Freie Universität Berlin

Fachbereich Wirtschaftswissenschaft

On the origin and diffusion of frames:

Theoretical review of frame research and future directions from a network perspective

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Amyn Vogel

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The landscape of frame research within social sciences is characterized by a rather loose and scattered concept, resulting in various characteristics and functions attributed to frames, and by diverging conceptualizations on the origin and diffusion of frames. Although reviews have been conducted to facilitate an overview on the definitions, types, characteristics and functions of frames, a review on the conceptualizations on the origin and diffusion of frames remains outstanding. This is considered relevant, since the scope of a frame can only be determined once we understand where a frame initially emerged, where it becomes manifest and its' underlying power structures shaping the diffusion.

The primary aim of this article is to review the conceptual foundations of frame research, on frames' origin and diffusion. Building on this review, this article aims at advancing the theoretical underpinning on frames' origin and diffusion, by elaborating contributions of network theory. A theoretical review has been conducted on the databases ProQuest, EBSCOhost and ScienceDirect. 2805 articles were assessed, 164 articles were reviewed on full text and 75 articles were selected.

The conceptualizations of frames range from individual and subjective frames to organizational and culturally induced frames, as well as collectively evolved frames. The elaboration of frames' origin and diffusion reflect these conceptualizations. Most of the articles imply a top-down diffusion of frames. As an analytical complement, a network approach regarding the origin and diffusion of frames is introduced, putting the individual and its' network in the center of frames' origin and diffusion. Further, this article proposes a process-sociological perspective, based on network analysis, for conceiving, and assessing frames. This has implications for conceptualizing the origin and diffusion of frames, and the recognition of power relationships shaping this process.

Keywords: Collective belief systems, frame analysis, theoretical review, network analysis

INTRODUCTION

Frame theory is an approach for conceptualizing and determining individuals' and collective belief systems, referring to the versatile composition of experiences, rationales and expectations that shape the individuals' perception and give meaning to reality at any given moment (Benford & Snow, 2000; Goffman, 1974; Levin et al., 1998) by "rendering what would otherwise be a meaningless aspect of the scene into something that is meaningful" (Goffman, 1974, p. 21). Originating within the intersection of sociology and psychology (Gamson & Modigliani, 1989; Pan & Kosicki, 1993), frame concepts have developed into various research areas: in the field media analysis (d'Angelo, 2002; Entman, 1993; Gamson & Modigliani, 1989; Matthes, 2009; Scheufele, 1999), in the field of political communication (Nylander, 2001; Rothschild & Shafranek, 2017), in the field of collective action and social movement organizations (Ferree, 2003; Gerhards & Rucht, 1992; Snow et al., 1986), as well as in the field of opinion formation and decision-making (Chong & Druckman, 2007a; Lindenberg & Steg, 2007).

However, the heterogeneous streams of research and studies also constitutes a major issue: In light of these significant contextual variations, defining generally applicable and comparable features, characteristics and requirements - for *framing* frame analysis - has hardly been pursued in a rigorous manner. The landscape of frame analysis is characterized by ambiguous terminological bases, a rather loose and scattered concept, as well as by its various research areas (Borah, 2011; d'Angelo, 2002; Entman, 1993; Matthes, 2009; Scheufele, 1999; Van Gorp, 2005). Concern lies in its being an obscure and widely applied concept, with its value being called into question as frame analysis could be applicable to all kinds of research, without being distinguishable from similar concepts (Cacciatore et al., 2016; Entman, 1993; Matthes, 2009; Van Gorp, 2007).

With this in mind, distinct harmonization of conceptual approaches is being discussed, in order to strengthen the alignment and comparability of frame studies within social sciences (Borah, 2011; Entman, 1993; Matthes, 2012). According to d'Angelo (2002), however, it is inevitable to have various approaches to frames, due to the diverse subjects of analysis. Even further, differing conceptual approaches are considered beneficial for the scientific frame community: "Theoretical and paradigmatic diversity has led to a comprehensive view of the framing process, not fragmented findings in isolated research agendas" (d'Angelo, 2002, p. 871).

While this article does not pursue the objective of harmonizing frame research, it is rooted on the believe that an overview of its research streams and specific characteristics is beneficial for current and future researchers. Although some well-founded review articles have consistently produced compelling overviews on the various definitions, conceptualizations and research fields of frame research (i.e., Borah, 2011; Matthes, 2009) a review on the origin and diffusion of frames remains absent.

Hereby, understanding the origin and diffusion of a frame is considered relevant for frame research. This article follows the notion that the mere determination of frames (be it media, political or collective frames) is not sufficient. The scope of a frame only becomes revealed and determined once we understand where a frame initially emerged, where it becomes manifest and its' underlying power structures shaping the diffusion (Carragee & Roefs, 2004; Ferree, 2003). In pursuit of these phenomenon, and the questions they raise for embodied research practices in frame research, this article conducts a theoretical review, examining the following research question:

RQ: How are frames conceptualized in terms of origin and diffusion?

Based on Goffmans' (1974) conceptualization of frames, the aim of this article is to conduct a theoretical review aimed at explaining employed approaches on the origin and diffusion of frame research and to further elaborate theoretical approaches benefitting frame research. This is

implemented through the adoption of an epistemologically constructivist perspective, and the employment of a process-sociological approach. This results in the introduction and discussion of potential contributions of a network theoretical approach on the origin and diffusion of frames.

At the outset the research question is explained. Further, a network theoretical approach on the origin and diffusion of frames is developed. This provides the groundwork for the subsequent review and discussion on frames. The methodological steps and results on the conceptual approaches of frame research will be presented. Lastly, the results of the theoretical review and conceived contributions of a network theoretical approach for frame research are to be discussed.

The contribution of this article consists in the shift from a state-sociological perspective to a process-sociological perspective on frames, based on a network conceptualization. This has implications for the ongoing conceptualization of the origin, and diffusion of frames, as well as for the recognition of power relationships influencing this process.

THEORY

Problem Statement

Frames refer to the assumptions, values, norms, views, knowledge and emotions that shape our perceptions of experiences, our choices and actions related to. In this sense, frames can be understood as a conceptual approach intended to address and portray the individuals' and collective belief systems, and thus the body of personal perceptions and attitudes. The aim of frame research, as also substantiated in Goffmans'(1974) subtitle - *An essay on the organization of experience –* lies in raising the curtain on the organization of human experiences, underlying values and believes and how these shape individuals' and collective reality. The underlying research question followed by many empirical studies on frames could be formulated as follows: What are the concerned entities' (i.e., individual, news article or community) believes, norms and values, that shape how they perceive, understand and talk about a respective subject (i.e., on immigration (Van Gorp,

2005), on biotechnology (Matthes, 2009) or on terrorism (Entman, 2003)) ? Frame research hereby serves as a conceptual and methodological pathway for analyzing, understanding, and describing perceptual and action-guiding belief systems (Borah, 2011; Gamson, 1988, 1989).

A key concern relates to the partially overlapping proximity to other concepts such as agenda-setting and priming (Cornelissen & Werner, 2014; Scheufele, 2000; Scheufele & Tewksbury, 2007), and cognitive bias (Beratšová et al., 2018). The pivotal distinction between frames vis-à-vis agenda setting and priming concerns the self-determined and purposeful approach of these two concepts (Scheufele, 2000; Scheufele & Tewksbury, 2007). Frames, in contrast, address the implicit social influences and past experiences that shape an individuals' values, attitudes, and beliefs, and how these drive their understanding of new experiences (Goffman, 1974). Cognitive bias conceptually refers to psychological factors, and how these affect perception, thought, and judgment. In this sense, a distinct conceptual proximity to frames is evident here, since both relate to the implicit notion on how individuals' perception and judgement are shaped. The main distinction consists in that cognitive bias is rooted in individuals' psychology, whereas frames conceive the individual from a sociological perspective, within their social setting shaping ones' values, beliefs and norms.

Within this article, the epistemological origin of frame studies is conceived as constructivism (Entman, 1991; Gamson & Modigliani, 1989; Pan & Kosicki, 1993; Scheufele, 1999; Van Gorp, 2007), but is still distanced from radical forms, as it "does not imply complete constructions of phenomena" (Nylander, 2001, p. 294) but encompasses emphasis on certain aspects and information we encounter and omissions of others (Entman, 1993; Gamson, 1989; Gitlin, 1980). In the constructivist perspective of this article, the 'world out there' is not simply encountered by individuals as it *objectively is*, but rather *subjectively becomes* through the human

lens. Frames, as a terminological amalgamation of values, views, norms, and logics of action, are the pivotal anchor through which this world *subjectively becomes*.

The broad potential for employing frame research contributes to its scattered use across social sciences. Its fragmentation is primarily due to its various means of employment, as it serves to understand how we perceive situations, form an opinion and ground decisions thereupon (Chong & Druckman, 2007b; Lindenberg, 2001), how arguments evolve and shift within policy implementations (Caldwell & Mays, 2012; Coburn, 2006) and how spectators underlying perceptions shape their reporting (Dijk, 1988; Entman, 1991; Lind & Salo, 2002; Venkataraman, 2018). Fragmentation is not inherently a drawback but requires for a comprehensive review and systematization of the existing research streams, conceptions, and applications to enable understanding and maneuvering within this research field. While frame types and employment of frame research in different domains have been subject to several reviews, enabling a comprehensive overview on frame research (i.e., Borah, 2011; Matthes, 2009), reviewing the origin, and diffusion of frames is still outstanding. The basic question relating to why origin and diffusion of frames is considered relevant in this article, relates to the perception and action guiding function attributed to frames and the quest for understanding where the assumptions, values and norms shaping our perceptions, our choices and our actions come from.

The essential issue at stake for conceptualizing the origin and diffusion of frames concerns the scope and inherent power structures of frames and frame research. Here, the scope of a frame is conceived as depending on its impact on individuals and societal attribution of meaning and forming of an opinion and thus on its diffusion. Starting with determining the origin of a frame, it is further relevant to understand in which areas a frame produces an impact, shapes opinions, values and perceptions of experiences – both, on the individual and collective level. Only if we can understand the origin of a frame and the social communities to which it is attached and to which it

diffuses, is it possible to understand its implicit purpose and its scope of influence and inherent power structures.

This article aims at analyzing and presenting the theoretical approaches of frame research towards the origin and diffusion of frames. Further, conceptual contributions of network research are introduced. This article refers to Goffmans' (1974) frame concept, which is based on constructivism and employed in social science. Since individuals' perception, attitude and behavior, is understood as the core of frame research a theoretical understanding of both the individual and the conditioning circumstances are required. Conceptual foundations of network research and in particular the research streams on social contagion constitute a pathway for this quest. Network analysis contributes to the study of individuals and (formal and informal) organizations by enabling to understand "how autonomous individuals can combine to create enduring, functioning societies" (Borgatti et al., 2009) – and how they produce and reproduce powerful frames shaping how they perceive, judge and act.

On the Origin: Understanding Individuals as an integral part of Networks

The primary pillar of network research is that the worlds exogenous to us and within ourselves are structured in networks: "From brains (e.g., neural networks) and organisms (e.g., circulatory systems) to organizations (e.g., who reports to whom), economies (e.g., who sells to whom) and ecologies (e.g., who eats whom)" (Borgatti et al., 2013, p. 5). Building on this understanding, the individual is conceived as an integral part in their social environment, through which they are conditioned, and which simultaneously is conditioned by them.

Elias' (1978, 1991) consideration of the individual in the societal system exhibits groundwork for this conceptualization of network thinking. The basic argument implies a coevolutionary approach: There is neither a society without a person, nor a person without a society, and there are no static boundaries between narrower and broader forms of human

relationships (Elias, 1991). In sum he argues that the views, values and norms, comprising our undoubtedly unique human identity emerge in interaction with our socially contingent experiences (Elias, 1991). Society is constituted as a "pattern or network (or 'system') of relationships obtaining between actors in their capacity of playing roles relative to one another" (Nadel, 1957, p. 97).

This conceptualization of individuals as "embedded in thick webs of social relations and interactions" (Borgatti et al., 2009, p. 892) is still reflected in current streams of network research. From a structuralist perspective, attitudes and scope of action of individuals are understood as being an integral part of the respective network and conditioned by the respective position of the individual within this network (Borgatti & Foster, 2003; Borgatti & Halgin, 2011; Burt, 2019; Granovetter, 1973; Kilduff & Brass, 2010). An empirical study on student runaways in the Hudson School for Girls in 1932 paved empirical grounding for this conceptualization. The study identified, that the reason for students to run away was not to be found in individual characteristics, but their relations to others and their locations within the network (Moreno, 1934). A recent large-scale empirical study on job search and the influence of the individuals' network and their position within supports these findings (D. Wang & Uzzi, 2022). Different structural locations therefore have different implications for an individuals' life – simplified: structure matters (Borgatti et al., 2009; Borgatti & Halgin, 2011; Centola, 2015; Kilduff & Brass, 2010). The network of which an individual is an integral part and the individuals' position and role within this network shape values, attitudes, beliefs, norms, and perceptions about this world (Aral & Walker, 2014; Borgatti et al., 2013; Borgatti & Foster, 2003; Fang et al., 2015; Guilbeault et al., 2018), mirroring the social capital approach by Burt (1992). Individuals' perceptual horizon is thereby conditioned by the respective characteristics of the given network: "The personal experience of individuals is closely bound up with larger-scale aspects of social structure, well beyond the purview or control of particular individuals" (Granovetter, 1973, p. 1377).

Translated to frames: Within this article, the origin of a frame is conceived as being rooted in the web of relationships between individuals, coined network frames. The access (and non-access) to frames is thus conditioned by the network of which the individual is an integral part and the position they hold. In line with the conception of social capital (Burt, 1992), an individuals' belief system, an individuals' frame, is conceived as conditioned by network structures and position within. These constitute the scope and boundary of the individuals' perceptual, interpretative, and behavioral logic. Hence, the origin of frames becomes analytically and empirically tangible: Building on the individual, a conceptual and empirical understanding of the network structure can provide tangible insights into a frames' potential scope of impact and inherent power structures.

In a more practical note, there are three basic measures which could promote the analysis of the network structure in which frames emerge: Degree, density, and centralization (Borgatti et al., 2013; Burt, 2019; Sparrowe et al., 2001). The degree of a network is defined by the number of connections between individual nodes (individual or defined group of individuals). The higher the degree of a network, the more nodes are connected within the network. Simply put, degree analysis enables to map the network structure of individuals or organizations holding a particular frame. Thereby offering a thorough understanding of the scope and reach of a frame. For frame analysis on the organizational level this could provide the basis for analyzing clusters of individuals sharing and promoting a frame but also to delineate its boundaries. On media analysis of frames this measure could further enable to understand relations between outlets, on the regional or national level or on specific issues. Faris et al. (2017) offer an exemplary study on networks of media outlets on the US presidential election 2016. Applied to frame analysis, this could support analyzing clusters of media outlets sharing and reproducing frames but also competing clusters of media outlets striving for promoting specific frames on issues, altering how these issues are understood, discussed, and reproduced.

Further, network density is defined by the strength of the connections between nodes. Thus, density describes the frequency and duration of interaction and therefore indicates how closely connected the nodes are within the network. On the organizational level this measure could enable to understand not only the underlying structure of frame clusters, but also offering a closer look at the intensity of the relations within a cluster but also relations crossing a frame cluster. A substantial insight that this kind of analysis can reveal relates to the characteristics of the boundaries of these clusters. Is it a frame cluster in which individuals operate exclusively within, resulting in a closed cluster in which frames are produced and reproduced in isolation, or is it a relatively open cluster that could be informed by external influences affecting the frame? Burt (2019) and Kilduff and Brass (2010) offer further theoretical implications and empirical applications on measuring density and its practical contributions. These two measures combined enable analyzing the underlying structure of the network and understanding the relations between individuals in which frames emerge and become reproduced.

Centrality refers to the extent to which actors are central to the structure of a network, and therefore indicates how important a particular actor is within a network. High centrality is represented by strong connections that are concentrated in a few nodes. This measure enables analyzing the relations between the individuals, organizations, or media outlets, promoting an initial understanding of key stakeholders and influential peers on the emergence of frames. In particular, this measure meets the demand ushered by Ferree (2003) and Carragee and Roefs (2004) for analyzing underlying power structures of the emergence of frames. These three basic measures provide an approach for understanding the underlying network structure and inherent power relations.

On the Diffusion: Social Contagion within Networks

This section addresses theoretical streams on the diffusion of norms, beliefs, or behavior of individuals affecting each other (contagion), which are to be contrasted with research streams that examine the extent to which initial similarity of individuals' (i.e., same beliefs, opinions or behavior) leads to building a relation in the first place (homophily)(Aral et al., 2009).

Modeling the diffusion of ideas, norms, and values is rooted on an analogy to epidemic models, both metaphorically and methodologically (Pastor-Satorras et al., 2015; Ugander et al., 2012; W. Wang et al., 2019). Whilst this enabled progress in research of social contagion, it should not be attempted unscrupulously: Understanding the subject of diffusion is pivotal. In particular with respect to frames, I consider the conception of *complex contagions* as beneficial (Centola, 2015; Centola & Macy, 2007; Guilbeault et al., 2018). These are best explained in contrast to *simple contagions*. The crucial difference is that *simple contagions* require only a single source (i.e., infectious disease) while *complex contagions* (i.e., beliefs, norms, attitudes) "require independent affirmation or reinforcement from multiple sources" (Centola & Macy, 2007, p. 703). *Complex contagions,* the diffusion of social behavior, rely on credibility and legitimacy, and thereby depend on "social reinforcement effects" (W. Wang et al., 2019, p. 3).

Considering the conceptual bases of diffusion norms, values and attitudes, the core premise is that individuals are conceived of as socially constituted – individuals' identities evolve in relation to others within the social structures and depending on positions in which they operate (Burt, 1992; Elias, 1991). The most relatable example for each one of us might be family structures and our positions within these, shaping our roles, behavior and scope of action within this particular network. Individuals engage in reciprocal relationships with one another, and, within these relationships, intersubjective values, views, and norms are constituted. An individual and its' social network are, thus, inseparably and continuously intertwining (Centola, 2015). Their mutual

influence and continuous transformation implies a process sociological perspective on networks (Borgatti & Halgin, 2011; Chen et al., 2022; Jacobsen et al., 2022). These relationships are dynamic in their structures, and the values, views, and norms are perpetually constructed, reproduced and transmitted (Borgatti & Halgin, 2011; Centola, 2015; Jacobsen et al., 2022). Networks are therefore understood as a set of socially interdependent people (Elias, 1978), whereby the connecting "ties are conceived of as conduits or roads along which information or influence flow" (Borgatti & Foster, 2003, p. 1005). Subjective perception, attitude or feeling thus means individual, inherent perception, attitude and feeling, but it is an integral part of and conditioned by social interdependencies (Centola, 2015).

In this sense, the dynamic process of networks, the application of a process-sociological perspective, is particularly informative for frame research. Despite a number of authors referring to the elasticity and the dynamic nature of frames (Carragee & Roefs, 2004; de Vreese et al., 2001; Oliver & Johnston, 2000; Reese, 2007), a static bias prevails in the empirical study of frames (Klein & Amis, 2020; Matthes, 2012). This perception is rooted in the lack of theoretical discussion of the dynamics of frames and empirical studies that merely determine frames (i.e., media frames) without discussing their diffusion and elasticity once adopted and shaped by its' audience.

For the practical analysis of the diffusion of *complex contagions* – and frames – the notion of threshold is important. Since the diffusion of values, norms and behavior depends on "social reinforcement effects"(W. Wang et al., 2019, p. 3), threshold analysis is an approach for determining the number of adopters needed in individuals' network, for the individual to adopt the same value, norm or behavior (Centola, 2015; Centola & Macy, 2007; Valente, 1996). The underlying assumption is that an "individual's adoption decision is contingent on having a sufficient number of her social contacts adopt the behavior"(Centola, 2015, p. 1334). Analyzing

thresholds is therefore related to the dynamics of networks to the diffusion of ideas in a *complex contagion* process within an existing network.

Thinking in network models, exemplified by *complex contagions*, is thus considered valuable for frame research. The exploration of the network structures in which frames emerge implies far-reaching significance for the diffusion and influence of frames.

In a more general note on network research, the conception of human, not only as a social being but as a being an integral part of networks, has long been subject to the criticism of providing theoretical approaches without any empirical basis (Borgatti & Halgin, 2021). Especially in recent years, the availability of longitudinal network data and methods of analysis have provided substantial empirical foundations (Borgatti et al., 2009; Centola, 2015; Jacobsen et al., 2022). The studies by Fowler and Christakis (2013) are particularly noteworthy, since they draw on the Framing Heart Study dataset, which began in 1948 and has collected a wide variety of data on individuals over decades. These data cover not only a variety of individual variables (i. e. weight, smoking habits), but also network-related information (family, friends, jobs, places of residence, and changes in these details). A key finding of these studies is that individuals' values and behaviors form, stabilize, but also change in relation to their respective communities. Elsewhere, studies have been undertaken that support these results, addressing the contagion of happiness (Fowler & Christakis, 2008; Knight & Gunatilaka, 2010) and emotion (through online social networks) (Kramer et al., 2014), the diffusion of knowledge (Singh, 2005) and behavior (Centola, 2015) - thus involving different components of frames. These studies demonstrate empirically, that individuals are conditioned in their being by the networks of which they are an integral part, and that the diffusion of shared ideas, norms and behavior is conditioned by the social relationships of the individual (Aral & Walker, 2014; Centola, 2015).

METHOD

Review Scope

This article aims at identifying the articles employing frame research within the field of social sciences, to understand the variety of types, functions and characteristics of frames and the approaches vis-à-vis the origin and diffusion of frames. The vantage point for conducting the review is Webster and Watson (2002), extended by Levy and Ellis' (2006) 'input-processing-output approach' and refined by Cooper and Valentines' (2009) research process model. The goal is to conduct a tailored but systematic, comprehensive, and transparent review of the scientific literature on sociological frame research. Drawing on the typology of literature review types by Paré et al. (2015) this review is considered to be a theoretical review, aiming at explaining the approaches on the origin and diffusion of frames, developing conceptualizations for analyzing these and elaborating further theoretical approaches benefitting frame research.

Input Phase

Phase 1: Define the Problem

The relevant content of the review concerns broadly any articles applying frame research within social sciences without demanding a specific context. The aim is to develop a comprehensive view on conceptual lenses on the origin and diffusion of frames employed by frame research. For this objective an interdisciplinary review is considered beneficial.

Phase 2: Collect Research Evidence

Collecting research evidence concerned a database search, reported under the Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocol (see figure 1).

Insert figure 1 about here

Three search steps were applied: (1) database search, (2) journal search within the fields political sciences, social sciences and communication, and (3) a backward search. The **database**

search was conducted in March 2022 and concerned every article that was available on the databases containing the respective keywords. The search was limited to academic journals, in order to only review high-quality articles (Brocke et al., 2009; Levy & J. Ellis, 2006). The primary keywords were 'Frame Analysis' and 'Frame Studies' and 'Frame Research' and 'Frame Theory' and 'Framing Analysis' and 'Framing Studies' and 'Framing Research' and 'Framing Theory'. The decision for these keywords is theory-based, as these are the most frequently and synonymously applied terms when it comes to frame research (d'Angelo, 2002; Entman, 1993; Goffman, 1974; Matthes, 2014; Pan & Kosicki, 1993). Due to the broad nature of the scope and keywords, these were applied to titles and abstracts. The database search was limited to social and political sciences databases of ProQuest, EBSCOhost and ScienceDirect (see figure 1) assuming that the general nature of these databases and the vast collection of journals supports the aim for a comprehensive review.

For the **journal search** the keywords 'Frame' and 'Framing' were applied within the top three journals of the fields political sciences, social sciences and communication. The set of journals determined at the initial database search constituted the baseline. The selection of the top three journals is based on the 5-year impact factor according to InCites Journal Citation Reports.

Further, a **backward search** for references (Levy & J. Ellis, 2006; Webster & Watson, 2002) was performed in order to circumvent potential database and keyword related omissions. These steps concerned the five most cited articles. Every cited publication with respect to duplicates and content has been considered, by reviewing the titles and abstracts. Hereby, every publication which (1) dealt primarily with the concept of frames within social sciences and (2) was written in English, German or French was considered. This approach provided a valuable contribution to the selection of articles (Hardy et al., 2020).

Process Phase

Phase 3: Evaluate Correspondence between collected Results and desired Results

The **database search** and **journal search** yielded to 3704 articles, of which 2789 after deduplication. Through the **backward search** 341 articles were identified, out of which 16 were selected, leading to a total number of 2805 articles. The subsequent selection process is based on two steps: (1) articles' citation count and (2) abstract and full text review.

The **article citation counts** were used as the basis for selecting the articles. The number of citations was identified for all articles, based on Web of Science or alternatively on other sources like the publishers' available metrics. The top three percent cited articles were selected, therefore 85 articles. The choice to use article citations as a basis is motivated by the aim to select high quality and circulating articles, assuming that these articles have a profound impact on the frame research community and reflect the employed approaches on frames' origin and diffusion. At the three percent threshold, the last article has 166 citations. Sporadically, the articles up to five percent were qualitatively examined. This did not yield any conceptual contributions that affect the results of this review.

Further, to circumvent a bias against more recently published articles, all articles since 2017 of the top three journals within our initial search of political sciences, social sciences and communication were selected. Hereby 79 further articles were selected. The total number of 164 articles were reviewed on abstract and full text.

For the **abstract and full text review** inclusion criteria were developed (see table 1). The objective was to only review articles which conceptually address frame research. Any articles that focused on other conceptual underpinnings were excluded. Further, only articles that implied a sociological approach were selected. Articles employing primarily psychological, experimental approaches (i.e., framing effects) were also excluded. These criteria were applied by reviewing the

abstracts of the articles. The reasons for exclusion are indicated in figure 1. 75 articles were selected for the qualitative analysis (see figure 1).

Insert table 1 about here

Phase 4 and 5: Analyze (Integrate) the Evidence from Individual Studies and interpret the Cumulative Evidence

Each stage was recorded using the PRISMA flow diagram (Moher et al., 2009). The data extraction was conducted using MAXQDA, a software for qualitative and mixed methods data. Beforehand code categories were developed. To explore the research question, the established taxonomy of macro-, meso-, and micro analysis (Blalock, 1979; Kelle, 2005), added by a network perspective (Bolíbar, 2016; Borgatti et al., 2009; Borgatti & Halgin, 2011) (see table 2) were employed for the code structure. The selected articles were analyzed considering origin and diffusion, with subgroups of unidirectional and reciprocal macro- (i.e., societal), meso-(i.e., collective), micro (i.e., individual) level analysis, and network analysis. The former codes address approaches, which are based on a macro, meso, and/or micro level perspective, while implying unidirectional (i.e., top-down) or reciprocal relations (i.e., feedback loop) between the levels. The code network analysis addresses approaches, which are detached from the macro, meso, and micro level perspective, and based on a network perspective. In praxis, these analyses could for example imply relationships between networks (between-network) or individuals within a network (within-network).

Insert table 2 about here

Output Phase
Phase 6: Present the Synthesis Methods and Results

The conceptual approaches were analyzed manually and based on the described codes through MAXQDA. The results are presented narratively, providing qualitative comparison of the

selected studies regarding the respective approaches vis-à-vis the conceptualization of the origin and diffusion of frames that were employed. This section is aimed at providing a comprehensive information base for researchers within the field of frame studies.

RESULTS
Overview of types, functions and characteristics attributed to frames

The aim of this section is to explain the operationalizations of frames in terms of the distinctive types and attributed functions. The importance of this lies in its results being the bases for the research question, as the conceptualization of frames' origin and diffusion depends on frames' definition, types, and characteristics.

The main conceptualizations on frames are distinguished as frame in communication and frame in thought (Chong & Druckman, 2007a; d'Angelo, 2002; Gamson, 1989; Pan & Kosicki, 1993; Scheufele & Tewksbury, 2007; Semetko & Valkenburg, 2000) and frame in culture (Van Gorp, 2005, 2007), whereby the latter is an exception and primarily emphasizes a cultural reference of frames. These conceptualizations can be applied to macro- (frame in culture), meso- (frame in communication) and micro-analysis (frame in thought), and is also reflected in the various concepts. Thereby further types are consolidated under the umbrella of issue, episodic and generic frames (Borah, 2011; de Vreese et al., 2001; Iyengar, 1994; Matthes, 2009). These vary in scope and angle - while generic frames imply a broad character and are considered relevant irrespective of period and topic, issue frames apply exclusively to specific topics, and episodic frames are aimed at specific time periods. Exemplary generic frames are the consequence, conflict, human interest, responsibility and strategic frame (Meyer, 1995; Semetko & Valkenburg, 2000; Van Gorp, 2005). The field of issue frames is constantly developing. Examples are horse race and the cold war frame (Entman, 1991), the dysfunctional state, risk and responsibility frames (Ocelik et al., 2017) or the

authenticity and exoticism frames employed by gourmet food journalism (Johnston & Baumann, 2007).

Moreover, specific frames have been developed in certain fields of research. In the field of collective action and social movement organization, prognostic, diagnostic and motivational frames have been developed (Cress & Snow, 2000), as well as collective action frames (Creed et al., 2002) and master frames (Benford, 1997; Gerhards & Rucht, 1992; Luther & Miller, 2005; Nylander, 2001; Snow et al., 1986). Concerning frames of thought and in the context of decision theories, Lindenberg and Steg (2007) examine the subjective effect of normative, gain and hedonistic goal frames.

With regard to key functions of frames, the definitions of Entman (1993), Gamson and Modigliani (1989), Gitlin (1980) and Goffman (1974) are thoroughly employed. Thereby Goffman (1974) can be assigned to frames of thought and Entman (1993), Gamson and Modigliani (1989) and Gitlin (1980) to frames of communication, although the essential functions are identical. According to Gitlin (1980, p. 7) frames "organize the world both for journalists who report it and, in some important degree, for us who rely on their report". This is similarly conceived by Gamson and Modigliani (1989, p. 3) who capture frames as an "organizing idea, […] for making sense of relevant events, suggesting what is at issue". Entmans' (1993, p. 52) definition of frames enables to understand how this organization is done or even how meaning is created: "To frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described". All these definitions imply a constructive character, according to which events are communicatively shaped in such a way that they are attributed factuality or meaning. This has been described quite succinctly by Gamson (1989, p. 157): "Facts have no intrinsic meaning. They take on their meaning by being embedded in a frame

or story line that organizes them and gives them coherence, selecting certain ones to emphasize while ignoring others. Think of news as telling stories about the world rather than as presenting "information", even though the stories, of course, include factual elements". A crucial function of frames in communication is to shape the audiences opinion (Chong & Druckman, 2007a, 2007b; Entman, 1993; Scheufele, 1999; Scheufele & Tewksbury, 2007) or (in the context of social movements) to activate audiences (Gerhards & Rucht, 1992; Semetko & Valkenburg, 2000). Thereby, the function exertion of power is also quite relevant and particularly problematized by Ferree (2003) and Carragee and Roefs (2004). At the heart of this concern lies the neglect of power relations in the study of frames and their effects. It is argued that the original source and sponsors of frames are often underestimated in the study of frames and, as a consequence, related power structures are neglected. As an approach to deal with this, the systematic investigation of these original sources or sponsors and profiteers of a frame is suggested. In this sense, it is conceived important to unfold the power structures in which a frame is created and spreads to – thus its' origin and diffusion.

Major functions of frames of communication are also assigned to frames of thought. This concerns for example the organization of experience, the selection, emphasis and omission of experienced aspects, meaning and sensemaking of an experience, decision making and judgement (Borah, 2011; Correll et al., 2020; d'Angelo, 2002; Fligstein et al., 2017; Lindenberg, 2001; Speer, 2017). In principle, these concern how an individual relates to personal experiences and ascribes meaning thereto. The influence on the perception and behavior of a person is also considered a function of frames of thought (Borah, 2011; Pan & Kosicki, 1993; Van Gorp, 2007; Weiss & Bucuvalas, 1980).

In summary, frames shape individuals' perceptions of experiences, their categorization, and their attribution of meaning (frames of thought), as well as the communication of these perceptions,

categorizations, and attributions of meaning, by placing more emphasis on certain aspects of an experience, leaving out other aspects, and focusing on the attributed meaning (frames of communication). Thereby, it is emphasized that frames should not be understood as static entities, but as dynamic and constantly changing (Carragee & Roefs, 2004; de Vreese et al., 2001; Oliver & Johnston, 2000; Reese, 2007) - depending on new experiences that provide significance.

RQ: How are frames conceptualized in terms of origin and diffusion?
The assignment of codes has been done if an article addressed this conception explicitly or implicitly in their methodological elaboration or in theoretical discussion (see table 3). Therefore, multiple assignments were possible. Initially, only explicitly employed conceptualizations were assigned, leading to many articles being left out. The reason for this is that numerous articles only implicitly address the origin and diffusion of frames. Previous articles and reviews also discussed a partial lack of substantial theoretical basis in frame research (Borah, 2011; Carragee & Roefs, 2004; Ferree, 2003; Matthes, 2009).

Insert table 3 about here

Overall, the analytical scope varies between individual, collective and societal aspects. With regards to frames' origin and diffusion, the analytical approaches mostly employed and vary within macro-, meso- and micro-analysis – meaning, that the approaches differ depending on whether the origin of frames is located on a socio-structural or individual level.

Unidirectional top-down emergence and diffusion of frames
Most conceptual and empirical articles imply a top-down diffusion of frames, locating origin among political or other elites, or generally addressing media frames (Bennett & Pfetsch, 2018; Chong & Druckman, 2007a; Rothschild & Shafranek, 2017; Scheufele, 1999). In the same vein, but conceptionally deviating, other articles insist on the cultural dimension and societal norms

and values as the sole harbor of frames, thereby undermining in particular individual analysis, arguing that individuals' subjective frames simply do not exist (Scheufele, 2000; Van Gorp, 2005, 2007).

Reciprocal emergence and diffusion of frames

Alongside these approaches, there are several articles that provide reciprocal diffusion relationships through the lens of macro-, meso- and micro-levels. In the field of social movements or collective action, micromobilization (Snow et al., 1986) and mesomobilisation (Gerhards & Rucht, 1992) are exemplary concepts. Snow et al. (1986) introduce the concept of frame alignments, which involves the concepts of frame bridging, amplification, extension and transformation as core building blocks of communication and activation of the public, and is echoed in this context (i.e., Creed et al., 2002; Gerhards & Rucht, 1992). Although the basic concept and the single building blocks imply a top-down communication, in which the respective social movement organization is conceived the origin, these in turn imply a feedback loop by individual or publics' frames, resulting in a reciprocal relationship. Entmans' (2003, 2010) original version of the cascading network activation comprises a feedback structure, but also implies a distinct top-down notion in which political elites are the originating point, their frames are diffused by the media, reach the public, and only then begins a feedback process (Bennett et al., 2006; Entman, 2003; Entman & Usher, 2018). Scheufele (1999) also refers to a feedback loop, whereby he does not focus exclusively on media and public, but also on the organizational context of journalism and "people's homogenous networks and their selective informational diets" (Scheufele & Tewksbury, 2007, p. 10). A limiting aspect is that organizational processes or the structures of the individual network are not further elaborated. Gamson and Modigliani (1989) refer to a value-added systems interaction. The core building blocks of this systemic interaction are "cultural resonances, sponsor activities, and media practices" (Gamson & Modigliani, 1989, p. 5) –

particularly the last two are in continuous relationship and mutual influence, unfolding social realities as active entities. These interactions are "value-added" in the sense that the emergence of social facts, values, and views become more consistent over time. Although the role of the public is considered to be affecting media practices ("media discourse is part of the process by which individuals construct meaning, and public opinion is part of the process by which journalists […] crystallize meaning in public discourse" (Gamson & Modigliani, 1989, p. 2)) these are not attributed an explicit part in this interactive process. Pan and Kosicki (1993, p. 55) adopt a similar approach, in which news discourse is regarded as a "sociocognitive process involving all three players: sources, journalists, and audience members operating in the universe of shared culture and on the basis of socially defined roles".

Network approaches

Particularly in the context of social media, more recent studies refer to a democratization of frame diffusion: "Potentially, disruptive digital technologies could diversify and democratize the flow of frames" (Entman & Usher, 2018, p. 300). The underlying assumption is that due to facilitated access to media content and a multitude of media providers, the possibilities of choice and selection have increased, leading to a tendency for individuals to move exclusively within their own networks (Aruguete & Calvo, 2018; Entman & Usher, 2018), leading to the birth of the term "netizens" (Zhou & Moy, 2007, p. 79). The individual, their relational structures and networks are thus given considerably more scope and agency with regard to the origin and diffusion of frames, which also increases the complexity of frame analysis, since it is no longer sufficient to explore print media and political instances (Bennett et al., 2018). Accordingly, the original cascading network activation model was revised by Entman and Usher (2018, p. 299), in which "platforms (i.e., Google, Facebook, Twitter), analytics (data about audience behavior), algorithms, ideological media (Fox, Limbaugh, Breitbart.com), and rogue actors (hackers, bots)" are considered to have a

significant influence on the cascading network, and in which elites, media, and the public are conceived and studied as primary entities - limiting a broad application of this model is in turn the explicit US American context of the cascading network.

Concluding, frame research is characterized by a top-down emergence and diffusion of frames, in which entities such as politics, elites, sponsors, SMOs, and the media are given the decisive role, and individuals and the public are regarded as recipients of frames - this basically also applies to the reciprocal approaches, as these mostly imply an initial top-down notion, before the reciprocal or feedback approach is set in motion. Concepts that consider the public, the individual and the personal relational structures are only marginally represented. Though recent articles refer to a network approach, this is primarily explained by the evolution of social media. Even though, as in Scheufele and Tewskbury (2007), there are repeatedly tentative approaches to employ network theory these are not discussed in more detail. This is exemplified, by Gamson and Modigliani (1989, p. 2) who state that "individuals bring their own life histories, social interactions, and psychological predispositions to the process of constructing meaning". Or by Entman (2003, pp. 418–419) who considers that the diffusion "has parallels in the way ideas travel along interpersonal networks and in the spread of framing words and images across the different media" and Neuman et. al (1992, p. 77) who state that "individuals do not slavishly follow the framing of issues in the mass media". Reese (2007, p. 150) further implies a network perspective: "As an approach to media texts, framing seems to capture more of the "network society" […] paradigm than the traditional sender–receiver, message-effects model". While all of these approaches at least indicate network theory, these remain as tentative attempts without broader application. In light of this, there are also calls in fairly recent articles for a broader exploration of the emergence and diffusion of frames (Aruguete & Calvo, 2018; Bennett & Pfetsch, 2018; Borah, 2011; Entman & Usher, 2018; Rothschild & Shafranek, 2017).

DISCUSSION

Frame theory serves as an approach for conceptualizing and empirically studying individual and collective belief systems, referring to experiences, rationales and expectations shaping individuals' and collective perception and give meaning to reality (Goffman, 1974; Levin et al., 1998). The world is not simply encountered as it *objectively is*, but rather as it *subjectively becomes*. Hereby frames are considered the anchor through which this world *subjectively becomes*. Thereby overcoming the notion of objectivity, while subjective and collective reality emerges in their stead. The theoretical review exhibits polarizing approaches concerning the origin of frames, ranging from psychologic, individualistic to sociological, collective and organizational approaches. This revealed that most of the articles employ reciprocal and unidirectional concepts on the origin and diffusion of frames. Network-based approaches, in contrast, are still in their infancy. Although its' relevance is being increasingly substantiated (especially due to assumed democratization processes through digitalization and social media), there is no extensive elaboration. Thus, while there are articles that refer to networks, especially online (blogs, twitter, commentary sections), thorough engagement with network research, reflected in theory or method, is missing (Shin, 2020). Rather than theory, concepts and method of frame research it is the acknowledgement of network approaches that has changed. It is more about referring to networks than its thorough implementation.

Overall, attention to the origins and diffusion of frames remains tentative. For the sole purpose of identifying media or organizational frames, most of the studies certainly provide an important contribution and serve a useful purpose. However, when it comes to the function of frames as shaping perception, decision-making and action of individuals and collectives, the issue of origin and diffusion must be addressed - and at this point the network perspective is considered beneficial.

Three contributions of network theoretical approaches of social contagion are conceived to contribute to addressing the origin and diffusion of frames: (1) Dynamic nature of frames (2) situating frames' origin at the relational level within clusters and (3) the social contagion of frames within networks. These are ordered by theory, concept and measurement (see figure 2).

Insert figure 2 about here

From a process sociological perspective, networks, individuals, and their traits are considered dynamic - and so are frames. Although this approach is not groundbreaking for frame research, I understand this awareness to be indispensable for any frame study, especially since many articles seem to imply a state-sociological bias (Klein & Amis, 2020). It may, for that matter, be considered a cornerstone for how the origin and diffusion of frames is understood within this article. The semantic network analysis of Marquart et al. (2020) serves as a good example for a network-based study of meanings of social concepts (exemplified here by the meaning of leadership) in which the variability of such meaning was studied in the period 1990 to 2019 in articles of the Harvard Business Review.

On the second contribution, I understand frames as arising through the networks of relations of the individuals. The emergence and manifestation of the respective frame is understood as a collective process, whereby frames evolve through the relationships between individuals and between clusters of individuals. The focus here lies on the perceptual, interpretative, and behavioral logic resulting from the individuals' web of relationships. This is carried out under the assumption that the genesis of frames is determined by the respective web of relations which constitute the social setting. Accordingly, the origin of each frame is located at the relational level, which is why I consider these as network frames.

For future research purposes on frames, this perspective harbors significant implications. Network understanding on the origin, genesis and diffusion of frames counter a top-down bias of frame research in which established media, political institutions or other elites are considered to be the starting point. While these entities are also part of the networks, the underlying assumptions vis-à-vis their power relations and the unfiltered diffusion of their frames are in question. The emphasis lies much more on the individual and the relational structures of the individual, which are considered crucial for the genesis, adoption, and diffusion of frames. This perspective is further sharpened by the relatively recent development of social media platforms as a channel for networking and opinion formation. Yet, this should not be regarded as a misconception of power - rather, these power structures are inherent in any relation (Elias, 1978), and when analyzing frames, these should also be examined and critically reconstructed in order to determine which instances or actors constitute the crucial origin for the formation and benefit from the diffusion of specific frames. The network perspective thus does not imply the dissolution of power structures but is to be understood as a call to explore these very structures within the networks.

An approach to investigate the origins are represented by degree, density and centrality analysis of network research (Borgatti et al., 2013). The articles by Sparrowe et al. (2001) and Burt (2019) provide a thorough introduction to understanding and applying these measures. The basic aim of these analysis is to identify and map the network structures underlying the frame (density) and consequently, to determine the relations within and external to the network (degree) and the key stakeholders, accountable for the emergence and diffusion of frames (centrality). Applied to media analyses, this could inform studies on the regional and national level or on a specific subject to determine which media outlets hold a particular frame on a particular topic - exemplary for this are generic media frames such as the consequence, conflict and human interest frames (Meyer, 1995; Semetko & Valkenburg, 2000; Van Gorp, 2005). Based on this, said measurements can

provide insights into which media outlets hold a particular frame for establishing the relationship between them (degree) or how often certain articles refer to previous articles indicating the relevance of a media outlet (centrality). On the organizational level, based on determined frames, researchers could further analyze which people holding a particular frame are in contact with each other (degree), the regularity of this connection (density), and which people are central to many contacts holding this frame (centrality). Thereby, it not only concerns the network structures relating to a frame, but also to determine the boundaries and permeability. Density and degree measurements can provide insight into the degree to which a frame network is closed and isolated, or the extent to which individuals and organizations interact with other network frames and thereby being exposed to alternative frames. These measures also provide the basis for analyzing the diffusion of frames.

With respect to the third contribution, the diffusion of frames within a network, I conceive the analogy of frames to *complex contagions* (Centola, 2015; Centola & Macy, 2007; Guilbeault et al., 2018) as meaningful. *Complex contagions* refer to „behaviors, beliefs, or attitudes for which transmission requires contact with multiple sources of activation" (Guilbeault et al., 2018, p. 4). The identification of causal peer effects, based on studying adoption threshold is considered beneficial for the analysis of frames' diffusion. The articles by Centola (2015) and Centola and Macy (2007) serve as examples for further consideration of *complex contagions* and empirical application of thresholds. As pointed out in the introduction, the scope of a frame depends on its diffusion and its manifestation. An analysis on how many contacts holding a particular frame is required for the adoption (based on a threshold analysis) can provide insight into the dynamics of diffusion and non-diffusion of frames. The availability of microlevel data at population scale (in particular online) constitutes a crucial opportunity for threshold analysis (Aral, 2016; Pastor-Satorras et al., 2015). Frame analyses referring to, for example, Twitter, could thus not only

determine the frames concerning the Arab Spring (Rennick, 2013) or presidential campaigns (Kreiss, 2016), but also how effectively these frames diffuse, respectively, how repeatedly a user has to be exposed to a frame before reproducing it.

Limitations

This theoretical review implies potential limitations, which should be considered. Foremost, the subjectivity inherent in the qualitative analysis process, as well as the writing and discussion of the results, may introduce limitations. To mitigate these, steps were taken to ensure transparency and accountability in the analysis and presentation of the findings. Further, employing predefined taxonomies implies a static classification system, which may not always accurately reflect the employed approaches. Still, the taxonomy applied here, and its implementation aimed at enabling an accurate representation of employed approaches and to reflect nuances.

CONCLUSION

The aim of this article is to discuss different approaches of frame research vis-à-vis the origin and diffusion of frames, thereby shaping our understanding on beliefs, attitudes, values and rationales that condition the individuals' perception and behavior. Further, it is aimed at introducing network theoretical concepts and measurements as an analytical complement, putting the individual and its' network in the center of frames' origin and diffusion.

Emerging from the debate on theoretical and conceptual harmonization (Borah, 2011; Entman, 1993; Matthes, 2012) and diversity (d'Angelo, 2002) the purpose is to promote the scope of frame research by considering the origin of frames, inherent power structures and its' diffusion. The conceptual contributions of this article consist of determining how frame research conceptualizes the origin and diffusion of frames and of embedding frames within a process-sociological perspective, based on a network perspective, which has implications regarding the origin, and diffusion of frames.

The various (contextually justified) concepts, fields of studies and characteristics of frames were considered. The theoretical review determined contrasting conceptualizations on frames' origin and diffusion, ranging from psychological, individualistic to sociological, collective and organizational approaches. Most articles employ macro, meso or micro level analysis, implying reciprocal or unidirectional relationships and diffusion of frames. While network-based approaches gain in relevance and application, this review revealed a lack of conceptual bases and exploration, requiring further theoretical elaboration.

From a constructivist perspective, it is argued here that frames are conditioned by the individuals' network, shaping an individuals' perception and scope of action (Borgatti & Foster, 2003; Borgatti & Halgin, 2011; Burt, 2019; Granovetter, 1973; Kilduff & Brass, 2010). The individual is thereby in constant reciprocal interaction with their network (Borgatti & Halgin, 2011; Chen et al., 2022; Entman, 1991; Jacobsen et al., 2022): The underlying frames determine the perception and attribution of meaning of experiences, while at the same time the experiences shape subsequent perception and interpretation of new experiences. Any perceptions, attitudes and decisions are thus not based on an objective consideration of facts but are primarily shaped by frames rooted in networks. This network perspective appears all the more relevant in light of social media. In this respect, a democratization of opinion-forming and frame-building can be assumed, which takes place to a considerable extent via social media and undermines the power and influence of established media and public bodies. Social media networks are a crucial factor for shaping an individuals' opinion.

In a more practical sense, this article proposes considering frames as emerging within networks and *complex contagion* as a conceptual approach for understanding the diffusion of frames. Thereby, measurements on network degree (number of connections), density (strength and quality of connections) and centrality (level of centralization) are considered as introductory

approaches for analyzing the network characteristics, underlying power structures shaping emergence of frames and for analyzing the degree of openness and relations to other frame networks of individuals, organizations or media outlet – or vice-versa the identification of closed networks, producing and reproducing frames in isolation. Further, measurement on threshold is introduced as an approach for analyzing the diffusion of frames and inherent social reinforcement effects.

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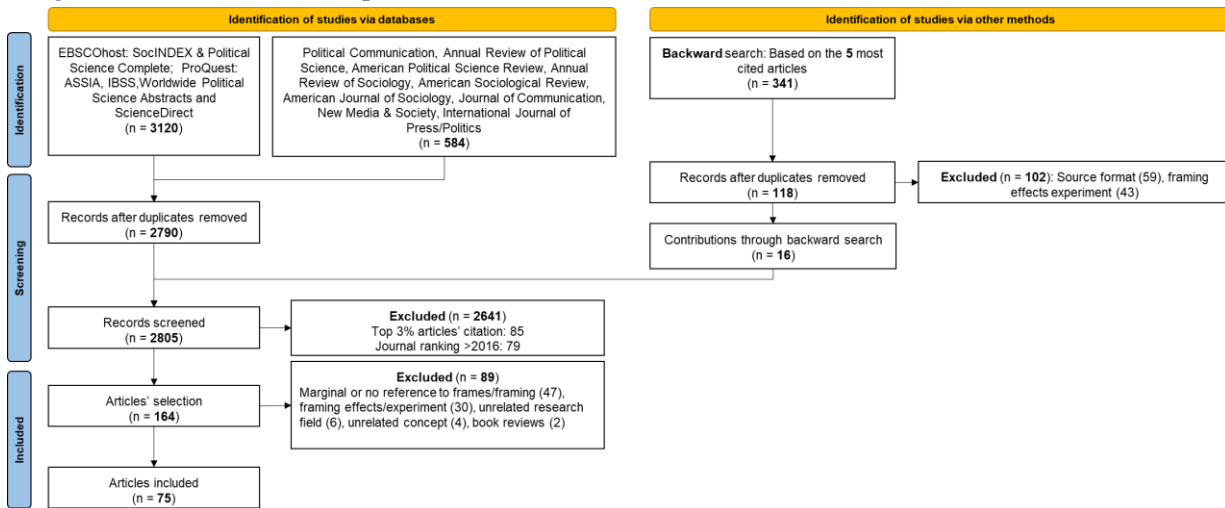
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Figure 1: PRISMA: Review process

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71c
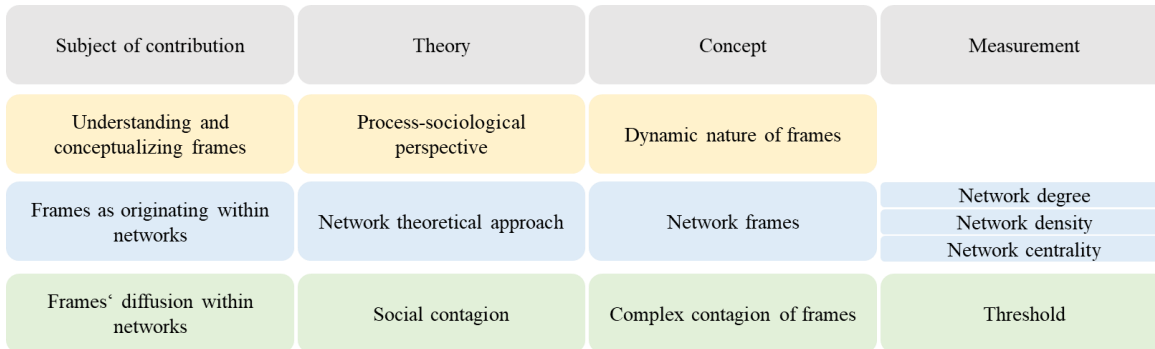
Figure 2: Contribution to Frame Research

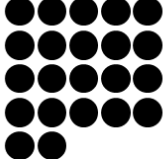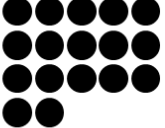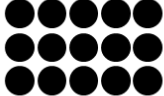| Subject of contribution	Theory	Concept	Measurement
Understanding and conceptualizing frames	Process-sociological perspective	Dynamic nature of frames	
Frames as originating within networks	Network theoretical approach	Network frames	Network degree / Network density / Network centrality
Frames' diffusion within networks	Social contagion	Complex contagion of frames	Threshold

Table 1: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Articles which conceptually address frame research	Marginal or no reference to frames/framing Unrelated concept
Sociological perspective	Framing effects/experiments; psychological approach to frames Unrelated research field
Articles published in English, French or German	Editorials Book reviews

Table 2: Data extraction template

		Diffusion	
		Unidirectional	**Reciprocal**
Origin	**Macro level**	This refers to articles that consider the origin of frames at the macro level (e.g., society or culture) and assume unidirectional diffusion (e.g., top-down or bottom-up).	This refers to articles that consider the origin of frames at the macro level (e.g., society or culture) and assume reciprocal diffusion (e.g., feedback loop).
	Meso level	This refers to articles that consider the origin of frames at the meso level (e.g., organization, firm) and assume unidirectional diffusion (e.g., top-down or bottom-up).	This refers to articles that consider the origin of frames at the meso level (e.g. organization, company) and assume reciprocal diffusion (e.g. feedback loop).
	Micro level	This refers to articles that consider the origin of frames at the miso level (e.g., individual) and assume unidirectional diffusion (e.g., top-down or bottom-up).	This refers to articles that consider the origin of frames at the miso-level (e.g. individual) and assume reciprocal diffusion (e.g. feedback loop).
	Multi level	This refers to articles that consider the origin of frames at multiple levels (e.g., macro and meso) and assume unidirectional diffusion (e.g., top-down or bottom-up).	This refers to articles that consider the origin of frames at multiple levels (e.g., macro and meso) and assume reciprocal diffusion (e.g., feedback loop).
		Within-Network	**Between-Network**
	Network	This refers to articles that consider the origin of frames from a network perspective, examining the diffusion within a network.	This refers to articles that consider the origin of frames from a network perspective, examining the diffusion between networks.

Table 3: Results – determined conceptual approaches