

# What changed public opinion on the same-sex marriage issue?

## New implications of attribute measures and attribute priming in media agenda setting

Newspaper Research Journal  
2018, Vol. 39(4) 453–469  
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DOI: 10.1177/0739532918810737  
journals.sagepub.com/home/nrj



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### Abstract

*This study explores the attribute agenda-setting effects and attribute priming effects of news coverage on the issue of same-sex marriage. The affective attribute salience of news coverage on the same-sex marriage issue is stronger when related to public opinion than the substantive attribute salience of the news coverage. News coverage on the issue is strongly associated with audience attitudes about controversial issues. Last, on controversial issues, news media have long-term, rather than short-term, effects on public opinion.*

### Keywords

*attribute agenda setting, controversial issues, attribute priming, public attitude strength, same-sex marriage*

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On June 26, 2015, same-sex marriage, a highly visible and polarized issue,<sup>1</sup> was legalized in all states in the United States. Polls showed that in the late 1990s, there was more opposition to same-sex marriage than support.<sup>2</sup> But, in recent years, the number of people who supported same-sex marriage surpassed those who opposed it.<sup>3</sup>

These statistics reveal large shifts in opinion over time.<sup>4</sup> In the months between March 2013 and May 2013, a majority of news coverage on the issue on television, print and online media conveyed strong support for same-sex marriage rights.<sup>5</sup> This raises interesting questions about the relationship between news coverage of the issue and shifts in public opinion. News media clearly influence public opinion, and this has received scholarly attention especially in the area of politics.<sup>6</sup> But how does this influence work, especially, in the case of controversial issues? How do the media affect public thinking in the short term as well as over a long period of time? The role of news media in influencing attitudes in the area of controversial issues, especially in the long term and over large periods of time, remain relatively unexplored.

The study compares the coverage in the *New York Times* (NYT) to public opinion surveys conducted by Gallup, the Pew Research Centers and CBS/NYT from 2003 to 2013 regarding three aspects (religious beliefs, family values, legal rights) of the same-sex marriage issue to explore how the attribute agenda-setting effects and attribute priming effects of news coverage influenced public opinion on the issue of same-sex marriage.

This study makes three important contributions. First, the analysis determines whether news media influences public opinion, or vice versa, on controversial issues. Studies on news media's agenda-setting effects on controversial issues provide conflicting results.<sup>7</sup> The direction of influence between news media and public is still unclear. Public opinion is important to news media if they want to cater to and retain their audiences.

The second contribution is the comparison of the effects of substantive attributes and affective attributes on opinion shifts. The agenda-setting theory indicates that news media not only tell people what to think (substantive attribute salience) but also what to think about (affective attribute salience).<sup>8</sup> However, few studies have examined if it is the amount or tone of news coverage that has a stronger effect on changing public opinion on controversial issues given that many individuals already have strong opinions, especially on issues like same-sex marriage.

Third, this study provides a methodological contribution, which compares the effects of the number of articles and the level of attribute salience to investigate the agenda-setting effect. Ascertaining the number of attribute salience helps us parse out the nuances of the news media agenda effect better, especially agenda effects in the long term.

## Literature Review

### *Attribute Agenda Setting*

The second level of agenda setting refers to the influence of issue attributes on public opinion about an issue. Attributes are a generic term encompassing the full range of properties and traits that characterize an object.<sup>9</sup> Generally, issues have many attributes. Attributes emphasized in news media become more prominent in the minds of the audiences.

Many studies have found that both substantive attribute salience and affective attribute salience affect public opinion.<sup>10</sup> For example, the more salient and more positive the news coverage is, the more voters would tend to support the party portrayed favorably.<sup>11</sup> Son and Weaver also found that cumulative salience and positive tones predicted increased public support in presidential elections, but this cumulative effect affected only nonpartisan voters, suggesting that news media have an effect on undecided voters.<sup>12</sup> The effect of short-term salience was not significant, indicating that news media coverage influenced public opinion in the long- rather than short-term time spans.<sup>13</sup>

### ***Media Salience, Attitude Strength and Attribute Priming***

Attribute agenda setting provides a theoretical foundation to examine the influence of news media on public attitudes.<sup>14</sup> The consequences of attribute agenda setting is attribute priming, which states that “certain issues emphasized in the media will become significant dimensions of issue evaluation among the public.”<sup>15</sup> Sheaffer added an affective dimension on priming effects called affective priming.<sup>16</sup> Affective priming means that the way individuals evaluate an issue is influenced by the tone of news coverage.<sup>17</sup> In sum, both substantive attribute salience and affective attribute salience have measurable influences on public attitudes.

### ***Substantive Attribute Salience and Public Attitudes***

The salience of news media issues has an attitudinal consequence.<sup>18</sup> In other words, substantive media salience is strongly associated with strengthened attitudes on issues.<sup>19</sup> Studies have found that increased salience of news media coverage was positively associated with increased attitude strength and attitude dispersion, leading to decreases in audiences who held no opinion on the matter and providing empirical proof of attribute priming effects.<sup>20</sup>

### ***Affective Attribute Salience and Public Attitudes***

The affective aspects of an issue in news media coverage also influence public attitude. Generally, negative tones in news media coverage are more influential than positive tones in influencing public opinion.<sup>21</sup> Positive tones in some cases even diminish the importance of an issue.<sup>22</sup> The role of emotions is also important. Individuals tend to consider an issue important when their feelings, such as fear or sadness, are aroused.<sup>23</sup>

### ***Agenda Setting and Controversial Issues***

The findings of studies examining the agenda-setting effect of news coverage on controversial issues have been mixed. Conway found evidence that highly negative coverage influenced attitudes in the coverage of Obamacare.<sup>24</sup> But cumulative negative affective attributes in the news media negatively influenced public support of Obamacare and that news media coverage strengthened the opinion of those already resistant to the idea.

Sheafer's study showed that the negative tone of news coverage is very successful in catching voter attention, and thus has a more influential effect than positive tones on public opinion. Voters perceived political agendas framed negatively as more important.<sup>25</sup> Thus, controversial issues that are often covered negatively influence public attitudes strongly.

Kim et al. found that the more salient the attribute is, the more it is likely to influence the public's evaluation of controversial issues.<sup>26</sup> But as Roberts, Wanta and Dzwo found, in cases where people already have strong opinions, this effect is less likely. They demonstrated this in the case of the abortion issue where no agenda-setting effect was found.<sup>27</sup>

### **Timing**

The issue of time lag has been a focus in agenda-setting research because the concept of time lag is related to causal effects of news coverage on public opinion. In addition, scholars are concerned about how long it takes before news media have measureable effects on public opinion.<sup>28</sup> The optimal agenda-setting effect time span is between four and six weeks<sup>29</sup> or three to four weeks.<sup>30</sup>

Several studies have indicated immediate and cumulative effects of news media on public opinion. However, immediate or cumulative agenda-setting effects depend on the type and tone of issues. For example, negative coverage of issues is more likely than positive coverage to influence public opinion immediately.<sup>31</sup> Previous studies found that controversial issues needed a long time lag before the issue has agenda-setting effects, whereas noncontroversial issues showed immediate effects.<sup>32</sup> Therefore, the present study collected data over time to examine the cumulative and immediate effects of news media.

Based on the polls measuring public opinion about same-sex marriage over 10 years, it is clear that a public opinion shift did take place. This raises interesting questions about the kinds of roles the news media play in influencing shifts in public opinion. In this light, this study proposes the following research questions:

#### **RQ1a:**

What is the relationship between the immediate substantive attribute salience of same-sex marriage in news coverage for each of these attributes and public opinion regarding each of these three aspects of the same-sex marriage issue?

#### **RQ1b:**

What is the relationship between the immediate affective attribute salience of same-sex marriage in the news coverage for each of these attributes and public opinion regarding each of these three aspects of the same-sex marriage issue?

#### **RQ2a:**

What is the relationship between the cumulative substantive attribute salience of the same-sex marriage issue in the news coverage for each of these attributes and public opinion regarding each of these three aspects of the same-sex marriage?

**RQ2b:**

What is the relationship between the cumulative affective attribute salience of same-sex marriage in the news coverage for each of these attributes and public opinion regarding each of these three aspects of same-sex marriage?

***Number of Articles and the Number of Attributes***

Most agenda-setting studies usually count the number of articles that mention the attribute and correlate that tally with changes in public opinion. However, some studies have counted the number of times that an attribute is mentioned (attribute frequency) in articles to predict changes in public opinion<sup>33</sup> and some have shown that a greater number of articles could mean greater salience of attributes.<sup>34</sup>

This study uses both measures. It is likely that some attributes are mentioned many times in one article, but it is also likely that an attribute is mentioned only once or twice in some articles. Do articles with the attribute mentioned only once or twice have the same effect as articles with the attribute mentioned several times? Given the discrepancy of the methodology of attribute agenda setting and few empirical studies on this, this study has RQ3 that asks,

**RQ3:**

Is the number of articles or the frequency of attributes cited in articles a better measure of the agenda-setting effect?

**Method**

Two types of data comprising articles for the years 2003 to 2013 from NYT and public opinion polls about three attributes of the issue from Gallup, CBS/NYT and Pew for the years 2003 to 2013 were gathered. The NYT, popularly used in many agenda-setting studies, is a key gatekeeper and is considered an agenda setter for other news media<sup>35</sup> although most U.S. journalists do not regularly read the NYT, and most U.S. news media do not subscribe to the NYT News Service.

The content analysis of news articles examined three attributes of coverage: attributes related to religious beliefs (whether same-sex marriage would or would not go against religious belief or is or is not morally wrong), family values (whether same-sex marriage should or should not be legal because it will hurt society, or the institution of marriage/traditional marriage/traditional family) and legal rights (same-sex marriage should or should not be legal because it is or is not an issue of legal rights and equality). This coding scheme was adapted from the Pew study titled, "News Coverage Conveys Strong Momentum for Same-Sex Marriage."<sup>36</sup>

***Independent Variables******Substantive attribute salience and affective attribute salience (tone)***

News coverage from the NYT was content analyzed as the measure of the media attribute agenda. Regarding the time lag of agenda-setting effects, the time period for

**Table 1**  
**The Dates of the News Articles from *the New York Times***

<i>Year</i>	<i>Date</i>	<i>The Number of the News Article Retrieved Each Year</i>
2003	4/1-4/30	9
	9/16-10/14	
2004	1/13-2/20	39
	4/1-4/30	
2005	1/1-1/31	44
	4/1-4/30	
	6/1-6/30	
2006	4/1-4/30	24
	5/1-5/30	
	4/1-4/30	
2007	6/7-7/5	21
	10/1-10/31	
	2/1-2/28	
2008	4/1-4/30	14
	7/7-8/5	
	4/1-4/30	
2009	2/1-2/28	37
	4/1-4/30	
	7/18-8/15	
2010	2/1-2/28	28
	4/1-4/30	
	7/1-7/31	
2011	1/24-2/21	28
	4/1-4/30	
	8/11-9/8	
2012	1/24-2/21	21
	6/27-7/27	
	4/1-4/30	
2013	2/1-2/28	48
	4/1-4/30	

each phase of the content analysis in the present study was four weeks prior to each poll (see Table 1 for the samples drawn from the NYT). Thirty polls from Gallup, CBS/NYT and Pew from 2003 to 2013 were examined.

The unit of analysis was the individual news article. Based on keywords, “same-sex marriage” and “gay marriage,” a sample of 313 articles was retrieved from the Lexis-Nexis database. Three attributes were examined related to whether the issue was discussed in the context of religious beliefs, family values or legal rights.

For the attribute “religious beliefs,” articles that mentioned “religious,” “church,” “moral,” or other religion-related words (e.g., clergy, pastors, etc.) were selected. For the attribute “family values,” articles that mentioned “one man and one woman,” “traditional marriage,” or “civil union,” were selected.” For the attribute “legal rights,” the articles that mentioned “legal,” “right,” or “equal” were selected.

Substantive attribute salience was operationalized as the number of times an attribute was cited. “Immediate substantive attribute salience” was operationally defined as the number of times each attribute was cited in the coverage four weeks prior to each poll. “Cumulative substantive attribute salience” is the accumulated number of times each attribute was cited in the coverage from April 1, 2003, to the present poll, from T1 to time Tn.<sup>37</sup>

Affective attribute salience was the affective tone of each mention of an attribute. Each of the three attributes was coded for positive, negative, or neutral tones. This study adopted the 3-point scale of positive, negative or neutral tone from the 2006 Weaver and Son study to examine the affective tone of the coverage.<sup>38</sup> Each article was classified as 3 (*positive*), 2 (*neutral*) or 1 (*negative*) toward the idea of same-sex marriage. The scores were added and averaged for each time interval. “Immediate affective attribute salience of each attribute” was operationalized as the tone of the coverage four weeks prior to each poll.

Two graduate students coded a randomly selected 10 percent of the sample. Using Cohen’s *K*, inter-coder reliability ranged from .81 to .90.<sup>39</sup> Cohen’s *K* values ranging from .81 to 1.00 are considered to indicate strong agreement.<sup>40</sup>

### ***Dependent Variable: Public Opinion Data***

The study gathered polls for each attribute. For the attribute “religious beliefs,” 10 polls were gathered from Gallup. For the attribute “family values,” nine polls were gathered from CBS/NYT. For the attribute “legal rights,” 11 polls were gathered from Pew.

The question for the attribute of “religious beliefs” asked, “Please tell me whether you personally believe that in general homosexual behavior is morally acceptable or morally wrong.” In this study, moral issues were treated as religious issues because a religious reason to oppose same-sex marriage is that same-sex marriage is against God’s intention.

The question measuring the attribute “family values” was, “Which statement states your opinion?” Gay couples should be allowed to form civil unions but not legally marry, or there should be no legal recognition of a gay relationship.” The question using “civil union” instead of “marriage” or “family” seems to imply that the terms “marriage” or “family” are not appropriate for same-sex couples. In other words, same-sex couples are excluded from the category of “marriage and family.”

The question measuring the attribute “legal rights” was, “Please tell me whether you strongly favor, favor, oppose, or strongly oppose . . . allowing gays and lesbians to marry legally?”

The measure of the dependent variable was the percentage of respondents supporting each attribute. The present study focuses on the effects of media attribute salience on public dispersion. Public dispersion is operationalized as the proportion of the public who support the same-sex marriage issues in terms of these three attributes.

**Table 2**  
**The Percentage Articles Mentioning Each Attribute**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Religious	67%	33%	63%	50%	80%	100%	52%	60%	44%	38%	75%
Family value	NA	42%	56%	38%	73%	33%	42%	38%	43%	25%	NA
Legal right	50%	93%	90%	58%	56%	73%	75%	100%	91%	92%	94%

## Results

### ***Trend of News Coverage about Same-Sex Marriage Issue***

The percentage of articles mentioning each attribute year by year is shown in Table 2. “Legal rights” is mentioned the most among the three attributes ( $M = 79$  percent,  $SD = 18$  percent), followed by “religious beliefs” ( $M = 60$  percent,  $SD = 20$  percent) and “family values” ( $M = 43$  percent,  $SD = 14$  percent). Table 3 shows the frequency of the attributes in the news coverage.

Overall, the affective attribute salience of articles related to “religious beliefs” were the most negative ( $M = 1.7$ ,  $SD = 0.56$ ) whereas “legal rights” was the most positive ( $M = 2.15$ ,  $SD = 0.63$ ). On the whole, the affective attribute salience of all three attributes became more and more positive and reached a peak from 2007 to 2008 (see Figure 1).

### ***Public Opinion about Same-Sex Marriage***

The turning point in public opinion for the attribute “religious beliefs” and “family values” was 2008. Before 2008, the number of people who supported same-sex marriage in terms of “religious beliefs” and “family values” was less than those who opposed same-sex marriage. After 2008, the two sides were reversed (see Figures 2 and 3).

However, the number of people who support gays and lesbians marrying legally continued to be less than the number of people who opposed it for a longer period of time. The difference was not close until 2011 (see Figure 4).

### ***Attribute Agenda-Setting Effects***

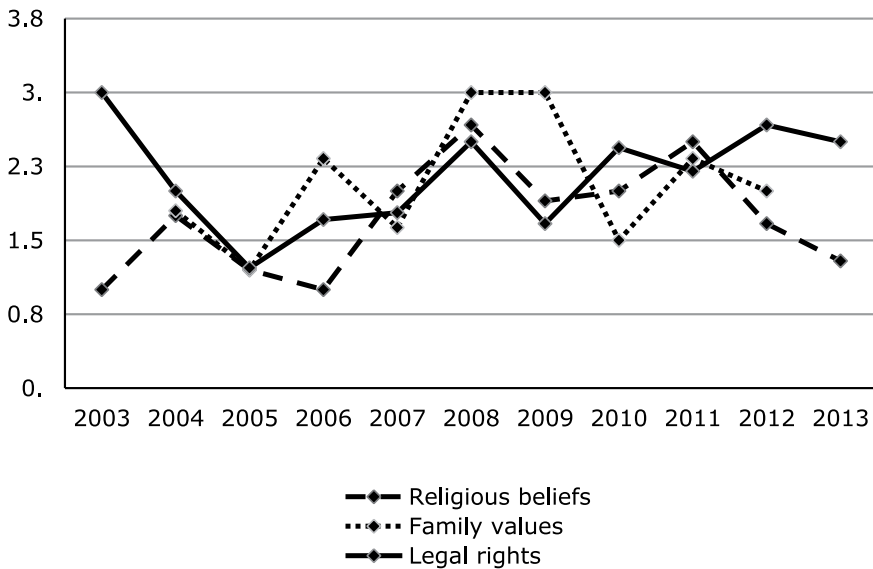
RQ1 and RQ2 examine the influence of news coverage on public opinion and vice versa in the short run as well as in the long run. Cross-lagged correlations were conducted. The lagged analysis compared news coverage and public opinion from 2003 to 2013 with the one-year lag between the two variables. Cross-lagged correlations are widely used in agenda-setting studies to capture causality between news coverage and public opinion.<sup>41</sup> It examines the relationship between two variables ( $X$  and  $Y$ ) in different points of time. We first computed the relationship between lagged news coverage ( $X$ ) (news coverage collected from one year ago, for example, news coverage in 2004) and public opinion ( $Y$ ) (e.g., public opinion in 2005) ( $rX_1Y_2$ ). If the correlation



**Table 3**  
**The Frequency of the Attributes Cited in the News Coverage**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Religious	7	12	19	4	7	13	16	7	11	6	26
Family value	NA	15	17	6	13	2	17	3	7	3	NA
Legal right	10	74	22	19	24	24	12	79	45	38	62

**Figure 1**  
**The Affective Attribute Salience of the Three Attributes**



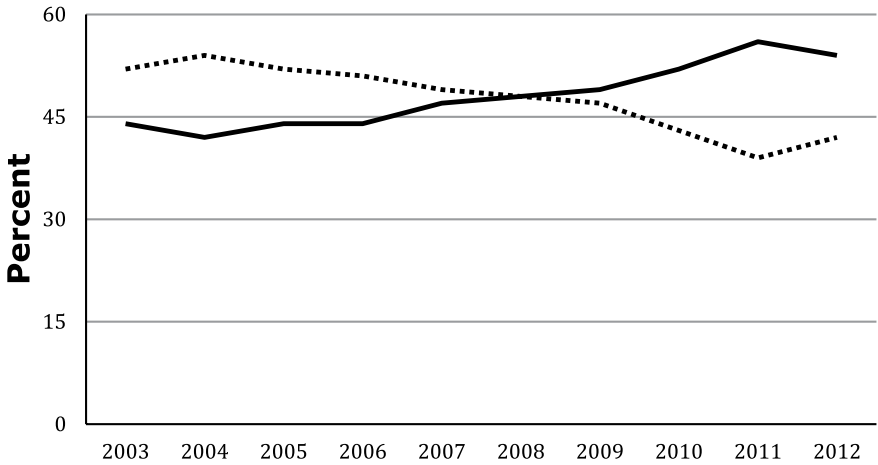
coefficient between lagged news coverage (e.g., news coverage in 2004) ( $rX_1Y_2$ ) and public opinion (e.g., public opinion in 2005) is higher than that between news coverage (news coverage in 2005) and lagged public opinion (public opinion collected from one year ago, for example, public opinion in 2004) ( $rX_2Y_1$ ), then we compared the relationship coefficients ( $rX_1Y_2$  and  $rX_2Y_1$ ) with the Rozelle-Campbell baseline value. If  $rX_1Y_2$  is above the Rozelle-Campbell baseline value but  $rX_2Y_1$  is below the baseline, then the causal effect of news coverage on public opinion is assumed.<sup>42</sup>

Time series analysis is not suitable for the present study because it requires at least 70 data points, but the total number of the sample collected in the current study is 30 data points across 10 years.<sup>43</sup> Therefore, a cross-lagged correlation is the best way to capture the interdependent effect between the series of content data and the series of public opinion in the present study.

**Figure 2**

**The Trend of Public Opinion Related to the Attribute “Religious Beliefs”**

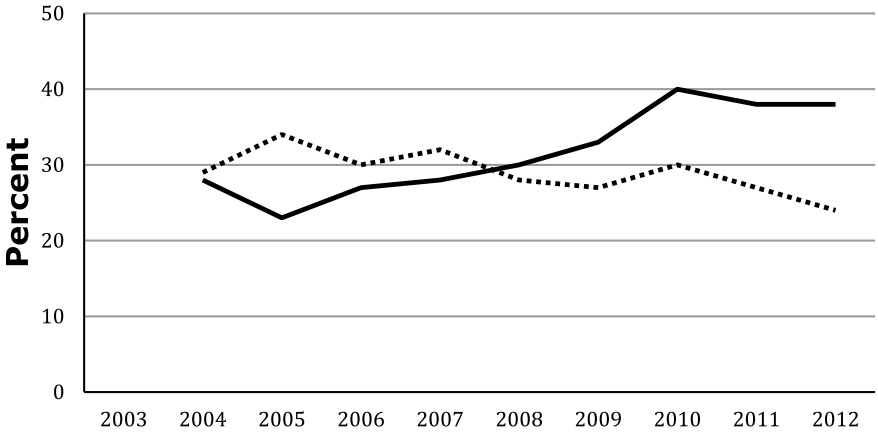
Homosexual behavior is morally acceptable or morally wrong



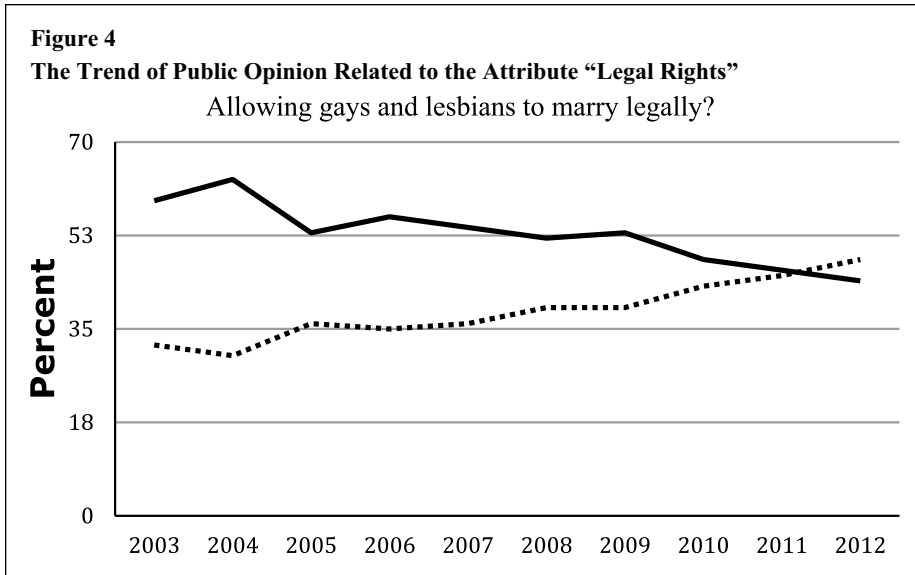
**Figure 3**

**The Trend of Public Opinion Related to the Attribute “Family Values”**

Gay couples should be allowed to legally marry or gay couples should be allowed to form civil unions



For RQ1, which asked about the relationship between the immediate substantive attribute salience and immediate affective attribute salience of each attribute in the news media coverage and public opinion regarding those aspects of same-sex marriage,



only one significant relationship was found in the relationship between public support toward same-sex marriage and the immediate affective attribute salience in terms of religious beliefs ( $r = .74, p < .05$ ).

For RQ2, which asked about the relationship between cumulative substantive attribute salience and cumulative affective attribute salience of each attribute in news coverage and public opinion, the cross-lagged correlation results show strong relationships. For the three attributes, the lagged cumulative substantive attribute salience was highly positively associated with the percentage of people who supported these aspects of same-sex marriage. The same was true for the cumulative affective attribute salience of the news coverage. The obtained cross-lagged correlations for both cumulative substantive attribute salience and affective attribute salience with measures of public opinion on all three attributes were all higher than .92 (see Table 4).

Examining the influence of public opinion on news coverage, a comparison of two cross-lagged correlation results showed that the coefficients of lagged news coverage and public opinion are all higher than that of news coverage and lagged public opinion (see Table 5). However, when comparing this with the Rozelle-Campbell baseline value, the result did not meet the requirements of causal effects, suggesting an association but not causality between lagged news coverage and public opinion.

### ***A Comparison of Media Agenda Measures***

The present article compared the results of the correlations between public opinion and the number of articles mentioning each attribute and the results of the correlations between public opinion and the frequency of the attribute cited in the articles. The correlation of the number of articles and public opinion and the correlation of

**Table 4**  
**The Cross-Lagged Correlation between Public Support toward Same-Sex Marriage and the Lagged Cumulative Substantive/Affective Attribute Salience in News Coverage**

	<i>Religious Beliefs</i>		<i>Family Values</i>		<i>Legal Rights</i>	
	<i>Lagged Substantive Attribute Salience</i>	<i>Lagged Affective Attribute Salience</i>	<i>Lagged Substantive Attribute Salience</i>	<i>Lagged Affective Attribute Salience</i>	<i>Lagged Substantive Attribute Salience</i>	<i>Lagged Affective Attribute Salience</i>
	The % of the people who support same-sex marriage	.979**	.979**	.922**	.922**	.927**

*Note.* The agenda-setting effect of news coverage on public opinion.

**Table 5**  
**The Cross-Lagged Correlation between the Lagged Public Support toward Same-Sex Marriage and the Cumulative Substantive/Affective Attribute Salience in News Coverage**

	<i>Religious Beliefs</i>		<i>Family Values</i>		<i>Legal Rights</i>	
	<i>Substantive Attribute Salience</i>	<i>Affective Attribute Salience</i>	<i>Substantive Attribute Salience</i>	<i>Affective Attribute Salience</i>	<i>Substantive Attribute Salience</i>	<i>Affective Attribute Salience</i>
	Lagged public support (The % of the people who support same-sex marriage)	.951**	.951**	.874**	.874**	.892**

*Note.* The agenda-setting effect of public opinion on news coverage.

the frequency of attributes and public opinion are highly similar. The Fisher's *r*-to-*z* transformation was performed to test for any difference between two measures (the number of articles and the frequency of the attribute cited in the articles). The results showed that the comparisons are all insignificant, suggesting that the two measures have no difference (see Table 6). In other words, the number of articles is as valid as the frequency of the attribute cited in the articles to examine agenda-setting effects. In conclusion, counting only the number of articles is sufficient to examine the affective agenda-setting effect.

**Table 6**  
**The Correlations between Cumulative Salience (Article Numbers vs. the Frequency of the Attribute) and Public Opinion**

	<i>Cumulative Number of Articles</i>	<i>Cumulative Frequency of Attributes Cited in the Articles</i>	<i>Fishers' r to z Transformation</i>
Religious beliefs			
% of people who support same-sex marriage	.923**	.926**	-.03
<i>N</i>	10	10	
Family values			
% of people who support same-sex marriage	.867**	.858**	.061
<i>N</i>	9	9	
Legal right			
% of people who support same-sex marriage	.878**	.911**	-.33
<i>N</i>	11	11	

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

## Discussion

This study examined the effect of substantive attribute salience and affective attribute salience of news coverage for three attributes, religious beliefs, family values and legal rights, on public opinion on the same-sex marriage issue. The results confirm the long-term effects of news media coverage and bring a new level of understanding to the agenda-setting theory with regard to a controversial social issue. Four findings merit notice. (1) The affective attribute salience of the news coverage is as influential as substantive attribute salience. (2) There is a strong relationship, but not causality, between news coverage and the changes of audience attitudes on controversial issues. (3) A methodological finding showed that the number of articles is as valid as the frequency of attributes cited in the article to examine agenda-setting effects. (4) The effect of news media on the public opinion about controversial issue is more complex than the causality that media drives public opinion.

### ***Affective Attribute Salience Is as Influential as Substantive Attribute Salience***

Previous studies have shown that substantive attribute salience is powerful in influencing the public's evaluation of the issue.<sup>44</sup> The present study demonstrated that compared with substantive attribute salience, affective attribute salience is equally or slightly more associated with public opinion. This result confirmed earlier studies that have shown that both news salience and specific attribute coverage of candidates can

significantly predict changes in public opinion in elections.<sup>45</sup> Compared with the results of this study and earlier studies, news salience about a controversial issue is as influential as news salience about a candidate on public attitude change because people, mainly, learn about a candidate and controversial issues from the news.

### ***A Strong Relationship between News Coverage and Changes of Audience Attitudes on Controversial Issues***

Same-sex marriage has been a controversial issue for a long time. However, the trend in public opinion regarding all three aspects of the issue studied here shows increased support for all three. The result showed strong relationship between one-year lagged news coverage and the public opinion. The more positive the presentation of same-sex marriage is, the more respondents who support same-sex marriage. This strong relationship is in line with earlier studies about attribute agenda setting of public opinion in controversial issues.<sup>46</sup> Scholars have indicated that audiences used the tone of news coverage as a clue to evaluate issues. However, causality effects remain vague based on the correlations in previous studies.<sup>47</sup>

We further investigated the causality effect versus no causality effect of news coverage on public opinion, and the results suggest that the effect of news media on the public opinion about controversial issues is more complicated than expected. News media might influence the issue evaluations among the audience but the public opinion climate might also influence news media coverage because news media might want to cater to the market, and appeal to the audience's tastes. Evidence of strong associations between lagged news coverage and public opinion indicates that the effect of news media and the public opinion is interrelated.

### ***Number of Articles Is as Valid as the Frequency of Attributes***

This is a major methodological contribution to agenda-setting research. Findings indicated no real difference between the results from measuring attribute salience by the number of articles mentioning the attribute versus the total number of mentions of the attribute in all the articles. The findings showed a highly significant correlation. The coefficient is almost 1. The result reveals that the more articles, the greater salience of the attributes, indicating that the number of articles is as valid as the frequency of attributes mentioned in the article to examine attribute agenda-setting effects.

### ***Long-Term Effects on Controversial Issues***

Some studies have shown short-term effects of news media while others have indicated long-term effects.<sup>48</sup> The cross-lagged correlation analysis for the three individual attributes have indicated a strong positive correlation between cumulative substantive attribute salience and affective attribute salience and supportive public opinion toward same-sex marriage. However, no significant correlation was found between immediate substantive attribute salience and affective attribute salience and public opinion. This finding is in line with Conway's study that shows that it takes time for controversial issues to have agenda-setting effects on public attitudes.<sup>49</sup>

## Limitation and Future Studies

This study has some limitations. Although the NYT is considered an agenda setter for news media nationwide,<sup>50</sup> individuals responding to opinion polls may not be readers of the NYT and may not be representative of them otherwise. Overall, the NYT's agenda-setting power on the U.S. public and even other U.S. news media is more assumed than proven.

This study did not examine the salience of object and affective salience of attribute in public agenda. It predicts public attitude with media salience, not public salience. Therefore, this study does not examine how media attribute salience influences public attitude (compelling argument). Future studies are encouraged to examine the effects of compelling arguments as well as the connection between media salience and public salience, and the connection between public salience and public attitude to have a holistic picture of how public salience influences public attitude.

### Editors' Note

This article was accepted for publication under the editorship of Sandra H. Utt and Elinor Kelley Grusin.

### Notes

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