

# Networks of Security

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## Abstract

While the idea that securitization is a relational, continuous process is not new, it remains unclear how this reconceptualization can be applied to systematically study the emergence of security threats at scale. To address this problem, this chapter offers an innovative adaptation of Discourse Network Analysis (Leifeld, 2016) to develop a formalized model that facilitates the exploration of the (trans)formation and evolution of (meanings of) security. The core purpose of this analysis is to strengthen the modern conceptualizations of securitization that move beyond the ‘speech act’ by addressing the void between the theoretical advancements and their limited empirical applications. By leveraging the empirical opportunities allowed by the advent of social media, an example is provided to demonstrate the usefulness of this formalized model and to illustrate the applicability of *networks of security* for the study of securitization as an intersubjective, dynamic process.

## 1 Introduction

The idea that securitization is a relational, continuous process is not new. Drawing upon Balzacq’s (2008; 2010; 2015) sociological take, various second-generation securitization scholars have highlighted the limitations imposed by the notion that ‘security is a speech act’ (Buzan et al., 1998) to propose an understanding of the concept that is dynamic, collective, and local/temporal (Balzacq, 2015; Balzacq et al., 2015; Huysmans, 2011; Paterson & Karyotis, 2022; Roe, 2012; Salter, 2008; Stritzel, 2011). While the concept of securitization remains stable, these new readings suggest that the discursive space is shaped not by a single utterance, but by relational processes of collaboration, contestation, and dissent by a variety of actors who intersubjectively produce meanings of security. However, while meaningful theoretical discussions have been extensively developed around this issue, the study of securitization has been hindered by the lack of a scalable and systematic empirical approach. To address this problem, this study presents the innovative application of discourse network analysis

(Leifeld, 2016) to develop a formalized model that facilitates the analysis of the (trans)formation and evolution of (meanings of) security at scale. By engaging with the concept of discourse networks, this analysis conceives a processual understanding of producing security and empirically explores the co-production, spread, scope, and evolution/transformation of the meanings of security, along with the socio-structural struggles involved in authorizing the securitizing agents. In other words, securitization is conceived as meso-level phenomena that results from the dynamic interactions between actors and security perceptions, and which cannot be understood by focusing on the individual components of the system in isolation.

The remainder of this article is structured as follows. First, I engage with the initial reflections presented by the Copenhagen School and draw on the critiques developed by the current literature to explain how securitization can be theoretically re-conceptualized as a network. In particular, I focus on three well-documented issues (1) the speech act, (2) the speaker, and (3) the finite moment of success. The study then continues by building on the mathematical model proposed by Philip Leifeld (2016) to define the concept of discourse networks and develop its main contribution, a formalized model that facilitates the systematical analysis of securitization as an intersubjective process. Finally, leveraging the empirical opportunities allowed by the advent of social media and the resulting online securitization processes, an illustrative example is developed to demonstrate the applicability of *networks of security*.

## 2 Related Work

### 2.1 The Speech Act

In their most famous articulation of securitization, Buzan, Wæver, and de Wilde (1998) propose that ‘security is a speech act’. Securitization has since been taken up by an increasing number of scholars who have shifted their focus from materialistic-realist threats to discursive security practices. The concept of ‘speech act’ was adopted from J.L. Austin’s (1975) work, which argues that utterances do more than merely describe reality and assign them a performative force according to their different uses:

- (i) locution refers to the conventional understanding of speaking as an act of saying something;
- (ii) illocution refers to the act performed as a result of the articulation of an utterance;
- (iii) perlocution, which refers to the act by which someone else does something as a result of being persuaded by an utterance.

Following this Austinian conceptualization, the Copenhagen School defined the securitizing move as an ‘illocutionary act in relation to security’ (Wæver, 1989: 42). In essence, it is through a (single) speech act that presents an issue as an existential threat to a referent object, and which has the effect of breaking the established bounding rules and justifying the use of extraordinary measures,

that an issue becomes securitized (Buzan et al., 1998). The speech act possesses a performative capacity based on the use of security language that allows it to enact an issue as a problem (Wæver, 1995) and create the reality in which that security problem will be dealt with (Austin, 1975; Stritzel, 2014). Thus, ‘because it is in this practice that the issue becomes a security issue’ (Buzan et al., 1998: 24), and not necessarily by the presence of a ‘real’ existential threat, securitization is conceived as a self-referential practice, which is successfully achieved through a three-stage process. First, a securitizing agent pronounces a (single) ‘speech act’ that presents something as an existential threat (Buzan et al., 1998). Then, the audience accepts the security discourse and allows the application of extraordinary measures to protect the referent object (Wæver, 1989: 42; Buzan et al., 1998).

While this three-stage process built around the enunciation of a speech act was originally developed to facilitate the analysis of security studies and the applicability of the framework, it has ultimately produced an overly simplified and atomized formulation of securitization. By attributing the performative power to a single actor and a one-time utterance (Butler, 1997; Wullweber, 2013), the concept of the speech act undermines the intersubjective element of security and stands in opposition with the Copenhagen School’s own description of securitization as ‘the process of constructing a shared understanding of what is to be considered and collectively responded to as a threat’ (Buzan et al., 1998: 26; Léonard & Kaunert, 2010). This tension is well illustrated in the articulation of the model, where Buzan, Wæver, and de Wilde continuously fluctuate between the use of the terms ‘process’ and ‘speech act/utterance’ as if the two were synonymous (Buzan et al., 1998; Stritzel, 2014).

Indeed, it has been broadly argued that the framework proposed by Copenhagen School is too undertheorized and contradictory to provide clear guidance for detailed empirical analyses (Stritzel, 2014). As a response, several theoretical approaches have been developed to address these limitations, in multiple cases challenging the act-centred model (Balzacq, 2010: 1) to account for the multiple iterations by multiple actors which ultimately lead to the collective understanding of an issue as a threat (Mützel, 2013: 6; Stritzel, 2011: 346). Rather than seeking to establish universal communication norms - necessary to hold the speech act approach - the modern readings of securitization draw on the sociological approach to analyse the structuration dynamics in and of discourse (Balzacq, 2010; Roe, 2012; Salter, 2008; Stritzel, 2014; Williams, 2010). However, *are not reiterated security enactments a simple repetition of a speech act that has already attached the meaning of security to an issue?* Huysmans (2011) answers this question by arguing that to analyse securitization as the intersubjective construction of (meanings of) security, it cannot be conceived as ‘a moment in which one had a non-security situation before and a security situation after’ (Huysmans, 2011: 377). Securitization is rather a process involving recurring ‘banal security nothings’ (Huysmans, 2011: 371) and, thus, less of a critical decision and a moment of disruption, and more of a continuous meaning-making process (Huysmans, 2011: 377). The concept can, therefore, be redefined as a network of actors who become connected by their resembling securitizing acts, and who collectively produce structures and meanings of security. It is the analyst’s task to follow the ways in which actors are connected (intentionally or not) to each other by their shared understandings of the security environment (Mützel, 2009) to be able to investigate and describe the process by which an issue becomes a security threat. Thus,

three layers are involved in the analysis of securitization: (1) the layer of security enactments, which describe an issue as a threat; (2) the embeddedness of these enactments within a network of actors who collectively convey meaning; and (3) the level of political/structural struggles, by which actors attempt to spread and impose their security narratives on others (Stritzel, 2014).

## **2.2 The Speaker**

In an attempt to strengthen their speech act approach, the Copenhagen School elaborate on Bourdieu to establish what they call ‘facilitating conditions’ (Buzan et al., 1998; Stritzel, 2014):

- (1) the internal demand to the speech act to follow a grammar of security;
- (2) that the speaker should hold an *a priori* authority position that allows them to speak security;
- (3) and the existence of a ‘real’ threat, which facilitates the success of the securitizing move (Buzan et al. 1998).

While the conceptualization of securitization as a performative speech act rests on the idea that utterances hold an intrinsic power, the facilitating conditions (the second one in particular) propose that the power position of the speaker is a core element to analyze and understand how securitization works (Buzan et al., 1998). It was indeed Bourdieu (1991) who argued against Austin that the performative force of an utterance necessarily derives from the social power of the speaker (Stritzel, 2014). Unfortunately, however, the Copenhagen School leaves the reader wondering how to reconcile these two readings of performativity and power, provoking further difficulties for the empirical applicability of their framework.

The idea that ‘security is articulated only from a specific place, in an institutional voice, by elites’ (Wæver, 1995: 57) was originally proposed by Ole Wæver in his earlier reflections on securitization. This explicit focus on particular security agents is justified by Wæver and his colleagues on the basis of the (empirical) assumption that security is ‘very much a structured field in which some actors are placed in positions of power by virtue of being generally accepted voices of security, by having the power to define security’ (Buzan et al., 1998: 31). However, such an abstract *a priori* selection of agency/agents results in a complete disregard of the everyday practices and the lay actors that are engaged in the development of securitization. Hence, despite the original purpose of the conceptualization of securitization to construct a wider theoretical net that goes beyond the realist state-centric approach to security, the Copenhagen School’s perspective proposes a state-dominated understanding of securitization (Buzan et al., 1998). In the words of Wullweber (2013: 20):

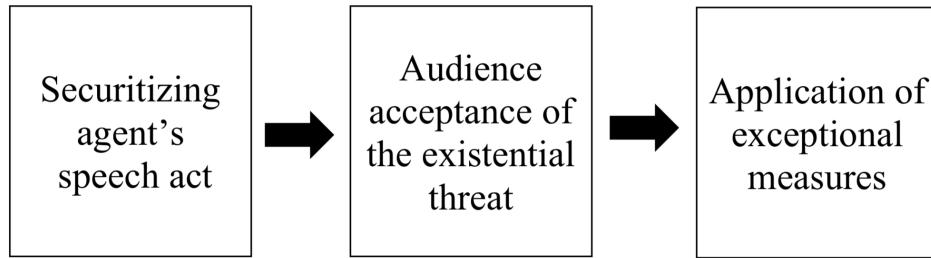
*‘the process of securitization is under-theorized, especially since the majority of analysis still focuses on the politics of the state or elite groups without sufficient taking into consideration the struggles within civil society at large’.*

These limitations would be easily addressed by recoiling to a network conceptualization of securitization. Rather than conceiving power *a priori*, it is in the process of enacting and constructing security that actors gain their agency. Power, in other words, is endogenous to the meaning-making process itself. This is not to say that all securitizing actors are equal, or that their exogenously pre-acquired power positions are irrelevant, but rather points to the fact that the question of who can speak security is constituted retroactively by the social magic of the performative security enactment itself (Stritzel, 2014: 28). Two elements are core to this understanding of securitization: the socio-performative and the sociopolitical one (Stritzel, 2014). The socio-performative element refers to the articulation of the securitizing move as a way in which actors convincingly convey security (Stritzel, 2014). The sociopolitical element, on the other hand, refers to a propagation process and the capacity to maximize the spread of the security discourse to create, challenge or amend existing structures and meanings of security. Hence, power is conceived as a fluid *effect* and not only a static cause (Aradau et al., 2014; Law, 1992), and it relates to the notions of ‘passage’, ‘diffusion’, and ‘encounter’ (Stritzel 2014; Szalai & Kopper, 2020).

### **2.3 Success and the Role of the Audience**

Trying to reconcile the speech act with the intersubjective concept of securitization, Buzan et al. (1998) propose that the discourse cannot by itself create security. An issue is securitized only when the audience accepts the security narrative and allows the use of extraordinary measures to protect the referent object. Without acceptance, the speech act is merely a ‘securitizing move’ (Buzan et al., 1998). This authorization element has the purpose of highlighting the fact that it is not only the speaker who understands the issue as a threat but society at large. However, the configuration of ‘success’ once again raises questions about the power of the performative speech act (in this case) against the power of the audience. While, as stated before, illocutionary utterances as conceived by Austin are intrinsically performative, the notion of success proposed by the Copenhagen School entails that securitization is negotiated and not simply assessed (Léonard & Kaunert 2010; Stritzel, 2014). In turn, securitization is shaped as a contradicting self-referential and intersubjective process of producing security, given that the more emphasis that is placed on ‘illocution’, the less important the concept of the ‘audience’ seems to become (Buzan et al., 1998; Léonard & Kaunert 2010; Stritzel,

2011: 349; 2014).



**Figure 1:** The Copenhagen School's framework of successful securitization

Expressing securitization in terms of ‘successfully attaching the meaning of security to an issue’ provokes even further tensions within the theory. Securitization is conceived as a dynamic meaning-making process. However, it is confronted with a static event of exceptional politics that imposes a universal, trans-historic, and fixed meaning of security (Stritzel, 2011). This combination of contradicting dynamic and static elements within the concept leads to an under-theorization of the processes of collaboration and contestation, which are constitutive to the production of security (Stritzel, 2011: 346). This is further problematized by the binary and passive role assigned to the audience (Côté, 2016; Walters & D'Aoust, 2015). While Buzan, Wæver, and de Wilde (1998: 25) agree that ‘to study securitization is to study discourse and *discourse constellations*’ (emphasis added), they assign the performative role to a single speaker and limit the role of the audience to merely accepting or denying the speech act. Thus, their conceptualization does not account for instances of contestation or dissonance, nor the evolving and collective practices of security (Léonard & Kaunert, 2020) imposing an artificial notion of universality and fixity.

The current literature has addressed these limitations by re-conceptualizing securitization as a relational, continuous process (Abrahamsen, 2005; Kaunert & Léonard, 2019; Léonard & Kaunert, 2020; Stritzel, 2011). By downplaying the relevance of any finite moment of ‘success’, instances of policy formation and institutionalization become additional enactments of security and constitutive elements of securitization. This same logic applies to the acceptance of a security narrative. Acceptance is a practice within a broader meaning-making process, and thus it can be understood as a securitizing move in itself. Hence, rather than marginalizing the audience to a passive role, securitization is achieved through processes of agreement, re-enactment, collaboration, and transactions with an actively engaged audience, whom themselves behave as securitizing actors (Ewick & Silbey, 2003: 1343). The notions of ‘source’ and ‘target’ are, therefore, attributed to a larger set of actors, and the lines between ‘speaker’ and ‘audience’ blurred by the interactive activity of producing security.

It is not challenging then to conceive securitization as a network, focusing on the formative process and the gradual transformation of (meanings of) security (Buzan et al., 1998; Balzacq, 2010; Stritzel, 2014). Rather than studying the existence of a unique speech act that can universally construct an

issue as a security threat and produce the application of exceptional measures, this re-configuration invites scholars of securitization to think of the form, the scope, the temporal framework, and the actors involved (and the links between them) in their analyses. The notion of ‘successful securitization’ is then replaced by the idea of hegemony. ‘Hegemony’ emerges from the Marxist tradition of social and political theory and can be defined as the attempt to dominate the discursive space and establish a moral-intellectual leadership by consistently reproducing a narrative (Leifeld & Haunss, 2012: 385; Norval & Prasopoulou, 2019; Wullweber, 2013: 7). Within the previous debate, the concept hegemony proposes that securitization is “successfully” achieved when a security narrative dominates a context-dependant (in terms of time, location, and actors involved) discursive space over other alternative narratives. In other words, the further a certain security narrative spreads, the more hegemonic that narrative becomes. This understanding, thus, points at the concept of “passage” as one of its core elements, defined as the transfer ‘into another place where it previously was not’ (Stritzel, 2011: 344) and aligns with the sociological understanding of securitization as “a set of interrelated practices, and the processes of their production, diffusion, and reception/translation that bring threats into being” (Balzacq 2011: 3). Moreover, the concept of hegemony not only highlights the localized quality of securitization, but also its dynamic and temporal character. Rather than the universal, trans-historic, and fixed conceptualization proposed by the notion of “success”, hegemony indicates that, while security narratives can become stabilized and dominate the discursive space for a prolonged period of time, securitization is by definition a continuous and indefinite meaning-making process, which falls apart when no longer enacted (Aradau et al., 2014; Stritzel, 2011).

### **3 Discourse Networks: A New Framework for Analysis**

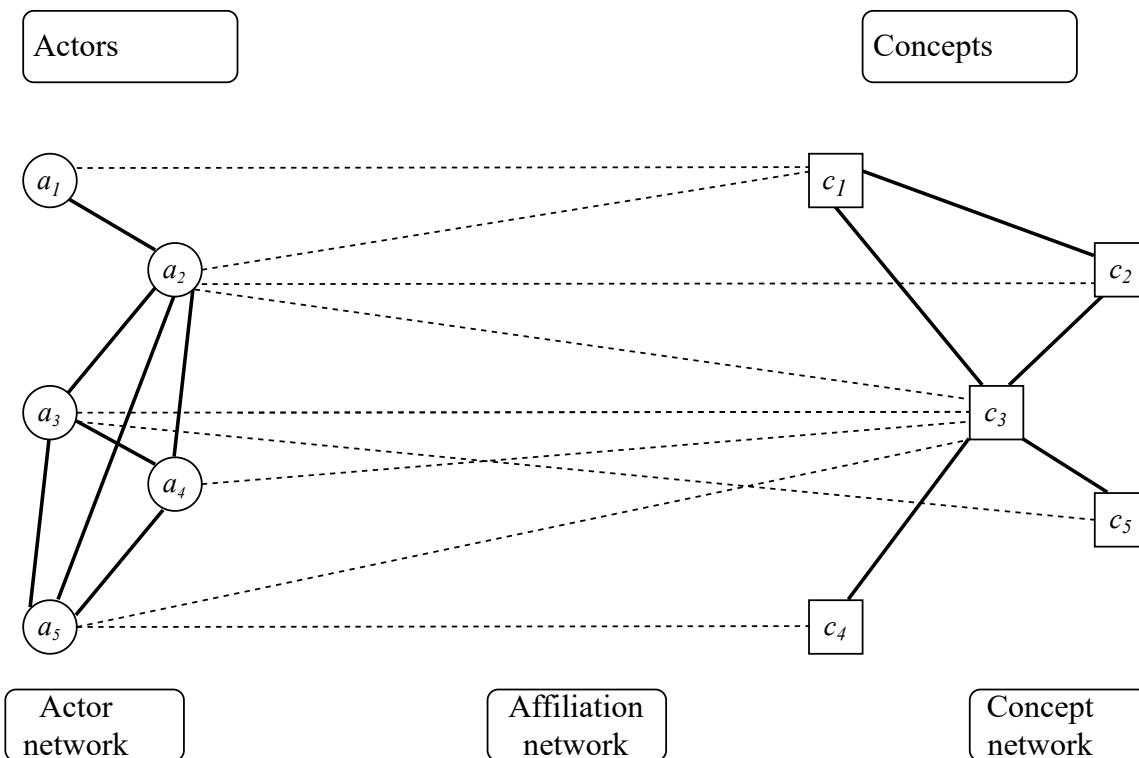
Discourse networks have found their way into various social disciplines, including policy studies and cultural sociology. In international relations, several terms have been coined to refer to these structures of meaning, such as Foucault’s (1979, 1980) notion of *dispositifs* as discursive structures of knowledge, Latour’s (2005) actor-network theory, Bennet’s (2010) notion of assemblages, and Butler’s (1993) approach to performativity. Indeed, important contributions have developed in recent years from the juxtaposition between actor-network theory and the field of international relations (Barry, 2013). However, while discourse networks have been extensively explored by existing literature regarding policy formation, problem definition, and framing, securitization scholars have yet to engage with this empirical approach. The field of critical security studies, marked by its focus on practices, discourses, processes, diffusion, and connectedness (Aradau et al., 2015) provides fertile ground for a more profound engagement with this framework. Indeed, networked meaning-making processes, particularly visible in the age of social media, seem to be so increasingly prevalent in international security affairs that it is surprising that the empirical potentialities of the concept of discourse networks have not been previously explored.

This section seeks to define discourse networks to develop a formalized mathematical model that can be systematically applied to study securitization. Particular emphasis is placed on four of the core attributes that characterize this understanding of the concept: (1) the performative role of discourse,

(2) the plurality of discourses, (3) the endogenous quality of power, and (4) the concept of hegemony.

### 3.1 Discourse Networks

Discourse networks analysis (Leifeld, 2016) is based on the premise that discourse is a relational phenomenon, characterized by a system of actors who exchange ideas and intersubjectively convey meaning (Leifeld, 2016: 3, 2016: 7). The standard discourse network approach identifies two types of nodes in a graph structure - actors and concepts - and maps the links (edges) between actors and concepts in a discourse. Actors are connected when they discuss the same concepts, and concepts are connected when they are discussed by the same actors. Thus, compared to traditional social network analyses and existing studies of meso-level structures in discourse, which tend to sort into either actor-centred or content-centred approaches, discourse network analysis accounts for the endogenous and relational aspects of actors and narratives in discourse simultaneously. Figure 2 illustrates the standard discourse network model.



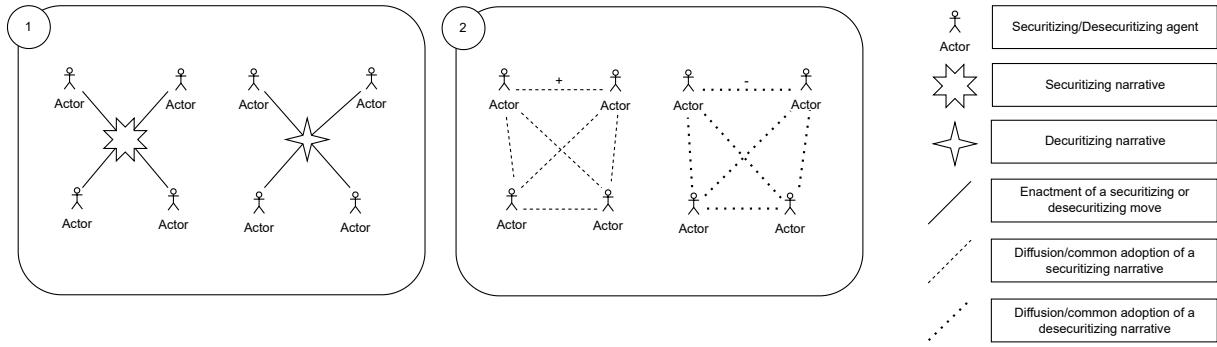
**Figure 2:** Static snapshot of the basic discourse network model, based on Leifeld (2016).

*Note:* Circles symbolize actors, boxes indicate concepts. The relations between actors ( $a_1, a_2 \dots a_n$ ) and claims or concepts ( $c_1, c_2 \dots c_n$ ) represent the affiliation network. For example, the presence of a line between  $a_2$  and  $c_3$  indicates that actor  $a_2$  mentioned the claim  $c_3$ . Lines between actors (concepts) represent the actor (concept) congruence network.

Transformations of discourse data can generate various network types. Building on the standard discourse network model, this study develops an innovative application that better adapts to the study of securitization. Securitization (as defined here) is an intersubjective meaning-making process. As such, rather than focusing on the ways in which actors individually relate to concepts, it analyses the construction of common interpretations of the security environment and the actor configurations that produce and sustain localized security constructs. This is what in network terms the literature would call a complex adaptive system. Complex adaptive systems, like the one described in the proposed model, are composed of diverse agents that must make decisions about how they behave in a dynamic context. These decisions (security perceptions) evolve over time in response to the decisions (security perceptions) of other agents. The dynamic interactions between actors and security perceptions lead to emergent meso-level phenomena (securitization) that cannot be understood by focusing on the individual components of the system in isolation. Discourse network analysis thus offers new avenues of investigation into the process of securitization, providing the necessary methodological toolkit to conduct this line of research.

The level of complexity of this graphical representation can, however, be simplified to facilitate its application to the study of securitization. One common way of doing this is by decreasing the variety of node types . Given that different threats are typically studied independently by the securitization scholarship, concepts are one element type that can be removed from the model (Ognyanova, 2020). In their place, a new relationship - what the literature on networked communication calls a convergence tie - is defined (as shown in Figure 3.2), representing, in this case, a shared understanding of the security environment between two actors (Ognyanova, 2020). This alteration of the original discourse network model, thus, produces an actor congruence network, which allows the sequential analysis of the interaction of actors and the congruence/convergence of their interpretations of the security environment as an effect of their enactment of securitizing/desecuritizing moves. This can be more

clearly visualized in Figure 3<sup>1</sup>.



**Figure 3:** Static snapshot of the adapted discourse network model, both in its original and its simple form.

*Note:* Rather than focusing on several security threats (concepts), this graph includes a single issue, but it is perceptive of both the securitizing and desecuritizing narratives that may develop simultaneously around that single issue. This is, however, a static sub-graph representation of a potentially larger (de-)securitizing process that develops over time.

This adaptation of the discourse networks model sheds light on the performative role assigned to discourse. Whether or not an issue will be perceived as a problem depends on the *narrative* in which it is discussed (Hajer, 2002: 44). ‘Narratives’ give meaning to ambiguous social circumstances by proposing a story or interpretation of events that describe and ‘brings into existence a social reality’ (Brown, 2006; Ford & Ford, 1995: 544; Hajer, 2002: 45; Schiller 2017). Other naming conventions with slightly different connotations are ‘storyline’ (Hajer, 2002), ‘image’ (Jones & Baumgartner, 2005), ‘claims’ (Wagner et al., 2002), ‘interpretations’, ‘puzzling’ (Heclo, 1978), and ‘framing’ (Leifeld, 2016; Rein & Schön, 1993). While typically discussed as linguistic representations (see, for example, Hajer, 2002; Leifeld & Haunss, 2012; Leifeld, 2016), narratives are not limited to ‘talk’ or utterance(s), but rather refer to linguistic and non-linguistic artifacts - such as practices, images, policies, institutions, events, commemorations, and other forms of (security) enactments - that shape the perceptions, thought processes, and meanings of an issue (Wullweber, 2013: 2).

By emphasizing the relational aspect, moreover, the concept of discourse networks suggests that while we typically refer to discourse in the singular, discourses do not develop uniformly (Hajer, 2002: 46). Discourse is formed by an ‘ensemble of a set of storylines, the actors that [enact] those storylines, and the practices that conform to these storylines, all organized around a discourse’ (Hajer, 2002: 47). Opposed to the notion of the speech act, the concept of discourse networks proposes that social constructs develop from instances of informational convergence among a myriad of actors who engage in processes of dissemination, cooperation, and negotiation by proposing/enacting and adapting their individual understandings of security (Ewick & Silbey, 2003: 1343). This conceptualization, thus,

<sup>1</sup>It should be noted that Figure 3 is a projection of a static sub-graph representation of a potentially larger (de-)securitizing process that develops over time.

better aligns with the claim by Buzan, Wæver, and de Wilde (1998: 25) that ‘to study securitization is to study discourse and *discourse constellations*’ (emphasis added). Indeed, this core transactional character highlights the importance of ‘multiple iterations by multiple actors’ (Freeman, 2009: 441) in the formative process of discourse, further eroding any rigid conceptualization of a sovereign speech act and a single speaker (Stritzel, 2011: 345).

The relational and interactive character of discourse networks also highlights the localized quality of discourse. Rather than producing a universal understanding of the social/security environment, discourse networks suggest that social constructs are tied only to the specific actors that construct/enact them (Eliasoph & Licherman, 2003; Hager, 2002: 46; Stritzel, 2014). In turn, this also points to the concepts of ‘passage’ and ‘hegemony’. A narrative becomes hegemonic and dominates the discursive space by spreading and being adopted and reenacted by an increasing number of actors over time. The bigger the coalition of actors who adopt a narrative, the more hegemonic this narrative will become. According to the graph model proposed above, this could be observed by the enlargement of the actor-network (as new actors adhere to a narrative) and the increase in network density (i.e. the number of edges connecting the actors who share a common understanding of a threat and produce securitizing or desecuritizing moves). However, while the dominance of a storyline over other alternative narratives has been typically explored as a moment of ‘success’ and policy formation (see Hager, 1998; Leifeld & Haunss, 2012), the notion of hegemony describes a process that is ultimately indefinite (Stritzel, 2011: 345). Such an approach, therefore, erodes the importance of any single moment of success (Stritzel, 2011: 345) and highlights the dynamic nature of the narrative, **both in terms of the ‘meaning’ attached to it and its performative power** (Stritzel, 2011: 346).

A final reflection regarding the concept of discourse networks involves the idea of power. Due to its focus on ‘multiple iterations by multiple actors’ (Freeman, 2009: 441), the concept of discourse networks allows for a more horizontal understanding of securitization as a process of discourse formation. Actors are connected by their shared interpretations of the security environment, regardless of any essentialist notions attributed to them (White, 1992). In other words, power can not be defined a priori, as positions of power will ultimately be determined by the actor’s capacity to spread and sustain a narrative. Exogenously pre-acquired power positions are, thus, still at play, but this conceptualization accounts for instances of connective action (Bennett & Segerberg, 2012; Wang & Zhou 2021) where lay actors become central to the widespread of a narrative<sup>2</sup> (Downing & Dron, 2020). As a result, power is both exogenous and endogenous, and positions of power are agnostically established as a result of the meaning-making process rather than pre-determined (Mützel, 2013: 6).

### **3.2 Networks of Security: A Formalized Model**

Thus far, this section has explored discourse formation from a content-oriented perspective, which focuses on the narratives and the production of common interpretations of the security environment. Yet, this alone provides for a disembodied picture that fails to link narratives with the actors

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<sup>2</sup>This may occur deliberately or accidentally. Both cases are accounted for in the framework.

who sponsor them (Steensland, 2008). Processes of discourse formation<sup>3</sup> are sustained by actor configurations that favor a certain narrative over others (Leifeld, 2016: 8). *But what type of actor configuration sustains a securitization process?*

Building on the adapted graph model presented above, let  $A = a_1, a_2 \dots a_n$  be the set of actors engaged in a (de-)securitization process, and  $T = t_1, t_2 \dots t_n$  the times at which they produce security enactments. As described in Figure 2.3.2, the level of analysis is the narrative: whenever two actors (or nodes) enact a certain securitizing or desecuritizing narrative, a relation (or edge) between those two actors can be inferred (Leifeld, 2016: 63). This relation is modeled as an edge  $e_t \in E(G_t^a)$  in a congruence network graph  $G_t^a$ , where edges indicate the existence of a shared understanding of a threat and actors are modeled as vertices:

$$G_t^a = (A, E_t^a) \quad (1)$$

To account for both securitization and de-securitization, which may occur simultaneously around the same issue, it is desirable to *directly* model these two processes. Edges are then assigned positive and negative values: a positive relation is inferred between two actors whenever they enact a securitizing narrative about the same issue, whereas a negative relation is drawn between two actors whenever they de-securitize the same issue<sup>4</sup>. This relation is modeled as an edge  $\forall e_t : e_t = \{a, v_t\}$ , where  $V_t$  is the set of positive and negative values, and  $v_t(a_i, a_j) \in V_t$  denotes the edge value between  $a_i$  and  $a_j$ .

Unlike the simplified illustration shown in Figure 2.3, edges have a subscript  $t$  because their presence or absence may vary over time<sup>5</sup>. The performative power of the security narrative is by nature historical - rather than universal and perpetual. Thus, actors are connected if they enact a narrative within a certain time period, but potential links are ignored if the duration between the two enactments is too long (Leifeld, 2016: 73). To model this, the discourse network can be subdivided into discrete time slices, and the slices can be compared to analyse the development of the securitization process over time<sup>6</sup>. To formalize this idea, let  $d^b$  be the beginning of the discourse (i.e. securitization process), which corresponds to the time of the first analysed securitizing move, and let  $d^e$  be the endpoint of (the analysis) of the discourse, corresponding to the last analyzed securitizing move<sup>7</sup>; then the duration of the (analysis of) the discourse is:

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<sup>3</sup>Understood as the shared interpretation of the security environment.

<sup>4</sup>In the original discourse network model, negative and positive values are attributed to edges to account for conflict between actors. In that case, positive edges are drawn between two actors when they both behave as securitizing or desecuritizing actors, and negative edges connect actors with opposing views. However, for simplification and due to the focus on a single issue, conflict is not included in this adapted model.

<sup>5</sup>For simplicity, we make the assumption that actors are present in all time periods.

<sup>6</sup>Subdividing time into discrete slices requires the analyst to explain their chosen size of a time slice by reference to the important changes that might occur within a certain number of days, months, or years.

<sup>7</sup>While securitization can (and is often) embedded in previous discourse or develops in response to previous events, all formal models are abstractions of reality, and as such, can never achieve a complete representation of it. For this reason, all empirical studies require a defined time frame of analysis to sustain their feasibility. These decisions will undoubtedly require an informed decision by the analyst based on the case study of interest and the research question at hand.

$$\bar{d} := d^e - d^b \quad (2)$$

Furthermore, a time window is introduced with a certain duration as an exogenous parameter determined by the analyst. The *window size*  $\bar{w}$  is the end time of the window minus the start time of the window:

$$\bar{w} := w^e - w^b \quad (3)$$

When a low value of  $\bar{w}$  is chosen, the resulting discourse network reflects the interactions of actors, which is recommended when studying securitization. The second exogenously given parameter is the *step size* of the time window  $s$  (i.e. the rate at which the window moves).

$$s := w_{t=1}^b - w_{t=0}^b \quad (4)$$

The number of time steps,  $k$ , follows directly from these parameters:

$$k = \frac{\bar{d} + \bar{w}}{s} = \frac{d^e - d^b + w^e - w^b}{s} \quad (5)$$

The congruence, undirected<sup>8</sup> time window graph is finally defined as:

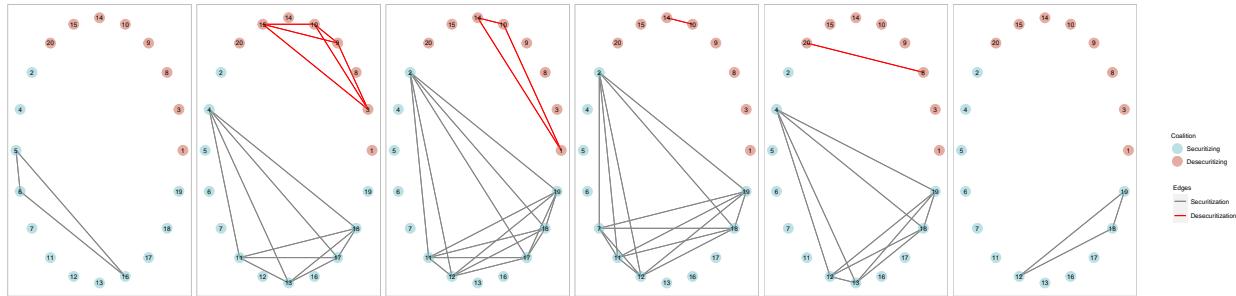
$$G^{tw} = (A, E^{tw}) \quad (6)$$

Finally, given the shifting nature of narratives, both in terms of the ‘meaning’ attached to them and their performative power, a modification is required to include a *decay* parameter. The decay parameter  $\bar{f}$  serves to specify for how long edges are valid before they expire and vanish (Leifeld, 2016: 77). This too requires an empirical estimation by the analyst to select the appropriate time window according to the context in which the securitization process develops and the actors’ activeness within that context (Leifeld, 2016: 15; 2016: 84). The resulting formalized security discourse network model, which more accurately describes the process of securitization, can be observed in a graph like the one

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<sup>8</sup>The directionality of a graph will depend on the context in which the securitization process develops. Thus, while the formalized model presented here is undirected, this can be modified to include directed edges at the discretion of the analyst.

depicted in Figure 2.4.



**Figure 4:** Hypothetical congruence security discourse network (i.e. formalized securitization process). Whenever two actors (or nodes) behave as securitizing or desecuritizing agents by enacting a security narrative regarding a specific issue, a relation (or edge) between those two actors is inferred. Securitizing narratives are represented by a gray line, whereas desecuritizing narratives are shown by a red line. Two coalitions can be distinguished, which are highlighted by the node color. The period of analysis is split into discrete time windows. Two agents are connected if they enact a narrative within the same time window, but potential links are ignored if the duration between the two enactments is too long. Moreover, accounting for the decay parameter, edges are only valid within the time window of the enactment and vanish in the following time window. Thus, edges reflect a contextualized discursive similarity (or opposition) between two actors. Securitization (defined as the production of a shared understanding of a threat) occurs when a security narrative becomes popular and (re)iterated by various actors, which is indicated by network density. However, these instances of information convergence can only become temporally stabilized and will eventually vanish.

Overall, the formalized model of securitization is composed of three dimensions: (1) the actors, (2) the narratives, (3) and the time points and duration of the enactments. When combined into a formalized model, it is possible to systematically analyze securitization as meso-level phenomena that cannot be understood by focusing on the individual components of the system in isolation. Hence, the discourse networks approach serves to facilitate the application of the sociological understanding of securitization, characterized as dynamic, intersubjective, contextual, and temporal.

The discussion thus far has presented and developed Philip Leifeld's (2016) notion of discourse networks and applied it to develop a formalized mathematical model of securitization. The model proposed here is an abstraction that draws attention to central aspects of the conceptualization of securitization that have not sufficiently been addressed by previous empirical approaches. In what follows, the encounter of (this understanding of) discourse networks with securitization theory will be applied to develop an illustrative example of *networks of security* by leveraging the empirical opportunities allowed by the advent of social media and the resulting online securitization processes.

#### 4 An Application: *Networks of Security* and Social Media

The formalized model presented above highlights five salient aspects of the concept of securitization: (1) the conceptualization of security as an activity of connecting and a focus on the local and temporal production of networked (meso-level) structures of meaning; (2) the reconfiguration of the securitizing move(s) and their spatio-temporal horizons; (3) the reconceptualization of power as both

exogenously inherited and endogenously acquired, which allows for elite *and* non-elite actors to behave as securitizing agents; (4) the erosion of any rigid conceptualization of ‘source’ and ‘target’; and (5) the adoption of the notion of hegemony rather than ‘success’. In this sense, the theory of discourse networks suggests an understanding of security as dynamic, local, temporal, intersubjective, and decentralized.

The widespread adoption of the Internet and the advent of social media provide both a catalyst and a good example to illustrate how the *networks of security* model can be applied to study securitization<sup>9</sup>. Social network platforms, such as Twitter and Facebook, have become a central part of the political communication space (Nielsen & Scroder, 2014; Schwarz, 2014). Although all media are somewhat ‘social’ and interactive in nature (Hogan and Quan-Haase, 2010; Thompson, 1996), social media platforms offer the opportunity to a large number of geographically distant users to gather around a message (Rasmussen, 2015). In fact, as a result of the ready-made tools that are made available by these sites, social media has empowered users to ‘share and distribute information, create viral events, [and] collaborate to produce knowledge’ (Nahon, 2015: 41). The micro-blogging site Twitter, for example, has become one of the main communication channels in daily politics (Barberá, 2015). Once considered a source of ‘pointless babble’ and a website to share personal status updates, Twitter has increasingly become an instrument in times of disaster, for event-following, revolution, and uprising (Rogers, 2014; Barberá, 2015). Social media has, thus, turned into a ‘third space’, formally defined as a forum for everyday talk, but where political communication emerges with the potential of producing meaningful political action (Jackson et al., 2015: 80).

In reference to securitization, social media exhibits new opportunities to understand the formative process of (meanings of) security. Not only do social media give rise to new forms of threats (Nissen, 2015), but they also affect the conditions for the production and dissemination of securitizing moves. Compared with mainstream media and other forms of traditional political communication (e.g. presidential speeches), social media accommodates a wider range of actors and is more accessible in terms of making effective claims about threats (Makhortykh, 2018), diminishing the gatekeeping power of more traditional agents (Gilardi et al., 2020). Furthermore, social media platforms allow elite and ordinary users to interact directly with one another and engage in a responsive activity within the same symbolic framework, using the same type of language and embedded in a common social network (Barberá, 2015). These interactions and security enactments, moreover, leave a digital trail that can be followed to study the development of the process of securitization. Different from the offline sphere, where security enactments by elites are easier to account for than the everyday securitizing moves by lay actors, social media facilitates the adoption of a decentralized approach<sup>10</sup> through the analyses of these digital trails. In other words, the proliferation of social media and

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<sup>9</sup>As explained before, discourse networks and the narrative(s) that form them are not limited to ‘talk’ or utterance(s) but instead refer to linguistic and non-linguistic artifacts that conform to a given social construct. Thus, the empirical model proposed here is perceptive of a broad range of securitizing moves - such as linguistic utterances, practices, images, policies, institutions, events, commemorations, and other forms of security enactments. However, given the nature of social media, where users perform and interact mostly by posting text, studies of online securitization processes focus on linguistic resources used to enact (in)security.

<sup>10</sup>Wullweber (2013) refers to the democratization of securitization theory, which accounts for everyday practices and routines by elite and non-elite actors (Wullweber, 2013: 21). Here, however, rather than referring to a horizontal or democratic approach, we choose to allude to the decentralization of the process of securitization to emphasize its network structure.

the multiplicity of voices allowed highlights the contribution and necessity of a systematic empirical model that accounts for the labyrinthine networks that bring security into existence.

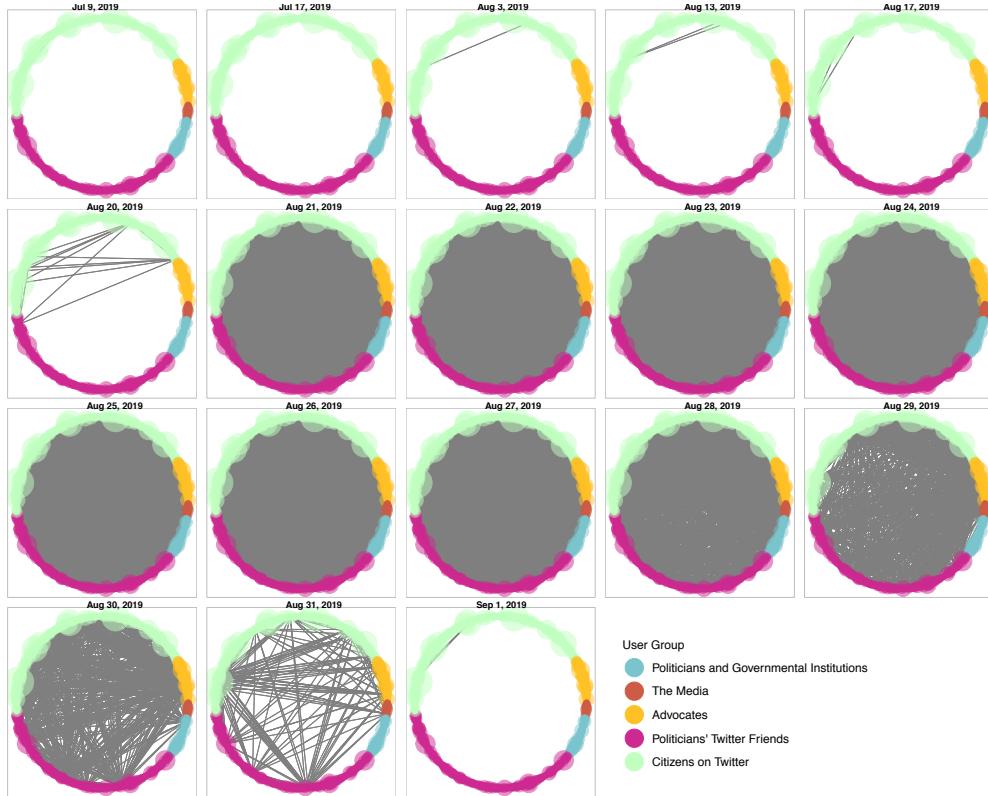


**Figure 5:** Tweets by Emmanuel Macron and Justin Trudeau

Indeed, several securitization processes have developed on social media in recent years, in many cases facilitated by the use of hashtags<sup>11</sup>. Hashtags, starting with a symbol ‘#’ ahead of keywords or phrases, are created organically and are widely employed by Twitter users as coarse-grained topics (Wang et al., 2011). Adding a hashtag to a tweet makes it easier for other users to search, link, and interact with one another via the hashtagged word and share stories related to it (Yang, 2016: 14) even when they do not directly follow each other. An example of a hashtag associated with an online securitization process is #PrayForAmazonas (as shown in Figure 2.5). For decades, loggers and farmers have been clearing the Brazilian rainforest, but the issue gained international traction in August 2019 as images of the Amazon on fire spread across the Internet. Several hashtags were employed to securitize the issue and describe it as an emergency, such as #ActForTheAmazon, #ActForAmazon, #SaveTheAmazon, #AmazonFires, and #SOSAmazonia. However, in response to these claims, a second coalition of actors developed countering the plea to propose that no emergency was taking place in the Brazilian rainforest. Among the most salient hashtags employed by this second discourse coalition of de-securitizing actors were #MacronleGrandMenteur, #BolsonaroTemRazao, #MacronLies, #AAmazôniaÉdoBrasil, #aamazoniaénostra, #AmazoniaSemONGS, #AmazoniaSemFake, #MacronMente, #MacronFakeNews, #MacronCaloteiro #MacronOBrasilNaoÉSuaCasa and

<sup>11</sup>While hashtags are a good example to illustrate the theoretical framework proposed here due to the obvious form of connection they provide, \*networks of security\* are not limited to the use of hashtags. Online security networks can be formed and analyzed around other natural language features of discursive affinity.

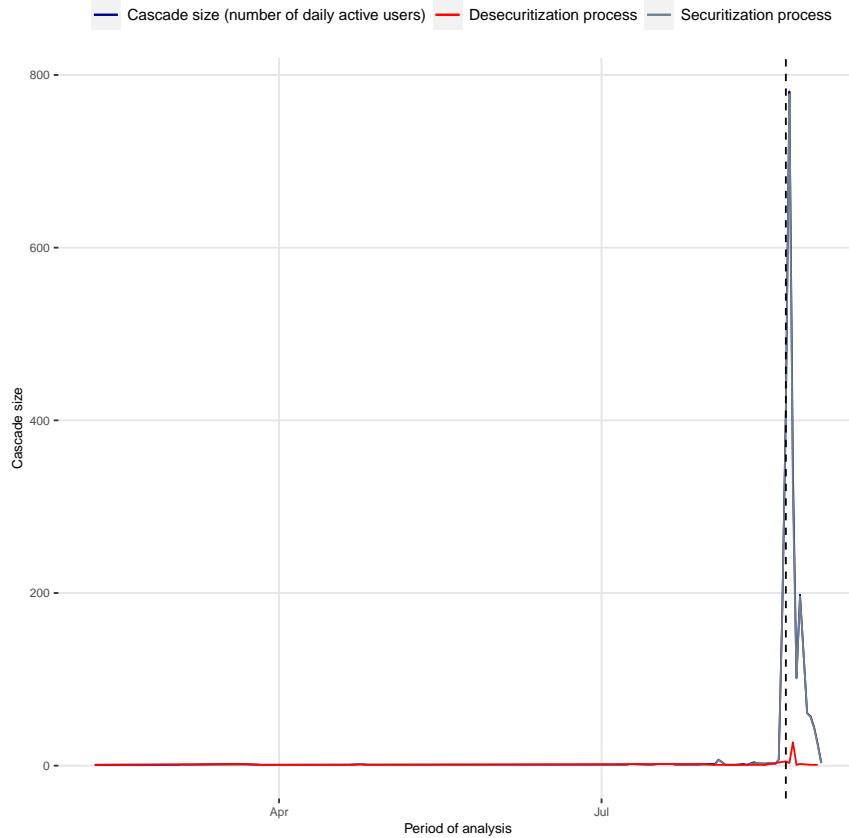
#BrasilNasRuas.



**Figure 6:** Amazon rainforest fires securitization network. Salient hashtags are classified into two groups: securitizing and desecuritizing. A relation (or edge) is inferred between two users when they both behave as securitizing or desecuritizing actors by employing a hashtag from either group. Securitizing agents are connected by gray edges, whereas desecuritizing agents share a red edge. Thus, to facilitate the visualization of the network, the projection only displays instances of discursive affinity. Node size indicates the level of engagement (i.e. the number of securitizing or desecuritizing moves produced) of each user in the overall period of analysis. To visualize the evolution of the network, the period of analysis is split into discrete time windows of one day. Node position across time windows is fixed, and two agents are connected if they enact a securitizing or desecuritizing move within the same time window, but potential links are ignored if the duration between the two enactments is too long. To reflect a contextualized discursive similarity between two actors, edges are only valid within the time window of the enactment.

Figure 6 shows a projection of the actor-level network of the Amazon fires drawn from a sample of tweets by actors directly or indirectly engaged with the G7 summit, who employed at least one of the hashtags listed before. Further specifications about the data collection strategies are detailed in Appendix A. However, it should be noted that the use of hashtags in this illustrative example serves to put forward the innovative framework, focusing on the main thrust of the argument and highlighting the contribution of this study. Hashtags are, nevertheless, not the only fitting approach to identify securitizing moves. Networks of security focuses on the emergent meso-level phenomena (securitization) that develops as a result of the interaction between actors and their evolving security perceptions. Yet, this approach purposefully leaves room for securitization scholars to adopt a broad range of identification strategies at the individual level of the securitizing/desecuritizing move. This is one of the strengths of the proposed model, as it reflects upon the various mechanisms and forms

of securitizing/desecuritizing moves (i.e., linguistic utterances, practices, images, policies, institutions, events, commemorations, and other forms of security enactments) discussed by the existent literature. For this reason, the identification, isolation, and analysis of the individual components of the system (securitization) is solely predicated by the measurement selected by the analyst according to the unit of analysis of interest. It is therefore beyond the scope of this study to develop a normative inference regarding data collection techniques and identification strategies. The existent literature, however, may provide guidance on the identification strategy at the individual level of the securitizing and desecuritizing moves (for example, Baele & Sterck, 2015; Umansky, 2022).



**Figure 7:** Chronological cascade size of the securitization and desecuritization processes as measured by number of active users. The dotted vertical line indicates the date in which Macron posted the tweet displayed in Figure 5.

As illustrated by this example, the formalized model offers a significant empirical contribution to the securitization literature. The application of *networks of security* allows the analyst to systematically reconstruct and observe the process of securitization, while still accounting for the intersubjective, dynamic, temporal, and localized qualities of the concept. Indeed, the model produces a clearer conceptualization and operationalization of the ‘shared understanding of a threat’, as it focuses on instances of information convergence and the processes of dissemination, co-production, and re-enaction that lead to it.

For instance, in the example presented here, we can observe step-by-step the process of securitization of the Amazon rainforest fires in 2019 (as it developed on social media). While the process was initiated by a small group of actors, particularly Brazilian citizens and local advocacy groups, the security narrative was then adopted and (re)enacted by international NGOs and other elites. After the city of São Paulo was covered in smoke from the Amazon fires on the 19th of August 2019, the securitizing narrative became widespread, which can be observed from the increase in network density (i.e. number of edges). Simultaneously, the desecuritization narrative became enacted. This can be better observed in Figure 2.7, which displays the chronological growth of the securitization and desecuritization processes (separately) as measured by the number of active users in each one of the opposing processes (González-Bailón et al., 2013). Given the small size of the desecuritizing coalition and the equally small number of desecuritizing enactments, this process can hardly be observed in Figure 2.6. Therefore, we replicate the same figure only for the tweets enacting desecuritization in Appendix A.2.

By the 21st of August 2019, the security narrative was widely endorsed and dominated the discursive space (i.e., it became hegemonic among the actors included in this analysis). In other words, the number of ties (i.e. increase of network density) and cascade size (i.e. number of active users) indicates the hegemonic position of a narrative, which in this case is demonstrated by the large endorsement of the security narrative against the desecuritizing one. On the 22nd of August 2019, before the beginning of the 45th G7 summit, political elites like Emmanuel Macron and Justin Trudeau called for immediate action and tweeted referring to the situation as an international emergency (as shown in Figure 2.5 and by the vertical dotted line in Figure 2.7). While the security narrative was already salient, their participation contributed to an even faster spread, driving the #PrayForAmazonas hashtag to become a global top trending topic on Twitter (Symonds, 2019). However, the saliency gained by the narrative also provoked a slight increase in the cascade size of the desecuritization process (as observed in Figure 2.7), under the claim that Macron's message was deceitful and that it disregarded Brazil's national sovereignty. Finally, matching the end of the 45th G7 summit, which concluded with a signed agreement to facilitate resources to fight the fires, the securitization process lost momentum. As shown in Figure 2.6, the network density gradually decreased from the 30th of August 2019, indicating a decrease in the performative power of the security narrative.

Moreover, while this observational analysis already provides meaningful insights, the application of this formalized model allows for the testing of a broad range of hypotheses concerning securitization. Relying on Social Network Analysis tools, the analyst can choose to, for example, answer questions regarding actors' agency and their ability to 'speak' security by calculating centrality measures. As demonstrated in this section, the *networks of security* model strengthens the modern readings of securitization that move beyond the 'speech act' and offers an operationalization that accounts for the intersubjective and dynamic qualities of securitization, which are core to the concept.

## 2.5 Conclusion

The idea that securitization is a relational, continuous process is not new. Modern readings of securitization have sought to broaden its conceptualization beyond the speech act and the moment of success to account for the wide range of actors and the processes of co-production, dissemination, interaction, and dissent from which this process develops. However, prior to this study, there was a void between the theoretical and the empirical applications of this reconceptualization.

Securitization is a field where the major and important theoretical advancements developed in the literature have not always been matched with systematic empirical approaches that allow a robust application of these frameworks (Baele & Sterck, 2015). Indeed, the second generation of securitization scholarship, among which we can place the sociological school, has made significant effort to highlight the need to contextualise securitization processes (Balzacq, 2015; Balzacq et al., 2015; Huysmans, 2011; Paterson & Karyotis, 2022; Roe, 2012; Salter, 2008; Stritzel, 2011) and to consider the active role taken by non-elite actors in this process (Wullweber, 2013; Umansky, 2022). However, to date, there has been no agreement in the literature as to how these challenges should be empirically addressed or how securitization could be analysed at scale. Thus, this study has aimed to generate dialogue between discourse network analysis and securitization theory to provide the securitization scholarship with the methodological toolkit to produce robust and systematic empirical applications of its already thoroughly developed theory(ies) at scale. Complex adaptive systems, like the one described in the model proposed here, are composed of heterogeneous agents that must make decisions about how they behave in a dynamic context. These decisions (security perceptions) evolve over time in reaction to the decisions (security perceptions) of other agents. The dynamic interactions between actors and security perceptions lead to emergent meso-level phenomena (securitization) that cannot be understood if we focus on the individual components of the system in isolation. Discourse network analysis thus opens new avenues of investigation into the process of securitization, providing the required methodological tools for this line of research.

The formalized model networks of security, developed as an innovative application of discourse network analysis (Leifeld, 2016), offers a systematic empirical approach that is contemplative of the particular qualities that define securitization as such. Before being able to contribute materially, this study, helped revise the theoretical critiques developed by the proponents of the sociological readings of securitization to explicate the suitability of this formalized model and its application at scale. Overall, as demonstrated by the illustrative example, this model has two major achievements: First, it enables the systematic reconstruction and direct observation of the process of securitization, and second, by combination with Social Network Analysis tools, it provides opportunities to answer meaningful theoretical questions concerning the intersubjective construction of security threats. Moreover, while the example developed in this analysis focused on social media communication, this model can be applied to study securitization in other environments by simply adapting the data collection strategies and the measurement employed at the level of the securitizing move. This is one of the strengths of the proposed approach, as it reflects upon the various mechanisms and forms of securitizing/desecuritizing moves (i.e., linguistic utterances, practices, images, policies, institutions,

events, commemorations, and other forms of security enactments) discussed by the existent literature.

However, potential weaknesses of this approach should be acknowledged. All formal models are abstractions of reality, and as such, can never achieve a complete representation of it. Validity and replicability issues may arise both from the data collection strategies and the specifications of the model assigned by the analyst. Decisions such as the type(s) of enactments (i.e. practices, images, policies, institutions, events, commemorations, etc.) to be considered and how they relate to each other, together with the definition of the time windows, which determine the existence and duration of edges, significantly affect the network described by the model. Moreover, the time span of the overall analysis will also determine the model's capacity to capture instances of institutionalization resulting from the analyzed securitization process. Future applications of *networks of security* should thus attempt to shed light on the challenges and opportunities presented by the flexibility and adaptability of this approach.

What does this conceptual juxtaposition mean for securitization theory? Does the notion of discourse networks destroy the concept of securitization? As argued by Wæver (1989: 37) himself, 'we deal with the classical core – but in a new circumscription.' As contended by numerous second-generation securitization scholars, the classical speech act and the traditional speaker are displaced and contextualized within relational and intersubjective processes formed by an ensemble of narratives and the wide range of actors who enact them. In this way, while there is still a need for readings and analyses of securitization, modern applications of the theory must remain perceptive of the labyrinthine networks that bring security into existence.

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# Appendix

## A.1 Data Collection

I collect tweets sent by five actor groups that have been identified as possible securitizing agents: politicians and governmental institutions, advocates, politicians' Twitter friends, the media, and citizens on Twitter. For this task, the `rtweet` package (Kearney, 2016) and the Twitter REST API<sup>12</sup> were employed. The study focuses on the seven G7 countries and collects tweets sent in the time period from February 2019, when the first Sherpa (emissary) meeting took place, to September 2019, when the 45th G7 summit was concluded.

**Table A.1:** Description of the Dataset

Group	Number of accounts	Number of tweets	Number of Amazon securitizing tweets	Number of Amazon de-securitizing tweets
Politicians and Governmental Institutions	513	360028	194	0
Advocates	3266	1012508	237	0
Politicians' Twitter Friends	15695	5062110	815	2
The Media	216	215026	61	0
Citizens on Twitter	23891	4312732	1043	50
Total	43581	10962404	2350	52

*Note:*

N corresponds to the number of Twitter accounts in each sample. Tweets corresponds to the number of Tweets, respectively, sent by individual users in each group during the whole period of analysis.

1. **Politicians and Governmental Institutions:** Based on Socialbakers' index, an initial sample of 1050 user accounts (150 per country) corresponding to the most-followed politicians and governmental institutions of each G7 country was identified. This sample was then reduced as a consequence of the data collection and data cleaning processes<sup>13</sup>.

<sup>12</sup>The data for this project was collected previous to the release of the Twitter Academic API, imposing further restrictions on the data collection strategy and overall available data.

<sup>13</sup>The Twitter REST API has limitations regarding the amount of data that can be collected. Therefore, even when the data collection algorithms run for several weeks or months, it might not be possible to extract all the data from a long list of

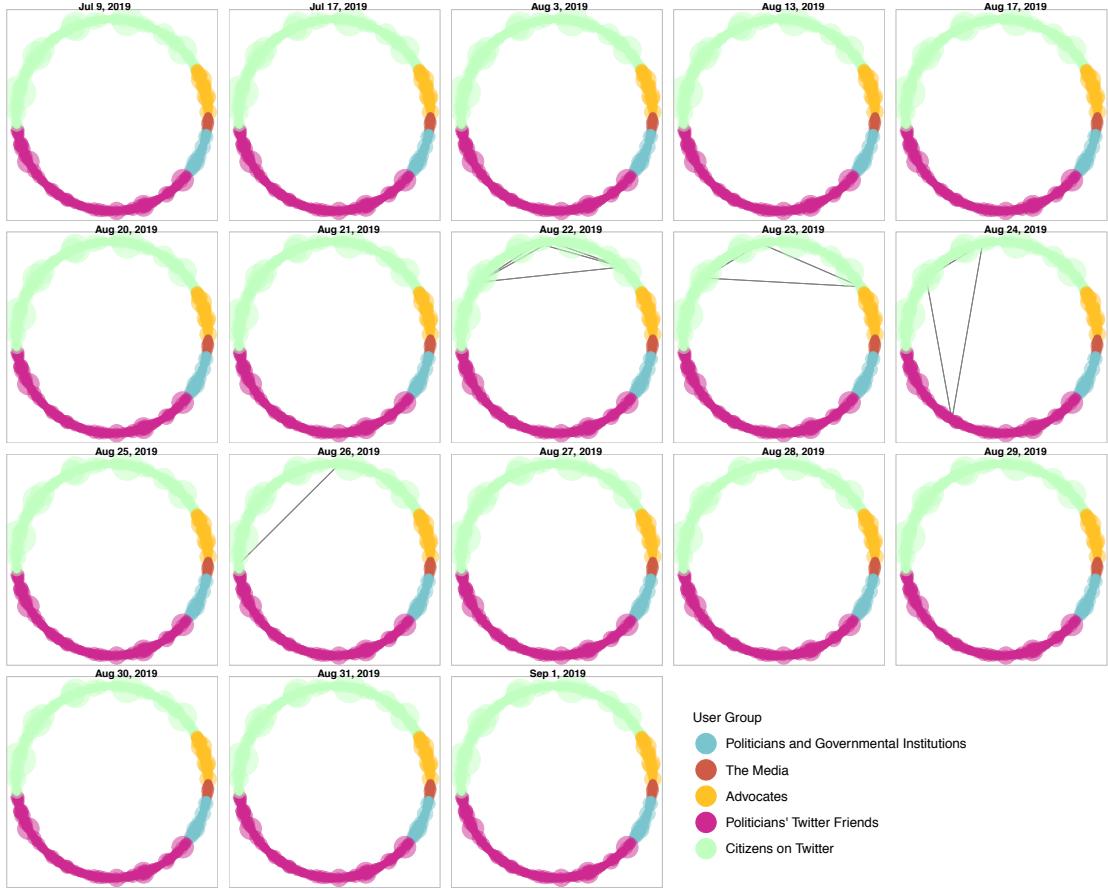
2. **Advocates:** Based on the EU Transparency Register and the *Politicians' and Governmental Institutions'* Twitter 'friends' (i.e. the accounts they follow), this group includes a rounded sample of 3000 interest groups lobbying at an international level. The register has been filtered to include only those users with a head office located in one of the G7 countries. The international quality of these organizations makes this register particularly well-suited for the research design.
3. **Politicians' Twitter Friends:** This group includes a rounded sample of 15000 accounts of the *Politicians' and Governmental Institutions'* Twitter friends (i.e. the accounts they follow on Twitter). Their relevance arises from the assumption that following decisions on Twitter are 'costly signals' (Barberá, 2013).
4. **The Media:** Applying a similar sampling technique to that employed for the first group, an initial sample of a thousand accounts (140 per country) was identified, corresponding to the most-followed media outlets of each G7 country. This sample was ultimately reduced as a result of the data collection and data cleaning processes. Moreover, based on the *Politicians' and Governmental Institutions'* Twitter 'friends', the final sample includes media outlet accounts being followed on Twitter by the first group.
5. **Citizens on Twitter:** This group includes a sample of almost 23000 Twitter accounts assembled by extracting a sample of the follower networks of the first and the fourth user groups, and filtering the accounts that were already considered somewhere else.

Splitting the samples into actor groups enables the identification of the securitization processes that develop at different levels of analysis. Thus, it serves the study in its aim to challenge the state-centered top-down approach adopted by earlier work as it integrates non-elite actors into the analysis. After identifying these five user samples, all the tweets they sent during the period of the analysis (February 2019 to September 2019) were collected. The final number of users and tweets in each group can be found in Table A.1. The advantage of this data collection strategy over a streaming approach (i.e. collecting live data or searching for specific hashtags and keywords) is its transparency related to the sampling techniques employed. When using the Twitter streaming API, users can expect to receive approximately 1% of the public tweet volumes at any time. However, even with large datasets, the obscure sampling methods applied by the Twitter algorithms may produce an inaccurate representation of the overall platform's data (Mortatter & Pfeffer, 2014).

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users. Moreover, the API has restrictions regarding the sort of data that can be extracted. Only publicly available data is to be collected. Hence, if the tweets had been deleted or the account has been private, these restrictions ultimately led to the reduction of the initial samples. Furthermore, many users' only activity on Twitter is sharing URLs or emojis. Given that the URLs and the emojis affect the performance of the text classifiers, they were eliminated when the data was cleaned. As a result, many users were removed from the sample.

## A.2 De-securitization



**Figure A.1:** Amazon rainforest fires de-securitization network. A relation (or edge) is inferred between two users when they both behave as desecuritizing actors by employing a hashtag classified as desecuritizing. Node size indicates the level of engagement (i.e. the number of desecuritizing moves produced) of each user in the overall period of analysis. To visualize the evolution of the network, the period of analysis is split into discrete time windows of one day. Node position across time windows is fixed, and two agents are connected if they enact a desecuritizing move within the same time window, but potential links are ignored if the duration between the two enactments is too long. To reflect a contextualized discursive similarity between two actors, edges are only valid within the time window of the enactment.