

Supplementary Data A - Cohort Statistics

1 Descriptive Statistical information

During data collection, a sizable cohort of participants was observed (n=9,037), with a significant proportion (n=7,221) meeting the inclusion criteria. In total, the valid participants posted 1,245,829 times. After additional filtering, there were 1,232,741 posts, with a total of 18,990,637 words. These were broken into separate 2-week windows based on posting date, and the windows were grouped into 3 cohorts.

1.1 Statistical information for the Pre Prosocial

The cohort of posts from June 1, 2018, to August 24, 2018, contained 8,523,001 total words. As detailed in Table A.1 the positive emotion markers (posemo) had a min of 4.28 with a max of 4.34. As graphed in Figure A.1 the trendline for this pre-group trended slightly upward with an R squared of 0.166

Table A.1.

The % of linguistic marker between June 1 - August 24.

Start Date	End Date	WC	posemo
June 1, 2018	June 15, 2018	1321489	4.27
June 15, 2018	June 29, 2018	1566465	4.23
June 29, 2018	July 13, 2018	1740264	4.34
July 13, 2018	July 27, 2018	1412906	4.3
July 27, 2018	August 10, 2018	1388768	4.33
August 10, 2018	August 24, 2018	1093109	4.28

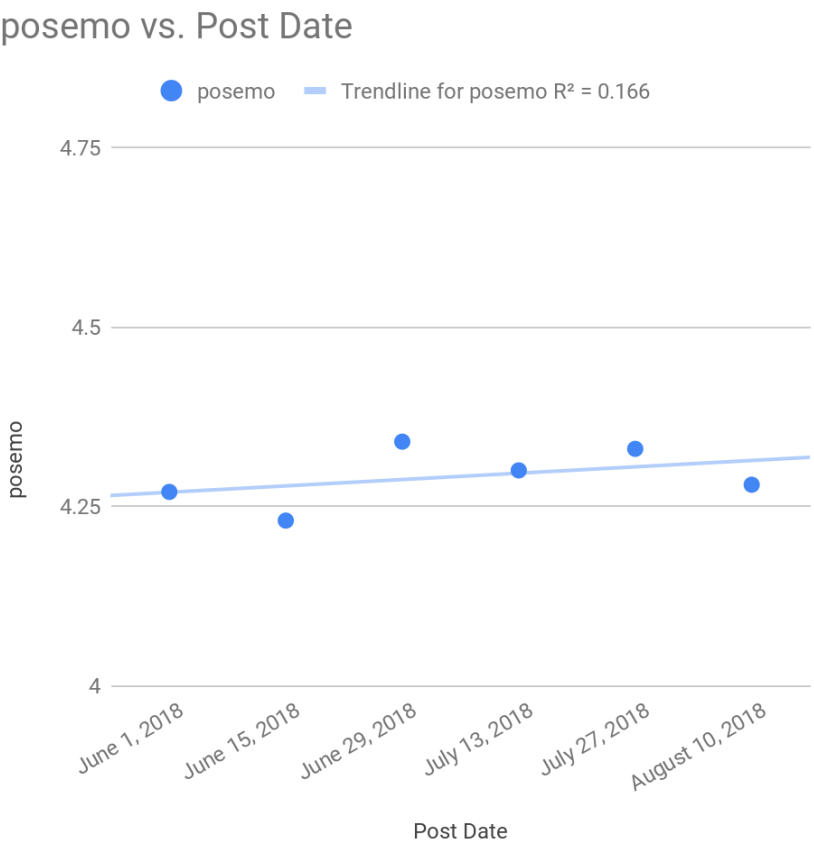


Figure A.1; posemo trend for Pre Prosocial Cohort $R^2 = 0.166$

1.2 Statistical information for the Post Prosocial

This cohort contains all recorded posts from August 28, 2018, to December 16, 2018, with 8,029,580 total words. Table A.2 details the breakdown of linguistic marker usage during this time. For this cohort, there was an increase in the R squared of the trendline for posemo at 0.463 as detailed in Figure A.2.

Table A.2.

The % of linguistic marker between August 28 - December 16.

Start Date	End Date	WC	posemo
August 28, 2018	September 7, 2018	881949	4.43
September 7, 2018	September 21, 2018	1096372	4.34
September 21, 2018	October 5, 2018	1130552	4.35
October 5, 2018	October 19, 2018	976744	4.45
October 19, 2018	November 2, 2018	1113897	4.46
November 2, 2018	November 16, 2018	1031441	4.34
November 16, 2018	November 30, 2018	798263	4.51
November 30, 2018	December 14, 2018	886446	4.51
December 14, 2018	December 16, 2018	113916	4.54

posemo vs. Post Date

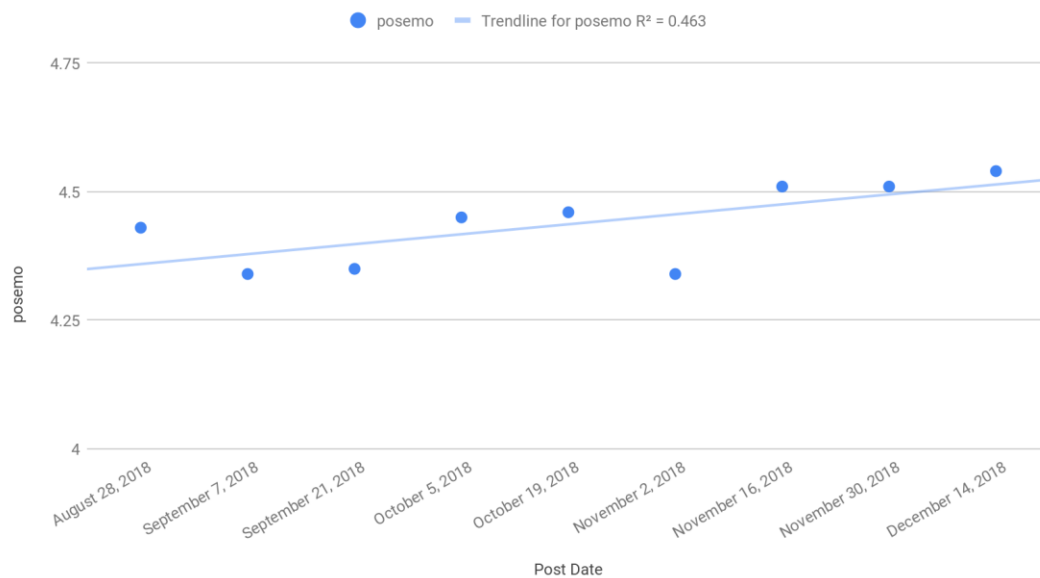


Figure A.2; posemo trend for Post Prosocial Cohort $R^2 = 0.463$

1.3 Statistical information for the Post Reciprocity

Finally, the post reciprocity introduction cohort which spanned December 20, 2018, to February 22, 2019. This contained 2,438,056 total Words as broken down in Table A.3. The lower number of total words than other cohorts is attributable to three reasons. The first being that it was a smaller window for data gathering, slightly less than two months. The second is that due to the transient nature of users there was a lower percentage of qualifying users that had reached the word threshold. The last is that the popularity of Fortnite had peaked at this point with user numbers decreasing since August.

Table A.3.

The % of linguistic marker between December 20 - February 22.

Start Date	End Date	WC	posemo
December 20, 2018	December 28, 2018	367715	4.85
December 28, 2018	January 11, 2019	692960	4.62
January 11, 2019	January 25, 2019	546087	4.43
January 25, 2019	February 8, 2019	453876	4.49
February 8, 2019	February 22, 2019	377418	4.63