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Relational coupling of multiple streams: The case of COVID-19 infections in German abattoirs

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Abstract

After a series of COVID-19 outbreaks among employees in the German meat-processing industry, the Work Safety Control Act protecting these workers made it on the government's agenda in July 2020. From a Multiple Streams perspective, local corona hotspots may be understood as policy windows for introducing respective measures. However, this alone is not sufficient to explain agenda setting. This study investigates the coupling of streams within policy windows. Introducing the notion of relational coupling to the MSF research agenda, discourse network analysis provides a new methodology to reveal entrepreneurial activities. Studying the German mass media discourse on the issue identifies two stages: (1) An initial problem brokerage without coupling of core policies, followed by (2) a coupling across all streams based on a focusing event. We argue that relational coupling allows for an enhanced understanding of agenda setting.

KEYWORDS

COVID-19, labor policy, multiple streams framework, relational coupling

INTRODUCTION

When thinking of politics as a contingent and ambiguous world with circumstances beyond control and subjects without clear-cut meanings, the task of political actors becomes one of seizing opportunities—and of making sense of them. In such a garbage can perspective (Cohen et al., 1972) the intuitive sequence of the policy process can be reversed. Instead of finding an answer to a problem, those who advocate a certain policy might seek to sell it as a solution and therefore look for a useful problem to come along. It is the merit of Kingdon's (2011) seminal work on multiple streams to introduce this perspective to policy studies explaining agenda setting as dependent on three conditions: the opening of a policy window providing an opportunity, which is utilized by policy entrepreneurs representing political actors, who take advantage of the favorable circumstances by making sense of them. The latter is achieved by reconnecting problems, politics, and policies, which are otherwise altering on their own in independently flowing streams. This activity is called coupling. While situated at the heart of the Multiple Streams Framework (MSF), it has received comparatively little attention compared to policy windows and policy entrepreneurs, for which there are well-developed refinements in the literature (Herweg et al., 2015; Petridou & Mintrom, 2021).

Recent progress on conceptualizing and operationalizing coupling builds on a discourse analytic approach to the MSF (Winkel & Leipold, 2016). In this context, coupling can be understood as an interpretative act. In light of a focusing event or a changing public mood, a policy may look different. Entrepreneurs are strategically making sense of the ambiguous world by drawing on the material provided in the streams. More explicitly, the concepts of coupling as argumentative (Blum, 2018) and partial (Dolan, 2021) have paved the way for a better understanding as well as an easier application. The former focuses on grasping coupling by looking at statements made by entrepreneurs on elements from the streams. The latter shows the diversity of combinations of streams beyond a full coupling of all of them. This study takes up this path of inquiry by highlighting the relational character of coupling. Inherent in argumentative coupling is a subject-object relation between the entrepreneur and the content of the respective statement. Inherent in partial coupling is an object–object relation between the discursive patterns taken from the streams. We develop the notion of relational coupling capturing these links between core concepts of the MSF. At the same time, it allows for empirically retrieving the second relation from the first and thereby paves the way for a straightforward operationalization drawing on discourse network analysis (Leifeld, 2016).

To illustrate the insights gained through relational coupling, we study the case of a German labor policy making it to the agenda in the aftermath of a series of COVID-19 outbreaks in German abattoirs. Conditions and safety at work are generally regarded deficient in the German meat-processing industry. Seasonal workers are reported to work overtime under precarious conditions without being employed by the respective company, but by subcontractors posing a complex and non-transparent system of outsourcing. These conditions of labor have been addressed by policies previously, however, the subcontractor system relying on service contracts persisted and violations of labor regulations kept being reported (Kuhlmann & Vogeler, 2021). Between May and July 2020 local outbreaks of COVID-19 at meat-processing plants shed light on the issue. Infections were regarded as an immediate consequence of inadequate working conditions and safety measures. On July 29 the Work Safety Control Act has been put on the federal legislative agenda. It addresses the sketched problems by prohibiting service contracts and temporary work and further includes requirements regarding overtime, housing, and monitoring compliance of the companies. Why and how did this policy become a part of the government's agenda only at this point in time?

This research question focuses on an exploration of the process of agenda setting in order to explain the timing of a particular policy. Such a setup is common for MSF applications (Becker, 2019; Kagan, 2019), although recent studies often extend the analysis to the phase of decision-making (Herweg et al., 2015). An answer is available from an MSF perspective, which has already been applied successfully in studying German labor policy (Zohlnhöfer, 2016). The spread of the virus in the meat-processing industry may be regarded as a series of focusing events (Birkland, 1997) opening a policy

window. However, this alone would not suffice to understand the agenda setting of the Work Safety Control Act according to the MSF. To explain the success of the policy as a consequence of COVID-19 infections in abattoirs, it needs a more fine-grained analysis of how the stories linking both are told. We need to show how the streams are coupled, which is expected to be successful only when the policy window is open. Therefore, the selected case is a useful environment for applying relational coupling. While we conduct a conventional MSF study insofar as we picture the case in the flowing of independent streams, we also investigate how the streams are coupled by conducting a discourse network analysis operationalizing relational coupling. This does not only picture the agenda setting of the Work Safety Control Act more comprehensively, but it also exemplifies how relational coupling can enhance MSF applications conceptually and methodologically.

THE MULTIPLE STREAMS FRAMEWORK

Why do some issues make it to the agenda of political decision-makers, while others do not? This question builds on the core theme of agenda setting literature stating that it does not only matter how issues are discussed in the policy process, but also if they are considered at all. Obviously, this makes the question of how to get a policy to the agenda a relevant and strategically decisive issue. The MSF provides a conception of how this movement from neglection to consideration may be achieved (Herweg et al., 2017; Kingdon, 2011). The main idea consists in disentangling the rational conception of political decision-makers, who are confronted with a clear-cut problem and find an appropriate solution to it. Kingdon (2011) turns over the basic assumptions of this rationalistic point of view. Most importantly, the world of definite problems and straightforward policies is replaced in the MSF by the notion of ambiguity. Furthermore, political decision-makers are no longer portrayed as capable, well-informed, or purposeful. Kingdon (2011) rather pictures them as deficient or simply human individuals. They lack time, they are tied to a serial processing of issues, and instead of having a fixed set of ordered preferences they develop inconsistent ad hoc positions on given issues. More information is no cure for ambiguity (Herweg et al., 2017). On the contrary, further information rather extends ambiguity because additional points of view on a subject become available.

From the perspective of a policy, which needs to make its way on a decision-maker's agenda, Kingdon (2011) suggests taking up three core elements of the policy process—problems, solutions, and politics—and conceptualizing them as independently flowing streams. This allows for the decomposition of the rational conception of political actors crafting solutions for given problems. In a strict reading of the framework, policies are not related to societal challenges in any way, while politics and the balance of power are unaffected by the severity of problems and the success of governmental policies, although this is counterintuitive and often undermined in empirical observations. It has stimulated classical critiques (Mucciaroni, 1992) and is a frequently reappearing issue (Hawkins & McCambridge, 2020). How to address this challenge? On the one hand, one may call for a more generous interpretation of the axiom of stream independence as a partial autonomy of streams (Winkel & Leipold, 2016). On the other hand, stream independence may be regarded as a conceptual device (Herweg et al., 2017), which allows for a point of view otherwise inaccessible for policy research.

Within the flowing of the streams, a policy is basically waiting for the right timing to present itself. Such a favorable constellation of the streams is called a policy window. A basic distinction rarely discussed in the literature differentiates between windows opening in one of the streams and those opening in all of the streams at the same time. The latter would require the developments in each of the streams to be favorable for the respective policy. Kingdon sketches this point in time by referring to the launch of a spaceship, for which it is necessary that all "target planets are in proper alignment" (Kingdon, 2011, p. 166). Yet, a few pages further, Kingdon (2011, pp. 173–174) also locates the opening of a policy window in only one single stream. From this alternative perspective, the window does not depend on the flowing of all streams, but simply on favorable conditions in one of them. Keeler (1993)

has suggested investigating the two different processes of opening policy windows under the labels of micro vs. macro windows. The former allows for a more fine-grained analysis as they can be located in the problem or in the political stream (Zahariadis, 1995, 2003). The concept of ripeness of streams put forward by Herweg et al. (2015) allows for bringing the macro window back into the model, while preserving the analytical strengths of the micro window and its focus on a single stream including the events within it.

Just because a policy window opens, this does not imply that a policy is washed up the agenda automatically. An open policy window and the streams being ripe are both necessary, but not sufficient for successful agenda setting. Another requirement consists in a policy entrepreneur successfully coupling the streams while the window is open. Policy entrepreneurs constitute a second type of actor in the MSF complementing the overburdened decision-maker. Kingdon's original account has highlighted the entrepreneurs' willingness "to invest their resources – time, energy, reputation, money – to promote a position" (Kingdon, 2011, p. 179). They are not limited to a specific sector but can be found in government or administration, in interest groups or grassroots movements, in media, or science. While decision makers hold the power to consider and decide issues, this task absorbs them from dealing with ambiguity, which makes them passively influenced by the way the world is presented to them. Policy entrepreneurs focus on a very specific subject and actively utilize ambiguity to their advantage. This does not mean that entrepreneurs are superior geniuses beyond bounded rationality (Herweg et al., 2017; Kuhlmann, 2016), but from the point of view of the MSF, they are at least able to transgress ambiguity and deal with it in an intentional way.

Worried about the imbalance between active entrepreneurs and passive decision makers, Ackrill and Kay (2011) have suggested moving from the dichotomy of actors toward a general conception of agency in the MSF. According to them, policy entrepreneurship may not only be found in entrepreneurs selling their ideas to policy makers but also in policy makers selecting ideas thereby utilizing ambiguity themselves. This way policy entrepreneurship becomes "a general label for a set of behaviors in the policy process, rather than a permanent characteristic of a particular individual or role" (Ackrill & Kay, 2011, p. 78). This makes it possible to portray ministers from governments or EU Commissioners as applying entrepreneurial strategies. In line with the recent entrepreneurship literature (Petridou & Mintrom, 2021), studying such strategies and their success has consequently become an important task in the MSF (Cairney, 2018) and will be further considered in the next section under the notion of coupling.

COUPLING THE STREAMS: A RELATIONAL APPROACH

This study focuses on coupling as the merging of the independently flowing streams. This activity is ascribed to the policy entrepreneur and it is only successful in the small periods signified by policy windows, although there are noteworthy exceptions that understand coupling as the active opening of a policy window (Exworthy & Powell, 2004). While the other metaphorical categories in the MSF always refer to real world phenomena observable in occurrences within the streams, in political actors or in periods of time, coupling constitutes a highly vague concept. Given that it is comparatively hard to operationalize, a coupling logic is applied only in 12% of MSF studies between 2000 and 2013 (Jones et al., 2016). Furthermore, it is sometimes hard to distinguish coupling from softening up and entrepreneurial strategies. Softening up signifies promoting a policy in the policy community thereby preparing it before a policy window opens. Entrepreneurial strategies designate the different ways in which entrepreneurs seek to realize coupling. Conceptual boundaries blur: Softening up, which happens before the policy window opens, may have excluded important processes from investigations of coupling (Blum, 2018), while entrepreneurial strategies may rather be a synonym for the tangible activities of entrepreneurs than for the conceptual term of coupling (Frisch-Aviram et al., 2019).

Early refinements include three strategies that entrepreneurs apply to couple the streams: framing, symbols, and salami tactics (Zahariadis, 2003). Zohlnhöfer et al. (2016) have extended the coupling process to decision-making, suggesting manipulation, concessions, and package deals as equivalent entrepreneurial strategies to ensure a proposal's adoption. Zahariadis and Exadaktylos (2016) have focused on issue linkage, side payments, and rule manipulation with an emphasis on the question which strategies succeed or fail under which conditions. As in the case of policy entrepreneurs, the literature on their strategies has become broader than the MSF itself (Meijerink & Huitema, 2010). However, within the MSF the activity of policy entrepreneurs remains attached to the task of coupling the streams. What exactly do policy entrepreneurs do to push their respective policies to the agenda? We need a conception of coupling that captures its interpretative moment. Coupling rests on the overcoming of ambiguity by making sense of the world and this world looks different depending on how its pieces from the independent streams are put together. Furthermore, we equally lack strategies for operationalizing coupling. While a plurality of empirical accesses is preferable, our methodological inventory is still limited in this respect. To address these gaps, we identify characteristics of coupling by drawing on the notions of coupling as argumentative and partial before introducing a relational approach.

Argumentative coupling

The first step in refining coupling consists in transposing the MSF into a discourse analytic perspective to access a conception of coupling as a discursive phenomenon. Winkel and Leipold (2016) have paved the way toward such a research agenda by building on discourse analytic strands in public policy (Leipold et al., 2019) and especially on storylines (Hajer, 1995) produced in discourses to connect elements like problems, solutions, and responsibilities. This allows for a reconsideration of MSF terminology, which remains in line with the original assumptions of the model, because of the ubiquitous need for interpretation under ambiguity: The three streams are discursive patterns, policy entrepreneurs are discourse agents crafting storylines and policy windows are floods—periods of high salience of patterns within one stream (Winkel & Leipold, 2016). This also enables a reassessment of coupling as discursive strategies establishing canals between the streams. Winkel and Leipold (2016) suggest the construction of story lines, emotionalization, and exclusion of certain aspects among others. However, this is not breaking with the MSF's research tradition, but rather deepening it. In an ambiguous world, interpreting becomes a strategic act. Framing, symbolizing, and partitioning reality is therefore similarly providing a certain discourse instead of another.

A conceptualization of coupling in line with a discursive approach toward the MSF has been suggested by Blum (2018) under the notion of "argumentative coupling." Drawing on knowledge utilization, coupling is understood as making a claim about reality by referring to elements from the streams (Blum, 2018). There is information in the streams, maybe even in the form of scientific evidence, but because of ambiguity and stream independence, selecting and connecting the pieces of information already constitute a strategic shaping of the discourse. Arguments are compatible with storylines, but while the latter can imply relations between problems and policies, arguments are more concise in stating them. At the same time, they are rather specific compared to symbols or emotions, which may equally link elements from the streams, but without necessarily naming them. Methodologically, argumentative coupling focuses on statements (Blum, 2018; Zittoun, 2013). A policy entrepreneur might argue the following: "Air pollution in the city has increased significantly, therefore, the new mayor needs to consider a congestion charge." This way, the problem stream (air pollution) would be coupled with the political stream (new mayor) and with the policy stream (congestion charge). The operationalization of argumentative coupling is straightforward. An entrepreneur participates in the discourse by making a statement.

Partial coupling

While argumentative coupling has provided an idea of how to capture it in policy entrepreneurship, the second step in refining coupling consists in clarifying the relationship between coupling and the other elements of the MSF. In a careful rereading of Kingdon (2011), Dolan (2021) has pointed to the concept of "partial coupling." The idea is to differentiate between a partial coupling of two streams, for example, a policy and a problem, and a complete coupling of all three streams, for which the above-suggested statement on a congestion charge would be an example. This is a simple but influential differentiation. Partial coupling lowers the requirements to be performed because only two streams are considered. Therefore, several partial couplings could be observed over time, before a complete coupling of three streams is achieved (Dolan, 2021). Given that the MSF is mostly about getting the right timing, it is helpful to disentangle coupling and transform it from a demanding task hard to achieve to a modest concept that rather pictures the everyday business of entrepreneurs. Multiple partial couplings can then be regarded as an entrepreneurial strategy itself. They can be understood as issue linkages (Dolan, 2021; Zahariadis & Exadaktylos, 2016), as attempts of entrepreneurs to steer the flowing of the streams, not fully successful as the streams move on, though also not without consequence allowing for persisting relationships of elements from different streams. Multiple partial couplings may equally be seen as a framing over time and—by accumulating across the still independently flowing streams—as telling stories of how their elements relate (Dudley, 2013; Winkel & Leipold, 2016).

Interestingly, the distinction of complete vs. partial coupling conceptually supplements the rarely considered difference of micro vs. macro windows. If we consider a demanding macro window of all streams being ripe simultaneously, there will be fewer cases harder to observe. Studying micro windows opening in one stream allows MSF scholars to study entrepreneurial activities as consequences of changes in a single stream instead of excluding it under the notion of softening up mostly limited to the policy stream (Blum, 2018). If a policy stream ready for coupling meets an open problem window, entrepreneurs will try to connect problem stream and policy stream, no matter how devastating the flowing of the political stream. Partial coupling makes us see this phenomenon. In line with Dolan (2021), also the complete coupling of all streams may be better understood by acknowledging the history of partial couplings facilitating it. A case in which a macro window opens in all streams and is seized by an entrepreneur conducting a complete coupling is still conceivable but unlikely. Partial coupling successively establishing perspectives within the discourse is more insightful, because it happens all the time. While it is the merit of argumentative and partial coupling to have opened the black box of coupling processes, we argue that the third feature of coupling is still missing.

Relational coupling

Coupling is about connecting independent streams or, put differently, about establishing links between problems, politics, and policies. At the same time, it relates the main concepts of the MSF, because it is performed by a policy entrepreneur during an open policy window. Connecting the streams is the essence of coupling while relating the concepts refers to how it is done. We suggest considering these links as what they are: relational phenomena. Our perspective is situated in a discourse analytic approach to the MSF (Winkel & Leipold, 2016) utilizing micro windows (Keeler, 1993) and ripeness of streams (Herweg et al., 2015) as well as a generalized policy entrepreneurship (Ackrill & Kay, 2011). It builds on the conceptions of coupling as argumentative (Blum, 2018) and partial (Dolan, 2021), which are compatible with each other (Dolan, 2021). Whereas argumentative coupling enables us to operationalize the how of coupling, partial coupling illuminates what exactly is coupled.

Inherent in these conceptions are two types of relations shown and utilized by relational coupling. A first dimension of coupling is represented by the relationship between the policy entrepreneur and the three streams, which is established in the activity of coupling. From a discourse analytic point of

view, a subject participating in the discourse is related to a discursive reference addressed. Because in such a discourse analytic perspective on the MSF, coupling is nothing but interpreting the world, the entrepreneur is linked to a stream by talking about it or more specifically its elements. Understanding this relation as an argument or claim, researchers are enabled to trace these relationships in documents empirically. Authors of documents could be regarded as entrepreneurs while the statements they make within a document could represent elements of the streams (Boscarino, 2009). Furthermore, specific types of text like newspaper articles or plenary protocols exhibit standard linguistic procedures to connect speaker and statement like colons, quotation marks, and indirect speech. Utilizing the identifiability of speaking subjects and spoken content enables human coders or computer programs to extract the first coupling relation from given texts. However, developing a coding grammar requires reflecting on the fit between speakers and entrepreneurs and between a claim's object and the three streams.

The second dimension of coupling is represented by the relationship between the three streams, which the entrepreneur seeks to establish by coupling them. This second relation is therefore no longer represented by the subject-object relation of entrepreneurs interpreting reality but solely by the object-object relation of elements within texts. Applying a perspective of partial coupling, statements meet the requirements to be considered as facilitating coupling, because addressing two streams is enough (Dolan, 2021). "Air pollution in the city has increased significantly, therefore, a congestion charge is needed" would suffice to couple problem and policy stream. "Air pollution in the city has increased significantly, therefore, the new mayor needs to take action" would constitute a coupling of policy and political stream by attributing responsibility. Finally, a coupling of problem and political stream is conceivable in the following statement: "The first thing the new mayor should do is to consider a congestion charge." Because coding based on given semantic categories would not even require the sentence as a unit of analysis, the latter would also work in the following: "Congratulations to the elected mayor. She should consider a congestion charge."

From a network analytic perspective (Leifeld, 2016), both relations may be represented in a discourse with a plurality of discourse participants. These speakers do not necessarily qualify for the role of a policy entrepreneur just by making a statement. At the same time, they should not be limited a priori because policy entrepreneurship allows for ministers and heads of government to be utilizing ambiguity strategically as well (Ackrill & Kay, 2011). The first subject-object relation can then be represented as a bipartite network of speakers making statements about elements in the streams in a certain way. The different nodes—speakers and concepts from the three streams—would only be interconnected by edges representing statements. The second relation may be derived from the first. If a speaker refers to elements of the streams within a specified context unit, in the same way, these elements could be considered coupled by the statement. This would yield a one-mode graph, in which elements from the streams are connected by edges representing the joint reference by at least one speaker. Several speakers coupling the same elements can be represented by edge weights highlighting a more extensive coupling. Within this discourse network, the role of entrepreneurs can be assessed by identifying the edges strategically constituted by their statements. This approach of studying relational coupling strictly follows the procedures of Discourse Network Analysis (DNA) developed for studying policy debates (Leifeld, 2016, 2018). Essentially, our suggestion is to operationalize coupling as discourse networks by coding statements in texts as entrepreneur-stream relations and studying the stream-stream relations as the resulting concept congruence networks.

Discourse Network Analysis can be applied in different policy theoretical contexts (Leifeld, 2018). Several applications have utilized actor congruence networks, which relate actors through edges representing joint references to concepts. They are useful to map and study advocacy coalitions (Kukkonen et al., 2017; Leifeld, 2013). Implications of external developments for discourse dynamics have been another important subject in DNA research (Hurka & Nebel, 2013; Rinscheid et al., 2020). This is of special importance for relational coupling because policy windows opening in the independent flowing of the streams are regarded external for those aiming at agenda setting. There are also contributions more closely investigating the role of concepts utilized and framed by actors like solidarity (Wallaschek, 2020). Other studies refine the types of actors being part of a discourse network (Bandelow & Hornung, 2019)

and even grant them the role of policy entrepreneurs (Buckton et al., 2019) intended in relational coupling. Recent research has paved the way for DNA applications in the MSF by investigating the persistence of previously influential entrepreneurs in British road policy (Witting & Dudley, 2020) or by studying the engagement of entrepreneurs in different issues in Swiss water policy (Brandenberger et al., 2020).

Therefore, the notion of relational coupling does not only tie in with the task of opening the black box of coupling within the MSF, it also speaks to the sketched strands of research in DNA strengthening the utilization of concept congruence networks and providing theoretical foundations for an investigation of discursive entrepreneurial strategies. With the aim to illustrate our argument of relational coupling and its merit for empirical MSF studies, we conduct a DNA regarding a case of agenda setting, namely the improvement of working conditions in the meat-processing industry in Germany following the problem window of outbreaks of COVID-19 among workers in the sector.

THE CASE OF COVID-19 INFECTIONS IN GERMAN ABATTOIRS

The case study seeks to understand the successful agenda setting of the Work Safety Control Act ("Arbeitsschutzkontrollgesetz"). This policy has been decided by the German government on July 29, 2020 and passed by the parliament on December 16, 2020. It bans service contracts and temporary work in the German meat industry and specifies standards regarding the recording of working time, the accommodations of workers, and monitoring compliance. While these measures have been discussed in respective policy communities for years, they are successfully pushed to the government's agenda in spring 2020. Why and how did the agenda setting of the policy succeed at this and not at a different point in time? This is our overall research question. From the perspective of the MSF, three requirements need to be met in the policy process: policy windows, policy entrepreneurs, and a coupling of the streams. We expect COVID-19 infections to constitute policy windows opening as focusing events (Birkland, 1997) in the problem stream. This is studied by examining the flowing of the streams, assessing their respective ripeness for coupling and probing the problem stream for open policy windows. However, this preliminary analysis only sets up the context for applying relational coupling. Explaining agenda setting in the MSF requires to show how the streams are coupled while the policy window is open. Therefore, this otherwise traditional research design is implemented innovatively by studying discourse networks in the German mass media discourse on COVID-19 infections in abattoirs. First, data gathering is described, then the results are discussed regarding the discursive connections established between problems, policies, and politics. Consequently, our explorative research question might be restated in two parts: 1) In which way does the flowing of the streams open a policy window? 2) How are the streams coupled to push the policy to the agenda?

The COVID-19 crisis in abattoirs in Germany

Germany counts with one of the biggest livestock sectors within the European Union (Bundesministerium für Ernährung und Landwirtschaft, 2015). The increasingly competitive environment in the meat-producing and -processing industry has resulted in extreme intensification, specialization, and regional concentration, often at the expense of animal and human welfare and the environment (Grethe, 2017; Möck et al., 2019). Competitive advantages are mainly reached by economies of scale, professionalization, and high cycle rates of assembly line work in abattoirs (Spiller & Schulze, 2008). In addition, animal welfare standards are often not respected (Velarde & Dalmau, 2012) and the exploitative working conditions especially in abattoirs have been the subject of several studies (Kuhlmann & Vogeler, 2021; Lever & Milbourne, 2016; Wagner & Hassel, 2016). The combination of low wages and the heavy workload has led to a high share of migrants—mostly

from eastern European countries. An estimated two-third of employees in German abattoirs are hired by subcontractors, in addition, there is a high share of posted and agency workers (Kuhlmann & Vogeler, 2021). The precarious working situation has repeatedly been subject to media and political discussion. In 2014, the meat sector became a part of the Posted Workers Act including the introduction of a sectoral minimum wage. In 2017, a law on securing workers' rights in the meat sector was enacted that aimed at further improving working conditions by holding meat companies responsible for their subcontractors and for social insurance contributions. In addition to these legal advancements, the industry committed itself to a voluntary code of conduct to improve working conditions. Despite these policy changes, there is a lack of control and enforcement and on several occasions, violations of the existing policies have been documented (Kuhlmann & Vogeler, 2021). Working conditions especially for migrant workers in the German meat-processing industry remain extremely precarious.

In May 2020, this changed substantially when tests for COVID-19 of several thousand employees of several German abattoirs turned out positive. A hotspot of infections was one slaughter plant of one of the biggest European players, namely the Tönnies Group. The rapid spread of infections among employees revealed the problematic living and working conditions of workers in the abattoirs. Especially the housing in overcrowded dorms and the partly unhygienic conditions favored the spread of the virus and raised public and political attention. In the context of the corona crisis, the hitherto almost invisible workers of the meat-processing industry moved to the center of attention, because their treatment now posed a threat to society as a whole. As a consequence of what has evolved into a public scandal, production was stopped at many sites and entire areas were put under quarantine. Beyond these immediate reactions, the COVID-19 outbreaks produced pressure on policymakers to react. On May 20, the Federal Minister of Employment and Social Affairs Heil announced a policy proposal with the aim to better protect workers in the meat-processing industry (Bundesministerium für Arbeit und Soziales, 2020). The cabinet passed it on July 29 as Work Safety Control Act.

Reading the case in the terminology of the MSF, we observe interesting constellations in the flowing of the streams. The policy stream offers a broad set of measures, although they lack a coherent compilation and an established label. Furthermore, some policies have made their way to the agenda successfully in recent years, yet deficits persist in their enforcement. Up to 2020, measures have been voluntary and those, which are compulsory, are regarded insufficiently controlled. Similarly, the political stream is somewhat ready for coupling. Among the governing parties, the social democrats (SPD) have claimed a critical position regarding service contracts and temporary work in their election program of 2017 (SPD, 2017). However, the conservatives (CDU/CSU), who lead the coalition government, only refer to the progress made on these issues in 2017 in their electoral program of the same year (CDU/CSU, 2017). Therefore, the social democrats being part of the government provide a certain ripeness of the political stream, but boundaries are posed by the conservatives. Furthermore, the already mentioned strong players in the sector, especially the Tönnies Group, need to be regarded as important political forces critical of respective policies.

Most interesting is the flowing of the problem stream, which lacks major opportunities to direct attention to working conditions in the German meat sector and thereby present respective policies as solutions until April 2020. Between May and July 2020, however, abattoirs in northern and western Germany become local hotspots of COVID-19 infections and allow to shed light on deficient working and living conditions accelerating the spread of the virus. Yet, in an ambiguous world, this interpretation still needs to be made. Table 1 lists five incidents in the mentioned period. They are not complete; in fact, there are many more similar cases in this period. These five cases have been selected based on media coverage posing salient COVID-19 hotspots. We argue that they can be understood as focusing events (Birkland, 1997), which are among the three sources of problem perception in the MSF also including feedback and indicators. This assessment is not self-evident given that the COVID-19 pandemic, in general, can hardly be conceptualized as a focusing event. Among the characteristics suggested by Birkland (1997), it can be assessed as rare and harmful, but its

TABLE 1   Timeline of outbreaks of COVID-19 associated with abattoirs (authors' compilation)

Date	Place: Municipality, county, state	Company
Early May	Coesfeld, Coesfeld, North Rhine-Westphalia	Westfleisch
Early May	Kellinghusen, Steinburg, Schleswig-Holstein	Vion
16/17 May	Dissen, Osnabrück, Lower Saxony	Westcrown
16/17 June	Rheda-Wiedenbrück, Gütersloh, North Rhine-Westphalia	Tönnies
18/19 July	Lohne, Vechta, Lower Saxony	Wiesenhof

development is less sudden, its geographic scope is not limited but global and an information asymmetry between policymakers and general public can be observed at least for January and February 2020 (DeLeo et al., 2021). Yet, for the five COVID-19 outbreaks in abattoirs, an evaluation implies different conclusions: They are concentrated in a certain geographic area, which is highlighted by an increased incidence and they are sudden in being reported by media immediately leaving decision-makers without an information advantage.

Data

We are interested in the coupling activities making agenda setting possible during the period identified as problem window. To understand relational coupling in the debate on working conditions in the German meat-processing industry, we narrow the scope of our analysis down to the German mass media discourse on the issue. This is a serious limitation given that there are several other arenas, in which entrepreneurs are expected to be active. Most importantly, policy entrepreneurs are likely to operate in the background exerting influence within policy networks (Petridou & Mintrom, 2021; Reardon, 2018), where they could portray issues in a certain way by filtering or directing information. At the same time, the public media discourse is of special importance to policy entrepreneurs, because it generates powerful and widespread perceptions of reality and negotiates the legitimacy of policies. At least in democratic constitutional settings, such debates create support for political projects or call them into question. Therefore, entrepreneurs can be expected to utilize the range of their strategies of intentional interpretation of circumstances also in this arena.

As a source of mass media discourse, we select the German daily national newspaper "Süddeutsche Zeitung" (SZ). While there is a significant bias in selecting a journalistic source as the representation of discourse, this choice can be justified following similar applications (Rinscheid et al., 2020). The SZ can be regarded as a quality press publication covering occurrences broadly and objectively. Among these newspapers, it is the one with the highest circulation in this period. It is rather liberal and regarded to be somewhat left, which could be balanced by considering, for example, the "Frankfurter Allgemeine Zeitung" as an opposite (Hurka & Nebel, 2013). However, this would entail other issues like duplication of statements by actors in newspaper articles (Leifeld, 2013). Drawing on the online archive of the SZ, newspaper articles including the German terms for meat and slaughter have been gathered for the period from May 2018 until July 2020 from the politics section of the main print issue. These articles constitute the sampling unit. In a multi-step selection procedure, irrelevant articles and opinion pieces are sorted out resulting in a final sample of 125 cases. For the period from May 2020 until July 2020 representing the policy window the sample consists of 67 articles.

Within the text corpus, statements made by actors on discursive concepts are the unit of analysis. They have been identified and coded for the period of the policy window in line with the DNA methodology (Leifeld, 2016, 2018) and consist of three basic elements: actors making a statement, concepts representing a generalized version of the content of the statement, and a dichotomous evaluation of the agreement of the actor with the concept. As in content analytic techniques like nuclear sentences (Kleinnijenhuis et al., 1997) or political claims (Statham & Koopmans, 1999), the basic idea is to derive

categories by interpreting text not only according to linguistic prerequisites but according to meaning. Irrespective of the order of words, newspaper readers are easily capable of identifying statements because the relation between speaker and subject is clearly signaled. In German these signals include quotation marks for direct and subjunctive for indirect speech as well as verbs establishing this connection like "said," "expressed," or "criticized." Once identified within a newspaper article, the three elements are coded inductively. Actors may be corporative or individual and in the latter case, an institutional affiliation of the individual can be specified from the text. However, actors need to be identifiable. Statements, which cannot be attributed to a speaker, are not coded.

Concepts capture the subject of the statement and are coded by paraphrasing it neutrally in the first round of coding. If a speaker is quoted referring to different subjects within a newspaper article, a new statement is coded for each of them. As for sampling articles, a relevance assessment applies for designating a concept. If some parts of the text report on working conditions or COVID-19 infections in the meat-processing industry, while others broach different issues, only statements on the former are coded. From the resulting codes for concepts, a coding scheme is developed to standardize expressions and rule out varying wording. Subsequently, this coding scheme is applied consistently in the second round of coding, which assures holistic application of concepts across the material. Although the level of abstraction varies to some extent, it is largely leveled by this procedure. Finally, the evaluation of the statement's concept by the actor is coded dichotomously as agreeing with the concept or as rejecting it.

The resulting dataset comprises 356 statements from 46 articles with the variables "individual," "organization," "concept," and "agreement." An intra-coder reliability test shows very high or even perfect repeatability for all elements except for concept. This is in line with expectations because speaking actors are easily identified in a newspaper article, but the content of statements can basically be anything. This study does not predefine codes apart from the general relevance criterion but develops them inductively from the material in the first round of coding. Against this rather qualitative background and given that Krippendorff's alpha is a strict reliability assessment, an alpha of 0.82 for concept is acceptable (Krippendorff, 2013). Details on sampling and coding are documented in the coding manual available in Appendix A. Details on the reliability test are provided in Appendix B. All visualizations and reliability estimations are implemented in R (Gamer et al., 2019; R Core Team, 2019; Schloerke et al., 2018; Wickham, 2016).

Results

Although the MSF generally expects coupling to take place within open policy windows (Kingdon, 2011; Zahariadis, 2003), it is insightful to contrast the 3-month period in 2020 identified as problem window with the previous agenda dynamic of the preceding years. This allows to ensure that no earlier policy windows are neglected, which may have provided opportunities unexploited by entrepreneurs or counteracted by agenda denial. A period of two years before the problem window opened by local COVID-19 outbreaks poses an adequate time frame as it covers the time, in which the law on securing workers' rights in the meat sector passed in 2017 is in force and in which the German federal government elected in 2017 is in office. From May 2018 until July 2020, the issue salience at the level of the newspaper article is represented by the number of relevant articles per month displayed in Figure 1. This shows that there is a low-level, but highly continuous salience of the production and consumption of meat products in the public debate represented by the selected newspaper throughout the investigation period. Before May 2020, articles per month yield an average of two publications and a maximum of eight publications in January 2019.

This salience is explained by different factors. Climate change is an overarching issue repeatedly associated with meat products and there are corporative actors, who represent this problem perception, most importantly the Green Party and the Fridays for Future movement. Yet, these perceptions are not connected to working conditions in the meat-processing industry. Although

explaining peaks in the issue salience is difficult due to these broader debates, it is further helpful to mention four policies. In autumn 2018, the castration of piglets without anesthesia is discussed by the parliament and finally extended in December. The early debate on introducing a state animal welfare label contributes to the high value in the following month. However, both debates primarily focus on animal husbandry at the farm and less on processing meat. In March 2019, the public agenda reflects the announcement of minister Heil to extend the responsibility for subcontractors to the parcel delivery sector resulting in a new law passed in November 2019. Although this labor policy explicitly addresses working conditions, it consists of those measures already implemented in the meat sector in 2017, which allows for respective references, but less for an exploitation of the feedback. Finally, a debate on raising the German value-added tax on meat products in August 2019 highlights the consumption side of the issue but again does not provide an opportunity to focus on the working conditions in production.

An entirely different agenda dynamic is pictured by Figure 1 for the three months in 2020 identified as policy window. With an average of 22 articles per month and a maximum of 29 articles in July 2020, which exceeds the number of working days in this month, the initial assessment of issue salience clearly points to high media attention on the issue for the investigation period. This effect is not due to the COVID-19 pandemic in general already starting in March 2020, but limited to the period of local outbreaks in abattoirs. It is therefore helpful to have a second look at the issue salience based on statements by actors, which are displayed per day for the investigation period identified as policy window in Figure 2. In early May 2020, several statements are made on the issue with peaks on May 12 and an overall peak of 53 statements on May 19. Both closely follow the external policy windows and represent their occurrences almost exactly. The latter peak, a striking outlier in the data, results from extensive reports on the issue. On the one hand, a policy paper on the meat-processing industries in general by the Green Party and its co-leader Habeck is discussed. On the other hand, the announcement by minister Heil to address working conditions legislatively is part of the public discourse though documented only on the following day. After this intense debate, the public discourse dies down. There is only one more statement between May 20 and June 15.

Following reports on the spreading of the virus in facilities of the Tönnies Group in Gütersloh, the debate on the issue resurges. While its peak is June 25 with 30 statements, it is important to note
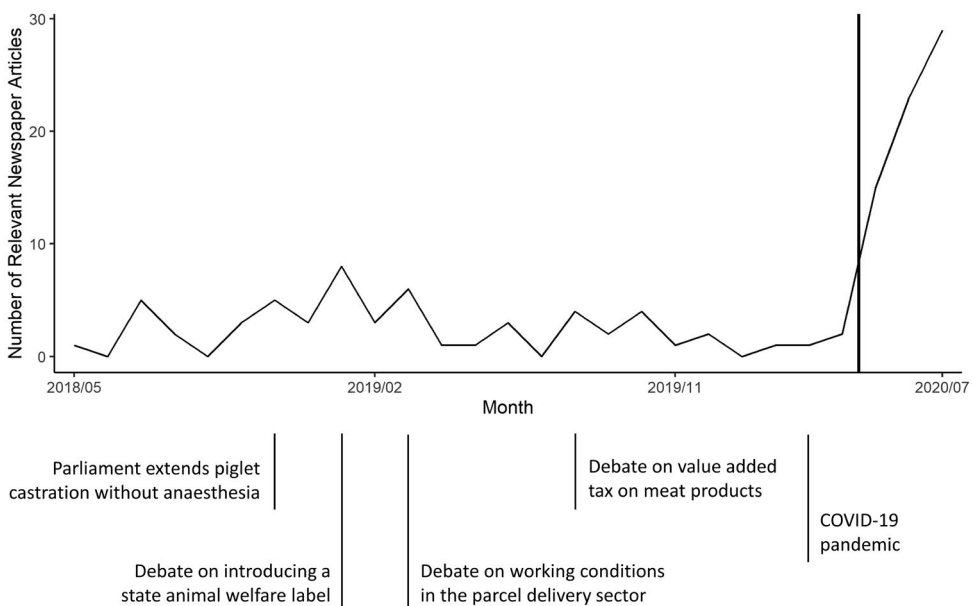

FIGURE 1 Relevant newspaper articles per month and selected debates (authors' compilation)
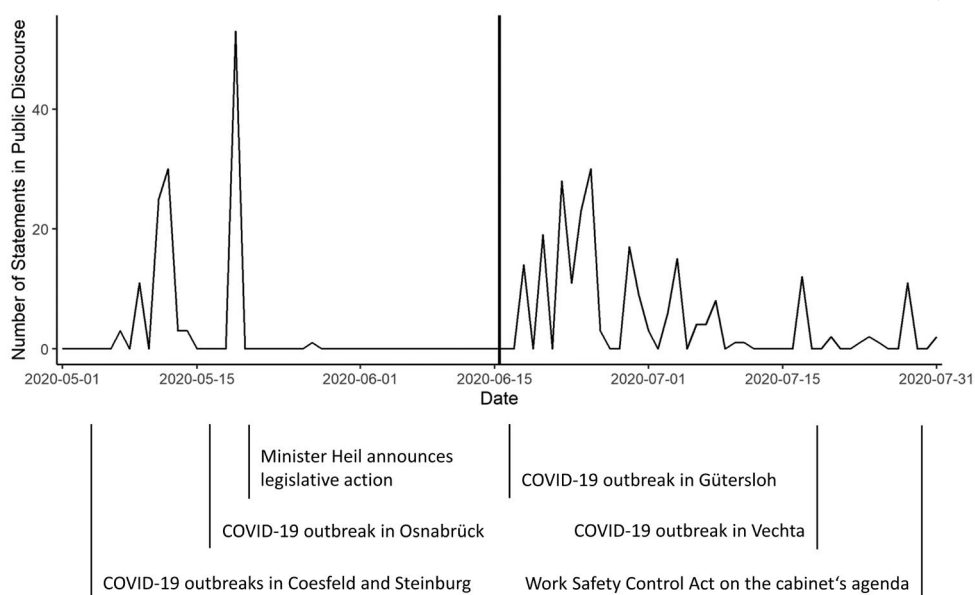
FIGURE 2   Statements per day in public discourse and relevant events (authors' compilation)

its significantly increased persistency. In the working week June 22 until June 26, there are daily comments on the subject with an average of 19 statements per day. At the end of June as well as in early July, actors keep making statements and contributing to the interpretation of the problem window. Interestingly, even the two medium peaks in late July are related to the outbreak in Gütersloh, while the problem window opened by the infections at abattoirs in Vechta is only marginally represented in the discourse with no more than two statements a day in the working week between July 20 and July 24.

Following the two distinct periods of salience observed in the discourse, we distinguish a first investigation period from May 1 until June 15 and a second investigation period from June 16 until July 31. The latter period ends with the German government deciding on the Work Safety Control Act on July 29. For each period, we define a salience threshold, which limits the discourse to those concepts mentioned at least three times in the respective period. Considering only the most salient concepts facilitates representation and interpretation. Salient concepts are manually assigned to one of the three streams as a subsequent coding documented in Appendix C. Furthermore, the participation in public discourse alone is not sufficient to grant a speaker a role of a policy entrepreneur. There are two possible ways of investigation, one focusing on the actors and one focusing on the discourses. A triangulation of mass media and case study data would allow for identifying the entrepreneurs interpreting the world in order to push their policy to the agenda. Studying bipartite ego-centric networks of entrepreneurial coupling would then provide a strategy based on relational coupling, which enables scholars to trace the coupling of individual entrepreneurs, for example, minister Heil. At the same time, the object-object relations derived from the entirety of the discourse pose an access to the bigger picture critical for the development of the discourse and for the research question regarding the successful agenda setting of the Work Safety Control Act. We, therefore, follow the second strategy acknowledging that it entails shortcomings in differentiating the individual entrepreneurial contribution from the overall discursive outcomes.

To study relational coupling we apply concept congruence networks as developed by Leifeld (2016) and sketched for MSF applications above under the notion of relational coupling. Figure 3 and Figure 4 display concept congruence networks for the two investigation periods. They allow for mapping the
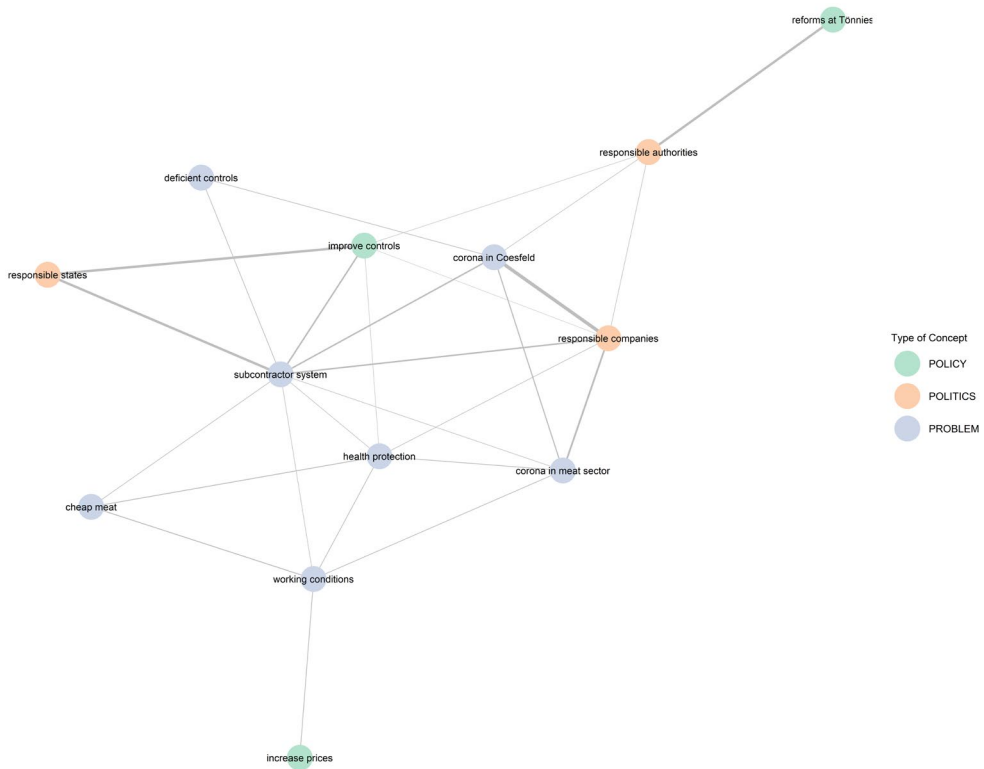
FIGURE 3   Concept congruence network of relational coupling for May 1 until June 15, 2020 (authors' compilation)

object–object relation in coupling by deriving it from the underlying subject-object relation. Edges between concepts represent speakers referring to them in the same, that is, agreeing or rejecting, way. For these results, individuals have been selected as constituting edges. While for example the Green Party as corporate actor would include co-leader Habeck, the concept congruence networks differentiate between all politicians with a Green Party affiliation. Furthermore, average activity normalization applies to the edges' weights.

Relational coupling in the first investigation period (Figure 3) shows a dominant strategy of problem brokerage. Most coupling takes place within the problem stream, some coupling reaches out to tie in the political stream, but integration of the policy stream is very rare. The major problem of COVID-19 infections in the meat-processing industry is coupled with the outbreak in Coesfeld utilizing one of the focusing events. The cases of Steinburg and Osnabrück are not integrated with the concept network. While the problem of a high risk of infections in abattoirs is mentioned by the same actors as working conditions and health protection, Coesfeld is associated with deficient controls. Another highly linked concept is the problem seen in the system of subcontractors in the meat-processing industry. Yet, it is not coupled to policies providing a solution for it, although it paves the ground for such a coupling of bans of service contracts and temporary work.

Instead, there are combinations with the responsibility of the meat-processing companies and the German states. The former is connected to many further problems including the main problem account and the most tightly coupled focusing event. The states as well as the third element from the political stream, the responsibility of local authorities, are less integrated and only connected to a single problem. However, they share a connection with the only relevant policy in the network. Actors focus on improving controls, which is rather connected to the political than to the problem stream, although the
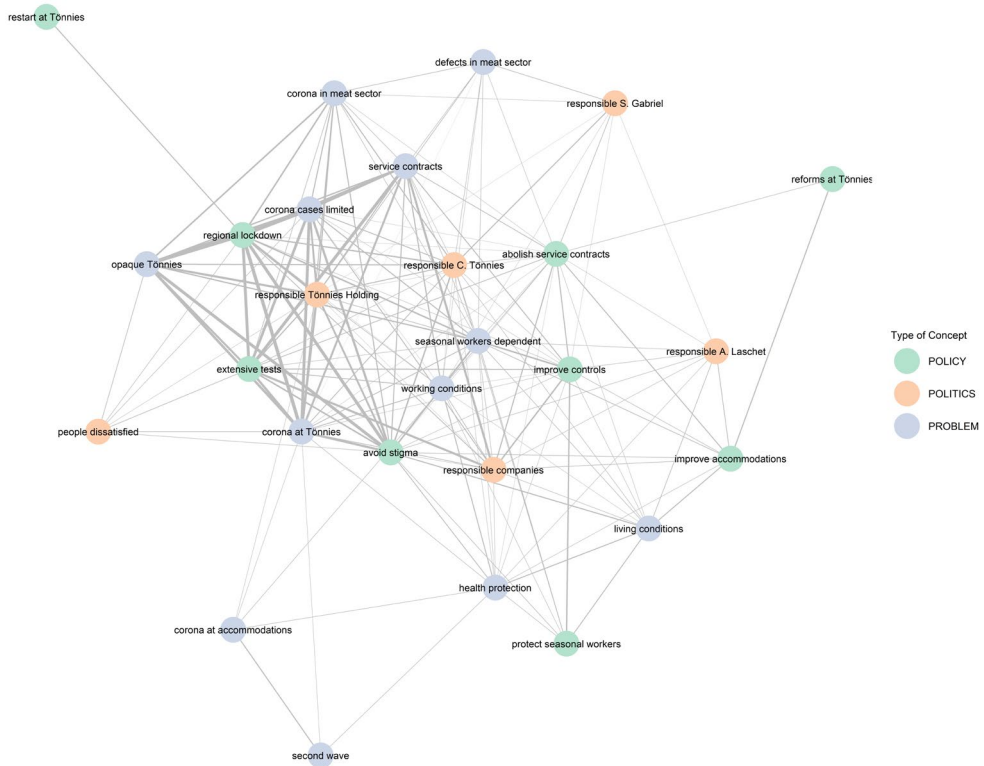
FIGURE 4   Concept congruence network of relational coupling for June 16 until July 31, 2020 (authors' compilation)

problems of health protection of employees and the already discussed subcontractor system are connected, which is plausible. Yet, the same would be true for working conditions and deficient controls. Actors pave the ground by weaving a sturdy net of problems, but they only slightly couple the political stream and do not couple the relevant policies at all.

The COVID-19 infections in abattoirs of the Tönnies Group in Gütersloh have tremendously revitalized the debate on the issue, which is mirrored in the far more populated concept congruence network (Figure 4) exhibiting a severely increased density at least in a cluster of concepts, to which several more marginal, but still, relatively integrated concepts are attached. At the center of the network is a set of concepts representing the crisis management component of the debate. The focusing event of infections in the facilities of the Tönnies Group is highlighted as its core problem. Interestingly, it is framed as outbreak at the Tönnies Group, which constitutes a shift in naming the issue, which highlights the company and not the place as in the case of Coesfeld before. This is underlined by a frequent association with the political stream and the responsibility of the Tönnies Group. Part of this tightly connected subnetwork is the problem of intransparent structures related to difficulties of identifying the subcontracted employees of the Tönnies abattoirs. The crisis management character of this debate is visible in the coupling with the policy stream, in which immediate response measures are most important: the necessity of a regional lockdown as well as COVID-19 tests of employees and population. In this context, the problem stream is not only stressed, but it is also enclosed by the same actors picturing related corona cases as limited. It is important to notice the risk of being blamed for the spread of COVID-19 that some decision-makers need to deal with. This especially includes the North Rhine-Westphalian prime minister Laschet and his minister for labor and health Laumann most active in the second investigation period. Attempts of holding the former responsible are visible in several, though rather marginal couplings of the political stream.

However, in which way does coupling contribute to an agenda setting of improving working and living conditions in the meat-processing industry? Compared to the first investigation period, service contracts are now framed as a problem explicitly. They are tied closely to the core crisis management cluster and to the political stream represented by the responsibility of companies and by the personal responsibility of the head of the Tönnies Group. There is now also the measure of a ban of service contracts taken up from the policy stream and coupled maybe not that tightly, but extensively and across all streams. This integration of the problem, policy, and political stream in the symbol of service contracts is not limited to the crisis management aspects but entails basic motives from the problem and the policy stream: deficient conditions and safety at work as problems and the need to improve controls already known from the policy stream in the first investigation period. Finally, the role of seasonal workers presented as dependent employees needing special protection is interlinked with the far broader and more elaborated discursive coupling in the problem window, which opened through COVID-19 infections at the Tönnies Group. It may therefore be regarded as an example of several partial couplings adding up to a tight web of issues linked over time (Dolan, 2021). While the Work Safety Control Act was planned and announced on the discursively rather weak foundation of the first investigation period, it was comfortably carried to the agenda by coupling in the second investigation period connecting all of the streams.

DISCUSSION AND CONCLUSION

Why did the labor policies of the Work Safety Control Act make it to the government's agenda? Our case study has developed an answer from a Multiple Streams perspective. Policy windows opened in the problem stream in the form of focusing events (Birkland, 1997): infection hotspots of COVID-19 in facilities of the German meat-processing industry. While the pandemic, in general, constitutes a broader context of crisis, which could be studied regarding its consequences for policy-making, the windows opening through infections in abattoirs can be regarded "micro" (Keeler, 1993) because they open in the problem stream. Therefore, these windows can be considered as opportunities for entrepreneurs to couple them with the political stream, which appears somewhat ripe due to the governing social democrats, and with the policy stream, which was ready for coupling insofar as the policies of the new law were known in the policy community but not packed into a proposal. Obviously, agenda setting within the policy window was not inevitable, but on the contrary, entrepreneurs needed to actively couple the streams.

Studying coupling in the public mass media discourse has revealed how this goal was achieved. Relevant speakers included the federal minister of labor Heil himself but also the political party of the Greens, the sectoral union for employees in food branches as well as political actors from North Rhine-Westphalia, where two corona hotspots were located. In the first investigation period including May and early June 2020, few concepts were coupled in a salient way. Most of them were problems describing the working conditions in the meat-processing industry. Therefore, one may consider this first stage of agenda setting a constellation of problem brokerage (Knaggård, 2015). Although it includes the announcement of legislative action by Heil, he does not frame it as banning service contracts explicitly. The only couplings across streams integrate the responsibility of companies from the political stream and the need for better controls from the policy stream. The latter become a part of the Work Safety Control Act.

The second investigation period including late June and July 2020 provides an entirely different picture. Elements are frequently coupled and reinforced across streams. These successful couplings include framing service contracts as a problem and their prohibition as a solution. Stricter controls reappear as a solution and better accommodation for workers is coupled as well though somewhat less tightly. The focusing event on which these couplings draw is the outbreak of COVID-19 in Gütersloh. It builds the center of the discourse including a crisis management cluster on which the successful coupling of policies can rely. This entails a coupling of the political stream and attributions of responsibility to

meat-processing companies, the Tönnies Group, and the head of the Tönnies Group. Therefore, this focusing event has provided the opportunity and the material inside the streams to connect measures from the Work Safety Control Act with the crisis in the problem stream and the weak position of the affected actors in the political stream. According to Zahariadis (2003), we observe a consequentialist coupling. Following Dolan (2021), we are able to highlight the partial couplings adding up to a coupling across all streams.

This explanation has only become possible by introducing the notion of relational coupling. Building on argumentative (Blum, 2018) and partial (Dolan, 2021) coupling, we suggest understanding this activity to be represented by two different relations. First, a subject-object relation represents entrepreneurs making statements about the ambiguous world and thereby interpreting, framing, symbolizing, and partitioning it. Second, an object-object relation connects discursive elements from the streams, which constitute discursive patterns (Winkel & Leipold, 2016). The first relation grasps argumentative coupling, the second is most useful in the context of partial coupling because entrepreneurs rarely link all elements simultaneously. Therefore, the second relation can be represented as a description of the first. Entrepreneurs referring to several concepts in the same way may be defined as the coupling instance, which allows for representing them as a network's edge. This idea is developed in the method of DNA (Leifeld, 2016) and allows for a straightforward operationalization of coupling.

There are important limitations for the application of relational coupling as well as for the interpretation of the case study's results. Concept congruence networks relate statements from speakers on elements, which may be made at quiet different points in time—in our application up to six weeks—and which may therefore not always be intended. However, coupling should remain an intentional activity. This underlines that research interpreting few but holistic acts of discursive coupling (Blum, 2018) is still needed. In the same vein, it may be argued that the analysis does not distinguish entrepreneurs from discourse participants and is therefore incapable of attributing successful coupling to individual entrepreneurs as achieved by other MSF applications. Yet, in order to understand a case of successful agenda setting, the focus on full discourse networks has considerable advantages. Finally, choice of words makes a huge difference. Initial coupling by minister Heil in May is underrepresented in Figure 3, because he avoids speaking of service contracts. While this may be intentional, such nuances are not mapped in concept congruence networks.

A way forward may include the utilization of two-mode networks offering entrepreneurial profiles by mapping the first relation in relational coupling as ego-centric networks. This would allow for a closer investigation of agency and the role of crucial entrepreneurs. Given that this study only investigates problem windows, further research is also needed to determine the implications of different types of windows. While this study highlights the role of coupled problems, this may be different for a political window. Finally, the cross-sectional design of the study only compares two stages of agenda setting. Understanding the influence of policy windows would require grasping coupling as a process and distinguishing the inherent dynamics of the debate from the external impulses. Recent work on DNA (Brandenberger et al., 2020) as well as on quantitative MSF applications (Engler & Herweg, 2019) paves the way toward such analyses highly needed.

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APPENDIX A

CODING MANUAL

Sampling

The identification of relevant newspaper articles representing the sampling unit is achieved by research in the online archive of the "Süddeutsche Zeitung" and more explicitly by applying a keyword search in the online library (https://archiv.szarchiv.de/). The search term applied is a combination capturing at least one of the German words for slaughter and meat, which are combined with wildcards to allow for the German equivalents of slaughterhouse and meat industry ("schlacht* ODER fleisch*"). Some specifications apply regarding the content included in this procedure, which can be selected within the online library. Only main sources are considered, while local sources and newspaper supplements are excluded (source "SZ"). Furthermore, only the main print issue is taken into account without considering regional Bavarian variations, online publications or the newspaper's

magazine (issue "Hauptausgabe"). Finally, only articles from the main section on politics are included disregarding feuilleton or economics (section "Politik"). An initial search for the period May 1, 2018 until July 31, 2020 yielded 747 articles. They have been limited in two further steps to obtain complete and pertinent material.

First, a manual relevance assessment has been conducted by one of the authors excluding all those articles using the search terms, but without any reference to the subject of meat production in Germany. These false positives are easily identifiable and are mostly due to the identical German signifier for slaughter and battle including international war reporting as well as metaphorical use of the term battle. There are 541 irrelevant articles excluded from the sample. In a second step, all opinion-forming contributions are manually dropped by one of the authors. While every report does entail selection and framing on part of the journalists, general media coverage is bound by norms of neutrality. Therefore, we expect the selection of actors getting the chance to speak in a newspaper article to be legitimately biased in commentaries. Identifying these cases is easy because they are designated as such by the newspaper. They include tables of contents, chronicles, reviews, and glosses, and add up to 81 irrelevant cases excluded from the sample. Therefore, the sample consists of 125 articles. Details of this selection are reported in Table A1 for the investigation period identified as the policy window as well as for each of the two preceding years.

Coding

Building on the method of discourse network analysis and utilizing the coding tool "Discourse Network Analyzer" (https://github.com/leifeld/dna), the material has been coded manually by one of the authors to identify relevant statements attributed to identifiable discourse participants. These statements are the unit of analysis. Each statement is composed of three elements: the speaker (or *actor*) quoted in the newspaper article, the object (or *concept*) of the statement made by the speaker, and an evaluation of the reference (or *agreement*) by the speaker to the object being either positive or negative. There are common ways of indicating statements in German language, most importantly by quotation marks and subjunctive. Speaker and quotation are generally connected by a verb signaling this relationship, for example, "to say," "to express," or "to criticize." There are also journalistic standards of representing statements: In an interview, text may lack the above signals, but still clearly indicate quotations by being formatted accordingly. The text is coded by searching for statements representing a speaker-object relation clearly indicated by one of the above-mentioned signals. Statements, which lack an identifiable speaker, are not coded. Equally, points of view, which are attributed to actors without being stated by the latter, are not coded. However, statements do not need to be verbal. Press releases, policy briefs, open letters, and other written statements generally qualify as sources for statements as long as all of the above prerequisites apply.

Because actors can be both, an *individual* or an *organization*, they are coded at two levels. Both are coded within a statement by adopting the name displayed in the text. Corporate actors are captured as organization without specifying an individual, but for individuals an organizational affiliation is assigned. The latter is coded in the same category as organization, which, though not relevant in this study, allows for studying discourse networks at the organizational level. In cases, in which individuals belong to multiple organizations, for example, the head of ministry with party membership, the most salient affiliation is selected and applied for this individual consistently.

Actors quoted in newspapers may refer to different concepts within the same passage or even within the same sentence. For each of these concepts, a new statement is coded. An actor A could state that policy B is not a good idea, but that policy C is equally problematic, and that we need to keep in mind situation D in this context. If such a quotation would meet the above prerequisites of coding a statement, it would establish three statements with the relations A-B, A-C, and A-D. Differentiating concepts is therefore based on an interpretation of the content, not on the syntax. As for selecting newspaper articles, an assessment of relevance applies in identifying concepts. Only those subjects, which are in

TABLE A1 Number of newspaper articles in each step of selection for different investigation periods

Period	Search	Irrelevance	Opinion	Final
May 1, 2018 until April 30, 2019	302	247	18	37
May 1, 2019 until April 30, 2020	273	225	27	21
May 1, 2020 until July 31, 2020	172	69	36	67
Total	747	541	81	125

TABLE A2 Coefficients for intra-coder reliability of the four elements of a statement (nominal data)

Reliability coefficient	Individual	Organization	Concept	Agreement
Krippendorff's alpha	0.98	1	0.82	1

any way linked to the debate on working conditions and COVID-19 outbreaks in the meat-processing industry in Germany are regarded relevant.

These concepts are coded inductively by paraphrasing the respective subject in a neutral and generalized form. As this step is difficult to achieve in an unstructured text, two rounds of coding the full-text corpus are conducted by the same person. In the first round, relevant concepts are generated without further preconditions from the text corpus. The resulting list has been checked for codes, which refer to the same concept but are paraphrased in varying words. These cases have been unified. The set of concept codes developed by this procedure and discussed by the authors has then been applied consistently to the material in a second round of coding including a reconsideration of the agreement category, which is closely related to the coding of concepts.

The agreement is a dichotomous assessment of the actor's stance on the subject. This is evaluated according to the concept, which either establishes the point of view of the speaker or constitutes the rejection of a possible perception in the discourse. This is comparatively easy for policies, which are either welcome or opposed by the actors, but it is important to notice that agreement does not necessarily correspond with picturing the world positively or negatively. Especially in the case of problem definitions, actors may state that a situation is critical, which would be coded as an agreement with the concept of the situation being critical instead of a disagreement with the situation. Similarly, attributions of responsibility can consist of actors stating that the mayor has lost control, which would be coded as an agreement with the concept of the mayor losing control instead of a disagreement with the mayor. These perceptions of the ambiguous world can be called into question by others, which then disagree with the situation being critical or with the mayor losing control. However, the agreement is consequently the more common code.

The coding of the 67 articles in the period May 1, 2020 until July 31, 2020 resulted in 356 statements coded in 46 articles. For 21 articles no statement was coded. The coding procedure has been tested on reliability (Appendix B) and concepts have been manually assigned to a stream (Appendix C).

APPENDIX B

RELIABILITY TESTS

In order to assess the quality of the coded data regarding the repeatability of the coding procedure, an intra-coder reliability test has been conducted. For this purpose, the author, who coded the text, recoded 10% of the material randomly selected from the sample including at least seven articles and at least 36 statements. If the selected test material turns out to contain less than 36 recoded statements further articles are randomly selected (this is not the case). Intra-coder reliability is evaluated with a time difference of more than a year. The test is limited to the second round of coding, in which concepts are

coded based on the list of concepts generated from the text in the first round of coding. It is available for making coding decisions in the reliability test.

Evaluating articles according to the number of statements identified for them results in a retest reliability of Krippendorff's alpha = 0.99 (ratio data). Although not perfect, this is a high level of repeatability. The reliability for the variables at the level of the statement is reported in Table A2.

Intra-coder reliability is very high for the actor making a statement. This is plausible as speakers are explicitly named in the text. The minor deficit regarding "individual" is not even based on a misinterpretation, but on a technical mistake in using the coding tool. The perfect reliability for "organization" shows that corporate actors are correctly reidentified and that affiliations are correctly reassigned. The hardest challenge in coding is "concept," because it addresses the unstructured diversity of policy debates. However, it is still at an acceptable level above 0.8 and also underlined by the perfect reliability for "agreement" correctly indicating the concept's valence. The coding of concepts as belonging to one of the three streams is fully documented in Table A3 and Table A4 (Appendix C).

TABLE A3   Period May 1, 2020 until June 15, 2020, salience threshold >2

Concept	Stream assigned
Cheap meat	Problem
Corona in Coesfeld	Problem
Corona in meat sector[a]	Problem
Deficient controls	Problem
Health protection[a]	Problem
Improve controls[a]	Policy
Increase prices	Policy
Reforms at Tönnies[a]	Policy
Responsible authorities	Politics
Responsible companies[a]	Politics
Responsible states	Politics
Subcontractor system	Problem
Working conditions[a]	Problem

[a]Tagged concepts are salient in second investigation period as well.

TABLE A4   Period June 16, 2020 until July 31, 2020, salience threshold >2

Concept	Stream assigned
Abolish service contracts	Policy
Avoid stigma	Policy
Corona at accommodations	Problem
Corona at Tönnies	Problem
Corona cases limited	Problem
Defects in meat sector	Problem
Extensive tests	Policy
Improve accommodations	Policy
Living conditions	Problem
Opaque Tönnies	Problem
People dissatisfied	Politics
Protect seasonal workers	Policy
Regional Lockdown	Policy
Responsible A. Laschet	Politics
Responsible C. Tönnies	Politics
Responsible S. Gabriel	Politics
Responsible Tönnies GmbH	Politics
Restart at Tönnies	Policy
Seasonal workers dependent	Problem
Second wave	Problem
Service contracts	Problem

APPENDIX C

ASSIGNMENT OF STREAMS