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Implicit frames of CSR: The interplay between the news media, organizational PR, and the public

Linda van den Heijkant*, Rens Vliegenthart

Amsterdam School of Communication Research (ASCoR), University of Amsterdam, Nieuwe Achtergracht 166, 1018 WV Amsterdam, The Netherlands



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ABSTRACT

This study focuses on the implicit framing of Corporate Social Responsibility (CSR) in the interplay between the news media, organizational public relations (PR), and the public. The aim of the study is to investigate the multidirectional causal relationships between these three domains in terms of the use of implicit frames. An automated content analysis of Dutch newspaper articles and organizational press releases is employed. In addition, Google Trends data is examined in order to determine implicit frames of CSR among the public. Monthly level Vector Autoregression (VAR) analyses show different effects across frames. Overall, in line with our expectations, results show positive effects of the news media on the public and of organizational PR on the news media. Moreover, contrary to expectations, we found a negative effect of the public on the news media and mixed results with regard to the effect of the public on organizational PR. Investigating the multidirectional relationships between the news media, organizational PR, and the public provides insights into how they – as a domain – affect and get affected by each other in their communications.

1. Introduction

Throughout the years, a variety of scientific perspectives on the concept and practice of Corporate Social Responsibility (CSR) have emerged. These perspectives have one particular aspect in common: the acknowledgment that organizations have responsibilities toward society that go beyond their own interests and legal requirements (Amaladoss & Manohar, 2013; Podnar, 2008). However, due to changing norms, values, and expectations in society over the years, there is an ongoing discussion about what CSR should entail and in which way it should be communicated (Tam, 2015). Organizational public relations (PR) is acknowledged to be an important domain with regard to the communication about CSR (Du, Bhattacharya, & Sen, 2010). However, CSR communication is not necessarily dominated by organizations (Burchell & Cook, 2006; Tam, 2015); news media are important in CSR communication as well (Du et al., 2010; Tam, 2015). Finally, the public realm is a domain with a significant role in the communication about CSR (Burchell & Cook, 2006).

Several studies have focused on the key role played by media, organizations, and the public in CSR communication, but most of these have examined the communication within merely one domain (e.g., Lee & Carroll, 2011; O'Connor & Shumate, 2010). Therefore, little is known about how different domains affect each other in CSR communication. Moreover, existing research in the field of CSR communication is mainly cross-sectional (Aguinis & Glavas, 2012). The current study fills those gaps by applying a longitudinal design that allows investigating over-time dynamics of CSR communication within three domains: the news media, organizational PR, and the public, and allows to assess the multidirectional causal relationships between these domains. Using a

* Corresponding author.

E-mail address: l.vandenheijkant@uva.nl (L. van den Heijkant).

framing approach, the aim of the study is to investigate whether the domains affect each other in terms of implicit framing of CSR. The overall research question is as follows: To what extent does CSR communication in the domains the news media, organizational PR, and the public affect each other in terms of implicit framing?

The interactions between media, organizations, and the public have been studied in a variety of areas, most notably in political communication. Here, the way political issues are presented by political parties and media, and how they are perceived by voters is key (Scheufele & Tewksbury, 2007). Findings point to the key influence media have on framing processes in politics and perceptions among citizens. In a similar vein, the way CSR is framed in different realms and the extent to which these realms affect each other can contribute to our understanding of the influence of key actors in the wider presentation of issues and in particular the way media, organizational PR and the public interact in their communication about this important issue. By applying a longitudinal design, covering the period from January 2011 to December 2015, this study seeks to get one step closer to disentangling the causal direction of relationships between the domains. In addition, this study attempts to theoretically enrich the field of CSR communication by proposing implicit frames used by the news media, organizational PR, and the public. The results will be relevant for PR practitioners, since these will shed light on the value of implicit framing as a strategy to get messages across.

To obtain an answer to the research question, an automated content analysis of newspaper articles and organizational press releases is conducted. In addition, Google Trends data is examined to determine implicit framing of CSR among the public. This study methodologically enriches public relations research, and more specifically the field of CSR communication, by employing a novel technique of automated content analysis that proved successful in recent research on news coverage of politically contested issues (McLaren, Boomgaarden, & Vliegthart, 2017).

2. Theoretical framework

2.1. Corporate social responsibility

Although a universal all-embracing definition of CSR is lacking (Tam, 2015; Van Marrewijk, 2003), CSR can be defined by means of various responsibilities of organizations toward society. These responsibilities of organizations toward society can be distinguished into four dimensions: economic, legal, ethical, and philanthropic (Carroll, 1979; Lee & Carroll, 2011). More practically, this means that CSR can be characterized by creating value and offer goods and/or services that society needs (*economic responsibility*), while operating within the framework of legal requirements (*legal responsibility*), as well as behaving in a way that is morally right (*ethical responsibility*), and responding to the wish of society to be actively involved in the enhancement of society (*philanthropic responsibility*; Carroll, 1979; Lee & Carroll, 2011).

2.2. Framing approach

Much research, both in organizational as well as political communication, uses an agenda's perspective to study the interactions between organizations, media, and the public (Carroll & McCombs, 2003; Kioussis, Popescu, & Mitrook, 2007; Walgrave & Van Aelst, 2006). Central to this perspective are the theoretical concepts of agenda-setting and agenda-building. Both concepts focus on the salience – or visibility – of issues. Traditionally, agenda-setting emphasizes the transfer of salience of issues from the media agenda to the public agenda (McCombs & Shaw, 1972), while agenda-building concerns the process by which groups in society compete to make issues salient among public officials (Cobb, Ross, & Ross, 1976; Zhang et al., 2017). In the field of public relations, agenda-building focuses specifically on the effort of organizations to get their issues on the media agenda (Kioussis et al., 2007; Zhang et al., 2017). Although agenda-setting and agenda-building are related, there are important theoretical differences between these concepts. While the effect of the media on the public is key in agenda-setting, agenda-building concerns a process that is rather strategic and purposeful in nature (Kioussis & Wu, 2008; Zhang et al., 2017). This distinction emphasizes that especially the notion of agenda-building is useful in understanding the strategy and effort of public relations in building the media agenda (Kioussis & Wu, 2008).

As fruitful as the agenda approach has been, most notably to understand questions that are central in the study of public relations, scholars have convincingly argued for extending this approach to also consider more specific elements of communication, such as issue attributes and their connections (second- and third-order agenda setting, see e.g., Carroll, 2016, and framing e.g., Strauss & Vliegthart, 2017). In this paper, we follow the framing approach, which has become one of the mainstream ways to study communication content and effects in a wide variety of situations (Scheufele & Tewksbury, 2007).

Entman (1993) defined the concept of framing as follows: “to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation” (Entman, 1993, p. 52). Through accentuating certain aspects of an issue above others, a frame provides a way to interpret an issue (De Vreese, 2005). Various distinctions in types of frames have been made, for example between generic and issue-specific frames (De Vreese, Peter, & Semetko, 2001; De Vreese, 2005). Generic frames are applicable to a range of different topics or events and exceed thematic limitations, while issue-specific frames are relevant only to particular topics or events (De Vreese et al., 2001; De Vreese, 2005). The current study adopts an issue-specific approach that allows to investigate CSR framing in great detail.

Besides the distinction between generic – and issue-specific frames, a frame can be explicit or implicit (Hellsten, Dawson, & Leydesdorff, 2010). Explicit frames are directly observable sets of words, deliberately selected by authors to promote a particular perspective of an issue (Hellsten et al., 2010; Jonkman & Verhoeven, 2013). Explicit frames are thus recognizable in the words that are selected in a communication text (Van der Meer, Verhoeven, Beentjes, & Vliegthart, 2014). For example, an author may

specifically choose to frame CSR as a practice driven by extrinsic motives, holding that organizations implement CSR activities with the aim of financial success rather than being ethical. Such explicit frames can be recognized in the words and tone, which makes it possible to investigate them with a manual content analysis (Hellsten et al., 2010). On the other hand, implicit frames are embedded in latent dimensions of communication, and are therefore not directly observable in a text (Hellsten et al., 2010; Jonkman & Verhoeven, 2013). These types of frames refer to the underlying contexts that provide meaning to words (Hellsten et al., 2010). Different from explicit frames, implicit frames cannot be easily detected with the aid of a manual content analysis because they are not observable manifestations (Hellsten et al., 2010). This does not imply that implicit frames cannot be used deliberately by the communicator or that there are no strategic considerations underlying the use of implicit frames, but rather that they are subtler and have a context-dependent emphasis on certain aspects of a topic (see also Strauss & Vliegthart, 2017). This study focuses on implicit frames rather than explicit ones, since most of the frames that are applied in the public sphere are not explicit (Hellsten et al., 2010). This means that we investigate frames of CSR that are embedded in latent dimensions of communication rather than clear-cut presented perspectives.

In the field of public relations, and more specifically in CSR communication, framing plays an important role as it allows PR practitioners to convey a message in a particular way (Waller & Conaway, 2011). In promoting certain aspects of business-relevant issues, PR professionals try to attract favorable media coverage of their issues and (indirectly) influence public perceptions.

2.3. News media and the public

The news media are active actors in, and a domain for, shaping information (Deephouse, 2000; Fombrun & Shanley, 1990). Media shape public opinion by framing issues in a specific way (De Vreese, 2005). Given that framing involves the selection and salience of some aspects of an issue (Entman, 1993), it can influence the public how to think about an issue (Hellsten et al., 2010; McCombs, 2005). Media can do this by deciding which attributes of issues are emphasized and which attributes are (almost) ignored (Kiousis, Mitrook, Wu, & Seltzer, 2006; McCombs, 2005). In that sense, framing is related to second level agenda-setting, which is concerned with the salience of attributes of specific issues (Carroll & McCombs, 2003; McCombs, 2005). In line with framing theory and second level agenda-setting, it can be argued that the news media play a role in influencing people's interpretations of CSR and their assessment of what aspects of CSR are important. The way CSR is addressed in the news media might affect the way it is interpreted by the public, since the news media put information into a context and determine the frames of reference in which people evaluate the information, understand meanings and even take actions when it is appropriate (Hallahan, 1999). Multiple 'outcomes' of media content can be considered: studies in the context of public relations focus for example on 'top-of-mind' awareness (e.g., Carroll et al., 2014) and organizational reputation (Einwiller, Carroll, & Korn, 2010) as key dependent variables when discussing media effects in relation to organizations. Here, we focus on (online) attentiveness and the public's actual use of frames through their online search behavior. Hence, the following hypothesis is formulated:

H1. The implicit frames used by the news media regarding CSR positively affect the use of these implicit frames among the public.

Due to the rise of the Internet, people are not merely receivers of communication, but have also become active participants and initiators in societal discussions (Jiang, 2014; Neuman, Guggenheim, Jang, & Bae, 2014). Internet has provided the public a platform where they can engage in mass-to-mass communication (Castells, 2007). This is denoted as mass self-communication and enabled the public to generate and distribute content to a potentially global audience (Castells, 2007). In line with the idea of mass self-communication, citizen journalism focuses on the power of people to engage in journalistic practices and participate in the news process (Goode, 2009). Hence, rather than staying 'nobodies', the public gained attention online and became 'somebodies' (Booth & Matic, 2011). Consequently, the framing power of the public has increased. The news media observe, and possibly use, the stories produced by the public (Lariscy, Avery, Sweetser, & Howes, 2009). In this regard, it can be argued that the public's attention for particular attributes of specific issues (i.e., the focus on certain implicit frames) might influence the emphasis on these particular attributes in the media. However, up to now, this idea of 'bottom-up' influence of the public has not been studied in the field of CSR communication, and only to a limited extent in communication science more generally. Hence, there is not much empirical evidence that can be used to support this reasoning, and therefore we refrain from formulating a hypothesis, but instead pose the following research question:

RQ1. How does the use of implicit frames of CSR among the public affect the use of these implicit frames by the news media?

2.4. News media and organizational PR

How particular frames emerge and gain prominence is captured by frame-building (Scheufele, 1999; Vliegthart & Van Zoonen, 2011). The frame-building process occurs in an ongoing interaction between journalists, (political) elites, and societal actors such as social movements, interest groups and businesses, with the frames that occur in the communicating text as an outcome of this process (De Vreese, 2005). The way CSR is communicated within the news media is thus a dynamic interaction between several domains. Most interestingly here is that organizational PR can influence the news media (Lee, 2016; Shoemaker & Reese, 1996). Public relations materials are an important, and easy accessible resource for the news media (Carroll, 2011; Davis, 2000; Kiousis et al., 2006), and might seriously impact the actual content of media coverage, most notably due to journalists' limited time and resources (Lee, 2016). Previous studies have proven that this is true for the agenda building influence of PR on the media agenda (e.g., Kiousis et al., 2006; Lee & Riffe, 2017), as well as for which issues are covered (Strauss & Vliegthart, 2017).

In the context of CSR, the importance of organizations as information source is even bigger, because of the fact that it is an organizational issue and information about CSR typically originates from organizations (Lee, Zhang, & Abitbol, 2017; Lunenberg,

Gosselt, & De Jong, 2016). A principal tool for organizations to influence the news media is by means of information subsidies such as organizational press releases (Kiouisis et al., 2015; Lee & Riffe, 2017). By highlighting particular aspects of an issue within their press releases, organizations can influence the communication about that issue in the news media (Boumans, Vliegenthart, & Boomgaarden, 2016). Research shows that organizations' communication through key messages, which are comparable to frames, is deliberately designed to gain legitimacy for the organizations' conduct and to affect news content (Carroll et al., 2014). Hence, it can be argued that frames suggested by organizational PR about a particular issue (e.g., CSR) are aimed at influencing the use of these frames in the news media (Scheufele, 1999).

The relationship between organizational PR and the news media is not unidirectional (Kiouisis et al., 2007). The frame-building process is an ongoing interaction between different sources, hence, the other way around, the news media are an important source of information for organizational PR as well (Sallot & Johnson, 2006). According to Hollanders and Vliegenthart (2008), news becomes news because it was news yesterday. This is based upon the idea that issues come and go in cycles (Downs, 1972) and hypes (Vasterman, 2005). Therefore, in order for a press release to be adopted by the media, organizational PR should frame information in their press releases in such a way that it fits previously presented information in the media (see also Strauss & Vliegenthart, 2017). Following this reasoning, organizations should understand the news values that journalists rely on, to be able to get their message across (Carroll, 2011). Due to the fact that news media content can only to a limited extent be steered by organizations, news media are more credible in communicating CSR information compared to organizations themselves (Du et al., 2010; Lee, 2016). Hence, organizations are better off disseminating information through the news media (Carroll, 2011). Following this line of thought, it can be argued that the news media are influencing the use of implicit frames among organizational PR professionals. This results in the following hypotheses:

H2a. The implicit frames used by the news media regarding CSR positively affect the use of these implicit frames by organizational PR.

H2b. The implicit frames used by organizational PR regarding CSR positively affect the use of these implicit frames by the news media.

2.5. Organizational PR and the public

So far, little is known about how organizational PR contributes to the salience of attributes of issues among the public (Kiouisis et al., 2006). In the field of political communication, Kiouisis et al. (2006) gained evidence for the effect of the salience of issues and candidate images in campaign news releases on the public opinion regarding these issues and candidates (Kiouisis et al., 2007). More generally and especially in the field of CSR communication, studies of the relationship between organizational PR and the public are scarce or even nonexistent; research to date focused mostly on the indirect relationship between organizational PR and the public through the news media, as outlined above. However, there are indications to expect a direct effect of organizational PR on the public, since the ultimate goal of an organization is to influence their publics (Lee & Riffe, 2017). Nowadays, organizations can directly target many publics online that they formerly could only reach through the news media (Carroll, 2011; Esrock & Leichty, 1998). In this way, organizations could by-pass the news media and influence the public directly. Nevertheless, since previous research on the direct relationship between organizational PR and the public is limited, we formulate the following research question:

RQ2. How does the use of implicit frames of CSR by organizational PR affect the use of these implicit frames among the public and vice versa?

3. Methods

3.1. Data collection part I: press releases and newspaper articles

An automated content analysis was conducted to establish implicit frames in press releases and newspaper articles. With regard to the organizational press releases, two large-scale Dutch organizations of three major sectors – industry, wholesale and retail trade, and commercial service sector – were selected. By including different types of organizations in the sample, a general impression of large-scale Dutch organizations was gained. Shell and AkzoNobel were selected for the industry sector, KPN and Delta Lloyd were selected for the commercial service sector, while Jumbo and FrieslandCampina were selected for the wholesale and retail trade sector. The press releases of the years 2011–2015 were retrieved from the corporate websites of the organizations and systematically explored by one of the researchers in order to determine relevant press releases in the context of CSR.¹ This selection procedure resulted in nearly five hundred relevant press releases ($N = 494$), Shell ($n = 113$), AkzoNobel ($n = 90$), KPN ($n = 79$), Delta Lloyd ($n = 49$), Jumbo ($n = 40$), and FrieslandCampina ($n = 123$). To check the reliability of the selection procedure, a second person repeated the selection process for a sample of forty press releases. The sample consisted of relevant and irrelevant press releases. Since there was perfect agreement between both persons, it can be assumed that the selection procedure of the press releases is highly reliable.

Besides organizational press releases, this study relies on newspaper articles. Newspapers were the most appropriate type of news media for this study, since newspaper articles are available as text documents and easily accessible (Van der Meer, 2016). Moreover, newspapers are still widely read in the Netherlands (Bakker, 2013) and considered to be important agenda-setters (De Feijter, 2007).

¹ An appendix with the criteria that were used to decide whether a press release included relevant information can be requested from the corresponding author.

The newspaper articles were obtained by means of the online database LexisNexis. In order to obtain as many relevant newspaper articles as possible while avoiding irrelevant articles, a variety of search strings was tested, adjusted and fine-tuned. Eventually, the most appropriate search string was used to collect the newspaper articles related to CSR.² The time period ranged from January 2011 to December 2015 and the sources of the newspaper articles were restricted to the six most-read Dutch national newspapers, which are De Telegraaf, Metro, Algemeen Dagblad, de Volkskrant, NRC Handelsblad, and Trouw. This search string provided a total of 1286 newspaper articles, 2011 (n = 318), 2012 (n = 306), 2013 (n = 282), 2014 (n = 207), and 2015 (n = 173).

3.2. Automated content analysis

We used an unsupervised automated content analysis to identify implicit frames in press releases and newspaper articles. Unsupervised methods refrain from analyzing the newspaper articles and press releases on the basis of a priori defined frames. Rather, the theoretical framework is tested by inductively identifying the word clusters (i.e., implicit frames) in the text (Van der Meer, 2016).

The automated content analysis began by identifying the most frequently used words in the texts about CSR. A list of all words and corresponding frequencies was established for both the press releases and newspaper articles. From each list, three coders indicated the 250 most frequently used words that were related to CSR or could be relevant in the context of CSR, while omitting stopwords, numbers and remaining irrelevant words. The words that were indicated by at least two of the three coders were selected and this resulted in a list of 361 words (for a comparable approach, see McLaren et al., 2017). We used the software program JFreq to assess the absolute presence of these 361 words in all press releases and newspaper articles. This resulted in two word matrices, one for the press releases and one for the newspaper articles.

Subsequently, we conducted a principal-component factor analysis with varimax rotation to identify word clusters. Words that load high on the same factor co-occur often in the same context and, therefore, can jointly be considered indicative for an implicit frame (Van der Meer, 2016). For reasons of conciseness, the number of extracted factors was constrained to ten. The decision to extract ten factors was taken to balance theoretical meaning and practical considerations. Based on the eigenvalues, scree plot, proportion of explained variance and interpretation of the word clusters, there appeared to be six factors that can be considered as coherent implicit frames. The eigenvalues of the six factors were respectively 12.63, 9.70, 6.35, 4.90, 4.23, and 3.98. Moreover, the bend in the scree plot indicated approximately six factors and the increase in the proportion of explained variance diminished after the sixth factor. Finally, the interpretation of these six word clusters was theoretical meaningful, which means that words that load high on the same factor could (easily) be interpreted and recognized as coherent word clusters. To maximize the potential amount of words included in these six factors, a subsequent factor analysis was conducted with the number of factors being constrained on six. These six factors explain together 11.6% of the variance in word use. For a word to be considered as part of a factor, the factor loading should be at least 0.20. Based on common practice in this area, a frame can be regarded as present in a text if at least three words of the particular word cluster occur in the text (see McLaren et al., 2017). The six implicit frames will be outlined below. The labeling and description of these implicit frames is based on the authors' interpretation of the keywords.

The first implicit frame that emerged from the factor analysis is related to **Economic Performance & Growth**. This frame was present in 37.3% of the press releases and 32.1% of the newspaper articles and consisted of keywords such as operating result, business operations, consumer, economic, consequence, growth, investments, revenue, operational, products, realization, result, strategy, improved, and profit. This implicit frame is similar to the economic responsibility dimension proposed by Carroll (1979). The second implicit frame to appear was **Society's Welfare**, which was present in 65.4% of the press releases and 84.8% of the newspaper articles. It is related to improving the welfare of employees, communities and society in general, including keywords such as earth, others, labor conditions, job, better, crisis, do, economy, each other, money, give, live, people, nature, society, future, change, responsibility, world, work, and care. This implicit frame corresponds to the ethical responsibility dimension suggested by Carroll (1979). The third implicit frame emerged is related to **Environmental Protection**. This frame was present in 52.6% of the press releases and 32.7% of the newspaper articles. Co-occurring words within this frame were natural gas, biomass, fuels, greenhouse gases, CO₂, sustainable, electricity, energy, energy sources, energy supply, fossil, gas, climate change, development, cleaner, emission, and worldwide. Another implicit frame that came about is related to **Global Business Activities & Responsibilities**; which was present in 27.3% of the press releases and 69.9% of the newspaper articles. Keywords within this word cluster were business community, businesses, policy, commerce, assistance, international, social, multinationals, undertake, enterprises, developing countries, development cooperation, organizations, and responsible. The fifth implicit frame that emerged is related to **Fair & Sustainable Products**. This frame was present in 41.7% of the press releases and 56.8% of the newspaper articles and included keywords such as business, consumer, sustainability, fair, factories, made, produced, customers, make, environment, produce, products, and production. The final implicit frame that appeared concerns **Educational & Charitable Programs**; which was present in 59.1% of the press releases and 40.6% of the newspaper articles. This factor included keywords such as involvement, foundation, help, children, together, school, safe, and volunteers. This implicit frame is in line with the philanthropic responsibility dimension proposed by Carroll (1979).

The relative presence of the identified frames was aggregated to monthly levels for both the press releases and newspaper articles.

² The following search string was used in the academic online database LexisNexis: "CSR OR corporate social responsibility OR maatschappelijk verantwoord ondernemen OR MVO OR maatschappelijk ondern! OR duurzaam! W/s ondern! OR sustainab! W/s ondern!".

3.3. Data collection part II: Google Trends

Based on the outcomes of the automated content analysis, data with regard to the public's use of implicit frames of CSR was obtained through the public web facility Google Trends. Google Trends provides insights in the popularity of particular issues by indicating how often a specific search term in a certain period of time and location is entered relative to the total search volume. Google Trends awards a score scaled on a range of 0–100, where 100 is the maximum search interest for the selected period of time and location. Hence, Google Trends can be used to collect time series data of the dynamics of public interest in CSR. Unfortunately, the data underneath the trends series are not made available by Google, but previous studies have suggested that this data source provides a valid measure of public attentiveness (Ripberger, 2011). Therefore, data drawn from Google Trends was used to determine the public's use of implicit frames of CSR.

In order to determine the search volume with respect to CSR, appropriate search terms needed to be formulated. Compared to the collection of press releases and newspaper articles, the opportunities with regard to data collection are somewhat limited in Google Trends. Therefore, simplified versions of the word clusters that emerged from the automated content analysis were used to obtain the public's use of the implicit frames of CSR in the period 2011–2015 in the Netherlands. Words with the highest factor loadings can be considered as most distinctive for the implicit frames and are, therefore, included in the search terms. The number of words allowed for each search term was limited by Google and differed per frame, ranging between five and eleven words.³ The scores indicated by Google are based on the absolute search volume for a frame relative to the number of searches received by Google for the selected period of time and location. The average attention for the six implicit frames of CSR among the public is respectively 68.4, 76.5, 71.7, 70.2, 56.3, and 84.3. The public's attention for the identified frames of CSR was aggregated to monthly levels.

3.4. Analysis

The theoretical framework was tested with the aid of time series analysis. Specifically, this study draws on the Vector Autoregression (VAR) time-series technique. A VAR model treats all variables in the model as endogenous (Freeman, Williams, & Lin, 1989; Vliegthart, 2014). Since there are no clear-cut theoretical expectations about the unidirectional causal relationships between the domains, VAR analyses are particularly suitable (Vliegthart, 2014). VAR analyses assess in separate equations the current value of each of the endogenous variables based on their own past and the past of other variables (Vliegthart & Montes, 2014).

A prerequisite for the analysis is that each time series is stationary. The assumption of stationarity implies that the mean should not depend upon the time of observation (Hollanders & Vliegthart, 2008). To test the assumption of stationarity for each series, augmented Dickey-Fuller tests have been conducted. In all instances, the augmented Dickey-Fuller test yielded significant outcomes, which indicated that the null-hypothesis of non-stationarity can be rejected. Hence, all series were stationary and did not need to be differenced before continuing with the analyses.

The next step involved determining the appropriate number of lags for each VAR model by comparing a series of models with different lag lengths based on the fit statistics. Since the study consisted of 60 time points (months), the number of lags needed to be limited in order to prevent using too many degrees of freedom. Using too many degrees of freedom can result in inefficient estimates (Brandt & Williams, 2007). Therefore, a maximum number of three lags was allowed for the selection-order criteria. This implies that it was expected that the mutual effects of the domains occur within three months – which is a reasonable expectation. With regard to the sixth frame, the fit statistics indicated that a model with zero lags was most appropriate. This means that no effect of any past values was present, hence, the VAR model of the frame presence of the sixth frame was disregarded.

Based on former steps of the analyses, five VAR models were estimated: one for each frame (except for the sixth frame). Next, Granger-causality tests, Ljung-Box Q tests, Engle's ARCH tests, cumulative impulse response functions (CIRF), and forecast error variance decompositions (FEVD) were obtained. Granger-causality tests were used to determine whether the domains were useful in forecasting each other. A series is Granger-causing another series when the prediction of the series based on its own past improves when adding the past of the other variable in the equation (Vliegthart & Montes, 2014). To test for the presence of (remaining) autocorrelation, the residuals of the series in the VAR models were tested using Ljung-Box Q tests.⁴ To detect autoregressive conditional heteroscedasticity, Engle's ARCH tests were conducted. Furthermore, we checked the issue of contemporaneous correlation.⁵ Finally, the CIRF and FEVD were explored in order to establish the direction and size of the significant effects emerged from the Granger-causality tests. The CIRF provides information about the consequences of a shock in one series at a certain time point on the subsequent values of the other series (Vliegthart & Montes, 2014). The CIRF is, therefore, useful in gaining insight mainly in the direction (positive or negative) of the effects. The FEVD assesses over time the fraction of the variation in each of the endogenous

³ The following search terms were used in the public web facility Google Trends in order to obtain data with regard to the public's use of the six implicit frames of CSR: *Economic Performance & Growth frame*: “bedrijfsresultaat, gevolg, consumer, products, realisatie, resultaat, strategie, winst”; *Society's Welfare frame*: “mensen, leven, economie, maken, samenleving, aarde, crisis, elkaar, doen, wereld, toekomst”; *Environmental Protection frame*: “uitstoot, energie, CO2, fossiele, brandstoffen, broeikasgassen, duurzame, aardgas”; *Global Business Activities & Responsibilities frame*: “bedrijven, maatschappelijk, verantwoord, ontwikkelingsamenwerking, ontwikkelingslanden”; *Fair & Sustainable Products frame*: “producten, bedrijf, product, duurzaamheid, consument, duurzaam, fabrieken, gemaakt”; *Educational & Charitable Programs frame*: “kinderen, samen, werken, helpen, school, vrijwilligers, medewerkers, kennis, foundation”.

⁴ The Ljung-Box Q tests indicated that there was some autocorrelation left in the (squared) residuals of the series of the news media and especially the series of the public. This means that there was some information from the series' own past that was not used to predict the current value (Vliegthart & Montes, 2014). For reasons of parsimony, we did not adjust the VAR models and accepted that the models were not (entirely) perfect.

⁵ The contemporaneous correlations between the residuals of the series of frame presence were negligible, indicating that a monthly aggregation level is appropriate and desirable for framing effects.

Table 1
Granger-Causality Findings.

Independent variable	News Media	Organizational PR	The Public
<i>News Media</i>			
Economic Performance & Growth (2)		0.990	3.901
Society's Welfare (1)		0.138	4.204*
Environmental Protection (2)		0.079	0.047
Global Business Activities & Responsibilities (1)		0.273	1.451
Fair & Sustainable Products (3)		3.423	3.957
<i>Organizational PR</i>			
Economic Performance & Growth (2)	11.733**		2.559
Society's Welfare (1)	2.917†		0.354
Environmental Protection (2)	2.982		0.267
Global Business Activities & Responsibilities (1)	1.390		0.209
Fair & Sustainable Products (3)	5.876		1.084
<i>The Public</i>			
Economic Performance & Growth (2)	1.317	0.624	
Society's Welfare (1)	0.346	0.146	
Environmental Protection (2)	9.890**	5.105†	
Global Business Activities & Responsibilities (1)	0.038	8.790**	
Fair & Sustainable Products (3)	4.827	8.298*	

Note. Frames are presented with number of lags in parentheses; significances for Granger causality tests: † $p < .10$, * $p < .05$, ** $p < .01$.

series that can be attributed to the past of the own series and to the past of each of the other endogenous series (Vliegthart & Montes, 2014). The FEVD, thus, provides information about the size of the effects.

4. Results

Table 1 provides an overview of Granger-causality findings per frame.

4.1. News media and the public

The first hypothesis stated that implicit frames used by the news media regarding CSR positively affect the use of these implicit frames among the public. Outcomes of the Granger-causality tests indicated a significant effect of the news media on the public for one of the five frames, that is the Society's Welfare frame (see Table 1). The CIRF showed that after a five-month time span, a one-unit increase in the percentage of monthly presence of the Society's Welfare frame in the news media led to a 18.94 unit increase in the presence of this frame among the public in these five months (90% CI = [1.69, 36.18]). This indicates a positive effect: the more attention for the Society's Welfare frame in the news media, the more attention for this frame among the public. This effect was significant at all time points. Findings of the FEVD sustained this effect, showing that after five months, shocks in the monthly presence of the Society's Welfare frame in the news media accounted for 6.93% of the variation in the presence of this frame among the public. Hence, hypothesis 1 can be supported, but only for one of the five frames.

Research question 1 asked how the use of implicit frames of CSR among the public affects the use of these implicit frames by the news media. Results of Granger-causality tests suggested that, with regard to the Environmental Protection frame, the public Granger-caused the news media (see Table 1). The CIRF suggested that after a time span of five months, a one-unit increase in the percentage of monthly presence of the Environmental Protection frame among the public resulted in a 0.018 decrease in the presence of this frame in the news media in these five months (90% CI = [−0.03, −0.01]). This indicates a negative effect, which remained significant from the first month onwards. The FEVD indicated that after a five-month time span, 12.51% of the variation in the monthly presence of the Environmental Protection frame in the news media can be attributed to the presence of this frame among the public. Hence, regarding research question 1, the outcomes indicated that the use of the Environmental Protection frame among the public negatively affects the use of this implicit frame by the news media. In other words, the more attention for this frame among the public, the less attention for this frame in the news media.

4.2. News media and organizational PR

In hypothesis 2a we argued that the implicit frames used by the news media regarding CSR positively affect the use of these implicit frames by organizational PR. However, Granger-causality tests indicated that the effect of the news media on organizational PR was not significant for any of the frames (see Table 1). Therefore, hypothesis 2a is rejected.

In hypothesis 2b we stated that the implicit frames used by organizational PR regarding CSR positively affect the use of these implicit frames by the news media. Outcomes of the Granger-causality tests showed a significant effect for two out of five frames: organizational PR Granger-caused the news media for the Economic Performance & Growth frame and the Society's Welfare frame (see Table 1). The CIRFs suggested that after a five-month time span, a one-unit increase in the percentage of monthly presence of the

Economic Performance & Growth frame and the Society's Welfare frame in organizational PR resulted in a respectively 0.61 and 0.51 increase in the presence of these frames in the news media in these five months (90% CIs = [0.23, 0.99], [−0.03, 1.05], respectively). This indicated that the presence of these two frames in organizational PR had a positive influence on the presence of these frames in the news media; hence, the more attention for these particular frames in organizational press releases, the more attention for these frames in newspaper articles. This positive effect was significant at all time points for the Economic Performance & Growth frame, while for the Society's Welfare frame, it was significant at the first time point and nearly significant afterwards. Moreover, the FEVD showed that after a time span of five months, respectively 15.13% and 4.14% of the variation in the monthly presence of the Economic Performance & Growth frame and the Society's Welfare frame in the news media can be attributed to the monthly presence of these frames in organizational PR. Hence, hypothesis 2b can be supported for the Economic Performance & Growth and Society's Welfare frame.

4.3. Organizational PR and the public

Finally, the second research question asked how the use of implicit frames of CSR by organizational PR affects the use of these implicit frames among the public and vice versa. Results of Granger-causality tests showed that the effect of organizational PR on the public was not significant for any of the frames (see Table 1). This means that the use of implicit frames of CSR in organizational PR did not affect the use of these implicit frames among the public.

Regarding the reversed direction, Granger-causality tests indicated significant effects for three out of five frames (see Table 1). The public Granger-caused organizational PR for the Environmental Protection frame, the Global Business Activities & Responsibilities frame and the Fair & Sustainable Products frame. The CIRFs showed mixed results with regard to the effect of frame presence among the public on the frame presence in organizational PR. After a time span of five months, a one-unit increase in the percentage of monthly presence of the Environmental Protection frame and the Fair & Sustainable Products frame among the public led to a respectively 0.01 and 0.003 decrease in the percentage of monthly presence of these frames in organizational PR in these five months (90% CIs = [−0.01, 0.00], [−0.01, 0.01], respectively). This suggests a negative effect of the public on organizational PR, that is the more attention for the Environmental Protection frame and the Fair & Sustainable Products frame among the public, the less attention for these frames in organizational press releases. However, these negative effects were not significant at any point in time; hence, these effects are limited. On the other hand, concerning the Global Business Activities & Responsibilities frame, a one-unit increase in the monthly presence of the frame among the public resulted in a 0.01 increase in the percentage of monthly presence of this frame in organizational PR in these five months (90% CI = [0.00, 0.02]). This indicates a positive effect, hence the more attention for the Global Business Activities & Responsibilities frame among the public, the more attention for this frame in organizational press releases. This positive effect was significant at all time points. The FEVD indicated that after a time span of five months, respectively 7.83%, 13.59%, and 10.77% of the variation in the monthly presence of the Environmental Protection frame, the Global Business Activities & Responsibilities frame and the Fair & Sustainable Products frame in organizational PR can be attributed to the monthly presence of these frames among the public. Thus, with regard to the effect of the public on organizational PR, although effects are limited, we found stronger support for the positive effect compared to the negative effects.

5. Conclusion and discussion

The aim of this study was to investigate the multidirectional causal relationships between the news media, organizational PR, and the public in terms of implicit frames of CSR. The study provides a varied picture regarding those interactions.

Consistent with previous findings on framing effects, we found a positive effect of the news media on the public in the use of the Society's Welfare frame. However, no significant effects were found for the other frames. Vice versa, a negative effect of the public on the news media was found in terms of the Environmental Protection frame. No significant effects were found for the other frames. Since there was no existing research in the field of CSR communication with regard to this unidirectional effect, this study is the first to provide some indication of the effect of the public on the news media.

Contrasting frame-building literature, we could not find any causal effect of the implicit frames used by the news media on the use of these implicit frames by organizational PR. The lack of this 'frame-building' effect might be explained by the so-called 'self-promotor's paradox' (Ashforth & Gibbs, 1990). This paradox suggests that organizations should not overemphasize their specific CSR efforts, as this may cause skepticism and be counterproductive (Ashforth & Gibbs, 1990). Moreover, too much sense-giving by organizations with regard to their CSR initiatives may also be counterproductive (Morsing & Schultz, 2006). Hence, organizations might have a well-defined and cautious strategy in their CSR communication and are consequently reluctant to be too responsive to external signals, such as provided by the news media. For the reversed direction, we did find a positive effect of organizational PR on the news media in terms of the Economic Performance & Growth frame and the Society's Welfare frame, which supports frame-building literature. Nonetheless, no significant causal effects were found with regard to the other frames.

Finally, we did not find significant causal effects of organizational PR on the public in the use of implicit frames. Since this study was the first to explore this relationship in the context of CSR communication, additional research is needed to investigate this unidirectional effect. Vice versa, contradictory results have been found for the various frames: both positive and negative effects of the public on organizational PR were found. These effects are limited, and only in one case, the (positive) effect was clearly significant. Nevertheless, this study is the first to provide some evidence for this unidirectional effect with regard to implicit frames of CSR.

Interestingly, the analyses yielded more (pronounced) effects for some implicit frames compared to others. The substantial

meaning of the frames provides some indication for whether or not certain effects have been found. For example, in line with previous research, we found some positive effects for the Economic Performance & Growth frame and Society's Welfare frame. These implicit frames are strongly corresponding to two of the responsibility dimensions proposed by Carroll (1979), which are widely used to define CSR. The widely acceptance of these dimensions of CSR can be an explanation for the responsiveness of the three domains: there are few constraints to adopt this type of frame when it becomes more prominent elsewhere. Future research is needed to further explore the characteristics of the frames that determine whether or not an effect takes place.

From an academic perspective, our study enriches public relations research by providing insights into the extent to which the news media, organizational PR, and the public affect each other in the way CSR is framed, which contributes to our wider understanding of the interactions between these realms in the presentation of issues. In addition, the current study builds on established research and concepts in the field of CSR communication – such as Carroll's 'Pyramid of Corporate Social Responsibility' (1979) – by proposing implicit frames of CSR that are present in the news media, organizational PR, and among the public. Furthermore, this study has applied a novel technique of automated content analysis in the field of public relations research, and proved its success in inductively identifying implicit frames. From a PR practice perspective, the positive effect of organizational PR on the news media is particularly important. This finding shows that PR practitioners are sometimes able to get their implicit framing across in media coverage, which in turn helps them with their key responsibility: to get messages across to their publics. Thus, also the communication of more nuanced, embedded interpretations of organizational issues might be a viable strategy to achieve organizational goals.

This study also has a couple of limitations. First, the somewhat limited sample and time frame of the study should be taken into account. Due to the finite amount of organizational press releases that was available online, this study was bounded to a time frame of five years. Therefore, the number of observations in this study was constrained. Moreover, the sample of merely six organizations and newspapers was limited. In this sense, a follow-up study covering a larger time frame and sample is needed to verify and extend the results of this study in a more confident way. Furthermore, as a consequence of the shortcomings of Google Trends as a public opinion measurement, foremost regarding the opportunities for data collection, the series obtained in this study might not completely reflect the true public use of the implicit frames of CSR. By using simplified search terms of the implicit frames, the series of the public could be incomplete. Therefore, scholars might consider using social media manifestations as public opinion data in future studies.

For future research, perspectives that go beyond agenda setting and issue salience hold great potential. Our approach turns out to be a fruitful one, but others, such as network agenda setting are particularly suitable for studying the reciprocal influence of domains in setting each other's CSR agendas. The central idea of this new direction in agenda setting research is that the salience of relationships among a set of objects and/or attributes can be transferred from one agenda to the other (Guo, Vu, & McCombs, 2012; Lee, 2016; McCombs, Shaw, & Weaver, 2014).

Overall, however, our study makes a significant contribution to determining implicit frames of CSR and disentangling the causal direction of relationships between the news media, organizational PR, and the public in terms of these implicit frames.

Declaration of interest

None.

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