

“Partner” surpassed “boyfriend” and “girlfriend” in prevalence within US active user Twitter profile biographies - Decomposition of a temporal identity trend

Jayne Yerrick, Stony Brook University, USA, <https://orcid.org/0000-0002-5960-2220>

Jason Jeffrey Jones, Stony Brook University, USA, <https://orcid.org/0000-0002-4140-0268>

Abstract

Some individuals have chosen to adopt the gender-neutral term “partner” to refer to their romantic counterpart in place of the gendered terms “boyfriend” and “girlfriend.” Here we explore this linguistic trend with data from millions of individuals’ self-descriptions spanning over a decade. We estimated the annual prevalence of each term and found increased use of partner coincident with decreased use of boyfriend and girlfriend. To decompose the mechanisms behind the observed trends, we performed ipseological analysis on cross-sectional and longitudinal samples. The evidence suggests very few individuals directly replaced gendered terms with partner. Instead, individuals who had included boyfriend and girlfriend removed those words from their bios or stopped posting. Independently, use of partner (overwhelmingly in a non-romantic sense) increased over time.

Introduction

Just as romantic relationships can be complicated in many ways, the terms used to describe romantic partners can be complex and varied as well. There are many ways to refer to a significant other; Longfield (2004), in a study of young people in the Ivory Coast, found that participants used over 79 different terms to describe their sexual and romantic partners. Longfield (2004) found that the difference in terminology depended on factors such as the level of emotional commitment and social legitimacy of the relationship. The use of boyfriend and girlfriend was especially common, and participants defined these terms as having a strong emotional component. Sexual health scholars also note that there is great variation in types of romantic and sexual partnerships. In fact, Estcourt et al. (2022) classify five different types of sex partners, using aspects of the relationship like emotional connection, sexual exclusivity, and timeframe to differentiate between partner categories. Fahs and Swank (2022) also found that classifying someone as a sexual partner is complex and defined according to factors like type of sexual activity, level of pleasure, romantic relationship, and attraction felt toward someone. As these findings demonstrate, the terms used to describe romantic and sexual partners vary greatly and are determined based on many different contextual factors.

In this work, we are interested in the contrast between the gendered terms boyfriend/girlfriend and the gender-neutral term “partner.” The term partner offers couples a more general, inclusive way to refer to their significant other. In the past, partner was mostly used by individuals within the LGBTQ+ community to describe their romantic interests, especially before gay marriage was legalized in the US in 2015 (Romack 2018). However, “partner” appears to no longer be limited to the LGBTQ+ community. Kitchener (2019) claims partner is increasingly used by both straight and queer couples to describe their relationships. As evidence, she cites the rise in the use of the term “partner” in Google Trends data – the number of searches for “my partner” in 2019 was eight times as much as it was in 2004.

There is more direct evidence that partner has acquired similar meaning and usage to girlfriend and boyfriend. Specifically, a YouGov survey of Britons in 2019 (Smith, 2019) found that 43% of

respondents used boyfriend or girlfriend to refer to a romantic partner, while 41% used the term partner. The same study also found that the use of boyfriend and girlfriend was more popular among younger participants; those older than 35 were more likely to use partner, while those younger than 35 used boyfriend and girlfriend more frequently.

We set out to bring a large amount of data to a simple question: *Do we observe a shift away from use of boyfriend/girlfriend and toward partner in self-descriptive texts?* Individuals frequently mention others when describing themselves. For instance, they name celebrities and politicians. Individuals frequently also mention their relationships with others when describing themselves by referring to children, pets and relatives. In the current work, we focus on the terms boyfriend, girlfriend and partner. As we shall show, our question turned out less simple than we initially thought. Thankfully, the richness of our data allowed us the opportunity to decompose the temporal trends we observed. We offer the results as an ipseological case study and a collection of methods we encourage others to emulate.

Ipeology and Personally Expressed Identity

Recall the question: *Do we observe a shift away from use of boyfriend/girlfriend and toward partner in self-descriptive texts?* Let's call an affirmative answer "partner shift." Due to our expertise in the area and the availability of methods and data, we will seek evidence for partner shift within personally expressed identity using methods from ipseology. Personally expressed identity is "who or what an individual themselves says they are" (Jones, 2021:1). Ipeology is the study of human identity using large datasets of personally expressed identity and computational methods (Jones, 2023). Previous ipseological studies have demonstrated the increasing frequency of political terms (Rogers & Jones, 2021), LGBTQ+ signifiers (Jones & Cisternino, 2022), and preferred pronoun lists (Tucker & Jones, 2023) within personally expressed identity texts. In similar work, Pathak et al. (2021) documented many personal identifiers within Twitter bios. Choi et al. (2023) have examined what happens after a change in personally expressed identity and found evidence for increased connections with same-identity alters.

Temporal Validity

Ipeology centers temporal analysis. This is a deliberate choice in response to the fragile temporal validity of social science research findings (Munger, 2019). Human culture changes rapidly – more and more so as time passes. It is far better to measure consistently and persistently and describe trends than our (perhaps uncharitable) perspective of the social science norm: to theorize incessantly and perform confirmation bias intermittently.

Diachronic Study of Language Corpora

We emphasize the importance of temporal validity through the diachronic study of language corpora. "Diachronic" refers to the idea that the object of study changes over time, which places the focus on temporal analysis. Following language use patterns can provide insight into cultural trends. Specifically, we are inspired by studies that focus on the use of search inquiries (Jun et al., 2018) and the development of culturomics, which is the assumption that language use can reveal valuable information about individuals' minds and the collective consciousness of societies (Michel et al., 2011). The value of large text corpora is demonstrated by the successes of word embeddings (Mikolov et al., 2013) and large language models (Bubeck et al., 2023). When natural language processing methods increased focus on scaling, their capabilities grew immensely. Here we will interrogate multiple, related, diachronic corpora to characterize partner shift.

Methods

In this work, we perform ipseological analysis on large, diachronic corpora of US Twitter users' profile biographies. From 2012 through 2023, contemporary observations of active users' public profiles were collected. The profiles contained a "user description" that contained the user's response to a field labeled "Bio" containing the prompt: *Describe yourself in 160 characters or less*.

The source of the data was a 1% random sample of all tweets. The sample was delivered by the Twitter Streaming API, which was free and publicly available at the time. In the present work, we filtered the accounts of tweet authors to those expressing a US location (e.g. "USA", "Cleveland, OH") within the location field of the profile. If one user was observed multiple times in one year, one observation was chosen at random and the rest discarded. Millions of self-authored short biographies were observed each year. Supplemental Table S1 lists annual statistics.

A longer, more detailed description of data collection and collation may be found in Jones, 2021 – an open-access, peer-reviewed research article. Jones, 2023 is an introductory textbook on ipseology. Data and analysis code supporting the results presented below are publicly available at <https://osf.io/g2f8p/>.

Results and Discussion

Cross-Sectional Trends in Boyfriend, Girlfriend and Partner Prevalence

Figure 1 represents the prevalence of the use of the words partner, boyfriend, and girlfriend in US Twitter users' profile bios from 2012 to 2023. Prevalence is expressed as the incidence of users who included the specified word in their bio per 10,000 users. We use the term signifier to refer to the words of interest.

The prevalence of the signifiers "boyfriend" and "girlfriend" decreased from 2012 to 2023, while the prevalence of "partner" increased. Regressing prevalence over year, the year coefficient for partner is reliably positive (95% confidence interval: +0.63, +1.17), while the coefficients for boyfriend (CI: -1.47, -0.65) and girlfriend (CI: -1.11, -0.55) were reliably negative. Nearly 13,000 unigrams met a minimum 1 per 10,000 prevalence threshold. Among these, boyfriend dropped in rank from 906th most prevalent in 2012 to 3,545th in 2023. Partner moved up from rank 1,284 in 2012 to 620 in 2023. Clearly, within our annual, cross-sectional samples of several million tweet authors, the proportion including partner in the bio increased – especially relative to boyfriend and girlfriend. In the remainder of this work, we will decompose how these trends developed.

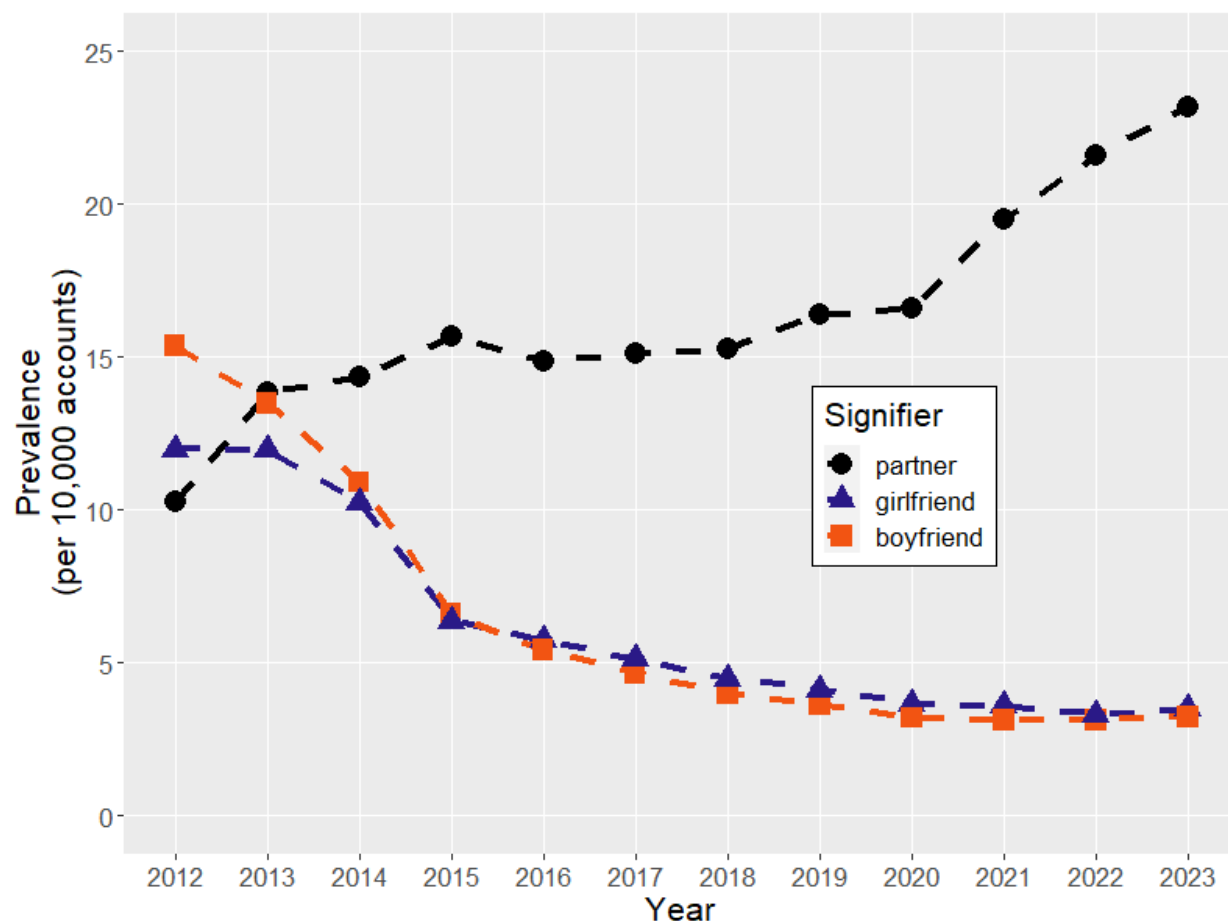


Figure 1. Prevalence of partner, boyfriend and girlfriend within an annual, cross-sectional sample of active (tweeting) US users of Twitter 2012-2023. Prevalence is estimated as count per 10,000 unique users. Estimates are based on several million unique US users per year.

Figure 1 appears to tell a very simple story. Partner shift was obviously, overwhelmingly evident, and use of partner substituted for girlfriend and boyfriend. But further investigation revealed that would be a too simple (generously) or plainly wrong (realistically) explanation. First, the fact that the results above are based on cross-sectional samples and many users entered and left the sample needed to be addressed. Second, the polysemic nature of “partner” required attention. These made the remaining analyses in this work necessary.

Year-over-Year Longitudinal Observations for Boyfriend, Girlfriend and Partner

Figure 1 presents prevalence in 12 *cross-sectional* annual samples. In each sample, each unique individual who was observed in a year contributed exactly one bio. The prevalence estimates, therefore, tell us what proportion of sampled yearly-active users had each signifier within their bio as they were observed posting. This is valuable information, but a *longitudinal* sample could tell us something different. Specifically, we could examine within-individual changes in self-description. Thus, we constructed 11 year-over-year longitudinal samples wherein we observed two bios for each user if they were present in both years. For instance, the first year-over-year longitudinal sample consists of both a 2012 bio and a 2013 bio for the 4,772,798 users we observed in both 2012 and 2013. Before we proceed to results, first let us define a small handful of terms.

Signifier-Level Events: Add, Delete, Keep and Ignore

With a longitudinal sample, one can make strong inferences not possible with a cross-sectional sample. Here we focus on four word-level events that form a mutually exclusive and exhaustive taxonomy of possible outcomes over two observations of the same user's bio. Editing out a word we dub a Delete event. Editing in a word, we dub an Add event. Given two observations of the same user's bio, we can identify every Add and Delete event. Over the entire longitudinal sample, we can count the incidence of such events. There are also two more possible events which are more frequent but less interesting. A Keep event occurs when the user maintains the same word from one period of observation to the next. An Ignore event occurs when the signifier of interest was never present in a user's bio. Table 1 recapitulates these definitions.

Earlier Bio	Later Bio	Added	Deleted	Kept	Ignored
I like my girlfriend.	I love my girlfriend.	love	like	I, my, girlfriend	partner, aardvark, many others...
Boyfriend of celebrity.	Partner of celebrity.	partner	boyfriend	celebrity, of	girlfriend, alligator, many others...

Table 1. Illustrating the concepts of Add, Delete, Keep and Ignore events. Given two observations of the same individual's bio, every word can be placed in exactly one of these four categories.

Consider Figure 2. Here we present the incidence of Add and Delete events for boyfriend, girlfriend and partner for each year-over-year sample. (Keep and Ignore counts are available in Table S2 in the Supplement.) In every year, we observed more Add events than Delete events for partner. Boyfriend and girlfriend show the opposite pattern; in every year, more users deleted these signifiers than added them.

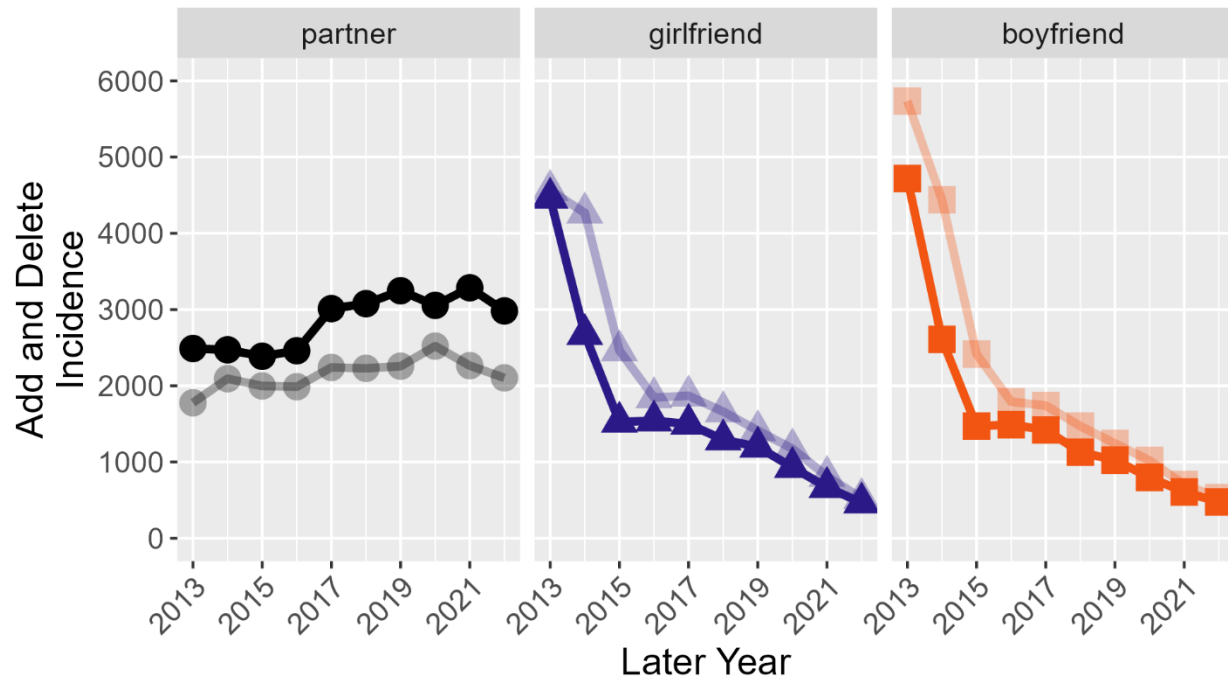


Figure 2. Counts of users that added (darker shading) or deleted (lighter shading) each signifier in each year. Later Year marks the second bio observation; the first bio observation is one year prior (e.g. 2017 on the x-axis labels the Add and Delete counts for users observed in 2016 and again in 2017). Estimates are based on about five million unique US users per year.

This analysis ruled out the possibility that the trends in Figure 1 were due entirely to the changing composition of users in the cross-sectional samples. It also prodded us to go one step further: within these same year-over-year longitudinal samples, we counted how often we observed a Delete event and a coinciding Add event among our three signifiers. These compound revisions we dub Transmutation events.

Transmutation: Replacement of Girlfriend or Boyfriend with Partner

Consider the second row of Table 1. A transmutation occurred. The individual edited out one word (boyfriend) and edited in another (partner). Counting transmutations will reveal how tightly linked the Add and Delete trends documented above were. Did the *same individuals* both delete boyfriend/girlfriend and add partner from the first period to the second? Figure 3 illustrates the general answer to the question is no, not frequently.

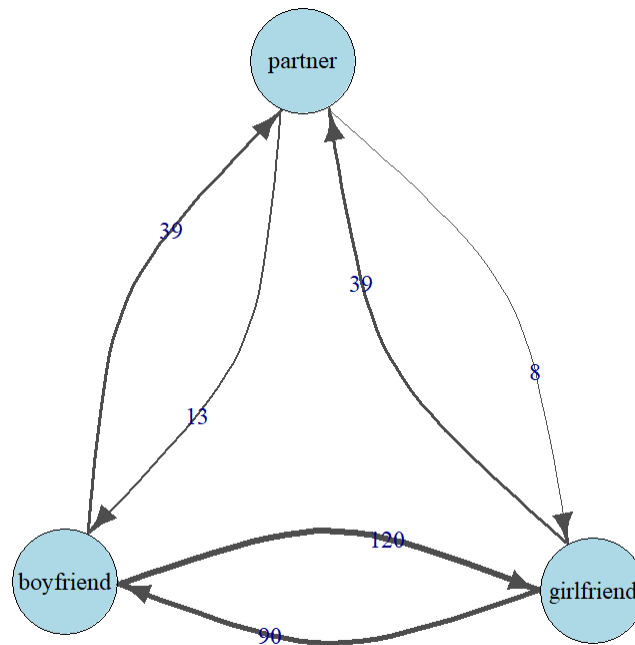


Figure 3. The transmutation network between boyfriend, girlfriend and partner. Over all year-over-year samples, we observed only 39 instances of boyfriend-to-partner transmutations and only 39 instances of girlfriend-to-partner transmutations. (The fact the two incidences were exactly the same was a coincidence.) Boyfriend-to-girlfriend and girlfriend-to-boyfriend transmutations were several times more common.

We had initially hypothesized we would find many boyfriend-to-partner and girlfriend-to-partner transmutations in our data. When we first looked at Figure 1, we imagined many users had deleted boyfriend or girlfriend and added partner in its place. As it turned out, these transmutations were infrequent. Additionally, even within the set of transmutations, we found that newly minted partners rarely had a romantic denotation when we reviewed the bios. Only an infinitesimal portion of the shift in popularity from boyfriend/girlfriend to partner demonstrated in Figure 1 should be credited to direct substitution.

Account Abandonment

Perhaps accounts with bios containing boyfriend/girlfriend were especially likely to be abandoned. Here we explore this possibility by examining accounts that disappear from observation. Again, we created Year-over-Year Longitudinal datasets. For example, we matched every user profile observed in 2016 to an observation of the same user (and their profile) in 2017 if it was available. If a user stopped using their account or stopped tweeting completely, this would cause their probability of being included in our 1% sample of tweets to zero. Of course, it could also be random chance that a user goes unobserved. However, we can take advantage of the fact that there is a baseline rate at which accounts go unobserved year-to-year and compare rates of reobservation as a function of the contents of user bios.

There are typical rates at which accounts go missing. In 2020, we reobserved 58.2% of all 2019 bios. Reobservation rates differed based on the content of the bio. Among 2019 partner bios, 65% were reobserved in 2020. Girlfriend (56.6%) and boyfriend (56.1%) bios were reobserved at lower rates. Out of 20,853 frequently-used words, the median rate of reobservation was 60.6%. Figure 4 below presents

the reobservation rates for each year for partner, girlfriend and boyfriend accounts. In every year from 2015 forward, partner reobservation rates were higher than girlfriend and boyfriend. This data suggests that users with girlfriend or boyfriend in their bio were less likely to continue being active users than those with partner in the bio.

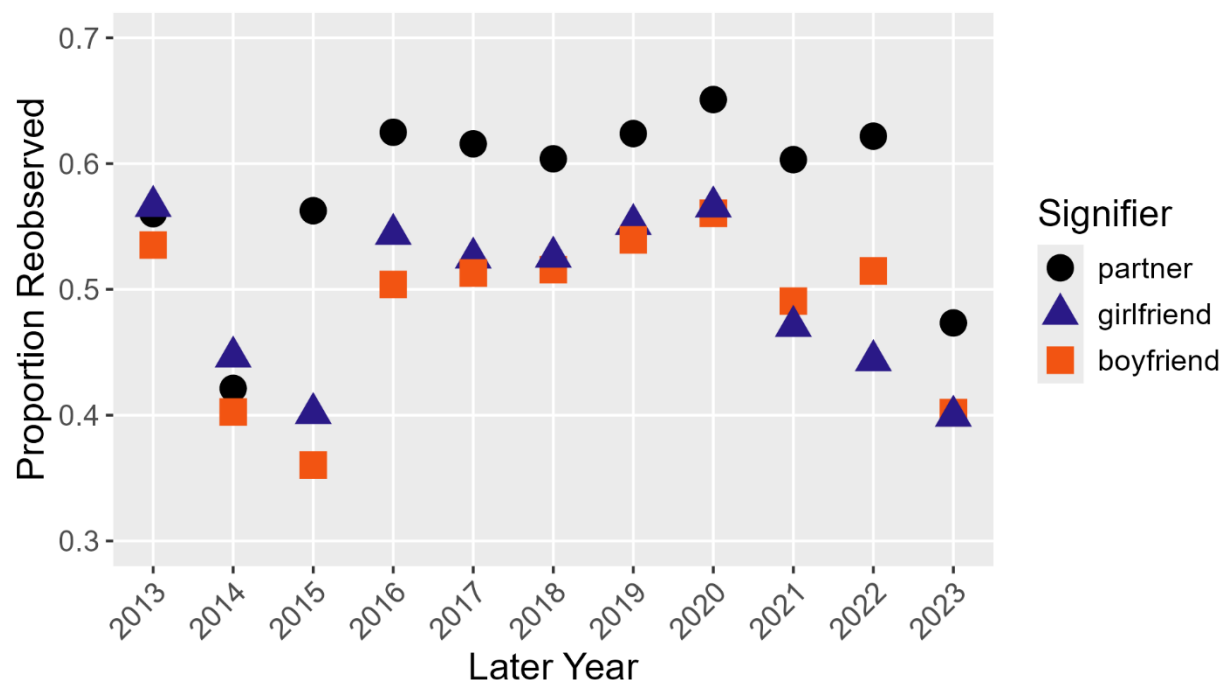


Figure 4. Comparing the proportions of users who were reobserved in Later Year based on the Signifier present in the earlier year. From 2015 forward, users with partner in the bio were more likely to be reobserved than those with girlfriend or boyfriend. Each proportion was estimated from at least several thousand accounts. (Lowest N=2,398 - boyfriend accounts from 2022 to 2023.)

Generational Replacement

Another dynamic that might have contributed to the observed trend from Figure 1 could be generational replacement. Even if no one ever edited their bio, and no one ever abandoned their account, it may be that new users to the platform for some reason preferentially used the word partner relative to boyfriend/girlfriend. Here we explore whether this phenomenon contributed to partner prevalence overtaking girlfriend and boyfriend. We use the fact that each observation of a bio is labeled with the users' date of joining the Twitter platform to examine the relationship between signifier use and account creation date.

In Figure 5 below, we compare the relative incidence of partner, girlfriend and boyfriend among recently joined users in each year. Recently joined users are defined as those users who joined within the calendar year they were observed. Thus, we show here the relative popularity of the Signifiers within users' early bios; each bio must be less than one year old. Note that partner gained in relative incidence (but not monotonically). Still, by 2023, less than half of new users who included one of these three signifiers chose girlfriend or boyfriend.

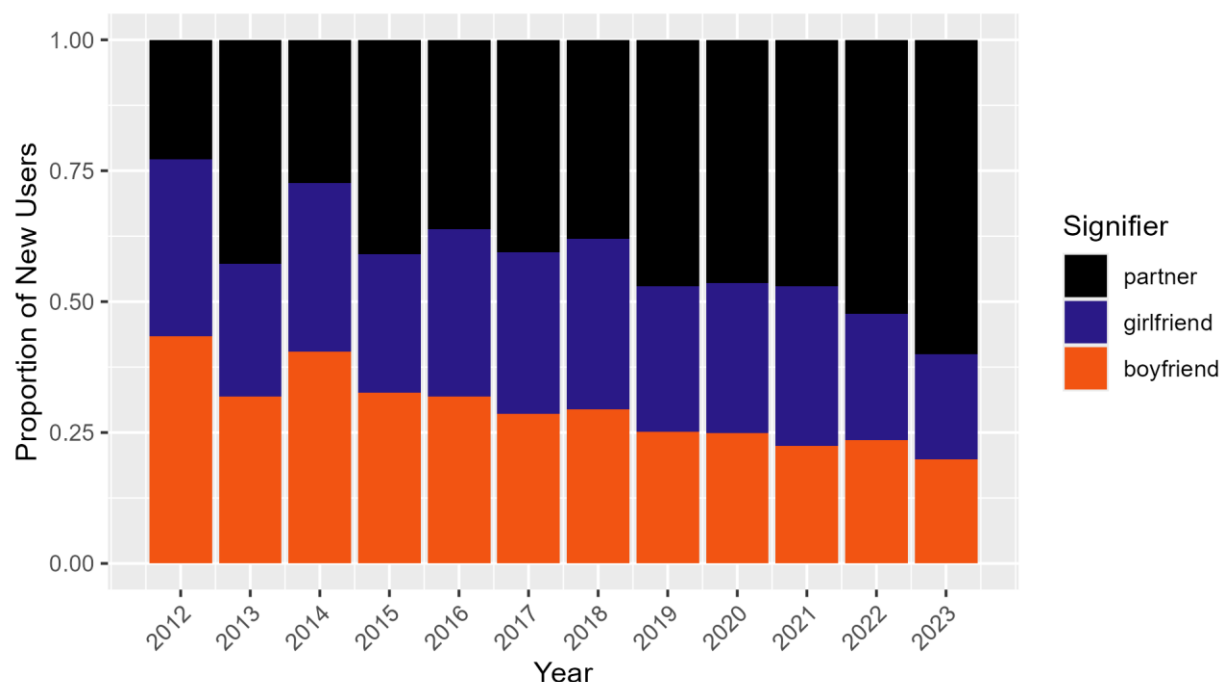


Figure 5. Proportion of recently joined users with each signifier by year within the cross-sectional sample (among only those new users including one of the three signifiers of interest). Recently joined users are those who joined within the same calendar year as they were observed. For example, the 2020 proportions are based on counts of users with an account creation date within 2020, and thus users who joined 2006-2019 were excluded.

In the supplement, we visualize this phenomenon another way. Specifically, we recreate Figure 1 including only recently joined users within each year. One sees that newly joined users included partner preferentially to girlfriend and boyfriend beginning in 2015, and partner grew in first-year bio prevalence following 2020. Regression results (Table S3) confirmed that the slopes (prevalence over time) were reliably lower for girlfriend and boyfriend than for partner.

Non-Romantic Use of Partner

In addition to our previous analyses, we also conducted a qualitative content analysis of the user bios that contained the words partner, boyfriend, and girlfriend to assess whether the terms were used in romantic ways and if that changed over time. To evaluate whether terms were romantic or non-romantic, we used context clues to note the association of the word with other words and symbols in the bio. Partner was deemed romantic when associated with adjectives like “loving,” “beautiful,” and “amazing,” or when followed by a person’s name. Emojis also provided insight into whether the use was romantic. For example, one of the romantic bios said, “❤️ My Love and Life partner is <USERNAME> ❤️.” On the other hand, partner was noted as non-romantic when associated with terms that indicated professional work, like “business” or “firm.” Users also demonstrated non-romantic use of partner when the term was paired with platforms like Twitch, YouTube, and other businesses. For instance, the bio “Dad | Partner streamer @twitch | <SPONSOR-NAME> Sponsored” indicated a non-romantic use of partner.

Upon reading and categorizing more than 1,500 bios, we noticed strong inequivalence in how partner, girlfriend, and boyfriend were used. Nearly always, when we read a bio that contained boyfriend or girlfriend, we judged that it did refer to a romantic relationship. However, in most instances, when we read a bio that contained partner, it was clear that the word was not being used to refer to a romantic relationship.

Instead of being used in a romantic context, we found that partner was often used to refer to other aspects of the user's identity, like employment status or hobbies. In general, social media allows users to showcase their identity, including their professional life (Kasperuniene & Zydziunaite 2019). In fact, the Pew Research Center (2023) finds that 39% of workers say that their career is very important to their overall identity. In the bios we examined, we noticed that "partner" was often used when referring to careers in business or law, as titles like "managing partner," "venture partner" and "law firm partner" were common. These titles refer to users' professional lives, which are closely linked to one's overall identity (Greenwood 2023). This became clear in the transmutation analysis as well. High-ranking sources of partner indicated use in a business context (shareholder, venture, reseller, startup), a legal context (litigator) and a videogaming context (speedrunner, streamer, caster). This last context explains why "Twitch partner" was the most-common phrase containing partner in 2022. Twitch partners are creators on Twitch, a live streaming service that focuses on video games (Gros et al. 2018).

Conclusion

In millions of Americans' self-authored self-descriptions spanning more than a decade, we observed *partner shift*. Girlfriend and boyfriend became less prevalent and partner more. However, our *a priori* theory as to how and why was not supported.

Millions of year-over-year bio observations yielded only a few dozen girlfriend-to-partner or boyfriend-to-partner transmutations. The prevalence bifurcation of Figure 1 was clearly not driven by individuals choosing to alter their language use. Other processes – rather than in-place, intra-individual substitution – drove the temporal trends.

First, girlfriend and boyfriend became decreasingly prevalent every year within reobserved accounts. Figure 2 demonstrates that users who persisted in using the platform removed the signifiers boyfriend and girlfriend at a higher rate than adding them. These findings prove the boyfriend, girlfriend and partner prevalence trends in the cross-sectional results were not due only to the changing composition of users in the cross-sectional samples. One reason for within-individual boyfriend and girlfriend deletions may simply be aging out of these terms. At each observation, the users are one year older. Perhaps young adults are keen to mention their boyfriends and girlfriends, but this tendency gives way to jobs, hobbies and family role signifiers as they age.

Second, partner gained in prevalence, but this was due to its use in non-romantic contexts. For example, the exact phrase "Twitch partner" grew from prevalence less than 1 per 10,000 in the year 2015 to a prevalence of 4 per 10,000 in 2023. Similarly, the prevalence of "YouTube partner" grew from 0 to 1. Again, partner shift resulted, but not because of a change in vocabulary for one's romantic counterpart.

Separately, we observed diverging trends in the changing composition of active users. Figure 5 illustrates that partner became increasingly popular in the early bios of newly joining users relative to boyfriend and girlfriend. It was not the case that romantic partner was directly displacing boyfriend and girlfriend through generational replacement; these uses of partner were overwhelmingly non-romantic. Figure 4 shows that existing accounts with partner bios remained active at a higher rate than boyfriend

and girlfriend accounts. Users with boyfriend or girlfriend in their bio were less likely to continue authoring tweets.

A unique aspect of the current project is that we tracked how the use of partner has changed over time, rather than at a single point in time. For this reason, our findings provide additional context to Smith's (2019) findings that a similar percentage of respondents referred to their romantic partner as boyfriend or girlfriend (43%) and partner (41%), and that those older than 35 years old were more likely to use partner than younger respondents. While these are valuable findings, the survey results capture generational differences in partner use in 2019, whereas our findings demonstrate how the use of partner has changed from 2012 to 2023. Furthermore, Smith (2019) surveyed respondents in the UK, while we focused on analyzing bios of US users.

Further, we had the advantage of longitudinal analysis at scale. Our transmutation analysis revealed that the users in our sample only very rarely added partner upon deleting boyfriend or girlfriend. When we read samples of user bios, we saw predominantly non-romantic use of the word partner, whereas boyfriend and girlfriend nearly always referred to romantic relationships. Partner was instead used to refer to other aspects of a user's identity, such as their job.

Our findings provide the most comprehensive analysis of *partner shift* in self-descriptive texts. Our initial hypothesis – that boyfriend and girlfriend romantic signifiers were being replaced by the partner romantic signifier – was not supported. However, the data used in the current project offer a wealth of opportunities for further research on the subject and beyond. We have demonstrated the value of year-over-year longitudinal, account abandonment and generational replacement ipseological analyses. There are thousands of additional identity signifiers available for study. We urge every social scientist to ponder how their research questions could be gainfully addressed with the ipseological approach.

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Supplemental Material for
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Jayne Yerrick, Stony Brook University, USA, <https://orcid.org/0000-0002-5960-2220>

Jason Jeffrey Jones, Stony Brook University, USA, <https://orcid.org/0000-0002-4140-0268>

Table S1. Annual statistics for the cross-sectional, US user sample derived from the 1% sample of tweets. Within each year, one profile observation per user was chosen at random. Therefore, users who were observed tweeting 100, 10 or 1 times each contributed exactly one profile observation.

Year	N (unique users)	Percent Empty Bios	Mean Bio Length (characters)	Median Bio Length	SD Bio Length
2012	9,947,225	15.51	83.2	81	45.2
2013	11,395,106	12.74	81.0	78	45.9
2014	8,891,764	13.06	77.0	70	47.4
2015	8,564,955	12.88	76.9	69	48.3
2016	10,227,688	14.24	73.9	65	48.9
2017	10,638,679	15.14	72.9	63	49.2
2018	10,310,854	15.04	71.9	61	49.5
2019	9,817,008	15.02	71.1	60	49.6
2020	10,181,678	15.28	71.4	61	49.6
2021	8,170,309	14.27	74.1	65	49.9
2022	7,605,856	14.16	75.1	67	50.0
2023	4,676,849	14.45	76.4	70	50.1

Table S2. Year-over-year longitudinal event counts. This table displays counts of Add, Delete, Keep and Ignore events for each signifier within longitudinal samples. The longitudinal samples are all US users observed in the 1% sample of tweets during both Early Year and Late Year.

Signifier	Early Year	Late Year	Total Longi Users	Adds	Deletes	Keeps	Ignores
boyfriend	2012	2013	4,772,798	4,719	5,735	2,445	4,759,899
boyfriend	2013	2014	4,553,309	2,609	4,440	1,747	4,544,513
boyfriend	2014	2015	4,230,440	1,471	2,416	1,081	4,225,472
boyfriend	2015	2016	4,926,814	1,490	1,791	1,061	4,922,472
boyfriend	2016	2017	5,672,120	1,421	1,740	1,118	5,667,841
boyfriend	2017	2018	5,793,412	1,129	1,471	1,098	5,789,714
boyfriend	2018	2019	5,764,118	1,024	1,243	990	5,760,861
boyfriend	2019	2020	5,712,884	798	1,020	976	5,710,090
boyfriend	2020	2021	5,061,998	607	704	901	5,059,786
boyfriend	2021	2022	4,249,407	476	533	785	4,247,613
boyfriend	2022	2023	3,067,556	313	337	627	3,066,279
girlfriend	2012	2013	4,772,798	4,463	4,564	2,188	4,761,583
girlfriend	2013	2014	4,553,309	2,676	4,269	1,816	4,544,548
girlfriend	2014	2015	4,230,440	1,526	2,463	1,197	4,225,254
girlfriend	2015	2016	4,926,814	1,542	1,846	1,130	4,922,296
girlfriend	2016	2017	5,672,120	1,498	1,869	1,223	5,667,530
girlfriend	2017	2018	5,793,412	1,294	1,661	1,201	5,789,256
girlfriend	2018	2019	5,764,118	1,199	1,413	1,142	5,760,364
girlfriend	2019	2020	5,712,884	931	1,174	1,128	5,709,651
girlfriend	2020	2021	5,061,998	669	814	949	5,059,566
girlfriend	2021	2022	4,249,407	466	523	784	4,247,634
girlfriend	2022	2023	3,067,556	335	316	692	3,066,213
partner	2012	2013	4,772,798	2,489	1,777	3,935	4,764,597

Signifier	Early Year	Late Year	Total Longi Users	Adds	Deletes	Keeps	Ignores
partner	2013	2014	4,553,309	2,472	2,093	4,546	4,544,198
partner	2014	2015	4,230,440	2,387	1,998	5,189	4,220,866
partner	2015	2016	4,926,814	2,460	1,988	6,397	4,915,969
partner	2016	2017	5,672,120	3,012	2,241	7,121	5,659,746
partner	2017	2018	5,793,412	3,077	2,229	7,471	5,780,635
partner	2018	2019	5,764,118	3,247	2,257	7,576	5,751,038
partner	2019	2020	5,712,884	3,055	2,521	7,940	5,699,368
partner	2020	2021	5,061,998	3,286	2,264	7,937	5,048,511
partner	2021	2022	4,249,407	2,982	2,104	7,806	4,236,515
partner	2022	2023	3,067,556	1,801	1,424	6,345	3,057,986

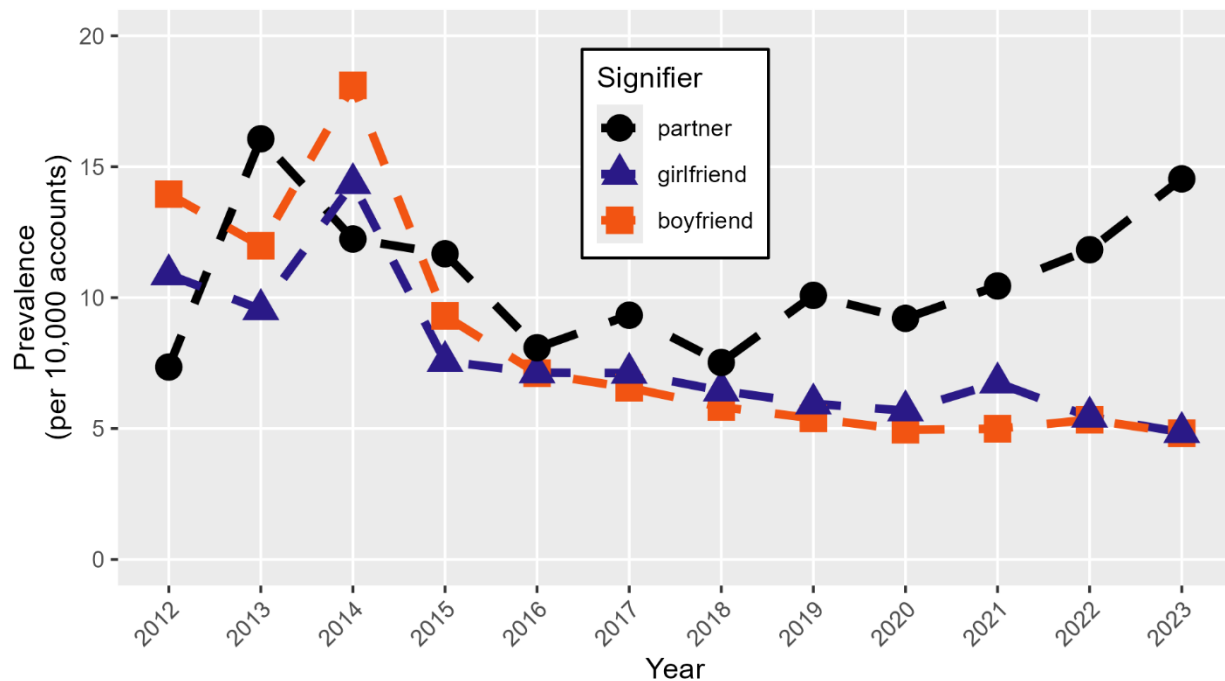


Figure S1. Prevalence of boyfriend, girlfriend and partner in first-year bios for newly joined users in each year. Beginning in 2015, more new users included partner in their first-year bio.

Table S3. Linear regression results for Signifier * Years_since_2012. Partner was the reference category for Signifier. The significant negative coefficients on the interactions indicate Partner prevalence in first-year bios grew relative to girlfriend and boyfriend. See the data visualized in Figure S1.

Term	Estimate	Std. Error	t Value	P-value	Significance
(Intercept)	10.31	1.33	7.78	0.000	***
Signifierngirlfriend	0.61	1.87	0.32	0.748	
Signifierboyfriend	3.26	1.87	1.74	0.092	.
Years_since_2012	0.07	0.20	0.35	0.732	
Signifierngirlfriend:Years_since_2012	-0.67	0.29	-2.31	0.028	*
Signifierboyfriend:Years_since_2012	-1.05	0.29	-3.63	0.001	**
Model Statistics	$R^2 = 0.585$, Adj. $R^2 = 0.516$, $F(5, 30) = 8.45$, $p = <0.001$				