

[a talk on news media, public relations, and computer science]

A big data approach to measuring news media reliance on the press release

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UNI Graduate College Brown Bag Lecture

October 29, 2014

What this talk is about

- News media reliance on press release content
- Methodological challenges of such research
- Computation as key methodological solution
- Results of two studies:
 - problem not as widespread as perceived
 - even one instance matters

Why this topic is important

From journalists and press critics:

Using press releases with little or no edits, and no attribution:

- “...handing over the narrative to public relations”
- “...the public expects that a newspaper story is an impartial account”
- “...unethical, manipulative, one-sided, and deceptive”
- “...shallow news accounts”
- “...without the filter provided by journalists, it is hard to divide facts from slant”
- “...there is a large gray zone between the truth and a lie. Skillful PR people can provide data that is entirely credible. It is true enough. It is slanted. It is propagandistic. But it is not false.”

The grain of salt...

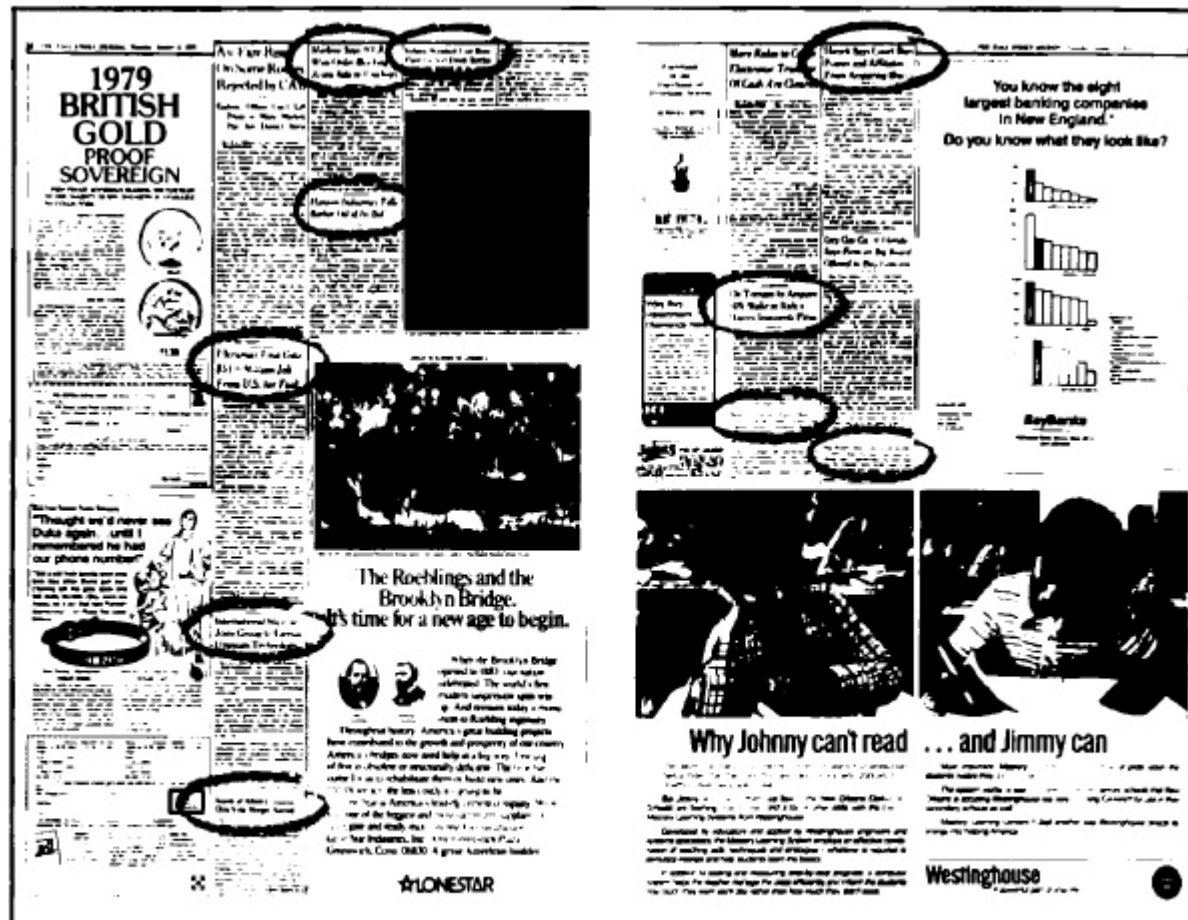
- Journalists acknowledge the need for press releases:
 - “...schools need to publicize their research, corporations defend their products, and political groups stake their positions”
- Historical antagonism between the two fields
 - “...hostility between journalists and PR practitioners began at the end of World War I, when the newspaper industry started a campaign against 'spacegrabbers’”
 - “... 'pre-digested news' affecting the process of news gathering as reporters became 'a race of mere retailers of ready-made intelligence'” *(study from 1921)*
 - Scholarship goes back to 1906!

The grain of salt...

Example from a major textbook

- Study used to provide evidence of public relations influence
- Analyzed one issue of WSJ after they announced +10% space for news content. Analyzed short articles which lacked in-depth analysis typical of WSJ. Requested press releases from all companies mentioned in these articles. Received 70 out of 111.
- Results:
 - 53 news stories were solely based on press releases
 - 32 out of them: the releases were reprinted almost verbatim or in paraphrase
 - 21: only the most perfunctory additional reporting had been done
 - 84 stories were based on press releases in the October 4 Journal—45 percent of the day's 188 news items and 27 percent of the paper's non-tabular news hole

The grain of salt...



Odds on the spread: ten of the thirteen stories appearing on pages 13 and 14 on October 4 were little more than press-release paraphrases (circled above)

The grain of salt...

It's in the Journal. But this is reporting?

continued

ALCO NEWS RELEASE

Also Standard Corporation • P.O. Box 22479, Cleveland, Ohio 44122 • 216-464-5200

FOR IMMEDIATE RELEASE:

For Information Contact:
Larry L. Lowry

Also Standard Corporation today announced that it has acquired the assets and business of Great Western Steel Company, Chicago, Illinois, from Jones & Laughlin Steel Corporation. The transaction was for cash. Great Western will join Also's Metalsource group which distributes specialty steel and steel products throughout America.

With annual sales in excess of \$20 million, Great Western is a major flat rolled steel processing and distribution center based in Chicago and serves the Midwest. Its product line includes hot and cold rolled carbon sheet steel, hot dipped galvanized steels and formed products. Operations of the company will remain at the present location and under current management.

Also Standard, The Corporate Partnership, with Headquarters in Valley Forge, Pennsylvania, is a diversified corporation serving the areas of manufacturing, distribution and resources.

Also Standard Acquires Jones & Laughlin Unit

Bye-Wood, Storer Journal Staff Reporter
VALLEY FORGE, Pa.—Also Standard Corp. said it acquired Great Western Steel Co. from LTV Corp.'s Jones & Laughlin Steel Corp. unit for cash; it didn't disclose the amount.

Also said Great Western, a Chicago-based processor and distributor of flat-rolled steel products, had annual sales in excess of \$20 million. Great Western will remain in its current location and will continue under its current management, Also said.

Also is a diversified manufacturing, distribution and mining concern.

BANK OF AMERICA NEWS

For immediate release

San Francisco
San Francisco World Headquarters
(415) 422-9556 (collect)

SAN FRANCISCO, October 1, 1979 -- Bank of America today announced the opening of a new branch in Alexandria, Egypt, its second in that country.

Alexandria is Egypt's second largest city, as well as its major seaport and commercial center.

The new branch, managed by Dominique Barden, will concentrate on financing international trade and Eurocurrency term financing, the bank said.

The bank opened a branch in Cairo in 1978.

Bank of America's Egypt Branch

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The bank opened a branch in Cairo in 1978.

Ultramar Unit Gets \$51.8 Million Job From U.S. for Fuel

Bye-Wood, Storer Journal Staff Reporter
WASHINGTON—Golden Eagle Refining Co., a unit of Ultramar Corp., received a \$54.8 million contract from the Defense Logistics Agency for 75 million gallons of jet fuel.

RCA Service Co., a division of RCA Corp., was awarded a \$8.2 million Air Force contract to operate 13 aircraft and warning stations in Alaska.

Ashtabud Oil Inc. got a \$30.3 million contract from the Defense Logistics Agency for 50 million gallons of jet fuel.

Automation Industries Inc., a unit of General Cable Corp., was given a \$22.8 million Navy contract for design, engineering and feasibility studies for shipboard combat systems.

Martin Marietta Corp. received a \$21.1 million Air Force contract to provide launch support for the Titan rocket program.

Wayne H. Colson Corp. received a \$9.9 million Air Force contract for an ammunition loading system.

SCI Systems Inc. was awarded a \$1.6 million Navy contract for Teletype units and associated equipment.

Sun Chemical Corp.'s Kollman Instrument Co. unit received a \$4 million Army contract for aircraft altimeters.

Northrup Corp. received a \$4 million increase in an Air Force contract for F-15 fighter planes.

Burroughs Corp. received a \$4 million Air Force contract for rental and maintenance of automatic data processing equipment.

Crumann Corp. got a \$3.6 million Navy contract for services and materials used in modifying F-4A fighter planes.

Rockwell International Corp. received a \$2.1 million Navy contract for an airborne communications system.

NEWS RELEASE

OFFICE OF ASSISTANT SECRETARY OF DEFENSE (PUBLIC AFFAIRS)

WASHINGTON, D.C. 20330

PLEASE NOTE DATE

IMMEDIATE RELEASE

October 1, 1979

NO. 48178

REF ID: A66000

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Common Aerospace Corporation, Bethesda, Md. is being awarded a \$1,500,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

AIR FORCE

Burroughs Corporation, Hawthorne, Ca. is being awarded a \$3.0 million contract for research and development for an advanced aerodynamic system. Wright Patterson AFB, OH is the contracting activity. (15-00000-00000)

Burroughs Corp., Federal and Special Systems Group, Melton, Pa. is being awarded a \$1,500,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

Wayne H. Colson Company, Inc., Tallahassee, Fla. is being awarded a \$1,500,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

Martin Marietta Corporation, Denver, Colorado, Denver CO is being awarded a \$1,500,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

RCA Service Company, Division of RCA Corporation, Camden, NJ is being awarded a \$1,500,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

Automation Industries Inc., Division of General Cable Corp., Camden, NJ is being awarded a \$1,500,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

Golden Eagle Refining Co., Inc., Los Angeles, Ca. is being awarded a \$51,800,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

Ashtabud Oil Inc., Ashtabud, Ohio is being awarded a \$30,300,000 fixed price contract for services and materials of theme and maintenance tasks required for a thirty month F16 on the F-16 aircraft (number 15). The Naval Air Systems Command is the contracting activity. (15-00000-00000)

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DEFENSE UNIT

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The grain of salt...

- **According to The Journal's executive editor:**
 - "The paper's beat reporters commonly spend a couple of hours a day confirming and processing press releases"
 - "Ninety percent of daily coverage is started by a company making an announcement for the record. We're relaying this information to our readers."
- **The author concludes:**
 - "Distinctions clear to the editors and staff of the nation's largest daily may be far less clear to its readers."
- **And yet...**
 - WSJ is a paper covering business news. If we follow the perspective of this author, every article is supposed to be an in-depth and an impartial analysis. Is this possible? Would the news be timely? Would the paper cover as much? Is this what the WSJ readers really need?

The grain of salt...

Main Issue:

**anecdotal data used to make
broad generalizations**

What the other side tells us

From PR Academia:

- PR and journalism – two parts of the same process
- Evolutionary model of PR by Grunig: P. T. Barnum (XIX century) >> 2-way communication (today)

Focus on mutual understanding, not persuasion and influence

From PR Industry:

- 1976: “...change the title "news release" to "news from..."”
- 2005: “...place the title "PRESS RELEASE" (in caps) at the top of each press release”
- Be a better salesman: "getting a story is basically the result of negotiation”
- "Personalize the press release with a handwritten note to a journalist."
- *"The true test of a release writer - indeed, of everyone in this business - is how well he or she disguises corporate intent as news."*

NOTHING HAS CHANGED!

What theory tells us

- Gandy, 1982: Press releases are information subsidies used to build the media agenda. Organizations with \$\$\$ will get more coverage.
- McCombs and Shaw, 1972 (and hundreds of later studies on agenda-setting): organizations, through affecting the media agenda, may influence what we think about
- Get press release accepted > affect **what** the public thinks about
- Lippmann, 1922: The nature of the message is the issue: more + favorable coverage.
- Entman, McCombs, as well as many PR scholars: framing explains how through carefully constructing a message (and getting news media to use it with no change) an organization may not only have a say in what we think about – but also in how we think about it ---

Get press release accepted **with minimum change** > affect **how** the public thinks about your topics

*...which is, according to many scholars - both journalism and PR –
the ultimate goal of a press release*

Summary of the problem

1. Press releases are carefully framed to serve the needs of the organizations that produce them (according to journalists, journalism scholars, PR practitioners, PR scholars)
2. By using press releases as a source, news media incorporates content and language *which favors the organization* into news reports *which are supposed to be impartial*
3. 30-75% of news are based on press releases (according to journalism scholars)
4. Thus, news media might be unwittingly serving the interests of the organizations which provide the press release, instead of serving the public:
5. News media's watchdog role may be compromised

The big question:

Are press releases published without any change?
And if so, what is the extent of this practice?

What research tells us

- Reviewed 45 relevant studies, published between 1978 and 2012
- Most originated in public relations and served practical PR needs:
 - Search for the “formula” of getting news coverage
- Most of non-PR studies :
 - Originated in Europe: **cannot describe US news media and PR**
 - Used small and non-representative samples: **cannot describe the overall picture**
 - Used ethnography and interviews: valuable as describing the process in depth; results cannot be generalized
- A few examples:
 - How promotional language is dealt with by journalists (Dutch)
 - How pseudo quotes are constructed
 - How a press release is written

What research tells us

- Main issue: only a few studies reliably demonstrated that the articles were indeed based on the press releases
- Most studies do not state the exact procedure; others use keyword search
(But content similarity is not content dependency!)
- One way to establish a dependency between press release and article:
 - There should be a long enough sequence of words appearing in both the press release and the article. ***Finding such matching sequences is the main methodological issue.***

Why more research is needed?

Wells Fargo & Co. (NYSE : WFC) announced today that the company has finalized an agreement with attorneys general from 49 states and several federal agencies regarding mortgage servicing , foreclosure and origination issues . Under the terms of the agreement , Wells Fargo has made a financial commitment covering expanded refinance , modification and other customer relief options , and will implement comprehensive servicing standards . Four other large mortgage servicers also have reached agreements with the states and federal agencies .

press releases

" Today , Wells Fargo Home Mortgage announced the settlement . " To restore confidence in the mortgage market , " stated Mike Heid , president of Wells Fargo Home Mortgage . " Wells Fargo has actively participated in the discussions leading to this agreement , which builds on the significant refinance and customer relief efforts we already have undertaken . "

" Wells Fargo welcomes the establishment of servicing standards as part of this agreement , " Heid explained . " We have already made significant investments in our systems and staffing and are fully committed to implementing the standards as defined . These investments have helped us provide refinance and foreclosure prevention options for our customers . "

Wells Fargo provided information about the anticipated financial impact of the commitments under the agreement . As of December 31 , 2011 , the company had fully accrued for the Foreclosure Assistance Payment . Similarly , as of December 31 , 2011 , the expected impact of the Consumer Relief Program was covered in our allowance for credit losses and in the non-accretable difference relating to our purchased credit-impaired residential mortgage portfolio . The Refinance Program can be even more difficult when the text is not a quote and result in any current-period charge as the impact of this program will be recognized over a period of years in the form of lower interest income as qualified borrowers benefit from

FIVE big banks finally reached a deal with government authorities last week over dubious mortgage practices and foreclosure abuses .

After months of talks , Ally Financial , Bank of America , Citibank , JPMorgan Chase and Wells Fargo agreed to pay a total of \$ 5 billion in cash to try to remedy this fiasco . They will also help homeowners who are underwater on their mortgages by reducing the principal on their loans by a combined \$ 17 billion over the next three years .

news articles

banks crowed that this settlement would help the economy and the reputation of the mortgage industry . Michael J. Heid , president of Wells Fargo Home Mortgage , characterized the deal as " a very important step toward restoring confidence in mortgage servicing and stability in the housing market . "

But it 's hard to imagine that this one settlement will be enough to restore trust in loan servicers . Given what we know about their questionable practices -- how they larded improper fees on struggling homeowners , for example , and forced people to buy home insurance at three times market rates -- restoring confidence in these firms will take some doing .

There 's no doubt that the banks are happy with this deal . You would be , too , if your bill for lying to courts and end-running the law came to less than \$ 2,000 per loan file . As for the supposed benefits can be even more difficult when the text is not a quote to the economy , skeptics abound . One of them is Paul Diggie , property economist at Capital Economics in London . In a report last week , he rejected the notion -- espoused by both banks and government authorities -- that this deal would help turn around the American housing market .

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Borrowers who qualify will get \$ 3 billion in refinancing arrangements. Those who were improperly foreclosed on will get a combined \$ 1.5 billion . That probably nets out to less than \$ 2,000 a person . The banks crowed that this settlement would help the economy and the reputation of the mortgage industry . Michael J. Heid , president of Wells Fargo Home Mortgage , characterized the deal as " a very important step toward restoring confidence in mortgage servicing and stability in the housing market . "

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Potential size of the problem:
for a 500-word press release and article,
there are $491 \times 491 = 241,081$ ways
a sequence of 10 words
can appear in both texts

" Today
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My work so far

Two studies: 2012 and 2014

- ***Goal 1***
To contribute to a broader understanding of the nature and scope of news media's reliance on the press release
- ***Goal 2***
To demonstrate the utility of computer science as a problem-solving approach in media research

My work so far

Part 1. What content is used?

RQ1. Given a press release, which is used as a source for a news article, what is the proportion of the press release text used without any change?

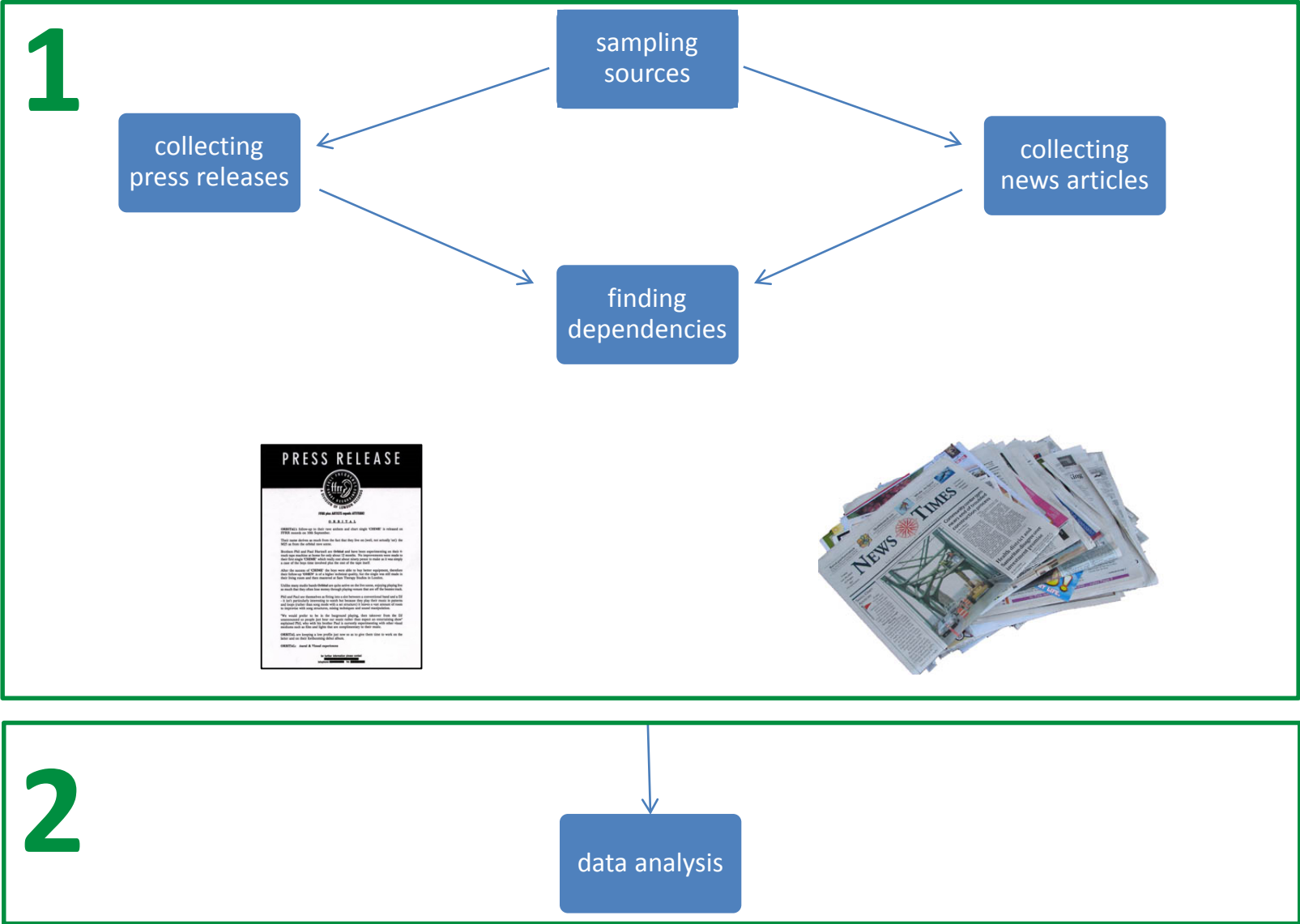
RQ2. Given a news article, which uses a press release as a source, what is the proportion of the article's text not copied from the press release?

Part 2. How is it used?

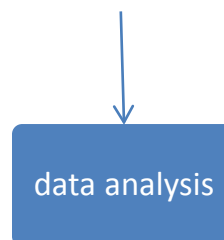
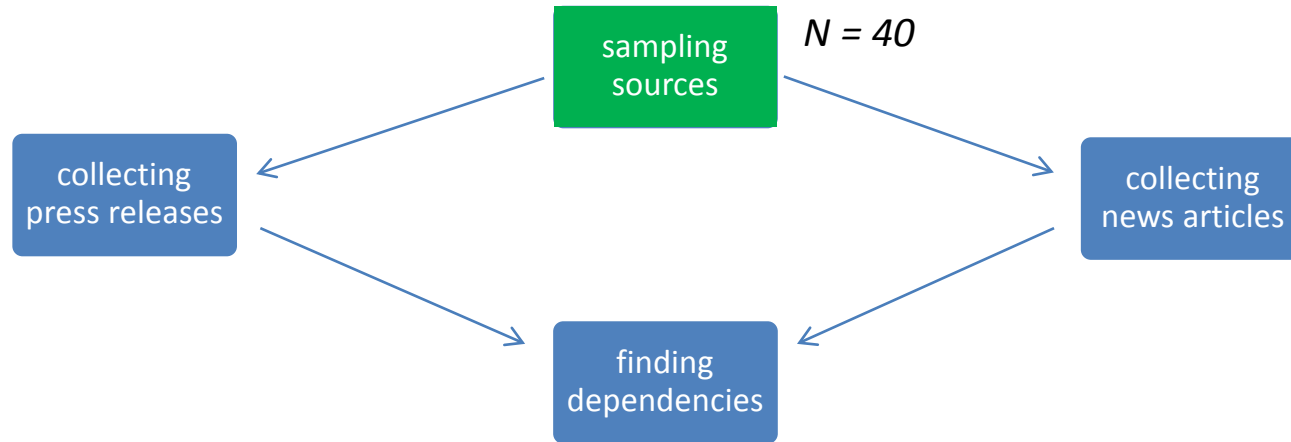
RQ3. How does press release content compare to the content of a news article, which uses that press release as a source, in regards to the evaluative, or subjective, language they use?

RQ4. How does press release content compare to the content of a news article, which uses that press release as a source, in regards to the polarity (positive versus negative) of the evaluative, or subjective, language they use?

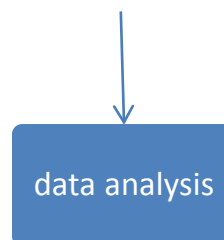
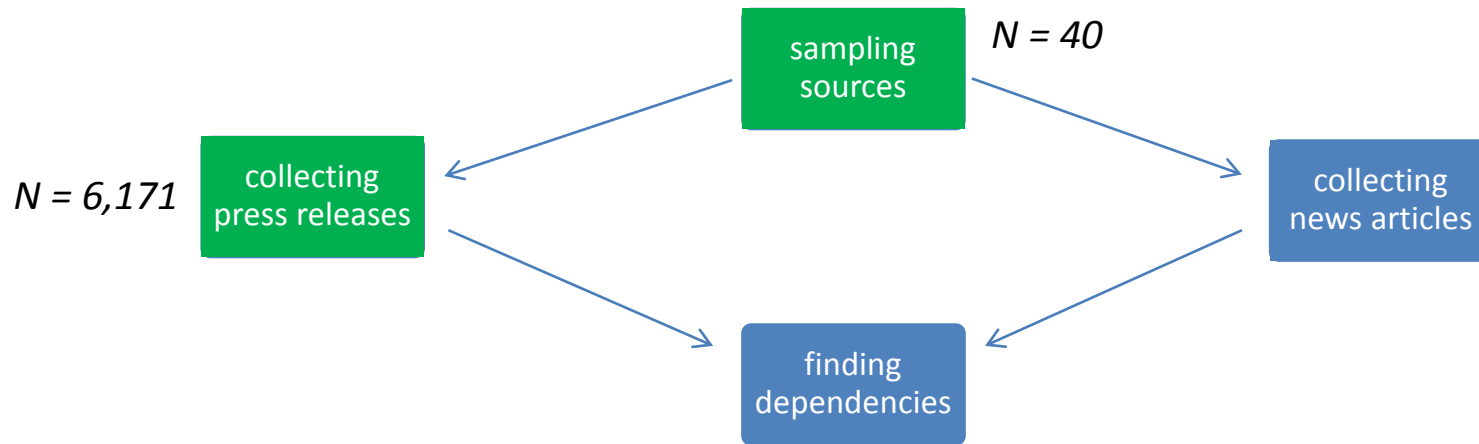
Research design



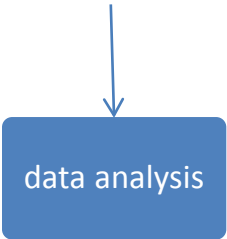
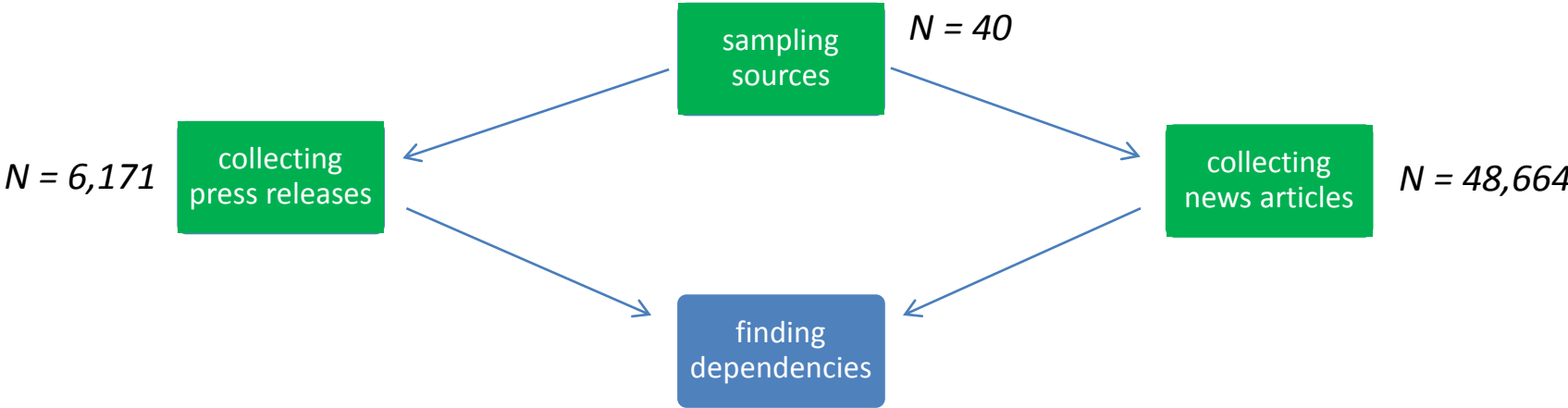
2012 Research design



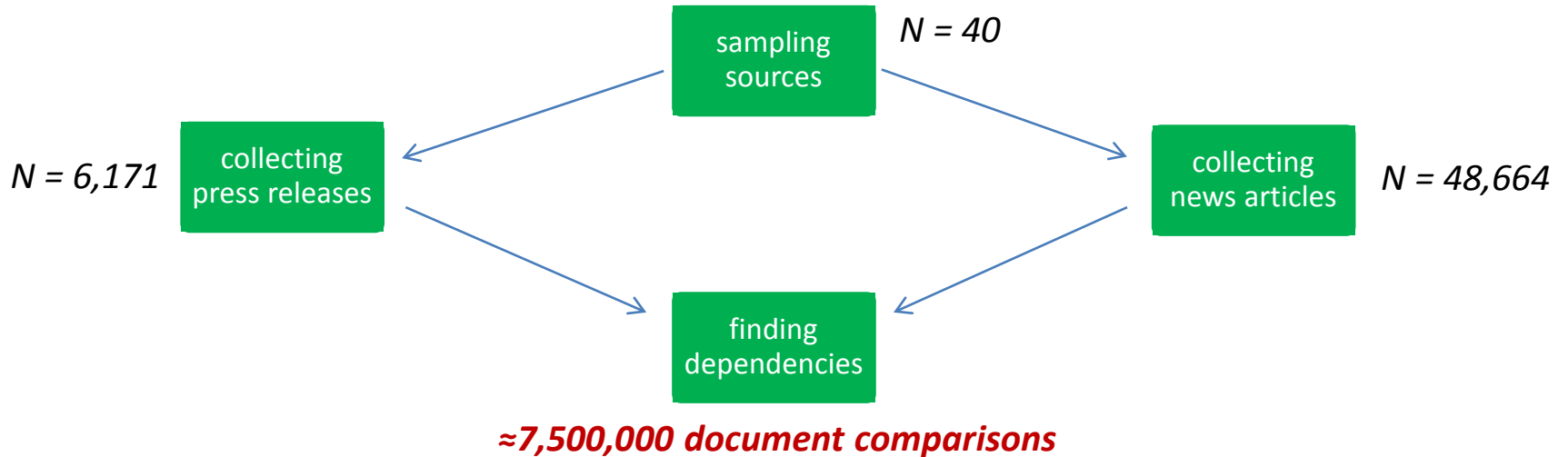
2012 Research design



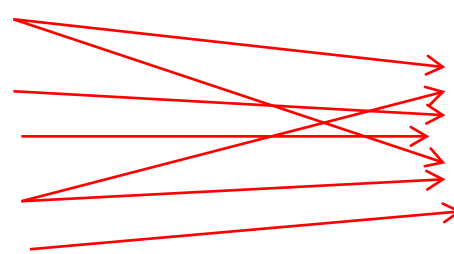
2012 Research design



2012 Research design



$N = 797$



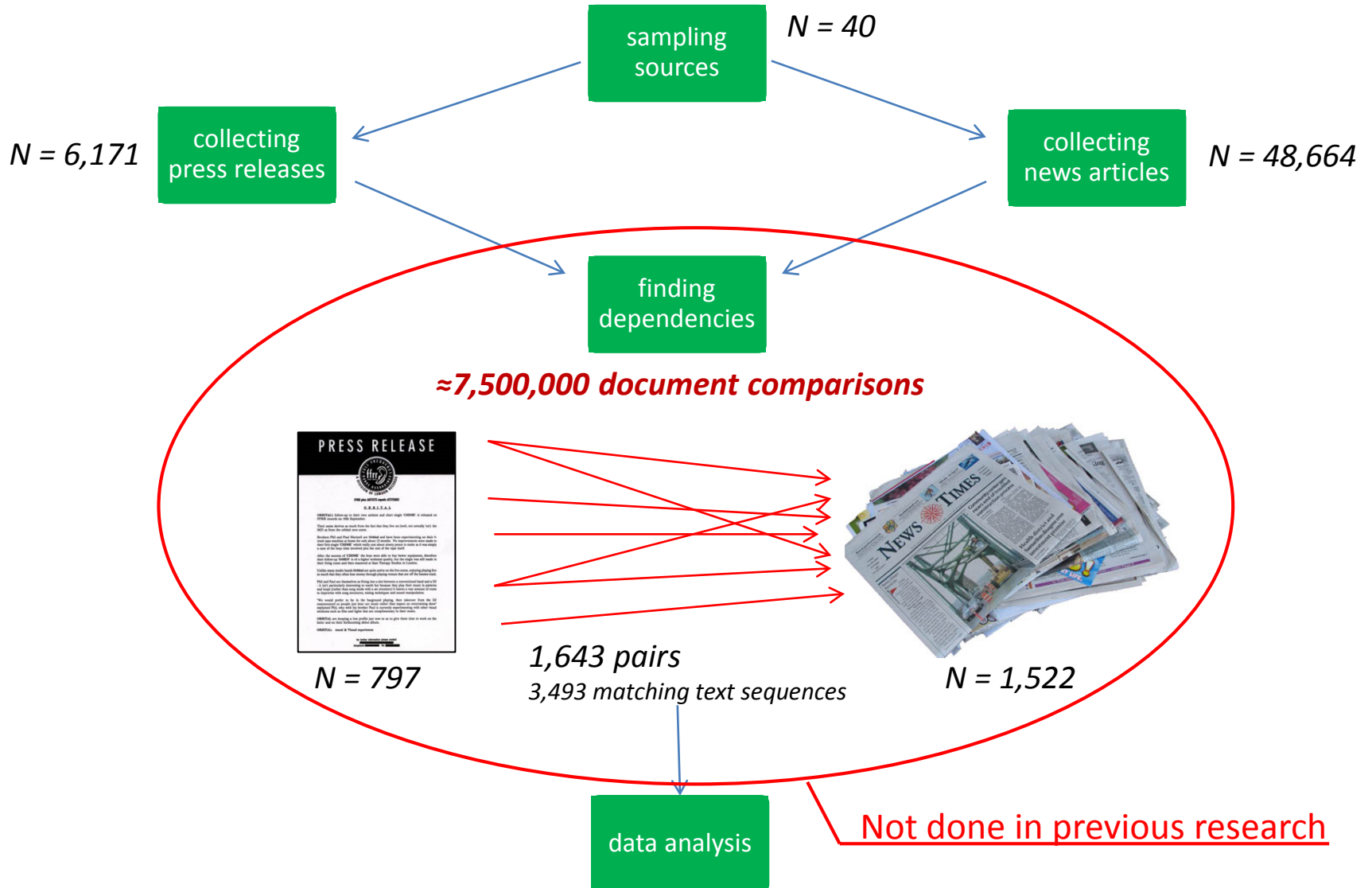
$1,643$ pairs
 $3,493$ matching text sequences



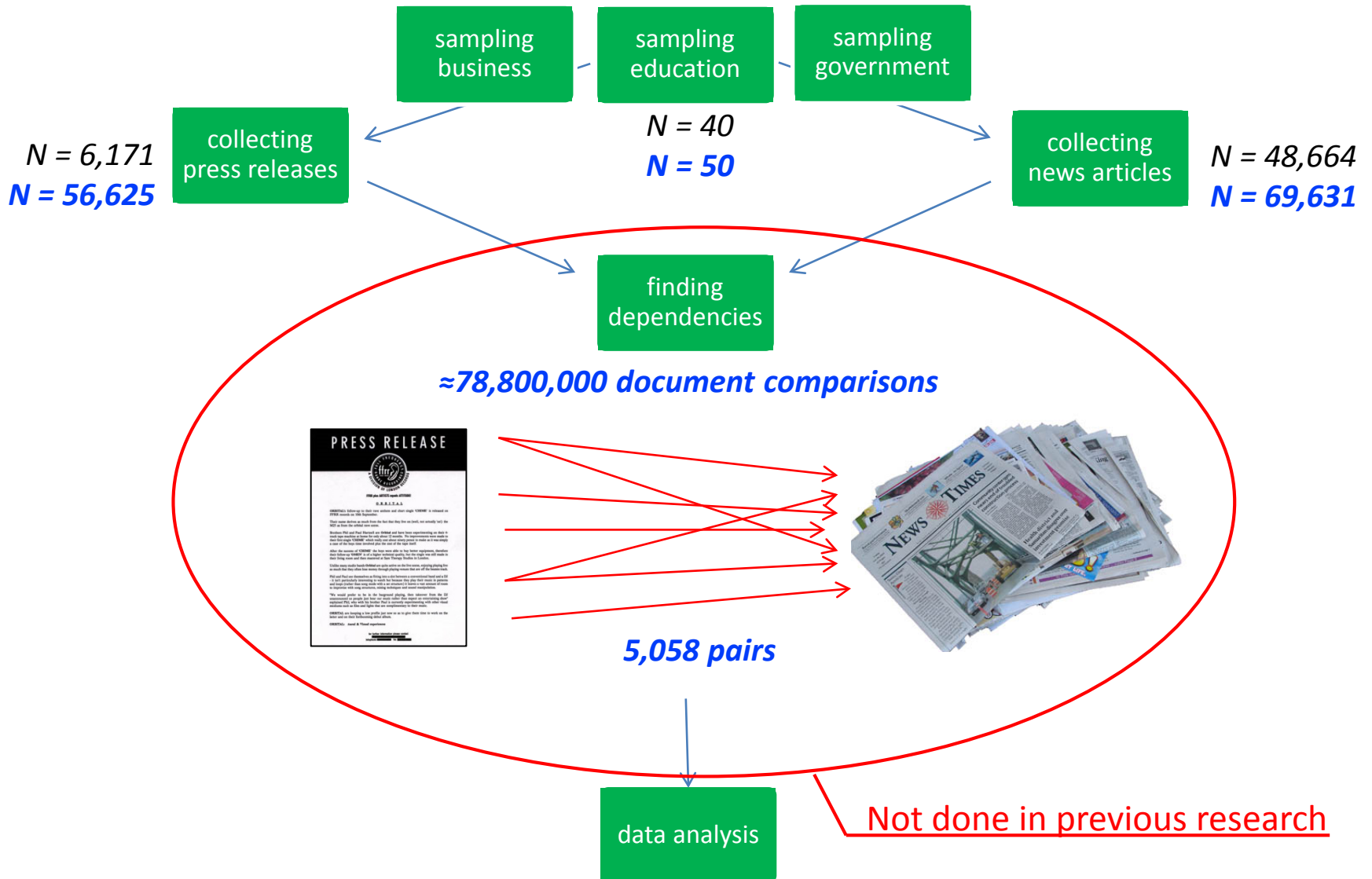
$N = 1,522$

data analysis

2012 Research design



2014 Research design



Sampling

- Limitations:
 - Forty large corporations (Fortune-100)
 - Nine major research universities
 - One mayor's office
 - Availability of a press release archive
 - Sufficient number of releases ($N > 29$)
 - Sufficient number of news articles ($N > 99$)
- Sampling: pseudo-random; **$N = 50$**



Collecting the data

News articles:

- Manually collect from LexisNexis
- Rely on LexisNexis *SmartIndexing* to identify relevant articles for business
- Select local media for education and government

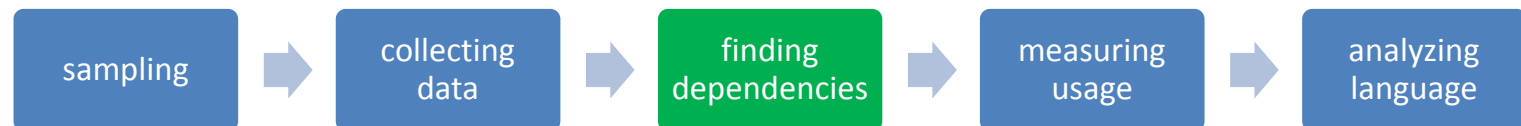
Press releases:

- Collect all available press releases from websites
- Use web scraping to automate process



Finding dependencies

1. Split documents into words
2. Find all matching sequences (optimal length = 7)
3. Eliminate those which are more than one month apart
4. Manually examine the remaining press release/article pairs
5. Results:
 - 1,643 press release/news article pairs for study 1
 - 5,058 press release/news article pairs for study 2



Calculating proportions of used/added text (measured in words)

Wells Fargo Mobile Banking Application Now Available from Amazon Appstore for Android

Wells Fargo Mobile Banking Application Now Available from Amazon Appstore for Android Keep track of your finances while on the go with Wells Fargo Mobile Banking

San Francisco - January 10, 2012

Wells Fargo customers who use Android-powered smartphone and tablet devices, like the new Kindle Fire, can now keep track of their finances while on the go with Wells Fargo Mobile banking services. Wells Fargo & Company (NYSE: WFC) announced today its new Wells Fargo Mobile banking app for Android is available for download from the Amazon Appstore for Android.

"Our goal is to provide services that are relevant to our customers, and Wells Fargo customers are enthusiastic about anytime, anywhere mobile banking," said Brian Pearce, senior vice president and head of the Retail Mobile Channel at Wells Fargo's Internet Services Group. "We are excited about the benefits mobile banking offers consumers, from better day-to-day money management to greater peace of mind."

Wells Fargo has more than 7 million active consumer and small business customers using Wells Fargo Mobile - the fastest-growing delivery channel at Wells Fargo. Wells Fargo offers three easy mobile banking services including mobile web (wfc.com), apps and text (to short-code 93557, which spells "Wells" on traditional telephone keypads). The services are free from Wells Fargo; however, mobile carrier text messaging and web access charges may apply.

Wells Fargo Mobile Banking Security & Fraud Prevention Wells Fargo's mobile banking services use the same security standards as Wells Fargo Online, including ongoing efforts to protect customers' information and privacy, since Wells Fargo launched internet account access in May 1995

A: 275 --- May 28 --- Lockheed Martin's Mississippi Space & Technology Center receives core structure for GEO-4 satellite --- Mississippi Business Journal (Jackson, MS)

#	length	match
1	97	Based on lessons learned from the first two SBIRS geosynchronous satellites production of GEO-3 and GEO-4 is proceeding very well. In addition we have a number of affordability initiatives in place jointly with the Air Force to continually reduce the cost of each follow-on SBIRS satellite. Lockheed Martin engineers and technicians will now integrate the propulsion subsystem with the core structure which is essential for maneuvering the satellite during transfer orbit to its final location as well as conducting on-orbit repositioning maneuvers throughout its mission life
2	80	The structure was delivered to Lockheed Martin's Mississippi Space Technology Center where engineers and technicians will integrate the spacecraft's propulsion subsystem. Featuring a mix of GEO satellites hosted payloads in highly elliptical earth orbit and associated ground hardware and software, SBIRS delivers resilient and improved missile warning capabilities for the nation while simultaneously providing significant contributions to the military's missile defense technical intelligence and battlespace awareness mission areas
3	63	The team expects to receive funding to begin long lead parts procurement for the fifth and sixth GEO satellite by the end of the year. Additionally under the Air Force's Overhead Persistent Infrared OPIR Space Modernization Initiative SMI Lockheed Martin will evolve technologies to improve capability and affordability for future SBIRS spacecraft
4	55	The integrated core propulsion module will then be shipped to Sunnyvale Calif. for final assembly integration and test. SBIRS GEO-4 is on schedule to be available for launch in 2015. Lockheed Martin's SBIRS contracts include four highly elliptical orbiting HEO payloads four GEO satellites
5	44	The GEO-4 structure identical to the previous three SBIRS GEO spacecraft is made from lightweight high-strength composite materials designed to withstand the accelerations and vibrations generated during launch and support the spacecraft throughout on-orbit operations
6	16	has received the core structure for the U.S. Air Force's fourth Space Based Infrared System
7	15	Louie Lombardo Director of Lockheed Martin's SBIRS Follow-on Production SFP program

Lockheed Martin Delivers Core Structure for Fourth SBIRS Satellite

STENNIS, Miss., May 24, 2012 - Lockheed Martin [NYSE: LMT] has received the core structure for the U.S. Air Force's fourth Space Based Infrared System (SBIRS) geosynchronous satellite (GEO-4). The structure was delivered to Lockheed Martin's Mississippi Space & Technology Center, where engineers and technicians will integrate the spacecraft's propulsion subsystem.

Featuring a mix of GEO satellites, hosted payloads in highly elliptical earth orbit, and associated ground hardware and software, SBIRS delivers resilient and improved missile warning capabilities for the nation while simultaneously

Lockheed Martin's Mississippi Space & Technology Center receives core structure for GEO-4 satellite

Lockheed Martin has received the core structure for the U.S. Air Force's fourth Space Based Infrared System geosynchronous satellite (GEO-4).

The structure was delivered to Lockheed Martin's Mississippi Space & Technology Center, where engineers and technicians will integrate the spacecraft's propulsion subsystem.

Featuring a mix of GEO satellites, hosted payloads in highly elliptical earth orbit, and associated ground hardware and software, SBIRS delivers resilient and improved missile

sampling

collecting
datafinding
dependenciesmeasuring
usageanalyzing
language

What content is used: results

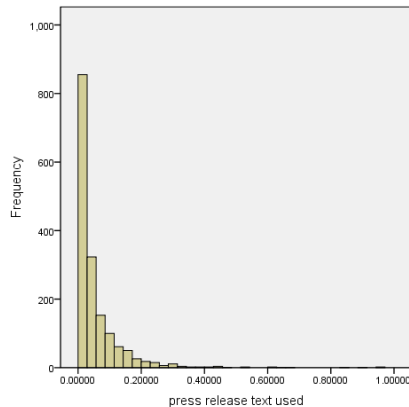
Press release	News article
<p>“During the past two years, we have successfully introduced a more centralised organisation to our Upstream; BP’s largest organisational change for two decades. I believe it is now timely and appropriate to appoint a fully dedicated chief executive to this, our largest business.</p> <p>“Lamar is an outstanding leader, with a proven record of strong operational effectiveness and strategic success. His leadership of BP America over the past three years has been exemplary, during a most difficult period for our company...”</p>	<p>“During the past two years, we have successfully introduced a more centralized organization to our upstream, BP’s largest organizational change for two decades,” Mr. Dudley said in a statement. “I believe it is now timely and appropriate to appoint a fully dedicated chief executive to this, our largest business.”</p> <p>The explosion in April 2010 on a drilling platform leased by BP killed 11 workers and created the largest oil spill in United States history. After the catastrophe, Andy G. Inglis departed as head of exploration...</p>

PR used PR not used News article added



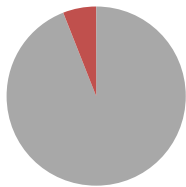
What content is used: results

RQ1: How much content journalists **borrow** from a press release

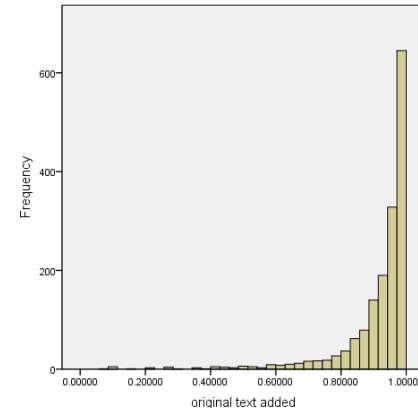


*when a press release
is indeed USED*

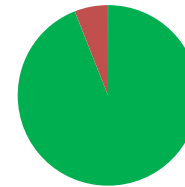
2012 Study: **6 percent** = PR
2014 Study: **2 percent** = PR



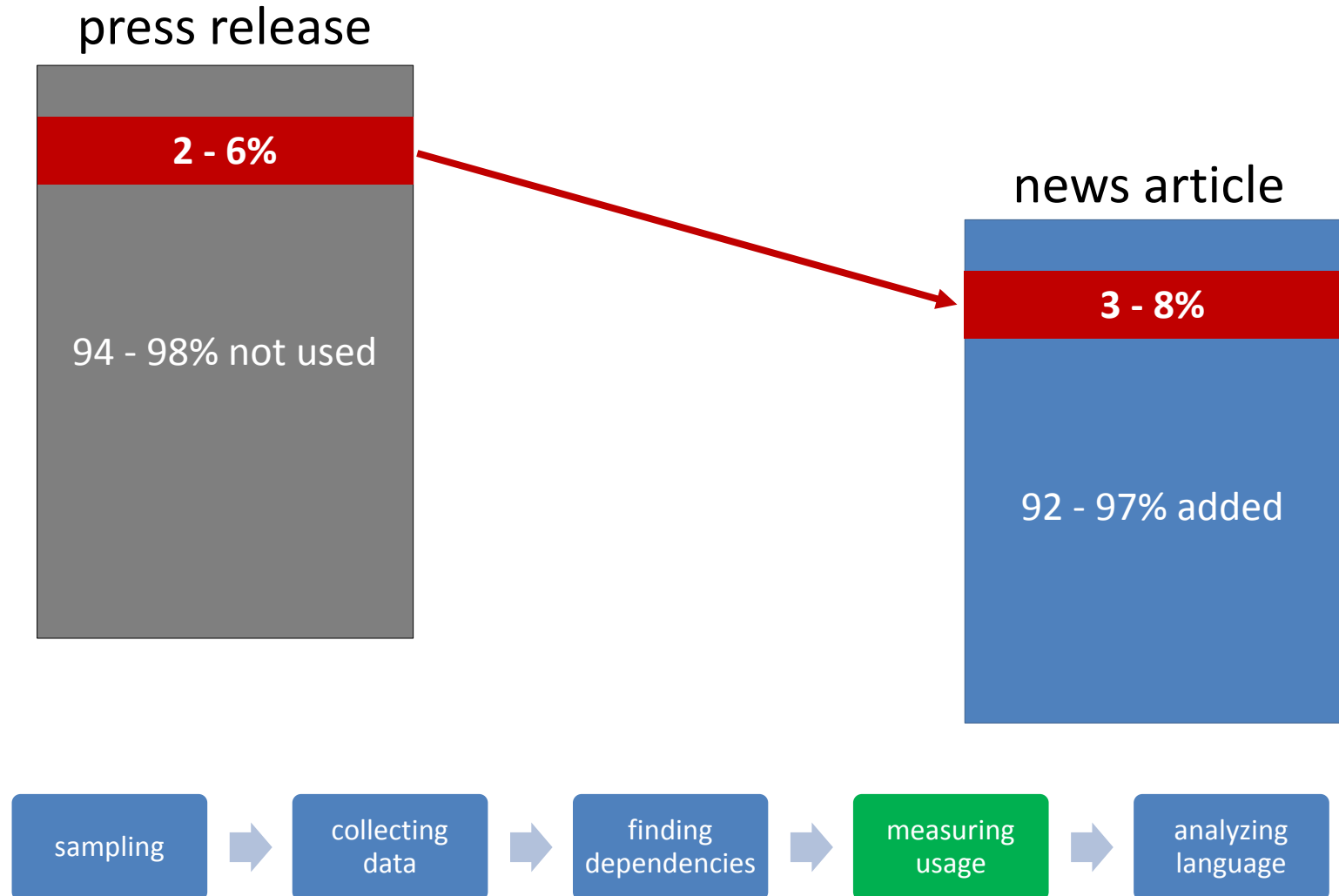
RQ2: How much journalists **add** to that borrowed content



2012 Study: **92 percent** = journalist
2014 Study: **97 percent** = journalist



What content is used: results



How content is used

- **Subjective language**

Compare press releases to news articles in terms of evaluative, or subjective, language usage

- **Positive vs. negative**

Compare press releases to news articles in terms of the polarity (positive or negative) of such language

- Two approaches: computational and manual



Subjectivity analysis

Press release	News article
<p>“We’re very proud to end a fantastic fiscal year with record September quarter results,” said Tim Cook, Apple’s CEO. “We’re entering this holiday season with the best iPhone, iPad, Mac and iPod products ever, and we remain very confident in our new product pipeline.”</p>	<p>Continuing a recent string of disappointments, Apple (AAPL) revealed weaker-than-expected fiscal fourth-quarter earnings growth of 24% on Thursday... Apple, which is known for giving ultra cautious guidance, also projected results for the current quarter that would widely miss estimates.</p>

proud adj positive strongsubj
 record-set adj positive weaksubj
 best anypos positive strongsubj

disappoint anypos negative strongsubj
 weak adj negative strongsubj
 miss verb negative weaksubj



Subjectivity analysis

Problem: the polarity of the word does not always indicate the polarity of the sentence!

- Negation: “This evil corporation is *not* bad”
- Context matters! “The movie is so bad, it’s a delight to watch!”
- More context: “Unpredictable steering” versus “unpredictable plot”

Building rules to handles all cases will not work:

- Language in a constant state of change
- Language is subjective and ambiguous



Analyzing language computationally

CVS/pharmacy 's " Project Health " Will Deliver More Than \$ 21 Million Worth of Preventive Health Screening Events Across the U.S. in 2012

Wellness program aims to help African American and Hispanic consumers on their path to better health with more than 1,000 free health screening events

WOONSOCKET , R.I. , Feb. 8 , 2012 /PRNewswire/ -- CVS/pharmacy , the nation 's leading retail pharmacy , announces today the launch of Project Health (Proyecto Salud in Spanish) , a wellness program delivering more than \$ 21 million worth of free health screenings to multicultural communities .

The program , which aims to prevent disease through early detection , grew from CVS/pharmacy 's highly successful To Your Health/A Su Salud campaigns . This year , Project Health will offer an array of free comprehensive health risk assessments and screenings during five disease-specific national health awareness months from American Heart Month (February) to Diabetes Awareness Month (November) . Over 1,000 Project Health events are scheduled for 2012 in Atlanta , Chicago , Dallas-Fort Worth , Detroit , Houston , Los Angeles , Miami , New York City , Philadelphia and Washington , DC . Events are also planned at CVS/pharmacy locations in Puerto Rico .

" We know that for a variety of reasons multicultural populations have difficulty accessing and benefitting from preventive care , " said Troyen A. Brennan , M.D. , M.P.H. , Executive Vice President and Chief Medical Officer , CVS Caremark . " Making this issue even more disconcerting , these same patients disproportionately suffer from certain treatable conditions , like high blood pressure and diabetes . Through Project Health , CVS/pharmacy will work to achieve better health outcomes among multicultural populations and is once again making the commitment to helping people on their path to better health . "

Project Health is a part of efforts by CVS/pharmacy to improve access to preventive care and ensure that cost is not a barrier to important services , like professional health assessments and screenings . Project Health events , while offered to address and raise awareness of ethnic health disparities , are open to everyone and will not require an appointment .

Medical personnel will be on hand to provide diabetes , blood pressure , cholesterol and osteoporosis screenings , and examine patients for oral care issues . Referrals for mammograms and pap smears will also be provided as well as consultations with nurse practitioners and CVS pharmacists . A selection of screenings will be available at each event.

Once screened , CVS/pharmacy will help patients through on-site consultations with bi-lingual (Spanish/English) nurse practitioners who will analyze the results and refer patients to no-cost or low-cost medical facilities within that neighborhood or to their primary care physician should additional follow-up be required .



Detecting subjective words

Mozilla Firefox

file:///C:/Users/serg...entences/2/pr/122.htm

file:///C:/Users/sergeig/Documents/Dropbox/docs/project docs/jhd/dissdata/sentences/2/pr/122.htm

CVS Caremark

ID	text	POS	NEG	BOTH	N/A
2-R-122-1	CVS/pharmacy 's " Project Health " Will Deliver More Than \$ 21 Million Worth of Preventive Health Screening Events Across the U.S. in 2012 .				
2-R-122-2	Wellness program aims to help African American and Hispanic consumers on their path to better health with more than 1,000 free health screening events WOONSOCKET , R.I. , Feb. 8 , 2012 /PRNewswire/ -- CVS/pharmacy , the nation 's leading retail pharmacy , announces today the launch of Project Health (Proyecto Salud in Spanish) , a wellness program delivering more than \$ 21 million worth of free health screenings to multicultural communities .				
2-R-122-3	The program , which aims to prevent disease through early detection , grew from CVS/pharmacy 's highly successful To Your Health/A Su Salud campaigns .				
2-R-122-4	This year , Project Health will offer an array of free comprehensive health risk assessments and screenings during five disease-specific national health awareness months from American Heart Month (February) to Diabetes Awareness Month (November) .				
2-R-122-5	Over 1,000 Project Health events are scheduled for 2012 in Atlanta , Chicago , Dallas-Fort Worth , Detroit , Houston , Los Angeles , Miami , New York City , Philadelphia and Washington , DC .				
2-R-122-6	Events are also planned at CVS/pharmacy locations in Puerto Rico .				
2-R-122-7	" We know that for a variety of reasons multicultural populations have difficulty accessing and benefitting from preventive care , " said Troyen A. Brennan , M.D. , M.P.H. , Executive Vice President and Chief Medical Officer , CVS Caremark .				
2-R-122-8	" Making this issue even more disconcerting , these same patients disproportionately suffer from certain treatable conditions , like high blood pressure and diabetes .				
2-R-122-9	Through Project Health , CVS/pharmacy will work to achieve better health outcomes among multicultural populations and is once again making the commitment to helping people on their path to better health .				
2-R-122-10	" Project Health is a part of efforts by CVS/pharmacy to improve access to preventive care and ensure that cost is not a barrier to important services , like professional health assessments and screenings .				
2-R-122-11	Project Health events , while offered to address and raise awareness of ethnic health disparities , are open to everyone and will not require an appointment .				
2-R-122-12	Medical personnel will be on hand to provide diabetes , blood pressure , cholesterol and osteoporosis screenings , and examine patients for oral care issues .				
2-R-122-13	Referrals for mammograms and pap smears will also be provided as well as consultations with nurse practitioners and CVS pharmacists .				
2-R-122-14	A selection of screenings will be available at each event .				
2-R-122-15	Once screened , CVS/pharmacy will help patients through on-site consultations with bi-lingual (Spanish/English) nurse practitioners who will				

Subjectivity Lexicon Example

type=weaksubj
word1=help
pos1=adj
priorpolarity=positive

type=weaksubj
word1=help
pos1=noun
priorpolarity=positive

type=weaksubj
word1=help
pos1=verb
priorpolarity=positive



Calculating subjectivity and polarity scores

CVS Caremark

ID	text	POS	NEG	BOTH	N/A
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2-R-122-14	A selection of screenings will be available at each event .				
2-R-122-15	Once screened , CVS/pharmacy will help patients through on-site consultations with bi-lingual (Spanish/English) nurse practitioners who will lower cost .				

Subjectivity Score Calculation

Visible sentence counts:

all = 15

positive = 6

negative = 2

both = 3

neutral = 4

subjective = positive + negative + both =
= 6 + 2 + 3 = 11

Subjectivity score =

= subjective / all = 11/15 = .73

Range: 0 to 1

Polarity score =

= (positive - negative) / subjective =
= (6 - 2) / 15 = 4/15 = .27

Range: -1 to 1

sampling

collecting
data

finding
dependencies

measuring
usage

analyzing
language

How content is used: summary of results

- **Subjective language**
News articles are less subjective
- **Positive vs. negative**
News articles are less positive



How content is used: specifics

- RQ3: Hypothesis supported: news articles use language which is less subjective compared to the source press release
 $t(27) = 2.059, p = .025, \alpha = .05$
- RQ4: Hypothesis supported: news articles use language which is less positive compared to the source press release
 $t(27) = 1.876, p = .036, \alpha = .05$
- Results of automated coding can be treated ONLY in terms of word usage
(as expected: sentence scores too different from manual coding results)
- However, there is a difference in word usage:
Testing for subjectivity: $t(1641) = 7.578, p < .001, \alpha = .05$
Testing for polarity: $t(1641) = 26.879, p < .001, \alpha = .05$



Summary of findings

- Press release content used not as frequently as expected
- Journalists transform it making it appear less subjective and less positive -
 - which indicates more balanced, impartial and factual news accounts (*consistent with at least one other study*)



When one case becomes an issue

- ***Press release dated September 26, 2012:***

“Alameda and Contra Costa counties have a great inventory of homes and attractive amenities for prospective homeowners in the East Bay,” Gilda Gonzales, chief executive officer of the Unity Council, said in a prepared release. “These grants will help people get over the tremendous financial hurdle of finding funds for a down payment.”

- ***Press release dated November 27, 2012:***

... said Prince George 's County Executive Rushern L. Baker, III.

“Prince George's County has a great inventory of homes and attractive amenities for prospective homeowners in the Washington region. These grants will help people get over the tremendous financial hurdle of finding funds for a down payment...”

Of course, this would never end up in the news...

When one case becomes an issue

- "Alameda and Contra Costa counties have a great inventory of homes and attractive amenities for prospective homeowners in the East Bay , " Gilda Gonzales , chief executive officer of the Unity Council, said in a prepared release . " These grants will help people get over the tremendous financial hurdle of finding funds for a down payment . " (Wells Fargo PR)
- "Alameda and Contra Costa counties have a great inventory of homes and attractive amenities for prospective homeowners in the East Bay, "Gilda Gonzales, chief executive officer of the Unity Council, said in a prepared release. "These grants will help people get over the tremendous financial hurdle of finding funds for a down payment."
(San Jose Mercury News and Contra Costa Times)

Advice from Public Relations Quarterly:

*“A press release enables you to tell a story from your perspective...
Of course, you have to disguise it as news...”* (Williams, 1994, p. 7).

A lesson from Wells Fargo PR:

*No need to disguise a corporate story as news ---
if you convince an elected official to tell it for you.*



Concluding remarks

1. News media's reliance on press releases:

😊 Problem not as severe as perceived

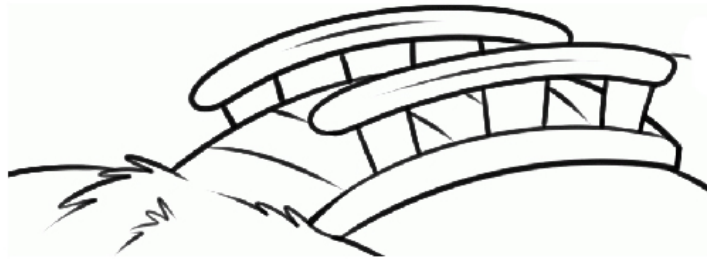
😞 Even one instance matters

2. Limitations:

- Lexis-Nexis / press releases / verbatim matches
- A press release is only one example of information subsidies:
results **do not** imply that PR lacks influence

3. The future:

Media
Studies



Computer
Science

Thank You!

- University of Northern Iowa:
 - Summer Fellowship (2014) and startup funds (2013)
- The University of Maryland:
 - The Philip Merrill College of Journalism
 - Computational Linguistics and Information Processing Lab,
University of Maryland Institute for Advanced Computer Studies
 - E-Discovery Lab, College of Information Science
- University of Northern Iowa:
 - Department of Communication Studies
 - Department of Computer Science