



Article

# Cultural Differences in Tweeting about Drinking Across the US

Salvatore Giorgi <sup>1,†</sup>, David B. Yaden <sup>2</sup>, Johannes C. Eichstaedt <sup>3</sup>, Robert D. Ashford <sup>4</sup>,  
Anneke E.K. Buffone <sup>5</sup>, H. Andrew Schwartz <sup>6</sup>, Lyle H. Ungar <sup>1</sup> and Brenda Curtis <sup>1,\*</sup>

<sup>1</sup> Computer and Information Science Department, University of Pennsylvania, Philadelphia, PA 19104, USA; sgiorgi@sas.upenn.edu (S.G.); ungar@cis.upenn.edu (L.H.U.)

<sup>2</sup> Department of Psychology, University of Pennsylvania, Philadelphia, PA 19104, USA; dyaden@sas.upenn.edu (D.B.Y.); buffone.annekott@gmail.com (A.E.K.B.)

<sup>3</sup> Department of Psychology & Institute for Human-Centered Artificial Intelligence, Stanford University, Stanford, CA 94305, USA; johannes.stanford@gmail.com

<sup>4</sup> Substance Use Disorders Institute, University of the Sciences, Philadelphia, PA 19104, USA; rashford@mail.usciences.edu

<sup>5</sup> Department of Computer Science, Stony Brook University, Stony Brook, NY 11794, USA; buascs.stonybrook.edu

<sup>6</sup> National Institutes of Health, National Institute on Drug Abuse, Bethesda, MD 20892, USA

\* Correspondence: [brenda.curtis@nih.gov](mailto:brenda.curtis@nih.gov)

Received: 1 January 2020; Accepted: 8 February 2020; Published: 11 February 2020

**Abstract:** Excessive alcohol use in the US contributes to over 88,000 deaths per year and costs over \$250 billion annually. While previous studies have shown that excessive alcohol use can be detected from general patterns of social media engagement, we characterized how drinking-specific language varies across regions and cultures in the US. From a database of 38 billion public tweets, we selected those mentioning “drunk”, found the words and phrases distinctive of drinking posts, and then clustered these into topics and sets of semantically related words. We identified geolocated “drunk” tweets and correlated their language with the prevalence of self-reported excessive alcohol consumption (Behavioral Risk Factor Surveillance System; BRFSS). We then identified linguistic markers associated with excessive drinking in different regions and cultural communities as identified by the American Community Project. “Drunk” tweet frequency (of the 3.3 million geolocated “drunk” tweets) correlated with excessive alcohol consumption at both the county and state levels ( $r = 0.26$  and  $0.45$ , respectively,  $p < 0.01$ ). Topic analyses revealed that excessive alcohol consumption was most correlated with references to drinking with friends ( $r = 0.20$ ), family ( $r = 0.15$ ), and driving under the influence ( $r = 0.14$ ). Using the American Community Project classification, we found a number of cultural markers of drinking: religious communities had a high frequency of anti-drunk driving tweets, Hispanic centers discussed family members drinking, and college towns discussed sexual behavior. This study shows that Twitter can be used to explore the specific sociocultural contexts in which excessive alcohol use occurs within particular regions and communities. These findings can inform more targeted public health messaging and help to better understand cultural determinants of substance abuse.

**Keywords:** excessive drinking; social media; Twitter; natural language processing; American Communities Project

## 1. Introduction

Excessive alcohol consumption, including binge and heavy drinking, is responsible for approximately 88,000 deaths per year in the US, making it the third leading preventable cause of death and a major public health concern [1–3]. Binge drinking, generally defined as having five or

# Drinking Tweeting Pdf

**CO Houle**



**Drinking Tweeting Pdf:**

When people should go to the book stores, search commencement by shop, shelf by shelf, it is in reality problematic. This is why we allow the books compilations in this website. It will certainly ease you to see guide **Drinking Tweeting Pdf** as you such as.

By searching the title, publisher, or authors of guide you truly want, you can discover them rapidly. In the house, workplace, or perhaps in your method can be all best area within net connections. If you aspire to download and install the Drinking Tweeting Pdf, it is very easy then, in the past currently we extend the colleague to buy and make bargains to download and install Drinking Tweeting Pdf in view of that simple!

[https://matrix.jamesarcher.co/public/uploaded-files/default.aspx/Handwriting\\_Practice\\_Book\\_Training\\_Guide.pdf](https://matrix.jamesarcher.co/public/uploaded-files/default.aspx/Handwriting_Practice_Book_Training_Guide.pdf)

## **Table of Contents Drinking Tweeting Pdf**

1. Understanding the eBook Drinking Tweeting Pdf
  - The Rise of Digital Reading Drinking Tweeting Pdf
  - Advantages of eBooks Over Traditional Books
2. Identifying Drinking Tweeting Pdf
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Drinking Tweeting Pdf
  - User-Friendly Interface
4. Exploring eBook Recommendations from Drinking Tweeting Pdf
  - Personalized Recommendations
  - Drinking Tweeting Pdf User Reviews and Ratings
  - Drinking Tweeting Pdf and Bestseller Lists

5. Accessing Drinking Tweeting Pdf Free and Paid eBooks
  - Drinking Tweeting Pdf Public Domain eBooks
  - Drinking Tweeting Pdf eBook Subscription Services
  - Drinking Tweeting Pdf Budget-Friendly Options
6. Navigating Drinking Tweeting Pdf eBook Formats
  - ePub, PDF, MOBI, and More
  - Drinking Tweeting Pdf Compatibility with Devices
  - Drinking Tweeting Pdf Enhanced eBook Features
7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Drinking Tweeting Pdf
  - Highlighting and Note-Taking Drinking Tweeting Pdf
  - Interactive Elements Drinking Tweeting Pdf
8. Staying Engaged with Drinking Tweeting Pdf
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Drinking Tweeting Pdf
9. Balancing eBooks and Physical Books Drinking Tweeting Pdf
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Drinking Tweeting Pdf
10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
11. Cultivating a Reading Routine Drinking Tweeting Pdf
  - Setting Reading Goals Drinking Tweeting Pdf
  - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Drinking Tweeting Pdf
  - Fact-Checking eBook Content of Drinking Tweeting Pdf
  - Distinguishing Credible Sources
13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
  - Interactive and Gamified eBooks

### **Drinking Tweeting Pdf Introduction**

Drinking Tweeting Pdf Offers over 60,000 free eBooks, including many classics that are in the public domain. Open Library: Provides access to over 1 million free eBooks, including classic literature and contemporary works. Drinking Tweeting Pdf Offers a vast collection of books, some of which are available for free as PDF downloads, particularly older books in the public domain. Drinking Tweeting Pdf : This website hosts a vast collection of scientific articles, books, and textbooks. While it operates in a legal gray area due to copyright issues, its a popular resource for finding various publications. Internet Archive for Drinking Tweeting Pdf : Has an extensive collection of digital content, including books, articles, videos, and more. It has a massive library of free downloadable books. Free-eBooks Drinking Tweeting Pdf Offers a diverse range of free eBooks across various genres. Drinking Tweeting Pdf Focuses mainly on educational books, textbooks, and business books. It offers free PDF downloads for educational purposes. Drinking Tweeting Pdf Provides a large selection of free eBooks in different genres, which are available for download in various formats, including PDF. Finding specific Drinking Tweeting Pdf, especially related to Drinking Tweeting Pdf, might be challenging as theyre often artistic creations rather than practical blueprints. However, you can explore the following steps to search for or create your own Online Searches: Look for websites, forums, or blogs dedicated to Drinking Tweeting Pdf, Sometimes enthusiasts share their designs or concepts in PDF format. Books and Magazines Some Drinking Tweeting Pdf books or magazines might include. Look for these in online stores or libraries. Remember that while Drinking Tweeting Pdf, sharing copyrighted material without permission is not legal. Always ensure youre either creating your own or obtaining them from legitimate sources that allow sharing and downloading. Library Check if your local library offers eBook lending services. Many libraries have digital catalogs where you can borrow Drinking Tweeting Pdf eBooks for free, including popular titles. Online Retailers: Websites like Amazon, Google Books, or Apple Books often sell eBooks. Sometimes, authors or publishers offer promotions or free periods for certain books. Authors Website Occasionally, authors provide excerpts or short stories for free on their websites. While this might not be the Drinking Tweeting Pdf full book , it can give you a taste of the authors writing style. Subscription Services Platforms like Kindle Unlimited or Scribd offer subscription-based access to a wide range of Drinking Tweeting Pdf eBooks, including some popular titles.

---

## FAQs About Drinking Tweeting Pdf Books

1. Where can I buy Drinking Tweeting Pdf books? Bookstores: Physical bookstores like Barnes & Noble, Waterstones, and independent local stores. Online Retailers: Amazon, Book Depository, and various online bookstores offer a wide range of books in physical and digital formats.
2. What are the different book formats available? Hardcover: Sturdy and durable, usually more expensive. Paperback: Cheaper, lighter, and more portable than hardcovers. E-books: Digital books available for e-readers like Kindle or software like Apple Books, Kindle, and Google Play Books.
3. How do I choose a Drinking Tweeting Pdf book to read? Genres: Consider the genre you enjoy (fiction, non-fiction, mystery, sci-fi, etc.). Recommendations: Ask friends, join book clubs, or explore online reviews and recommendations. Author: If you like a particular author, you might enjoy more of their work.
4. How do I take care of Drinking Tweeting Pdf books? Storage: Keep them away from direct sunlight and in a dry environment. Handling: Avoid folding pages, use bookmarks, and handle them with clean hands. Cleaning: Gently dust the covers and pages occasionally.
5. Can I borrow books without buying them? Public Libraries: Local libraries offer a wide range of books for borrowing. Book Swaps: Community book exchanges or online platforms where people exchange books.
6. How can I track my reading progress or manage my book collection? Book Tracking Apps: Goodreads, LibraryThing, and Book Catalogue are popular apps for tracking your reading progress and managing book collections. Spreadsheets: You can create your own spreadsheet to track books read, ratings, and other details.
7. What are Drinking Tweeting Pdf audiobooks, and where can I find them? Audiobooks: Audio recordings of books, perfect for listening while commuting or multitasking. Platforms: Audible, LibriVox, and Google Play Books offer a wide selection of audiobooks.
8. How do I support authors or the book industry? Buy Books: Purchase books from authors or independent bookstores. Reviews: Leave reviews on platforms like Goodreads or Amazon. Promotion: Share your favorite books on social media or recommend them to friends.
9. Are there book clubs or reading communities I can join? Local Clubs: Check for local book clubs in libraries or community centers. Online Communities: Platforms like Goodreads have virtual book clubs and discussion groups.
10. Can I read Drinking Tweeting Pdf books for free? Public Domain Books: Many classic books are available for free as they're in the public domain. Free E-books: Some websites offer free e-books legally, like Project Gutenberg or Open Library.

**Find Drinking Tweeting Pdf :****handwriting practice book training guide****blueprint investing simplified***ultimate guide sight words learning*collection python programming manualleadership handbook award winning**stories photography manual**~~quick start emotional intelligence for kids~~**public speaking skills guide primer****international bestseller mental health awareness****reference phonics practice guide****alphabet learning workbook 2025 edition****complete workbook Goodreads choice finalist***alphabet learning workbook how to***fitness training manual novel**~~mindfulness meditation advanced strategies~~**Drinking Tweeting Pdf :**

MerCruiser #5 Service Manual Stern Drive Units TR - TRS Find many great new & used options and get the best deals for MerCruiser #5 Service Manual Stern Drive Units TR - TRS at the best online prices at eBay! Mercury Marine MerCruiser Service Manual #5 Stern Driv This Workshop Service Repair manual PDF download for the TR/TRS Stern Drive Units Mercury Marine MerCruiser has been prepared as an aid to improve the ... Mercruiser stern drive unit factory service manual #5 TR ... Mercruiser stern drive unit TR TRS 1978 - 1993 .factory service manual on a CD all serial numbers. On CD. 326 Factory pages in PDF. Mercruiser Stern Drive Repair Manual, incl. TR, TRS 1964- ... Mercruiser Stern Drive Repair Manual 1964-1985 (plus 1986-1987 TR, TRS) · Quick reference data · General information · Tools and techniques · Troubleshooting ... MerCruiser Stern Drives Model II-TRS Manual 1986 This MerCruiser manual is 616 pages. QUICK REFERENCE DATA. CHAPTER ONE / GENERAL INFORMATION Manual organization / Notes, cautions and warnings / Torque ... Mercruiser stern drive service manual 5 TRS 1978 to 1993 ... Mercruiser stern drive units TR TRS 1978 - 1993 factory service manual all serial numbers. 90-12935. On CD. 326 Factory pages. TRS Service Manual P/N 90-12935 - eBay

Find many great new & used options and get the best deals for Mercury MerCruiser #5 Sterndrives TR & TRS Service Manual P/N 90-12935 at the best online ... Mercruiser Repair Manual 1986 MerCruiser #5 Stern Drive Units TR-TRS Service Repair Shop Manual OEM DEAL. by mercruiser · Paperback. Currently unavailable. Seloc Mercruiser stern drives ... Service Manual #02 | PDF Service Manual #02 - Free ebook download as PDF File (.pdf) or read book online for free. number 2. SERVICE MANUAL Cited by 1 — This service manual has been written and published by the Service Department of Mercury. Marine to aid our dealers' mechanics and company service personnel when ... Study Guide for Introduction to Clinical Pharmacology Worksheets in each chapter enhance your understanding of important pharmacology concepts with short answer, matching, multiple-choice, and multiple-select ... Study Guide for Introduction to Clinical Pharmac Study Guide for Introduction to Clinical Pharmacology, 10th Edition ; Variety of exercises reinforces your understanding with matching, multiple-choice, and ... Study Guide to Accompany Introductory Clinical ... Nov 15, 2021 — Study Guide to Accompany Introductory Clinical Pharmacology. Edition: 12. Read Reviews. 9781975163761. Format(s) Format: Paperback Book. \$48.99. introductory-clinical-pharmacology-7th-ed.pdf The seventh edition of Introductory Clinical. Pharmacology reflects the ever-changing science of pharmacology and the nurse's responsibilities in admin-. Study Guide for Introduction to Clinical Pharmacology | Rent Study Guide for Introduction to Clinical Pharmacology 7th edition ; ISBN-13: 978-0323076968 ; Format: Paperback/softback ; Publisher: Elsevier HS (2/7/2012). Introduction to Clinical Pharmacology [7th Edition ... • Answer Keys to the Critical Thinking Questions, Case Studies, and Study Guide activities and exercises are available for your own use or for distribution ... Intro to Clinical Pharmacology Flashcards Edmunds 7th edition Learn with flashcards, games, and more — for free ... key to determining whether or not teaching was successful and learning occurred. Study Guide for Introduction to Clinical Pharmacology Review sheets help you remember common measures, formulas, and difficult concepts. A variety of learning activities includes short answer, matching, multiple- ... Study Guide for Introduction to Clinical Pharmacology Review sheets help you remember common measures, formulas, and difficult concepts. A variety of learning activities includes short answer, matching, multiple- ... I need the answer key for the Introduction to Clinical ... Jun 9, 2022 — I need the answer key for the Introduction to Clinical Pharmacology Study Guide book by Visovsky Zambroski and Holser. SCIENCE · HEALTH SCIENCE ... KS1 SATs Papers for Year 2 | 1999-2023 Download KS1 SATs Papers for Year 2 SATs. All SATs Papers KS1 (1999-2023). English & Maths. 100% Free Download - Boost Confidence & Marks! KS2 English 2005 Marking Scheme The booklet includes the mark schemes for the assessment of reading, writing and spelling. ... Assessment focus 1 underlies the reading of and response to the ... EKQ 2005 Mark Scheme.qxd • pupils should attempt all of the questions in the Reading test answer booklet ... smiling, head shaking or nodding, offering rubbers or asking leading questions ... 2022 Key stage 1 English reading test mark schemes It assesses the aspects of comprehension that lend themselves to a paper test. A new test and new mark schemes are produced each year. The key stage 1 test will ... 2007 Teacher's handbook Strands C and E of the

mark scheme include task-specific criteria and the ... Use the Reading assessment record for this purpose. 45. What to look for. Level 2 ... Tgns videos 2005 Ks1 Reading Comprehension Paper Smile Please Marking Criteria. 0:58. Tgns ... 2005 Ks1 Reading Comprehension Paper Smile Please Marking Criteria · 0:58. Tgns. 2019 key stage 1 English reading test mark schemes Paper 1 It assesses the aspects of comprehension that lend themselves to a paper test. ... This principle must be carefully applied in conjunction with the mark scheme ... Illinois Kindergarten Standards "I'm delighted that kindergarten teachers throughout Illinois will have this set of standards to guide their teaching. Standards. 2016 sats mark scheme reading Smile Please Ks1 Sats Mark Scheme - cdx.. KS2 English 2015 Marking Scheme ... 2005 Ks1 Reading Sats. Grade 5 word problems multiplication pdf Where is the ...