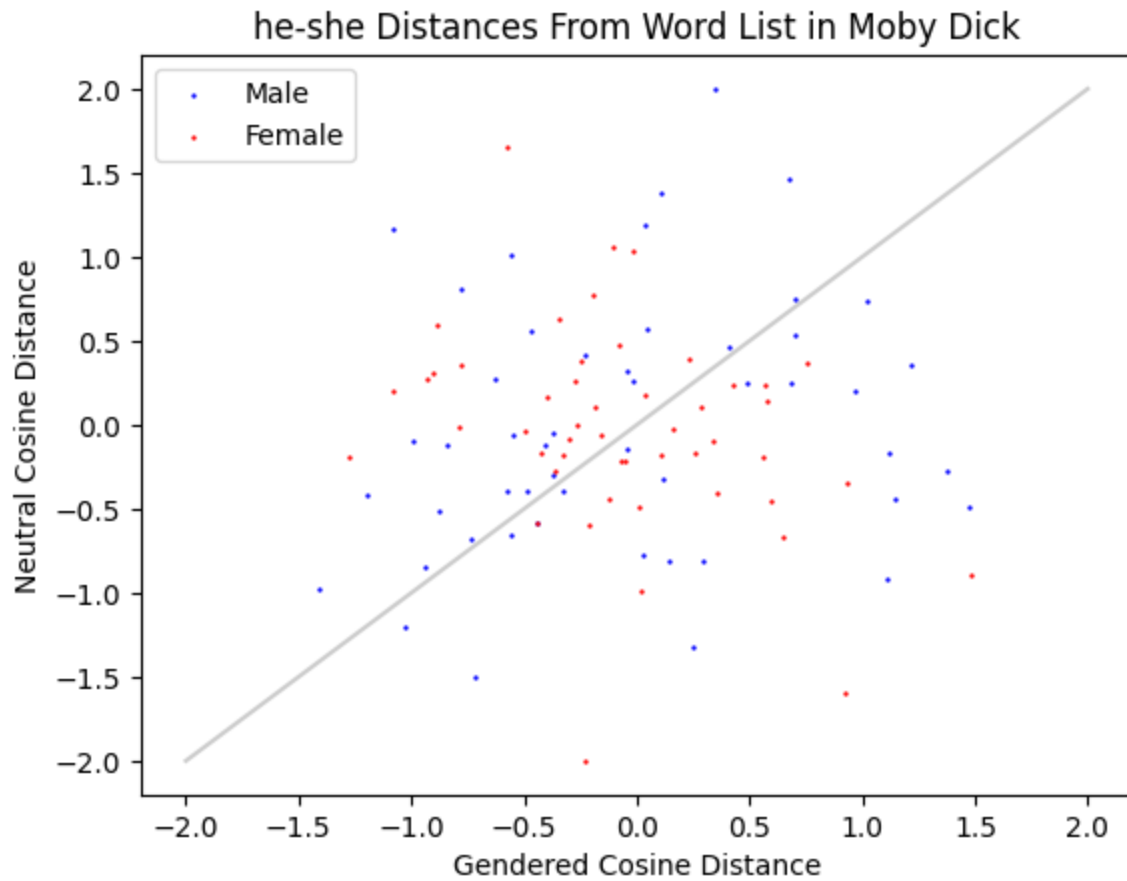


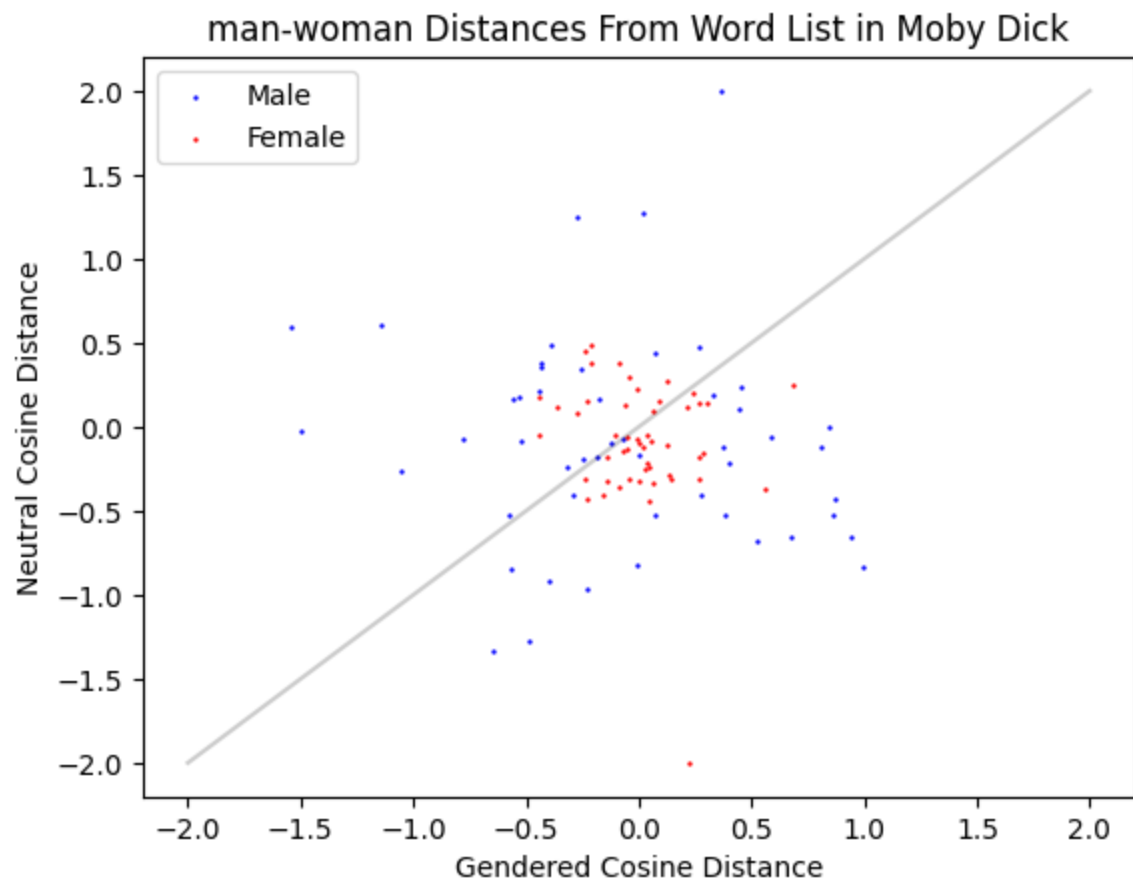
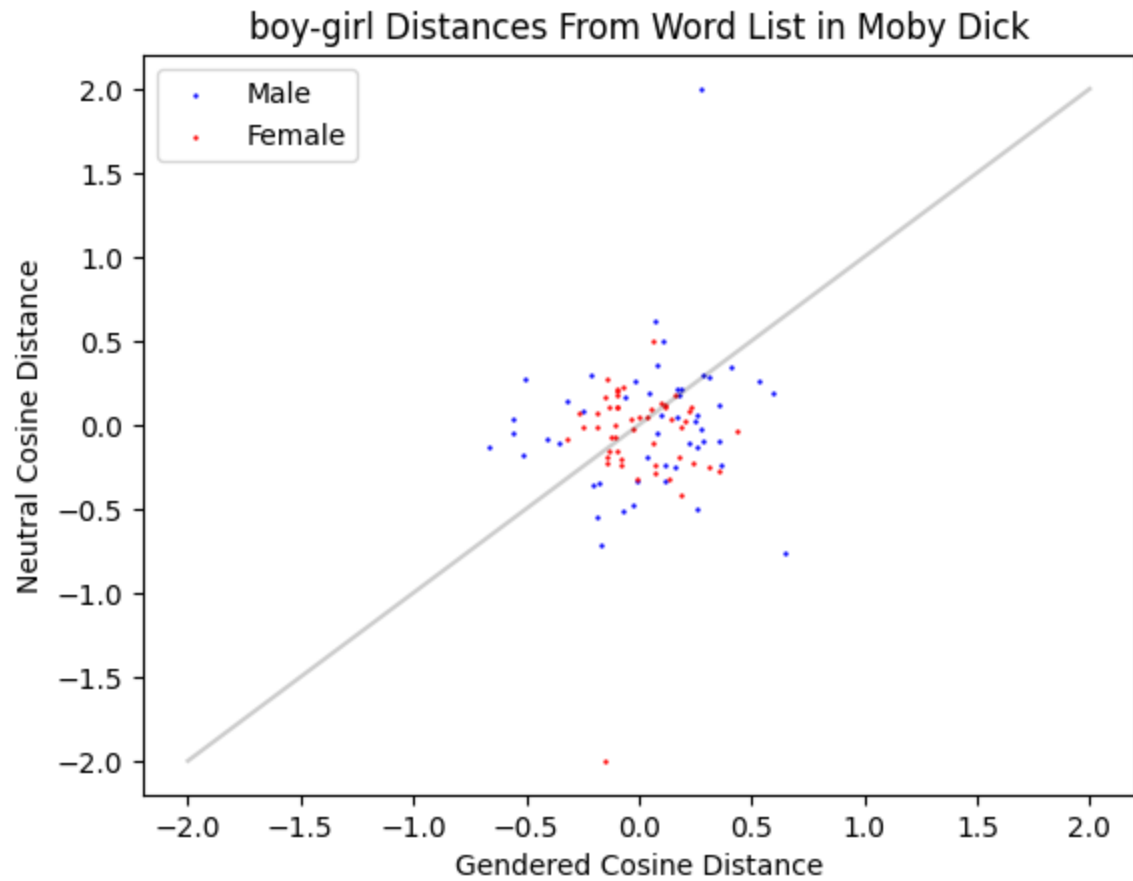




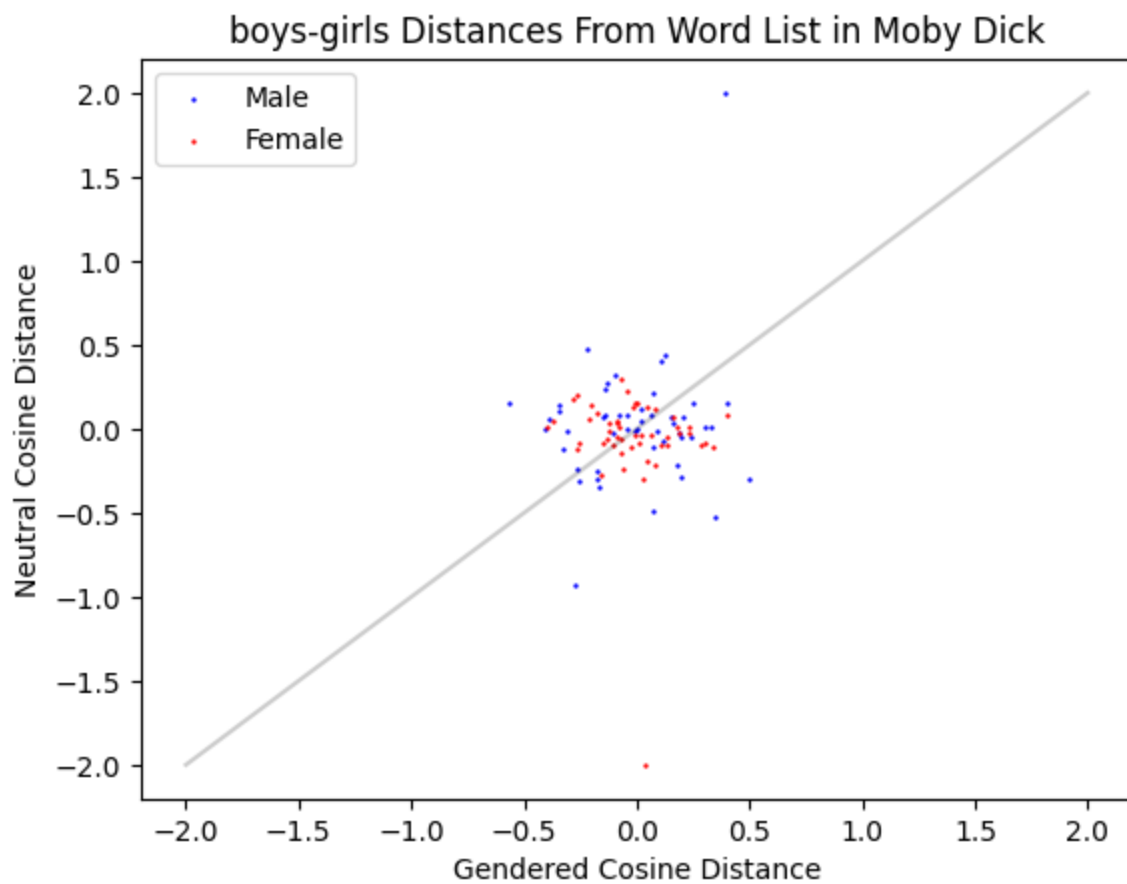
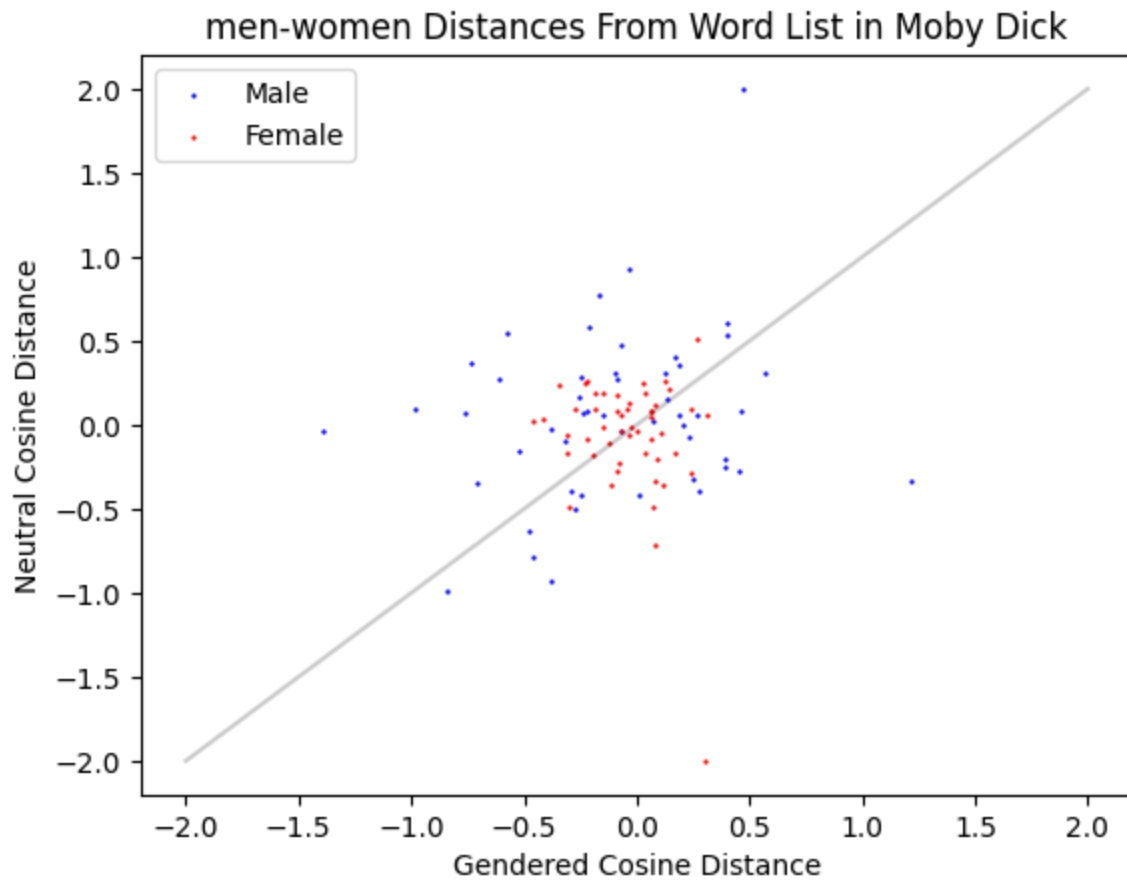
```
In [ ]: a.plotter(genderPairs, spotlightWords, mobyNEMbeds, mobyGEMbeds, titles[3])
```

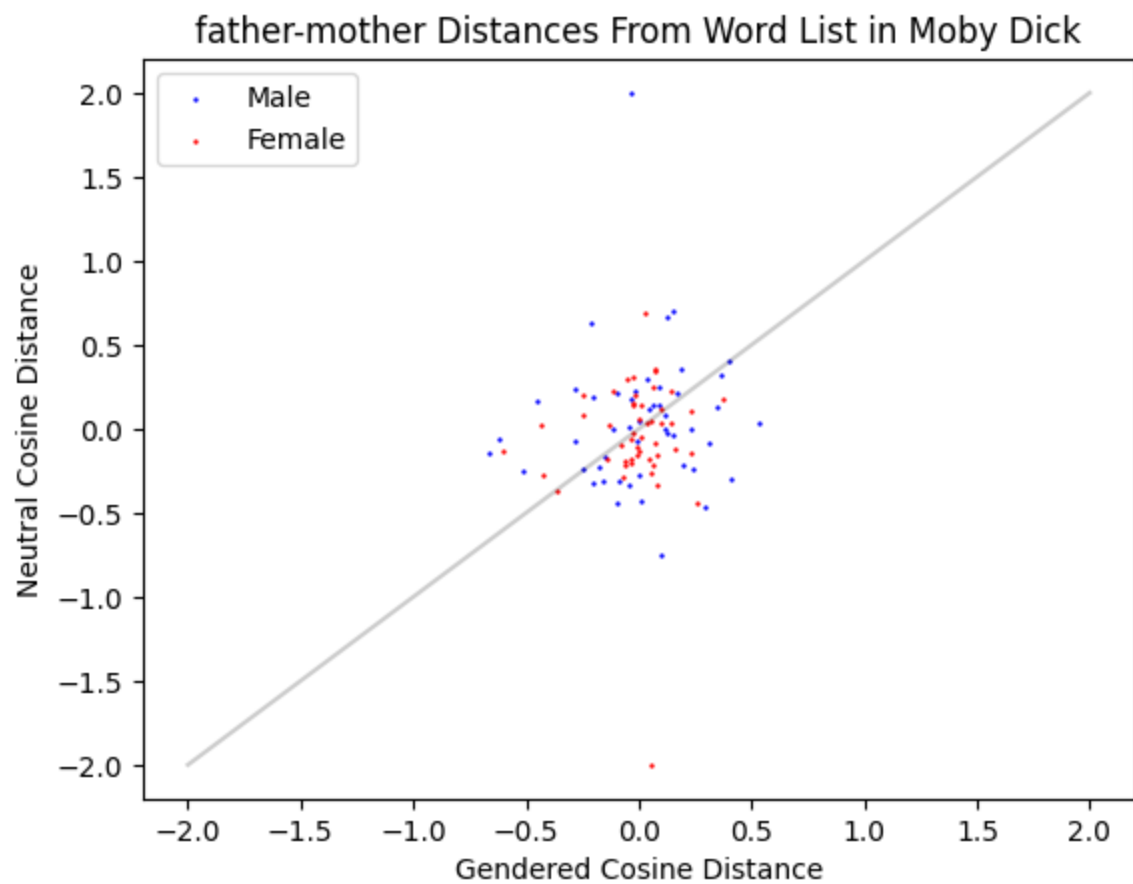
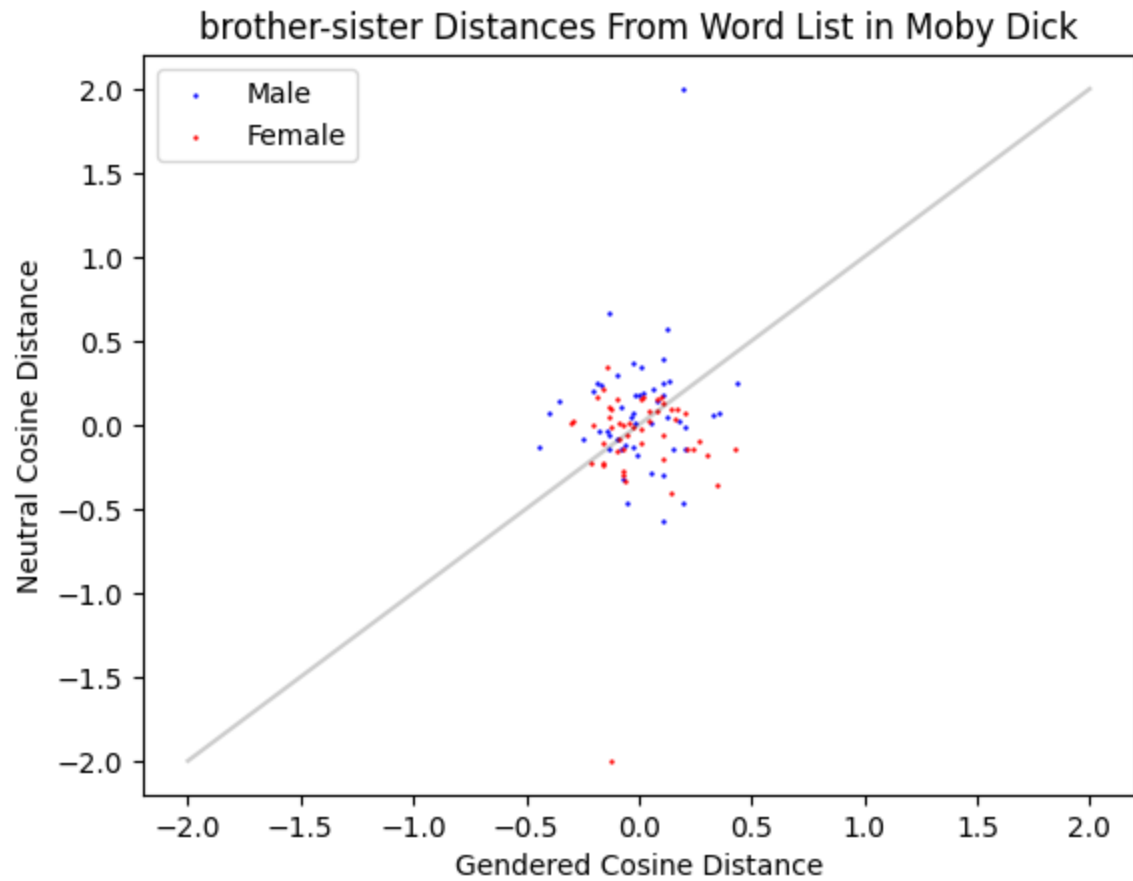


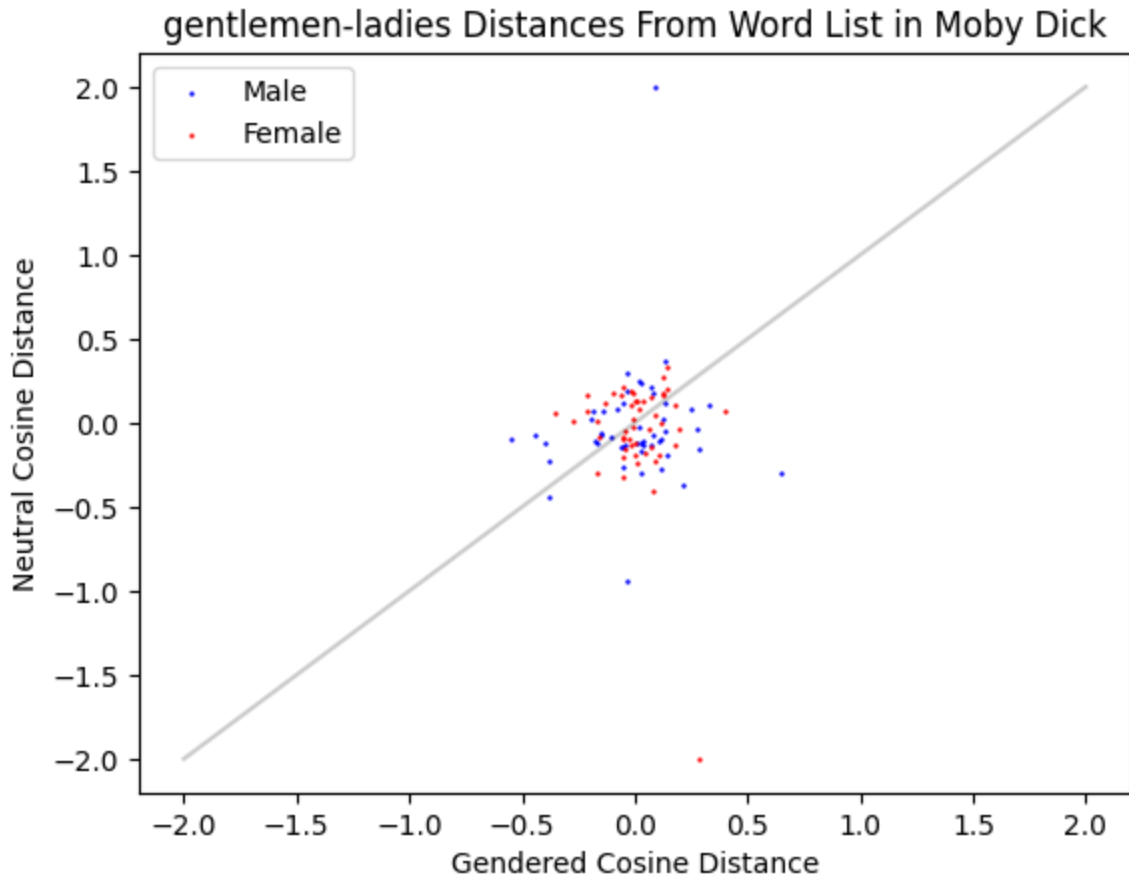












```
In [ ]: """for i, (gen, neu) in enumerate(list(zip(genderEmbeds, neutralEmbeds))):
    avg = 0
    count = 0
    for word in spotlightWords:
        if word in gen.keys() and word in neu.keys():
            count += 1
            top3gen = set(a.closestWordsNorm(gen, gen[word], 110))
            top3neu = set(a.closestWordsNorm(neu, neu[word], 110))

            top3set = top3gen.union(top3neu)

            diff = round((len(top3set) - len(top3gen))/100, 3)
            avg += diff
    avg = round(avg / count, 3)
    print(f'Top 3 rank change for {titles[i]}: {avg}')"""

#Doesn't work right
print('Top 10')
for i, (gen, neu, title) in enumerate(list(zip(genderEmbeds, neutralEmbeds, titles))):
    print(f'{title} Cosine Differences between Neutral and Gendered Embeddings')
    diff = a.closestWordsDistances(spotlightWords, gen, neu, 10)
    print(diff)
print('Top 5')
for i, (gen, neu, title) in enumerate(list(zip(genderEmbeds, neutralEmbeds, titles))):
    print(f'{title} Cosine Differences between Neutral and Gendered Embeddings')
    diff = a.closestWordsDistances(spotlightWords, gen, neu, 5)
    print(diff)
print('Top 2')
```

```
for i, (gen, neu, title) in enumerate(list(zip(genderEmbeds, neutralEmbeds, titles)):  
    print(f'{title} Cosine Differences between Neutral and Gendered Embeddings')  
    diff = a.closestWordsDistances(spotlightWords, gen, neu, 2)  
    print(diff)
```

Top 10

Bible Cosine Differences between Neutral and Gendered Embeddings

0.967

BUG Cosine Differences between Neutral and Gendered Embeddings

0.906

GAP Cosine Differences between Neutral and Gendered Embeddings

0.946

Moby Dick Cosine Differences between Neutral and Gendered Embeddings

0.919

Top 5

Bible Cosine Differences between Neutral and Gendered Embeddings

0.97

BUG Cosine Differences between Neutral and Gendered Embeddings

0.908

GAP Cosine Differences between Neutral and Gendered Embeddings

0.945

Moby Dick Cosine Differences between Neutral and Gendered Embeddings

0.92

Top 2

Bible Cosine Differences between Neutral and Gendered Embeddings

0.972

BUG Cosine Differences between Neutral and Gendered Embeddings

0.914

GAP Cosine Differences between Neutral and Gendered Embeddings

0.952

Moby Dick Cosine Differences between Neutral and Gendered Embeddings

0.915