Inter-coder reliability in the TV News Archive: A Report on Coding Issues, Countries and Actors in Belgian television news

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A Report on Coding Issues, Countries and Actors in Belgian television news

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Abstract

The News Archive is a continuous television news monitoring service that exists since 2003. All flagship newscasts of both the most important commercial (vtm) and public (Eén) broadcaster of Flanders (Belgium) are daily archived and coded. More specifically, information about the countries, issues and actors involved in news items are coded and stored together with the actual video footage of the news item. The main aim of the News Archive is to monitor the news and to report to and inform the media policy, and to feed the public and policy debate about the news content. Besides this, it also presents the scholarly community with an easy accessible database that allows for the quick retrieval of news items dealing with certain issues, actors or countries. As such more specific secondary coding can be executed. Notes on the end of this report present a non-exhaustive reference list of reports, papers and book chapters based on the data of the News Archive.

This report briefly introduces the archive and focuses on the training procedures of coders and inter coder reliability test results. Inter coder results show that inter coder values (Krippendorf α) of actors and countries are highly satisfactory. For issues, only major issue categories produce reliable results. These findings are discussed in light of maintaining a continuous census television news dataset.

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www.nieuwsarchief.be

Introduction

The News Archive is a continuous television news monitoring service that exists since 2003 and it is financed by a project grant of the Flemish Government (Minister of Media). In the period 2012-2015 it was hosted by the Media Policy Research Centre (steunpunt Media), a consortium including research groups from the four Flemish (Belgian) universities in which research on news and mass media is done. During the period 2003-2005 the archive was financed by the fund Max Wildiers (FWO) and since the end of 2005 it is financed by a project grant of the Flemish Government (Minister of Media).

Since 2003, all flagship newscasts (population data) of both the most important commercial (vtm) and public (Eén) broadcaster of Flanders (Belgium) are daily archived and coded. More specifically, the database stores the raw video material and coded information about the countries, issues and actors that are involved in the newscasts. The main aim of the News Archive is to monitor the news and to report to and inform the media policy, and to feed the public and policy debate about the news content. Besides this, it also presents the scholarly community with an easily accessible database that allows for the quick retrieval of news items dealing with certain issues, actors or countries. As such more specific secondary coding can be executed.

Training coders

On average twelve active job students (coders) watch the newscasts in detail and fill in a standardized coding form. The coders are bachelor or master students of the Faculty of Political and Social Science of the University of Antwerp. For every coded newscast, the students receive a financial compensation.

The project coordinator of the Media Policy Research Centre, also member of the research group Media, Movements and Politics (M^2P), is responsible for the training of the coders and gives them feedback on a regular basis. First, each coder gets an individual training. During this training the code scheme is explained and the issue categories are shed light upon. After that, the student codes a first newscast as an exercise. In a next step, the trainer reviews this coded newscasts and provides the candidate coder with detailed feedback on the coding of the full newscasts. When a coder meets the standards, he/she can start coding newscasts for the News Archive. As a standard procedure from the start of the project in 2003, every newscast coded undergoes a quick routine check, during which the trainer verifies the quality of the coded material for the most important variables, such as issue codes, actors, date and medium. Since 2011, regularly inter coder reliability tests are performed. In 2012 a first formal report on reliability of the coding of The News Archive was conducted. See page 9 for the results 2012. This report is the second formal report (results 2014).

Testing coders

For any researcher willing to report meaningful results when using a dataset based on content analysis, inter coder reliability is key. Content analysis data most of the time is generated by trained human coders. They watch, hear or read some sort of content, interpret the content, and have to

categorize the content following a particular code scheme. As Hayes and Krippendorff (2007)[1] argue "*Conclusions from such data can be trusted only after demonstrating their reliability.*" In short, inter coder reliability tests deal with the question of how sure one can be that the trends observed in a dataset are based on real differences in an observable empirical world or due to mistakes, inattentiveness or outright incompetence of coders.

In the next several paragraphs, we present inter coder reliability results for the most important variables used in the *News Archive*. We test inter coder reliability for countries, actors and issues. How did we proceed? In a nutshell, seven coders coded five newscasts. One coder coded four instead of five newscasts. Table 1 presents the distribution of coders over newscasts. In total, 544 news items were analyzed by seven trained student coders.

Table 1: Distribution of coders over newscasts

	4/7/2014	10/7/2014	16/7/2014	22/7/2014	28/7/2014
	Friday	Thursday	Wednesday	Tuesday	Monday
Coder 1	X	X	X	X	X
Coder 2	X	X	X	X	X
Coder 3	X	X	X	X	X
Coder 4	X	X	X	X	X
Coder 5	X	X		X	X
Coder 6	X	X	X	X	X
Coder 7	X	X	X	X	X

In order to calculate inter coder reliability scores we relied on the KALPHA macro for SPSS provided by Hayes[2], which calculates Krippendorff Alpha values (Hayes & Krippendorff, 2007). Krippendorff α is a superior measure for reliability, since it takes into account the probability for a coder to code correctly by chance, and takes into account the measurement level of the checked variable. Generally, when the α-value for a certain variable is above ,800 the inter coder reliability can be considered sufficiently high. However, a researcher might want to raise this standard for variables that are extremely simple or straightforward. For example, when coding the sex of a person based on a picture, one might rightly expect reliability score to be much higher than .80. As a lower bound value, it is common to use α = ,667. Alpha values below this lower bound should be discarded. Alpha values only slightly above the lower bound are only tentative, and at least some background for the variable, coders and/or coding process should be provided when reporting analyses on this variable.

Countries

In the code scheme of the News Archive coders can list up to eight different countries that were involved in each news item by clicking a dropdown menu and selecting the appropriate country in the list. Based on the countries involved in a news item, one can decide whether a news item is domestic news (only Belgium involved), whether it is foreign or international news (only one foreign country or several other countries or an international institution involved) or whether the news item has a mixed, hybrid form (combination of domestic and foreign). Here we present reliability results

[1] Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. Communication Methods and Measures, 1, 77-89.
[2] http://afhayes.com/spss-sas-and-mplus-macros-and-code.html

for (1) the reliability of the number of countries coders distill out of a news item (2) the reliability of three specific countries chosen out of the country list that were frequently mentioned and (3) the reliability of the nominal variable "domestic, mixed or foreign news".

Table 2: Inter coder reliability results for country variables

	KALPHA	LL95%	UL95%	alphamin70
Number of countries	0.811	0.781	0.839	0.000
Belgium	0.907	0.806	0.979	0.002
USA	0.847	0.613	1.00	0.088
France	0.872	0.671	1.00	0.027
Foreign news	0.907	0.806	0.979	0.000
Domestic news	0.867	0.755	0.959	0.002
Mixed news	0.754	0.573	0.909	0.283
Domestic - Mixed - Foreign	0.913	0.864	0.953	0.000

Results show that coders code countries well. Both the number of countries coders distill (α = .811) the recognition of specific countries, as well as the umbrella "domestic-mixed-foreign" news variable produce highly reliable results. Krippendorff α for "Belgium" has a value of .907 and has nearly zero chances of ending up below .700 according to the bootstrap applied[3]. The variable "domestic news", that is, news that only involves Belgium and no other countries, has a α value of .867. The mixed news also produce very reliable results (α = .754), however the coding proves to be a little less reliable then the other country variables. Apparently, news items that combine foreign with domestic elements are somewhat more difficult to code. This is not unlogical. In the foreign news literature such a hybrid news format is known as "domesticated" news (Clausen, 2004)[4]. Typical examples of domesticated news items are for instance stories created when an earthquake hits a foreign country (for example Turkey). Journalists then focus on how the Turkish community in Belgium deals with the earthquake, or, interview Belgian tourists in Turkey or the Belgian rescue team that is building shelters. It seems that not all coders do equally well listing countries when confronted with this kind of news reports.

Issues

How does the News Archive deals with issues in the news? First, coders need to fill in two open text fields. In the first text field they have to summarize the news item. Often, capturing the introducing lines of the news anchor already provides a sufficient account of the subject of the news item, since (s)he usually starts with a short summary of the item. If necessary, additional information is added. In the other text field, the coder is instructed to summarize the news items by giving as many key words as possible. Next, up to three closed issue codes can be assigned to a single news item. The issue list contains 231 minor topic codes which can be combined to major issue categories. The starting point

[3] Hayes' macro for SPSS provides the possibility to estimate the accuracy of the krippendorff α obtained, by bootstrapping, Using confidence intervals, the user gets an idea of how likely it is that the variable tested would drop below (or rise above) certain thresholds for a comparable dataset, as such extending the significance of the reliability measure beyond the actually tested data.

[4] Clausen, L. (2004) Localizing the Global: "Domestication" Processes in International News Production. Media, Culture & Society, 26, 1, 25-44.

of the issue list was the EUROVOC thesaurus of the European Union, a very encompassing codebook that categorizes the policy domains of the EU. The starting point of the issue list was the EUROVOC thesaurus of the European Union, a codebook that categorizes the policy domains of the EU. This EUROVOC codebook was adapted to match the Belgian context and fit television news themes.

The possibility to code up to three issue codes (in random order) complicates the calculation of a reliability score. To make this possible, we computed dummy variables for a randomly chosen sample of respectively minor and (the collapsed) major topic codes. Results are presented in table 3. The first column shows the alpha values for some of the most prominent major topic codes in our sample. The second column shows Alpha values for some of the most prominent minor topic codes in the sample.

Table 3: Reliability scores on major and minor issue codes.

Major Topics	KALPHA	Minor Topics	KALPHA
Royalty	0,873	Popular concerts and festivals	0,904
Sport	0,862	European summit	0,854
Culture	0,862	Religious traditions and events	0,813
Agriculture	0,799	Health policy	0,764
Religion	0,795	Organization sports event	0,756
Politics	0,771	Organization of government	0,735
Courts and Criminality	0,760	Trials and processes	0,704
Military	0,747	Prices, price change	0,704
Mobility	0,731	Taxes	0,695
Energy	0,729	Murder	0,636
Social Affairs	0,721	traffic accidents	0,634
Economy and Work	0,679	physical planning	0,575
Disasters	0,674	internal armed conflict	0,478
Nature and environment	0,668	Nature disasters and consequences	0,384

For the specific (minor) topics it appears that there are some problems. Some of the specific topics codes do not seem to be coded in a reliable way: some of the minor topic tested ended with an alpha value below .60. Several reasons for this can be addressed. To start with, the large amount of specific topic codes makes it impossible for a continuous project like this to train coders so long as it would be necessary to get a perfect grip on each one of these subtopics. The News Archive rather focuses on training more essential elements, like getting the large (most commonly used) topic categories right. We need to add that recoding the original topic code variable into dichotomous topic variables does not do complete right to the original variable. Especially in case of multi-topical news items, coders often have to choose between (many) more than three topics that are relatively equal in perceived importance, which are in most cases also situated within the same overarching major topic category. Situations in which coders forget to mention a domain, or enter a completely different issue code that actually does not apply, are actually very rare. Much of the low alpha's in other words is a consequence of specific codes within an issue domain that are hard to distinguish. Researchers using the News Archive should take this into account when working with the minor topic categories. For advice on dealing with minor topic codes of the News Archive, see conclusion.

On the major issue level, results indeed prove to be much better. Nearly all fourteen issues have alpha values above .670; eleven are above .70, three are above .80. The News Archive trainers have

taken these results into account designing current and future coder trainings, adding more focus to demarcating some close-to-problematic topics better.

Actors

The code scheme of the *News Archive* allows coders to list up to twelve actors that are involved in the news item. Every news source's name (open text field), function (open text field), gender (button) and speaking time (open numeric field) have to be completed. In a next step, the *News Archive* coordinator cleans the name field (makes sure that an actor name is correctly written, in line with earlier appearances in the archive) and recodes the function of the actor into a closed typology of 60 unique actor functions.

In this report we present results on the reliability of the number of actors that are distilled out of a news item, and also distinguish between the number of speaking actors and actors that only get mentioned (or attributed a statement to). Next, we look at the closed functions actors get assigned. To do so, we have a thousand actors double coded. But we also look at our five newscasts and compare between their coding. Table 4 presents the results.

Table 4: Inter coder reliability results for actor variables

	KALPHA
Number of actors	0,836
Number of speaking actors	0,936
Number of actors mentioned	0,798
Closed Actor Typology	0,926

We distinguished between speaking actors and actors that were merely mentioned, as we expected the latter category would be more easily overlooked by coders. The α-values for the general amount of actors (α = ,836) and certainly those for the amount of speaking actors (α = ,936) are satisfactory even if one applies the most strict criteria. Almost all coders distill the same amount of speaking actors out of a news item. Also satisfactory is the reliability score for actors that are merely mentioned. The α-value is ,798. Finally, we should draw attention to an element in the coding procedure that can cause lower reliability. That is the instruction the coders get during training that if they would doubt whether a certain person is an actor or not, they should go for the safe way and code the actor, even if they doubt, of course providing the necessary information to make it possible for the coordinator to decide. In practice, the wrongly coded actors are deleted by the News Archive coordinator.

What about the functions assigned to actors? For coding actors, finding and recognizing them is one, recoding them into a general typology is the next step. In order to test this function recoding phase, we make use of two tests. We test (1) whether a particular actor type/function is involved in the newscast and recoded as such across the seven coders, (2) we test the general recoding procedure by drawing a sample (N=1000) out of the entire (already coded) *News Archive* database and let a trained coder double-code this sample.

Results show that recoding actors produces highly satisfactory inter coder reliability results. In table 4, the general reliability score of the nominal function typology reaches a Krippendorf alpha value of .926. The reliability of the actor recoding is further illustrated in table 5. The first column reports

the alpha values for 10 actor functions. Stars behind the actor functions indicate that the category hosts by definition non-speaking actors. All α-values are situated between .712 and 1.000, showing that recoding open function descriptions is done highly reliably. Also, the more 'important' source categories many students of sourcing patterns in the news are interested in (politicians, civil society organizations, government institutions) score good.

Table 5: Reliability scores for specific actor functions

	KALPHA double coding	KALPHA Nine coders
Politician	0,994	0,985
Company***	0,926	0,831
Spokeperson civil society org.	0,962	0,990
Expert	0,908	0,990
Civil society organization***	0,951	0,763
Consumer	0,712	1,000
Government institution***	0,967	0,374
Medical expert	1.000	1,000
Participant	0,831	1,000
Man in the street	0,835	0,989

If one looks at the cross coder comparison, the results are also reliable, expect from 'government organization' (0.374). Some coders are stricter in coding organizations (e.g. government institution, museums, schools,…) over other coders. All other categories are above .7.

We have to mention that the multidimensionality of news sources guarantees mistakes. For example, an automobile factory worker who is wearing a union jacket gets interviewed during a strike. All of the next actor functions apply to this very same news source: he is a 'worker/employee', he is a 'participant in a protest event', and he is a union member, so also a 'civil society spokesperson'. All of these categories are correct classification of the actor, only are some categories more correct than others depending on the research question one has in mind. The scholar interested in social movements in the news would hope that the striking automobile factory worker would be classified as a "participant in a protest event", or, because of his union jacket, as a "civil society spokesperson". The scholar interested in occupations in the news, on the other hand, would prefer the employee-classification.

Conclusion

Coder reliability values are a matter of life and death for content analysis datasets (Riffe, Lacy & Fico, 2005)[5]. This report introduced the News Archive and presented results of inter coder reliability test. What is crucial about the News Archive data collection is that it is census data. All newscasts of every day of the most important commercial and public television station of Flanders (Belgium) are coded. As no specific research questions guide the News Archive data collection, its main purpose is indexing the news by means of a generic code scheme that accounts for issues, actors and countries. Together these three concepts allow scholars to perform directed searches in the database for news content they are interested in and which they might want to analyze with a specific research question in mind.

[5] Riffe, D., Lacy, S, Fico, F. (2005) Analyzing Media Messages: Using Quantitative Content Analysis in Research, Routledge: New York, p. 224

This reports tested how well the News Archive indexes the news. What did the tests learn us, and what kind of lessons can we draw of them?

- In general, inter coder reliability tests show that most of the variables are coded in a reliable way. Both for the number of actors (α = ,836) as for the number of countries (α = ,811) results are good. Coders understand the concepts explained to and practiced with them in the introducing sessions, and are able to extract these concepts out of raw news items.
- Based on the countries involved in the news, a very reliable 'domestic–mixed-foreign news' variable can be computed (α = ,913). Whereas domestic and foreign news items are highly reliably coded, the mixed category scored somewhat lower (α = ,754). Special attention will be paid in future training sessions on this mixed news category, in order to produce better results.
- For issues, especially major issue categories seem to be reliable (average α = ,762).
- On a lower level, the minor issue categories appear to be too fine grained to be reproduced perfectly given the limited possibility to give coders endless trainings. Some of the specific issues prove to be reliable as dichotomous variables whereas others do not. Some issues are more keen to mistakes because of multidimensionality than others. And some issues were so rare in our sample that α-values almost by definition were low, as soon as a single miss was noted. We suggest users of the News Archive to be careful when dealing with issues on a minor topic level. More specifically, we advise users of the archive to go by the following procedure when interested in very specific issues. In the open thematic text fields (summary + keywords) search with the SPSS needle-haystack function for any combination of words that fits the minor issue in which you are interested. The SPSS needle-haystack function will create a dummy variable that is 'one' if the news item fits the search term combination. Next, compute overlap between both the needle haystack and the original archive issue code. Finally, double code a sample of both the needle haystack dummy and the original News Archive topic code (along with several other non-related news items) according to see whether they fit the conception of the minor issue you are interested in. If one (or both) of the samples produce(s) reliable results, use the data without worries.
- Despite low intercoder results regarding minor topic codes, the News Archive will continue to code along minor topic code lines instead of using major topic codes directly. The reason is simple and straightforward. It is always better to aggregate, than to have no detailed information whatsoever.
- For actors, the recoding in a closed function typology produced highly reliable results (α = ,926). If one looks at the cross coder comparison, the results are also reliable, expect from 'government organization'.
- This was the second inter coder reliability report of the News Archive. Given the nature of the archive (indexing the news, composing a census database, feeding public debate, offering the scientific community with an easy manageable database to locate video material for secondary coding) transparency in data gathering and data quality is key. The explicit goal of the News Archive is to perform reliability tests on a systematic and structural basis, also in the future.

Table 4: Distribution of coders over newscasts

	5/09/2011	25/09/2012	19/09/2012	8/11/2012	9/11/2012	30/06/2012	31/07/2011
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Coder 1		X	X	X	X		X
Coder 2	X	X	X	X	X	X	X
Coder 3	X		X	X	X	X	X
Coder 4	X						X
Coder 5	X					X	X
Coder 6	X	X	X	X	X	X	X
Coder 7		X	X	X	X	X	
Coder 8						X	
Coder 9				X	X	X	

Table 5: Inter coder reliability results for country variables

	KALPHA	LL95%	UL95%	alphamin70
Number of countries	0.765	-	-	-
Belgium	0,919	0,813	1,00	0,000
USA	0,880	0,700	1,00	0,010
France	0,863	0,674	1,00	0,056
Foreign news	0,919	0,813	1,00	0,000
Domestic news	0,830	0,714	0,939	0,017
Mixed news	0,655	0,419	0,863	0,689
Domestic - Mixed - Foreign	0,815	0,739	0,885	0,000

Table 6: Reliability scores on major and minor issue codes.

Major Topics	KALPHA	Minor Topics	KALPHA
Agriculture	1	Pedosexuality	1
Royalty	1	Nature disasters and consequences	0,969
Sport	0,813	Popular concerts and festivals	0,863
Military	0,811	Traffic security	0,815
Economy and Work	0,803	Popular celebrity persons	0,741
Migration	0,799	Trials and processes	0,724
Disasters	0,793	Traffic accidents	0,688
Mobility	0,785	Criminality	0,643
Courts and Criminality	0,749	Elections	0,596
Politics	0,697	Prices, price change	0,576
Education	0,697	Religions	0,559
Celebrity	0,686	Organization and policy of specific companies	0,498
Culture	0,674	Dismissals	0,389
Energy	0,650	Consumer affairs	0,382
Social Affairs	0,637	Street violence and public order	0,362

Table 4: Inter coder reliability results for actor variables

	KALPHA	Avg. pairwise % agreement
Number of actors	0,821	61,28%
Number of speaking actors	0,949	87,88%
Number of actors mentioned	0,627	64,98%
Closed Actor Typology	0,867	87.40%

Table 5: Reliability scores for specific actor functions

	KALPHA double coding	KALPHA Nine coders
Politician	0,977	0,823
Company***	0,952	0,651
Spokeperson civil society org.	0,911	0,761
Expert	0,878	0,695
Civil society organization***	0,877	0,578
Consumer	0,862	0,258
Government institution***	0,861	0,223
Medical expert	0,748	0,530
Participant	0,712	0,211
Man in the street	0,701	0,601

Beckers, K. (2014). Het nieuws door de ogen van de financieel-economische expert. Available at http://www.steunpuntmedia.be/

De Smedt, J., Hooghe, M., and Walgrave, S. (2010). Franstalige politici in het Vlaamse televisienieuws: quantité négligeable?. Available at: http://www.steunpuntmedia.be/

De Smedt, J., Hooghe, M., & Walgrave, S. (2010). Regeringsdeelname en media-aandacht voor Nederlandstalige partijen en politici. Available at http://www.steunpuntmedia.be/

De Smedt, J., Hooghe, M., & Walgrave, S. (2011). Meest actieve parlementsleden nauwelijks in nieuws Vlaamse parlementsleden in de Vlaamse televisiejournaals. Available at http://www.steunpuntmedia.be/

De Smedt, J., Hooghe, M., & Walgrave, S. (2012). Continuïteit of trendbreuk? Nieuwsjaar 2011: terugkeer naar buitenlands nieuws. Available at http://www.steunpuntmedia.be/

De Smedt, J., Schipper, A., De Cock, R., d'Haenens, L., Reul, R., Ichau, E., Valcke, P., & Wauters, E. (2013). Slachtoffers in de media, ook slachtoffers van de media? Available at http://www.steunpuntmedia.be/

De Smedt, J., & Walgrave, S. (2014). Mediabonus voor CD&V in de campagne voor 25 mei 2014. Available at http://www.steunpuntmedia.be/

De Smedt, J., & Walgrave, S. (2015). Minder aandacht voor criminaliteit in de Vlaamse nieuwsmedia. Available at http://www.steunpuntmedia.be/

De Smedt, J., Wouters, R., Van den Bulck, H., Walgrave, S., De Ceunynck, T., Daniels, S., & Baets, M. (2015). Verkeersongevallen in de media. Available at http://www.steunpuntmedia.be/

De Swert, K. (2007). "Soft en Hard Nieuws als Kwaliteitskenmerken bij Televisienieuws. 'Soft and Hard News as Quality Measures of Television News'." Pp. 232 in *De Kwaliteit van het Nieuws 'The Quality of News'*, edited by M. Hooghe, K. D. Swert, and S. Walgrave. Leuven: Acco.

—. 2011. "Where is the Balance in the News? The Determinants of Balanced Coverage of Politcal News Sources in Television News." Department of Political Science, University of Antwerp, Antwerp.

De Swert, K., & Hooghe, M. (2010). "When Do Women Get a Voice? Explaining the Presence of Female News Sources in Belgian News Broadcasts (2003—5)." *European Journal of Communication* 25:69-84.

De Swert, K., & Wouters, R. (2011). "The coverage of China in Belgian television news: a case study on the impact of foreign correspondents on news content." *Chinese Journal of Communication* 4:331-347.

Epping, L., De Smedt, J., Walgrave, S., & Hooghe, M. (2013). Gemeenteraadsverkiezingen 2012: er werd vooral over de N-VA gesproken. Available at http://www.steunpuntmedia.be/

Hauttekeete, L. (2007). "Het fenomeen tabloidisering: van modewoord tot de creatie van een meetinstrument." *De kwaliteit van het nieuws. Kwaliteitsindicatoren voor televisienieuws*:57-70.

Hooghe, M., & De Swert, K. (2009). "Gender Model or Job Model?" *Media Report to Women* 37:13-21.

Hooghe, M., De Swert, K., & Walgrave, S. (2005). "Het leven zoals het is? Televisienieuws en onze kijk op de werkelijkheid." *status: published*.

—. 2007. *De Kwaliteit van het Nieuws. Kwaliteitsindicatoren voor televisienieuws*. Leuven: Acco.

Jacobs, J., & Hooghe, M. (2015). Spreekbuis van hun gemeenschap? Available at http://www.steunpuntmedia.be/

Jacobs, J., & Hooghe, M. (2014). Roldiversiteit op de Vlaamse en Franstalige Televisie. Available at http://www.steunpuntmedia.be/

Joye, S., & Biltereyst, D. (2007). "All quiet on the...? Een analyse van het buitenlandaanbod van VRT en VTM." *De kwaliteit van het nieuws. Kwaliteitsindicatoren voor televisienieuws.*:71-84.

Swert, K., Walgrave, S., Hooghe, M., Uce, V., & Hardy, A. (2008). "Het Vlaams Televisienieuws onder de loep. Een vergelijkend onderzoek 2003-2008." University of Antwerp, Antwerp.

Van Aelst, P. & De Swert, K. (2009). "Politics in the news: Do campaigns matter? A comparison of political news during election periods and routine periods in Flanders (Belgium)." *Communications* 34:149-168.

Van Den Bulck, H., Walgrave, S., & Schipper, A. (2013). Bronnenselectie in het economische nieuws op televisie. Available at: http://www.steunpuntmedia.be/

Vandenberghe, H., d'Haenens, L., & Van Gorp, B. (2014). Genderdiversiteit in de Vlaamse nieuwsmedia. Available at: http://www.steunpuntmedia.be/

Vos, D., De Smedt, J., Hooghe, M. & Walgrave, S. (2012). Nieuws voor de meerwaardezoeker. Available at: http://www.steunpuntmedia.be/

Walgrave, S., & De Swert, K. (2007a). "De 'kanseliersbonus' revisited. Over de dominante aanwezigheid van de regering en de premier in het TV-nieuws." in *Nieuws op Televisie. Televisiejournaals als venster op de wereld*, edited by M. Hooghe, K. De Swert, and S. Walgrave. Leuven: Acco.

—. 2007b. "TV-nieuws als rollercoaster: over thematische diversiteit, mediahypes en weggedrukte nieuwsthema's." *De kwaliteit van het nieuws. Kwaliteitsindicatoren voor televisienieuws.* Leuven: Acco.

Walgrave, S., De Swert, K., & Uce, V. (2007). "Betekent kwaliteit van het TV-nieuws ook veel kijkers? Of is het omgekeerd?". *De kwaliteit van het nieuws. Kwaliteitsindicatoren voor televisienieuws.* Leuven: Acco.

Wouters, R. (2013). "From the Street to the Screen: Characteristics of Protest Events as Determinants of Television News Coverage." *Mobilization: An International Journal* 18:83-104.

Wouters, R., De Swert, K., & Walgrave, S. (2009). "A Window on the World. The Status of Foreign News Coverage in the Media: Facts, Impact and Policy." Flemish Peace Institute, Brussels.

Wouters, R., Hooghe, M., De Smedt, J., & Walgrave, S. (2011). "Rood en groen op het scherm: de vakbonden in het Vlaamse tv-nieuws." *De Gids op Maatschappelijk Gebied: Blad met Mening (m/v)* 102:36-40.

Appendix: code scheme