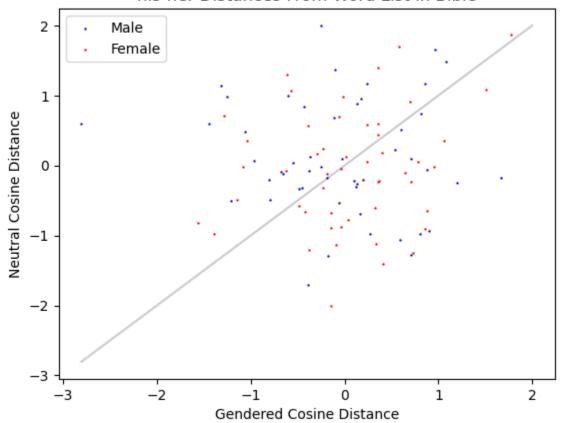
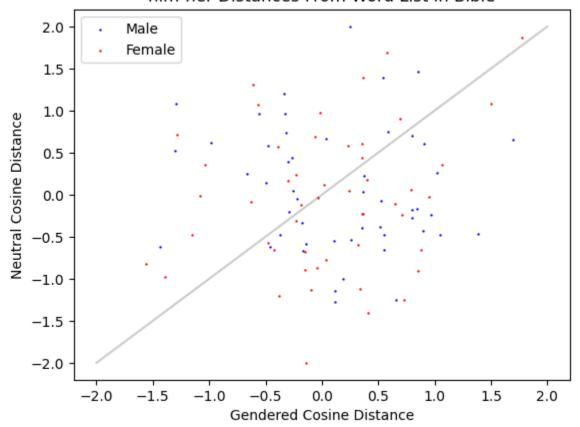
```
In [ ]: import analyze as a
In [ ]: titles = ["Bible", "BUG", "GAP", "Moby Dick"]
        bibleNEmbeds = a.embeds('NvectorsBible.txt')
        bibleGEmbeds = a.embeds('GvectorsBible.txt')
        bugNEmbeds = a.embeds('NvectorsBUG.txt')
        bugGEmbeds = a.embeds('GvectorsBUG.txt')
        gapNEmbeds = 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
__")\n
                 a.plotter(genderPairs, spotlightWords, neutralEmbeds[i], genderEmbeds
        [i], title)'
In [ ]: a.plotter(genderPairs, spotlightWords, bibleNEmbeds, bibleGEmbeds, titles[0])
```

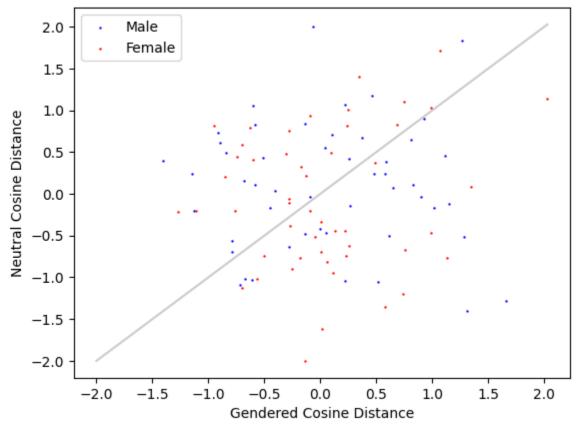




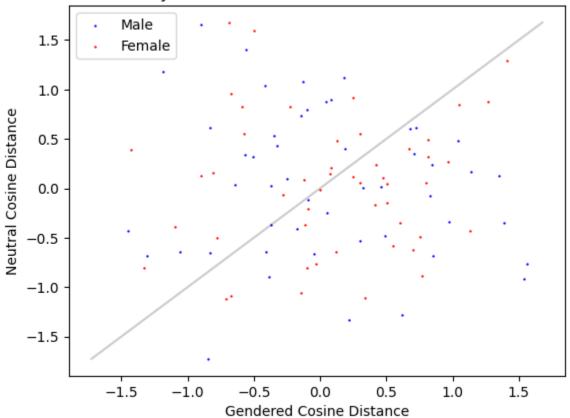
## him-her Distances From Word List in Bible



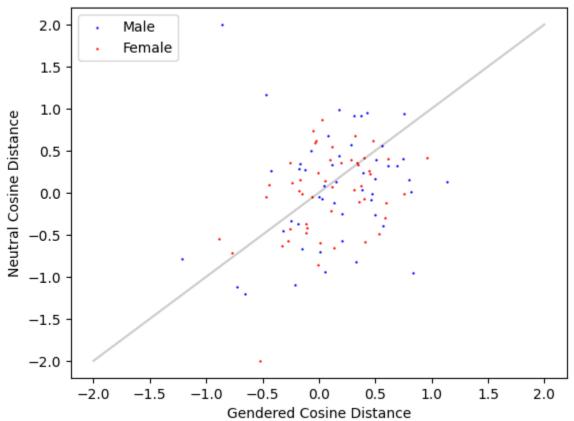




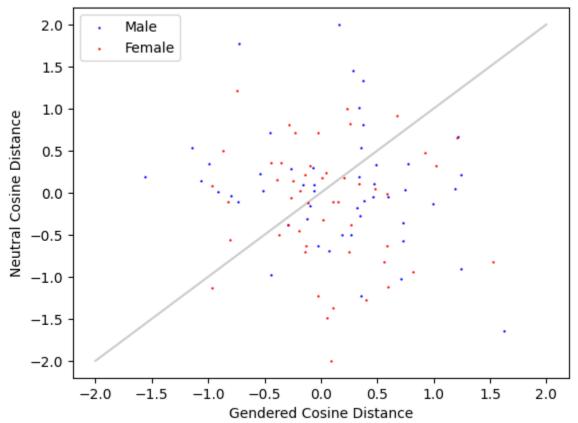
# they-them Distances From Word List in Bible



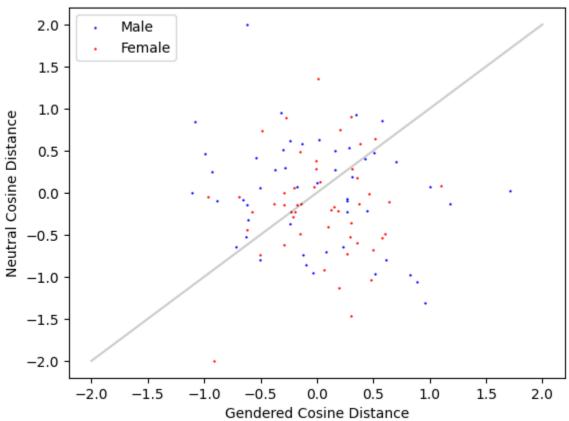




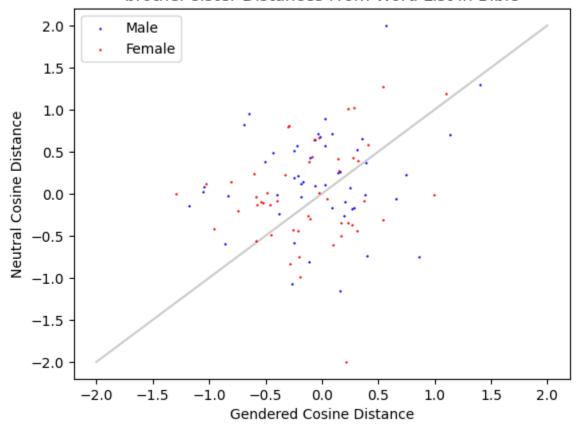
### man-woman Distances From Word List in Bible



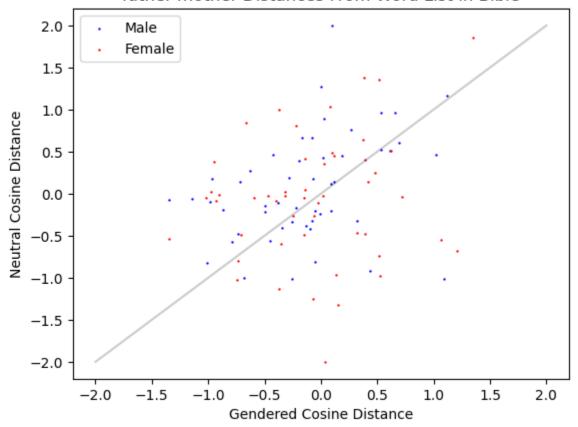




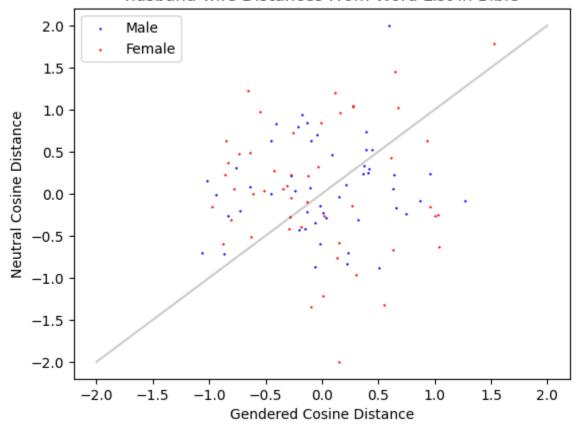
#### brother-sister Distances From Word List in Bible





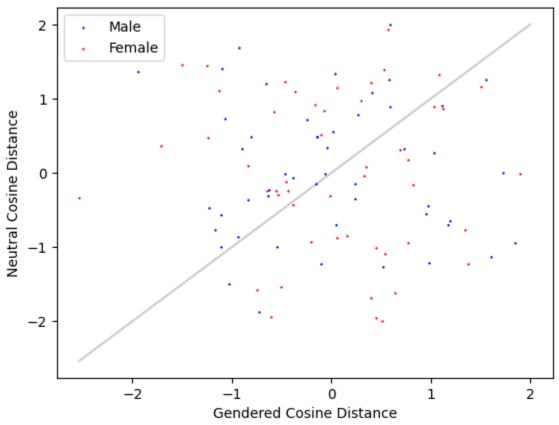


## husband-wife Distances From Word List in Bible

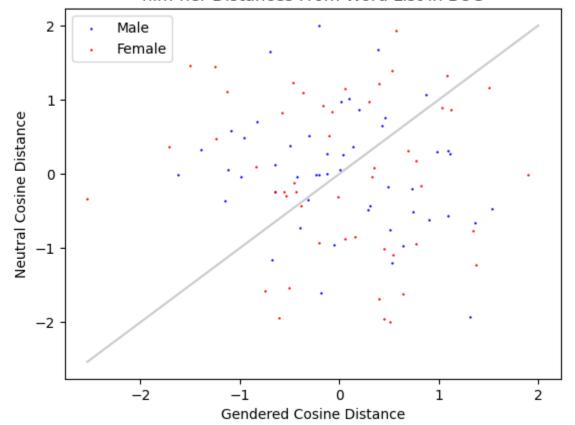


In [ ]: a.plotter(genderPairs, spotlightWords, bugNEmbeds, bugGEmbeds, titles[1])

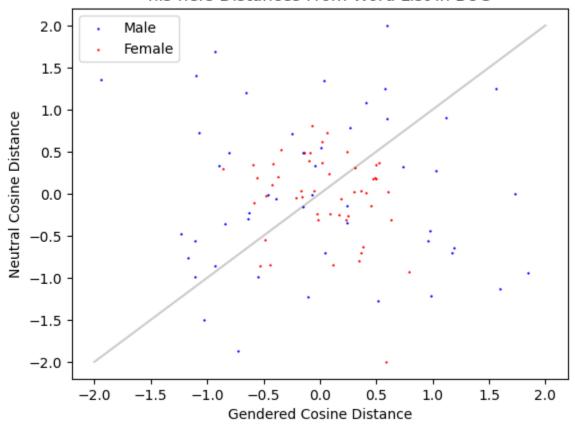




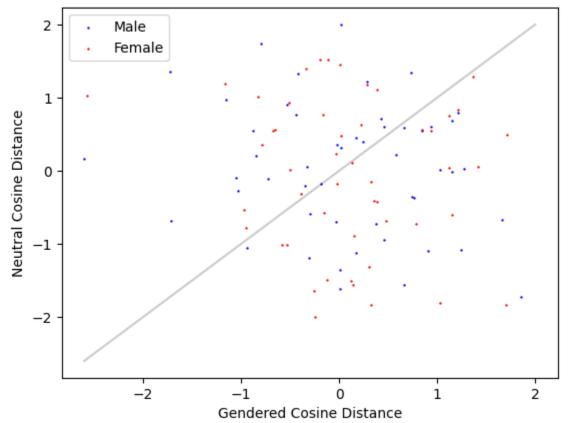
## him-her Distances From Word List in BUG



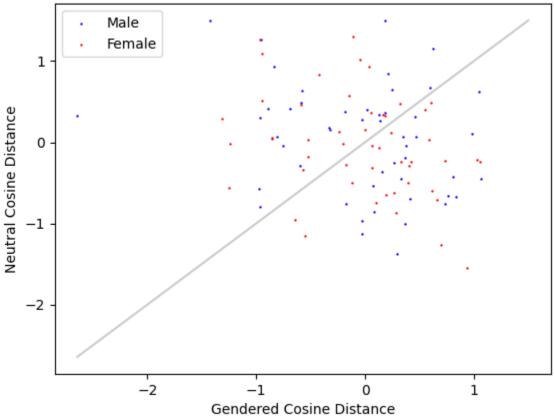




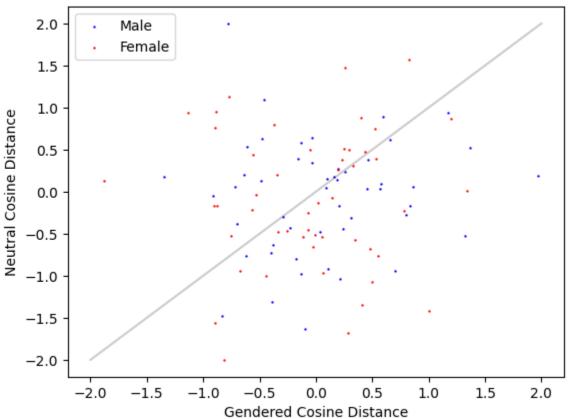
## he-she Distances From Word List in BUG



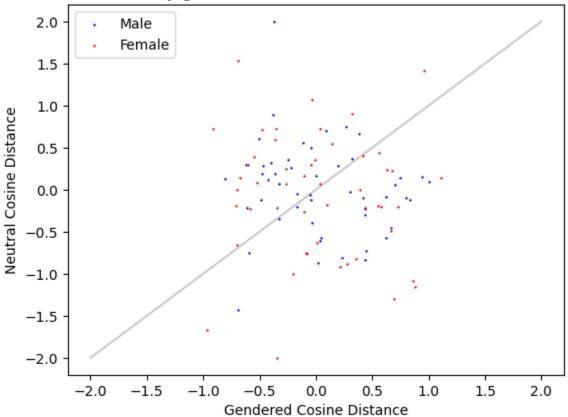




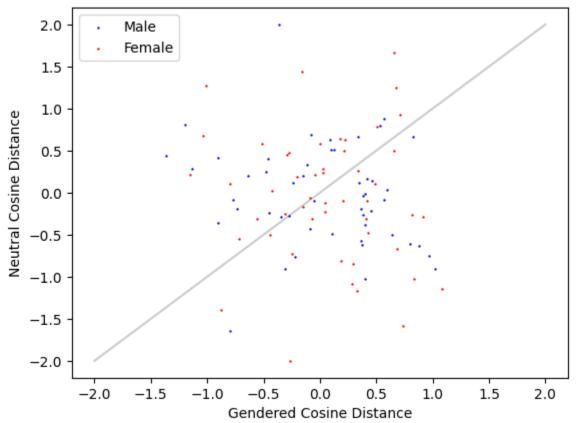
## male-female Distances From Word List in BUG



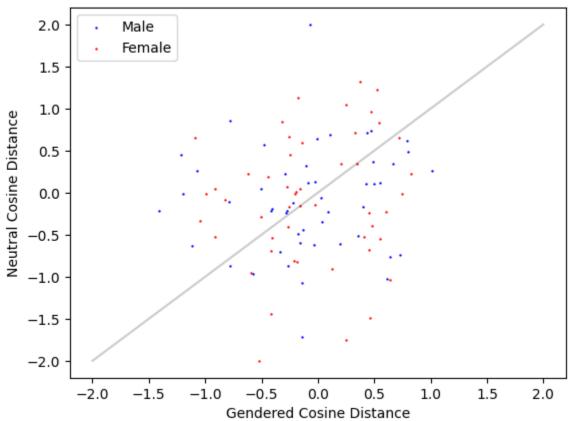




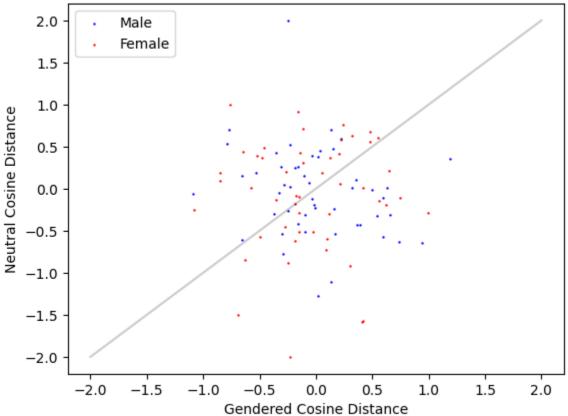
### man-woman Distances From Word List in BUG



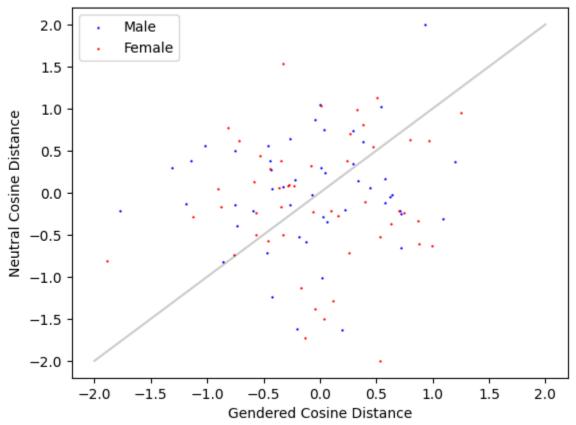




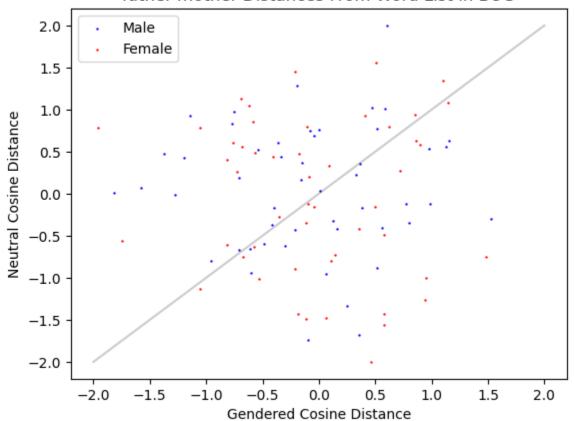
# boys-girls Distances From Word List in BUG



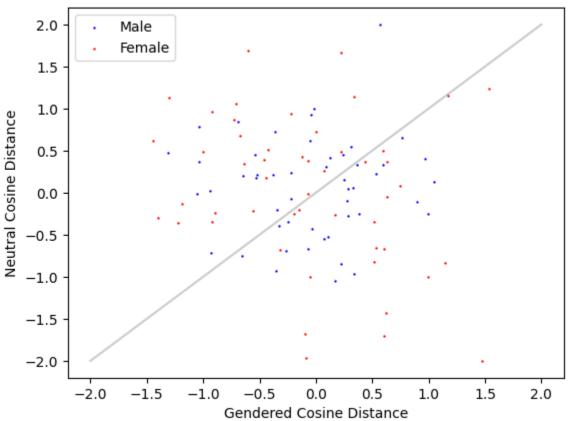




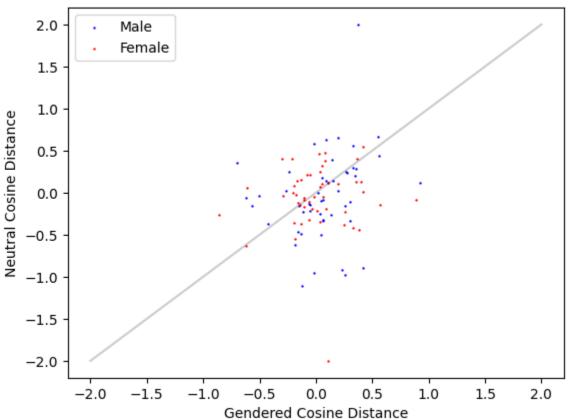
## father-mother Distances From Word List in BUG



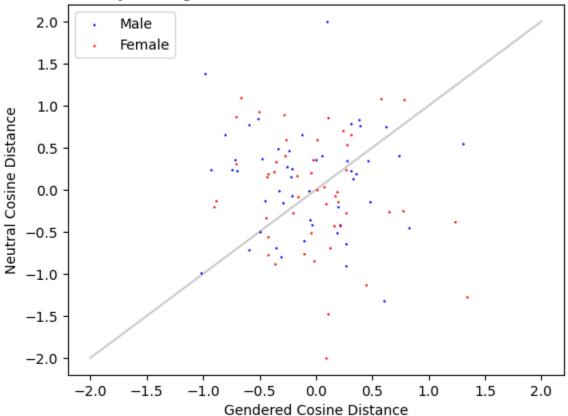




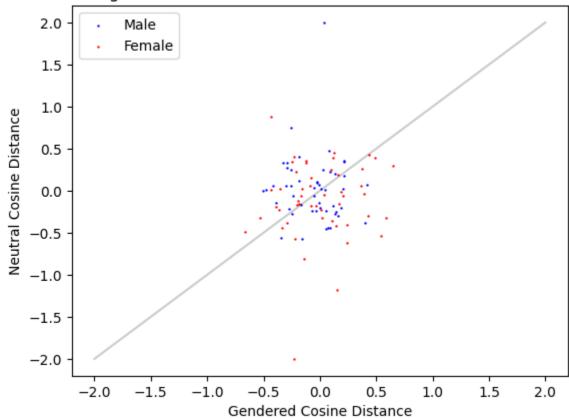
#### dad-mom Distances From Word List in BUG



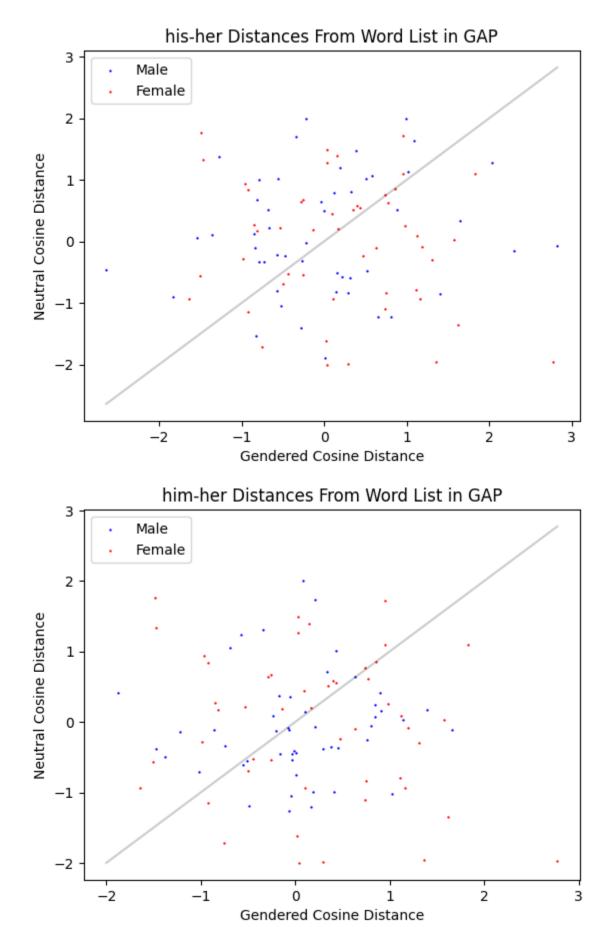




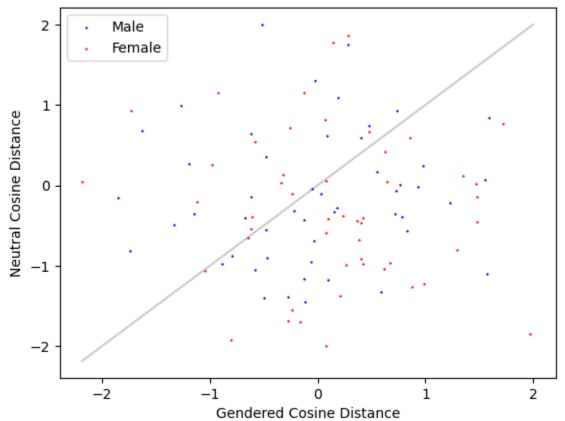
## gentlemen-ladies Distances From Word List in BUG



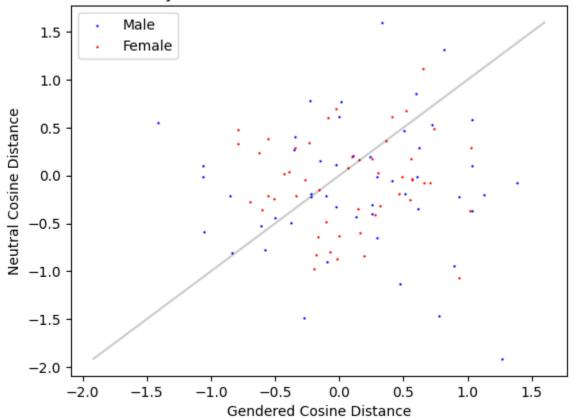
In [ ]: a.plotter(genderPairs, spotlightWords, gapNEmbeds, gapGEmbeds, titles[2])



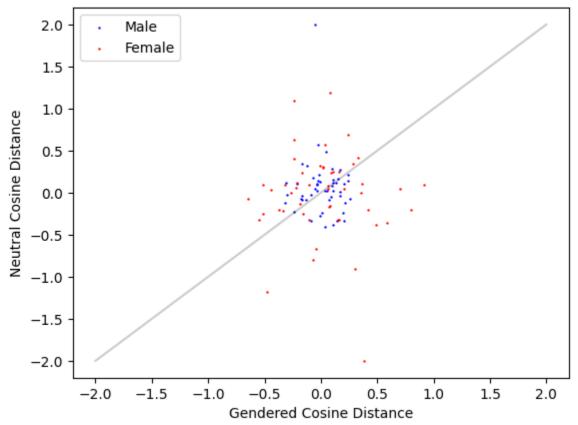




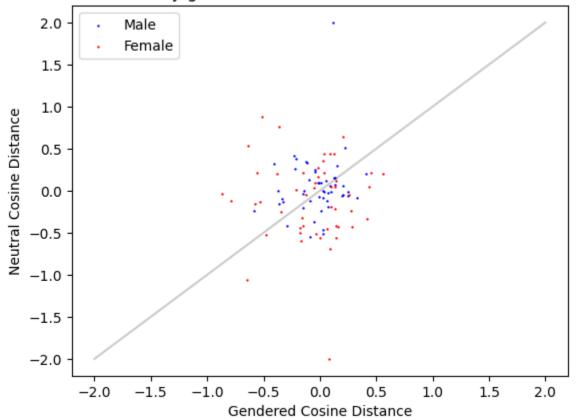
# they-them Distances From Word List in GAP



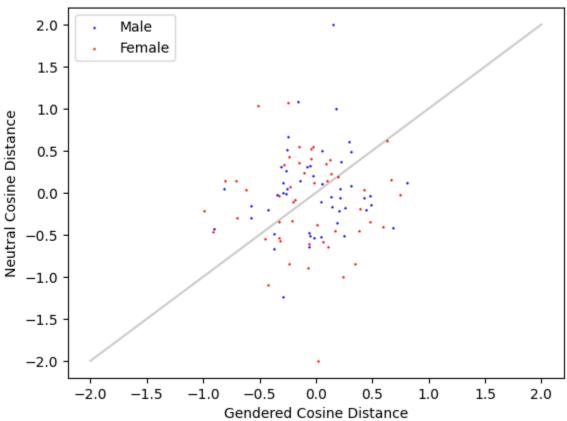




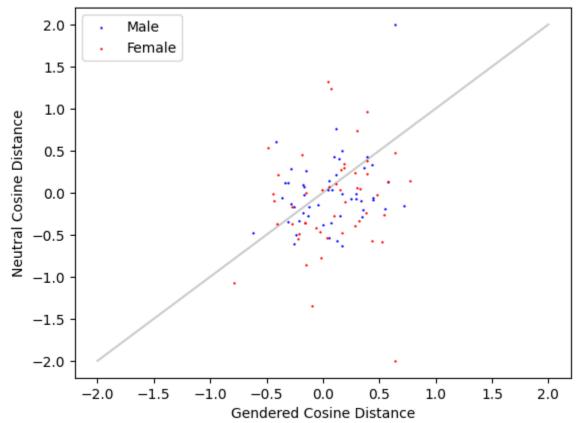
# boy-girl Distances From Word List in GAP



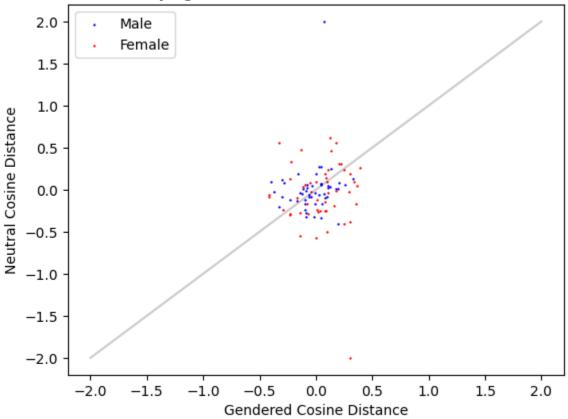




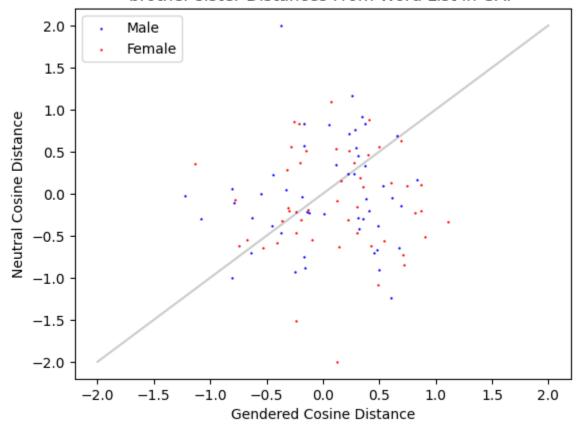
#### men-women Distances From Word List in GAP



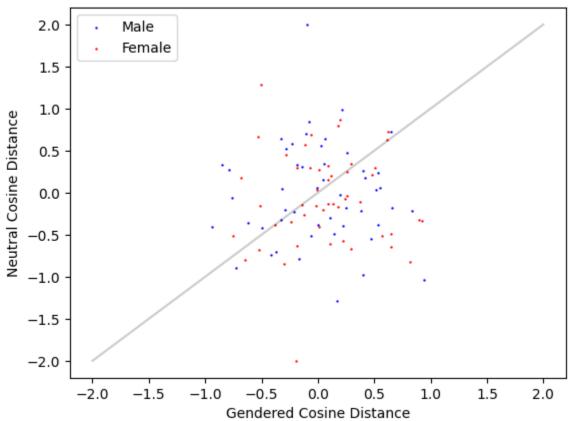




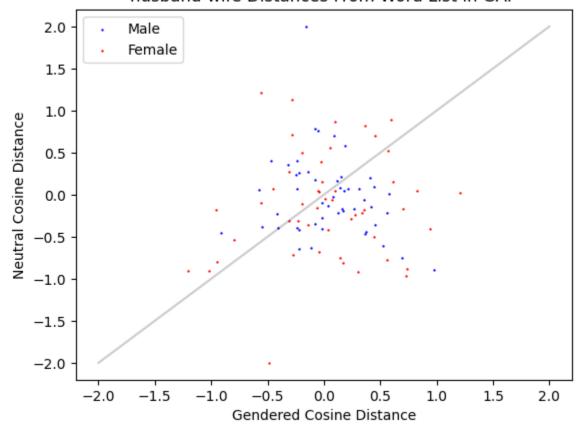
### brother-sister Distances From Word List in GAP



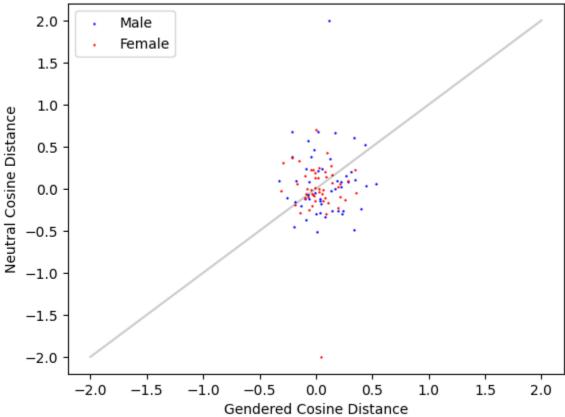




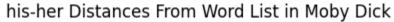
## husband-wife Distances From Word List in GAP

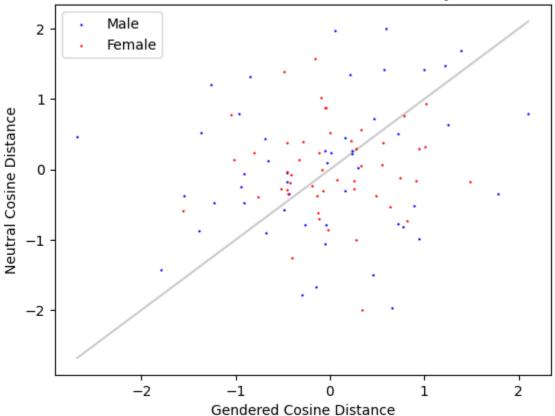




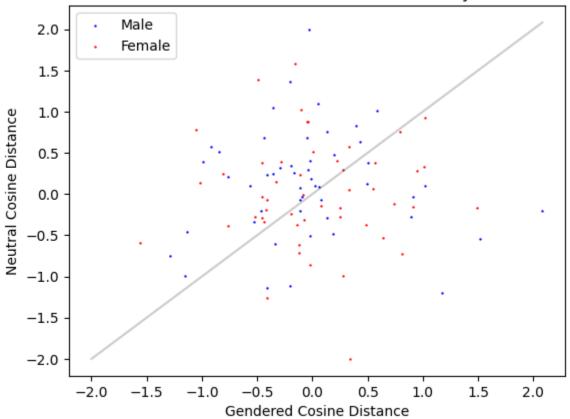


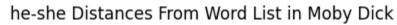
In [ ]: a.plotter(genderPairs, spotlightWords, mobyNEmbeds, mobyGEmbeds, titles[3])

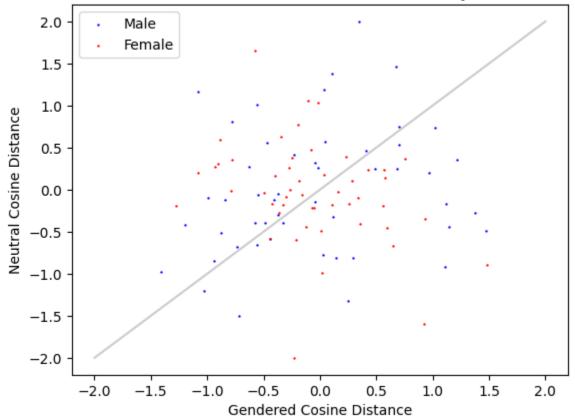




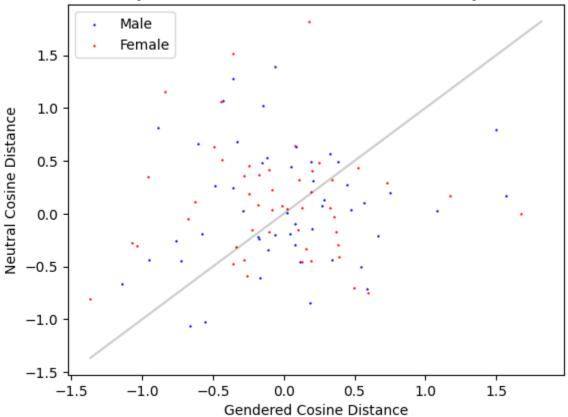
# him-her Distances From Word List in Moby Dick



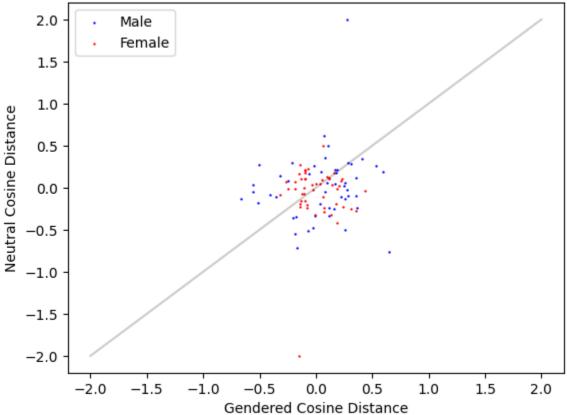




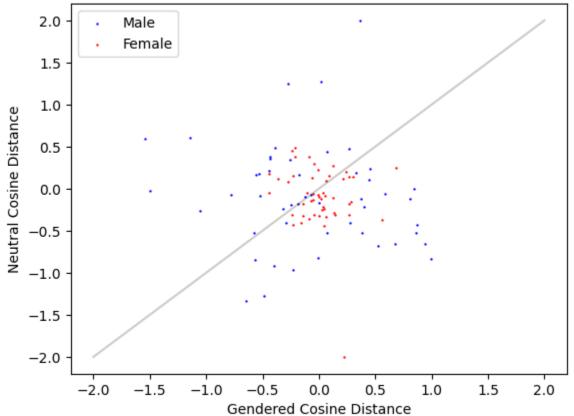
# they-them Distances From Word List in Moby Dick



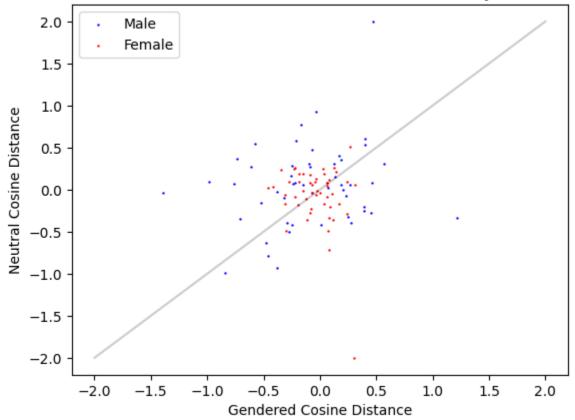




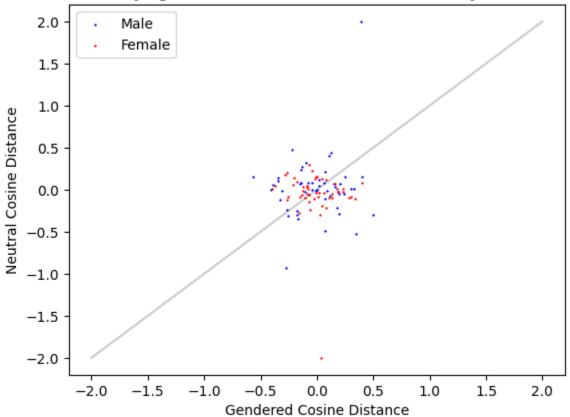
## man-woman Distances From Word List in Moby Dick



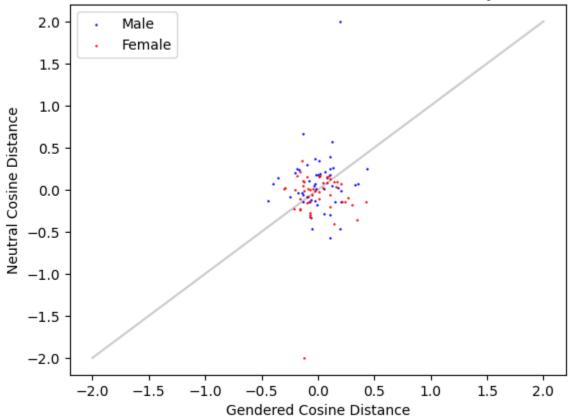




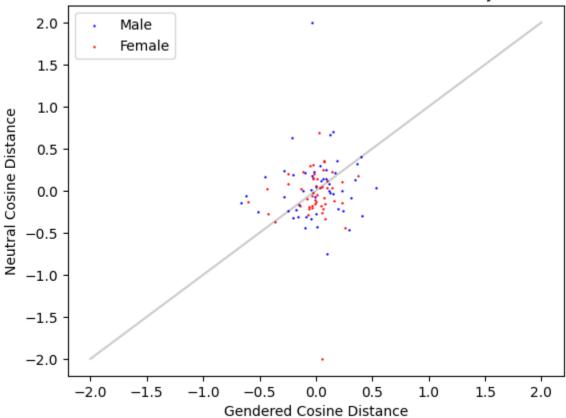
## boys-girls Distances From Word List in Moby Dick



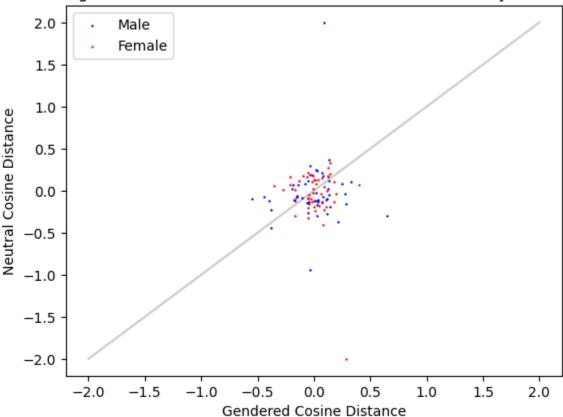




## father-mother Distances From Word List in Moby Dick



#### gentlemen-ladies Distances From Word List in Moby Dick



```
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
        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)
```

Bible Cosine Differences between Neutral and Gendered Embeddings 0.158

BUG Cosine Differences between Neutral and Gendered Embeddings -0.06

GAP Cosine Differences between Neutral and Gendered Embeddings 0.001

Moby Dick Cosine Differences between Neutral and Gendered Embeddings 0.065