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CHAPTER 1

ISSUE FRAMING AND FRAME VARIATION IN NEWS CONTENT

This chapter appeared as: Jonkman, J. & Verhoeven, P. (2013). From risk to safety: implicit frames of third-party airport risk in Dutch quality newspapers between 1992 and 2009. *Safety Science*, 58, 1-10.

ABSTRACT

In this study, we investigated the public debate in the Netherlands about third-party airport risk by analyzing 17 years of media discourse in two quality newspapers from May 1, 1992 to May 31, 2009. The Netherlands is one of the few countries in which third-party airport risks are analyzed, modeled, systematically monitored and integrated into the national external safety policy for industry. We used a semantic mapping method and constructed implicit frames to represent the discourse's latent structure. The research shows that third-party airport risk is mainly framed as an economic issue. In the 1990s these economic frames are flanked by frames of accidents and risk and in the 2000s accidents and safety.

INTRODUCTION

Third-party risks around major airports are a significant issue (Ale & Piers, 2000). The Netherlands is one of the few countries in which third-party airport risks are analyzed, modeled, systematically monitored and integrated into the national external safety policy for the industry. External risk analysis and safety policies were developed in the early 1980s for Dutch industries in general (Bottelberghs, 2000) and were followed in the 1990s by the assessment of third-party risks for Amsterdam Schiphol Airport, the major airport of the Netherlands, which is located in a densely populated area (Ale & Piers, 2000; Ale, 2002).

Since 1995, the Dutch have used third party airport risk models to assess individual risk (the risk of an individual on the ground being killed by a crashing airplane in the vicinity of an airport) and societal risk (the risk of an accident involving an airplane killing a group of people on the ground) for regulatory purposes, especially for decision-making related to land use planning and the expansion and operation of Schiphol Airport (Netjasov & Janic, 2008).

One reason for the considerable attention in scientific, political and industrial circles in the Netherlands to the issue of third-party airport risk is the crash of an El Al Boeing-747 cargo aircraft in the Bijlmermeer district of the city of Amsterdam on October 4, 1992, which killed 39 persons on the ground and four crew members (Hale, 2002). This accident was seen as a "major impetus" (Hale, 2002, p. 300) for third-party airport risk assessment in the Netherlands, and it moved "the question about what to do with these kind of risks into the public debate" (Ale & Piers, 2000, p. 5). However, no research into the public debate about third-party airport risks has yet been conducted. In this explorative study, we examine the type and development of discourse about third-party airport risk in two newspapers in the Netherlands between May 1, 1992, and May 31, 2009.

THEORETICAL BACKGROUND

By writing articles in online and offline media and by generating reports for radio, television and the Internet, journalists construct meanings of issues. In mass communication and media studies, framing is the chief theoretical concept used to study this meaning-making process and its resulting constructs (Borah, 2011). The classical definition of framing is “select[ing] some aspects of perceived reality and mak[ing] them more salient in the communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation for the item described” (Entman, 1995, p. 55).

Framing by journalists results in frames, which are central organizing ideas or storylines that provide meaning in news stories (Gamson & Modigliani, 1989). Framing refers to the typical manner in which journalists construe news stories using a familiar frame of reference or in accordance with a latent structure or meaning (Van Gorp, 2006). In this process, issues are given particular meaning and contextualized. The process by which journalists construct news stories is called frame building (De Vreese, 2005).

This process is often influenced by other social actors, such as politicians (see for examples of framing by Dutch politicians: De Bruijn, 2010; 2011), organizations and social movements (Carragee & Roefs, 2004) who also frame. The complex process of frame production and frame building creates a media agenda that can influence political and public social agendas, which include the frames constructed by journalists and other social actors. These processes are partly cultural and country specific and can lead to media hypes about certain subjects, for example media hypes after the crash of the El Al Boeing-747 in the Bijlmermeer about poison, health risks and during the parliamentary inquiry into the accident (Vasterman, 2004).

Frames are constructed through language and, thus, words. Words usually constitute the basic element of frames. Information sciences indicate that words derive their meaning from an encompassing network of words. Information becomes meaningful from the variation and the selection of words in a discourse (in this case, the media discourse), thus producing the co-occurrences of certain words in media texts and the co-absences of other words. These processes of making information meaningful can be considered processes of codification (Leydesdorff & Hellsten, 2005).

The codification of meaning leads to knowledge that is produced by the network of words that is constructed. Codification can be high, when there is agreement about the meaning of an issue, or low, when there is lesser agreement about the meaning (Leydesdorff & Hellsten, 2005). Science and technology studies have shown that social systems codify the meanings of words differently. The codification of meaning, for example, has been found to be stronger in scientific communication than in mass media (Leydesdorff & Hellsten, 2006; Hellsten, Dawson, & Leydesdorff, 2010). Codification depends on the way in which communications in a domain are organized—a process of organization that is considered to be self-organizing. In this process, certain combinations of words are selected from all possible word variations, depending on the system’s binary code. For mass media, this code is either new or not new (Luhmann, 1996).

Hellsten, Dawson and Leydesdorff (2010) build on the theory of codification as outlined above and propose to operationalize the codification of meaning in the media system with the concept of implicit frames. They make an analytical distinction between explicit and implicit frames in media discourse. Explicit frames are directly observable word choices made by authors to label issues in a certain way. Implicit frames are embedded in latent dimensions of communication. Put differently, implicit frames are patterns of words that co-occur throughout discourse and are not directly observable. Words can co-occur between sentences and paragraphs in one media text or between different texts in different media outlets or at different moments in time:

Implicit frames (...) are generated because of spurious correlations between word (co-)occurrences in communications. (...). The dynamics of coevolving words in sets of documents that deal with the same topic (...) at all these levels may reveal systematic information on latent aspects in communications (Hellsten et al., 2010, p. 593).

Implicit frames shed light on the latent dimension of communication content and on the meaning that these co-occurring words create. The frames represent the way an issue is conventionalized in the media community (Hellsten et al., 2010). The coherence of those words can be analyzed using semantic mapping to indicate the different frames within a discourse and to distinguish between main debates and sub-debates in a discourse (Hellsten et al., 2010).

To investigate how meaning is attributed to information and is codified in implicit media frames, we must be able to define meaning using a measurable unit of analysis. The sociology of translation has shown that the co-occurrences and the co-absences of words can be used to map meaning in the dynamics of the sciences. Meaning is thus measured according to the information contained in the distribution of observable units in texts, such as words and co-occurrences of words. This provides an operational definition of meaning: a semantic field defined by the relations among words in a domain, in this case, the mass media (Leydesdorff & Hellsten, 2005). A semantic field represents a set of words that are related to one another in a specifiable way; thus, the relations between words particularize meaning. This definition permits the study of how communication is organized and is codified in different contexts and at different moments in time, e.g., in the media (Leydesdorff & Hellsten, 2005).

The dynamics of codification cannot be shown using a first order analysis that only examines the frequencies of words and the correlations between words. Such an analysis does not indicate the relative position of the words in the network, nor does it indicate the structural characteristics of the language in the domain: the discourse. In addition, it does not reveal the contextualization occurring within the communication in a domain. To accomplish these tasks, we require a next order analysis in which co-occurring words can be mapped. Such maps construct a semantic field that not only shows the frequencies of the words and the correlation between the words but also the relative position of the words in the network of words used to produce meaning. Such maps also reveal the higher order structure of the discourse and can be compared across time in terms of degrees of codification. A second order analysis shows the processing of meaning that occurs in communications (Leydesdorff, 2001; Leydesdorff & Hellsten, 2006).

METHOD

To investigate the public debate about third-party airport risk in the Netherlands, we analyzed the discourse in two quality newspapers, *NRC Handelsblad* and *Trouw*, between May 1, 1992, and May 31, 2009. We used quality newspapers because issues are often discussed in these papers. Quality newspapers designate greater attention to politics than to entertainment. The news media associate issues of sociotechnical risk issues with political information (Arnolodi, 2009) and it is therefore sensible to analyze a media debate concerning third-party airport risk using quality newspapers. *NRC Handelsblad* is considered to be a liberal but politically neutral newspaper. *Trouw* has Protestant Christian roots that are visible in the volume of attention granted to religion and the philosophy of life (Bakker & Scholten, 2009). The third quality newspaper in the Netherlands is *De Volkskrant*, which we excluded from the research for practical purposes. When the fieldwork was being conducted, the data from *De Volkskrant* were only electronically available from 1995 onwards and thus did not coincide with our time frame. We chose the time frame beginning from May 1, 1992, and ending May 31, 2009, because an El Al Boeing 747 aircraft crashed in Amsterdam in 1992, and a Turkish Airlines Boeing 737 aircraft crashed near the Amsterdam airport in 2009.

We used the LexisNexis database to select newspaper articles about third-party airport risk that contained the following words (in Dutch): ‘Schiphol’ and ‘safety’ or ‘risk(s)’ or ‘safety risk(s)’ or ‘air crash(es)’ or ‘aircraft crash(es)’ or ‘group risk(s)’. All texts were read to ascertain the topic of the article. The result was a data set of 579 relevant news articles. Based on events that were discussed in previous research on third-party airport risk at Schiphol Airport (Verhoeven, 1996; Ale & Piers, 2000; Hale, 2001; 2002) and the publicity pattern we detected over the years, 7 consecutive periods were identified to facilitate discourse analysis over time. In each period, an important event happened, and/or the period had a high or low frequency of articles in the newspapers.

The first period starts in May 1992, six months before the El Al Boeing 747 crash on October 4, 1992. This crash initiated the publicity on third-party airport risk. In the second period, the model development of third-party airport risk is the central event, followed by the political decision-making concerning the extension of the airport in the third period. In the fourth period, the expansion plans are implemented, and in the fifth period, a new runway is used. The sixth period is characterized by several minor incidents with aircraft and a political discussion about the airport’s possible privatization. Finally, the seventh period is characterized by the Turkish Boeing 737 crash near the airport in 2009. See Table 1 for an overview of the events and the periodization.

TABLE 1.

7 research periods and the number of news articles on third-party airport risk during 1992-2009 (N = 579)

Period	Event	Date from	Date to	Frequency of articles
1	El Al Boeing 747 crash	May 1, 1992	May 31, 1993	82
2	Model development third-party airport risk for Amsterdam Schiphol Airport	June 1, 1993	November 30, 1993	36
3	Political decision-making about the expansion of Amsterdam Schiphol Airport	December 1, 1993	December 31, 1995	93
4	Implementation of expansion plans for Amsterdam Schiphol Airport	January 1, 1996	December 31, 1999	210
5	The use of a new runway at Amsterdam Schiphol Airport	January 1, 2000	December 31, 2003	78
6	Further development of Amsterdam Schiphol Airport	January 1, 2004	January 31, 2009	60
7	Turkish Airlines Boeing 737 crash	February 1, 2009	May 31, 2009	20
				Total: 579

Note. The frequency of articles corresponds to absolute numbers.

We analyzed the two newspapers jointly because we sought to understand the discourse of quality newspapers. The type of news coverage in the two newspapers can be considered comparable (Bakker & Scholten, 2009). At this point, because we were not investigating differences between the individual newspapers, we did not analyze them separately. Because we were studying the development of the discourse over time, the news articles were analyzed for each research period separately. We analyzed the texts using a semantic mapping technique. With this technique, a model of related words can be represented with a semantic field or map and may be applied to word/document occurrence matrices (Leydesdorff, 2001; Leydesdorff & Hellsten, 2005; Hellsten et al., 2010) that contain words as variables and the newspaper articles as cases.

The word/occurrence matrix indicates the frequency of words in the newspaper articles. Before generating a word/occurrence matrix, we compiled a list of the 75 most frequently used words in the media texts, with stop words removed, for each research period, using the software program *FrequencyList*. We chose 75 words because a visualization of more than 75 words is difficult to interpret. Word/document matrices were generated for each research period using the software program *FullText*. These matrices were imported into *SPSS* (Statistical Package for the Social Sciences) to perform a factor analysis with a maximum of six components. The components are networks of correlated words that represent frames in the media texts.

To test the reliability of components, Cronbach's alpha was determined, and components with scores less than .60 were removed. We assigned labels to the generated frames. Consistent with factor analysis, this component labeling is an interpretation by the researchers. Because this method is in ongoing development, a more objective labeling method is not yet available (Leydesdorff & Welbers, 2011). The relative position

of the frames for each period was assessed by determining the *EigenValue* (EV) and the *Explained Variance* (R^2) of each frame. Frames that score high on these two indicators dominate the discourse.

Finally, the frames were visualized as semantic fields using the software program *Pajek* (Batagelj & Mrvar, 2008). Using *Pajek*, the word/occurrence matrix can be visualized. The software program FullText produces a cosine-normalized matrix that is comparable to a Pearson correlation matrix used for factor analysis in SPSS (for further information, see, e.g., Leydesdorff & Hellsten, 2006; Hellsten et al., 2010). *Pajek* uses a cosine-normalized matrix to produce visualizations. This cosine-normalized visualization can be adjusted based on the results of the factor analysis by manually adjusting the pictures (see, e.g., Leydesdorff & Hellsten, 2005). Each word was assigned the color that refers to a component generated by the factor analysis. The visualizations show a two-dimensional word network. Each node (in network theoretical terms, a vertex) in the visualization represents a word. The size of the nodes is proportional to the frequency of the words; therefore, larger nodes indicate that a word occurs more frequently in a discourse. The lines in the pictures represent the correlation between the words: the thicker the line is, the higher the correlation is. For visibility reasons, lines with a value less than 0.5 have been removed.

In Figures 1 - 7, each implicit frame found with the factor analysis has a different color. The yellow nodes represent the main debate, or the debate with the highest explained variance; consecutive sub-debates in green, red, blue, pink and turquoise represent sub-debates with variances that were respectively explained to lessening degrees. Grey nodes are words that are not connected to a frame, as indicated by the factor analysis. Grey nodes can be connected to other words in the network but do not belong to an implicit frame and thus represent words on the outskirts of the discourse.

RESULTS

The 579 articles about third-party airport risk around Schiphol Airport are not equally distributed over time. The first media texts about this issue appear in 1992, shortly after the crash of the El Al Boeing 747 on October 4 of that year. The corpus of texts after 1992 shows a pattern with highs and lows in numbers of articles, peaking in 1998 around a parliamentary hearing into the El Al crash and in 2009 at the time of the crash of the Turkish Airlines Boeing 737 in February of that year.

Table 2 provides an overview of the 40 implicit media frames we identified over a 17-year period. A closer look at the development of the media discourse shows that in the first period (May 1, 1992- May 31, 1993), the debate began shortly after the crash of the El Al Boeing in Amsterdam. In this period, an inquiry frame about the causes of the crash dominates the discourse ($EV = 8.41$. $R^2 = 11.61$, $\alpha = .90$), containing words such as disaster, accidents, investigation(s), police, Aviation Authority, KLM (Royal Dutch Airlines) and minister. Next to this inquiry frame, the second most important frame is an economic-ecological frame on the airport expansion plans, indicated by words such as safety, environment, economy, expansion, plan, millions and question. The other sub-debates concern, similar to the main debate, the El Al crash and include the local reconstruction

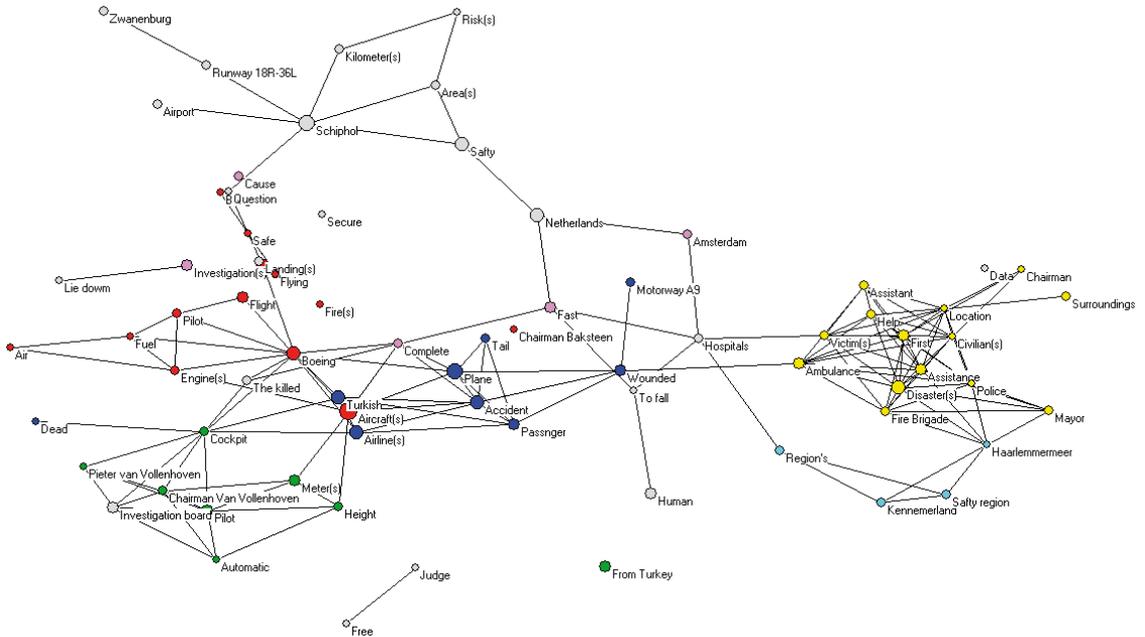


Figure 7. *Media discourse period 7*

During the summer and autumn of 1993 (the second period, June 1, 1993 – November 30, 1993), when scientists were working on a model to assess third-party airport risk at Schiphol Airport, the economic-ecological frame becomes the main frame for the debate ($EV = 17.75$, $R^2 = 23.64$, $\alpha = .92$). This main frame contains words such as expansion, mainport, millions, KLM, economy, jobs, national, environment, surroundings and plan. Sub-debates concerning the El Al crash continue in the inquiry and responsibility frames with words that are similar to the words used in the first period and with a safety frame and a risk frame, respectively as the third and the fifth frame. In popular language, like that of the newspapers investigated, the word safety is used to indicate a state of being from someone or something that is safe, in other words a state of being out of danger. In popular language the word risk is used to signify the probability of danger for damage or loss. The empirical data show that in the discourse of the two newspapers, safety is discussed in context of a planned new (fifth) runway. Safety, as a central word of the sub-debate, is defined with words such as runway, nature, construction, fifth and environmental reports.

Table 2

Media frames of third-party airport risk at the Amsterdam Schiphol Airport from 1992 to 2009

Period	1	2	3	4	5	6	7
	1992-1993	1993	1993-1996	1996-2000	2000-2004	2004-2009	2009
Frame sequence	Frame label (Eigen Value, R ² , α)						
1	Inquiry (8.41; 11.61; .90)	Economic-ecological Inquiry (17.75; 23.64; .92)	Economic (9.91; 13.42; .89)	Long term plans (5.91; 8.21; .80)	Safety (10.94; 15.14; .92)	Financial (9.11; 12.55; .91)	Assistance (11.56; 15.64; .96)
2	Economic-ecological (7.15; 9.82; .83)	Inquiry (8.32; 11.15; .92)	Regional (7.22; 9.83; .91)	Decision-making (5.54; 7.75; .76)	Ecological (5.86; 8.11; .60)	Safety (7.26; 9.91; .88)	Inquiry (8.86; 11.83; .88)
3	Local (6.17; 8.56; .87)	Safety (6.88; 9.15; .81)	National (4.75; 6.45; .75)	Parliamentary hearing (5.53; 7.74; .75)	Judicial (4.91; 6.81; .76)	Incident (6.01; 8.26; .87)	Technical (8.32; 11.32; .87)
4	Causality (6.08; 8.37; .81)	Responsibility (5.01; 9.17; .80)	Ecological (4.76; 6.37; .64)	Economic (5.05; 7.08; .84)	Noise pollution (4.63; 6.44; .85)	Economic (5.58; 7.69; .80)	Public information (7.54; 10.13; .86)
5	Responsibility (4.08; 5.56; .73)	Risk (4.74; 9.11; .78)	Risk (3.92; 5.31; .69)	Infrastructure (3.71; 5.21; .68)	Infrastructure (4.19; 5.72; .76)	Policy (5.07; 6.91; .81)	Causality (7.55; 10.18; .60)
6	Testimony (3.61; 5.04; .78)	-	Infrastructure (3.51; 4.78; .73)	National (3.23; 4.46; .60)	-	Ecological (3.83; 5.31; .82)	Safety zone (5.98; 8.06; .92)
Total R ²	48.96	62.22	46.15	40.45	42.22	50.63	67.16

Note. Frame 1 is the main debate in the discourse; frames 2-6 are sub-debates measured by the proportion of explained variance (R²)

Safety is, in the newspapers, an environmental aspect of the construction of a new runway. Risk is defined in a different way in the discourse of the two newspapers. The word risk is part of a sub-debate on the risks of flying over residential areas such as the area affected by the El Al crash. Risk is defined with correlating words such as disaster at Bijlmermeer (the name of the residential area where El Al crashed), victim(s) and the names of the Minister of Transport, May, and the leader of an environmental non-governmental organization, Reijnders. The empirical data show that in this period safety is distinguished from risk in the discourse because the words safety and risk are both part of a different network of words. Safety is associated with the new runway and defined in the context of the construction of this runway, risk is associated with the El Al accident. The words safety and risk belong to two different implicit frames (see Figure 2).

In the next three years (December 1, 1993 – December 31, 1995), when an extensive public participation program accompanied the political decision-making about the airport expansion plans, the discourse is dominated by an economic frame ($EV = 9.91$, $R^2 = 13.42$, $\alpha = .89$) containing words such as growth, millions, billions, guilders, passengers, fifth (of runway), jobs, plans and percentage. The sub-debates include the regional and national consequences of the expansion, as indicated by words naming the province and municipalities surrounding the airport and the national parliamentary discussion, including the word economy. Other sub-debates concern ecology (with words such as environment, expansion, nature, noise pollution and parallel 19R-01L and an alternative location for the planned fifth runway) and comparisons with other large infrastructural projects, particularly the construction of the freight railway track to Germany, i.e., the Betuwe railway line, named after the Betuwe region in the east of the Netherlands that is affected by this railway track. The sub-debate on risk again focuses on the residential area affected by the El Al crash, with words such as risks, aircraft, the neighbors, disaster and Bijlmermeer (see Figure 3).

In the fourth period (January 1, 1996 – December 31, 1999), when political decisions were made, the main debate shifted from the current development plans to the distant future in a long-term frame related to the growth of the airport on an island in the North Sea ($EV = 5.91$, $R^2 = 8.21$, $\alpha = .80$). At that time, the Dutch aviation industry developed a plan to re-locate Schiphol Airport from its current location at approximately nine miles from the city of Amsterdam to an artificial island near the Dutch coast in the North Sea. The main frame in this period concerns this plan and contains words such as airport, airfield, island, North Sea, passengers, percentage and KLM (Royal Dutch Airlines). Sub-debates include frames related to political decision-making (with words such as growth, the future and the names of political parties), economic development (with words such as economic, government, human and new), infrastructure (with words such as the name of the Minister of Transport, Netelenbos, fifth, runway and council) and national development (with words such as Dutch and transport, seemingly referring to the importance of transport for the Dutch economy). An investigative frame is then used to discuss the parliamentary hearing on the El Al crash, with words such as investigation, commission, questions, El Al Israel Airlines, disaster(s), freight and Bijlmer disaster. Risk is no longer a frame in the discourse (see Figure 4).

The dominant frame in the fifth period (January, 1 2000 – December 31, 2003),

when a new fifth runway becomes operational, focuses on safety ($EV = 10.94$, $R^2 = 15.14$, $\alpha = .92$). This main frame includes words such as safety, aircraft, problems, air traffic control(ling), runway, flights, politics, human and KLM. Risk is not part of this dominant frame, and the word *risk* now stands in the periphery of the network, i.e., it is no longer connected to frames in the network. Third-party airport risk is subsequently discussed in terms of safety, particularly for specific aircraft and airlines flying in and out of Schiphol Airport. Sub-debates are framed in terms of ecology (with words such as environment, growth, nature and transport), judicial procedures (with words such as law, aviation law, norm, and the names of the involved political parties), noise pollution (with words such as investigation, noise pollution, noise, aviation and the name of the professor leading a commission about noise pollution, Berkhout) and infrastructure (with words such as using and the Minister of Transport and Public Works; see Figure 5).

From the mid-2000s (January 1, 2004 – January 31, 2009), the main frame of the media discourse is the financial feasibility of privatizing the airport that is owned by the Dutch state, the province of North Holland and the municipality of Amsterdam ($EV = 9.11$, $R^2 = 12.55$, $\alpha = .91$). Within this frame appear the words privatization, shares, percentage, interests, government, parliament and municipalities. The safety frame remains an important sub-debate during these years, emphasizing the safety of specific aircraft and airlines. The name of a specific airline, Onur Air, is included in this frame because of several incidents with this Turkish airline that obtained a flight restriction in 2005 for Schiphol Airport. The words Onur Air are accompanied by words such as aircraft, safety, inspection, supervision, safe, European, cost(s) and passengers. The third frame, which is related to the safety frame, addresses incidents with the aircraft and the authorities' management of these incidents, as indicated from words such as aircraft, KLM, air traffic control, occurrences, investigations, justice and reporting. The word *risk* is not included in these frames and remains an independent term on the outskirts of the network. The other sub-debates in this period focus on economic growth (with words such as growth, economy and new), operational policies and discussions concerning the new runway (with words such as runway 19R36L—that is, the fifth runway, council, commission, advise, Transport and Public Works and CEO of Schiphol Airport), and ecology (with words such as environment and Geel, the name of the State Secretary of Environment) (see Figure 6).

The media discourse in the seventh period (February 1, 2009 – May 31, 2009) focuses exclusively on a Turkish Airlines Boeing 737 that crashed near the new runway on February 25, 2009. The main debate is framed in terms of the assistance provided by emergency services and authorities to the casualties and other passengers ($EV = 11.56$, $R^2 = 15.64$, $\alpha = .96$), as indicated by words such as first, aid, mayor, police, disaster, ambulance, fire brigade, relief worker and assistance. The sub-debates address inquiries into the accident (with words such as investigation council, the name of this council's chair, Pieter van Vollenhoven, cockpit, landing, automated, pilot and Turkish), technical aspects (with words such as fuel, Boeing, pilot, engine, crash, fire, aircraft, air, safe and the name of the chair of the Dutch ALPA, Baksteen), public information concerning the facts and figures of the accident (with words such as Turkish, Airlines, deaths, wounded, tail, accident and motorway A9), the causes (with words such as cause, fast and complete) and the safety in

the region where the plane crashed (with words such as safety zone, that is, the zone inside the risk contour around each runway at Schiphol Airport where building is restricted or banned, and the names of the areas, i.e., Kennemerland and Haarlemmermeer). This frame refers to the third-party airport risk that is connected to the safety region where the plane crash occurred. The words risk and safety no longer belong to a subframe and thus are not part of an implicit frame. An implicit frame emerged around the word safety-region. Economic or ecological frames are not connected to this accident (see Figure 7).

The levels of the elaboration and the restriction of the overall discourse vary over time. In the early nineties, the discourse is elaborated, indicating the possibility of differentiated meanings concerning third-party airport risk. During 1992-1993, the total explained variance of the six implicit frames is less than 50%. In the second period, there is a lower possibility of different meanings, as the explained variance increases to approximately 62%; the discourse is more restricted. Between 1993 and 2009, the explained variance fluctuates between 40% and 50% and in 2009, rises to approximately 67%, the highest level for the entire period, thus indicating that the discourse is at its most restricted level.

CONCLUSION AND DISCUSSION

Between May 1, 1992, and May 31, 2009, different meanings were constructed concerning third-party airport risks in two Dutch quality newspapers. Our second order analysis of the newspaper word networks concerning third-party airport risk shows that the selection and the variation of words for this issue change over time. We used the concept of implicit frames, as an operationalization of the codification of meaning in the media, to analyze the dynamics of the media discourse over time. The analysis of the newspaper discourse indicates forty implicit frames, sixteen of them are used more than once, what leads to twenty four *different* implicit frames between 1992 and 2009. Our research shows that the El Al Boeing 747 crash is an amplifier of the third-party risk assessment in two quality news papers in the Netherlands, as Hale (2002, p. 300) noted before. Our newspaper discourse analysis strengthens this conclusion because we found no newspaper articles addressing third-party airport risk between May and October 1992. The newspaper discourse begins immediately after the crash on October 4, 1992. The latent structure of the discourse (Van Gorp, 2006) since that time shows a stable contextualization of third-party airport risk in terms of the economic development of Schiphol Airport and the Dutch national economy generally. In addition to implicit frames on the actual accident, third-party airport risk is immediately strongly signified as an economic-ecological problem. Immediately proceeding the accident, an economic-ecological frame is the second frame in the discourse and explains approximately the same amount of variation in the discourse as does the main frame of the discourse at that time, i.e., the accident frame. The economic-ecological frame clearly becomes the dominant frame in the second period, 1993, after which period economy and ecology become two separate frames, thus indicating that the newspaper discourse starts differentiating economical and ecological aspects with respect to third-party airport risks. The economic and ecological frames continue to be part of the discourse until 2009 and are accompanied by other

frames that emphasize this economic denotation of third-party airport risk, specifically, frames about infrastructural work (between 1993 and 2004), long-term development plans for Schiphol Airport (e.g., the plan for a new airport in the North Sea between 1996 and 2000), noise pollution (between 2000 and 2004) and financial affairs (the main frame between 2004 and 2009). The issue of third-party airport risk concerning Schiphol Airport is primarily conventionalized as an economical and ecological problem in quality newspapers in the Netherlands.

Next to the group of economic-ecological frames is a political contextualization, shown by the implicit frames with a political character. These implicit frames are visible after 1993 in the frames concerning regional and national planning and in decision-making concerning Schiphol Airport expansion as well as in the frame on the 1998 parliamentary hearing about the El Al crash and the policy on safety frame between 2004 and 2009. The second contextualization of the issue of third-party airport risk concerning Schiphol Airport is clearly political: in the 1990s, it concerned the airport's expansion, and in the 2000s, the implementation of the policies and the judicial consequences of those policies concerning the risk and safety of flying.

A third group of implicit frames in the newspaper discourse logically addresses actual aircraft accidents. During 1992-1993, the discourse is dominated by the signification of the El Al Boeing 747 crash in Amsterdam, and in 2009, by the Turkish Airlines Boeing 737 crash in the polder near Schiphol Airport. In both periods, the accidents are labeled in terms of inquiries into their causes and related events. There are also some remarkable differences. In 1992, the discourse discusses the location of the accident, the responsibility for the accident and eyewitness statements. In 2009, these frames are replaced by frames concerning the assistance at the location, the technicalities of the accident and the information provided to the public. It is also immediately defined in terms of safety, a subject that appeared only after some months in the case of the El Al accident. The factor analyses of the words shows that the words safety and risk are not part of a sub-debate anymore. The only sub-debate that could be distinguished is about the safety region as the materialized form of third-party risk around Schiphol airport in a specific physical area. In the two quality newspapers the Turkish Airlines crash is not framed in terms of safety or risk as such, but as an incident in the safety region around the airport.

In the context of the stable groups of economic-ecological, political and actual accidents' implicit frames, it is informative to follow the flanking frames about risk and safety more closely over the years. Safety and risk frames first appeared in the discourse in 1993. In the 1990s, third-party airport risk was discussed more in terms of risk (in popular language defined as the probability of danger for damage or loss) than of safety (in popular language used to indicate a state of being from someone or something that is safe, a state of being out of danger). The implicit frame of risk appeared two times in the discourse in the 1990s. After the year 2000, the risk frame disappeared, and the safety frame lengthened, specifically, as the main frame of the newspaper discourse between 2000 and 2005 and as a sixth frame in 2009 with regard to the Turkish Airlines Boeing 737 accident, notably about the safety region that had been implemented in the 2000s. Over the years, the risk and safety frames became a frame about the safety region. The decision-making concerning Schiphol Airport's future, including policies about third-party

airport risk, changed the way in which third-party airport risk is framed in news paper discourse. In this respect one can say that policy works, at least for quality news papers. The Dutch third-party airport risk policy changed the meaning of it in the discourse of the two quality newspapers. Third-party airport risk is no longer contextualized by risk frames with the probability of damage or loss, but by safety frames indicating a safe state of being out of danger. Before 2000, the safety frame appears only once in 1993 and is accompanied by a risk frame. After 2000, the safety frame appeared three times, each time accompanied not by a risk frame, but a judicial frame, an incident frame and a policy frame. This change indicates that the codification of third-party airport risk is specific to the time period; it differs in the 1990s and in the 2000s. In the 1990s, third-party airport risk is contextualized by implicit frames on the risks of flying linked to a political discussion about Schiphol Airport's expansion. Risks are signified as a societal and therefore a political issue. In the 2000s, this contextualization becomes a codification of safety, contextualized by implicit frames about the judicial and policy aspects of aviation safety and incidents. This may seem to be a subtle change in word use, but it signifies a major shift in meaning, from third-party airport risks as a potential risk to society to a discourse about the safety of particular aircraft and airlines with respect to incidents. In the implicit frames of the quality newspaper discourse about third-party airport risk, the word risk as a probability of danger for damage or loss is disconnected and replaced by the word safety, indicating a principle state of being out of danger. In other words, the meaning of third-party airport risk in Dutch quality newspapers has transformed from a risk issue to a safety issue, an issue that can be pragmatically managed legally by the actors involved. The different framings of the two major airline crashes in those years strengthen this shift in the newspaper discourse. The 1992 El Al crash was contextualized with risk frames, whereas the Turkish Airlines crash in 2009 was contextualized with safety frames surrounding the word safety-region. In 17 years, the implicit frame of risk was replaced by an implicit frame of a safety-region in the discourse of quality newspapers in the Netherlands. Although the words risk and safety are nevertheless part of the discourse, they have lost their connection to the discourse's implicit frames. Over the years, the economical, ecological and political frames that contextualized third-party airport risk waned, and frames of accidents and safety arose, thus changing the structural character of the discourse of third-party airport risk in Dutch quality newspapers.

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