
THE CONTINGENCY OF INTERMEDIA AGENDA SETTING: A LONGITUDINAL STUDY IN BELGIUM

By Rens Vliegenthart and Stefaan Walgrave



This large-scale study investigates how intermedia agenda-setting effects are moderated by five factors: (1) lag length; (2) medium type; (3) language/institutional barriers; (4) issue type; and (5) election or non-election context. Longitudinal analyses of daily attention to twenty-five issues in nine Belgian media across eight years demonstrate that (1) intermedia agenda setting is mainly a short-term process; (2) newspapers have stronger influence on television than vice versa; (3) language/institutional barriers suppress influence; (4) size of influence differs across types of issues; and (5) intermedia agenda setting is largely absent during election times.

To what extent and how do mass media adopt each other's issue agenda? The evidence is mixed and contradictory. Media to some extent imitate each other and tend to devote attention to issues that have previously received exposure in other media outlets, but the "intermedia" agenda-setting process is not well specified. This paper focuses on contingent factors in intermedia agenda setting in Belgium.

Intermedia Agenda Setting: Previous Findings and Hypothesis

Several theories address how news media emulate each other and adopt each others' stories. The most robust accounts of imitation processes in the media rely on the concept of intermedia agenda setting. Just as mass media coverage determines the public's priorities, news media affect each other's issue attention.¹ One reason, according to Dearing and Rogers, is that other media provide a cue to the real world that is impossible to observe directly: "News people operate in a special kind of environment, without much contact with their audience members. So they take their clues about an issue's priority from other media."²

Second, these imitation processes help uphold the news norms within the journalistic community. The fact that other media copy a medium's decision to cover a news event and consider it to be newswor-

J&MC Quarterly
Vol. 85, No. 4
Winter 2008
860-877
©2008 AEJMC

Rens Vliegenthart is an assistant professor in communications research at the University of Amsterdam and Stefaan Walgrave is a professor in political science at the University of Antwerp. These data were gathered during the Belgian interuniversity agenda-setting project funded by the "Federale Diensten voor Wetenschappelijke, Technische en Culturele Aangelegenheden" and conducted by Walgrave, Lieven Dewinter, Benoît Rihoux, Frédéric Varone, and Patrick Stouthuysen. A version of this paper was presented at the 2008 Dutch-Flemish "Politicologenetmaal" in Nijmegen, Netherlands. Special thanks to Rosa van Santen for useful suggestions.

thy indirectly validates the first medium's initial decision. Intermedia agenda setting is the mechanism creating a common definition of what is news and what is not.³

A third reason for intermedia agenda setting is the competitive setting of most media markets. Media observe competitors' behavior and emulate them as soon as it is clear that to do so is a competitive advantage.⁴ As a consequence of all these processes, intermedia agenda-setting dynamics cause the mass media coverage of issues to follow similar patterns.

At least nine empirical studies focus explicitly on the process of intermedia agenda setting.⁵ Based on those studies, but also on insights from agenda-setting processes between media and political bodies and media and public, five "contingent factors" determining the level of intermedia agenda setting are proposed. The design and findings of these intermedia agenda-setting studies are summarized in Table 1.

In many of the cases, moderators of intermedia agenda setting were not examined. Consequently, a real theory of intermedia agenda setting has yet to develop. Conversely, in the other two "branches" of agenda-setting research, public and political agenda setting, the precise conditions hindering or stimulating public or political agenda setting have been better specified. Especially within public agenda setting, many studies have shown that the mass media's impact on the public's priorities is contingent upon a range of receiver (public), sender (media), or context (country) features.⁶

However, there are theoretical reasons to expect that the transfer of saliency between the media and the public follows a different logic than the transfer of saliency between media outlets. Indeed, public agenda setting deals with individuals who adapt their personal priorities while intermedia agenda setting involves institutions/organizations; the dependent variable in public agenda-setting studies is attitudinal (what the public thinks) while in intermedia agenda setting it is behavioral (what a medium does); public agenda setting often is an unconscious process while intermedia agenda setting is a deliberate action, etc.⁷ This is why one cannot simply rely on public agenda setting to provide a suitable theoretical explanation for intermedia agenda setting.

The first contingent factor to consider is the delay with which one outlet influences another. Most previous studies used fixed lags and did not examine empirically what the actual lags in the intermedia agenda-setting process are. Several studies drew on remarkably long lags of several weeks. One can ask, though, whether medium A adopting the issue emphasis of medium B after a delay of a few weeks really points to an agenda-setting effect. Indeed, during the lagged time period many real-world events could have caused medium B to also devote attention to the issue. Working with long lags may identify media *convergence* rather than intermedia *effects*. From a substantive point of view, short lags make sense. News media compete for audience, so it is unlikely that an editor will wait for weeks before picking up an issue that received considerable attention in another medium. If media imitate each other, it should be immediately. Thus, **H1** states that *immediate, short-*

lagged intermedia agenda-setting effects will be larger than the longer-term effects.

The second moderator of intermedia agenda-setting effects is the type of medium. Studies consistently found that newspapers matter more for TV news than vice versa, irrespective of the country under investigation. Morning papers set the mass media agenda, culminating with those of the main evening news shows. In the United States, the agenda-setting role of the *New York Times* has been clearly established.⁸ Belgium has no medium as prestigious as the *New York Times*, but it is possible to test the more general assumption that television is more heavily influenced by newspapers than the other way around. Therefore, **H2** is *newspapers lead TV news more than the other way around.*

The third factor is presence of institutional/language barriers. Table 1 studies almost all examined fairly homogenous political systems and unilingual media systems. Only three of nine dealt with countries other than the United States.⁹ Consequently, none of the studies tackles the question whether the intermedia agenda-setting process “transcends” language or institutional borders. Belgium is split along language lines with separated media: Flemish people hardly read French newspapers or watch French TV news and vice versa.¹⁰ Furthermore, Belgium is a country in which considerable decision making takes place at the regional level. Still, both media systems are part of the same political system and political reality. Additionally, foreign events probably have roughly the same relevance for both parts of the country. Therefore, we expect that the “news reality” for the various media outlets is to a considerable extent similar and a high correlation between the coverage of issues in those outlets is likely.¹¹ However, when it comes to the influence different media have on each other, journalists and editors working in one language are probably paying more attention to similar language media that compete directly for the same audience. Therefore, **H3** predicts more *intra-language* intermedia agenda setting than *inter-language* intermedia agenda setting: *Flemish media affect other Flemish media more than they affect French-speaking media and vice versa.*

The fourth contingent factor is issue type. Only the Table 1 study by Mathes and Pfetsch dealt directly and implicitly with comparing intermedia agenda setting for different types of issues.¹² This is remarkable, because it is one of the main findings of *public*¹³ and *political* agenda-setting studies¹⁴ that agenda-setting effects differ across issue types. It is to be expected that the same applies to intermedia agenda setting.

Therefore, “exogenous” and “endogenous” issues are distinguished here. Exogenous issues are typically driven by external events beyond control of the government or other formal institutions (e.g., crime, environment, disasters...). Endogenous issues, in contrast, are produced under the control of structured efforts of formal institutions (e.g., political institutions, EU topics, finances, science...). Endogenous issues are typically predictable and routinized, while exogenous issues are unpredictable and unexpected. Attention for exogenous issues is likely driven by unpredictable “real-world” events that are regarded as newsworthy and are adopted by media outlets, with little attention paid

TABLE 1

Set-up and Findings of Previous Intermedia Agenda-setting Studies

Study	Lag	Media Type	Comparing across Languages	Comparing across Issues	Election vs. Non-elections	Results
Reese & Danielian, 1989	Not Specified	Newspapers TV News Magazines	No	No	No, Only Non-elections	Newspapers→TV News
Mathes & Pfetsch, 1991	Not Specified	Alternative Newspapers Traditional Newspapers Magazines	No	Yes	No, Only Non-elections	Alternative→Traditional Press
Roberts & McCombs, 1994	3 Weeks	Newspapers TV News	No	No	No, Only Elections	Newspapers→TV News
Trumbo, 1995	2 Weeks	Newspapers TV News Magazines	No	No	No, Only Non-elections	Newspapers→TV News Newspapers→Magazines
Breen, 1997	Not Specified	Newspapers	No	No	No, Only Non-elections	Newspapers→Newspapers
Lopez-Escobar et al., 1998	1 Week	Local Newspapers Local TV News	No	No	No, Only Elections	Newspapers→TV News
Boyle, 2001	4 Weeks	Newspapers TV News	No	No	No, Only Elections	No Significant Effects
Lee, 2005	4 Days	Newspapers Internet News	No	No	No, Elections Only	Newspapers→Internet News
Golan, 2006	1 Day	Newspapers TV News	No	No	No, only Non-elections	Newspapers→TV News

to other media outlets. On the one hand, this might result in less intermedia agenda setting. On the other hand, because determination of real-world event newsworthiness is probably universal,¹⁵ media are likely to make similar choices at the same time and, as a result, contemporaneous attention in various outlets might be more similar. Therefore, **H4** predicts that *the intermedia agenda-setting effects will be larger for endogenous than for the exogenous issues, but attention for endogenous issues diverges more across outlets.*

Finally, the moment or phase in the electoral cycle is proposed as a contingent factor. None of the nine studies compared intermedia agenda-setting effects in election *and* non-election times, focusing instead on one or the other. But public and political agenda-setting studies have shown that agenda-setting dynamics differ between elections and non-elections. Political actors, the public, and the mass media behave and react differently during electoral campaigns.¹⁶ This might affect intermedia agenda setting as well. If political actors determine the media agenda during the campaign, there is less opportunity for the media to imitate each other and intermedia agenda-setting effects should be weaker. Yet, because *all* the media's agendas are affected by political actors' actions, there should be more overlap between the agenda of individual outlets during elections. Thus, **H5**: *there is less intermedia agenda setting during the campaign than during routine times but there is more agenda convergence during the campaign.*

Data and Methods

To put these ideas to the test, an extensive set of longitudinal data on Belgian news media coverage between 1993 and 2000 was used. Belgium is a small, bilingual, consociational democracy. The media landscape is sharply divided between Dutch-speaking (Flemish) and French-speaking (Walloon and Brussels') media outlets. The public broadcasters and commercial TV stations in both parts of the country are more or less equally strong and one can speak of a duopoly situation in both TV markets. Newspapers used to be partisan, but during the 1980s and 1990s parties and newspapers grew more distant.

Both French-speaking and Dutch-speaking print and broadcast media were analyzed. The data set contains three Flemish morning newspapers, tabloids, and broadsheets with different partisan leanings (*De Standaard*, *De Morgen*, and *Het Laatste Nieuws*); two French-speaking morning newspapers (*Le Soir* and *La Libre Belgique*); two Flemish television channels, one public service broadcasting (TV1) and the other commercially ran (VTM); and two French-speaking channels (RTBF and RTL). All front-page newspaper stories were coded, with exception of the newspapers that appeared on Tuesdays and Thursdays, on a daily basis.¹⁷ The main, prime-time (7 p.m.) TV news shows were coded in their entirety on a daily basis. In total, the database contains 180,265 news items. Coders were 30 students who were trained, briefed, and pre-tested. Coders scoring less than 90% accuracy (compared to master coders) were dismissed. Issue code errors of the remaining coders amounted to an average of 1.69 per hundred items.

Initial coding involved 110 different issue codes, which were later reduced to twenty-five major issue categories. All analyses and estimations rely on these twenty-five-issue panels or distributions for all media separately, resulting in 9 media x 25 issues = 225 issue panels with 2,504 daily observations.

Belgian newspapers are not issued on Sundays. Therefore, for the various television channels a mean score computed for each Saturday and Sunday pair of issues was used to substitute for the channel's original Saturday score, in order to keep data comparable with the newspaper data. Furthermore, newspaper data for Tuesdays and Thursdays that were not coded were estimated based on previous and subsequent values. This procedure did not affect the results reported in this study.¹⁸ For the analysis of different issue types (H4), the 25 issues were dichotomized as exogenous and endogenous issues.

For each medium, attention to the various issues is "explained" by its own lagged values and the lagged values of other media. Contemporaneous values are not used, because of the basic requirement of causality that the cause has to precede the consequence. The choice for the appropriate technique to analyze the data is based on the following considerations:

(1) First, the focus is on the overall influence of the various media on each other. For the first three hypotheses, the influence of medium characteristics is examined without differentiating between various issues (exogenous or endogenous) or non-election/election time. Therefore, the analysis is for each medium *across* all issues (nine analyses in total). A pooled data structure was used, including daily scores for the twenty-five issues. Each analysis involves 62,600 observations (2,504 days x 25 issues). For each outlet, descriptive statistics (and bivariate correlations) are offered in the Appendix. For comparisons between endogenous and exogenous issues and between election and routine time politics, the datafile was split across issues and time.

(2) A second characteristic of the data is apparent from the description presented above: it is in the form of time series, with daily values as the units of analysis. As said, this offers the opportunity for more convincingly demonstrating causality and requires adequately modeling the dynamic structure of the series.

(3) A third relevant element concerns the structure of the variables. The variables measure the occurrences of certain issues in a certain medium and are therefore counts resembling a Poisson distribution.¹⁹ Not taking into account this particular distribution may result in misspecified models and unreliable results.

Combining these features of variables results in the choice of a longitudinal, pooled Poisson model. However, within this type of analysis, again various options are available. The following considerations are of importance here:

(1) The first question that needs to be addressed is whether the series are stationary, i.e., whether the mean of each medium-level series is unaffected by a change of time origin. The Fisher test that is based on the results of augmented Dickey-Fuller tests is used for each individual

issue series.²⁰ Results indicate that for all dependent variables the null hypothesis of non-stationarity can be rejected. Consequently, the series do not have to be differenced.

(2) To establish the preferred type of analysis, it is generally recommended to first check for heterogeneity.²¹ Heterogeneity indicates the presence of panel-specific (in our case issue-specific) differences in the dependent variable that are not captured by the independent variables in the model.²² From a substantive point of view, it is highly likely that heterogeneity is present in the data: there are substantial differences across issues with some issues receiving far more coverage than other issues. Processes other than intermedia agenda setting are likely to account for those variations (e.g., classification of issues, perceived importance by journalists, etc.). Fixed-effect analyses including independent variables at a lag length of one day confirm this expectation and demonstrate heterogeneity for all our media.

(3) Taking into account this heterogeneity forces a choice between a fixed-effects or a random-effects analysis. The first resembles an analysis in which dummies for each of the issues are included as independent variables. The latter resembles an analysis in which, for each issue, a random deviation from a mean intercept is allowed. Depending on sample sizes (number of panels and time points) one or the other is more efficient. However, with a large number of time points the difference between the two ultimately disappears.²³ For all analyses, both a fixed effects and a random effects variant were conducted and the parameters for each of the independent variables compared using a Hausman test. This Hausman test indeed indicated little or no differences in the parameters obtained with both types of analyses. In general, the random effect models are slightly more efficient (higher log likelihood), and, therefore, those results are reported.

(4) The last question that needs to be addressed is at what lag length to include the independent variables. An immediate effect was anticipated, so the shortest lag length possible was used. This means the content of the morning newspapers is predicted by the content of newspapers on the previous morning and the content of television news on the previous evening. For television coverage, television coverage of the previous evening as well as newspapers' content on the *same* day are predictors. To test the first hypothesis, models resulting from that analysis are compared with different alternatives and increases in log likelihood scores are compared to models that only include the lagged value of the respective medium.

Tests of the various hypotheses rely mainly on coefficients and comparisons of z-values resulting from the various Poisson regressions, as well as various model fit statistics.

Results

Before discussing the results for specific hypotheses, Table 2 presents nine analyses explaining daily attention for the twenty-five issues in each of the nine media. The z-values give an overview of the bi-directional effects between each of the media, demonstrating considerable intermedia agenda-setting relationships in Belgium.

TABLE 2
Overall Intermedia Agenda Setting in Belgium, 1993-2000

	De Morgen	Het Laatste Nieuws	Standaard	La Libre Belgique	Le Soir	VTM	VRT	RTBF	RTL
De Morgen t-1	72.87***	1.01	0.07	-3.00**	-0.05	7.26***	8.10***	8.23***	6.01***
Het Laatste Nieuws t-1	2.12*	62.05***	-0.72	2.33*	-0.49	11.21***	9.13***	6.47***	8.47***
Standaard t-1	5.55***	4.26***	66.32***	0.20	-1.29	10.00***	10.04***	8.29***	7.44***
La Libre Belgique t-1	-5.33***	-1.25	-2.46*	69.27***	-3.90***	8.53***	9.47***	7.90***	12.17***
Le Soir t-1	2.73**	-0.54	-2.97**	-2.35*	71.94***	4.72***	4.69***	8.84***	8.68***
VTM t-1	6.27***	5.50***	2.72**	4.47***	2.21*	22.79***	14.23***	1.79	2.34*
VRT t-1	3.24**	4.33***	6.97***	4.70***	5.15***	15.99***	21.90***	7.25***	5.71***
RTBF t-1	2.72**	3.26**	5.70***	9.27***	3.43**	3.22**	3.05**	17.93***	16.22***
RTL t-1	3.41**	-1.40	-1.26	-3.11**	2.52**	1.86*	2.51**	16.13***	21.51***
N	62,575	62,575	62,575	62,575	62,575	62,575	62,575	62,575	62,575

Note: Reported are z-values for models with medium as the dependent variable and lagged values (one day) of all media as independent variables (pooled random effects poisson regression); *** $p < .001$, ** $p < .01$, * $p < .05$ (two-tailed tests)

H1 assumed intermedia agenda-setting effects mainly take place within short time spans (within one or several days). In Table 3, several lag-length options are compared and the increase in log likelihood compared to a model that includes only the lagged dependent variable is presented. In this case, higher values indicate higher explanatory power of the other media. The results provide convincing evidence for the assertion that intermedia agenda setting has mainly a short-term character. For all nine outlets, the best predictions are retrieved using a lag length of only one day, supporting **H1**. Using longer lags leads to rapid decline in model fit. Using week-level data does not enhance the models either. **H1** is accepted and additional analyses use lags that fall within one day.

H2 predicted that newspapers affect TV news more than the other way around. Table 2 had presented influences of newspapers and television channels on similar and different outlets. Additionally, models compare media content in a certain outlet based on outlets from a similar

TABLE 3
Comparing Model Fit for Different Lags and Aggregation Levels

<i>Medium</i>	<i>1 Day</i>	<i>2 Days</i>	<i>3 Days</i>	<i>4 Days</i>	<i>1 Week</i>	<i>2 Weeks</i>
De Morgen	200.73	77.53	76.52	70.19	53.43	31.87
Het Laatste Nieuws	121.83	35.51	18.65	34.05	58.63	49.65
Standaard	121.05	16.65	13.36	19.72	64.44	44.27
La Libre Belgique	157.68	35.88	29.10	26.36	88.23	52.41
Le Soir	109.13	37.26	24.01	21.89	29.63	22.93
VTM	590.13	342.83	322.22	245.10	157.62	101.20
VRT	525.07	261.50	272.60	235.93	54.15	75.48
RTBF	643.50	395.86	357.00	303.61	104.46	106.92
RTL	649.50	360.48	307.13	299.28	162.47	133.52
mean	346.51	173.72	157.84	139.57	85.90	68.70

Note: reported are increases in Log Likelihood for models with daily (or weekly) attention for each issue in a medium as the dependent variable and lagged values for all media as independent variables compared to models that only include the own lagged value of the medium.

type with models with different type outlets as independent variables. Decreases in the Akaike Info Criterion compared to a model with only the lagged dependent variable included as a predictor allow for a good comparison between those models. Table 4 presents the results. The first remarkable finding is the difference between newspapers and television channels when influencing other outlets from the same type. Yesterday's news on other television channels strongly influences today's television news, with only one out of twelve coefficients from the analyses being insignificant. Mean z-values and model improvement are consistent with this finding.

For newspapers, a different pattern results. While stable in their coverage (large influence of lagged dependent variable, as in Table 2), other newspapers have only limited influence on the agenda of a newspaper. Out of the 20 coefficients, 15 are insignificant or even negative. Considerable cross-type influences strongly support the expectation that newspapers influence TV more than vice versa. As Table 4 shows, all 20 coefficients tapping newspaper's influence on TV are significant at a .001 level, with only 9 for the reversed relationship. However, for TV's influence on newspapers, only 3 coefficients are not significant. Mean z-values confirm that newspapers have an influence on television and vice versa, but the first relationship is significantly stronger (8.28 compared to 3.51; t -value = 5.757; $p < .001$; one-tailed). The considerably better improvement of model fit that occurred when predicting television coverage based on newspaper coverage instead of the other way around confirms this picture, offering strong support for H2.

H3 predicted a smaller influence from other-language media compared to same-language media. The results, again presented in Table 4, support the hypothesis: same-language influences are stronger than

TABLE 4
*Comparing Influences of Newspapers and Television Channels
and Influences of Flemish and French-speaking outlets*

	Newspaper				Television			
	<.001	<.01	<.05	n.s.	<.001	<.01	<.05	n.s.
Newspaper								
Coefficients	2	1	2	15	20	0	0	0
Mean z-value		-0.30				8.28		
Mean model improvement		43.14				815.09		
Television								
Coefficients	9	7	1	3	6	3	2	1
Mean z-value		3.51				7.30		
Mean model improvement		245.29				640.54		

Note: reported are significance levels of individual coefficients and mean z-values for analyses explaining current values of a medium by its lagged value and lagged values of other media (coefficient for own lagged value not included in count), split for the various combinations (newspaper-newspaper; television-television; newspaper-television and television-newspaper). Mean model improvement reports mean decrease in score on Akaike Info Criterion (AIC) when adding lagged dependent variables of all media from a certain type to a model only including the lagged dependent variable as a dependent variable. N.s. = not significant, also including negative (significant) coefficients.

	Flemish				French			
	<.001	<.01	<.05	n.s.	<.001	<.01	<.05	n.s.
Flemish								
Coefficients	14	2	1	3	11	0	3	6
Mean z-value		6.36				3.81		
Mean model improvement		516.37				482.34		
French								
Coefficients	5	7	1	7	7	2	0	3
Mean z-value		2.03				6.32		
Mean model improvement		283.21				546.47		

Note: reported are significance levels of individual coefficients and mean z-values for analyses explaining current values of a medium by its lagged value and lagged values of other media (coefficient for own lagged value not included in count), split for the various combinations (Flemish-Flemish; French-French; Flemish-French and French-Flemish). Mean model improvement reports mean decrease in score on Akaike Info Criterion (AIC) when adding lagged dependent variables of all media from a certain type to a model only including the lagged dependent variable as a dependent variable. N.s. = not significant, also including negative (significant) coefficients.

other-language influences. The difference between the mean z-value of Flemish-Flemish and Flemish-French is significant (t -value=1.997; p =.027; one-tailed). The same goes for the difference between French-Flemish and French-French (t -value=1.949; p =.035; one-tailed). However, the language barrier does not eliminate all influence: 13 of 20 coefficients

TABLE 5

Comparing Influences for Exogenous and Endogenous Issues and Influences in Election Campaigns and during Routine Time Politics

	<.001	<.01	<.05	n.s.	Mean correlation
Exogenous					
Coefficients	29	6	7	30	.36
Mean z-value			2.66		
Mean model improvement			296.74		
Endogenous					
Coefficients	31	6	6	29	.31
Mean z-value			3.43		
Mean model improvement			401.60		

Note: reported are significance levels and mean z-values for analyses explaining current values of a medium by its own lagged value and lagged values from other media (coefficient for own lagged value not included in count). Data file is split in exogenous (N=25,030) and endogenous (N=37,545) issues. Mean model improvement reports mean decrease in score on Akaike Info Criterion (AIC) compared with a model only including the lagged dependent variable as a dependent variable. N.s. = not significant, also including negative (significant) coefficients.

	<.001	<.01	<.05	n.s.	Mean correlation
Election Campaign					
Coefficients	0	2	7	63	.39
Mean z-value			0.64		
Mean model improvement			6.91		
Routine Times					
Coefficients	37	10	4	21	.36
Mean z-value			4.42		
Mean model improvement			664.19		

Note: reported are significance levels and mean z-values for analyses explaining current values of a medium by its own lagged value and lagged values from other media (coefficient for own lagged value not included in count). Data file is split for times of national election campaigns (one month before election; N=1,100) and other (N=61,475) issues. Mean model improvement reports mean decrease in score on Akaike Info Criterion (AIC) compared with a model only including the lagged dependent variable as a dependent variable. N.s. = not significant, also including negative (significant) coefficients.

addressing the influence of French-speaking outlets on Flemish media are significant, as are 14 of 20 indicating the reverse influence.

H4 posits that the size of intermedia agenda-setting effects is contingent upon the type of issue under consideration. Effects were expected to be stronger for endogenous issues compared to exogenous issues. Table 5 compares results from an analysis including exogenous issues with a similar analysis for endogenous issues.

Comparing significance levels of coefficients indicates differences that go in the expected direction. More significant coefficients for endogenous issues occurred at the highest (.001) level (31 compared to 29). Furthermore, the difference in mean z-values (2.66 for exogenous issues compared to 3.43 for endogenous issues) is in the expected direc-

tion and approaches significance (paired t -test=1.597; p =.057; one-tailed test). Also mean model improvement (over 100 points more for endogenous issues) offers support for the first part of **H4**: intermedia agenda setting is slightly larger for endogenous issues.

The second part of **H4** was also confirmed, with less divergence in attention for exogenous issues across outlets. This indeed is the case: for endogenous issues the mean correlation is .31, compared to the mean correlation for exogenous issues at .36. This difference is significant at a .001-level (paired t -test = 6.486; p <.001; one-tailed).

H5 posits less intermedia agenda setting during the campaign than during routine times but more agenda convergence during the campaign. Confirmation of the first part requires fewer significant coefficients for an analysis covering only election times than for analyses covering non-election times. Furthermore, the mean z -value and model improvement should be lower. Confirmation of the second part requires higher contemporaneous correlation between the agendas of the various outlets during election campaigns compared to routine times. Again, the data file was split to conduct an analysis for attention for issues during the month before a national election and an analysis for all other dates. The results, also presented in Table 5, confirm these expectations. Though standard errors for coefficients in a relatively small dataset ($N=1,100$ for the election campaign) are comparatively large and consequently likely to yield significant results, the differences between the two analyses are too large to be a coincidence. During election campaigns, there is hardly any intermedia agenda setting: only 9 out of the 72 coefficients are significant, the mean z -value is only .64 and the mean model improvement compared to a model with only a lagged dependent variable as exogenous variable is negligible. In contrast, during routine time 51 coefficients are significant at a .05-level (and 37 at a .001-level), the mean z -value is 4.42 and model improvement is on average 574 points. The difference in z -values is significant at the .001-level (t -test=7.032; p <.001; one-tailed). Additionally, the contemporaneous correlation between the various media outlets is larger during election campaigns (r = .39) compared to routine times (r = .36), which is a small, but significant difference (paired t -test=4.038; p <.001; one-tailed).

This paper has explored intermedia agenda setting on an unprecedented scale. Considering the daily attention for all issues in nine Belgian media outlets for eight years and covering two entire electoral cycles offered ample opportunities to test hypotheses about the contingency of intermedia agenda-setting effects.

Convincing support was found for short-term effects to be stronger than long-term. In their struggle for audiences, media outlets closely monitor each other and follow changes in attention other media pay to issues mainly in the short run. Intermedia agenda setting is not, like public agenda setting and to a lesser extent political agenda setting, a matter of a slow and gradual adjustment of agendas. It is an immediate and stochastic process.

Conclusion and Discussion

The level of intermedia agenda setting is contingent upon medium characteristics. Confirming previous studies, newspapers have a larger influence on TV than the other way around. Additionally, evidence indicates that language poses a barrier to agenda-setting effects and reduces (though not suppresses) these effects. It is impossible to assert what part of this difference can be attributed to real *language* barriers and what part is a reflection of a different regional political *reality*. This finding has greater applicability than for a bilingual country like Belgium and at least calls for additional research in other countries. Would similar results occur when looking at the expanding minority media industry (mainly Spanish) in the United States? Moreover, in an increasingly global media system with media outlets issued in different languages being active on the same international market, the results show that media may imitate each other across language barriers.

Support was also found for the idea that issue characteristics matter for intermedia agenda setting. Intermedia agenda-setting effects for endogenous issues are larger than for exogenous issues and we find more agenda convergence for exogenous issues. For issues that come up from outside the realm of institutional politics and are more driven by newsworthy "real-world" events, media turn to the same extra-media sources and produce more similar agendas.

Finally, compelling differences were found between election campaigns and routine times. Intermedia agenda-setting dynamics differ during election times and media are more likely to closely follow political actors instead of each other. The electoral cycle also influences intermedia agenda-setting dynamics. When focussing more on the political realm during elections, media tend to pay less attention to each other and influences between them largely disappear. However, because they all direct their attention in the same direction, the result is greater convergence in reporting.

One important reservation regarding the findings of strong intermedia influence is in order: real-world cues and other agendas that might be part of the mutual relationship entanglement were not taken into account. If an event of any type takes place and is picked up by the evening broadcast and also by the next morning's newspapers, this does not necessarily mean that without last night's television coverage newspapers would not do the same. However, earlier coverage by other outlets increases the likelihood that the event will be covered. Previous research has shown that media are only guided to a limited extent by real world cues and determine their own agendas to a large extent;²⁴ there is no reason to believe that is not the case here as well.

A final remark is in order about the research period (1993-2000) this study covers and the conclusions that can be drawn about present day intermedia agenda-setting effects. These intermedia agenda-setting effects were analyzed in a time when the Internet was for most Belgians not an important news source. The boom of Internet news media after 2000 has probably not changed the dynamics of the process, but it certainly has speeded up the imitative processes. The study design also represents a departure from increasingly common 24-hour news cycles.

Current news cycles might go much faster. Newspapers and TV stations all have their news Web sites that are constantly updated; weblogs may also inject a new news stream in the process. To grasp those frenetic dynamics one would need an even more time-dense design with several measuring points during a single day and an even larger array of news media. This is a serious challenge for subsequent intermedia agenda-setting studies.

This paper offers a plea to move away from “across-the-board” studies and consider possible factors that function as moderators of intermedia agenda-setting processes. The agenda-setting theory as a whole has indeed moved forward from the original studies showing that there *is* an effect from the media on the public and on politics, to studies that chart the specific *conditions* under which mass media coverage affects the public’s and politics’ priorities. Such contingencies in the intermedia agenda-setting process have hardly been tackled. Interestingly, the dynamics and conditions of intermedia agenda setting are not identical as for both other types of agenda setting; the time lag, for example, is much shorter. However, this study shows that intermedia agenda setting is also a contingent process: sometimes it happens, some times it does not (or less). Focusing on the contingency of the process enhances understanding of when, how, and why media tend to follow each other. It helps us to come closer to the answers of the underlying questions of how issue attention rises and falls and how media agendas are shaped.

Appendix and Notes follow.

APPENDIX

Descriptive Statistics Media Variables

	N	Mean	sd	Min	Max
De Morgen	62600	0.19	0.47	0	11
Het Laatste Nieuws	62600	0.14	0.40	0	7
Standaard	62600	0.24	0.52	0	6
La Libre Belgique	62600	0.34	0.69	0	10
Le Soir	62600	0.33	0.67	0	8
VTM	62600	0.37	0.87	0	15
VRT	62600	0.33	0.76	0	12
RTBF	62600	0.32	0.78	0	20
RTL	62600	0.31	0.81	0	22

Correlation Matrix Media Variables

	De Morgen	Het Laatste Nieuws	Stan- daard	La Libre Belgique	Le Soir	VTM	VRT	RTBF	RTL
De Morgen	1.00								
Het Laatste Nieuws	0.25	1.00							
Standaard	0.37	0.25	1.00						
La Libre Belgique	0.33	0.22	0.35	1.00					
Le Soir	0.34	0.25	0.37	0.45	1.00				
VTM	0.17	0.25	0.18	0.15	0.16	1.00			
VRT	0.18	0.23	0.20	0.16	0.17	0.71	1.00		
RTBF	0.17	0.19	0.19	0.18	0.19	0.48	0.48	1.00	
RTL	0.15	0.21	0.16	0.16	0.17	0.51	0.48	0.70	1.00

NOTES

1. James W. Dearing and Everett M. Rogers, *Communication Concepts 6: Agenda-Setting*, ed. Steven H. Chaffee (Thousand Oaks, CA: Sage, 1996).

2. Dearing and Rogers, *Communication Concepts 6: Agenda-Setting*, 33.

3. Maxwell McCombs, *Setting the Agenda: The Mass Media and Public Opinion* (Cambridge: Polity Press, 2004), 113; David Weaver, Maxwell McCombs, and Donald L. Shaw, "Agenda-Setting Research: Issues, Attributes, and Influences," in *Handbook of Political Communication Research*, ed. Lynda L. Kaid (Mahwah, NJ: Lawrence Erlbaum Associates, 2004), 269.

4. Rainer Mathes and Barbara Pfetsch, "The Role of the Alternative Press in the Agenda-Building Process: Spill-over Effects and Media Opinion Leadership" *European Journal of Communication* 6 (spring 1991): 33-62.

5. Thomas Boyle, "Intermedia Agenda-Setting in the 1996 Presidential Election," *Journalism & Mass Communication Quarterly* 78 (spring 2001): 26-44; Michael Breen, "A Cook, a Cardinal, His Priests and the Press: Deviance as a Trigger for Intermedia Agenda Setting," *Journalism & Mass Communication Quarterly* 74 (summer 1997): 348-56; Guy Golan, "Intermedia Agendasetting and Global News Coverage," *Journalism Studies* 7 (spring 2006): 323-33; Byoungkwan Lee, Karen M. Lancendorfer, and Ki Jung Lee, "Agenda-Setting and the Internet: The Intermedia Influence of Internet Bulletin Boards on Newspaper Coverage of the 2000 General Election in South Korea," *Asian Journal of Communication* 15 (spring 2005): 57-71; Esteban Lopez-Escobar, Juan Pablo Llamas, Maxwell McCombs, and Federico Rey Lenon, "Two Levels of Agenda Setting among Advertising and News in the 1995 Spanish Elections," *Political Communication* 15 (summer 1998): 225-38; Mathes and Pfetsch, "The Role of the Alternative Press in the Agenda-Building Process"; Stephen Reese and Lucig H. Danielian, "Intermedia Influence and the Drug Issue: Converging on Cocaine," in *Communication Campaigns About Drugs: Government, Media, and the Public*, ed. Pamela Shoemaker (Hillsdale NJ: Lawrence Erlbaum Associates, 1989), 29-45; Marilyn Roberts and Maxwell McCombs, "Agenda Setting and Political Advertising: Origins of the News Agenda," *Political Communication* 11 (autumn 1994): 249-62; Craig Trumbo, "Longitudinal Modeling of Public Issues: An Application of the Agenda-Setting Process to the Issue of Global Warming," *Journalism & Mass Communication Monographs* 152 (spring 1995): 1-57.

6. See, for example, Jochen Peter, "Country Characteristics as Contingent Conditions of Agenda Setting: The Moderating Influence of Polarized Elite Opinion," *Communication Research* 30 (winter 2003): 683-712; Dominic L. Lasorsa and Wayne Wanta, "Effects of Personal, Interpersonal and Media Experiences on Issue Salience," *Journalism Quarterly* 67 (winter 1990): 804-13; Randy E. Miller and Wayne Wanta, "Race as a Variable in Agenda Setting," *Journalism & Mass Communication Quarterly* 73 (winter 1996): 913-25; Wayne Wanta and Yu-Wei Hu, "The Effects of Credibility, Reliance, and Exposure on Media Agenda-Setting: A

Path Analysis Model," *Journalism Quarterly* 71 (spring 1994): 90-98.

7. For a similar argument on political agenda setting, see Stefaan Walgrave and Peter Van Aelst, "The Contingency of the Mass Media's Political Agenda-Setting Power. Toward a Preliminary Theory," *Journal of Communication* 56 (spring 2006): 88-109.

8. Golan, "Intermedia Agendasetting and Global News Coverage"; Reese and Danielian, "Intermedia Influence and the Drugs Issue."

9. Lee, Lancendorfer, and Lee, "Agenda-Setting and the Internet"; Lopez-Escobar et al., "Two Levels of Agenda Setting among Advertising and News in the 1995 Spanish Elections"; Mathes and Pfetsch, "The Role of the Alternative Press in the Agenda-Building Process."

10. Other-language newspapers are most of the time available on the other side of the language border, although not everywhere. TV stations are available over air across the language border although only close to the border. A large segment of the other-language TV-stations are available via cable. The official agency measuring viewership and readership in Belgium (www.cim.be) does not even measure TV audiences across the language border; they only assess the share of Dutch-speaking people watching Dutch-speaking TV and the same applies to the French-speaking public and TV. Consequently, we cannot reliably estimate the cross-linguistic broadcast patterns. CIM studies of newspaper readership suggests that about 2%-4% of the readers of the Belgian newspapers come from across the language border.

11. This substantial correlation between outlets is confirmed in the Appendix. Note that the size of the correlation is to a large extent determined by type of outlet (newspaper versus television) and only in second instance by language.

12. Mathes and Pfetsch, "The Role of the Alternative Press in the Agenda-Building Process."

13. Harold Zucker, "The Variable Nature of News Media Influence," in *Communication Yearbook*, ed. B.D. Rubin (New Brunswick NJ: Transaction Books, 1978), 154-72.

14. Walgrave and Van Aelst, "The Contingency of the Mass Media's Political Agenda Setting Power."

15. Karl Rosengren, "International News: Methods, Data and Theory," *Journal of Peace Research* 11 (summer 1974): 145-56.

16. Walgrave and Van Aelst, "The Contingency of the Mass Media's Political Agenda Setting Power."

17. The reason for not coding newspapers on Tuesdays and Thursdays is a purely pragmatic one and due to the limited availability of resources.

18. We substituted the Tuesday and Thursday values by taking the mean score of the previous and subsequent day. This, of course, might affect the outcomes of our analysis in several ways. Foremost, it increases the autoregressive (t-1) parameter for the newspapers, since for imputation of part of the data, the previous day is used. To test whether this affects the other findings, we replicated all analyses presented in this paper on a subset excluding all cases that have missing values as either dependent or independent variables. For the newspapers the analyses do not include days with missing data as dependent (Tuesday and Thursday)

or as independent (Wednesday and Friday) variables. For the television channels the analyses do not include days with missing data as independent variables (Tuesday and Thursday). Overall, this results in $N=20,900$ cases for newspapers and $N=41,750$ for television channels. While these analyses indeed show considerably lower influences of the autoregressive, lagged values for newspapers, all other results do not differ substantially from those for the whole dataset presented in the results section. This means that we reach exactly the same conclusions regarding our hypotheses with and without the imputation of missing values. A replication of tables 2-7 for the analyses excluding missing values are available at the first author's website: www.rensvliegenthart.com.

19. J. Scott Long, *Regression Models for Categorical and Limited Dependent Variables* (Thousand Oaks, CA: Sage, 1997). For good examples of applications in the realm of communication science, see Diana C. Mutz and Jeffery J. Mondak, "The Workplace as a Context for Cross-Cutting Political Discourse," *Journal of Politics* 68 (spring 2006): 140-55; Donald L. Diefenbach and Mark D. West, "Violent Crime and Poisson Regression: A Measure and a Method for Cultivation Analysis," *Journal of Broadcasting & Electronic Media* 45 (autumn 2001): 432-45.

20. G. S. Maddala and Shaowen Wu, "A Comparative Study of Unit Root Tests with Panel Data and a New Simple Test," *Oxford Bulletin of Economics and Statistics* 61 (winter 1999): 631-52.

21. Bernard Kittel, "Sense and Sensitivity in Pooled Analysis of Political Data," *European Journal of Political Research* 35 (spring 1999): 225-53; Sven E. Wilson and Daniel M. Butler, "A Lot More to Do: The Sensitivity of Time-Series Cross-Section Analyses to Simple Alternative Specifications," *Political Analysis* 15 (summer 2007): 101-23.

22. William H. Greene, *Econometric Analysis* (Prentice Hall Upper Saddle River, NJ, 1997).

23. Greene, *Econometric Analysis*.

24. G. Ray Funkhouser, "The Issues of the Sixties: An Exploratory Study in the Dynamics of Public Opinion," *Public Opinion Quarterly* 37 (spring 1973): 62-75; Rens Vliegenthart and Hajo G. Boomgaarden, "Real-World Indicators and the Coverage of Immigration and the Integration of Minorities in Dutch Newspapers," *European Journal of Communication* 22 (autumn 2007): 293-314.