How historical analogies in newspapers of five countries make sense of major events: 9/11, Mumbai and Tahrir Square ☆

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ABSTRACT

We analyze how historical analogies are used in the media to make sense of novel events. While earlier work focused on single case studies, this is the first quantitative analysis comparing historical analogies invoked in three events in newspapers from five countries. With very high intercoder reliability we found 881 invocations of historical analogies. We found an interesting contrast between the roles of historical analogies in foreign policy decision making vs. newspaper articles. When the task is advocacy for policy choice, a compelling historical analogy will be one in which the causal mechanisms are as similar as possible to the current situation so that similar actions are likely to lead to similar results. Instead, newspapers spend more time at the early stages of sense-making and help the audience understand just a few features of the current situation. Newspapers thus offer a much broader range of historical analogies without much regard to maximizing similarity.
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"And because the future is unknowable and the present is opaque, we will always turn towards the past for understanding" (English, 2011, 1029).

When leaders hear about a major event, their first reaction is often to make sense of it with an historical analogy. Consider these three examples from Presidents Truman, Johnson and G .W. Bush.

– On June 24, 1950, when Truman was told that North Koreans had invaded South Korea, his first reaction was, "Communism was acting just as Hitler, Mussolini and the Japanese had acted ten, fifteen, and twenty years earlier" (Truman, 1956, 333).
– When Lyndon Johnson got his first briefing as President about Vietnam, he said, "I am not going to be the President who saw Southeast Asia go the way China went" (Caro, 2012, 402).

– In the evening of 9/11, George Bush dictated for his personal diary, "The Pearl Harbor of the 20th century took place today" (Woodward, 2002, 37).

It is not just leaders who use historical analogies to make sense of new events; so do the mass media and their readership. In this study we provide a quantitative analysis of the use of historical analogies in coverage of three events of global significance: the 9/11 attacks of 2001, the terrorist assault on Mumbai, India, in November 2008, and the large demonstrations that started on January 25, 2011 in Cairo's Tahrir Square aiming to overthrow Egyptian President Mubarak. For each event, we systematically code the historical analogies used in selected newspapers of five countries: the United States, Israel, Lebanon, India and China.

Earlier case studies were able to draw inferences about how historical analogies are used as a tool of sense making in foreign policy decision making (e.g. Khong, 1992; Hemmer, 2000).[3] However, the very restrictive access researchers have to transcripts of foreign policy decision making groups limits the amount of text available for analysis, and reliance on minutes of meetings might miss many of the analogies actually used. Another way to understand the use of historical analogies is to examine their use in newspaper articles about major events. This approach allows a broader perspective of understanding sense making in at least four different ways. First, we are able to collect data for systematic statistical analyses. The present study is the first comparative quantitative analysis of historical analogies for more than one event.[4] Second, by broadening the scope to include five countries we can learn more about sense making differences between nations. Our study is also the first comparative quantitative analysis of historical analogies for sources in more than one country. Third, unlike foreign policy decision making behind closed doors, we can take a look at sense making shapers for the public. Fourth, by looking at a broader group of elites compared to meetings we can offer more general observations. Beyond confirming hypothesis about the role of similarity and salience in the selection of historical analogies in the media, we also find that these historical analogies play a different role than suggested by literatures on decision making and artificial intelligence.

1. The role of analogies

Analogies have been intensively studied in many different fields such as foreign policy, artificial intelligence, and cognitive psychology.

There is a large literature on the use of historical analogies in decision making on foreign policy issues, especially crisis decision making. Some of these studies are of single events, and even the role of single analogies in a single event. Good examples include the role of the Pearl Harbor analogy in the Cuban Missile Crisis (Tierney, 2007), and the analogy of the outbreak of World War I with US policy toward Kosovo in 1999 (Hehir, 2006). Other case studies consider the multiple analogies used in various cases such as the three main ones used in deciding upon the 1965 escalation of US forces in Vietnam (Khong, 1992), the three used by the Soviets and Americans in the development of outer space law (Peterson, 1997) and the five (Houghton, 1996), or eight (Hemmer, 2000) analogies used in the deliberations leading to the failed attempt in 1980 to rescue American hostages held in Iran.

The only quantitative studies of analogical reasoning outside the laboratory that we are aware of are two analyses of the debate in Congress over whether the US should invade Iraq in January 10–12, 1991 (Voss et al., 1992; Taylor and Rourke, 1995). Both found frequent use of historical analogies.[5]

The thrust of the case study material is that historical analogies frequently play an important part in crisis decision making, but that dangers of misuse abound. The theme that historical analogies can be either valuable or misleading is developed further in a number of more general studies of foreign policy decision making including those by Jervis (1976), Neustadt and May (1976), George (1980), Reiter (1996) and Vertzberger (1990). Both the case studies and the broader analyses offer useful advice on how to avoid misleading analogies, but all agree that doing so is still more an art than a science.[6]

Regardless of whether analogies are used well or poorly, it is clear that previous exemplars are widely used not only in foreign policy decision making, but also in many domains of reasoning. Indeed their use has been established in the areas of categorization (e.g. Medin and Schaffer, 1978), problem solving (Sweller and Cooper, 1985; Medin and Ross, 1989), general analogical reasoning (e.g. Gick and Holyoak, 1980, 1983; Gentner et al., 1993) and in applied areas such as medicine (e.g., Brooks et al., 1991), law (Kolodner, 1993, 1997), science teaching (Glynn et al., 1995) and real estate appraisal (Northcraft and Neale, 1987).

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[3] We will describe the content of these studies in the next section on the review of the literature.

[4] A quantitative analysis by Reiter (1996) shows that small countries learn whether or not to change their willingness to align with a major power based on whether or not their choice was successful in the last systemic war. He assumes rather than measures which historical analogy was used in each case.

[5] For a laboratory-based study of foreign policy reasoning that found only occasional use of historical analogies, see Sylvan et al. (1994).

[6] There is a limited amount of experimental work on overcoming misleading analogies. For example, in the domain of medical education, Spiro et al. (1989) study misleading examples such as treating muscle movement as analogous to rowing a boat, but this work also has limited applicability because there is only a single analog and a known "correct answer."

The use of previous exemplars to reason about a current situation is a thriving academic field of inquiry known as case-based reasoning. The study of case-based reasoning is especially active in the fields of cognitive psychology and artificial intelligence. The foundation of case-based reasoning is that similar actions in similar cases will have similar effects. Of course, what counts as "similar" may depend on one's personal and cultural preferences in determining point of view (e.g. grapes and wine) rather than another (e.g. grapes and blueberries) (Medin et al., 1993), and this strongly influences what counts as a reasonable analogy or exemplar (Vosniadou and Ortony, 1989).

As implemented in artificial intelligence systems, case-based reasoning involves retaining a memory of previous problems and their solutions, and by referencing these, solves new problems (Shui and Pal, 1994; Kolodner, 1993; Aha and Watson, 2001). When presented with a new problem, a case-based reasoner searches its memory of past cases (the repertory) and identifies the case that is most similar to the current query case. The reasoner then interprets the query case as an analogy to the current situation. Using this analogy, the reasoner can recommend an action based on what worked in the previous case.

Although the abstraction of general principles and rules is often treated as the highest form of intellectual accomplishment, there is substantial and wide-ranging evidence that human reasoning is heavily grounded in previous examples or cases to make sense of novel situations encountered in the world.

Despite this substantial evidence on the role of case-based reasoning, any translation of findings to the use of precedents in policy issues is limited by several factors. The work on analogy often relies on precedents that are isomorphic and differ only in surface or superficial characteristics, and often does not transfer from the laboratory to real-world settings. Nevertheless, several researchers (Gick and Holyoak, 1980, 1983; Keane, 1987; Gentner et al., 1993; Catrambone, 1997) have demonstrated that while superficial similarity is a critical factor in remembering or retrieving source analogs, structural similarity – similarity between underlying relationships – is most important in applying analogies for learning about the target domain. Novick (1988) and Blanchette and Dunbar (2000) found that the primacy of superficial similarity in driving recall in laboratory studies on analogy was not necessarily replicated in real world settings, where people tend to generate analogies based on deep structural features and personal knowledge. More recent research indicates that analogies rooted in personal experience are a powerful way to motivate even complicated statistical ideas (Martin, 2003).

Cognitive psychologists, Tversky and Kahneman (1973) show how the availability (or salience) of an object affects how readily it will be recalled and used in judgment. Tversky (1977) later proposed that the perceived similarity between two objects is affected by the proportion of features they have in common. Both of these ideas are useful in developing hypotheses about which historical analogies will be used in a given setting. In addition, Holyoak and Thagard (1995) show that useful analogies need to be related on the basis of their corresponding structure and purpose, as well as their similarity.

For the present purposes, it is necessary to identify the use of historical analogies in a given text, such as newspaper coverage of a current event. The good news is that there has been great progress in recent years in the automatic coding of such texts. Among the automated methods that have been developed are the identification of international interactions (Schrodt and Gerner, 1994), positive and negative sentiments (e.g. Young and Soroka, 2012), dimensions of latent semantic content (Landauer, and Dumais, 1997; Landauer et al., 2007), and degree of agency (László et al., 2010). The bad news is that each of these methods relies on what is called "a bag of words" technique. In other words, they rely on more or less sophisticated analysis of word counts without taking account of the context beyond one or two adjacent words. For this reason, the state of the art of machine coding of text is not very good at distinguishing, for example, whether "Afghanistan" is used to describe the country where Bin Laden was living or to demonstrate the difficulties of intervention by citing past attempts by the Soviet Union, Pakistan or Britain. Consequently it is necessary to use human coders to identify historical analogies.

2. Methods

The methodology for generating the data on historical analogies involves four steps: the selection of events to analyze, the selection of newspapers whose coverage will be used, the identification of relevant articles in those newspapers, and the coding of historical analogies in the relevant articles.

2.1. Events

Three cases were selected for analysis on the basis that each was an event of global significance with a specific starting date that presented a novel stimulus which evoked efforts to make sense of its meaning. The three cases were:

1. The terrorist attacks in the United States of 9/11 in 2001. The most damaging attack was on the Twin Towers of New York City. It soon became evident that the attacks were organized by Al Qaeda, based in Afghanistan.
2. The terrorist attacks on multiple sites in Mumbai, India beginning on November 26, 2008. It was immediately evident that the attacks were launched and controlled from Pakistan. The main attack was on the landmark Taj Mahal Palace Hotel, whose takeover lasted 60 h.

Table 1
Examples of historical analogies.

Event	9/11	Tahrir Square
Newspaper	People's Daily (China)	Ha'aretz (Israel)
Text (emphasis added)	The event of attack shows that the war launched by terrorists has no boundaries. The surprise attack conducted by an unim-aginable method and from an unimaginable direction by means of taking the destination by surprise, setting the few against the many and making a feint to the east but attacking in the east [sic] is even more difficult to cope with than the guerrilla war then facing the United States in Vietnam.	Prime Minister Benjamin Netanyahu warned during his meeting yesterday with German Chancellor Angela Merkel in Jerusalem that the continued upheaval in Egypt may bring to power radical Islamic elements, a repeat of the scenario that occurred during the Iranian revolution in 1979.
Source	Commentary by Fang Siyong	Israeli Prime Minister
Date	Day 6 [Sept. 17, 2001]	Day 7 [Feb. 1, 2011]
Analog	Vietnam War	Iranian Revolution
Date	1965-1973	1979
Region	East Asia	Middle East North Africa[a]
Terrorist Attack	No	No

[a] Iran is considered part of the Middle East North Africa region by the World Bank, whose definitions we use.

3. The large anti-Mubarak demonstrations in Cairo's Tahrir Square, Egypt, that began on January 25, 2011, and lasted more than a week. A week after the large demonstrations in Tahrir Square began, they were still underway and their goal of overthrowing President Mubarak was still in doubt.

2.2. Newspapers

Newspapers from five countries were selected on the basis of their importance and availability on the Web.

1. *The New York Times* is a leading paper in the United States.
2. *Ha'aretz*[7] is an important paper in Israel.
3. *Dar al Hayat*[8] is published in Lebanon and "is regarded as by far and away the best and most intensely read Arab newspaper" (Ibhahim, 1997).
4. *The Times of India*[9] is a leading paper in India.
5. *People's Daily*[10] is the voice of the Communist Party of China.

Because the *NY Times* coverage of the three selected events was so much more extensive than the other four papers, for the *NY Times* we coded only the front page stories and the opinion pieces: editorials, op eds, and letters to the editor. The *Times of India* 9/11 coverage also contained such a large number of articles that we limited our selection to front-page articles, opinion pieces and special pages devoted to 9/11. For the other two events we were able to search the entire *Times of India*.

2.3. Relevant articles

In each case, we coded the first seven days after the initial event date of coverage. We selected relevant articles on the basis of key words. For the three cases, the key words were respectively "World Trade Center," "Mumbai" (for the *Times of India* both "Mumbai" and "attack"), and "Egypt". All together there were 477,000 words in the relevant articles.

2.4. Coding of historical analogies

Our operational definition of an historical analogy is simply a "historical reference to a previous situation that is relevant to the current situation due to its similarity or contrast. " This definition closely corresponds to the more general definition from psychology that analogies are systematic comparisons in which a source situation provides information about a target situation (Thagard, 2011).

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[7] *Ha'aretz* was taken from their English language edition published on the Web. For other scholars relying on the English version of *Ha'aretz* see for example Viser (2003); Slater (2007).
[8] Dar al Hayat was taken from a mixture of English and Arabic articles. Columns from regular columnists including the editor-in-chief are routinely available in English online.
[9] The *Times of India* are published only in English.
[10] English translation of *People's Daily* is provided by the newspaper. For other scholars relying on the English version of *People's Daily* see for example Parsons and Xiaoge (2001); Yin (2006); Wu (2006); Yang (2003).

Our operational definition excludes references to previous events that serve only as antecedents without implication of similarity or contrast, such as the date marker of "since the creation of NATO." The definition also excludes non-historical analogies, such as those from myths, religion, literature, and movies.[11]

The coding of historical analogies achieved a very high level of intercoder reliability. In particular, Cohen's Kappa for whether or not a paragraph included an historical analogy was .91, where the established standard is that anything greater than .75 is considered excellent (Fleiss, 1981). In those paragraphs where both coders found analogies, the coders agreed on 87.8% of those analogies.

Table 1 shows two examples of the coding of historical analogies. The first example is from a commentary in *People's Daily* making an analogy between the difficulty the Americans will face in coping with 9/11 and the difficulty they faced in their involvement in the Vietnam War. The second example is from *Ha'aretz* quoting Israeli Prime Minister Netanyahu warning that the events in Tahrir Square might lead to a repeat of the Iranian revolution of 1979.[12]

Having specified the scope and methods of the study, we are now ready to formulate and test the hypotheses.

3. Hypotheses and data[13]

Our hypotheses, especially Hypotheses 1 and 3, may seem unsurprising yet there confirmation is still valuable when done systematically.

The first hypothesis is based on the case studies that find an extensive use of historical analogies in foreign policy settings.

Hypothesis 1. Historical analogies will often be used in the media coverage of major events.

Remarkably, there were almost as many historical analogies used as there were articles to code. Specifically, we found 881 historical analogies in 1061 articles.[14] Certainly this confirms the hypothesis that historical analogies are used frequently.

We now turn to the question of which analogies are used under what circumstances. The three literatures on analogies – political, psychological and artificial intelligence – suggest that two factors are the most important: the similarity of the analog to the present situation, and the salience (or availability) of the analogy.

We derive the next two hypothesis based on similarity between the current event and its analog, one based on similarity of location and the other based on similarity of type of event.

Hypothesis 2. Historical analogies tend to be drawn from events that are similar in location, i.e. from the same geographic region as the current event.

The geographic regions of the current events are taken to be the US for 9/11, South Asia for Mumbai, and the Middle East North Africa (MENA) for Tahrir Square. We use the World Bank's definitions of these regions.[15]

Hypothesis 2 yields eight separate statistical tests: one for each of the five newspapers, and one for each of the three events. For example, the first test is whether the 9/11 coverage in the *NY Times* draws more analogies from US history than it does in its coverage of Mumbai and Tahrir Square. Another test is whether all the newspapers tend to cite South Asia more when they cover Mumbai than when they cover the other two events.

Each of the eight tests of Hypothesis 2 is confirmed with a two-tailed difference of proportions test (each $p < .01$). For example, historical analogies do tend to be drawn from the same region as the current event, regardless of which newspaper is covering the current event.

The other form of hypothesized similarity between the current event and its analog that we can test refers to similarity in the type of events.

Hypothesis 3. Historical analogies tend to be drawn from events that are similar in type to the current event. In particular, analogies to 9/11 and analogies to Mumbai tend to be to previous terrorist attacks, while analogies to Tahrir Square tend to be to previous cases of popular unrest (such as demonstrations and bottom-up revolutions).

Hypothesis 3 is strongly confirmed for each of the three events. For 9/11 there were 141 mentions of previous terrorist attacks and not a single mention of popular unrest. For Mumbai, there were 171 mentions of previous terrorist attacks and

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[11] We coded non-historical analogies separately and only identified 18 mentions. The highest density was found in the *Times of India* in the coverage of 9/11 with movies being the dominant category.

[12] For a critique of Netanyahu's use of this particular analogy see Yossef (2012).

[13] The dataset is available from the authors upon request and will also be archived at the Inter-university Consortium for Political and Social Research (ICPSR).

[14] All letters to the editor in a single day are counted as one article.

[15] The list of countries by region is at http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/0,pagePK:180619~theSitePK:136917,00.html accessed 7/23/2012. An historical analogy was deemed to take place in the region of its occurrence, independent of the actor(s). There is one exception that applied to four analogies: if the relationship between two countries outside the region of the source's home was mentioned, both regions were coded. For example, when the *New York Times* refers to the beginning of close diplomatic relations between India and Israel both MENA and South Asia were coded.

not a single mention of a popular unrest. In contrast, for Tahrir Square, there were zero mentions of previous terrorist attacks but there were 208 mentions of previous examples of popular unrest. The chance that all 520 mentions of terrorist attacks and instances of popular unrest would occur by chance only in the coverage of the three events as predicted solely is exceedingly small ($p < .001$).

Later we will describe the range of analogies used in each of the three events. For now, we note that terrorist attacks are only 39% of the analogs used in the coverage of 9/11. For Mumbai, 76% of the analogs used were terrorist attacks, but this still leaves almost a quarter that were not. Likewise, instances of popular unrest are only 73% of the analogs used in Tahrir Square. While analogies to previous terrorist attacks and instances of popular unrest are distributed between the three cases as predicted, as many as 44% of all mentions of analogies are to events that are neither terrorist attacks nor popular unrest. To help account for the broader range of analogies, we can turn to the concept of salience.

The cognitive psychology literature (e.g. Tversky and Kahneman, 2000), as well as the artificial intelligence literature (e.g. Schank, 1990), suggest potential analogs have a degree of salience that is independent of the current situation. The higher the salience (also called "availability" or "accessibility"), the more likely that analog will be used. One way to measure the effect of salience is with "familiarity." A given historical analogy will tend to be more familiar and hence more salient in the country it happened than in distant countries. Given the importance of regional politics, especially in the Middle East and in South Asia, the more relevant test of the salience should be based on a country's region rather than only its own territory.

Hypothesis 4. Regardless of the location of the current event, analogies will tend to be drawn from a newspaper's own region of the world.

The regions are coded as in Hypothesis 2. This hypothesis about the effect of the newspaper's regions leads to five statistical tests, one for analogies used in each of the five newspapers in comparison to analogies used in the other four newspapers.

The hypothesis is confirmed: each newspaper tended to cite analogies from its own region more than the others did (each $p < .01$).

In sum, the four hypotheses about frequency, similarity and salience are all supported by the quantitative evidence.

4. Observations

We now turn to observations about the historical analogies that are less amenable to quantitative measurement and offer surprising findings. The observations deal with the analogies in terms of their diversity, their narrowness of purpose, their use as warning, their denials that a specific analogy actually applies to a given case, and the differences between the sources.

4.1. Diversity of historical analogies

To investigate the range of themes, we grouped the historical analogies of each of our three events into broad categories.

4.1.1. 9/11
The 359 mentions of analogs in the coverage of 9/11 can be categorized as

152 Wars, interventions and conflicts (34 Pearl Harbor, 18 related to Pearl Harbor such as discrimination of Japanese-Americans; 18 WWII, 6 WWI, 73 other)
141 Terrorism (41 US domestic; 49 US abroad; 51 Other)
17 Economy (For example, Clinton and Reagan used statements and actions to generate confidence in US economic recovery, and. President Bush should do the same today)
10 US domestic other than terrorism (For example sporting events were canceled after 9/11 but not after the Kennedy assassination)
9 Cooperation and unilateralism
6 Nazism, Fascism and the Cold War
6 India other than terrorism (For example, unlike during the Gulf War, Indian support for the US has to be overt)
5 Intelligence failure
4 Airport security
3 Natural disasters
3 Israel other than terrorism (For example, like the US has supported Israel during history, Israel will now do the same)
3 Other (Oil futures soaring during the first Gulf War; Tiananmen Square in June 1989; Pakistan, crisis during war with India).

4.1.2. Mumbai
The 239 mentions of analogs in the coverage of Mumbai can be categorized as

182 Terrorism (101 India, 20 Pakistan, 61 other)
25 Other India (For example other disasters have occurred on the 26th like the Gujarat earthquake on 01/26/2001)
16 Other Israel (For example the Israeli rescue operation at a school in Ma'a lot in 1974 was successful unlike India's response to 11/26)
7 India–Pakistan (For example previous use of the sea during Indo–Pak War in 1971)
6 Other (2 Somalia failed state; 2 US Iraq War; Southeast Asia tsunami 2004; Acid attacks against women)
3 Other Pakistan (For example, is the Pakistani public willing to demonstrate against the mass killing in India like they did after the publication of Muhammad cartoons by Danish cartoonist).

4.1.3. Tahrir Square

The 283 mentions of analogs in the coverage of Tahrir can be categorized as

209 Popular unrest (122 Tunisia)
35 US foreign policy
18 Other Egypt (For example Cleopatra's Egypt was modern in ancient times and Mubarak's was ancient in modern times)
15 Democracy
6 Other (Sudan referendum; end of Apartheid; internet disruption in Burma; Saddam Hussein's domestic tactics; Iran nuclear brinkmanship; world order after WWII).

Among the three events being studied, 9/11 is the most novel. After all, India had previously suffered a number of major terrorist attacks on their territory, and the Tahrir Square demonstrations were inspired by the comparable events in Tunisia.

While the categories are somewhat arbitrary, they do support the idea that the most novel stimulus, 9/11, evoked the widest range of historical analogies. It was more difficult to make sense of this dramatic and unprecedented situation than Mumbai and Tahrir Square. The 9/11 attacks marked a turning point in US history and the magnitude made a comparison to past terrorist attacks in the US or on US targets abroad difficult. In fact, only 39.3% of analogs refer to other terrorist attacks. A variety of categories such as the references to the Pearl Harbor attack and more general U.S. wars and interventions help to place the event, underline the scale and suggest possible reactions. Other categories of historical analogies were mentioned to support or at least illustrate various aspects of the attacks. Intelligence failure and airport security for example helped to understand the failure to prevent the attack. There are some quite unusual items in the category of "US domestic other than terrorism." This category illustrates just how varied historical analogies can be. Just as insiders were the key to the defeat of big tobacco, so Muslims need to turn their back on the terrorists; just as the Florida shark scare shows how crises can be blown up and create the illusion of a moral equivalent of war, so 9/11 might be used this way; and just as the imaginary "solution" to the energy crisis shows how we tend to live in a fantasy world, we need to wake up to the reality of the terrorist threat.

Mumbai presented a different situation. Unlike the US on 9/11, India had experienced a large number of terrorist attacks on its soil in the recent past. More than three-quarters of all Mumbai analogs refer to past terrorist events including responses and lessons learned. Although some regarded Mumbai 2008 as a new situation with no precedent, the attacks were often treated as "another" attack. The most unusual analog was a *NY Times* reference to acid attacks against women, comparing this type of terror with the Mumbai attack. In general, sense making largely focused on different aspects within the large topic of terrorism. This helps to explain the fewer categories for Mumbai compared to 9/11.

Tahrir differs from both 9/11 and Mumbai in terms of the focus of its analogs with almost three quarters referring to past popular unrest. This proportion drops if Tunisia is excluded but popular unrest still makes the majority of analogs with 54%. None of analogies to Tahrir Square stand out as highly unusual. Tahrir is also the only case where the most frequently mentioned historical analogy is the same (Tunisia) for all sources. Because of the continuation of events and the uncertain outcome the use of analogs remains high for all seven days while for the two terrorist attacks the density of analogies is highest in the first few days after that attack and then markedly drops.

4.2. Special purpose similarity

By taking a closer look at the different categories of historical analogies, it becomes clear that this wide range of past events can capture many different aspects of similarity depending on what point the author wishes to make. At first, the large diversity is surprising, but even the most unusual analogs, such as the shark scare for 9/11, help to make a point by highlighting one particular aspect of similarity rather than attempting to maximize similarity.

Good analogies are generally taken to be those that are most similar to the target. As we have seen, the historical analogies in the coverage of our three events do indeed tend to be similar to those events in terms of their location (by geographic region) and type of event (whether terrorist attack or popular unrest). But these are only tendencies and there are dozens of examples in which one or both of these types of similarity do not apply. Newspapers, unlike foreign policy decision-making meetings, strive to help the reader make sense of particular aspects of the situation without necessarily implying policy choices. They spend more time at the earlier stages of sense making. Often the purpose of analogies goes less far while still narrowing the viewpoint of the reader. Usually, newspaper articles also do not spend much time explaining the historical analog. In fact, most references to past events are surprisingly brief: just one or two sentences.

In selecting an analogy in a given context, authors often seem to start with a point they want to make. For example in the context of 9/11, Frank Rich wanted to make the point that Americans have been living in a fantasy world until now. He found an earlier situation to illustrate his point, writing in the *NY Times* four days after the attack that "daydreaming America is done now…[as gone as the idea that] we could lick our energy crisis…while still guzzling gas." The larger variety of authors further helps us understand the broad range of analogies because to each author different aspects of similarity may be salient.

When used to make a particular point, the chosen historical analogy need not be the most similar previous event to the current situation. The similarity can be limited to the special purpose for the point the author wishes to make. Indeed, sometimes the very fact that the analogy is from a completely different domain helps to make the point - as in the case of the fantasy about gas guzzlers not affecting the energy crisis helps make the point that we Americans need to realize that we have also been daydreaming about how safe we have been from terrorist attacks.

One might imagine that the most compelling historical analogy for 9/11 would be the earlier attempt in 1993 to bring down one of the World Trade Center's Twin Towers. The 1993 event was also a terrorist attack, was against one of the very same targets, was also carried out by Islamic militants, and was only eight years earlier. The 1993 attack was mentioned in the coverage of 9/11 in all five newspapers, a total of 16 times but Pearl Harbor is mentioned much more often: 52 times including 18 mentions to the US reaction. In the case of 9/11 it seems more important at first to understand the trauma and the magnitude of the attack. For this part of sense making, the failed 1993 attack was much less relevant for the American public than Pearl Harbor, even though the more recent event was also a terrorist attack against civilians and carried out by Al Qaeda. In later stages of sense making however these features of similarity become more important.

Previous research on foreign policy decision-making has criticized the use of a limited number of analogies. Our data suggests that early stages of sense making allow one to employ a much broader range of analogies. Arguably policy makers need to spend less time at this stage because they are more familiar with the current situation and do not need as much descriptive information as the average newspaper reader. While a good analogy for foreign policy decision makers provides answers to as many of Khong's (1992) six diagnostic tasks[16] as possible, many of the analogies in a newspaper cover fewer aspects in what we call special purpose similarity. One example is the reference to airlines security by *Ha'aretz*. Unlike the strict security measures implemented by the Israeli airline El Al, the US airlines lacked appropriate security precautions. The article lists previous planned attacks that were prevented because of the security measures in place. This analogy helps define the problem and predicts the chances of success (for one option) but does not provide any information for Khong's other diagnostic tasks.

4.3. Analogies as warning of what to avoid

One way in which historical analogies were used was to provide a warning about what needs to be avoided in the future. In the coverage of both 9/11 and Mumbai, there were multiple warnings about wrong ways to respond to terrorism, citing a variety of past unsuccessful reactions.

In the case of 9/11, a number of authors warned about responding with an invasion of Afghanistan, citing examples of the failed invasions of Russia and Britain, and even the difficulties of Alexander the Great. Referring to the discrimination against Japanese-Americans after Pearl Harbor, some warned not to repeat this mistake with American Muslims.

In the case of Mumbai, the analogies point out the failures of police, intelligence professionals and politicians to learn from past mistakes in order to improve the prevention of terrorism. *Ha'aretz* stands out in warning not to repeat the escalation that took two nuclear powers to the brink of war after the attack on the Indian Parliament in 2001.

In the case of Tahrir Square, a similar situation to the Iranian Revolution should be avoided, as illustrated by the example in Table 1. Another group of analogies is used to warn against a repetition of past US support for dictators or general failures of US foreign policy.

All together, almost one-fifth (19.1%) of analogies were used in the service of pointing out what to avoid. There were widely distributed among the three events, and across the five newspapers.[17]

4.4. Analogies to deny the relevance or similarity of past events

Another way in which historical analogies were used in the cases we studied was to deny the relevance or similarity of a past event. Overall, 14.0% of all historical analogies are used as "denials". Denying the similarity of an analog further helps the reader to understand the event and shapes the public's interpretation.

Surprisingly denials were not always used in reaction to an assertion of the same analogy. Denials are already frequent on the first day after the event. In the *NY Times* coverage of 9/11 there were 8 denials of historical analogies, including two denials of similarity to Pearl Harbor, and other denials of similarity to the Vietnam War, to the inability to protect our capital

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[16] Analogies (1) help define the nature of the situation confronting the policymaker, (2) help assess the stakes, and (3) provide prescription. They help evaluate alternative options by (4) predicting their chances of success, (5) evaluating their moral rightness, and (6) warning about dangers associated with the options.

[17] The only exception is that in *People's Daily* coverage only one of its 47 analogies talked about avoidance, and that was in a quote from an Indonesian saying they have prevented such acts as Mumbai from happening in Indonesia.

Table 2
Number of historical of analogies in each newspaper and event.

	9/11	Mumbai	Tahrir	Total
New York Times	179	36	91	306
Dar al Hayat	23	19	60	102
Ha'aretz	44	49	110	203
People's Daily	28	11	8	47
Times of India	85	124	14	223
Total analogies	359	239	283	881

Table 3
Number of historical analogies per 1000 words for each newspaper and event.

	9/11	Mumbai	Tahrir	Total
New York Times	1.98	1.51	2.41	2.02
Dar al Hayat	1.92	7.66	2.00	2.30
Ha'aretz	1.29	1.22	8.24	2.32
People's Daily	1.14	0.65	0.68	0.88
Times of India	2.26	1.31	2.31	1.61

in the War of 1812, and even to the Cuban Missile Crisis in which President Kennedy (unlike President Bush) worked in Washington despite the palpable danger.

In the coverage of Tahrir, some authors point out that while certain similarities between Tunisia and Tahrir exist, other aspects are very different. For example Ghassan Charbel in *Dar al Hayat* writes, "The story here is different from what Tunisia witnessed, for many reasons. Perhaps the similarity resides in the role of the youth, their impetuosity, and their use of modern communication means. But beyond this point, we can assert that the situation in Egypt is more complex".

The attacks in Mumbai were frequently compared to 9/11. The following example is a rare case where an author responds to a previously asserted analog by denying the similarity. Vasundhara Sanger argues in the *Times of India* that, "The analogies with the American response to 9/11 ignore the enormous cost that country has extracted and paid by its meaningless war against a country that had nothing to do with the attacks."

While an analogy does sometimes evoke a denial, as in this example of the 9/11 analogy to Mumbai, most analogies are not challenged. The infrequency of denials is apparently due to the fact that most analogies are not used for advocacy, and hence need not be challenged.

4.5. National differences

To see if newspapers from different nations make use of analogies in different ways, we examine how frequently they use historical analogies relative to the length of their coverage. Table 2 reports how the analogies were distributed among the newspapers for each event. Table 3 reports the density of analogies in terms of the number of analogies per thousand words. An interesting point is that *People's Daily* uses relatively few analogies: its density of analogies is barely half of that of any of the other newspapers.

One explanation of this phenomenon is that there is something about Chinese culture or politics that make analogies less important in making sense of novel situations. Another plausible explanation is that *People's Daily* has relatively little space devoted to opinion pieces, and that analogies tend to be used more often in opinion pieces than in news reports. Still a third possibility is that the Communist Party of China, which publishes *People's Daily*, does not want to draw attention to previous terrorist attacks or instances of popular unrest.

We analyzed the Hong Kong based newspaper *South China Morning Post* to control for possible differences. The *South China Morning Post* is like *People's Daily* in that it is published within a Chinese cultural context, but it is published only in English and is politically independent. Comparing the results will help distinguish whether the relative rarity of historical analogies in *People's Daily* is due mainly to its being Chinese or to other factors. The *South China Morning Post* coverage contains a higher density of historical analogies (1.8 per 1000 words on average for all three cases) than *People's Daily*, and is thus more comparable to our other sources. This suggests that the spare use of historical analogies in *People's Daily* is less likely a cultural phenomenon but more likely attributed to the censorship and limited number of opinion pieces. Looking at differences between the types of articles we find that the *NY Times* and *Dar al Hayat*[18] show a higher density in their opinion pieces while in the *Times of India*'s[19] the front page articles contain more analogies per 1000 words. Yet, we can say that on

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[18] Information only available for Mumbai and Tahrir.
[19] Information only available for 9/11.

average most opinion pieces show a higher density that other news articles. Furthermore, the *South China Morning Post's* coverage of Tahrir Square supports the censorship claim in several articles. For example Tam (1 February 2011) writes: "Mainland censors have cleansed state-controlled newspapers, television, internet portals and microblogs of any mention of the Egyptian unrest, with the authorities fearing the uprising could fuel calls for reform at home (…) [or] remind the public of the Tiananmen Square protests in 1989." The censorship is not limited to popular unrest but also applies to the other two events. *People's Daily's* coverage of Tahrir Square shows a similar density to the events in Mumbai with 0.7 mentions per 1000 words while their coverage of 9/11 contains 1.1 analogies per 1000 words. Thus we can say that *People's Daily* limited space devoted to opinion pieces together with strict censorship explains its sparing use of historical analogies.

Another interesting point is that the two newspapers with the *highest* density of historical analogies are the two Middle East newspapers. Whether this has a cultural cause or some other cause is unclear. Fortunately, we do have another piece of data that is relevant, namely the density of historical analogies in Osama Bin Laden's statements in 1994–2004 (Lawrence, 2005). In these public messages, interviews and letters amounting to 80,600 words, he mentioned historical analogies 292 times. This is an average of 3.62 analogies per thousand words. This density is even greater than the 2.30–2.32 seen in the two Middle Eastern newspapers. Again, there are a number of different explanations for these results, but one candidate is certainly that there is something about the Middle East sources that encourages the use of historical analogies.

5. Limitations

Any analysis of the media can help us understand how the public discourse is shaped, but only occasionally offers direct inside evidence about the decision making process at the national level.

We do not have a good way to evaluate whether the frequent use of analogies is, on the whole, helpful or harmful. This is partly due to the fact that for the events we have chosen, there is no clear answer to the question of "what should have been done," let alone to the question of "which analogy would have been most helpful in choosing the right policy." In terms of the value of particular analogies, we can however, note that use of the Pearl Harbor analogy, especially in the context of 9/11, frames the problem as one of trauma, innocence, revenge and infamy. This tends to imply that war would be the appropriate response. We can also note the contrast with the Indian response to the Mumbai attacks, a response that warned against revenge and included many reminders that the military escalation after the 2001 attack on the Indian Parliament led to a dangerous confrontation with Pakistan, and should not be repeated.[20]

6. Future research

We have not yet exploited our data on who invoked a given analogy, and in what type of article a given analogy was mentioned. For example, it would be useful to explore the differences in density of historical analogies in news stories compared to opinion pieces. It would also be interesting to explore how analogies used by authority figures (such as a Foreign Minister) differ from those used by journalists, and how both differ from non-authorities such as most writers of letters to the editor.

Our research design used the first seven days of coverage after the start of each event. A useful exercise would be to study the same sources on the first anniversary of the event. Among the questions that could be answered are which historical analogies had "staying power" and which dropped from sight. Knowing this might help us understand how the initial framing of an event affected the longer-term understanding of its meaning and significance.

Our findings suggest that analogies are used differently in newspapers than they are in high-level confidential decision-making meetings – the usual focus of studies of analogies in foreign policy. We can, for example, compare our results in this paper to the use of historical analogies in the transcripts of the ExComm deliberations during the Cuban Missile Crisis (May and Zelikow, 2002).[21]

7. Conclusions

This is the first comparative and quantitative study of historical analogies for multiple events, and for sources from more than one country. We were able to provide insight about the use of historical analogies in making sense of different events based on a highly reliable identification of more than eight hundred mentions of such analogies. We provided statistical evidence that strongly supported a number of hypotheses mainly from literatures on foreign policy decision making, cognitive psychology and artificial intelligence.

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[20] For a qualitative analysis on the framing of the Mumbai attacks in the *NY Times* and the Indian *Hindustan Times,* see Roy and Ross (2011). The authors come to similar conclusions about the revenge-averse framing in Indian media.

[21] Our results of these transcripts find 44 mentions of analogies, of which ten were to Pearl Harbor. For comparison, the ExComm transcripts have about 121,000 words, and have density of 0.36 analogies per thousand words. The Pearl Harbor analogy was critical in that the strong desire to avoid a "Pearl Harbor in reverse" was important in the choice of quarantine rather than an air strike (Khong, 1992; Tierney, 2007).

The frequent use of historical analogies in foreign policy decision making suggested to us that historical analogies would also be used frequently in newspaper coverage of major events (Hypothesis 1). We confirmed that analogies were used frequently with almost as many historical analogies as there were articles.

The psychological, medical, legal and artificial intelligence literatures on analogy all point to the central role of similarity between the analog and the "target". We were able to confirm that in each of our three cases the analogies were similar to the corresponding event in two regards: location and type (Hypotheses 2 and 3). The historical analogies tended to be from the same region as the event and tended to be of the same type as the event (terrorist attack or popular unrest). These two aspects of similarity between the event and its analog were confirmed for each of the five newspapers.

The cognitive psychology and artificial intelligence literatures both suggest that salience (or availability) will affect which analogs are chosen. We were able to confirm that regardless of the location of the current event, analogies tended to be drawn from events that took place in the newspaper's own region (Hypothesis 4).

Although we found strong tendencies for the analogies to be similar to the current event in several ways, we were surprised by the frequency of historical analogies that were *not* very similar to the current event.

In the realm of foreign policy, the use of historical analogies has been mainly studied in the context of the policy making process. In a decision-making setting, analogies are often used as evidence about the consequences of a particular policy choice. Predicting the consequences of policy choices is typically the central problem. The complexity of major events in foreign policy prevents the kind of statistically based reasoning used in evidence-based medicine. Often the best that can be done is to find a similar event from the past and hope that a similar policy choice will have a similar effect. Or if the outcome of the previous event was unsatisfactory, one can hope that a different policy choice will have a different effect. Thus when prediction is essential, it is important to use one of the few previous experiences that have the same causal structure as the current situation.

In most media pieces, historical analogies are not used to predict the consequences of specific policy choices. Instead they are more often used to describe the novel situation by evoking a familiar event from the past without much regard to maximizing similarity.

We found that authors often seem to start with a point and then find an analogy to support or at least illustrate the point. As we have seen in the analogies of 9/11 to the defeat of big tobacco by insiders, the overblown shark scare, and the unrealistic thinking about the energy crisis, sometimes an analogy from a completely different domain helps to make the point even better than an analogy from the same domain. The event referenced need not be very similar as long as the point is clearly implied by the analogy and the analog is familiar to the reader.

The use of historical analogies in the early stages of sense making for description rather than advocacy helps explain three things about the use of analogies in the media: their diversity, infrequency of denials and the non-similarity in the coverage of the three selected events.

1. The great diversity of historical examples reflects the wide range of meanings that can be attached to the current event in the mass media. On the other hand in decision-making settings, where a similarity of causal mechanisms is important for policy guidance, there may be only a few historical events that would qualify as useful analogies.
2. The scarcity of denials in the media is also understandable. When, as is often done in the media, an analogy is used only to make a specific point, a denial of its over-all relevance may seem unnecessary. In contrast, in an advocacy setting where analogies are used to support a policy recommendation, an opponent will often find the denial of similarity of causal mechanisms both easy and compelling.
3. The occasional use of analogies that are not very similar to the current situation is understandable in the media when the purpose is to describe only one or a few specific aspects. Conversely, if the purpose is to support a recommendation in a decision-making setting based on what happened in the past, the similarity of the past situation to the current situation is essential.

In sum, there is an interesting contrast between the roles of historical analogies for foreign policy decision making vs. newspapers. When the task is prediction (as is required for advocacy), a compelling historical analogy will be one in which the causal mechanisms are as similar as possible to the current situation so that similar actions are likely to lead to similar results. The situation is different if the task is to help the audience make sense of just a few features of the current situation. In that case, the historical analogy tends to be chosen to highlight just those features without much regard to maximizing similarity of the causal mechanisms of the analog compared to those of the current situation.

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