

A Computational Analysis of the Emergence of Therapy-speak in Social Media

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Abstract

The present article comparatively investigates semantic change in psychology-related concepts across scientific and social media texts. We assess patterns of change over 15 years and compare word usage corpora of psychology journals abstracts and Reddit comments, testing whether specialized communities on social media align with psychology experts. Our results confirm that many terms are used differently on social media compared to specialized literature. Furthermore, Reddit communities focused on psychology discussions occupy an intermediate position, adopting a more objective stance than general-domain threads while remaining distinct from specialized literature.

1 Introduction and Related Work

In the current century, mental health has steadily become a main concern. As the population is confronted with what is deemed a "mental-health crisis" (Evans et al., 2018; Schnittker, 2025), considerable efforts have been made to increase awareness regarding psychological issues (Foulkes and Andrews, 2023). On the one hand, this has led to undeniably positive outcomes, such as an increase in seeking professional help (Foulkes and Andrews, 2023). On the other hand, some scholars claim that the increased presence of the mental health-related discourse in the everyday life can lead to negative consequences such as people's excessively interpreting their normal negative emotions as mental disorders (Foulkes and Andrews, 2023), or the trivialization of the severity of the conditions (Spencer and Carel, 2021). Another consequence of the permeation of medical terminology into the mainstream is the advent of *therapy speak* - "the imprecise and superficial integration of psychotherapy language into everyday communication" (Isern-Mas and Almagro, 2025). While semantic change, understood as "a change in the concepts associated with a word" (Lehmann, 2013),

is a naturally-occurring linguistic phenomenon, the situation in which a term is simultaneously used with a different connotation by experts and laymen can raise concerns - as even medical experts report difficulties in drawing the boundary between disorder and normal manifestations of negative emotions (Wakefield and First, 2013). Regarding psychology-related words in particular, the "concept creep" hypothesis posits that harm-related concepts are particularly prone to broaden their meaning over time so as to encompass both new and milder phenomena (Haslam, 2016). Subsequent research has shown that some concepts do indeed undergo such a transformation in specialized literature (Haslam, 2016).

In previous research, Vylomova and Haslam (2021) studied the concept creep hypothesis in relation to five harm-related concepts via Word2Vec embeddings trained on two different corpora, and found that concepts show a tendency towards becoming wider and milder, confirming the concept creep hypothesis. The same tendency was observed by Baes et al. (2023b). Baes et al. (2023a) evaluated the phenomenon of pathologisation, by which traits generally considered normal human behaviours become conceptualised as mental disorders. Pisl et al. (2025) analyzed the semantic severity of anxiety, depression, and trauma on a corpus of New York Times. A study conducted on Reddit data (Record et al., 2018) found that the online discourse of self-identified counseling experts aligns with established counseling principles.

Since no previous study has compared the use of psychology-related terminology in specialized literature with data from social media, our study aims to bridge this gap using an up-to-date corpus. Specifically, we aim to:

- 1) Analyze whether psychology-related terms undergo similar patterns of semantic transformation over time in both professional literature and social media, testing the concept creep hypothesis.

2) Determine whether, within the same time period, the use of psychology-related terms differs significantly between the specialized corpus and the general domain.

Drawing from the methodology employed by [Vylomova and Haslam \(2021\)](#), we analyze concepts previously identified as prone to misuse or change ([Isern-Mas and Almagro, 2025](#); [American Psychological Association, 2024](#)): *toxic, bipolar, psychopath, narcissistic, triggered, trauma, OCD, imposter, gaslighting, addiction, bullying, harassment, and prejudice*. While previous research has examined the general domain by turning to corpora based on magazines or newspapers, we aim to answer the aforementioned questions by analyzing the proposed terms in social media. To assess whether specialized communities within the Reddit platform utilize the proposed terms in a similar manner with psychology specialists, we create two separate Reddit corpora by making a distinction between general threads and threads dedicated to psychology discussions. Moreover, in addition to previous work, we adapt the methodology to use contextual embeddings alongside static ones.

2 Data Collection and Preprocessing

Psychology Corpus (PC). For the specialized scientific corpus, we start from the dataset compiled by [Vylomova et al. \(2019\)](#), which spans the period from 1930 to 2019 and includes psychology abstracts sourced from the E-Research and PubMed databases, and we further expand the corpus by extracting additional abstracts from PubMed up to 2025. To align with the availability of social media data, we restrict the corpus to abstracts published from 2010 onward.

Reddit General Corpus (RGC) and Reddit Psychology Corpus (RPC). For the social media data analysis, we assemble a corpus of Reddit comments. To investigate the presence of specialized communities within Reddit, we divide the data into two separate corpora according to subreddits: the Reddit General Corpus (RGC) and the Reddit Psychology Corpus (RPC), including only psychology-oriented subreddits. For all corpora, we exclude entries shorter than 15 words. Descriptive statistics are presented in the Appendix (Figs. 3-5).

For all experiments, the target concepts are mapped to a single canonical form. A full description of the mapping can be found in the Appendix, Table 2. For the experiments based on static em-

beddings, the following preprocessing steps were employed: removing stopwords, punctuation and numeric tokens, then lemmatizing using SpaCy.

3 Methodology

We follow the methodology established by [Vylomova and Haslam \(2021\)](#) to evaluate four dimensions of semantic change: relative term frequency, semantic breadth, semantic displacement, and the evolution of neighbor similarity. We use the same methodology described here to train Word2Vec models on our corpora, and we additionally employ contextual embeddings based on pretrained BERT models ([Devlin et al., 2019](#)). For a selection of terms, we compare generic pretrained models with domain-specific models pretrained on psychology data (MentalBERT ([Ji et al., 2022](#))).

Global Word2Vec Model. We train a global type-level Word2Vec model on each corpus.

Year-Specific Word2Vec Models. We train year-specific Word2Vec models for each year, initializing from the global model and fine-tuning on sentences from the respective year.

Contextual Embeddings. For each target word and year, we: (i) filter sentences containing the word; (ii) randomly sample 10% of sentences; (iii) extract embeddings for the word (averaging over subtokens); (iv) compute the mean embedding for the sample; (v) repeat sampling 5 times; (vi) aggregate all sample-level embeddings by averaging across samples.

3.1 Semantic Breadth

Semantic breadth refers to the range of contexts each target concept is used in. According to the concept creep hypothesis, health-related concepts tend to widen their breadth over time ([Haslam, 2016](#)).

We capture the semantic breadth by calculating the cosine similarity between the contexts each concept is used in. A low similarity points to the fact that the concept is used across different contexts (wide semantic breadth), while a high similarity shows that the concept is confined to specific contexts (narrow semantic breadth). We obtain context representations as follows:

Static Embeddings. For each concept and year, up to 20 sentences containing the target word are sampled. A 5-token window around the target word (tokens present in the year-specific Word2Vec vocabulary) is converted to a vector by averaging

token embeddings. This sampling and aggregation were repeated 10 times, producing sub-aggregate vectors per repetition. Semantic breadth is quantified as the mean pairwise cosine similarity of all sub-aggregate vectors per year.

Contextual Embeddings. For each concept and year, sentences containing the target word are identified, and a 10% random sample (minimum 1 sentence) are taken. A 5-token window around the target word is extracted from each sentence. Word or context embeddings are obtained from BERT, averaging subword embeddings per sentence. The sampling is repeated 5 times, and all embeddings are averaged to produce a single mean embedding per concept/year. Semantic breadth is quantified as the mean pairwise cosine similarity among all sentence embeddings for that year.

3.2 Semantic Displacement

Semantic displacement quantifies how much each concept has changed from one year to another, by computing the cosine distance between corresponding word representations in each year.

3.3 Neighbours Similarity Evolution

We aim to capture how the relationship between the concept and words it is often associated with changes over time in each corpus. We first construct a list of top 5 nearest neighbours for each concept in each corpus, and compute the evolution of the cosine similarity between the concept and each neighbour over time. We rely solely on static embeddings for these experiments, since they are more suitable for retrieving global nearest neighbors (relative to the entire vocabulary) efficiently.

4 Results

4.1 Frequency Analysis

While each concept behaves differently, an overall upward trend in relative frequency was observed for the proposed terms. The terms *bipolar*, *trauma*, and *bullying* showed increasing frequencies across all three corpora. Notably, *trauma* is the most frequent term in the PC data, whereas in the RPC, it only becomes the most frequent term starting with 2016. The term *toxic* has a particularly sharp increase in the RGC, becoming the most frequent among the proposed terms, while in the RPC it has a slower increase and remained at all times surpassed in frequency by other terms. In the PC, *toxic* maintains its frequency. The frequency of the

term *narcissistic* shows a decreasing tendency in the PC, while its presence increases in the RPC and RGC corpora. Exact frequencies plots are found in the Appendix. All frequency plots are smoothed with a 3-year centered moving average.

Table 1: Semantic Breadth: Trend and Volatility

Concept	PC	RGC	RPC
Addiction	Broadening (Stable)	Narrowing (Stable)	Narrowing (Stable)
Bipolar	Broadening (Stable)	Narrowing (Mod. Volatile)	Narrowing (Stable)
Bullying	Broadening (Mod. Volatile)	Narrowing (Stable)	Narrowing (Mod. Volatile)
Gaslighting	Broadening (High Volatile)	Broadening (High Volatile)	Broadening (Mod. Volatile)
Harassment	Narrowing (Mod. Volatile)	Narrowing (Stable)	Narrowing (Mod. Volatile)
Imposter	Broadening (High Volatile)	Narrowing (High Volatile)	Broadening (High Volatile)
Narcissistic	Broadening (Mod. Volatile)	Narrowing (Stable)	Narrowing (Stable)
OCD	Narrowing (Mod. Volatile)	Narrowing (Mod. Volatile)	Narrowing (Stable)
Prejudice	Narrowing (Stable)	Narrowing (High Volatile)	Narrowing (Mod. Volatile)
Psychopath	Broadening (Stable)	Broadening (Mod. Volatile)	Broadening (Stable)
Toxic	Narrowing (Mod. Volatile)	Narrowing (Stable)	Broadening (Mod. Volatile)
Trauma	Broadening (Stable)	Broadening (Stable)	Narrowing (Stable)
Triggered	Broadening (Stable)	Narrowing (Stable)	Narrowing (Mod. Volatile)

4.2 Semantic Breadth

Since contextual embeddings uncover certain patterns more clearly than static embeddings, particularly in the displacement experiments, we focus this analysis on contextual embeddings. Contextual embeddings have also become the standard method for semantic representations in lexical semantic change studies in recent years (Periti and Tahmasebi, 2024). Results obtained using static models are reported in the Appendix (Figures 9-14), alongside results obtained with MentalBERT (Figures 18-20). We note that there is no substantial difference between the results obtained using the BERT-base model and those derived from MentalBERT, indicating that the base model is sufficient for capturing semantic shifts in psychology-related vocabulary. All semantic breadth plots are smoothed with a 3-year centered moving average. Figure 1 shows the evolution of semantic breadth for each concept. To quantify shifts in the corpora, we applied linear regression with year as the independent variable and mean cosine similarity as the dependent variable. For each concept, the regression slope captures the annual change in semantic breadth, reflecting whether the concept’s contextual usage is expanding or contracting over time. To measure the overall magnitude of variation, we computed the amplitude as the difference between the maximum

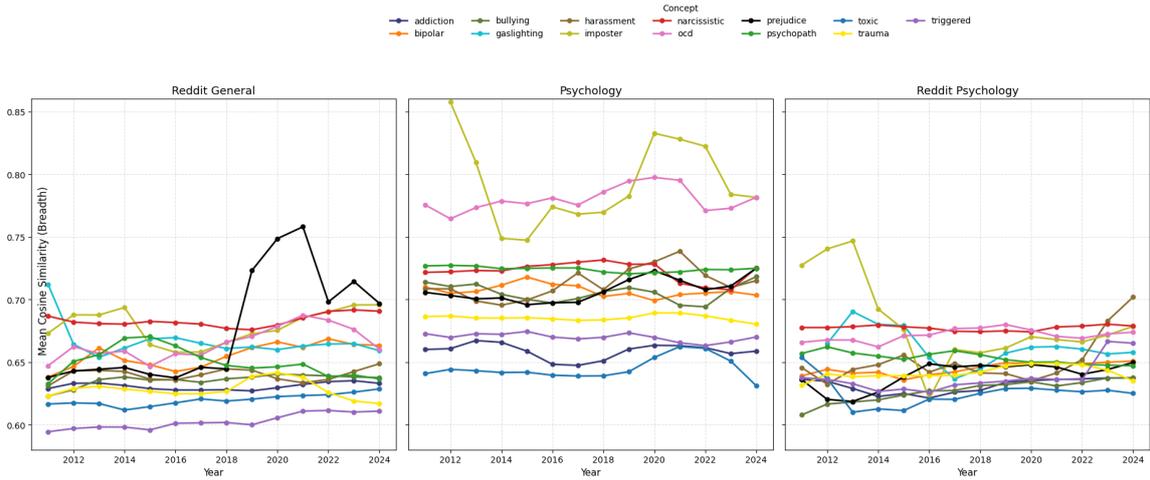


Figure 1: Semantic Breadth using BERT

and minimum similarity values observed for each concept across the available years. Table 1 summarizes the results based on this analysis for each term. The exact values for the regression slope and amplitude are found in the Appendix (Table 3).

In the Reddit Corpora, there is a higher number of terms presenting a narrowing in breadth, which mirrors the results obtained by Vylomova and Haslam (2021). For instance, the terms *triggered* and *narcissistic* widen their breadth in the PC, but their breadth becomes narrower in the RGC. This inverse relationship suggests that specialized terms may be adopted into general use while being applied in only a subset of their original contexts.

As in the case of the terms' frequencies, the RPC occupies an intermediary position between the specialized PC and the RGC: some of the terms follow the patterns present in the specialized corpus, while others follow the general domain trends.

4.3 Semantic Displacement

Figure 3 presents the semantic displacement results obtained with the contextual embeddings. The results obtained with Word2Vec year models can be found in the Appendix (Figures 15-17).

The specialized PC is the steadiest in terms of displacement. There is little change in long-established psychological terms such as *OCD*, *bipolar*, or *trauma*, but terms such as *gaslighting* or *imposter* shift their semantics substantially from one year to another, possibly pointing to the fact that they still haven't sedimented into a fixed usage.

Terms in the RGC show the most displacement, while the RPC occupies once more an intermediary position. We also note an inverse relationship between increases in term frequency and semantic displacement in the Reddit corpora. For instance, the term *toxic* has an abrupt increase in frequency in the RGC around the year 2016, which is the same year when the semantic displacement begins to stabilize. This suggests that starting with 2016 the term acquired a dominant meaning that is predominantly used thereafter.

4.4 Neighbours Similarity Evolution

To understand the evolution of neighbours in the embeddings space for each concept, we illustrate the evolution of a selection of nearest neighbors (Appendix, Figs. 22-33). One example of the trajectory of the most relevant neighbors for such a

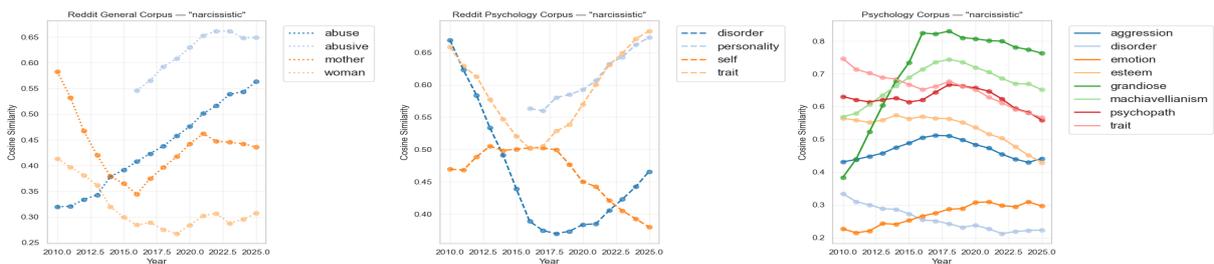


Figure 2: Narcissistic - Neighbours Similarity Evolution

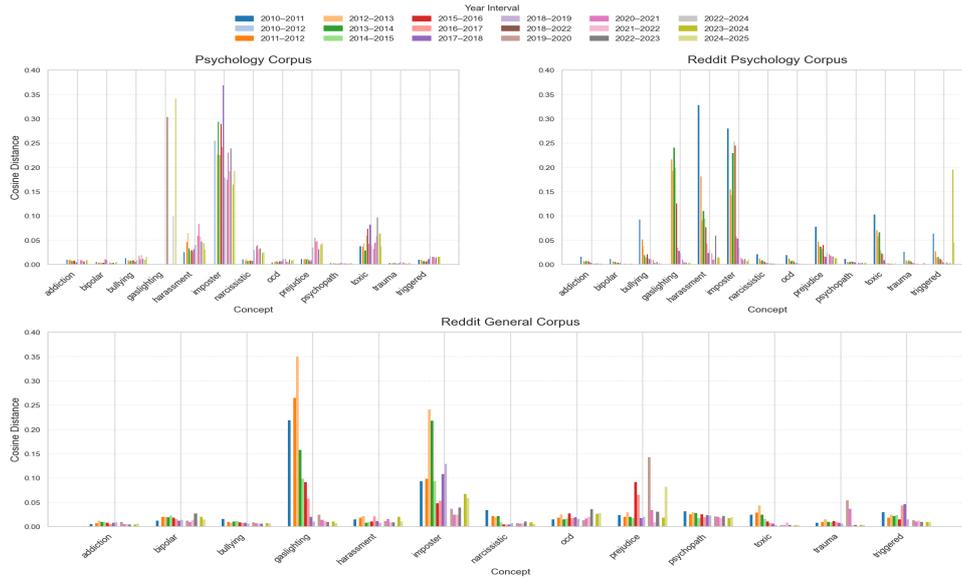


Figure 3: Semantic Displacement using BERT

term is shown in Figure 2 for "narcissistic". The complete list with the top neighbours for each year can also be found in the Appendix, Tables 4-42.

While some words show similar associations across all three corpora (e.g., *bipolar*, *psychopath*), others are used in markedly different contexts. For example, in the PC, the term *toxic* is not linked to psychological traits or behaviors, but to harmful substances. In contrast, in the RGC, its usage shifts noticeably: around 2010, it is associated with terms such as "chemical" and "health", but starting in 2015, there is a sharp increase in associations with words like "masculinity" and "relationship" - coinciding with the year when *toxic* experiences a rapid rise in frequency in the Reddit Corpus. The RPC mirrors this trend, following the pattern observed in the RGC.

Another term with a contrastive usage is *narcissistic* (Fig. 3). While in the RGC it is associated with words such as "abuse" and "mother", RPC and PC present a more objective stance, the term being associated with words such as "disorder" or "trait".

5 Conclusions

Our experiments provide insights into the nature and mechanisms of semantic change. The results show that concepts shift semantically both diachronically throughout years and concurrently - when they are adopted from a specialized domain into general usage.

There is not one single pattern for semantic change. Consistent with previous findings, we

have found that the concept creep phenomenon is more prevalent in specialized literature than in general usage. We have also shown that semantic displacement experiments can point to the concepts that are not traditionally related to psychology vocabulary, as these terms tend to present a greater degree of displacement. Our results indicate that some terms adopted from specialized terminology are integrated into everyday language with distinct nuances (such as *narcissistic*, *addiction*, etc.) In contrast, other words—although appearing in psychology-related contexts, as evidenced by their presence in the RPC, were likely not derived from specialized psychology vocabulary, either because their usage in the specialized corpus differs substantially (as in the case of *toxic*) or is entirely absent (as with *gaslighting*).

Finally, we find that there is a difference in word usage between general Reddit comments and comments extracted from forums dedicated to Psychology, the latter having a somewhat intermediary position between specialized usage and general domain usage. Thus, our research brings insights into the interaction between cultural shifts and semantic change. Based on these results, research in the fields of psychology, sociology and linguistics can further determine whether the divergence in word usage between specialized literature and general discourse reflects misuse - as in the so-called *therapy speak* - or represents a natural process of cultural change.

Limitations

Due to computational limitations, we restricted the context selected for extracting contextual embeddings to a sample of the original corpus for each term in the case of some analyses, which might affect the robustness of the results. Similarly, we extract contextual embeddings as well as contexts for computing semantic breadth using static embeddings based on a 5-word context window. Especially for contextual embeddings, the limited context could affect the quality of the resulting representations - using entire sentences as contexts instead could be a future improvement.

One of the dataset limitations is focusing solely on abstracts extracted from Psychology journals, which might not reflect the full range of terms' usage. Moreover, the identified differences between Reddit corpora and scientific abstracts could reflect a mix of the assumed effect of the authors' expertise and competence in using psychological terms (experts versus laypeople) and the general differences in communicative function and genre convention in the two types of texts. While we do find that there are differences in term usage even within Reddit (by comparing RG and RPG), future work could further examine this, possibly by selecting Reddit authors based on verified expertise (Record et al., 2018).

Ethical Statement

All data used in the study is anonymous. No personally identifiable information was accessed, stored, or processed during the research. Access to the dataset can be granted upon request for academic and research purposes only.

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A Appendix

Models and configurations used were as follows:

- BERT models: google-bert/bert-base-uncased¹ and mental/mental-bert-base-uncased². We use the final layer of the models as the embedding representation (as preliminary experiments showed it is more useful than middle layers for our analyses).
- Word2vec hyperparameters: window size 10, minimum count 5, 10 epochs.

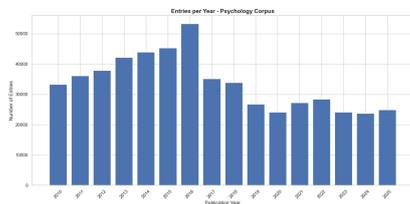


Figure 4: Entries per Year - Psychology Corpus

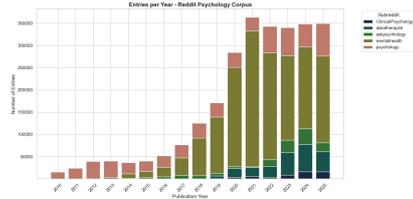


Figure 5: Entries per Year - Reddit Psychology Corpus

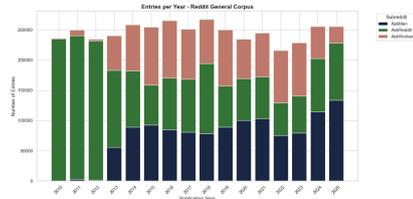


Figure 6: Entries per Year - Reddit General Corpus

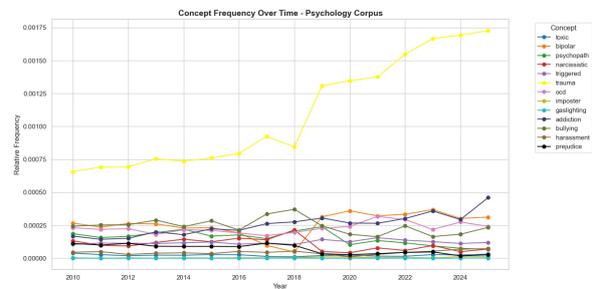


Figure 7: Frequency Analysis - Psychology Corpus

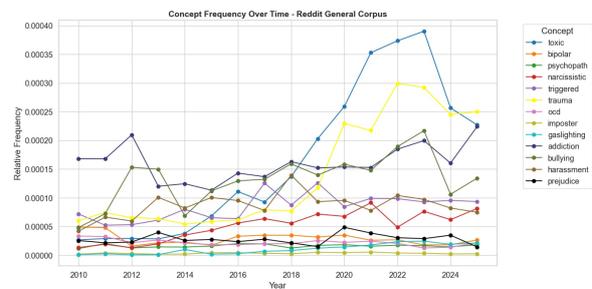


Figure 8: Frequency Analysis - Reddit General Corpus

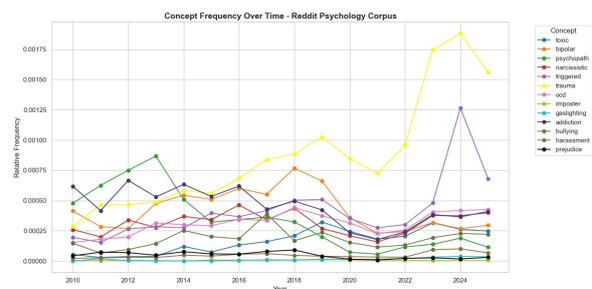


Figure 9: Frequency Analysis - Reddit Psychology Corpus

¹<https://huggingface.co/google-bert/bert-base-uncased>

²<https://huggingface.co/mental/mental-bert-base-uncased>

Concept	Mapped Forms
Psychopath	psychopath, psychopaths, psychopathy, psychopathic
Narcissistic	narcissist, narcissists, narcissistic, narcissism
Bipolar	bipolar, bipolarity, bipolar disorder, bipolar disorders
Toxic	toxic, toxicity
Triggered	trigger, triggers, triggered, triggering
Trauma	trauma, traumas, traumatic, traumatized, traumatised, post-traumatic, post-trauma, traumatize, traumatizes
OCD	obsessive compulsive disorder, obsessive compulsive disorders, obsessive compulsive, OCD
Imposter	imposter, impostor, imposters, impostors, imposter syndrome, impostor syndrome, imposter syndromes, impostor syndromes, imposter phenomenon, impostor phenomenon
Gaslighting	gaslighting, gaslighted, gaslights, gaslight
Addiction	addict, addiction, addicts
Bullying	bully, bullying, bullies
Harassment	harass, harassment, harasses
Prejudice	prejudice

Table 2: Target concepts and their corresponding lexical variants

Table 3: Quantitative Metrics: Slope and Amplitude across Corpora

Concept	Slope			Amplitude		
	PC	RGC	RPG	PC	RGP	RPG
Addiction	-0.0001	0.0003	0.0006	0.037	0.014	0.028
Bipolar	-0.0007	0.0019	0.0010	0.027	0.070	0.026
Bullying	-0.0001	0.0009	0.0021	0.055	0.030	0.050
Gaslighting	-0.0198	-0.0034	-0.0011	0.207	0.144	0.111
Harassment	0.0013	0.0009	0.0031	0.103	0.046	0.112
Imposter	-0.0018	0.0009	-0.0043	0.223	0.089	0.310
Narcissistic	-0.0001	0.0003	0.0001	0.052	0.018	0.016
OCD	0.0010	0.0018	0.0008	0.073	0.072	0.034
Prejudice	0.0016	0.0059	0.0015	0.045	0.279	0.057
Psychopath	-0.0003	-0.0002	-0.0008	0.010	0.082	0.021
Toxic	0.0000	0.0011	-0.0013	0.065	0.025	0.080
Trauma	-0.0002	-0.0001	0.0006	0.015	0.045	0.036
Triggered	-0.0003	0.0013	0.0018	0.018	0.025	0.116

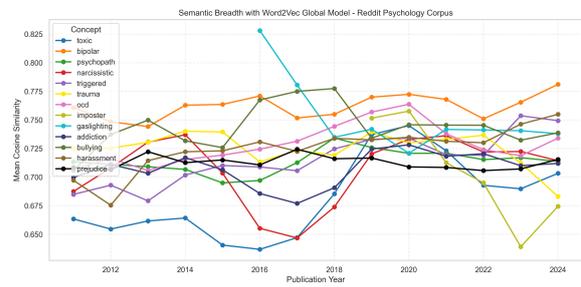


Figure 12: Semantic Breadth with Word2Vec Global Model - Reddit Psychology Corpus

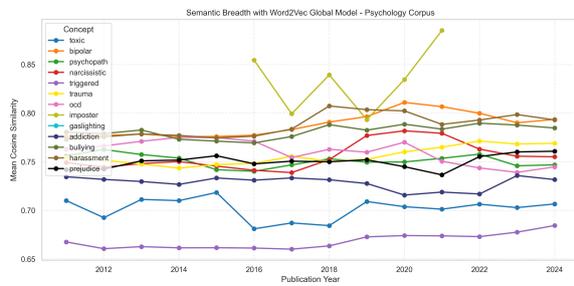


Figure 10: Semantic Breadth with Word2Vec Global Model - Psychology Corpus

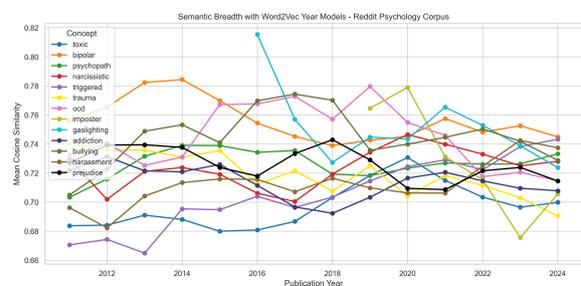


Figure 13: Semantic Breadth with Word2Vec Year Models - Reddit Psychology Corpus

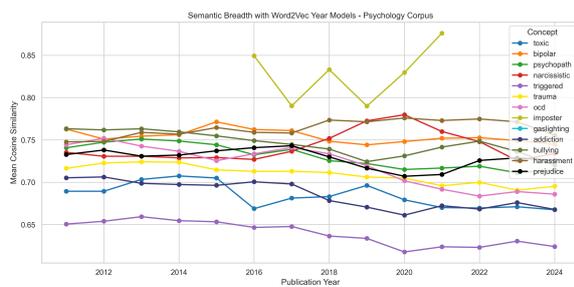


Figure 11: Semantic Breadth with Word2Vec Year Models - Psychology Corpus

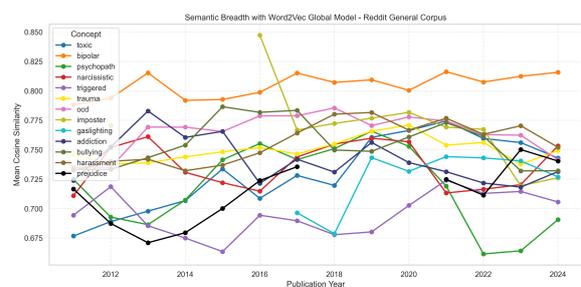


Figure 14: Semantic Breadth with Word2Vec Global Model - Reddit General Corpus

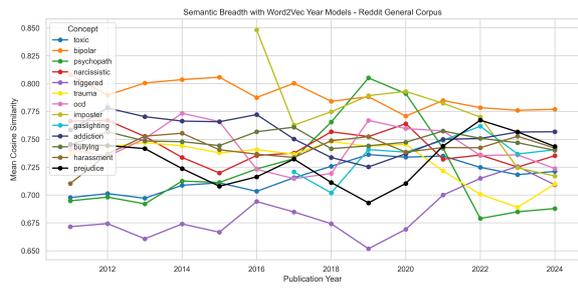


Figure 15: Semantic Breadth with Word2Vec Year Models - Reddit General Corpus

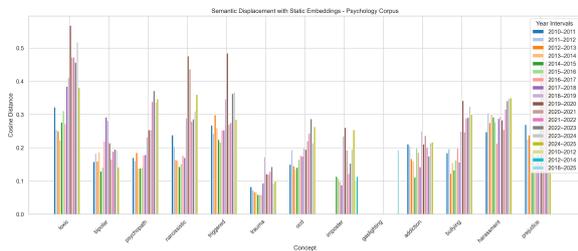


Figure 16: Semantic Displacement with Word2Vec Year Models - Psychology Corpus

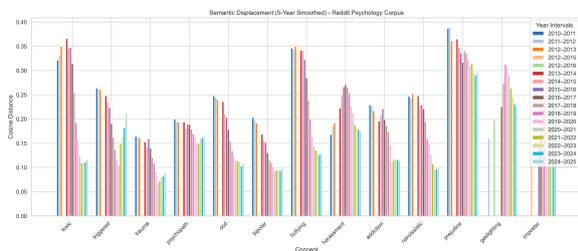


Figure 17: Semantic Displacement with Word2Vec Year Models - Reddit Psychology Corpus

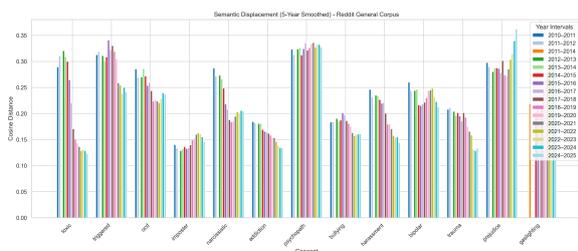


Figure 18: Semantic Displacement with Word2Vec Year Models - Reddit General Corpus

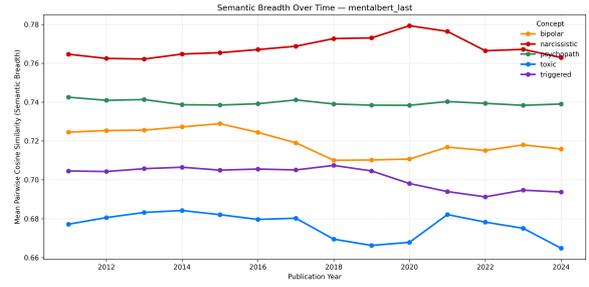


Figure 19: Semantic Breadth with MentalBERT - Psychology Corpus

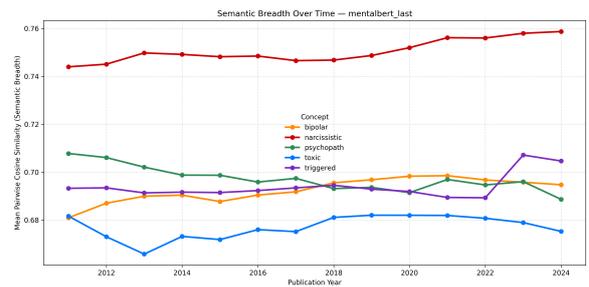


Figure 20: Semantic Breadth with MentalBERT - Reddit Psychology Corpus

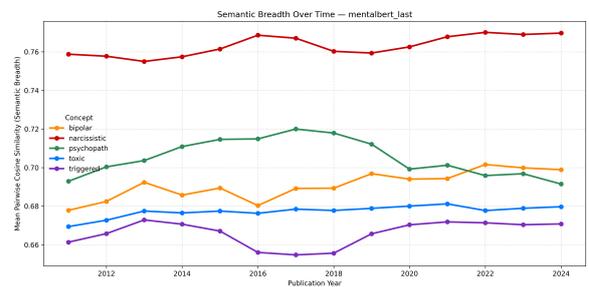


Figure 21: Semantic Breadth with MentalBERT - Reddit General Corpus

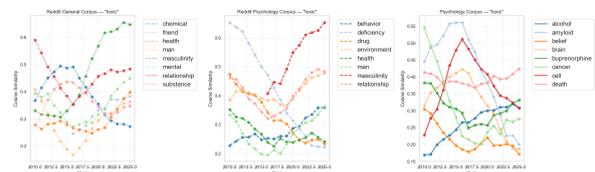


Figure 22: Toxic - Neighbours Similarity Evolution

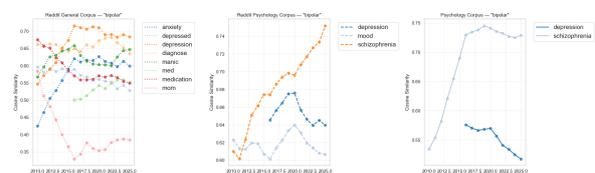


Figure 23: Bipolar - Neighbours Similarity Evolution

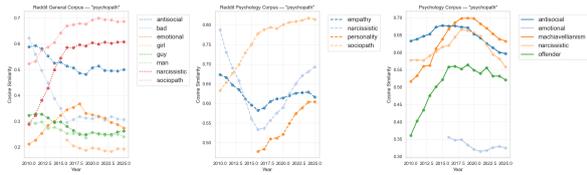


Figure 24: Psychopath - Neighbours Similarity Evolution



Figure 25: Triggered - Neighbours Similarity Evolution

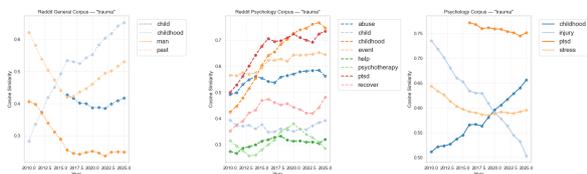


Figure 26: Trauma - Neighbours Similarity Evolution

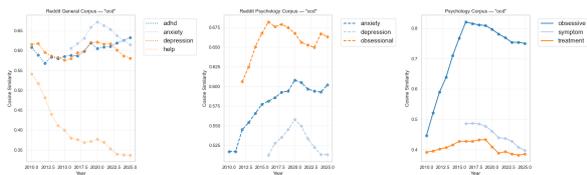


Figure 27: OCD - Neighbours Similarity Evolution

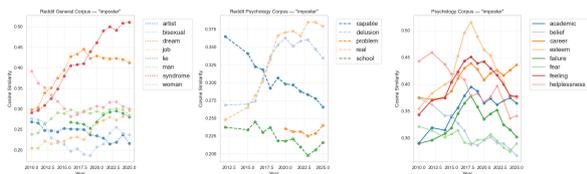


Figure 28: Imposter - Neighbours Similarity Evolution

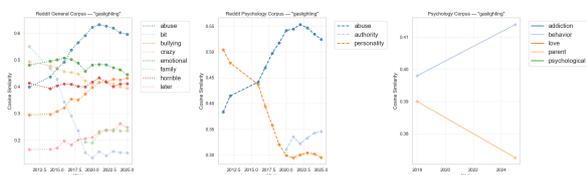


Figure 29: Gaslighting - Neighbours Similarity Evolution

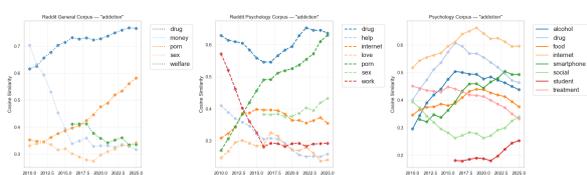


Figure 30: Addiction - Neighbours Similarity Evolution



Figure 31: Bullying - Neighbours Similarity Evolution



Figure 32: Harassment - Neighbours Similarity Evolution

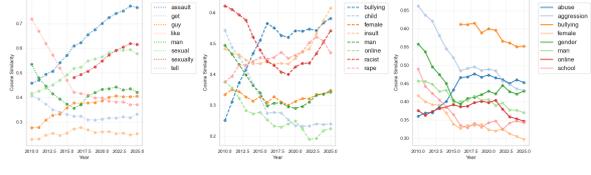


Figure 33: Prejudice - Neighbours Similarity Evolution

Table 4: Top-5 Co-occurring Neighbors per Year for *addiction* - Psychology Corpus

Year	1	2	3	4	5
2010	treatment	drug	study	disorder	internet
2011	treatment	drug	internet	use	study
2012	internet	treatment	drug	study	disorder
2013	drug	internet	study	treatment	disorder
2014	internet	study	use	treatment	drug
2015	treatment	study	internet	use	drug
2016	study	internet	treatment	food	drug
2017	internet	food	treatment	use	study
2018	internet	food	study	use	social
2019	study	internet	treatment	use	disorder
2020	treatment	study	use	disorder	drug
2021	study	use	disorder	treatment	alcohol
2022	study	internet	treatment	use	smartphone
2023	study	internet	smartphone	social	disorder
2024	internet	social	study	disorder	scale
2025	internet	study	social	scale	student

Table 7: Top-5 Co-occurring Neighbors per Year for *gaslighting* - Psychology Corpus

Year	1	2	3	4	5
2010					
2011					
2012					
2013					
2014					
2015					
2016					
2017					
2018	clinical	paper	parent	child	clinician
2019					
2020					
2021					
2022	behavior	result	indicate	clear	sequential
2023					
2024	specifically	respondent	experience	frequent	psychological
2025	love	addiction	gaslighte	perceive	acceptability

Table 5: Top-5 Co-occurring Neighbors per Year for *bipolar* - Psychology Corpus

Year	1	2	3	4	5
2010	disorder	patient	study	control	depression
2011	disorder	patient	study	depression	control
2012	disorder	patient	study	depression	risk
2013	disorder	patient	study	depression	control
2014	disorder	patient	study	depression	depressive
2015	disorder	patient	study	depression	depressive
2016	disorder	patient	study	depression	schizophrenia
2017	disorder	patient	study	schizophrenia	depression
2018	disorder	patient	study	depression	schizophrenia
2019	disorder	patient	schizophrenia	study	depression
2020	disorder	schizophrenia	patient	study	depression
2021	disorder	patient	schizophrenia	study	depression
2022	disorder	patient	schizophrenia	study	depression
2023	disorder	schizophrenia	study	patient	depression
2024	disorder	schizophrenia	study	patient	depressive
2025	disorder	schizophrenia	study	patient	depressive

Table 8: Top-5 Co-occurring Neighbors per Year for *harassment* - Psychology Corpus

Year	1	2	3	4	5
2010	sexual	study	workplace	experience	woman
2011	sexual	gender	experience	man	study
2012	sexual	experience	student	school	violence
2013	sexual	gender	study	woman	behavior
2014	sexual	experience	report	study	gender
2015	sexual	bullying	study	online	victim
2016	sexual	experience	study	behavior	report
2017	sexual	study	woman	experience	risk
2018	sexual	experience	woman	study	report
2019	sexual	female	study	victimization	aggression
2020	sexual	violence	experience	base	analysis
2021	sexual	experience	study	student	abuse
2022	sexual	violence	report	study	experience
2023	sexual	experience	violence	victimization	study
2024	sexual	violence	experience	student	abuse
2025	sexual	health	experience	bullying	study

Table 6: Top-5 Co-occurring Neighbors per Year for *bullying* - Psychology Corpus

Year	1	2	3	4	5
2010	school	victim	study	victimization	child
2011	school	study	victim	report	victimization
2012	school	study	victim	student	child
2013	school	victim	victimization	child	study
2014	school	victim	victimization	study	student
2015	school	victimization	victim	study	child
2016	victimization	school	study	victim	student
2017	school	study	victimization	student	victim
2018	school	victimization	study	victim	behavior
2019	behavior	victimization	study	relationship	school
2020	victimization	school	study	student	high
2021	victimization	behavior	study	report	school
2022	victimization	school	study	child	behavior
2023	victimization	study	school	adolescent	high
2024	victimization	school	study	social	adolescent
2025	school	study	victimization	high	experience

Table 9: Top-5 Co-occurring Neighbors per Year for *imposter* - Psychology Corpus

Year	1	2	3	4	5
2010	feeling	examine	patient	objective	study
2011					
2012	phenomenon	self	university	research	efficacy
2013	belief	replace	capgras	syndrome	characterize
2014	tendency	person	phenomenon	job	satisfaction
2015	academic	self	concept	path	phenomenon
2016	phenomenon	career	self	feeling	fear
2017	self	esteem	phenomenon	level	instability
2018	phenomenon	self	student	esteem	feeling
2019	phenomenon	scale	fraudulence	systematic	examine
2020	phenomenon	individual	feeling	syndrome	association
2021	phenomenon	mindset	failure	fear	goal
2022	phenomenon	learn	helplessness	model	experience
2023	study	instrument	age	reliably	detect
2024	phenomenon	psychological	career	decision	resilience
2025	phenomenon	self	career	satisfaction	esteem

Table 10: Top-5 Co-occurring Neighbors per Year for *narcissistic* - Psychology Corpus

Year	1	2	3	4	5
2010	self	personality	study	high	esteem
2011	self	personality	study	high	examine
2012	personality	self	study	trait	disorder
2013	personality	self	study	high	associate
2014	self	personality	study	trait	psychopath
2015	self	study	trait	psychopath	personality
2016	self	study	personality	trait	high
2017	self	personality	psychopath	study	trait
2018	self	study	grandiose	vulnerable	personality
2019	psychopath	personality	machiavellianism	self	trait
2020	trait	personality	regulation	psychopath	emotion
2021	self	study	trait	personality	psychopath
2022	personality	study	trait	grandiose	self
2023	disorder	trait	personality	self	grandiose
2024	study	trait	personality	machiavellianism	psychopath
2025	trait	personality	study	aggression	high

Table 11: Top-5 Co-occurring Neighbors per Year for *ocd* - Psychology Corpus

Year	1	2	3	4	5
2010	disorder	obsessive	compulsive	symptom	patient
2011	disorder	symptom	obsessive	compulsive	study
2012	disorder	obsessive	compulsive	patient	symptom
2013	disorder	obsessive	patient	compulsive	symptom
2014	disorder	symptom	compulsive	obsessive	patient
2015	disorder	patient	symptom	obsessive	compulsive
2016	disorder	compulsive	obsessive	symptom	patient
2017	disorder	symptom	patient	compulsive	obsessive
2018	disorder	symptom	obsessive	compulsive	study
2019	patient	disorder	symptom	obsessive	compulsive
2020	disorder	patient	compulsive	obsessive	symptom
2021	disorder	patient	symptom	obsessive	compulsive
2022	disorder	patient	compulsive	obsessive	symptom
2023	disorder	patient	compulsive	obsessive	symptom
2024	disorder	patient	compulsive	obsessive	study
2025	disorder	symptom	obsessive	treatment	compulsive

Table 15: Top-5 Co-occurring Neighbors per Year for *trauma* - Psychology Corpus

Year	1	2	3	4	5
2010	symptom	ptsd	stress	study	injury
2011	ptsd	stress	symptom	disorder	study
2012	ptsd	symptom	stress	study	disorder
2013	ptsd	stress	symptom	study	disorder
2014	ptsd	stress	disorder	symptom	study
2015	symptom	stress	ptsd	disorder	experience
2016	symptom	stress	ptsd	study	disorder
2017	symptom	experience	study	stress	ptsd
2018	symptom	stress	experience	study	ptsd
2019	ptsd	stress	disorder	symptom	childhood
2020	ptsd	stress	symptom	disorder	study
2021	ptsd	symptom	stress	disorder	exposure
2022	ptsd	symptom	stress	disorder	study
2023	ptsd	symptom	stress	disorder	childhood
2024	symptom	stress	ptsd	disorder	study
2025	stress	ptsd	symptom	disorder	experience

Table 12: Top-5 Co-occurring Neighbors per Year for *prejudice* - Psychology Corpus

Year	1	2	3	4	5
2010	study	participant	group	social	high
2011	study	sexual	relationship	social	contact
2012	study	social	group	contact	sexual
2013	study	relationship	social	group	reduce
2014	study	social	group	intergroup	sexual
2015	study	group	social	contact	attitude
2016	study	group	sexual	social	research
2017	social	study	contact	group	effect
2018	study	social	group	contact	people
2019	social	tom	study	level	sensitivity
2020	laïcité	social	study	outcome	associate
2021	empathy	study	social	patient	intergroup
2022	people	self	study	discrimination	individual
2023	discrimination	stereotype	study	experience	group
2024	social	discrimination	continuum	distance	study
2025	scale	study	discrimination	stigma	student

Table 16: Top-5 Co-occurring Neighbors per Year for *triggered* - Psychology Corpus

Year	1	2	3	4	5
2010	response	suggest	stimulus	event	task
2011	process	suggest	response	stimulus	study
2012	process	suggest	effect	result	response
2013	process	response	stimulus	behavior	study
2014	study	process	stimulus	response	task
2015	response	suggest	study	result	stimulus
2016	response	effect	result	study	process
2017	study	response	result	social	process
2018	response	social	experience	suggest	result
2019	asmr	response	stimulus	study	cue
2020	response	study	symptom	stimulus	result
2021	response	stress	study	behavior	result
2022	response	stress	change	social	study
2023	self	effect	behavior	study	response
2024	social	response	symptom	lead	result
2025	study	effect	response	stress	anxiety

Table 13: Top-5 Co-occurring Neighbors per Year for *psychopath* - Psychology Corpus

Year	1	2	3	4	5
2010	study	personality	trait	measure	high
2011	trait	personality	study	high	factor
2012	trait	personality	study	associate	measure
2013	trait	study	personality	high	factor
2014	trait	personality	study	measure	high
2015	trait	study	personality	measure	narcissistic
2016	trait	study	personality	measure	high
2017	trait	narcissistic	study	machiavellianism	high
2018	trait	study	personality	narcissistic	machiavellianism
2019	trait	study	antisocial	behavior	individual
2020	trait	study	relate	high	emotional
2021	trait	study	personality	factor	model
2022	trait	offender	study	high	research
2023	trait	study	high	personality	report
2024	trait	study	machiavellianism	personality	narcissistic
2025	trait	study	association	relate	associate

Table 17: Top-5 Co-occurring Neighbors per Year for *addiction* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	drug	self	know	thing	work
2011	drug	like	people	disorder	work
2012	drug	like	people	think	sex
2013	people	drug	like	think	internet
2014	drug	people	like	help	mental
2015	drug	people	brain	like	mental
2016	drug	people	like	think	disease
2017	book	people	drug	like	love
2018	drug	people	like	think	thing
2019	drug	people	like	think	help
2020	drug	like	people	think	help
2021	drug	like	people	help	think
2022	drug	like	people	help	thing
2023	like	people	drug	porn	thing
2024	like	people	drug	porn	thing
2025	like	people	drug	porn	feel

Table 14: Top-5 Co-occurring Neighbors per Year for *toxic* - Psychology Corpus

Year	1	2	3	4	5
2010	cell	abeta	effect	brain	amyloid
2011	effect	cell	result	study	induce
2012	effect	amyloid-	brain	study	drug
2013	effect	oligomer	environment	suggest	study
2014	effect	cell	tau	stress	formation
2015	effect	study	cell	increase	child
2016	effect	exposure	health	study	child
2017	stress	pride	treatment	risk	white
2018	stress	art	alcohol	belief	interactive
2019	alcohol	stress	death	matter	opioid
2020	patient	response	effect	cancer	expectancy
2021	case	relate	buprenorphine	trauma	death
2022	stress	program	study	youth	associate
2023	financial	phenibut	cancer	study	day
2024	drug	health	case	death	mental
2025	drug	case	health	associate	exposure

Table 18: Top-5 Co-occurring Neighbors per Year for *bipolar* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	disorder	depression	mood	people	schizophrenia
2011	disorder	depression	diagnose	people	schizophrenia
2012	disorder	people	depression	diagnose	schizophrenia
2013	disorder	depression	people	schizophrenia	like
2014	disorder	depression	like	people	diagnose
2015	disorder	depression	like	people	diagnose
2016	disorder	depression	like	people	diagnose
2017	disorder	depression	like	people	diagnose
2018	disorder	depression	like	diagnose	people
2019	disorder	depression	like	diagnose	people
2020	disorder	depression	like	diagnose	people
2021	disorder	depression	like	diagnose	people
2022	disorder	depression	like	people	diagnose
2023	disorder	depression	like	people	diagnose
2024	disorder	like	depression	diagnose	people
2025	disorder	like	bpd	diagnose	depression

Table 19: Top-5 Co-occurring Neighbors per Year for *bullying* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	inner	think	school	need	self
2011	people	feel	think	way	like
2012	school	people	like	think	kid
2013	school	kid	like	people	child
2014	school	kid	people	like	think
2015	people	school	think	high	self
2016	people	school	like	think	feel
2017	and/or	life	requirement	conflict	pick
2018	people	school	like	kid	feel
2019	school	people	like	get	think
2020	school	people	like	think	get
2021	people	like	school	feel	get
2022	people	school	like	get	think
2023	people	school	like	get	feel
2024	school	people	like	get	feel
2025	people	school	like	get	feel

Table 23: Top-5 Co-occurring Neighbors per Year for *narcissistic* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	personality	disorder	people	self	trait
2011	self	high	personality	people	disorder
2012	self	personality	people	disorder	think
2013	self	personality	people	disorder	like
2014	people	personality	disorder	self	like
2015	people	self	like	disorder	think
2016	people	personality	think	self	disorder
2017	people	personality	disorder	self	like
2018	people	self	personality	like	disorder
2019	people	personality	like	disorder	self
2020	people	like	think	personality	disorder
2021	people	like	think	personality	disorder
2022	people	like	disorder	think	personality
2023	people	like	personality	think	self
2024	people	like	personality	disorder	think
2025	people	like	personality	trait	disorder

Table 20: Top-5 Co-occurring Neighbors per Year for *gaslighting* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010					
2011	idea	try	gaslighte	person	think
2012	following	warning	sign	true	dance
2013	wiki	prescriptive	authority	rxp(http://en.wikipedia.org)	wikipedia
2014	classic	turn	will	able	tell
2015	thing	try	understand	attempt	somebody
2016	abuse	mean	thing	think	wrong
2017	like	think	need	people	personality
2018	think	try	abuse	need	feel
2019	try	like	know	abuse	time
2020	try	people	like	feel	think
2021	people	like	feel	think	know
2022	like	people	try	think	know
2023	like	think	people	feel	try
2024	try	people	like	think	feel
2025	people	try	think	like	feel

Table 24: Top-5 Co-occurring Neighbors per Year for *ocd* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	disorder	people	anxiety	know	behavior
2011	anxiety	like	disorder	think	thing
2012	like	anxiety	people	thought	disorder
2013	pure	disorder	obsessional	like	people
2014	anxiety	disorder	like	depression	thought
2015	like	disorder	anxiety	thought	think
2016	anxiety	like	disorder	thought	people
2017	anxiety	like	thought	disorder	think
2018	anxiety	like	disorder	thought	people
2019	anxiety	like	thought	disorder	think
2020	like	anxiety	thought	disorder	think
2021	thought	like	anxiety	people	depression
2022	thought	like	anxiety	people	disorder
2023	like	thought	anxiety	people	think
2024	like	anxiety	thought	think	disorder
2025	like	anxiety	thought	disorder	think

Table 21: Top-5 Co-occurring Neighbors per Year for *harassment* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	sexual	get	send	sexually	research
2011	student	sexual	use	like	people
2012	like	rape	tell	sexual	people
2013	think	child	people	man	woman
2014	sexual	people	bullying	likely	tell
2015	woman	female	think	online	sexual
2016	people	like	bullying	health	mental
2017	people	sexual	woman	man	like
2018	sexual	woman	people	like	workplace
2019	people	like	know	want	talk
2020	people	like	sexual	sexually	sub
2021	sexual	people	like	feel	think
2022	people	sexual	woman	man	sexually
2023	act	insult	tolerate	provoke	language
2024	act	provoke	insult	disrespectfully	racist
2025	insult	act	racist	language	tolerate

Table 25: Top-5 Co-occurring Neighbors per Year for *prejudice* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	see	know	self	yes	fight
2011	people	aware	mean	study	find
2012	people	think	social	mental	way
2013	people	think	racism	mean	say
2014	implicit	people	attitude	association	base
2015	people	find	black	base	study
2016	people	research	like	think	bias
2017	people	think	racism	feel	study
2018	people	group	study	right	like
2019	people	group	study	right	abstract
2020	people	like	mental	group	woman
2021	people	group	like	bias	think
2022	people	racism	like	group	bias
2023	people	woman	like	man	experience
2024	people	think	like	bias	man
2025	people	group	like	man	social

Table 22: Top-5 Co-occurring Neighbors per Year for *imposter* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	delusion	syndrome(http://en.wikipedia.org)	wiki	impostor_syndrome	interesting
2011	right	people	problem	convince	close
2012	delusion	person	capgras	replace	see
2013	syndrome	research	effect	real	actually
2014	syndrome	control	simply	forget	picture
2015	syndrome	develop	think	people	feel
2016	syndrome	think	like	people	call
2017	syndrome	delusion	like	opposite	replace
2018	syndrome	school	grad	life	feel
2019	syndrome	like	think	feel	capable
2020	like	syndrome	feel	think	time
2021	syndrome	like	feel	people	know
2022	syndrome	like	feel	think	people
2023	syndrome	feel	like	feeling	people
2024	like	syndrome	feel	people	try
2025	syndrome	like	feel	people	know

Table 26: Top-5 Co-occurring Neighbors per Year for *psychopath* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	people	think	like	disorder	personality
2011	people	think	like	empathy	trait
2012	sociopath	people	disorder	think	like
2013	people	think	disorder	sociopath	personality
2014	people	like	think	sociopath	disorder
2015	people	think	disorder	like	sociopath
2016	people	think	personality	sociopath	like
2017	people	like	disorder	think	personality
2018	people	trait	personality	like	disorder
2019	people	trait	think	personality	disorder
2020	people	sociopath	like	think	disorder
2021	people	like	narcissistic	think	personality
2022	people	like	think	disorder	empathy
2023	people	narcissistic	like	personality	trait
2024	people	like	narcissistic	think	trait
2025	people	trait	narcissistic	like	empathy

Table 27: Top-5 Co-occurring Neighbors per Year for *toxic* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	people	deficiency	and/or	like	environment
2011	environment	deficiency	brain	good	different
2012	people	individual	help	deficiency	brain
2013	change	social	health	mean	behavior
2014	drug	like	people	brain	cause
2015	people	like	article	feel	think
2016	masculinity	man	people	like	think
2017	masculinity	people	like	man	life
2018	people	relationship	like	life	mental
2019	people	like	relationship	masculinity	think
2020	people	like	relationship	feel	life
2021	people	like	relationship	think	feel
2022	people	like	relationship	thing	think
2023	people	like	man	relationship	masculinity
2024	people	like	relationship	man	masculinity
2025	people	like	man	relationship	woman

Table 30: Top-5 Co-occurring Neighbors per Year for *addiction* - Reddit General Corpus

Year	1	2	3	4	5
2010	drug	like	people	time	get
2011	drug	people	think	like	know
2012	drug	people	like	money	welfare
2013	drug	like	people	think	get
2014	drug	people	like	think	get
2015	drug	like	think	people	life
2016	drug	like	people	get	think
2017	drug	like	year	people	life
2018	drug	people	like	life	get
2019	drug	like	sex	people	thing
2020	drug	porn	like	people	year
2021	drug	like	porn	people	year
2022	drug	porn	like	life	people
2023	drug	people	like	life	porn
2024	drug	porn	like	people	time
2025	drug	porn	like	people	time

Table 28: Top-5 Co-occurring Neighbors per Year for *trauma* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	event	child	experience	childhood	abuse
2011	experience	event	like	stress	people
2012	experience	memory	event	people	like
2013	experience	people	like	cause	child
2014	experience	people	childhood	like	ptsd
2015	experience	people	think	event	ptsd
2016	experience	people	ptsd	like	disorder
2017	psychotherapy	processing	like	sensorimotor	sp4
2018	experience	people	like	childhood	help
2019	experience	people	like	childhood	help
2020	experience	like	people	feel	childhood
2021	like	experience	people	help	feel
2022	experience	like	people	childhood	therapist
2023	experience	people	like	therapist	feel
2024	sexual	experience	help	like	recover
2025	sexual	violence	rainn.org](https://rainn.org	recover	help

Table 31: Top-5 Co-occurring Neighbors per Year for *bipolar* - Reddit General Corpus

Year	1	2	3	4	5
2010	disorder	people	know	like	medication
2011	disorder	manic	people	think	depression
2012	disorder	like	diagnose	know	depressed
2013	disorder	people	like	depression	mom
2014	disorder	people	depression	anxiety	diagnose
2015	disorder	depression	time	year	like
2016	disorder	people	diagnose	depression	get
2017	disorder	depression	think	thing	work
2018	disorder	year	like	depression	diagnose
2019	disorder	depression	diagnose	mental	people
2020	disorder	depression	people	diagnose	date
2021	disorder	diagnose	like	depression	year
2022	disorder	people	diagnose	depression	mental
2023	disorder	diagnose	like	year	get
2024	disorder	feel	like	med	diagnose
2025	disorder	depression	get	like	diagnose

Table 29: Top-5 Co-occurring Neighbors per Year for *triggered* - Reddit Psychology Corpus

Year	1	2	3	4	5
2010	think	brain	like	fear	way
2011	like	people	time	brain	thing
2012	like	people	thing	think	stress
2013	thing	people	like	anxiety	know
2014	like	thing	people	help	know
2015	people	warming	like	think	help
2016	like	anxiety	thing	feel	people
2017	like	people	thing	think	feel
2018	like	thing	people	anxiety	feel
2019	like	feel	thing	people	anxiety
2020	like	thing	feel	people	know
2021	like	feel	thing	people	anxiety
2022	like	people	feel	thing	know
2023	like	feel	thing	trauma	people
2024	get	give	topic	provide	potentially
2025	prevent	resource	get	give	topic

Table 32: Top-5 Co-occurring Neighbors per Year for *bullying* - Reddit General Corpus

Year	1	2	3	4	5
2010	kid	school	get	like	people
2011	school	kid	get	people	like
2012	school	kid	get	like	people
2013	school	kid	people	get	like
2014	school	people	friend	kid	like
2015	school	people	like	kid	get
2016	school	kid	get	people	like
2017	school	people	kid	like	think
2018	school	kid	like	people	get
2019	school	like	people	get	friend
2020	school	people	get	like	friend
2021	school	people	get	like	year
2022	school	like	people	get	kid
2023	school	people	get	like	kid
2024	school	get	like	people	friend
2025	school	kid	get	people	like

Table 33: Top-5 Co-occurring Neighbors per Year for *gaslighting* - Reddit General Corpus

Year	1	2	3	4	5
2010	band	anthem	anthem](http://www.youtube.com	watch?v	current
2011	wiki	family	pretty	bit	let
2012	feel	anthem	begin	thing	time
2013	ray	lamontagne	jolene	mike	doughty
2014	gaslighte	man	behavior	make	victim
2015	later	know	people	woman	break
2016	year	emotional	horrible	relationship	time
2017	like	try	abuse	know	time
2018	try	lie	abuse	think	emotional
2019	like	woman	tell	crazy	bullying
2020	try	people	abuse	thing	want
2021	like	try	think	abuse	tell
2022	try	person	people	manipulate	relationship
2023	try	people	think	like	tell
2024	woman	try	like	people	thing
2025	try	think	lie	like	woman

Table 34: Top-5 Co-occurring Neighbors per Year for *harassment* - Reddit General Corpus

Year	1	2	3	4	5
2010	people	woman	sexual	get	like
2011	sexual	people	get	like	ask
2012	people	sexual	like	guy	tell
2013	sexual	woman	man	people	like
2014	sexual	woman	like	man	people
2015	woman	sexual	like	people	man
2016	woman	sexual	people	man	like
2017	sexual	woman	like	guy	get
2018	sexual	woman	man	people	assault
2019	woman	sexual	man	like	think
2020	sexual	woman	man	like	sexually
2021	sexual	woman	man	sexually	like
2022	woman	sexual	sexually	man	people
2023	woman	man	sexual	people	get
2024	woman	sexual	man	sexually	like
2025	woman	sexual	man	get	people

Table 38: Top-5 Co-occurring Neighbors per Year for *prejudice* - Reddit General Corpus

Year	1	2	3	4	5
2010	people	think	like	way	come
2011	people	know	minority	say	stereotype
2012	people	think	white	racist	like
2013	people	think	woman	man	pride
2014	people	like	think	man	know
2015	people	like	think	man	woman
2016	pride	people	like	thing	woman
2017	people	racism	white	pride	like
2018	people	think	like	woman	experience
2019	people	woman	like	think	pride
2020	stereotype	personal	experience	opinion	entire
2021	experience	preference	opinion	personal	stereotype
2022	personal	experience	generalize	opinion	stereotype
2023	people	experience	personal	stereotype	opinion
2024	preference	generalize	opinion	experience	question
2025	people	like	man	pride	woman

Table 35: Top-5 Co-occurring Neighbors per Year for *imposter* - Reddit General Corpus

Year	1	2	3	4	5
2010	lose	doubt	wait	lie	hat
2011	syndrome	artist	know	think	lose
2012	dream	lose	meet	man	triumph
2013	like	lose	man	doubt	wait
2014	lose	man	life	think	thing
2015	syndrome	like	feel	look	thing
2016	syndrome	man	lose	hold	doubt
2017	man	lose	turn	doubt	wait
2018	man	syndrome	feel	like	know
2019	like	syndrome	feel	work	good
2020	syndrome	like	feel	job	woman
2021	syndrome	like	feel	think	smart
2022	syndrome	feel	like	need	bisexual
2023	syndrome	feel	like	man	dream
2024	syndrome	feel	like	work	time
2025	syndrome	like	wait	know	lose

Table 39: Top-5 Co-occurring Neighbors per Year for *psychopath* - Reddit General Corpus

Year	1	2	3	4	5
2010	think	like	people	want	come
2011	people	like	think	personality	believe
2012	like	disorder	people	personality	indicate
2013	people	like	think	know	girl
2014	like	people	woman	guy	way
2015	like	people	think	emotional	want
2016	people	think	get	like	know
2017	think	like	people	person	know
2018	like	people	say	thing	feel
2019	like	people	check	know	bad
2020	people	like	job	think	sound
2021	like	people	think	know	thing
2022	people	like	think	narcissistic	want
2023	like	people	man	sociopath	think
2024	like	people	way	play	try
2025	people	think	narcissistic	like	woman

Table 36: Top-5 Co-occurring Neighbors per Year for *narcissistic* - Reddit General Corpus

Year	1	2	3	4	5
2010	think	people	self	like	good
2011	think	like	personality	people	say
2012	like	people	look	think	say
2013	like	people	feel	want	thing
2014	think	people	like	self	woman
2015	like	people	self	think	woman
2016	like	think	people	personality	disorder
2017	people	think	like	good	want
2018	like	people	think	personality	mother
2019	like	people	thing	think	life
2020	people	like	self	think	get
2021	people	like	think	year	mother
2022	people	think	like	good	know
2023	year	people	abusive	abuse	like
2024	people	woman	want	like	think
2025	people	like	think	life	woman

Table 40: Top-5 Co-occurring Neighbors per Year for *toxic* - Reddit General Corpus

Year	1	2	3	4	5
2010	chemical	like	find	say	people
2011	like	body	waste	people	relationship
2012	know	substance	relationship	like	thing
2013	relationship	like	know	think	people
2014	relationship	people	like	think	thing
2015	woman	people	man	think	relationship
2016	people	relationship	friend	life	masculinity
2017	relationship	people	like	life	get
2018	relationship	people	masculinity	like	man
2019	relationship	people	masculinity	like	friend
2020	relationship	people	masculinity	like	friend
2021	people	relationship	like	think	friend
2022	health	mental	people	term	label
2023	health	mental	people	man	term
2024	health	mental	people	relationship	woman
2025	people	health	mental	relationship	man

Table 37: Top-5 Co-occurring Neighbors per Year for *ocd* - Reddit General Corpus

Year	1	2	3	4	5
2010	like	people	thing	think	disorder
2011	like	people	thing	get	life
2012	people	get	thing	like	know
2013	like	people	thing	think	know
2014	anxiety	like	thing	issue	people
2015	like	thing	anxiety	think	need
2016	anxiety	depression	like	time	mental
2017	anxiety	like	depression	disorder	thing
2018	like	anxiety	people	thing	depression
2019	anxiety	like	thing	depression	bad
2020	anxiety	like	thing	think	lot
2021	anxiety	like	get	thing	adhd
2022	like	thing	anxiety	think	time
2023	like	thing	issue	help	anxiety
2024	get	like	thought	thing	people
2025	like	disorder	people	anxiety	adhd

Table 41: Top-5 Co-occurring Neighbors per Year for *trauma* - Reddit General Corpus

Year	1	2	3	4	5
2010	experience	time	way	thing	think
2011	experience	people	child	like	life
2012	people	cause	experience	life	get
2013	like	experience	people	think	cause
2014	experience	think	know	people	like
2015	people	experience	like	think	thing
2016	experience	like	life	people	think
2017	experience	think	people	like	life
2018	experience	like	people	think	life
2019	like	experience	feel	people	think
2020	permit	tourism	askwomen	comments8xqo	announcementupdate
2021	people	like	experience	lot	childhood
2022	like	think	childhood	year	experience
2023	people	like	life	time	experience
2024	like	people	childhood	thing	past
2025	like	people	man	lot	think

Table 42: Top-5 Co-occurring Neighbors per Year for *triggered* - Reddit General Corpus

Year	1	2	3	4	5
2010	pull	time	like	thing	know
2011	pull	like	gun	people	time
2012	pull	know	get	gun	people
2013	pull	like	time	thing	think
2014	like	pull	know	think	thing
2015	pull	like	time	people	thing
2016	like	think	pull	thing	time
2017	post	error	chance	violate	rule
2018	like	anxiety	know	get	people
2019	chrono	like	time	know	thing
2020	like	thing	people	pull	get
2021	like	time	get	thing	pull
2022	like	feel	get	thing	know
2023	like	thing	people	know	get
2024	like	thing	time	know	pull
2025	like	thing	people	get	know