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On Frames, Framing, and the Probability of Framing Effects:

The Metacommunicative Role of the Omnipresent Terrorist Actor

A dissertation submitted in partial satisfaction of the requirements for the degree

Doctor of Philosophy in Communication

by

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General Research Areas

- Public Opinion
- Media Communication & Effects
- Quantitative Research Methods

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- Framing
- Perceptions of Terrorism
- Public Understanding of Science
- Latent Variable Modeling

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- Inductive Text Analysis
- Computational Text Analysis
- Content Analysis

ABSTRACT

On Frames, Framing, and the Probability of Framing Effects:

The Metacommunicative Role of the Omnipresent Terrorist Actor

by

Benjamin King Smith

In media depictions of terrorist actors and events, a select few organizations appear to be omnipresent. These dominant terrorist actors (i.e., al Qaeda and ISIS) are frequently used to provide a familiar frame of reference for understanding non-dominant actors (e.g., the New IRA and al Shabaab). In this dissertation, I attempt to answer the question "to what effect," that is, what are the (potentially unintended) effects of the dominant actor framing device on beliefs about the framed organizations? In answering this question, I also seek to provide a framework for better understanding the framing phenomenon and framing effects writ large.

I begin by providing a general overview of what is meant by frames and framing, outline the process wherein frames guide construction and interpretation of discourse products and provide evidence for the use of dominant actors as framing devices in media depictions of non-dominant actors. Following from this, I provide the outlines of a general model of information processing and belief formation, which is used to inform design of a probabilistic framing process model. Taken together, these models are used to craft a set of

predictions about for whom the dominant actor framing device should have what effect on beliefs about the threat of non-dominant actors to the U.S.

Using an online based survey experiment with a quota-based sample of 2,316 adults living in the U.S., I present individuals with a news article depicting the actions of a non-dominant actor (either al Shabaab or the New IRA), manipulated so that 1/3 link the non-dominant actor to ISIS, 1/3 link the non-dominant actor to al Qaeda, and 1/3 do not make explicit reference to any other organizations. I find that the single strongest predictor of beliefs about the threat of non-dominant actors to the U.S. is individuals prior perceptions of the threat from terrorism to the U.S., and I find a negative relation between beliefs about the threat of non-dominant actors and the extent to which individuals exert executive control over the processing of the information in the news article. In addition, I find that the dominant actor framing device increases perceptions of the non-dominant actor as a threat to the U.S.

Building from the information processing and belief formation model, as well as the probabilistic framing process model, I also suggest a three-way interaction between prior beliefs about the threat from terrorism, the amount of effort exerted when processing information about the non-dominant actor, and the presence of the dominant actor framing device. This hypothesis was supported, providing preliminary evidence for the underlying theoretical models.

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Chapter 1. The Omnipresent Terrorist Actor

Van Rampage in Toronto Kills 10 Along Street

> TORONTO — The killing began on a busy lunchtime thoroughfare in Toronto on Monday when a white rental Ryder van ran over a pedestrian crossing the street — then mounted a sidewalk and began plowing into people indiscriminately.
>
> …
>
> By the end, at least 10 people were dead and 15 were injured, said the authorities.
>
> The driver's actions, they said, appeared intentional, but did not seem to have been an act of terrorism. "The city is safe," said the Toronto police chief, Mark Saunders.
>
> …
>
> The carnage was reminiscent of deadly attacks by Islamic State supporters using vehicles that have shaken up Nice, France, Berlin, Barcelona, London and New York. But late Monday, Canada's public safety minister, Ralph Goodale, said this time appeared to be different.
>
> "The events that happened on the street behind us are horrendous," he said, "but they do not appear to be connected in any way to national security based on the information at this time." (Austen & Stack, 2018, p. A.1)

Writing a news article in the immediate aftermath of a major event is always a difficult task: the journalist must quickly and accurately condense the complex realities of a world upended, molding it into a form which effectively communicates, as they see it, the relevant facts, details, tone; a form which is inherently meaningful to an audience physically, temporally, and emotionally divorced from the unfolding events. Complicating this process further, the journalist must do so within the limiting constraints of their medium (e.g., print, film, radio), and in many cases must continuously update the information being provided as the "facts on the ground" change. To simplify this process, journalists rely heavily on socially shared frames of reference, to structure both their thinking and their reporting. This framing process influences both what ends up in the final discourse product, as well as what

is left out. It is from this process that the phenomenon of interest underlying this dissertation emerges.

The excerpts at the start of this chapter are from an article that appeared on the front page of the New York Times on April 24, 2018, the day after Alek Minassian, a 25-year-old white male Canadian used a rented van to hit and kill 10 individuals, injuring another 16. Shortly before the Toronto attack, Minassian posted a message to his Facebook page which read in part "The Incel Rebellion has already begun! We will overthrow all the Chads and Stacys! All hail the Supreme Gentleman Elliot Rodger" (BBC News, 2018). This was not a well-known fact at the time the *New York Times* article was written, however, it is notable given the explicit reference to ISIS (i.e., Islamic State) in the 10th paragraph. Despite being motivated by a fundamentally different ideology; despite not fitting the typical 'profile' of someone affiliated with ISIS; despite the article quoting the Toronto chief of police saying that the attack "did not seem to have been an act of terrorism" [1] (Austen & Stack, 2018, para. 4), the authors of this article still felt compelled to contextualize the event by emphasizing the similarities to events claimed by ISIS or ISIS affiliates.

This article is not unique in including reference to a dominant terrorist actor (e.g., ISIS or al Qaeda) when describing the actions of a relatively unfamiliar terrorist actor (what I refer to as a non-dominant actor, or NDA). These dominant terrorist actors (DTAs) are commonly used as framing devices within terrorism discourse, helping to provide an interpretive structure for the reader to process information about complex and unfamiliar

[1] In my view, the government's decision (and later media's decision) not to label this attack "terrorism" simply reflects the fact that the term has become bounded to only refer to Muslims and/or people who can be linked to Islamic terrorist organizations. The actions and motives of the attacker meet most reasonable non-actor specific definitions (e.g., Stohl, 1983), and when this event is compared to the Oct. 1, 2017 attack in Edmonton, Alberta which *was* labeled terrorism, it becomes clear that there few if any other distinctions to be made.

issues, events, and actors in a more clear, concise and compelling manner (B. K. Smith, Englund, Figueroa-Caballero, Salcido, & Stohl, 2017). However, framing – colloquially understood as the construction, presentation, or positioning of a fact or issue with a particular 'frame of reference' – can also affect public perception in ways that journalists neither desire nor anticipate.

Hülsse and Spencer (2008) argue that counter-terrorism policies are inherently limited by a discursively-derived understanding of terrorist organizations. As they explain, "by mapping a source domain onto a target domain, a metaphor puts the target domain in a new light. By projecting the known onto the unknown, metaphors create reality; they constitute the object they signify" (p. 578). Similarly, when using al Qaeda or ISIS as a framing device, the framed organization, or organizational actor, may take on (to some extent) the attributes associated with the DTA. A fundamental problem with using DTAs as a frame for understanding other terrorist actors, however, is that the DTAs are themselves major outliers in terms of their international composition and global focus.

Most NDAs – to include most "al-Qaeda affiliates," "ISIS affiliates" and derivatives – operate within a narrow geographical range (often a single nation or a discreet transnational region). Despite espoused rhetoric about a global or even cosmic struggle, their recruits, targets, and expressed grievances tend to be overwhelmingly focused on a particular nation state or state-cluster (Kilcullen, 2009). Thus, the average NDA, while a danger to the region within which they are active, poses little to no threat for American citizens. It is possible, however, that use of the DTA framing device when describing the actions of NDAs may inappropriately project onto them these organizations' global ambitions and international priorities.

No previous research has looked at the potential effects of the DTA framing device, and subsequently no previous research has looked at potential effects of the DTA framing device on perceptions of framed NDAs. Thus, testing the effects of the DTA framing device on beliefs about the threat posed by regionally bound NDAs to the U.S. functions as the substantive focus of this dissertation.

In addition, a primary goal of this dissertation is to better understand *when* or *for whom* frames affect beliefs. Mass media is not a value neutral conduit for information, with no role other than to increase or decrease the flow of information to the public. Similarly, humans are not empty vessels, eagerly waiting to be filled to the brim with information from the media. Unfortunately these types of assumptions have undergirded the vast majority of mass communication research conducted over the life-span of the field (Lang, 2013), resulting in a collected body of research ripe with small and generally non-meaningful effects.

To move away from this type of approach, I argue media effects researchers must focus on identification of the structural, informational, and contextual components embedded within message which function to alter the psychological relevance of the information contained in the message for specific sub-sets of individuals. I hope to provide a first step in this process, specifically as it relates to better understanding the potential effects of the DTA framing device.

Overview of What is to Come

The focus of Chapter 2 is on building the ground work for understanding frames and the framing process. I begin by outlining the current state of framing research, ultimately arguing that despite the general benefits of the subject's rich multi-paradigmatic history,

frequent and repeated attempts of theoreticians to urge researchers toward their specific paradigmatic approach has ultimately done the subject more harm than good. To correct for this, I take a broad historical look at the shared roots of the framing concept across paradigms, identifying common thoughts and assumptions underlying the vast majority of framing research as practiced today. Building from these shared roots, and incorporating contemporary perspectives which are applicable across paradigms, I propose my own definitions of *frame* and *framing* which embrace the constructionist perspective of framings earliest roots, while allowing flexibility for application within both the critical and cognitivist paradigms.

Building from the provided definitions, I outline an approach to understanding how the latent social construct of "frames" become manifest in discourse, discourse products and cognition, and subsequently the processes wherein frames both shape the construction of and shape interpretation of communicative messages. I then show how the proposed definitions and framing process model can provide unifying clarity to framing research, by comparing studies with two seemingly oppositional perspectives on what frames are. I conclude the chapter by applying the framing process model to understanding the role of DTAs in terrorism discourse.

Whereas Chapter 2 is almost entirely focused on content, Chapter 3 is aimed at providing the necessary theoretical grounding for answering the question of "to what effect?" The chapter opens with a very brief discussion of the current state of media effects research, and the general inability of media effects theories – framing included (see: Gallagher & Updegraff, 2012; Rains, Levine, & Weber, 2018) – to find anything but the smallest and weakest of effects. As I argue in the chapter's introduction: We can look at the world and see

that effects have occurred, yet when it comes to predicting what the effects of any particular communication will be *a priori*, we, as a field, come up short. I subsequently argue that the consistent failure to find meaningful media effects suggests a fundamental shift is necessary in how we conceptualize and study them, framing effects included. Specifically I argue this shift requires embracing the idea of communication as an evolved, adaptive and emergent phenomenon of humans, used as a tool for spreading information from one cognition to another (cf. Lang, 2014; Lang & Bailey, 2015).

To accommodate this shift in approach to the study of media effects, Part 1 of Chapter 3 begins by outlining a set of assumptions about human cognition and memory which are used to explicate the variable of interest, beliefs. I then describe the way information is processed by individuals, both in the general case (automatic processing) and in the specific case when the individual is exerting executive control over the processing of information in their environment. Part 1 concludes by bringing these conversations together to propose a working model for understanding communication's influence on the construction of beliefs (what I generally refer to throughout as the memory and information processing model).

Keeping with the discussion of information processing as fundamentally probabilistic, in Part 2 of Chapter 3, I recast the framing process model outlined in Chapter 2 in terms of a probabilistic system. This is followed in Part 3 with a discussion focused on unpacking just some of the many implications of the combined set of models in relation to framing effects theories. Finally, Part 4 of Chapter 3 returns to the substantive question driving this dissertation, by applying the information processing and belief formation model and the probabilistic framing process model to the question of how the DTA framing device

influences beliefs about the threat posed by NDAs. I ultimately arrive at four testable hypotheses, which are the focus for the remainder of the dissertation.

The rest of the chapters in this dissertation progress in roughly the order that would be expected for an experimental study. Chapter 4 details the study context and methods. I begin by discussing the sampling and data collection procedures, and the weighting procedure used to ensure representativeness. In Part 2, I provide rationales for selection of the non-dominant actors being framed, describe the content and structure of the manipulations, and provide evidence that the manipulations worked. I subsequently describe measurement of key constructs, in Part 3. Where the data for this analysis was collected as part of a broader study, I only focus on measurement of the indicators for the variables used herein. However, I provide a general overview of the flow of participants through the study in text, and I provide an appendix with the full survey materials. Part 4 concludes the chapter by providing detailed specification of the analysis plan, from testing of the measurement model through probing of hypothesized interaction effects. Where appropriate, I also provide a priori standards for assessing model fit.

Chapter 5 reports the results from the analyses, in the order specified in the analysis plan. Chapter 6 provides a discussion of the results, split by hypothesis. Within each hypothesis delimited section, I discuss the findings, provide rationalizations and explanations for any null or divergent findings, and then contextualize the findings in relation to real world implications, the theories outlined herein and, where relevant, prior research. Chapter 7 concludes this dissertation with a general discussion of research findings, key theoretical and empirical takeaways, and future directions.

Chapter 2. On Frames and Framing

Framing is an inherently multidisciplinary concept, with commonly acknowledged roots[2] in sociology (Gamson, 1992; Goffman, 1974; Tuchman, 1978), psychology (Fiske & Taylor, 1991; Kahneman & Tversky, 1984), political science (Iyengar & Kinder, 1987; Zaller, 1992), communication (Edelman, 1993; Entman, 1993; Pan & Kosicki, 1993), and linguistics (Bateson, 1972; Lakoff & Johnson, 1980). Understandably, the multidisciplinary nature of the concept has resulted in multiple and often conflicting conceptualizations. Just within the terrorism context there are highly varying perspectives: frames are viewed as narrative structures (e.g., Brinson & Stohl, 2012, p. 271), interpretive structures (e.g., Norris, Kern, & Just, 2003), labels and attributes (e.g., Bruscella, 2015, p. 760), organizing principles (e.g., Reese & Lewis, 2009, p. 777), consistent sets of cognitive schemata (e.g., D. A. Scheufele & Scheufele, 2010, p. 128), and more. Thus, in order to apply the framing concept to the discussion of how the media influences beliefs about non-dominant terrorist actors, it is first necessary to elucidate what the underlying phenomenon of study is.

In what follows, I outline the current state of framing research, and argue that despite the general benefits of framing research being multi-paradigmatic, the frequent attempts of theoreticians to urge researchers toward their specific paradigmatic approach has ultimately done the subject more harm than good. In response, I take a broad historical look at the shared roots of framing research across paradigms, identifying common thoughts and assumptions underlying the rich multi-paradigmatic tradition of framing as practiced today. From this, I propose definitions for framing and frames which I believe to be broadly

[2] Less commonly acknowledged roots, like Bartlett (1932), and Sherif (1936), will be discussed in detail later in this chapter.

applicable. I next outline an approach to understanding the manifestation of frames in discourse and cognition and show how it applies to pre-existing research on the framing of terrorist organizations. I conclude by applying this model to understanding the framing of non-dominant terrorist actors.

Part 1: The Current State of Framing "Theory"

Twenty-five years ago, Entman (1993) offered "the concept of framing" as a perfect example of a "fractured paradigm" which communication scholars could synthesize and develop into a coherent, multi-disciplinary theory. Drawing upon notable work across disciplines, Entman sought to provide a preliminary contribution toward the development of "a general statement of framing theory that shows exactly how frames become embedded within and make themselves manifest in a text, [and] how framing influences thinking" (1993, p. 51).

Despite the large amount of attention paid to Entman's work, and the numerous articles written in response, the goal of developing a "precise and universal understanding" (Entman, 1993, p. 52) of framing has yet to be achieved. A cursory glance at the volumes of communications flagship journals shows an ongoing epic surrounding the central theoretical tenants of framing theory and research, carried through the work of Entman and on to Scheufele (1999), D'Angelo (2002), Carragee and Roefs (2004), Chong and Druckman (2007a), Van Gorp (2007) and many others. This is to say nothing of the alternative conceptualizations found elsewhere in communication literature, as well as those scattered across other disciplines.

D'Angelo provides a compelling argument as to why the goal of a unified framing concept has yet to be reached. Put bluntly, "there is not, nor should there be, a single

paradigm of framing" (D'Angelo, 2002, p. 871). He notes that the underlying tensions in attempting to build a unifying theory of framing and frames can be traced back to the differences in perspective between the *cognitive*, *constructionist*, and *critical* research paradigms. Even though there appears to be an agreed upon core in framing theory – the role of selection and interpretation – each of these paradigms makes different assumptions about the form and function of frames, and each derives its conceptualizations from distinct traditions.

Three Conflicting Paradigms

Theoretical work within the cognitive paradigm typically begins with a definition of framing and either works (a) *backward* to a definition of frames or (b) *ignores* the question of what a "frame" is altogether. The latter approach is evident in the preferred definition of framing provided by Scheufele and Iyengar (2014): "framing refers to differential modes of presentation for the exact same piece of information" (p. 3-4). In turn, they define frames as "variations in how a given piece of information is being presented (or framed) in public discourse" (p. 1; see also: Cacciatore, Scheufele, & Iyengar, 2016; Tewksbury & Scheufele, 2009). This "definition" of *frames* is no more than a restatement of their *framing* definition, and consequently provides little actionable information for researchers attempting to identify frames in public discourse.

An example of the former approach (i.e., defining frames based on a definition of framing), is provided by Chong and Druckman (2007b) who define framing as "the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue" (2007b, p. 104). Based on this, the authors define *cognitive frames* as the set of considerations that affect an individual's attitude toward an issue. Whereas *discourse*

frames can be defined as the elements in a text which function to promote attitude relevant attributions. Though arguably more useful than the definition of frames provided by Scheufele and Iyengar (2014), this effects driven definition is still limiting, as it requires all frames to be issue and attitude specific.

From the constructionist perspective, the relatively narrow construal of frames typically promulgated by cognitive paradigm scholars (e.g., Chong & Druckman, 2007b) ignores the importance of culture as a primary base for the constitution of shared meaning, while also failing to adequately capture the tensions between latent and manifest meaning; in other words, what is said and what is left unsaid (see: Van Gorp, 2007). In addition, critical paradigm scholars generally contend that these approaches "neglect the ideological nature and consequences of the framing process as well as the power relationships that influence that process" (Carragee & Roefs, 2004, p. 219). In sum, both constructionist and critical scholars argue that cognitive approaches reduce framing to just another content element against which to measure effects (Reese, 2001) and fail to consider the broader social reality in which framing and frames exist.

In contrast to the cognitive paradigm, critical and constructionist theories tend to focus their attention on defining what is meant by "frame." While not immune to the tendency of defining frames based on their outcome or effect (see Entman, 1993), there is a generally agreed tacit understanding of frames as other than the sum of their parts (e.g., Koffka, 1922). Additionally, both critical and constructionist approaches emphasize the role of frames in the social construction of meaning, that is, that frames "do not come about intentionally but are the result of interactions and conflicts between collective and individual social and media actors" (Vliegenthart & van Zoonen, 2011, p. 107) and that framing is an

active process of negotiation over meaning. However, where these two traditions diverge is in their view of the function of frames.

Within the critical paradigm, frames are seen as an articulation of hegemonic ideology (Carragee & Roefs, 2004), and framing as a complex exercise in power linked to hegemonic processes which limit the range of democratic debate (Reese, 2001). Constructionists, while sharing the view of frames as embedded in and derivative of larger socio-cultural structures, generally view frames as a tool kit for reducing the complexities of reality to a graspable plausible whole (Van Gorp, 2007). On this point constructionists and cognitivists tend to agree: "individuals do not slavishly follow the framing of issues in the mass media" (Neuman, Just, & Crigler, 1992, p. 77), as proposed by much of the research in the critical paradigm.

Our Way or the Highway – Paradigm Specific Arguments

As it respects the question of if framing is multi-paradigmatic, D'Angelo is clearly correct in saying yes. Unfortunately, in light of disagreements related to the hard core conjectures of framing research (see: D'Angelo, 2002, pp. 872–874), theoreticians across paradigms have urged researchers to adopt their own perspective, rather than simply acknowledging and learning from these differing perspectives as urged by D'Angelo, by making appeals to framing's "original theoretical foundations" (e.g., Cacciatore et al., 2016, p. 9; Carragee & Roefs, 2004, p. 221; Krippendorff, 2017, p. 96; Van Gorp, 2007, pp. 61–62). Generally, this means tracing the lineage of framing either to cognitive psychology via the work of Kahneman and Tversky (1984; Tversky & Kahneman, 1981), or to sociology via the work of Goffman (1974), and later the work of Tuchman (1978), Gitlan (1980) and Gamson (1988; Gamson & Modigliani, 1989).

Carragee and Roefs (2004) provide one such argument in contending that "framing research needs to be linked to the political and social questions regarding power central to the media hegemony thesis" (p. 214; for similar, see: Reese, 2001, p. 9). The original concept of framing, they argue, "directly linked the framing process to the distribution of social and political power in American society (Gitlin, 1980; Tuchman, 1978)" (2004, p. 221). As such, any "sensitive" definition requires an emphasis on framing as a social process (2004, p. 225). This line of reasoning is similarly extended by Vliegenthart and van Zoonen (2011), who argue for a return to more sociologically informed framing research, that is, research which views the knowledge, attitudes and behaviors of individual producers of news content as "the product of professional and organizational processes in the newsroom, rather than traits or decisions of autonomous individuals" (p. 111). While it is perhaps needless to say that questions of power and frame sponsorship are important in the larger tradition of framing research and should not be ignored, these arguments are potentially alienating to researchers laboring within both the cognitivist and constructionist paradigms. Purely focusing on framing as a social process risks ignoring the role of the individual in the construction of reality. Indeed, the focus on ideological domination central to Carragee and Roefs (2004) argument is in many ways antithetical to the ideas of negotiated meaning at the core of most framing research.

On the opposite side of the ideological spectrum is the argument put forth by the "Scheufele school" of framing research for "a return to a more rigid and narrow equivalency-based definition of framing" (Cacciatore et al., 2016, p. 12), which they argue is more in line with "the concept's original theoretical foundation" (2016, p. 8; see also: D. A. Scheufele, 2000; D. A. Scheufele & Iyengar, 2014; D. A. Scheufele & Tewksbury, 2007; Tewksbury &

Scheufele, 2009). As discussed earlier, an equivalency-based definition states that "framing refers to differential modes of presentation for the exact same piece of information" (p. 3-4). This is placed in contrast to emphasis-based definitions of framing, i.e., the emphasis of one set of topic relevant considerations over another. While the equivalency-based definition is useful for experimentation, this narrowing of the framing concept necessarily excludes the deep-rooted focus on cultural and social influences seen in both critical and constructionist paradigm research.

Talking Past Each Other – The Lack of a Clear Direction Forward

In their article, provocatively titled "The End of Framing as we Know it… and the Future of Media Effects," Cacciatoore, Scheufele and Iyengar (2016) note that although a considerable amount of scholarly attention has been paid to framing, the concept itself is possibly more amorphous than ever before. Specifically, they contend that Entman's (1993) attempt at developing a multidisciplinary definition of frames and framing has resulted in:

> …[a] movement away from a rigid conceptualization of framing toward one that captures a wide range of media effects, which has little to no actual explanatory power and which provides little understanding of the mechanisms that distinguish it from other media effects concepts. (2016, p. 9)

Krippendorff makes a similar, and yet fundamentally opposed contention in his own provocatively titled article: "Three Concepts to Retire" (2017). He notes that the framing concept has been around since "well before mass communication researchers adopted the concept of framing to account for media effects" (p. 97), and that much of the literature on framing is "far removed from the more general idea of framing that Bateson[3] discussed" (p.

[3] In Bateson, 1972, pp. 184-193

96). He ultimately concludes it is time to retire "the largely psychological construct of framing" (p. 97).

The arguments of Cacciatore et al. (2016), and Krippendorff (2017), amongst others, echo the sentiments put forth by Berelson, when he declared that "'the great ideas' that gave the field of communication research so much vitality ten and twenty years ago have to a substantial extent worn out" (1959, p. 6). And so, I must play the role of Schramm (1959), and simply say that, while I mean no offense to the attending physicians, the framing concepts death seems a livelier condition than anticipated. However, it is also apparent that D'Angelo (2002) is wrong, at least in this one respect: while the framing concept is surely multi-paradigmatic, and ideally there should not be a single paradigm of framing, the inability of the field to develop a coherent conceptualization of the phenomenon has resulted in more harm to the study of the concept than perhaps anything else.

While solid empirical work continues to be conducted under the banner of "framing" (see, e.g.: Koch & Peter, 2017; Priem & Solomon, 2018; Valenzuela, Piña, & Ramírez, 2017), there is something to the contentions of Cacciatore et al. (2016) and Krippendorf (2017) as seen through their contradictions of each other: there are fundamental tensions underlying any attempt to work within the disparate and multi-paradigmatic body of framing research attributable primarily to it being multi-paradigmatic. Current framing conceptualizations fail to fulfill either (a) the need for a definition of *frames* that adequately captures the nuanced relationship between culture, communication, and the individual or (b) the need for a complimentary conceptualization of *framing* and *framing effects* which can be functionally disassociated from other commonly used media effects models (such as agenda-setting and priming). The question then appears to be: is it possible to define the form and

function of frames in a way that is equally satisfactory to all its applications, while also providing a step forward in achieving the goals set forth by Entman (1993) at the outset of this chapter? I argue that the answer is yes.

Part 2: From the Past to the Present – Defining Frames and Framing

As noted, in attempting to demonstrate that either a cognitive, constructionist, or critical approach is preferable, scholars tend to make appeals to the past, delineating the history of framing research within their own paradigm with the goal of persuading readers that the other approaches have lost touch with the concepts roots (see, e.g.: Cacciatore et al., 2016; Carragee & Roefs, 2004; Krippendorff, 2017; D. A. Scheufele & Tewksbury, 2007). Not surprisingly, these characterizations fall somewhat short. Not only have attempts to persuade researchers as to the validity of one approach versus another yielded little insight into our shared sojourn towards an understanding of the form and function of frames, they also arbitrarily pick a point in time by which the concept had already diffused across disciplines. However, by taking a longer view, it is possible to discern common thoughts and assumptions underlying the rich multi-paradigmatic tradition of framing as practiced today.

The theoretical underpinnings of modern framing research, across all three paradigms, can be described as being rooted in the social psychology of the 1920's-30's. This period was defined by a rejection of reductionist assumptions about stimulus-reaction relationships, as characterized by the work of Bartlett (1932), Sherif (1936) and early Gestalt psychologists (Heider, 1930; Koffka, 1922; Köhler, 1929; Wertheimer, 1925). Instead, all three inter-related fields of thought sought to emphasize the constructive nature of perception, memory, and interaction.

The Gestalt psychology of the 20's and 30's was primarily concerned with perception, and the ability to perceive in the whole what is not apparent in the parts. Researchers in this school of thought argued that the processing of perceptual information is sub-consciously guided by an attempt to make order out of chaos, that is, to give structure to seemingly disconnected bits of information. Bartlett's (1932) work, while apparently isolated from Gestalt psychology, provided a similar and complimentary perspective on the construction and reconstruction of memory, through the explication of cognitive schema. These mental maps are described as helping individuals make sense of the world around them and process incoming information more efficiently. These schema act as "living," dynamic, mental representations of common experiences, objects, or relations between objects, which allow individuals to gauge information gleaned from their environments and align it with their experiences and judgments (Bartlett, 1932; Wagoner, 2013).

Building from Gestalt theory and Bartlett's (1932) work on memory construction, Sherif observed in his foundational piece on social norms and social interaction that "experience appears to depend always upon *relations*" (1936, p. 32). From this general observation, Sherif proposed the concept of "frames of reference" as "a fundamental characteristic of every situation" (1936, p. 33):

> The concept [frame of reference] is used to designate some of the important factors coming into the total field of external and internal stimulation which constitutes a functional whole. In other words, the concept of frame of reference denotes some factors among other functionally related, interdependent factors, around which the whole process is organized.
>
> …in the course of the life history of the individual and as a consequence of his contact with the social world around him, the social norms, customs, values, etc., become interiorized in him. These interiorized social norms enter as frames of reference among other factors in situations to which they are related, and thus dominate or modify the person's experience and subsequent behavior in concrete situations. (Sherif, 1936, pp. 43–44)

Sherif's conceptualization of "frames of reference" is notable both for its generalized nature (applying to all psychological phenomena while attempting to bridge the divide between sociology and psychology), and for its incorporation of early cultural and social constructionist perspectives. Additionally, Sherif's conceptualization stands as perhaps the first recognizable definition of the framing concept as we know it today.

Parallel Streams of Thought

A proper historical accounting of the framing concept would be incomplete without mention of two other scholars whose work contemporaneously paralleled that of the social psychologists described above: the journalist Walter Lippmann (1922) and literary theorist Kenneth Burke (1937). Lippmann, in his treatise on public opinion argued that individuals know the world through the creation of "pictures in our heads" which arise from the multitude of communicative channels and messages that engage individuals. Like Plato's observation that manacled cave-dwellers perceive only shadows on the walls, Lippmann noted that the delivery system (as well as sociopolitical norms) necessarily constrains and distorts media messages, requiring individuals to engage in meaning construction by filling in the missing gaps: making "pictures" in our heads. Lippmann does not appear to have been directly influenced by the work of Gestalt psychologists. However, his observations on the origins of public opinion do bear a striking resemblance to the experimental findings within this school of thought.

In a similar way, Burke both echoes and appears to have been somewhat apart from the work of all aforementioned. In his 1937 "Attitudes Toward History," Burke[4] lays out the concept of "frames of acceptance" as "the more or less organized system of meanings by

[4] All quotes are from the 2nd edition of Attitudes Toward History.

which a thinking man gauges the historical situation and adopts a role with relation to it" (Burke, 1959, p. 5). Later in the same book, Burke expands on the concept of frames of acceptance, arguing:

> Out of such frames we derive our vocabularies for the charting of human motives. And implicit in our theory of motives is a program of action, since we form ourselves and judge others (collaborating with them or against them) in accordance with our attitudes. (1959, p. 92).

This description of the form and function of frames strongly echoes that put forth by Sherif (1936), with the only true distinction being Burkes focus on "labels" and symbols in discourse.[5]

How We Got from There to Here

The ideas perpetuated by Bartlett, Sherif, and Gestalt psychologists like Heider and Koffka, as well as the work of Lippmann and Burke, laid a foundation for understanding the media's construction as well as the social, cultural, and cognitive construction of reality. In addition, these works serve as a shared foundation upon which most (if not all) modern day framing research is based. As noted previously, work in the cognitive paradigm is commonly traced back to Kahneman and Tversky's (1979, 1984; Tversky & Kahneman, 1981) work on prospect theory and the framing of risk. This work draws heavily upon the concepts and ideas originally perpetuated by Sherif (1936; see also: Sherif & Hadley, 1945), especially as it pertains to shifts in reference points within a frame, also known as anchoring (see: Chapman & Johnson, 2002). Both the constructionist and critical paradigms (via Tuchman, 1978) – often described together as the "sociological" approach to framing (Borah, 2011; Pan & Kosicki, 1993) – are commonly described as having their roots in Goffman (1974), who in

[5] It's also worth acknowledging that Sherif (1936), Bartlett (1932), Lippmann, and Burke (1937) all drew inspiration from the work of Carl Jung.

turn explicitly based his concept of framing on the perspective put forward by Gregory Bateson (1955, 1972). Both Goffman and Bateson appear to have been at least tangentially influenced by the socio-psychological "frame of reference" explicated by Sherif (1936). More importantly, Bateson makes frequent explicit reference to Gestalt psychology in explicating his concept of psychological frames (e.g., Bateson, 1972, pp. 188–189), and Goffman gave substantial credit to the work of Burke.

In addition to Goffman, the constructionist (and to a lesser extent critical) framing paradigm has been heavily influenced by the seminal work of Gitlin (1980) and Gamson (1988; see also: Gamson & Lasch, 1983; Gamson & Modigliani, 1989). Gamson in particular was influential in introducing framing scholars to Bartlett's (1932) concept of schema, using it both to explain the effects of frames and the form of cognitive frames. Most framing theories, across all three paradigms, now incorporate the schema concept, albeit to varying degrees (cf. Chong & Druckman, 2007b, p. 110).

An Updated Conceptualization of Frames and Framing

Driven by the shared history of framing research, and in line with the best available conceptualizations from across paradigms, I believe it is possible to provide a definition of both frames and framing which can adequately characterize the phenomenon while also being a useful guide for future research. The fact that the concept has spread across so many perspectives is to be expected. Sherif in formalizing the concept of a frame of reference, built it up from an exploration of various psychological problems, and intended it as a bridging concept between sociology and psychology (see: Sherif, 1936, p. 27). My goal is to do something similar, by constructing an understanding of framing built upon the shared foundation outlined previously while incorporating more or less contemporaneous

perspectives on the phenomenon (I especially rely on the work of: Bateson, 1972; Goffman, 1974; Neuman et al., 1992; Norris et al., 2003; and Reese, 2001). To do this however, I must first provide a definition of the concept. I propose that:

> *Frames* are socially shared organizing principles used to convey and interpret information, and which work through their symbolic manifestations to meaningfully structure and define the social and natural world.

Similarly:

> *Framing* is the metacommunicative process of providing an interpretive structure for understanding a given set of information through the application of one or more frames.

These definitions position framing as a metacommunicative process – that is, communication about how to interpret a communication – while emphasizing the role of frames in constructing meaning within discourse products, cognition, and, more broadly, in social interaction. In doing so, they embrace the constructionist perspective of framings earliest roots, while allowing flexibility for application within both the critical and cognitivist paradigms.

Part 3: Moving Forward – A Proposed Model of the Framing Process

Providing a definition of the framing phenomenon, and of frames, is a necessary step in advancing "framing theory," however, it can only take the field so far. In addition to a general disagreement about the nature of the phenomenon, there also remains the need for "a general statement of framing theory that shows exactly how frames become embedded within and make themselves manifest in a text, [and] how framing influences thinking" (Entman, 1993, p. 51). Here, the richness of the framing discipline may be brought to bear. Similar to the metatheory proposed by D'Angelo (2002), I argue it is possible to build a framing process model, building upon existing theory and work across disciplines and paradigms, which may serve as a fundamental building block for achieving Entman's (1993) goal.

The Manifestation of Frames

An underappreciated aspect of frames, embedded within the provided definitions, is that frames are socially shared, meaning they exist apart from any one individual, or communicative message. This compliments the perspective of early framing researchers, like Sherif (1936), Burke (1937), Bateson (1955), and Goffman (1974), who viewed frames as built up from social experience. Importantly, however, and as argued by many contemporary scholars (e.g., Reese, 2001; D. A. Scheufele & Scheufele, 2010; B. K. Smith et al., 2017; Van Gorp, 2007), this also means frames exist *solely* within the collectively shared memory of a group or society.

Frames are latent, or unobservable, and should in many ways be thought of as conceptual tools for ensuring that the dense complexities of the world are reduced to a graspable plausible whole, whether in thought or communication. Thus, frames are separate and distinct from their symbolic and cognitive manifestations, only becoming embedded and manifest in cognition and in discourse products (e.g., news texts) through the framing process. This contention is a necessary condition of frames: just as language exists separate from any one individual, for frames to be useful communicative tools, they must exist apart from their use, whether in cognition, discourse, or discourse products.

Frames in communication.

Considering frames as latent constructions resurfaces the question of how to identify frames. Van Gorp (2007, 2010) provides a useful model for reconstructing frames, proposing that the manifestation of frames in communication (i.e., discourse and discourse products)

can be represented schematically as a *frame package*,[6] defined as "an integrated structure of framing devices and a logical chain of reasoning devices that demonstrates how the frames functions to represent a certain issue" (Van Gorp, 2010, p. 9). I extend this concept by arguing that these re-constitutive elements of the frame package are also constitutive; they are the elements which function as the literal manifestation of frames in communication

Frames become manifest (or signified) in discourse and discourse products via *framing devices*, such as metaphors, catchphrases, visual images, non-verbal cues, arguments, exemplars, and emotional appeals. Within a *frame package*, the internally congruent framing devices are held together under the umbrella of a latent, socially shared *organizing principle*,[7] that is, the frame itself. Examples might include shared beliefs, values, and norms (e.g., freedom of speech), stereotypes (e.g., the Muslim terrorist), archetypes (e.g., the victim), mythical or literary figures (e.g., Frankenstein's monster), or commonly understood narratives (e.g., the devil's bargain). In theory, any socially shared concept may serve as the organizing principle,[8] whether it be a shared experience between two individuals, or something as universally shared as "gains" and "loses." In practice, however, the more *widely shared* and the more *persistent* the organizing principle, the more powerful it is as a frame.

The final aspect of any frame package is the set of either implied or stated *reasoning devices* used to connect the latent frame (manifest in the framing devices) to the events,

[6] Alternatively referred to as "media packages" (Gamson & Modigliani, 1989) or "news frames" (Norris, Kern, & Just, 2003, pp. 10–11).

[7] What Van Gorp (2007) refers to as an organizing theme.

[8] Here I depart from the perspective put forth by Van Gorp (2007, 2010), in arguing that the organizing principle is socially shared, rather than culturally shared. While a culturally shared frame would without argument be more powerful, frames can also be built up during the course of a single interaction.

issues, and actors being framed in a logically coherent way. Reasoning devices are what provide the framing package with the quality of providing structure to and defining events, issues, and actors. Importantly, reasoning devices allow for a large amount of flexibility in how frames can be used, allowing the same framing devices and organizing principle to be used to promote diametrically opposite conclusions (Jackson, 2010). No framing package is complete, and thus no communicative frame may be identified, without acknowledging the implied or stated reasoning devices which tell the receiver of a message how to apply the latent frame within the context of the message.

Frames in thought.

Just as frames cannot be said to exist in discourse or discourse products, they also cannot be said to exist in cognition. Similar to discourse products, however, frames can be said to be manifest in cognition, in what are generally referred to as *frames in thought*, or individual frames (Chong & Druckman, 2007a). The typical conceptualization of frames in thought borrows strongly from Bartlett's (1932) concept of cognitive schema (see, e.g., D. A. Scheufele & Scheufele, 2010; F. Shen, 2004a, 2004b), which makes sense given the concepts foundational role in the history of framing research, and the utility provided by the theory's well integrated set of theoretical assumptions. Even when not mentioned by name, schema theory guides most of the research on individual frames, and framing effects (e.g., Chong & Druckman, 2007a, 2007b).

As will be described in greater detail in the next chapter, cognitive schema provide the organizing structures that influence memory formation and retrieval (Dudai, 2012; Wang & Morris, 2010). They provide an individual with a logical progression of actions to be taken, adaptable to the environment around them, and a set of expectations for what should

occur. As may be evident, the function of schema is highly similar to that of frames writ large.

While schema can be specific to the individual, many are socially shared (Garro, 2000; Stone, Barnier, Sutton, & Hirst, 2010). It is these socially shared schemata that serve as the manifestations of frames in thought. As an emergent phenomenon of humans and as a tool for spreading information, communication has evolved to be as cognitively efficient as possible. Frames can be thought of as an adaptation used to increase the efficiency of communication, helping to guide information processing through the activation of *socially shared* cognitive schemata (D. A. Scheufele & Scheufele, 2010).

A Conceptual Model of the Framing Process

Having explicated the manifestation of frames in communication and cognition, it is now possible to elucidate the connections between the manifestations of frames and the frames themselves, and in so doing propose the building blocks for a general model of the framing process. The intent here is not to outline a model of framing effects (which will, in part, be the subject of the next chapter), but instead simply the interaction between message sender and receiver. It is also worth pausing to acknowledge that what follows is an idealized framing model; for the sake of clarity and simplicity, the process described is specifically focused on a linear interpretation of the communicative process. Intentionally ignored for the time being, is the dynamic nature of communication and information processing, as well as many well-established moderators of framing effects,[9] as a way to simplify the presentation of this process.

[9] For a useful overview of these, see Borah (2011)

This description of the communicative framing process begins with the sender, who is tasked with condensing the complex realities of the world, as they see it, into a form which is inherently meaningful to the receiver. In addition, the sender must attempt to overcome the limits of their communicative medium, maximizing the amount of information encoded in their message while minimizing the cognitive effort required to decode the message's intended meaning (Adamic, 2011). Frames, in this sense, are a metacommunicative tool, providing an interpretive structure for understanding the information provided, thus increasing the efficiency of communication.

The interpretive schema (i.e., the receivers cognitive manifestation of the frame) selected by the sender (which is conceptualized as a deliberate, albeit seldom conscious choice) guides construction of the communicative message, both in terms of what is selected for inclusion / exclusion and how it is presented.[10] The framing devices (e.g., metaphors, visuals, arguments) embedded in the message are aimed at activating specific interpretative schema (the manifestation of the frame in cognition), while the logical progression of the implied and/or manifest reasoning devices describe to the receiver how the interpretive schema should be applied to the issue or concept being framed. A framing package (i.e., the representation of the frame in the message through the use of framing and reasoning devices) is "effective" in as much as it activates the appropriate socially shared cognitive schema, and to the extent that the schema is subsequently used to guide the processing of the encoded information.

[10] Importantly, this can occur at multiple levels of analysis, from the message as a whole to a particular sub-clause.

The embedding of the framing package, that is, how the frame gets manifested, is determined by the representation of the frame in the sender's long-term memory (LTM), in connection with the learned set of information they are attempting to communicate. The creation of a message can thus be thought of as a (largely sub-conscious) attempt to minimize the amount of uncertainty related to the interpretation of a message, while accommodating the needs of the medium through which the message is carried. This can be done either by increasing the power of the framing package to evoke the desired frame of reference and/or by excluding information which would imply a different set of frames.

Fundamentally, the interpretation of the communicated message is solely dependent upon the receiver; the sender can attempt to encode the message in such a way as to promote a specific interpretation (e.g., through the application of one or more frame), but it is ultimately the interaction between the receiver and the message which determines how the information is decoded and subsequently interpreted. The specific question of interest then is determining the probability (a) that the correct schemata will be activated and (b) that these interpretative schemata will be used to guide interpretation.

To answer the first question, it is assumed that the embedded framing package is a manifestation of the socially shared schema of the sender, itself a manifestation of the latent frame. The receiver has their own manifestation of the socially shared schema, which may, but is likely not, perfectly similar to that of the sender. This is mainly due to the individual experiences of both the sender and receiver which shaped their schemata. Additionally, schematic interpretation of the message will largely be influenced by the positioning of the intended schema in the broader knowledge structures (that is, the perceived relevance of the

intended schema to the information being decoded, in relation to the related information already stored in memory; more on this in the next chapter).

To restate, whether the framing package activates the intended socially shared schemata is a product of the representation of the frame in the receivers LTM, in connection with the receivers set of issue- or context-specific schemata. The activation of the "correct" frame is thus dependent upon:

A. The extent to which the manifest framing devices are evocative of (i.e., act as cues for) the intended socially shared schema
B. The activation potential of the intended socially shared schema given the information manifest in the discourse product (a function of how often and how recently the issue schema and the intended socially shared schema have been co-activated)
C. The general activation potential of the intended socially shared schema (itself a function of how often and how recently the schema has been activated).

Applying the Framing Process Model to the Framing of Terrorism

The provided definitions of frames and framing, and the explication of the framing process, are in many senses the first step in understanding the core questions driving this dissertation. I will be further expanding upon these concepts in the next chapter, within the discussion of memory, information processing, and framing effects, as well as in the next section, in the context of the framing of terrorist organizations. Prior to moving on, however, I want to return to the conundrum posed at the outset of *this* chapter, particularly the highly varying perspectives on framing within the terrorism literature. My contention is that the approach I've proposed can provide some unifying clarity, as can be demonstrated by

comparing studies with two seemingly oppositional perspectives on what frames are: those looking at broad discourses (e.g., Brinson & Stohl, 2009, 2012; Papacharissi & de Fatima Oliveira, 2008) and those looking at the relatively more narrow application of labels and attributes (e.g., Bruscella, 2015; Reese & Lewis, 2009; B. K. Smith et al., 2016).

Using the perspective put forth by Entman (1993) – namely that frames function to define problems, diagnose causes, make moral judgments, and suggest remedies – Brinson and Stohl (2009) identified two competing frames in U.S. and U.K. coverage of the 7/7 terror attacks in London: (a) the *domestic frame*, which "defined and diagnosed the problem as homegrown," and (b) the *international frame*, which "defined and diagnosed the problem as being connected to international terrorist organizations" (Brinson & Stohl, 2012, p. 271). Also relying on the perspective put forth by Entman (1993) and using a similar methodology for identification of frames, Papacharissi and de Fatima Oliveira (2008) explored the U.K. and U.S. coverage of terrorist attacks in Iraq, Israel, and Afghanistan from June 2006 to June 2007. They found two frames in their investigation: (a) the *military frame*, wherein "events and occurrences were reported in relation to overall military strategy" and (b) the *diplomatic frame*, wherein "all reports, analyses, and editorials introduced events from a diplomatic point of view and tracked current events within the overall progression of diplomatic plans" (2008, pp. 68–69).[11]

The approach taken by these authors can be contrasted with Reese and Lewis's (2009) study entitled "Framing the War on Terror." As the name suggests, this study looks at the application of the War on Terror label "assigned by the Bush administration to its

[11] In both the article by Brinson and Stohl (2009) and the article by Papacharissi and de Fatima Oliveira (2008), frame A was further identified as primarily "episodic," frame B was primarily identified as being "thematic" (e.g., Iyengar, 1991).

national security policy" (2009, p. 777). Reese and Lewis briefly describe the organizing principle evoked by the War on Terror framing device – "the War on Terror describes a vague enemy, opposes a 'tactic', has no clear measure of success, privileges the state and the status quo – who 'we are vs. who 'they' are – and thus lifts the problem out of political, economic, and historical context" (p, 781) – the study is focused almost exclusively on how the framing device was applied.

The frames identified by these scholars, and the framing packages wherein they manifest, could hardly be any different. The typical approach to understanding the distinctions between the forms these frames take might be to label the first as "context-transcendent" and the later as "context-specific" (e.g., Shah, McLeod, Gotlieb, & Lee, 2009, p. 86). This type of distinction has been unfruitful, however, as was discussed in Part 1 of this chapter. I propose instead that the distinction between the *form* of the frames and the abundance of framing devices identified by Brinson and Stohl (2009) or Papacharissi and de Fatima Oliveira (2008) and the singular framing device and singular corresponding frame studied by Reese and Lewis (2009) may be understood solely within the confines of the framing process model outlined herein.

When decoding a given discourse product, the cooperative receiver is faced with a daunting task: determine the intended latent frame for decoding the given information, based solely on the provided framing package and the context.[12] The receiver observes the context and framing package and must infer which latent frame was used to create the message, a task which is complicated by the fact that the receiver's representation of the context and

[12] Here it is worth noting, as will be discussed in more detail in the next chapter, that this is almost never a conscious process.

latent frame are not necessarily equivalent to that of the sender. The sender is intuitively aware of this fact and, given they are embedded within the same culture as the receiver, should encode their communication in a way that reflects this underlying uncertainty.

If the intent of the sender (in this case a journalist, or a government official) is to evoke as idiosyncratic and amorphous an organizing principle as "domestic issue" then it is likely going to require a relatively robust framing package – both in terms of the number of framing devices used to invoke the latent frame and the extent to which reasoning devices are used to bound its interpretation – which has been specifically tailored to the informational context of the communication.[13] In contrast, the socially shared schema evoked by the "war on terror" framing device is relatively universal[14] and narrowly applicable, at least within the cultural context of the U.S. in the years immediately following 9/11. As such you might expect the typical framing package relying upon the "war on terror" framing device to require little to no additional packaging.

The Framing of Terrorist Actors

In addition to providing clarification about the phenomenon of interest, the framing process model also provides a useful lens for understanding the role of dominant terrorist actors (DTAs) in terrorism discourse. I define a DTA as an organization whose actions are inherently meaningful, no matter where or to whom they occur. In the context of U.S. media discourse, there are very few organizations which rise to this level. In fact, looking at

[13] This is especially true if the sender expects that the 'default' frame of the sender will be diametrically opposed to the prescribed frame (as could be the case when looking at applications of the *domestic* and *international* frames).

[14] That is, there are fewer ways in which it could meaningfully differ from one person to the next, as opposed to the previous examples.

terrorism discourse over the last 21 years, I argue only two organizations have met this standard: al Qaeda, and ISIS.

To justify this claim, I re-analyzed a set of newspaper articles published in the *New York Times* and *Wall Street Journal* which explicitly mention terrorism / terrorists collected as part of an earlier study on media constructions of terrorism (B. K. Smith et al., 2017), which I have expanded to cover the entire time span from 1996 through 2017 (for a description of data collection methods, as well as how the data was analyzed, see Appendix A). To begin, I looked at the total number of articles mentioning each of the U.S. State Department designated Foreign Terrorist Organizations (FTOs). The results are shown in Figure 1.

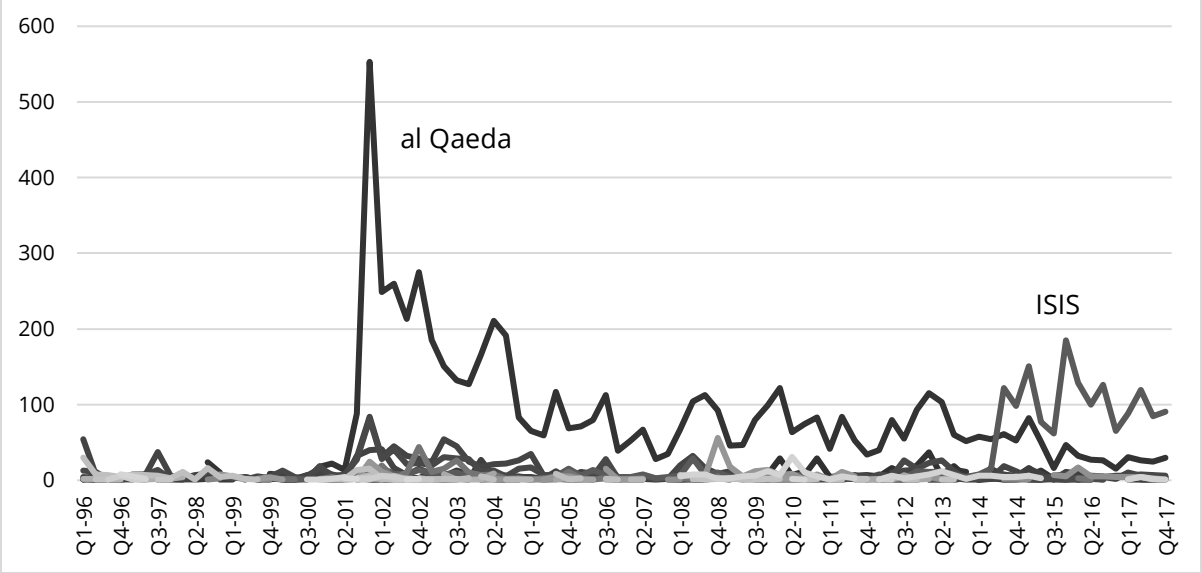

Figure 1. Number of articles mentioning each FTO, per quarter, between 1996 and 2017. All organizations with a minimum of 10 article mentions are included.

Only two lines in this figure stand out: the trend lines for al Qaeda and ISIS. From September of 2001 to August of 2014, there was not a single quarter in which another terrorist actor had more article mentions than al Qaeda. In September of 2014, the month when journalist James Foley was beheaded, there was no quarter in which another terrorist

actor had more article mentions than ISIS, and no quarter in which al Qaeda was not the second most frequently mentioned organization.

In contrast to these two omnipresent organizations, the vast majority of terrorist actors receive almost no coverage. Given that the vast majority of the public (thankfully) lacks first-hand experience with terrorism – and often possess little if any personal knowledge of terrorist organizations – in order to discuss the actions of a little-known terrorist actor (what I refer to as "non-dominant actors" or NDAs), such as Ansar Dine, journalists must frame the NDA in such a way as to efficiently communicate what the nature of the organization is (its form and function), how to think about the organization (especially in terms of moral judgment), and why it's important to pay attention to the framed organization.

I argue that DTAs are ready made framing devices for sharing information about NDAs, because they are symbolically meaningful, and highly evocative of their intended frame, i.e., existential threat (B. K. Smith et al., 2016). In the case of al Qaeda this has been discussed and demonstrated in previous research, whether directly (e.g., Bruscella, 2015; Hülsse & Spencer, 2008; B. K. Smith et al., 2017) or indirectly (e.g., Brinson & Stohl, 2009; Entman, 2004). However, this can also be assessed empirically for the entire set of FTOs: Given that the co-occurrence of any given set of framing devices and any given set of information contained in a message is independent conditional on the frame used to package the information (and the information that the sender is attempting to communicate), it is possible to demonstrate the validity of this claim through analysis of the conditional probability of FTO co-occurrence in articles.

I measured co-occurrences using the inclusion index (Eck Nees Jan van & Waltman Ludo, 2009), which measures the conditional probability that an article mentioning group X (e.g., Hezbollah) will also mention organization Y (e.g., Hamas), and is calculated as a ratio of the number of co-occurrences for the two groups over the number of occurrences for the least frequently occurring group. I assume that, in general, the more frequently an organization is mentioned in the overall discourse the more likely it is the organization being used as the frame of reference. More formally then, the co-occurrence measure can be stated as: $P(\mathrm{DTA}|\mathrm{NDA}) = \frac{P(\mathrm{DTA} \cap \mathrm{NDA})}{P(\mathrm{NDA})}$ where DTA is the organization mentioned more frequently, and NDA the organization mentioned less frequently. It takes the maximum value of 1 when one organization always appears when the second one appears, even if the reverse is not necessarily true. I then created an average inclusion index score (*C*) for each FTO, by taking the sum of the inclusion index coefficients for each organization and dividing by the number of FTOs with at least one mention during the time-period. This is equivalent to calculating the weighted degree centrality for each entity in the semantic network.

When looking at the entire time range from 01/01/96 to 12/31/17, the average inclusion index score for all organizations with at least 1 mention was $C = .055$ ($N = 71$, $SD = .055$). Based on these values, and using two-tailed z-tests, two organizations had rates of co-occurrence which were significantly higher than those for the average FTO: al Qaeda ($C = .436$, $p < .001$) and ISIS ($C = .186$, $p = .017$). Looking specifically at the narrower time-periods in which one of the two organizations was dominant, the same story unfolds. For the period ranging from 09/11/01 to 08/19/14, the only organization with a significantly higher centrality than average was al Qaeda ($C = .475$, $p < .001$), and for the period 08/20/14 to 12/31/17, only ISIS ($C = .493$, $p < .001$) and al Qaeda ($C = .407$, $p < .001$).

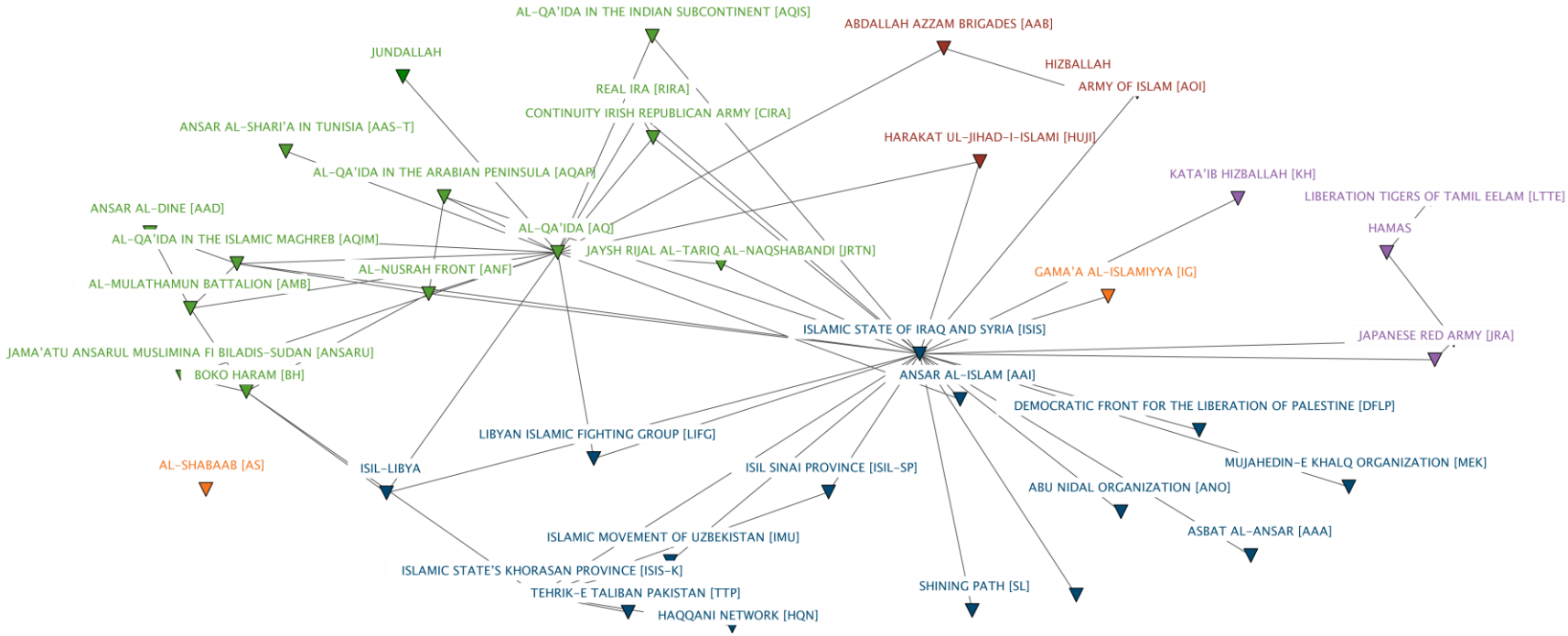

Figure 2. Network of article level co-occurrences between organizations.
Each node on the graph stands for one FTO, with distances between pairs of nodes representing how likely those FTOs are to cooccur in a newspaper article. Location in the graph was determined using multidimensional scaling, with randomized initial configuration. Edges are shown for all organizations with an inclusion index > .50. Colors denote membership in clusters, which were determined using an average-linkage hierarchical clustering method. Number of clusters was set by removing linkages until all remaining had a similarity coefficient > .05. Network based on 3,872 articles published from 04/08/13 to 12/31/17.

Figure 3 shows a graphical representation of the results, for the period from 04/08/13 to 12/31/17. There are two major clusters of organizations, one centered around al-Qaeda (shown in green) and one centered around ISIS (shown in blue). Additionally, most of the edges (representing inclusion index > .50) emanate from these two central organizations. What the co-occurrence data clearly demonstrates is that ISIS and al Qaeda have transcended their status as literal entities, functioning as symbolic devices used when framing NDAs. In other words, there is a socially shared conceptualization of these DTAs which can be drawn upon to package information about NDAs, thus increasing the efficiency of communication when the actions of an NDA are being discussed.

Previous research has explored the way in which journalists attempt to render other agents or threats more comprehensible as a result of their rhetorical connection to al Qaeda or ISIS (B. K. Smith et al., 2017). One of the more prevalent when framing NDAs is the *devil you know* framing package, which is characterized by the use of the DTA as an explicit frame of reference for the NDA, generally through the use of organizational metaphor as reasoning device, with the primary function being to provide readers with a heuristic for evaluating the framed organization. What the framing process tells us is that by tying these NDAs to a DTA, the reader is provided with the tools necessary to evaluate and respond to the unfamiliar, providing the reader with an understanding of the lesser-known groups' structure, function, and motivations.

Before continuing, it is worth noting that use of DTAs as framing devices is not an inherently bad practice: by employing a familiar and culturally shared frame of reference, journalists are able to more clearly get information across to a wide audience. However, as noted in the framing process model, frames can influence both what is included and what is

omitted, and often the omissions "may be as critical as the inclusions in guiding the audience" (Entman, 1993, p. 54). I argue that to treat NDAs within the framework used to understand these DTAs necessarily masks the ways in which they differ, limiting the public's understanding of terrorism and terrorist organizations, and restricting the publics ability to properly grasp and conceive of solutions. I am not the first to argue this (e.g., Bruscella, 2015; Hülsse & Spencer, 2008), nor is the first place I have argued this (e.g., B. K. Smith et al., 2016, 2017).

In Summation

At the outset of this chapter, the stated goal was to make clear what frames and framing are, and how they work to guide the processing of information. The definitions provided were aimed at being inclusive of the phenomenon, while providing a common language from which framing research can be built. A framing process model was then proposed, building upon existing theory and research from across disciplines and paradigms, with the ultimate goal of providing the building block for achieving Entman's goal of a unified conceptualization of how frames become embedded within and make themselves manifest in a text, [and] how framing influences thinking" (Entman, 1993, p. 51). I concluded this chapter by discussing the application of the framing process model to understanding differential approaches to framing research in the terrorism context, and to insights from the framing process model to identify DTAs as a primary framing device used when framing NDAs.

The question that remains to this point is "to what effect?" To what extent, in what way, and under what conditions, does the use of the DTA framing device alter public perceptions of NDAs? These are the questions I seek to answer in Chapter 3.

Chapter 3. On Memory, Information Processing, and Framing Effects

In 1948, Bernard Berelson proposed that "Some kinds of communication, on some kinds of issues, brought to the attention of some kinds of people under some kinds of conditions, have some kinds of effects" (Berelson, 1953, p. 451). This statement was meant to illustrate the central questions underlying study of "the effect of communication on public opinion." Looking at the landscape of media effects research since, I can't help but agree with Lang (2013): "the only thing we have learned after 60 years of mass communication effects research is that the weight of exposure to almost any specific medium or content influences any given behavior, on average, very slightly" (p. 15). This is equally true of research on the effects of frames as it is with media effects writ large. As with everything else related to the framing concept, there are a multitude of approaches, both to how framing effects should be studied as well as what "counts" as a framing effect (see: Tewksbury & Scheufele, 2009). The only true consistency is the general failure to find meaningful individual level effects.

Taken at face value, the consistent finding of very small and weak effects across the discipline suggests that the media can be ignored as a serious agent of social and behavioral change, however, logic would suggest this is not the case. We know the media influences the public's view of the world because we know that on most issues, like terrorism, the average person has no personal experience, and their only true source of information is the media. We know that frames have an effect based on the same logic. We can look at the world and see that effects have occurred, but when it comes to predicting what the effects of a particular communication will be *a priori*, we, as a field, come up short.

As a number of scholars have argued in the recent past (Bennett & Iyengar, 2008; Lang, 2013), the consistent failure to find meaningful media effects suggests a fundamental shift is necessary in how we conceptualize and study them, framing effects included. I believe this shift requires embracing the idea of communication as an evolved, adaptive and emergent phenomenon of humans, used as a tool for spreading information from one cognition to another. Under this conceptualization, mediated messages are processed based on the meaning that the information holds for the individual. As such, the goal of media effects research should be to identify structural, informational and contextual components embedded within messages that alter the psychological relevance of the information contained in the message (cf. Lang, 2014; Lang & Bailey, 2015)..

Chapter 2 has already begun this process, by addressing the core components of the framing package and its relation to the manifestation of frames in thought, and I will be expanding upon that discussion in this chapter. However, in order to examine the question of how beliefs are formed and updated in relation to news framing (that is, the effects of frames in mediated communications), it is first necessary to describe the 'normal' process of belief formation, that is, the general process by which beliefs are formed, updated, and expressed. The first half of this chapter aims to do just that.

Part 1 of this chapter addresses the question of how individuals generally form beliefs. I begin by laying out a set of assumptions about human cognition and information processing. I then explicate the variable of interest, beliefs, in relation to their representation in long-term memory (LTM), and propose that implicit beliefs are what link two or more conceptual object references in LTM, and that explicit beliefs (or stated beliefs) should be viewed as the expression of agreement or disagreement with a statement, the expression of

which is dependent upon the conditional probability of co-activation between two or more object references. I then describe the automatic processes of encoding and storage which produce LTM, as well as the systems by which individuals can exert executive control over these processes. I conclude Part 1 by bringing these concepts together and presenting a working model for understanding communication's influence on the construction of beliefs.

In the second half of this chapter, I return to the question of how the media influences belief formation, and specifically the way that frames influence belief formation. In keeping with the information processing and belief formation model proposed herein, Part 2 recasts the framing process model described in Chapter 2 in terms of a probabilistic system. I follow this up in Part 3 with a discussion focused on unpacking some of the implications of the combined set of models for our understanding of framing effects. In Part 4 I apply the information processing and belief formation model and the probabilistic framing process model to the question of how the DTA framing device influences beliefs about the threat posed by NDAs and conclude by laying out the hypothesis to be tested in this dissertation.

Part 1: Human Memory, Information Processing and the Formation of Beliefs

As discussed, in order to develop a more robust understanding of the way media influences beliefs, it is first necessary to explicate the 'normal' process wherein individuals form beliefs. The specific conceptualization that I will present in this part of the chapter builds primarily on two well-tested and highly compatible conceptualizations of human information processing: The John Q. Public model of political information processing (Kim, Taber, & Lodge, 2010; Lodge & Taber, 2013), and the limited capacity model of motivated mediated message processing (Lang, 2000, 2009, 2014). Both of these models, as well as my own thinking, also rely heavily on the evaluative space model (Cacioppo, Berntson, Norris,

& Gollan, 2012; Cacioppo, Gardner, & Berntson, 1997; Petty & Cacioppo, 1986), the expectancy-value model (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975, 2010, 2011), and the object-evaluation model (Fazio, 2001, 2007).

The basic assumption underlying this conceptualization is that humans have evolved to save energy – through a host of modifications, from how we walk (Sockol, Raichlen, & Pontzer, 2007), to how we perceive light (Rieiro et al., 2012) – in order to offset the high energy cost of creating and maintaining a cognitive system capable of quickly adapting to environmental change (Lang, 2014; Lang & Bailey, 2015). This is especially true when it comes to information processing, as the massive energy costs that would be associated with attending to and consciously processing all the information in an individual's environment would make doing so evolutionarily impractical. As such, the human brain has evolved to be an efficient, though not necessarily parsimonious, information processing machine (Lodge & Taber, 2013), with several inter/independent, dynamic systems and tools for automatically filtering out 'irrelevant' information, condensing 'relevant' information, and, where needed, filling in missed or missing details (Kelso, 1995; Kim et al., 2010).

The determinations made by these systems regarding whether something is perceived, learned, and / or remembered are fundamentally probabilistic (Chater, Tenenbaum, & Yuille, 2006). As argued by Gallistel and Matzel (2013), probabilistic inference (and specifically Bayesian inference) undergirds all parts of human psychology. Because the world is complex, computationally noisy, and often ambiguous, it is inherently necessary for the human brain to draw inferences from sensory input that are fundamentally uncertain to varying degrees. This is stored in memory, allowing individuals to make decisions while incorporating this inherent uncertainty.

Human Memory

A functional perspective of human memory is that it is the process of acquiring, integrating and maintaining information over time (Matlin & Farmer, 2016). It is a single term used to describe a wide range of abilities: temporarily holding information while it is worked on and manipulated (working memory), remembering personal experiences from a particular time and place (episodic memory), the ability to have general knowledge of facts of the world (semantic memory), and many more. The fundamental function of all memory systems is to carry acquired information forward in time in a computationally accessible form (Gallistel & King, 2009). Each memory system is independent of the others (both functionally and biologically), and yet each works with the others within a probabilistic system to allow the individual to draw on past experiences to guide current behavior (Stone et al., 2010), and imagine the future (Schacter, Addis, & Buckner, 2007).

Of particular interest is semantic long-term memory, or LTM, which is where beliefs are stored for future recall. An individual's LTM can be thought of as a semantic network of affectively charged (positive, negative, ambivalent, or neutral) and associatively linked object references (Kim et al., 2010). In this context, object means any sort of concept stored in long-term memory, including but not limited to people, events, abstract ideas, categorizations, emotions, perceived attributes or characteristics, etc. (Lodge & Taber, 2013). Each object reference in LTM can be metaphorically thought of as a network node, represented by a word or phrase connoting the object. Each of the nodes in an individual's semantic memory network carries both a set of affective charges and an accessibility weight. Additionally, all nodes are associatively 'linked,' with varying strength, to one or more other nodes in the network. These edges are both weighted and directed (Gallistel & Matzel, 2013),

meaning the strength of the association between object reference X and object reference Y is not necessarily equivalent to the strength of the association between Y and X.

Under this conceptualization, all object references carry a positive and/or negative *affective charge*, with each independently variable in its intensity (i.e., the strength of the affective charge). This can be thought of as the extent to which the object reference automatically activates the appetitive and/or aversive motivational systems (Cacioppo & Berntson, 1999; Cacioppo et al., 2012, 1997).[15] The weight of each node can be thought of as that object references *accessibility*, or familiarity: "the ease with which a stored object lying dormant in LTM can be activated to influence information processing" (Lodge & Taber, 2013, p. 29). Finally, the weight of the directed edge from one node to another (i.e., the strength of the connection) is defined as the *applicability* of the association between two object references. It describes the conditional probability of an object reference being co-activated along with another object reference, all else constant.[16]

A brief aside on the differentiation between types of beliefs and information.

From this intentionally abstract understanding of semantic LTM, it is possible to derive an understanding of what is meant by belief.[17] *Implicit beliefs* are what link two conceptual object references in LTM. If asked "is the New IRA a threat," the answer is at least partly dependent upon the strength of the association between the object reference "New IRA" and the object reference "Threat," that is, the strength of the individuals implicit

[15] Note that the strength of the positive and/or negative affect carried by the object reference is independently variable.

[16] That is to say, the observed conditional probability derived from explicit beliefs is also in part contingent upon the information currently stored in working memory and perceptual memory.

[17] Importantly, and in line with previous research (Eveland & Cooper, 2013), no distinction is made between "knowledge" and "belief."

belief that the New IRA is a threat. Importantly, these are *not* static links, nor should the nodes which represent object references be considered crystallized 'points' in memory. In fact, each node is likely to be represented in multiple, shifting locations, each instance associated with its own set of (sometimes overlapping) object references, in a complex, semi-hierarchical web of associations (Eichenbaum, 2017; Huth, Nishimoto, Vu, & Gallant, 2012). LTM should be thought of as a series of probabilities: the probability of object X being activated when presented with some stimuli, the probability of object X activating object Y, etc. (e.g., Gallistel & Matzel, 2013). From a measurement perspective then, an *explicit belief* is best described as the expression of agreement or disagreement with a statement, the expression of which is largely dependent upon the conditional probability of co-activation between two or more object references.

Intricately embedded in this definition of belief is the concept of information, which can be broadly defined as that which reduces uncertainty (Shannon, 1948). From an ecological perspective, and derived from the focus on uncertainty reduction, information is simply any stimulus that alters the cognitive structure of the receiver (Dervin & Nilan, 1986). Put another way, information is the input and beliefs, whether explicit or implicit, are the output; a stimulus is informative to the extent to which it alters the conditional probability of co-activation between two or more object references.

Encoding and the Automatic Processing of Information

Following from this conceptualization of LTM, there is a question which naturally arises: how individuals determine which information in their environment to store and which to ignore. Humans have a relatively large capacity to perceive information in their environment, and an even larger capacity to store information, but a relatively small capacity

to attend to information. In other words, "more is seen than can be remembered" (Sperling, 1960, p. 1). For information that is perceived in the environment to enter memory, it must first be encoded, that is, it must be converted into a construct that can be stored within the brain. This is a highly idiosyncratic process: the selection of both what information to encode as well as *how* to encode it "are dependent not only on characteristics of the environment and the stimulus, but also on the previous experiences of the perceiver" (Lang, 2009, p. 195).

Encoding is also an automatic, continuous, and probabilistic process, with information in our environment becoming encoded based largely on its subconsciously perceived relevance: relevant stimuli are given more attention in turn increasing the likelihood that the information will be encoded and stored in LTM (Rensink, O'Regan, & Clark, 2000). Subconsciously perceived relevance can be split into two different types, affective relevance (aka motivational relevance, e.g., Lang, 2009) and schematic relevance (aka goal-oriented relevance). The following sub-sections address each in turn.

On the role of the affect system.

The idea of affective relevance[18] is derived from the dual system evaluative space model (ESM; Cacioppo et al., 2012, 1997), which postulates that there are two functionally separable subcomponents of the affect system: the appetitive (approach, positive) system and the aversive (avoid, negative) system, which automatically and unconsciously bias the processing of incoming information.[19] Per Cacioppo et al. (2012, p. 46), "a fundamental premise of the ESM is that the affect system evolved to help organisms differentiate hostile

[18] Alternatively referred to as motivational relevance (Lang, 2009).

[19] While the systems are related, they are functionally separable (Gable, Reis, & Elliot, 2003); they are not equivalent in their constitution, operations, or consequences. However, they are alike in that they appear to share a common neurological pathway (Plassmann, O'Doherty, & Rangel, 2010), and in that they both have primacy over cognition (Lodge & Taber, 2013).

from hospitable stimuli." Given this evolutionary necessity, the affect system is situated in such a way as to short-cut cognition.

Incoming perceptual information first passes through the amygdala, where features of the stimuli are assessed for affective relevance (Adolphs, 2010; Bradley, Keil, & Lang, 2012). If there is a feature match between a cue and an existing representation in memory, and that representation has high affective relevance, it is substantially more likely to be attended to. This, in turn, increases the likelihood that related information will be passed onto the hippocampal formation, where it can be encoded, processed, and acted upon (Hamann, Ely, Grafton, & Kilts, 1999; Ranganath & Ritchey, 2012). This is especially true if the cue is negatively charged, as the aversive system has evolved to be more sensitive than the appetitive system (Cacioppo et al., 2012).

On the role of cognitive schema.

Schematic relevance drives encoding in a similar fashion to affective relevance, in that both involve learned experience. Cognitive schema are defined as "adaptable associative networks of knowledge extracted over multiple similar experiences" (Ghosh, Moscovitch, Colella, & Gilboa, 2014, p. 12057), and, as discussed in Chapter 2, were first explicated in Bartlett's (1932) work on the reconstruction of memory. As an emergent phenomenon of semantic memory, cognitive schema are perhaps best understood as mental maps that help individuals make sense of the world around them as well as to process incoming information more efficiently (Markus, 1977). They act as "living," dynamic, mental representations of common experiences, objects, or relations between objects, which allow individuals to match the information within their environment against the amassed resources of the past, in order to meet the demands of the present (Bartlett, 1932; Wagoner, 2013).

Fundamentally, the "function of any schema is to make predictions about what one should expect to experience in a given context/situation/setting, to aid in interpreting events that occur there, and to enable one to notice new details that do not fit the schema" (Moscovitch, Cabeza, Winocur, & Nadel, 2016, p. 118). They provide the organizing structures that influence memory formation and retrieval (Dudai, 2012; Wang & Morris, 2010) by providing an individual with a logical progression of environmentally adaptable actions, and a set of expectations for what should and should not occur. Take for example the process of driving a car: The first time an individual gets behind the wheel of a car, they must consciously and deliberately move from one step to the next – turn the key, put the car into gear, disengage the clutch, etc. If anything happens to interrupt this process, a novice driver will likely panic, having no memory of what they should do next. However, for an experienced driver, there is an automaticity to their actions, both when things go right and when cues in the environment suggest things are about to go wrong. The automatic and adaptable actions and expectations of the experienced driver are derivative of that individuals driving schema.

A similar process occurs when first encountering and cognitively attending to any new and novel information, including information about an unknown terrorist actor, or an unfolding terrorist event (e.g., Bruscella, 2015). At first, a large amount of cognitive resources must be expended in order to make sense of the group, concept, or situation, but once a schema has been established, it will be used to automate the processing of all future information applicable to the schema.[20] Information that is determined to be more or less

[20] It is worth considering that the process which creates affective associations and the process by which we learn to drive a car, learn what is and what is not socially acceptable, etc., are all the same, and all engage the cerebellum, which like the amygdala is one of the phylogenetically older cognitive structures (Benney & Henkel, 2006; Henke, 2010).

congruent with the schema during pre-processing will likely not enter working memory, instead only serving to reinforce the existing associations and expectations within the schema. In contrast, a large amount of resources will be dedicated to encoding information which significantly departs from the expectations produced by the cognitive schema (Boysen & Vogel, 2007; Gunther, 1992; Todorov, Chaiken, & Henderson, 2002).

From Encoding to Storage

The encoding process, as discussed, is continuous, limited, and idiosyncratic. In addition to these traits, it is also nonveridical. Through a process of semanticization, the encoding of information turns the perceptual information into a necessarily abstract conceptual representation, not an exact copy (Henke, 2010).[21] Information that is encoded necessarily moves from an individual's perceptual stores to their short-term memory stores, and from there selectively into LTM.

Storage and consolidation is the process of creating and/or updating the long-term representation of the encoded information. Thinking specifically of associative memory structures (i.e., episodic, procedural, and semantic memory), as information gets encoded, it is compared to other information already held in memory. The regularities between episodes are extracted, consolidated, and stored for future use. As the depth of processing increases, connections between the semanticized object references are created and strengthened (Craik & Lockhart, 1972; Craik & Tulving, 1975). This process forms the basis for the model of semantic LTM described at the outset of this chapter.

[21] The exception to this is the rare episodic memory that even after large periods of time remains multifaceted, contextually rich and flexibly expressed. However, this appears to be a function of the hippocampus reconstructing the memory, rather than anything else (Moscovitch et al., 2005).

By default, the encoding and storage of information is automatic. Online updating describes the system by which this occurs, proposing that the current affective state of the individual (positive, negative, ambivalent or neutral) when exposed to a stimulus is automatically integrated into the summary evaluation of the object reference, during pre-processing (i.e., when the informational cue is being checked for relevancy). In addition, the connections between object references (i.e., beliefs) are constructed by associating the activated object reference with all other currently active memory objects in short-term memory. In general, the effect of this online updating is small and temporary, lasting only a few seconds (Tulving & Schacter, 1990). However, through classical condition, the repeated co-activation of an object reference and an affective state, and/or the co-activation of two or more object references, can lead to strong and rigid association which once formed prove remarkably resistant to change (Taber & Lodge, 2006).[22]

Automatic Override: Executive Control and Working Memory

At this point I have laid out a detailed model of how information within an individual's environment is processed, and how beliefs are stored, which presents these processes as largely automatic, infused with affect, embodied in physiological systems, and responsive to the environment through online updating. However, the discussion to this point has largely, and intentionally, avoided discussion of conscious, or deliberative thought. Executive control (also known as the central executive system, or executive functions) refers to a family of mental processes arising from the pre-frontal cortex which are used to override and/or attenuate the automatic processes which generally guide information processing and

[22] In part, this helps to explain why there would be such a strong conceptualization of DTAs across most of the population, and why they seem to gain power as framing devices after large spiked in coverage, although this can also be explained via cultural trauma.

behavior (Diamond, 2013; Eichenbaum, 2017; Kiefer & Martens, 2010). There are three generally agreed upon core functions of executive control (E. K. Miller, 2001) – interference control,[23] working memory (WM), and cognitive flexibility – two of which are especially relevant to the current discussion, namely interference control and WM.

Interference control.

One of the most important functions of interference control (also known as cognitive control) is to attenuate the automatic processes which generally guide information processing and behavior (Kiefer, 2012; Kiefer & Martens, 2010; Moors, 2016). Interference control works on two levels, perception and cognition. At the level of perception, interference control "enables us to selectively attend, focusing on what we choose and suppressing attention to other stimuli" (Diamond, 2013, p. 137). While some salient stimuli will almost invariably attract our attention through automatic orienting processes – especially when there are unexpected, affectively relevant changes in one's environment, such as a sudden motion, or a loud noise (see: Lang, 2009, 2014), – interference control allows for a decrease in the likelihood of attending to non-selected for stimuli (Kiefer, 2012). An example may be tuning out the words scrolling across a television screen during a news report to focus more selectively on what is being said, or vice versa. In addition, interference control allows for an *increase* in the likelihood of attending to selected for stimuli. Attentional interference control biases individuals toward perceiving information in their environment which will aid in the completion of a specific goal or task.

[23] This type of control is more accurately described as inhibition, which includes both self-control and interference control. However, inhibitory control is generally synonymous with self-control, which is not considered in this study as it deals primarily with behavior.

At the level of cognition, interference control functions to suppress prepotent mental representations, in other words, resisting extraneous thoughts or memories (Dudukovic & Kuhl, 2017). Whether engaged in automatic or deliberative processing the connections between object references (i.e., beliefs) are constructed by associating the activated object reference with all other memory objects currently available in short-term memory. The same is true with summary evaluations of object, i.e., *implicit attitudes*, which are constructed through the integration of "the evaluations of memory objects that are accessible at the time of attitude construction" (Lodge & Taber, 2013, p. 174) as well as the current affective state of the individual. Interference control can attenuate this process by shifting the *criterion for applicability* (Aminoff et al., 2012, 2015). For example, when an individual is required to complete a non-emotional task in an emotional context, interference control functions to desensitize emotional pathways, decreasing the likelihood that the affect system will be activated (Kiefer, 2012).

The shift in the criterion for applicability functions by making individuals more sensitive to discrepancies between information in their environment and information which does not conform to the schema being used to process the information. This, in turn, can result in a rejection of the currently activated schema for one that is more applicable to the incoming information. To the extent that the individual is actively engaged in deliberative processing (i.e., to the extent they are exerting executive control and are elaborating on the information), the formation of implicit beliefs will primarily be driven by accessible (i.e., activated) considerations that are *also* deemed applicable (Chong & Druckman, 2013), in relation to the schema that is being used to guide processing.

Working memory.

Interference control – especially at the level of cognition – is usually engaged in the service of WM, which is a limited capacity system allowing the temporary storage and manipulation of information necessary for such complex tasks as comprehension, learning and reasoning (Squire & Dede, 2015). [24] Separate from short-term memory – which is where information is stored during pre-processing and which does not have the capacity to manipulation information – WM allows for the conscious disentangling of complex thoughts and ideas, the derivation of general processes or even to see relations between items or ideas. Put another way, "WM is critical to our ability to see connections between seeming unrelated things and to pull apart elements from an integrated whole" (Diamond, 2013, p. 143). Together, cognitive interference control and WM allow for an individual to focus on certain sets of information (both presented in the environment and stored in LTM) to the exclusion of other, potentially less relevant, cognitions.

Working memory is critical in the expression and formation of explicit beliefs and opinions. As mentioned earlier, the extent to which the information contained in the experience of an event is integrated into LTM is largely a product of the depth of processing: As cognitive elaboration increases, connections between the semanticized object references are created and strengthened (Craik & Lockhart, 1972; Craik & Tulving, 1975). The longer a piece of information is held and manipulated in WM – the more it is considered in the context of unique perspectives and connections – the more broadly and completely it will be integrated into an individual's knowledge structure.

[24] Working memory should not be confused with short-term and/or perceptual memory stores, which do not allow for manipulation of conceptual objects (Diamond, 2013)

Limitations of executive control.

In a normatively ideal world, the central executive system would always guide the processing of politically/socially relevant information and the formation/expression of explicit beliefs and opinions. In fact, most models of human behavior and cognition assume that this is the case, to a greater or lesser extent, and calls for greater critical thinking / executive control liter the communication literature (e.g., Baumer, Polletta, Pierski, & Gay, 2017; Simon, Fagley, & Halleran, 2004; B. K. Smith et al., 2016, 2017; Zhao & Peterson, 2017). Unfortunately, there are general limitations to executive functioning, as well as specific limitations to WM which both prevent this from being true and prevent this from being ideal. The first set of considerations is that use of the central executive system is highly resource intensive. In order to exert executive control, one must both have the desire to actively process the information being attended to, and must have the *ability* to actively process the information (Petty & Briñol, 2008; Petty, Briñol, & Priester, 2009). Ability is a function of the number of resources available for directing toward executive control – which can differ based on the number of resources being automatically allocated by an individual's affect system (Kiefer & Martens, 2010) –, the amount of effort required by the individual to direct said resources, [25] and the total number of resources required.

The second set of considerations is specific to WM, which is generally characterized as being limited and slow. Early conceptualizations of WM suggested that it had a maximum capacity of 7±2 "chunks" of information (chunks being broadly defined; Miller, 1956). While more recent evidence suggests that WM is not as strictly limited as this, the capacity of WM

[25] Interestingly, it appears that this later point is a learned trait, with strong evidence suggesting that executive functions can be improved through training (Diamond, 2013).

pales in comparison to the theoretically infinite capacity of LTM. In addition to limits on how much can be held in WM, as well as how long and with how much effort, it takes substantially longer to process information using WM than it does using LTM (Moors, 2016). This especially becomes an issue when asked to make an evaluation of a complex multi-faceted issue, with the amount of time necessary to weigh all relevant considerations quickly outpacing the energy constraints of the central executive system.

The general take away is that it is *not* always beneficial to exert executive control over the processing of information. While the use of executive control is almost certainly necessary when learning something new, and to a lesser extent when processing symbolic information (e.g., written or spoken language), once a representation of the information has been stored in LTM, it is generally better to not engage the executive control system (Diamond, 2013). The phylogenetically older regions and systems of the brain have had far longer to perfect their functioning; they are more efficient and, in most instances, accurate enough. Unfortunately, and especially in the case of emotionally and politically charged issues, they can also be significantly biased.

Bringing it Together – The Information Processing and Belief Formation Model

To summarize what has been established thus far, human information processing is a probabilistic system driven by the need to reduce the massive energy costs that would be associated with attending to and consciously processing all the information in an individual's environment (Chater et al., 2006). Information which enters into the perceptual memory of an individual is pre-processed, being checked against semantic representations stored in LTM for affective relevancy (Bradley et al., 2012) – that is, the stimuli's relation to past affective states – and subsequently for schematic relevancy – that is, information which significantly

departs from the expectations produced by previous similar experiences (Pessoa & Adolphs, 2010). Necessarily, the act of checking for affective or schematic relevancy alters the structure of LTM, a phenomenon known as online updating. In general, the effect of this online updating is small, but through classical conditioning the repeated co-activation of an object reference and an affective state, and/or the co-activation of two or more object references, can lead to strong and relatively rigid associations (Gallistel & Matzel, 2013).

As the level of perceived affective relevancy and/or schematic relevancy increases, the amount of resources dedicated to encoding the information will increase (Lang & Bailey, 2015), and the likelihood of the information rising to the level of conscious thought, that is, entering WM also increases. This processes in attenuated by executive control (e.g., Schacter & Addis, 2007), specifically interference control (Dudukovic & Kuhl, 2017; E. K. Miller, 2001), which shifts an individual's criterion of applicability (Aminoff et al., 2015), that is, the threshold wherein activation of one object reference activates other associated object references in LTM. In doing so, priority is also given to information within the environment that is task and/or schematically relevant over information that is affectively relevant (Egner & Hirsch, 2005). This results in a desensitization of emotional pathways (Kiefer, 2012), and an increased sensitivity to mismatches between the information in the environment and the activated cognitive schema – which subsequently can result in rejection (either sub-conscious or conscious) of the activated cognitive schema in favor of one deemed more applicable.

Finally, the extent to which the information contained in the experience of an event is integrated into LTM, apart from the online updating process described earlier, is largely a product of cognitive elaboration (Craik & Tulving, 1975). The longer a piece of information is held and manipulated in WM – the more it is considered in the context of unique

perspectives and connections – the more broadly and completely it will be integrated into an individual's knowledge structure. The extent to which elaboration occurs is dependent upon the perceived relevancy of the information (whether determined by executive control, affect, or schema), and an individual's resource availability (i.e., ability) to actively process the information.

At this point, however, there is still one more concept that must be addressed. As described previously, consideration of affective relevancy occurs prior to the encoding of perceived information and/or retrieval of semantic considerations, cognitive associations, etc. This has a direct influence on the retrieval and interpretation of these and other forms of subsequent information, due to the role of affective congruency, also known as affect contagion (see, e.g.: Schweizer et al., 2017). The affective congruency axiom states:

> Memory objects that are affectively congruent with currently processed information [that is, information currently being held in short term or working memory], including environmental and internal stimuli, become more accessible, while affectively incongruent concepts in memory become less accessible. (Lodge & Taber, 2013, p. 174)

The theory of affect contagion, in connection with the previously discussed concepts of hot cognition and affect transfer, forms the bedrock for one of the most important concepts in political and social psychology: the theory of motived reasoning (TMR).

Broadly speaking, TMR states that individuals are motivated to produce emotionally preferable conclusions when presented with new information (Kunda, 1990), with prior affect biasing attention to and processing of information in ways that favor acceptance of affectively congruent information and rejection of affectively incongruent information. When considering two pieces of dissonant information (e.g., a belief in LTM that conflicts with information in a news report), individuals will take the path of least resistance toward a cognitive equilibrium. This equilibrium must "simultaneously satisfy two sets of constraints:

cognitive constraints, which maximize goodness of fit to the data, and *emotional constraints*, which maximize positive affect and minimize negative affect" (emphasis in original; Westen, Blagov, Harenski, Kilts, & Hamann, 2006, p. 1947).

Taken together, what has been outlined thus far provides the building blocks for understanding how beliefs are formed as individuals process the information within their environment. By opening up the black box of human cognition, the goal is to be better able to understand what factors within media communications should affect if and how information is integrated into the consumer's memory. The next three parts of this chapter build upon the entirety of the conversation thus far. In Part 2, I reformulate the framing process model proposed in Chapter 2 as a probabilistic model, with framing devices acting as cues for the activation of socially shared schema, and the learned experiences of the receiver acting as the priors upon which the determination of 'fit' is made. Part 3 then discuss how these two models (the probabilistic framing process model and the information processing and belief formation model) can be used to better understand extant literature on framing effects. In Part 3, I then specifically apply these models to the question of the effect of the Dominant Terrorist Actor (DTA) framing device when discussing Non-Dominant Actors (NDAs), and propose a set of testable hypothesis.

Part 2: The Probabilistic Framing Process Model

As described earlier, frames are used to convey, interpret, and evaluate information, working symbolically to meaningfully structure the social and natural world. Journalists, as much as everyone else, rely on these socially shared principles of organization to construct meaning within discourse products and cognition. Once imbedded in communication or in thought, the frame acts as the packaging for a given set of information, tapping into socially

shared constructs to provide an interpretative structure, thus efficiently helping the recipient of a communication to understand the "proper" interpretation of a message or event.

For instance, given that the vast majority of the public (thankfully) lacks first-hand experience with terrorism – and often possess little if any personal knowledge of terrorist organizations – in order to discuss the actions of a little-known FTO, such as Ansar Dine, journalists must frame the organization in such a way as to efficiently communicate what the nature of the organization is (its form and function), how to think about the organization (especially in terms of moral judgment), and why it's important to pay attention to the framed organization.

The description of the framing process in Chapter 2 left off by describing the determinates of whether a given framing package will activate in the cognition of the receiver the framing package intended by the sender. Specifically, it was argued that the activation of the "correct" frame is dependent upon:

A. The extent to which the manifest framing devices are evocative of (i.e., act as cues for) the intended socially shared schemata
B. The activation potential of the intended socially shared schemata given the issue / context of the discourse product (a function of how often and how recently the issue schema and the intended socially shared schemata have been co-activated)
C. The general activation potential of the intended socially shared schemata (a function of how often and how recently the schemata have been activated).

All three of these statements were written with the knowledge that they would later be considered within the context of information processing, and so in and of themselves do not

need to be updated. The description of the framing package is simply a description of how cues for the activation of socially shared schema are manifest in communication, and socially shared cognitive schema (the manifestation of frames in thought) are simply a subset of the cognitive schema available to individuals when processing information within their environment. However, given that LTM and learning are fundamentally probabilistic, it is useful to recast the above statements in terms of a probabilistic system. [26]

Formalization of the Probabilistic Framing Model

Figure 3 provides a graphical depiction of this model, extending from the creation of a message by the sender to interpretation of the message by the receiver. The only directly observable part of this system is the message, which is represented as being composed of the elements of the frame package manifest in the message (**w**) and a given set of information manifest in the message (**d**). These elements are conditionally independent, with both determined by the (generally socially shared) schema used to package the information (c), and the information that the sender intends to communication (z).

[26] Gallistel and Matzel (2013) actually extend the ideas of statistical inference to the concept of perceptual frames of reference, arguing that "Frames of reference anchored to perceptible landmarks in an enclosed space can prevent the accumulation of error while the animal is in that environment" (2013, p. 186). This statement perfectly encapsulates the conceptualization of frames put forth in my prior definition, making the "perceptible landmarks" function as framing devices in the natural environment. Importantly, the role played by these landmarks, preventing the accumulation of error, is the same role I prescribe to frames writ large.

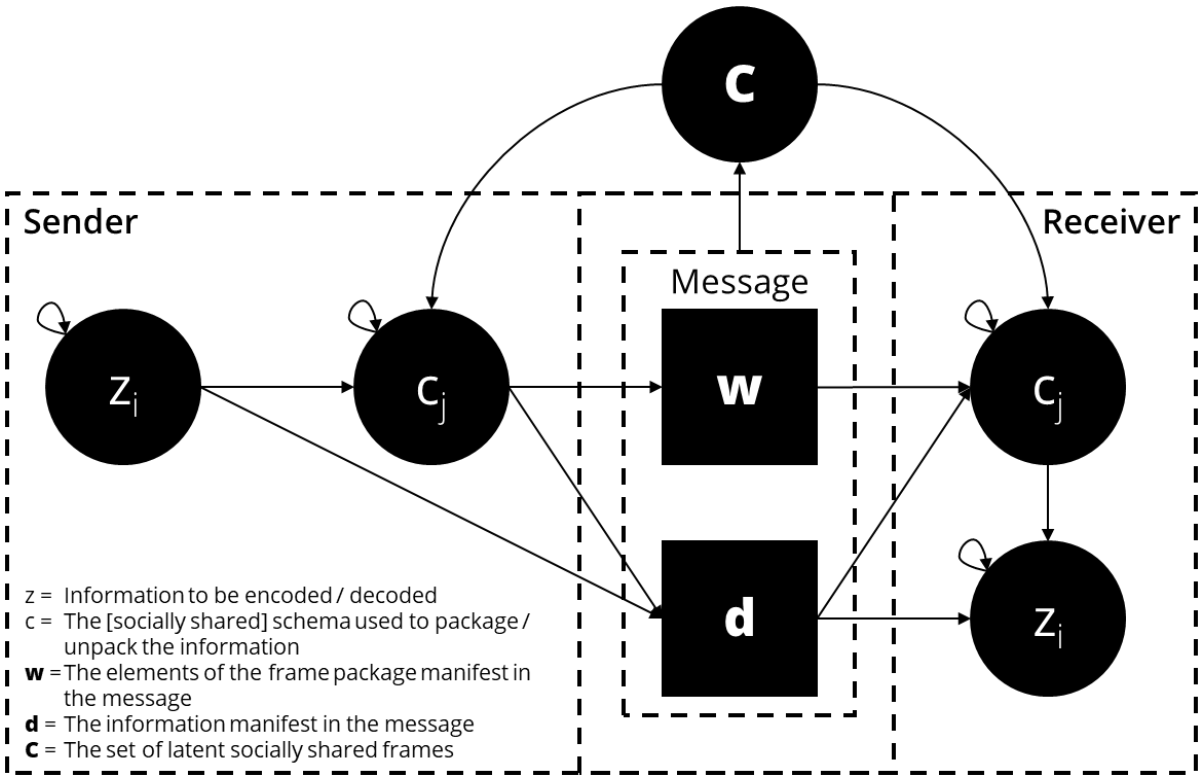

Figure 3. Graphical depiction of the probabilistic framing process model.

Using this notation, the system described thus far can be recast into a crude probabilistic system, in order to describe both the creation and interpretation of a given message. Because **w** and **d** are conditionally independent, we can model them each with their own separate equation. In the case of the manifest elements of the frame package, we obtain:

$$P(\boldsymbol{w}, c, z) = P(\boldsymbol{w}|c, z)P(c|z)P(z). \quad (1)$$

In the case of the information manifest in the message, there is a slightly more complex set of equations, given that c is dependent on z, and **d** mutually dependent upon z and c. However, this can still be described, using a nested function. For some z_i, where i is a subset of the entire sampling space that z can take, and for some c_j, where j is a subset of the entire sampling space that c can take:

$$P(\boldsymbol{d}, c) = \begin{cases} P(\boldsymbol{d}|c_i)f(c_i), & j \cong i \\ 0, & j \ncong i \end{cases} \quad (2)$$

What this equation says is that for **d** and c to co-occur, there must be an equivalence between the information to be encoded and the schema used to encode the information. This both is a natural outcome of the probabilistic model outlined in Figure 3, but also reflects the theoretical model outlined in this Chapter.

Narrowing the focus – the sender.

While these two equations are the most generally applicable statements of a probabilistic framing process model, if we can accept the assumption that for any given c to be used in the processing / packaging of a given set of information there must be an approximate equivalence between c and z, we can actually boil z and c down into a single latent construct, and thus the framing process model into a single equation. Where both **w** and **d** are dependent upon the state of c, and where, c is dependent upon z *and* there must be a match between c and z for **d** to occur, we can limit our conversation to the special case wherein $i = j$. Doing this we get a single equation to describe the cooccurrence of **w** and **d**, namely:

$$P(\boldsymbol{w}, \boldsymbol{d}) = \sum_{j=1}^{J} P(c_j) P(\boldsymbol{w}|c_j) P(\boldsymbol{d}|c_j). \quad (3)$$

This equation can be viewed as the internal and most often subconscious calculation by which the sender determines the construction of any given communicative message. Functionally speaking, the creation of a message can be thought of as a (largely sub-conscious) attempt to minimize the amount of uncertainty related to the interpretation of a message, while accommodating the needs of the medium through which the message is carried. This can be done either by increasing the power of the framing package to evoke the desired frame of reference and/or by excluding information which would imply a different

set of frames. Equation 3 is an expression of the internal and most often subconscious calculation by which this is determined.

Narrowing the focus – the receiver.

Via application of Bayes theorem, Equation 3 can also be recast into a form which is useful for understanding the way a receiver interprets a given communication. Specifically:

$$P(c_j = k|\boldsymbol{w}, \boldsymbol{d}) = \frac{P(c_k)P(\boldsymbol{w}|c_k)P(\boldsymbol{d}|c_k)}{\sum_{j=1}^{J} P(c_j)P(\boldsymbol{w}|c_j)P(\boldsymbol{d}|c_j)}. \quad (4)$$

What this describes is the probability that the correct socially shared frame (c_j) is j, from the perspective of the receiver, given the co-occurrence of the framing package and manifest information ($\boldsymbol{w}, \boldsymbol{d}$). The resultant equation is composed of three pieces, (a) $P(c_k)$, which is the prior probability of latent frame c_k; (b) $P(\boldsymbol{w}|c_k)$, which is the perceived probability of observing the elements of the framing package $\boldsymbol{w}$ given that c_k was used when creating the message; and (c) $P(\boldsymbol{d}|c_k)$, which is the perceived fit between the information manifest in the message and the latent frame, manifest in cognition in the form of a socially shared schema.

Interestingly, this is not the only way that $P(c_j = k|\boldsymbol{w}, \boldsymbol{d})$ can be specified. Specifically, by reversing the arc between $\boldsymbol{d}$ and c, and factoring out the latent frame from the denominator (in favor of an emphasis on the pairing of the framing package and the information), we get:

$$P(c_j = k|\boldsymbol{w}, \boldsymbol{d}) = \frac{P(\boldsymbol{d})P(\boldsymbol{w}|c_k)P(c_k|\boldsymbol{d})}{P(\boldsymbol{d})P(\boldsymbol{w}|\boldsymbol{d})} = \frac{P(\boldsymbol{w}|c_k)P(c_k|\boldsymbol{d})}{P(\boldsymbol{w}|\boldsymbol{d})}. \quad (5)$$

Equations 4 and 5 are equivalent parameterizations, however, we learn two things from this expression. First, we learn that the probability of a frame being activated is inherently dependent upon the perceived probability of observing the elements of the framing package, given the informational context, as shown in the denominator $P(\boldsymbol{w}|\boldsymbol{d})$. Words and phrases

that are simply "part" of the discourse in a given context are less likely to activate the intended socially shared frame, all else equal. Second, by reversing the arc to view frame activation as dependent upon the informational context – that is, $P(c_k|\boldsymbol{d})$ – we can better see the role of "fit" described when discussing the framing process model.

Part 3: Implications for the Study of Framing Effects

The previous discussion on memory and information processing provides a general framework from which to identify structural, informational and contextual components embedded within news media messages that may function to alter the psychological relevance of the information contained in the message. In combination with the probabilistic framing processes model, I have provided the building blocks for a generalized predictive model which can be used to guide the development of research questions and hypothesis. Given general limitations of human endurance, it is not possible to fully delineate the applications of this model, nor all its implications. However, focusing on a select number of relevant questions, we can begin to understand how this model provides greater insight into our understanding of both media effects in general, and framing effects specifically.

As with the frame concept writ large, there are many conceptualizations of framing effects, varying wildly in their focus and complexity (Borah, 2011). Additionally, there are many framing effects models which embrace, rather than reject, the mere exposure approach of classic mass communication theories (Craft & Wanta, 2004; McCombs, Llamas, Lopez-Escobar, & Rey, 1997). The approach to framing effects research taken by Chong and Druckman (Chong & Druckman, 2007a, 2007b; see also: Bolsen, Druckman, & Cook, 2014b; Druckman & Bolsen, 2011) is noteworthy, however, due to how closely it aligns with the model of memory and information processing established earlier, and it's frequent

application when looking at framing effects in the context of terrorism (Boydstun & Glazier, 2013; Chong & Druckman, 2010; de Vreese, Boomgaarden, & Semetko, 2011; Slothuus, 2008; Slothuus & de Vreese, 2010).[27]

According to Chong and Druckman (2007a), "framing refers to the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue" (p. 104), the effect of which occurs "when a communication changes a person's attitude toward an object (e.g., policy) by increasing the weight given to a subset of relevant considerations" (Bolsen, Druckman, & Cook, 2014a, p. 2). This is done through one of three processes: (1) by making new beliefs *available*, i.e., by creating a new implicit belief; (2) increasing the *accessibility* of a consideration, i.e., increasing the probability of activation for an object reference; and (3) increasing the *applicability* of a consideration, i.e., increasing the probability of coactivation (Chong & Druckman, 2007b, p. 110).

If we take as given that the C&D approach explains *how* frames derive their effect, the next question to address is *when* or *for whom* frames affect beliefs. One area of special interest to those studying framing effects has been the question of how the information is being processed, especially as it relates to the amount of effort an individual engages in when processing a given set of information (see, e.g., Chong & Druckman, 2007a, 2013; Geise & Baden, 2015; Igou & Bless, 2007; L. Shen & Dillard, 2009; L. Shen & Mercer Kollar, 2015), that is, the extent to which they exert Executive Control. This topic is of special interest to researchers given that frames are conceived as a tool for guiding information processing, and

[27] The only other commonly employed framing effects model I could identify, in the context of terrorism, is the model put forth by Price and Tewksbury (1997; see also: Price, Tewksbury, & Powers, 1997). This includes the study by Brinson and Stohl (2012). However, the Chong and Druckman model is nothing if not an extension of the Price and Tewksbury model, making all the same predictions albeit without the unnecessary restriction of framing effects to changes in applicability, and with substantial expansions.

that the vast majority of research takes as given that increased Executive Control is the answer to reducing the negative side effects of framing (e.g., Baumer et al., 2017; Simon et al., 2004; B. K. Smith et al., 2016, 2017; Zhao & Peterson, 2017).

The Moderating Role of Executive Control

While there is no dearth of research exploring the role of elaborative vs. automatic processing (that is, high Executive Control vs. low Executive Control) in moderating framing effects, the empirical findings have been mixed at best. In a series of three experiments, Igou & Bless (2007) demonstrated that "framing effects increase when individuals engage in an *effortful constructive* processing style" (p. 137). These findings echo those of de Vreese (2004) who showed that increased issue elaboration resulted in increased probability of frames in news content being used to construct opinions. In contrast, however, Druckman (2004) showed that increased issue elaboration (in the form of increased deliberation) attenuated framing effects, as did Chong and Druckman (2010).

It is my contention that these divergent results can largely be explained by a failure to acknowledge that the way a given set of information is processed can affect both the size of an effect and the probability of an effect. From the perspective of the information processing and belief formation model outlined in Part 1, the *size* of a framing effect should be directly related to the amount of effort an individual exerts in processing the framed information, all else held constant. Simply put, as the depth of processing increases (i.e., as cognitive elaboration, and thus Executive Control increases), the level of integration also increases (Craik & Lockhart, 1972; Craik & Tulving, 1975). More formally, the longer a piece of information is held and manipulated in working memory – the more it is considered in the context of unique perspectives and connections – the more broadly and completely it will be

integrated into an individual's knowledge structure. Framing exerts an effect by guiding the processing of information through the activation of appropriate cognitive schema. As such, the more effort excreted in processing the information, all else equal, the greater the influence of the frame, as shown by Igou & Bless (2007).

In contrast, it is equally true to say that the *probability* of a framing effect should be inversely related to the amount of effort an individual exerts in processing the framed information. This can be most readily seen in dual process information processing models (e.g., Chaiken & Trope, 1999; Petty & Cacioppo, 1986), and framing effects theories built from these models (e.g., Chong & Druckman, 2007a, 2007b), but is also consistent with the criterion shift principle outlined previously which posits that as the cognitive resources dedicated to elaborative processing increases, the criterion for judging applicability also increases (Aminoff et al., 2012, 2015), thus shifting the shifting the probability of the frame being selected. This causes an increased probability of a frame being deemed inapplicable (as discussed in relation to Equation 5), and therefore a decreased probability of the frame being used to guide information processing. In a fundamental sense, this is the mechanism Baumer et al. (2017) exploit in development of their intervention for reducing framing effects in perceptions of global climate change.

The Importance of Context

In addition to the considerations related to the role of Executive Control, the probabilistic framing process model and the model of belief formation and information processing outlined herein also allow for predictions related to informational context. This discussion can be split into three sets of considerations: (a) the influence of context on motivation, (b) the latent nature of frames.

Context and motivation.

There is an interesting implication embedded into the proposed model of belief formation and information processing, as presented, namely that the effects of frames are at least in part a function of the relevance of the information, with the likelihood of framing effects increasing as the level of personal relevance decreases. I believe this can in part explain why framing has such a powerful influence on individuals perceptions and understanding of international affairs, as demonstrated by Entman (2004), *and* why research on the knowledge gap consistently finds larger effects when considering information related to proximally distant issues.

In a comprehensive meta-analysis of the knowledge gap, Hwang and Jeong (2009) found that the size of the gap between high and low SES individuals varied significantly as a function of setting. "Studies involving international issues (r = .50) yielded the highest level of knowledge gap, followed by national setting studies (r = .29), personal setting (r = .25), and local setting (r = .21)" (2009, p. 522).[28] A reasonable hypothesis can be made suggesting that the reason for an increasing gap as the level of proximal distance increases is due to a general decrease in the motivation to process said information, caused by a decrease in personal relevance. If this were the case, all else held equal, the model presented herein would suggest that increases in the proximal distance of the issue being framed should lead to a general increase in the *probability* of a framing effect occurring.[29]

[28] Notably, the 95% CI interval for personal setting completely subsumed that of local setting, suggesting that the ordering of the two setting may be a function of increased variability in reported findings.

[29] I would also expect that increases in proximal distance would decrease the influence of partisanship, however, that is a discussion for a different paper.

The latent nature of frames.

Apart from the influence of context on motivation, the final consideration I would like to discuss is the distinction made in Chapter 2 between frames as latent constructs, and frames in communication/thought as manifestations of these social constructs. The challenge when applying this conceptualization to the study of framing effects is that almost all framing effects models either implicitly or explicitly assume that frames are issue specific (e.g., Chong & Druckman, 2007b; Entman, 1993; B. T. Scheufele, 2004). The C&D model is one of the most explicit in this assumption:

> A frame in communication can be defined only in relation to a specific issue, event, or political actor. For example, the frames for social security reform differ from the frames for immigration reform. Even the same issue at different times may invoke alternative frames (e.g., the frames used for social security reform in 1997-2000 are not identical to those invoked in 2003-2005). (Chong & Druckman, 2007b, p. 106)

In my view, this is a somewhat shortsighted conceptualization, implying that any shift in the framing of an issue ultimately means the original frames no longer exist. In contrast, the conceptualization I present divorces the frame from the topic, which suggests the possibility that the same frame may be applied to various topics.

While I present compelling arguments for why frames should be viewed as socially shared (or at least, I think they are compelling), the argument is based on logic not empirical findings. However, I do believe that the memory and information processing model I have presented herein provides a useful framework for future research to test this assumption. Specifically, if "cognitive frames" are manifestations of socially shared latent frames, as suggested by my definition of frames / framing, then in the absence of affective reactance, it would be expected that embedding a frame that the C&D suggests is issue and domain specific, e.g., an economic cost frame, into an issue which exists in a separate public opinion

domain, e.g., the war on terror, should result in opinions about the framed issue which, on average, more closely reflect opinions in the original opinion domain than would otherwise be expected. If, however, frames are indeed issue and context specific, then no effect should occur due to the general incongruences of the frame.[30]

Part 4: The Current Study

Part 2 of this chapter extended upon Chapter 2 to propose a probabilistic framing process model. Part 3 then applied this model, along with the model of belief formation and information processing described in Part 1, to our understanding of framing effects. These sets of considerations are relevant to understanding the possible effects of using dominant terrorist actors (DTAs) and framing devices in discourse about NDAs, and as such serve the basis for an experimental study testing the effects of the DTA framing device.

Prior to laying out hypotheses related to framing specifically, it is first worth considering the normative case, that is, what should happen in the absence of the DTA framing device. I will begin with a basic supposition: prior domain specific beliefs should be predictive of future domain specific beliefs, all else equal. The logic of this supposition is self-evident (the state of X at t1 is almost always the best predictor of X at t2), however, it is also suggested by the online updating and affect transfer processes described in Part 1 of this chapter.

The question of interest in the normative case is deciding which domain specific beliefs are relevant within the given context. Given that the typical discussion of a foreign NDA in the U.S. is limited to episodic coverage of attacks conducted by the NDA (B. K.

[30] Note, however, that this should only be true in cases where there is little to no exertion of Executive Control, as even a modest shift in the applicability criterion should obfuscate this result.

Smith et al., 2017), and given that the vast majority of the public views terrorism as a "critical threat" (Norman, 2018), I assume that whether intended or not the effect of reading a news article about an NDA will be to map an individual's general perceptions of the threat from terrorism to their beliefs about the threat from the NDA. That is to say, prior perceptions of threat will guide future perceptions of threat. This can be stated in the form of our first hypothesis:

H1a: When presented with a news article describing an attack conducted by an NDA, there will be a positive direct effect of prior perceptions of the threat from terrorism in the U.S. on perceptions of the threat of the NDA to the U.S., such that those with the highest levels of prior threat perceptions will have the highest perceptions of the NDA as a threat, all else equal.

This hypothesis should generally hold true regardless of whether a DTA is used as a framing device or not and should, as with most "priors" also be the single strongest predictor of individuals perceptions of the threat posed by the NDA.

Based on the conversation in Part 1 of this chapter, it is also possible to make a general prediction about the role of executive control. A primary function of executive control (and specifically interference control is to desensitize emotional pathways, thus decreasing the likelihood that the affect system will be activated when presented with external stimuli. Given that the affect system is the primary mechanism whereby humans decide what is and is not threat, increases in executive control (which lead to a decreased likelihood of affect system activation) should result in lower beliefs that the NDA is a threat. Put more formally:

H1b: When presented with a news article describing an attack conducted by an NDA, there will be a negative direct effect of Executive Control on perceptions of the threat of the NDA to the U.S., such that those with highest levels of Executive Control will have the lowest perceptions of NDA as a threat, all else equal.

Following from these two base considerations, the next thing to discuss is the role of the DTA framing device. Here it is useful to again consider that the primary framing of DTAs has historically been as threat (B. K. Smith et al., 2016), and that the context within which DTAs emerge into the public consciousness is through events which are deemed highly threatening (i.e., 9/11, the beheading of James Foley). Given this and given that the default frame for thinking about an article describing an attack by an NDA is "threat," then Equation 4 suggests that inclusion of the DTA framing device should increase the likelihood of using the "threat" frame to process the information. This leads to Hypothesis 2:

H2: When presented with a news article describing an attack conducted by an NDA, there will be a direct effect of the DTA framing device on the perceived threat of the NDA to the U.S., such that those read an article wherein an NDA is framed as "linked to" a DTA will believe the NDA poses a greater threat to the U.S. than those who read an article wherein the NDA is not explicitly linked to a DTA.

Notably, all else equal, this effect should be independent of both H1a and H1b: it should hold after accounting for the effect of both prior threat and Executive control.

The final hypothesis to be tested in this study relates to the differential role of Executive Control described in the section on framing effects, which built upon both the model of belief formation and information processing and the probabilistic framing process model. Essentially, when a DTA framing device is used to activate the "threat" frame, increases in Executive Control should moderate the relationship between prior perceptions of threat and perceptions of the NDA as threat. When individuals are exerting little to no Executive Control, there should, in effect, be no effect of prior threat – that is to say, perceptions of NDA threat should entirely be driven by the frame. In contrast, when individuals are engaged in high levels of Executive Control, there should be large differences in perceptions of NDA threat, with those having high levels of prior threat reporting high

levels of NDA threat, and those with relatively low levels of prior threat reporting relatively low levels of NDA threat. Functionally speaking, this is a manifestation of shifts in the criterion of applicability, and can be formally expressed with the third and final hypothesis:

H3: When presented with a news article describing an attack conducted by an NDA in which the NDA is framed as "linked to" a DTA, there will be a positive interaction effect between Executive Control and prior perceptions of the threat from terrorism in the U.S. whereas there will be no interaction effect for those who read an article wherein the NDA is not explicitly linked to a DTA.

Of course, finding this hypothesis to be statistically true will only partly confirm the hypothesis. The true test will be in the pattern of loadings found when decomposing the effect, with the expected set of relations shown in Figure 4. In the no DTA framing device case, I've depicted all three lines having the same relationship (b = .25), with the intercept varying as a function of prior threat (b_0 for high prior threat = 1, average prior threat = 0, low prior threat = -1). In the case where there is a DTA framing device, the distance between the intercepts stays the same, albeit I have increased all three by .5, as a reflection of the direct effect of the frame. In addition, each of the slopes has changed: for those with the highest prior threat, the slope is expected to be ~ 0; for those with the lowest prior threat the slope is expected to be ~ 2x the slope of those with average prior threat; and those with average prior threat are expected to be roughly halfway between the slope for High Prior Threat and the slope for Low Prior Threat (in the figure this is shown as b = .5). What matters in testing hypothesis 3 is not necessarily that these intercepts and slopes are exactly equivalent to those in these graphical depictions. However, for hypothesis 3 to hold, the general pattern of loadings should be consistent.

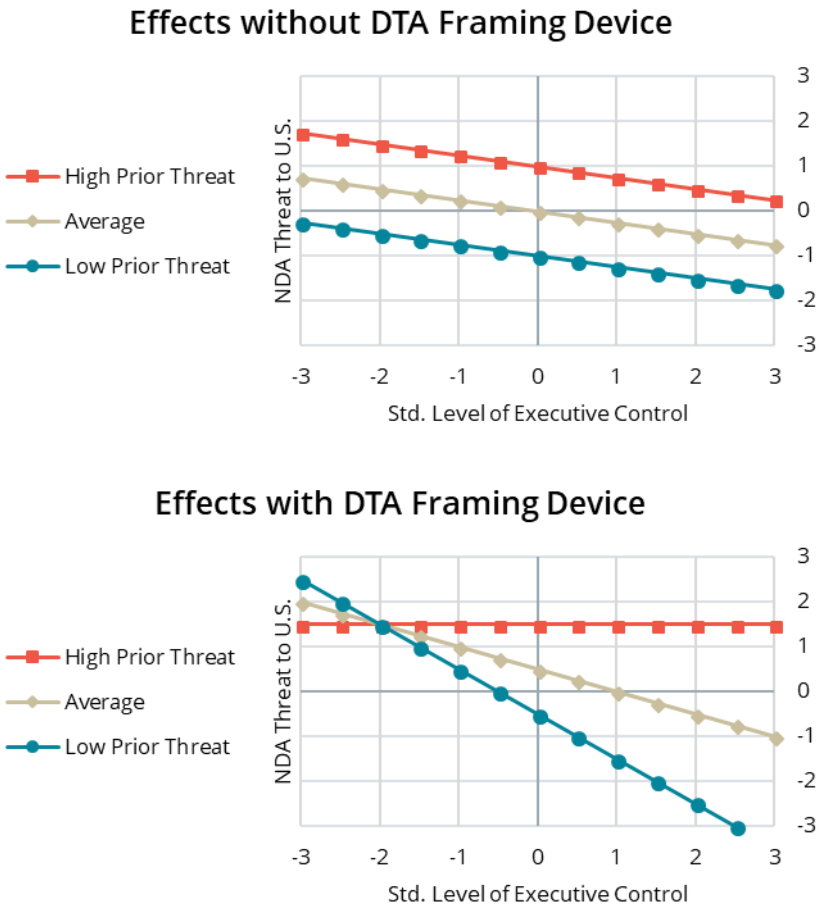

Figure 4. Graphical depiction of expected three-way interaction between DTA framing device, prior threat, and executive control.

Chapter 4. Study Context and Methods

Using an online survey-based experiment, this study tests the effects of the dominant terrorist actor (DTA) framing device in news media (and specifically the "devil you know" framing package; see: B. K. Smith et al., 2017) on beliefs about the threat of non-dominant actors (NDAs) to the U.S. Based on the results of a longitudinal analysis of newspaper article mentions in the *New York Times* and *Wall Street Journal*, as well as article level co-occurrences between terrorist actors (both analysis are found in Chapter 2 Part 3), the DTAs selected for this study were al Qaeda and ISIS. These two groups have dominated news coverage of terrorism and terrorist actors over the last 21 years, with al Qaeda serving as the primary referent for NDAs from 09/11/01 to 08/19/14 (and the secondary referent from 08/20/14 through at least 12/31/17), and ISIS serving as the primary referent from 08/20/14 through at least 12/31/17.

This chapter outlines the full methods and procedures used in this study. I begin by outlining the sampling, data collection, and weighting procedures. In Part 2, I discuss the experimental manipulations, and provide justification for the selection of al Shabaab and the New IRA as the NDAs being framed.

Part 1: Sampling and Data Collection Procedures

Prime Panels was contracted to acquire a quota-based sample of 2,000 U.S. adults. The study was fielded using the Qualtrics survey platform, from 04/11/2018 to 04/19/2018. Quotas were based on U.S. Census estimates of age, gender, Hispanic ethnicity, and race, as well as Gallup survey estimates of political party affiliation (Gallup News, n.d.) and religious affiliation (Gallup News, 2017). The sample was overfilled, with a total of 2,422 qualified

respondents reaching the end of the survey.[31] However, 4.4% of these respondents (n = 106) were removed from the sample based on a set of pre-specified criteria: 67 were removed because they self-reported not having read the manipulation,[32] and 39 because of spam like responses to open-ended questions (e.g., "fgnlksfd kdfklsdnkasd"). The final sample size was 2,316.

Raked design weights (i.e., rim weights) were used to match the sample to population parameters on gender, age, ethnicity, race, education, and income. Population estimates were taken from the United States Census Bureau (2017a, 2017b, 2017c). The table in Appendix B contains full information on the raw sample demographics, the population proportions used, and the weighted sample demographics. The largest weight was 7.06, and the smallest weight was .06 (*Mdn* = 0.776, *SD* .782). The overall sample balance (or rim weighting efficiency) was .6203. This is calculated as $E = \frac{(\sum_i R_i)^2}{N \sum_i R_i^2}$, where R_i is the rim weight for case i. In practice this means that the effective sample size for this study was .6203 * 2316 ≈ 1437.

Part 2: Experimental Manipulations

This study used a reconstructed news article, varying by NDA, and DTA as the primary stimuli. The full text of each article can be found in Appendix C.[33] The NDAs selected for this study were al Shabaab and the New IRA. These two organizations differ in tactics, ideology, and goals, and yet both have been framed as "linked" to either al-Qaeda

[31] To qualify for the study, respondents needed to be over the age of 18, reside in the U.S.

[32] This was found by responses to the question: "Understanding that your response to this question will have no effect on your compensation whatsoever, and will be kept confidential, how closely would you say you read the news article?" This question appeared at the end of the substantive portion of the survey, immediately prior to the demographics block of questions. Anyone who responded saying they did not read the article, or that they only read part of the article, was removed.

[33] The articles also varied by image, however, findings related to the impact of image are not part of the current study, and as such are ignored. Numerous tests were conducted to ensure this decision did not impact the results presented herein. This is discussed further in Appendix D.

and/or ISIS (e.g., Millar, 2016; Omar & Hussein, 2017). In both cases there is also little to no evidence that the NDA has ever actually worked with either of the DTAs, and in both cases the goals and ambitions of the NDA appear to be regionally bound, implying they pose little to no actual threat to the U.S. directly. Al Shabaab was selected as an ecologically valid NDA, given the superficial similarities between the group and the DTAs, and given that the organization is officially designated as "linked" to al Qaeda by the U.S. State Department. The New IRA was selected as a strong test of the DTA framing device, given the lack of any similarities with the DTAs, apart from their shared designation as U.S. State Department Foreign Terrorist Organizations.

Article Content and Structure

I created separate news stories for both of these actors, focusing on real world terrorist attacks claimed by the NDA. In both instances, respondents were told that the article was published by Reuters, and the articles were formatted to match the content typical of online newspapers. The Shabaab stimuli was based on a Reuters news story describing a car bombing which occurred in Mogadishu, Somali on 07/20/2017 (Omar & Hussein, 2017; see also: Reuters, 2017). In the original news story Shabaab is described as "Al Qaeda-linked al Shabaab" (Omar & Hussein, 2017, para. 4). The New IRA stimuli was based on a set of Express news story describing a car bombing which occurred in Belfast, Ireland on 03/15/2016 (O. Smith, 2016; Sykes, 2016), and an article published shortly thereafter claiming that "THE IRA is helping ISIS develop deadly new car bombs for an attack on mainland Britain" (Millar, 2016, teaser). Small edits were made to maintain consistency between the article used for the Shabaab condition and the New IRA condition, and the dates

of the events were altered to (a) take place on the same day, 02/20/2018,[34] two months prior to fielding of the study. Importantly, both articles make direct reference to the regional motivations of the NDA, while avoiding any suggestion of non-regional ambitions.

DTA Conditions

Within the article created for each NDA, the only way the text of the stimuli varied was on which DTA the organization was described as linked to (none, al-Qaeda, or ISIS). In the headline, the Shabaab was described as "Islamic militants," "al Qaeda linked militants," or "ISIS linked militants," depending on condition, while the New IRA was described as "Republican dissidents," "al Qaeda linked dissidents," or "ISIS linked dissidents." Additional language linking the organization to the DTA appeared in the headline, photo caption (where applicable), lead, second, third, and fifth paragraph.

Manipulation Checks

To determine whether the manipulations worked, respondents were asked at the end of the study (immediately prior to demographic information block): "In the article that you read, were any other terrorist organizations mentioned, other than the [NDA]?" If they responded yes, or maybe, they were subsequently asked to write down the name of the organization. 73% of respondents (n = 1,683) were accurately able to either identify the DTA or identify that no other organization had been mentioned.

Part 3: Measurement of Key Constructs

Figure 5 shows the flow of participants through the online survey-based experiment, from informed consent through debriefing. This study utilizes only a portion of the variables

[34] The date of the attack only appears in the photo caption, and thus is not mentioned in the "no image" conditions.

measured; the full text of all survey items, as well as full randomization procedures, can be found in Appendix E. What follows is a description of the measures used in this analysis.

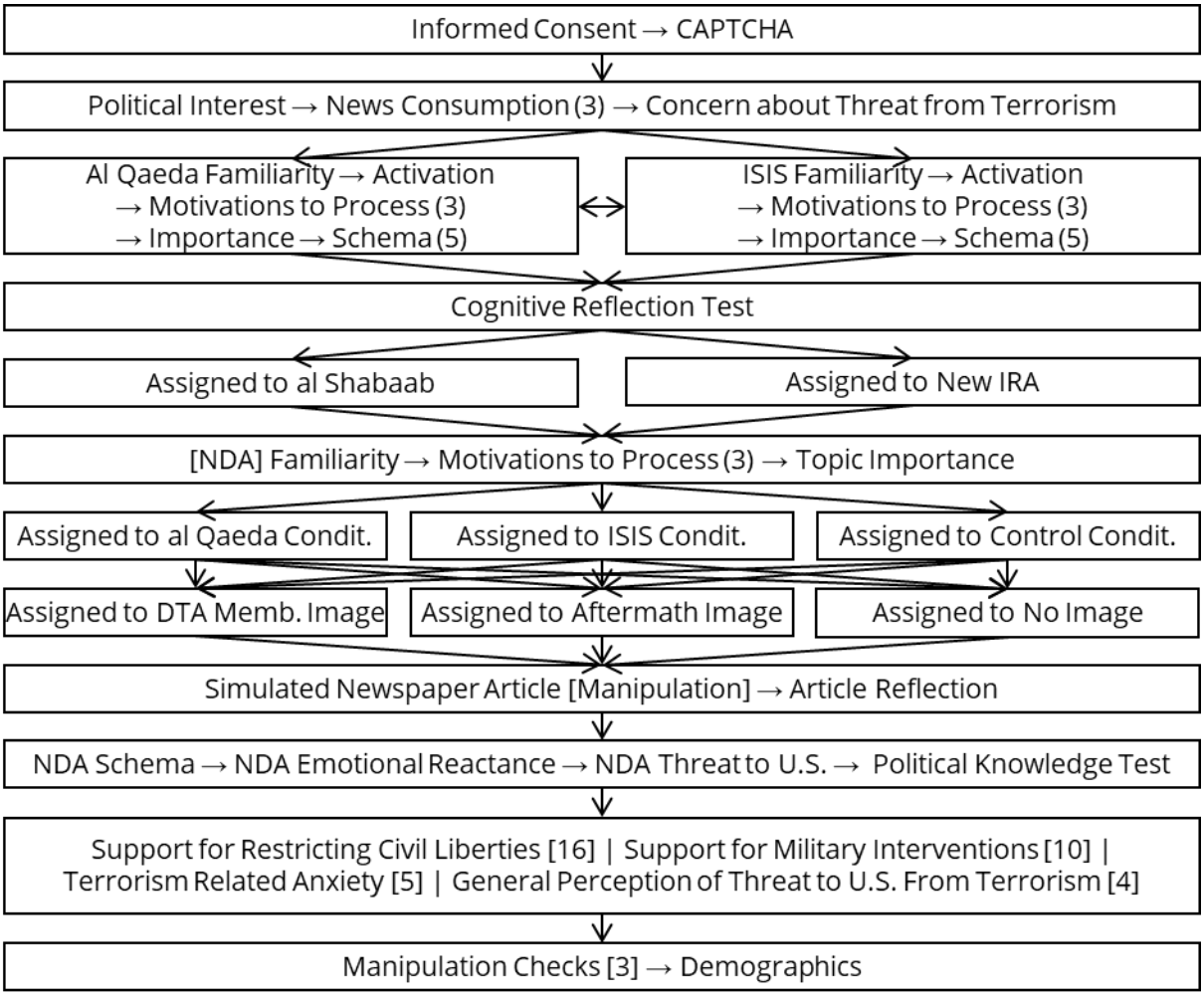

Figure 5. Flow of participants through online-survey based experiment.
→ indicates a new block of questions progressing linearly; | indicates a new block of questions, with the blocks randomized in their presentation order. Arrows descending from blocks indicate progression of respondents through the survey; whenever more than one arrow descends from a block, respondents are randomly assigned to one of the available paths. The double arrow between the al-Qaeda set of questions and the ISIS set of questions indicates that respondents were first asked one of the two sets, and were then asked the other set (e.g., if they first were asked about ISIS they were then asked about al-Qaeda).

Dependent Variable – Perceived Threat of the NDA

The perceived threat of the NDA to the U.S. was measured using a set of three items. I randomized the order in which these questions were displayed to participants, to avoid any ordering effects. For two of the items, respondents were asked to indicate the extent to which

they agreed or disagreed (on a seven point scale ranging from -3 = strongly disagree to 3 = strongly agree) with a statement about the organization: (a) "The [NDA] is a threat to the security of the United States" (M = 0.31, SD = 1.75); and (b) "The [Framed Organization] have the will and capability to attack the United States" (M = -0.02, SD = 1.71). In addition, respondents were asked (c) "How likely do you think it is that the [Framed Organization] will conduct a terrorist attack in the United States in the next 6 months" (M = -0.47, SD = 1.78) with responses ranging from -3 (extremely unlikely) to 3 (extremely likely). These three items had good reliability (α = .880) and were loaded onto a single latent variable (NDA Threat).

Independent Variable: Prior Perceptions of the Threat from Terrorism

The primary independent variable used in this study was individual's prior beliefs about the threat from terrorism within the U.S. Given the dependent variable was perceived threat of the NDA to the U.S., it was important that the items used to measure the independent variable not tip respondents off to the study's purpose. As such, I included only one direct measure of threat prior to measurement of the dependent variable: asking respondents to report their level of concern "that the United States might suffer another terrorist attack in the next three months" with responses options ranging from -3, strongly unconcerned, to 3, strongly concerned (M = 1.09, SD = 1.50). This question was asked at the end of the first block of questions, along with questions about news consumption and interest in politics, prior to mention of any particular terrorist actors.

In addition to this question, I indirectly measured prior beliefs by asking respondents about the perceived issue important they assign to each terrorist discussed in the survey. I expected that the same psychological processes wherein individuals reported increased

concern about the threat of terrorism would produce higher levels of perceived importance related to each terrorist actor, and as such these items would load well together onto a single latent variable. At the end of each block of questions measuring individuals perceived issue importance for each terrorist actor, I asked: "How unimportant or important would you say the topic of [terrorist actor] is to you personally," with responses ranging from -3, not at all important, to 3, extremely important (al Qaeda: M = -0.05. SD = 1.59; ISIS: M = 0.35, SD = 1.58). The answer to these three questions was then averaged (M = -0.29, SD = 1.40), to create a single indicator of DTA importance. This measure was loaded onto a single latent variable (Pre-Threat), along with the general threat measure discussed in the previous paragraph.

Moderating Variable: Executive Control

The extent to which individuals engaged executive control over the processing of the information in the article they read – that is, the extent to which they deliberated and elaborated on the presented information – is expected to play a fundamental role as a moderator of framing effects. This construct has been measured a variety of ways – response latencies (e.g., Carlson, Poole, Lambert, & Lammers, 2017; Faust, Balota, Spieler, & Ferraro, 1999), self-reported prior dispositions toward engaging in effortful processing (e.g., Hodgkinson, Sadler-Smith, Sinclair, & Ashkanasy, 2009; Soane, Schubert, Lunn, & Pollard, 2015), overall survey response patterns (e.g., Kleiner, Lipps, & Ferrez, 2015; Krosnick, 1991), surrogate measurement of motivation and ability to engage in effortful processing (e.g., Druckman, 2004; Druckman, Peterson, & Slothuus, 2013; Grabe, Yegiyan, & Kamhawi, 2008; Hopmann, Vliegenthart, De Vreese, & Albæk, 2010; J. M. Miller & Peterson, 2004), etc. – each with its advantages and drawbacks. Rather than pick one of these

approaches, I decided to use two approaches: (a) coding of open-ended reflection responses for cognitive elaboration, and (b) measurement of time spent reflecting, and deliberating on the NDA. The resulting three indicators had acceptable internal consistency ($\alpha = .758$) and were loaded together onto a single latent factor (Executive Control).

The choice of these measurement approaches over others was driven by two considerations: feasibility, and validity. A number of possible approaches were ruled out due to limitations of the survey platform. For example, direct measure of response latencies while simple enough to measure in a lab are not possible to obtain using the Qualtrics survey platform.[35] The vast majority of alternative approaches were ruled out based on validity concerns. This primarily revolved around prior dispositions and surrogate measures of motivation and ability, which while often used are only loosely connected to the phenomenon of interest in any given context. For example, while someone with a high Cognitive Reflection score (i.e., Frederick, 2005; Primi, Morsanyi, Chiesi, Donati, & Hamilton, 2016) may in general be more able to engage in cognitive control, that does not mean they will do so in any particular context. Additionally, something like an individual's interest in a particular topic, a commonly used indicator of motivation, likely has multiple drivers, e.g., motivation, ability, and prior attitudes. The selected measures were a more direct and valid approach to assessing executive control in the current context.

Executive control indicator 1: Manifest elaboration in written reflection.

In keeping with previous research on media framing and the processing of mediated information, immediately following reading the manipulation, I asked respondents to "Please

[35] Qualtrics does provide information on the "time to first click," however, it was possible to take the survey without actually making any "clicks." For example, on the NDA reflection page, 85 individuals provided valid answers to the question without making a single click.

write down all the thoughts, ideas, or reflections induced by reading the news story, that is, those impressions that came to mind while reading it." This question is based off similar research attempting to assess the level of elaboration in individuals responses to mediated content (e.g., Igartua & Cheng, 2009; Shiv, Edell Britton, & Payne, 2004; Valkenburg, Semetko, & de Vreese, 1999). To translate this qualitative measure into a quantitative measure, responses to this question were coded by a set of four undergraduate students, blind to the experimental conditions, using the following coding scheme (M = 1.50, SD = 1.20):

0: No information and no elaboration contained in the response. Includes answers which only address emotional reactance to the article. (n = 708)

1: Single concept answers, e.g., "terrorist group," "George Bush" (n = 250)

2: Basic description, labels, definitions, and "facts." (n = 969)

3: Simple or abstract elaboration. This generally means the respondent puts the information in the article into a broader context, which was not explicitly mentioned in the article. (n = 254)

4: Complex elaboration. This generally means the respondent provides elaboration along multiple dimensions or displays analytical thinking. (n = 136)

If everything in the response was taken purely from the article, it could not be coded above a 2. Additionally, elaboration was only coded in relation to "information" and not in relation to emotional reactance. This coding scheme was developed following a constant comparative analysis of the responses to the same question in a pilot survey, and is similar to other approaches used to assess cognitive elaboration in media studies research (e.g., Igartua & Cheng, 2009; Igou & Bless, 2007).

Of the 2,635 responses to the article reflection question (which includes responses later removed from the analysis; see above), 435 (16.5%) were randomly selected to be

coded by all four coders. The coders were unaware of which responses were being coded by multiple individuals, and the selected responses were randomly distributed throughout each coding file. Krippendorf's alpha (Kalpha) for ordinal data was used to assess inter-coder reliability, using the SPSS macro provided by Hayes and Krippendorff (see: Hayes & Krippendorff, 2007). According to Krippendorff: "To assure that the data under consideration are at least similarly interpretable by two or more scholars (as represented by different coders), it is customary to require [Kalpha] ≥ .800" (Krippendorff, 2004, p. 429). The resultant inter-coder reliability across the four coders was α_k = .822, 95% CI [.788, .849]. This falls well within the recommended range for academic research of $\alpha_k \geq .800$ (see: Krippendorff, 2004, 2012), with the probability of having failed to reach at least .800 (based on 1,000 bootstrap samples) of only 7.80%.

Executive control indicators 2 & 3: Reflection and description timing measures.

I indirectly assessed executive control by tracking the time spent by each respondent on the cognitive reflection page (ln-transformed *M* = 3.68, *SD* = 0.917, Range = 0.20 – 7.30, *n* = 2312), and the subsequent page asking respondents to describe the NDA to someone who had never heard of the group (ln-transformed *M* = 3.97, *SD* = 0.77, Range = 1.52 – 7.02, *n* = 2314). Both of these activities require some amount of deliberation (see: Diamond, 2013), and this approach to assessing deliberation has been used in previous research (e.g., Schaffner & Roche, 2017). To avoid issues with multivariate outliers, extreme outliers ($\pm 3.5\sigma$) were removed and treated as MAR in the final analysis.

Part 4: Analysis Plan

All analyses, unless otherwise specified, were conducted using M*plus* 8.0 (Muthen & Muthen, 1998-2017). Full information maximum likelihood estimates with sample weights

were used to calculate parameters across all models, with robust standard errors computed using a sandwich estimator (MLR estimation; L. K. Muthén & Muthén, 2017, p. 668). When required, the Expectations Maximization (EM) algorithm was used to compute parameters, with standard errors computed using a numerical integration algorithm (more on this in the discussion of the relevant analyses).

Assessment of Measurement Model

In determining the adequacy of the measurement model, the first step was to run a confirmatory factor analysis (CFA) on the proposed three factor structure. Commonly used model fit statistics were examined to judge the adequacy of the CFA, including the root mean square error of approximation (RMSEA) test of close fit, the comparative fit index (CFI), and the standardized root-mean-square residual (SRMR).[36] The RMSEA test of close fit assess the null hypothesis that RMSEA is $\leq .05$; if the null hypothesis is accepted, then it can be concluded that the model does indeed have close fit (Browne & Cudeck, 1993). CFI is an incremental fit index, with higher values indicating good model fit, when compared to a baseline model where all variables are uncorrelated (Brown, 2015). While RMSEA and CFI are both adjusted indices, SRMR is an absolute fit index, showing the "average discrepancy between the *correlations* observed in the input matrix and the correlations predicted by the model" (Brown, 2015, p. 70). Hu and Bentler (1999) suggest that acceptable fit requires both a CFI $\geq .95$ and SRMR $\leq .08$. While some simulation studies have challenged the validity of this two-index strategy (e.g., Fan & Sivo, 2005), it is still commonly applied in the literature, and as such was used as a criterion for model fit herein.

[36] In line with tradition, the χ^2 likelihood ratio test is also reported. However, it is well known that large sample sizes can inflate χ^2, rendering the resulting statistic largely meaningless (e.g., Brown, 2015; Fabrigar, Wegener, MacCallum, & Strahan, 1999; Kline, 2016). Due to the relatively large sample size, it was expected that all χ^2 would be significant.

Following confirmation of the overall measurement model, I then tested for measurement invariance across conditions, that is, whether scores from the operationalization of the three latent constructs have the same meaning for individuals in each condition (Meade & Bauer, 2007). Determination of measurement non-invariance followed the guidelines set by Chen (2007).[37] When testing for loading invariance (i.e., metric invariance), the criterion is ΔCFI > -.010, and either ΔRMSEA < .015 or ΔSRMR < .030. When testing for intercept invariance (i.e., scalar invariance), the criterion for ΔSRMR shifts to < .010 (see: Chen, 2007, p. 501).

Assessment of Hypothesized Model

After establishing measurement invariance, the hypothesized model was tested using a series of structural equation mixture models (SEMM), with experimental condition as a "known class." The mixture approach, which fits a separate structural model for each condition while holding the measurement model constant, is analogous to running a multigroup structural equation model (B. O. Muthén, 2002), and was chosen over group code analysis (e.g., dummy coding condition) as the results are, in general, comparable under the assumption of measurement invariance (with the multiple group approach preferable under conditions of partial and/or non-invariance; Dimitrov, 2006), but far more computationally efficient. By allowing the slopes and intercept of the factors to vary by condition, I was able to efficiently model interactions between each predictor (Prior Threat and Executive Control) and the dependent variable (NDA Threat to U.S.)

The latent factor interaction between Prior Threat and Executive Control was specified using the latent moderated structural equations approach (Klein & Moosbrugger,

[37] Similar to the CFA tests of model fit, $\Delta\chi^2$ tests will be reported, but not relied upon for determining invariance (for justification, see: Chen, 2007).

2000), which is natively implemented in MPlus, and provides ML estimation of model parameters using the EM algorithm. The slope of the interaction is modeled as a random effect, and robust standard errors are calculated using a numerical integration algorithm. To avoid multicollinearity, the means of the exogenous latent factors were fixed at 0.

As will be discussed in the results, the assumption of measurement invariance does not hold when making comparisons between those in the al Shabaab and New IRA conditions (although it does hold for all comparisons made between the control, al Qaeda, and ISIS conditions). As such, the hypothesized model was tested separately for all those in the New IRA condition and all those in the Shabaab condition. Each model was tested hierarchically, beginning with the direct effects of Prior Threat and Executive Control in Step 1, adding the effect of the DTA framing device in Step 2, followed by all two-way interactions in Step 3, and the three-way interaction in Step 4. The latent variable interaction was conducted using numerical integration and the expectation maximization algorithm. To accommodate the testing of interaction effects, the means of the latent variables Executive Control and Prior Threat were fixed at zero across all steps of the analysis. The significance of the ΔR^2 (averaged across conditions) between steps was used to determine whether the increased complexity of each subsequent step was justified.

Post-hoc modifications.

Given the possibility for disagreement between global fit metrics typically used in a latent variable modeling framework and the preferred model fit criteria of ΔR^2 (which looks specifically at the variance explained in the dependent variable, rather than across all variables), post-hoc modifications were conducted to find a model which both maximized global fit (when accounting for the number of estimated parameters) and variance explained.

This was done one parameter at a time in a backward step-wise process, by constraining parameters to be equal across conditions where there were not significant differences in the estimated coefficients, and/or by fixing parameters at 0 if they were not significant. The order of removal was based on a principle of "least significant difference" (meaning the difference with the highest *p*-value) stopping at the first point where imposing an additional constraint would significantly reduce R^2, or when there were no additional statistically insignificant differences (at $p < .05$). This model was then compared to the last significant pre-specified model to determine whether the partially-reduced model[38] improved global fit.

Probing latent factor interaction effects.

In cases where a three-way interaction effects was observed, the final step of the hypothesis testing procedure was to prob the findings using a SEMM, with two interacting latent categorical factors: one known class mixture defined by experimental condition and one latent finite mixture, with differences in the means of the two Prior Threat indicators defining class membership. The advantage of this approach over other approaches to probing the interaction effect is that individuals are split into levels of Executive Control based on shared response characteristics, rather than arbitrary cut points. This gives a more meaningful look at the three-way interaction than if I had used a more typical rule-of-thumb approach, e.g., the simple slopes technique: splitting Executive Control into three groups based on z-scores, with low at one standard deviation below the mean, and high at one standard deviation above the mean (e.g., Cohen, Cohen, West, & Aiken, 2003, Chapter 7). As has been noted by a number of scholars (e.g., MacCallum, Zhang, Preacher, & Rucker, 2002;

[38] In this sense, reduced means in comparison to the full model with the three-way interaction. In both the case of the New IRA and the Shabaab analysis, this "reduced" model had more parameters than the last significant pre-specified model.

Preacher, Curran, & Bauer, 2006), this standard is somewhat arbitrary, and does not guarantee optimal identification of for whom the effect of Prior Threat on NDA Threat varies.

What are latent finite mixture models?

Finite mixture models attempt to represent the heterogeneity in a given population as a mixture of a finite number of component distributions. In the most general sense, a given distribution f is a mixture of k component distributions f_1, f_2,…, f_K if $f(y) = \sum_{k=1}^{K} \pi_k f_k(y)$, where π_k are the mixing weights (or mixing proportions, or component priors), $\pi_k \geq 0$ for $k \in \{1, \ldots, K\}$, and $\sum_k \pi_k = 1$. A parametrized version of the basic finite mixture model likelihood function can be expressed as:

$$f(y|\varphi) = \sum_{k=1}^{K} \pi_k f_k(y|\theta_k), \tag{6}$$

where y is a (possibly multivariate) continuous random variable, class membership is indicated by a latent categorical variable C (where C = 1, …, K), f_k is the class-specific density function, $\varphi = (\pi, \theta)$ is the vector containing all unknown parameters to be estimated ($\pi = \pi_1, \ldots, \pi_k$, and $\theta = \theta_1, \ldots, \theta_k$), and with θ_k the vector of unknown parameters for the probability density of class k. In theory, each f_k can be any arbitrary distribution. In practice, however, f_k are customarily modeled as all being from the same parametric family (Gaussian, Poisson, etc.), but with different parameters. Most frequently, f_k is assumed to be a (multivariate) normal density (Masyn, 2013), with class-specific mean vector and covariance matrix $\theta_k = (\mu_k, \Sigma_k)$. Full information maximum likelihood estimates for all the elements of θ can be obtained using the EM algorithm, under the MAR assumption.

From the perspective of the individual case, what this model describes is the probability that an individual would have responded in a particular way given that they are members of class 1 vs., the probability that they would have given those response patterns if they were members of class *k*. The probability of class membership is estimated for each individual, and a categorical latent variable is used to identify subpopulations (classes), each with their own set of parameters (Scotto Rosato & Baer, 2012).

Model specification and class enumeration.

SEMMs and Regression Mixture Models (RMMs) are a subset of the broader class of finite mixture models which specifically aim to model differential effects, that is, subgroups of individuals for whom the effects of a predictor on an outcome variable differ in their magnitude and/or direction when compared to members of other latent classes (Masyn, 2013). Rather then using arbitrary cut-points, as is more typical, this approach probabilistically places individuals into groups based upon shared response characteristics, providing a more valid, if data driven, approach to exploring moderation effects (Lamont, Vermunt, & Horn, 2016; Van Horn et al., 2015).

Within each 3 (Condition) by K (Prior Threat class) cell of the analysis, the slope of the regression of NDA threat on Executive Control was allowed to freely vary, as was the intercept of NDA threat (excepting in the last class of the control condition, which was fixed at 0 as a referent). To ensure that Prior Threat class membership represented differences in responses to the prior threat indicators, and not any of the other freely estimated parameters, the thresholds were constrained to be equal within Prior Threat class, across experimental

condition.[39] The resulting model recreates the SEMM with one known-class used in the hypothesis testing phase of the analysis. A pictorial depiction of this model is shown in Figure 6.

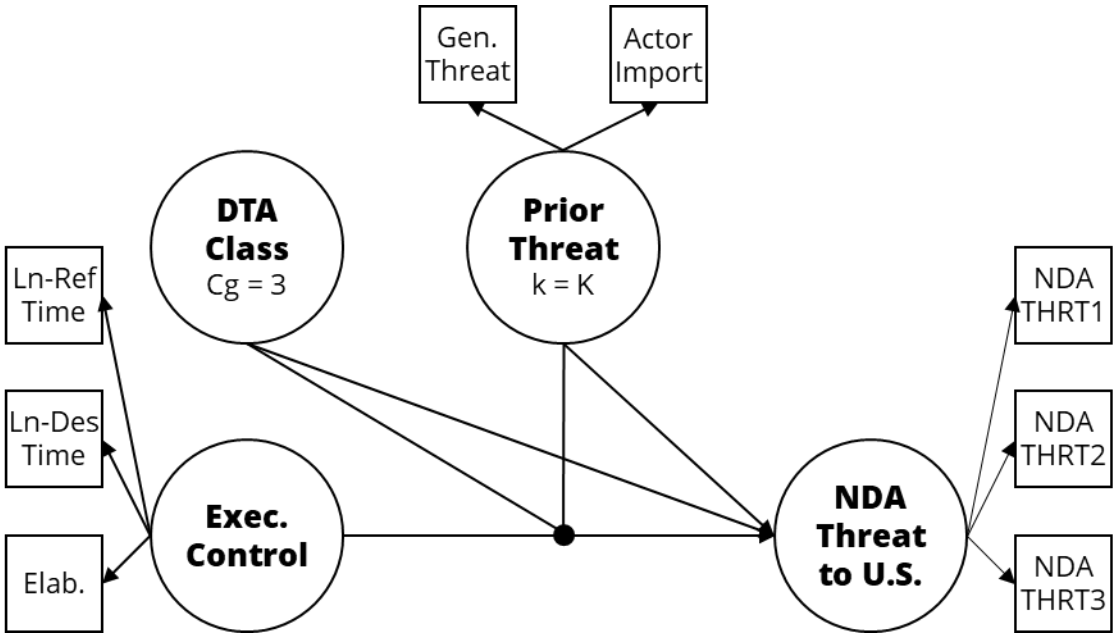

Figure 6. Visual depiction of the SEMM used to probe the effect of Executive Control on NDA Threat conditional on DTA condition and Prior Threat latent class membership.

Given the complex model being estimated, many common approaches to determining the correct number of latent classes cannot be used.[40] It is also well known that the assumptions of traditional likelihood ratio tests are not met when comparing k class models to k-1 class models (Nylund, Asparouhov, & Muthén, 2007), leaving a limited number of alternatives. Where the purpose of the two-latent categorical factor SEMM was to probe the three-way interaction effect, it was determined that the primary determinant of the number of

[39] While not reported herein, the membership of the latent classes was compared to membership derived from a simple Latent Profile Analysis with only the two Prior Threat indicators in the model, with no substantive differences found.

[40] This includes all approaches which require deleting a class to determine whether the K+1 class improves model fit, e.g., the Lo-Mendell Rubin likelihood ratio test of model fit (Lo, Mendell, & Rubin, 2001), or a parametric bootstrapped likelihood ratio test.

Prior Threat latent classes to specify would be interpretability, with the upper bound on the number of classes based on BIC* (sample-size adjusted Bayesian information criteria), and the "correct model probability," which uses BIC* to test the probability that a particular model is the correct model, in comparison to all other tested models. BIC* was selected over the standard BIC as simulation studies have shown BIC* to perform equivalently under most conditions, but better under more extreme conditions, i.e., when the per-class sample size is small and/or the number of items defining class membership are small (Lin, 2014).

Comparison Model

A key argument of this dissertation is that traditional approaches to the study of framing effects, and media effects writ large, have fallen short, failing to capture the individual level effects we know occur based on post-hoc observations of the world. To show the utility of the current approach over earlier approaches, it is necessary to show what this study would look like using a more traditional approach. Of course, part of the approach I have advocated herein – namely the careful consideration of structural, informational and contextual components embedded within messages that alter the psychological relevance of the information contained in the message – is baked into any comparison model. I expect larger than normal effects for this study based solely on what is being tested. However, it may still be useful to develop a comparison model, based on previously used predictors and moderators.

As documented by Borah (2011), dozens of moderators have been tested in the framing literature. However, a few key moderators seem to be tested substantially more often than others, specifically political knowledge (this was assessed using the scale from Delli Carpini & Keeter, 1993), political ideology (measured on a scale from -5 [Extremely Liberal]

to 5 [Extremely Conservative]),[41] political interest (using the item from the American National Election Studies), and gender (coded 0 for Male, 1 for Female). To this list of variables, I also included age (in years) and race (coded as 0 for White and 1 for Non-White), as these are often included as controls in political science research.

To develop a comparison model, I began by testing the full set of interactions between framing condition and each of these six variables, using the SEMM approach described above, with experimental condition as a "known class." As with the model building procedure described in the section on hypothesis testing, I then worked backward, by fixing parameters at 0 if they were not significant. This procedure stopped at the first point where imposing an additional constraint would significantly reduce R^2, or when there were no more statistically insignificant differences (at $p < .05$). I then compared this model to the model developed in the hypothesis testing portion of the results, with a particular focus on differences in the variance explained.

[41] Political party affiliation is also frequently tested, however, given the high correlation between political ideology and political party affiliation, including both in a single model is inappropriate (i.e., results in high multicollinearity). As such, I chose to only include the variable which explained the most variance, i.e., political ideology.

Chapter 5. Results

Assessment of Measurement Model

Confirmatory Factor Analysis

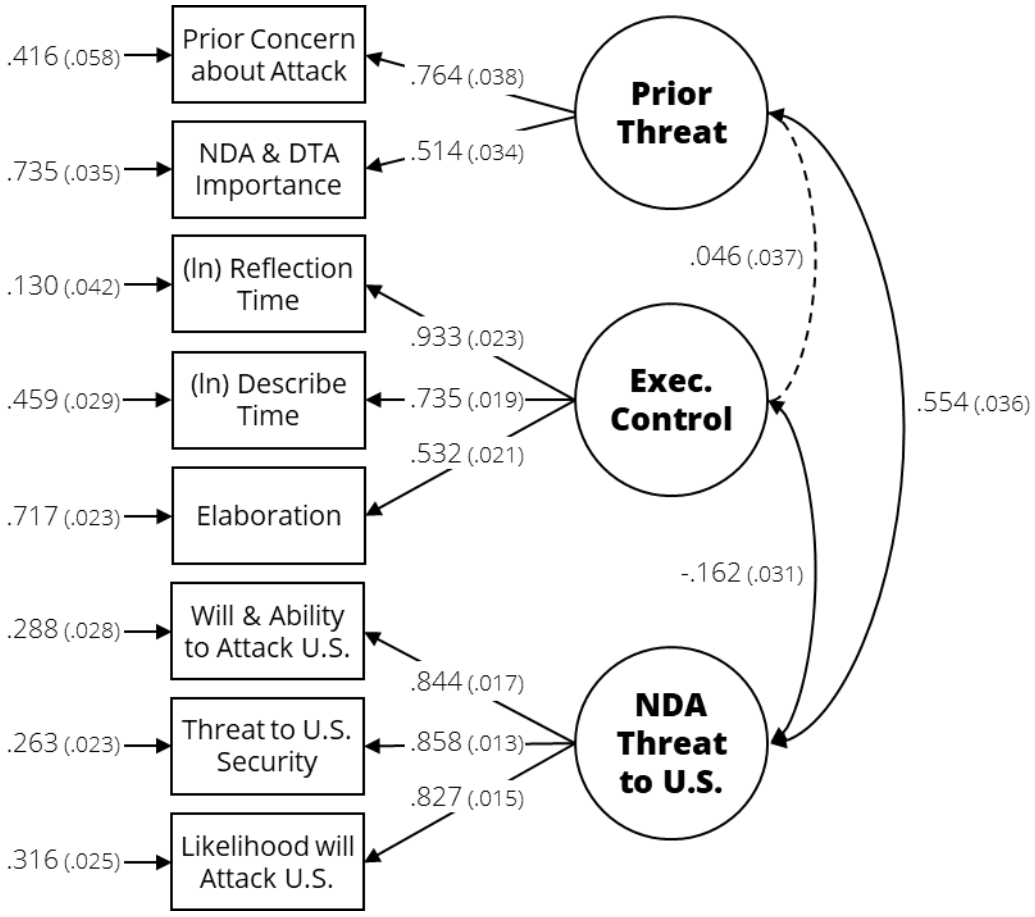

Figure 7. Confirmatory factor analysis model with three latent variables and eight indicators.
Path coefficients are completely standardized maximum likelihood estimates with robust standard errors (in parentheses). Where the results are standardized, the means of the latent factors are fixed at 0 and the variances are 1. All solid line coefficients (both when standardized and unstandardized) are statistically significant at $p < .001$; the correlation of Prior Threat with Executive Control is not significant, $p = .207$. $N = 2{,}316$.

A CFA was conducted based on the pre-specified 3-factor solution (i.e., Prior Threat, Executive Control, and NDA Threat). Correlation tables for all of the variables used in the model, both overall and by condition, can be found in Appendix B. The model showed good fit, based on the criterion set out in the analysis plan: $\chi^2_{(17)} = 45.83$ (scaling correction factor for MLR = 1.805), $p < .001$; RMSEA = .021, probability RMSEA ≤ .05 = 1.000; CFI = .991;

SRMR = .020. In addition, an examiniation of the standardized residuals and model modification indices did not suggest any meaningful modifications should be made to the model. Figure 7 shows the tested path model, with completely standardized maximum likelihood parameter estimates, and robust standard errors.

Table 1 holds fit statistics for specific subsets of conditions, specified with the same form as the model shown in Figure 7. While there are minor differences in the model fit within sub-sets of experimental conditions, dependent upon which subset is selected, all subsets meet the criteria set out in the analysis plan.

Table 1

Tests of Model Fit for Three-Factor Model Across Sets of Experimental Conditions

	χ^2 Test of Model Fit				90% CI				
Model (*df* = 17)	χ^2	SCF	*p*	RMSEA	*LL*	*UL*	$p_{<.05}$	CFI	SRMR
Overall (*N* = 2316)	45.83	1.81	.000	.027	.018	.037	1.000	.991	.020
Single Group Solutions for DTA Condition									
DTA = al Qaeda (*n* = 796)	24.95	1.85	.096	.024	.000	.043	.990	.993	.024
DTA = ISIS (*n* = 757)	35.34	1.82	.006	.038	.020	.055	.866	.981	.032
DTA = None (*n* = 763)	25.22	1.46	.090	.025	.000	.045	.985	.993	.023
Single Group Solutions for al Shabaab Set									
NDA = al Shabaab (*n* = 1152)	25.30	1.72	.088	.021	.000	.036	1.000	.995	.020
al Shabaab & al Qaeda (*n* = 377)	13.78	1.62	.683	.000	.000	.037	.991	1.000	.030
al Shabaab & ISIS (*n* = 388)	31.78	1.69	.016	.047	.020	.073	.533	.973	.042
al Shabaab & None (*n* = 387)	21.57	1.46	.202	.026	.000	.056	.895	.992	.026
Single Group Solutions for New IRA Set									
NDA = New IRA (*n* = 1146)	35.80	1.88	.005	.031	.016	.045	.989	.989	.025
New IRA & al Qaeda (*n* = 419)	25.79	1.90	.079	.035	.000	.061	.807	.985	.032
New IRA & ISIS (*n* = 369)	25.01	1.78	.095	.036	.000	.064	.773	.985	.038
New IRA & None (*n* = 376)	27.56	1.39	.050	.041	.000	.067	.686	.985	.036

Note. SCF = scaling correction factor for MLR; RMSEA = root mean square error of approximation; $p_{<.05}$ = probability of RMSEA being less than .05; CFI = comparative fit index; SRMR = standardized root mean square residual.

Tests of Multigroup Measurement Invariance

The next step in the analysis plan was to test for measurement invariance across the six conditions of the study. This was done by running a series of multiple group CFAs. The

question of interest was whether the experimental manipulations fundamentally altered the way individuals responded to the questions in the survey. Establishing invariance is a necessary prerequisite for making substantive comparisons of the means of the latent factors (Vandenberg & Lance, 2000).

Table 2

Tests of Measurement Invariance for Three-Factor Model Comparing Respondents Across Sets of Experimental Conditions

	χ^2 Test of Model Fit				χ^2 Δ Fit				90% CI				
Model	*df*	χ^2	SCF	*p*	Δ*df*	Δχ^2	*p*	RMSEA	*LL*	*UL*	$p_{<.05}$	CFI	SRMR
2 (NDA) X 3 (DTA)													
Configural	102	145.93	1.64	.003	-	-	-	.033	.020	.045	.992	.987	.035
Metric	127	181.12	1.65	.001	**25**	**35.21**	**.085**	.033	.021	.044	.997	**.985**	.045
Scalar	152	251.45	1.64	.000	25	71.36	<.001	**.041**	**.032**	**.050**	**.949**	.972	**.049**
1 (al Shabaab) X 3 (DTA)													
Configural	51	67.64	1.59	.059	-	-	-	.029	.000	.046	.979	.990	.034
Metric	61	79.72	1.61	.054	10	12.16	.275	.028	.000	.044	.990	.989	.043
Scalar	71	94.51	1.60	.033	**10**	**14.86**	**.137**	**.029**	**.009**	**.044**	**.992**	**.986**	**.044**
1 (New IRA) X 3 (DTA)													
Configural	51	77.98	1.69	.009	-	-	-	.037	.019	.053	.910	.985	.035
Metric	61	93.65	1.69	.005	10	15.67	.109	.037	.021	.052	.927	.982	.044
Scalar	71	103.47	1.68	.007	**10**	**9.77**	**.461**	**.034**	**.018**	**.048**	**.971**	**.982**	**.045**
1 (ALL) X 3 (DTA)													
Configural	51	86.13	1.71	.002	-	-	-	.030	.018	.041	.999	.989	.026
Metric	61	97.44	1.72	.002	**10**	**11.39**	**.328**	.028	.017	.038	1.000	.989	.030
Scalar	71	116.23	1.70	.001	10	18.94	.041	**.029**	**.019**	**.038**	**1.000**	**.986**	**.032**
2 (NDA) X 1 (ALL)													
Configural	34	61.56	1.80	.003	-	-	-	.026	.015	.037	1.000	.992	.023
Metric	39	68.29	1.80	.003	**5**	**6.71**	**.243**	**.025**	.015	.035	1.000	**.991**	.025
Scalar	44	110.29	1.78	.000	5	45.01	<.001	.036	**.028**	**.045**	**.997**	.980	**.030**

Note. χ^2 Δ Fit = χ^2 test of change in model fit; SCF = scaling correction factor for MLR; Δχ^2 = nested change in χ^2; RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean square residual. A ΔCFI > -.01 and either ΔRMSEA < .015 or ΔSRMR < .030 indicates that the null hypothesis of invariance is accepted. When testing for intercept invariance, the criterion for ΔSRMR shifts to < .010. The bolded values indicate the last level at which the null hypothesis of invariance is accepted, according to these combined standards. The bolded values indicate the last level at which the null hypothesis of invariance is accepted, according to each of the fit statistics. All chi-square test statistics were calculated using the scaling correction factor.

The results of the measurement invariance tests are shown in Table 2. As discussed in the earlier section, the three-factor solution showed good fit, and as is shown in Table 1, so

did separate three-factor models for each of the 6 conditions. When looking specifically at the 6-condition invariance tests, the results of the test of equal form showed that the model fit the data acceptably well across conditions (RMSEA = .033, 90% CI [.020, .045], SRMR = .035, CFI = .987), indicating configural validity. Constraining the factor loadings to be equal across groups did not significantly decrease model fit when compared to the equal form model $\Delta\chi^2_{(25)}$ = 35.21, p = .085, ΔCFI = -.002, suggesting that the null hypothesis of metric invariance should be accepted. However, the model with indicator intercepts constrained to be equal significantly and substantively reduced model fit: $\Delta\chi^2_{(25)}$ = 71.36, p < .001, ΔCFI = -.013. As such, the null hypothesis of scalar invariance should be rejected, when attempting to compare all six conditions at once.

Whereas the null hypothesis of scalar invariance cannot be accepted when comparing all six conditions, measurement invariance tests comparing DTA conditions *within* each NDA condition subset independently showed that there was likely scalar invariance within the al Shabaab set of conditions ($\Delta\chi^2_{(10)}$ = 14.86, p = .137, ΔCFI = -.003) and within the New IRA set of conditions ($\Delta\chi^2_{(10)}$ = 9.77, p = .461, ΔCFI > -.001). Additionally, the null hypothesis of scalar invariance is marginally accepted when comparing DTA conditions only, that is, when ignoring which NDA condition respondents were in ($\Delta\chi^2_{(10)}$ = 18.94, p = .041, ΔCFI = -.003). The group comparisons wherein the null hypothesis of scalar invariance does not appear to hold is when directly comparing respondents in the New IRA set of conditions and respondents in the Shabaab set of conditions ($\Delta\chi^2_{(5)}$ = 46.15, p < .001, ΔCFI = -.003).

Discussion on findings of scalar non-invariance.

Given that the null hypothesis of scalar invariance does not hold across NDA conditions (that is, there is scalar non-invariance between NDA conditions), it is likely that the responses and behaviors of respondents was fundamentally altered by the condition they were in. Specifically, looking at the residuals and modification indices, it appeared there was differential item functioning on two of the three dependent variable indicators: (a) "the [framed organization] is a threat to the security of the United States" and (b) "the [framed organization] have the will and capability to attack the United States." When the intercepts for those two items were separately estimated for each of the NDA conditions, the null hypothesis of scalar invariance was accepted: $\Delta\chi^2_{(23)}$ = 30.14, p = .145, ΔCFI = -.002. This indicates that individuals responded differently on these two items when presented with a news article about the New IRA compared to those presented with a news article about al Shabaab, in a way that is not fully captured by the latent factors. As such, no meaningful comparisons can be made between these two groups of respondents, as it relates to the constructs measured in this study.

In contrast, the finding of scalar invariance for all comparisons of DTA – both when looking specifically within NDA and when ignoring NDA – suggest that meaningful comparisons *can* be made between the three framing conditions. Given this, the decision was made to split the analysis into two parts, with the first set of results looking specifically at the effects of the DTA framing device for those in the New IRA condition, and the second set of results looking specifically at the effects of the DTA framing device for those in the al Shabaab condition.

Results: New IRA as NDA

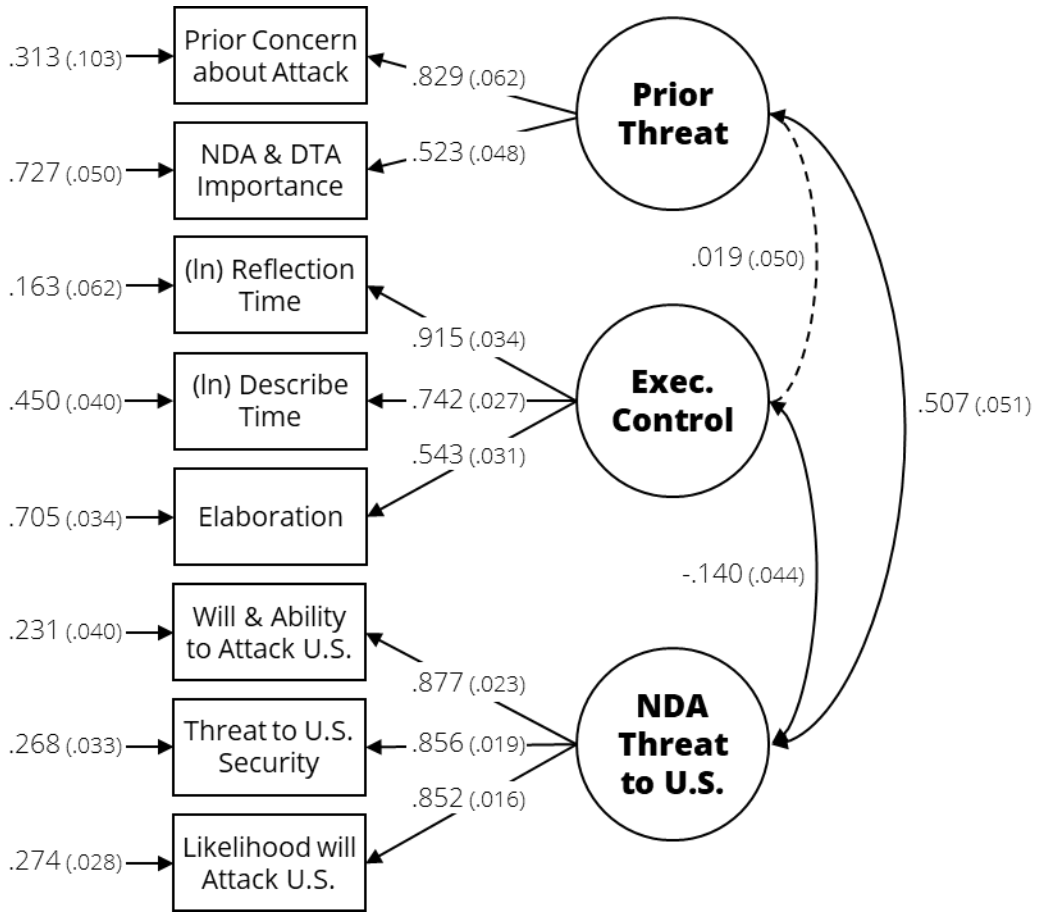

Figure 8. New IRA specific confirmatory factor analysis model with three latent variables and eight indicators. Path coefficients are completely standardized maximum likelihood estimates with robust standard errors (in parentheses). Where the results are standardized, the means of the latent factors are fixed at 0 and the variances are 1. All solid line coefficients (both when standardized and unstandardized) are statistically significant at $p < .001$ except for the following: the correlation of Prior Threat with Executive Control is not significant, $p = .710$; the correlation of Executive Control and NDA Threat to U.S. is significant at $p = .002$; and the residual variance for Prior Concern about Attack is significant at $p = .008$. $N = 1{,}164$.

The model fit statistics for the full set of nested SEMMs with known class membership tested for the New IRA, including post-hoc modification, are shown in Table 8. As described in the analysis plan, the base line model specified direct effects of Executive Control and Prior Threat on New IRA Threat, with the intercept of the endogenous latent variable fixed at zero across each of the DTA conditions (this was freed in step 2). For all analyses, the factor loadings and indicator intercepts were specified to be invariant across

condition, and both the means of the exogenous variables and the correlation between exogenous variables was fixed at zero (as to accommodate testing of the two-way interaction between executive control and prior threat in step 3). The New IRA specific measurement model underlying these analyses is shown in Figure 8.

Table 3.

Fit Statistics for Nested SEMMs Testing the Effects of the DTA Framing Device on Perceived Threat of the New IRA

		Global Fit of Model to Data							Variance Explained		
	FP	-2LL	SCR	BIC	BIC*	χ^2	p	$cm\hat{P}_a$	R^2	ΔR^2	p
S1: No DTA Variant Parameters	28	30645	2.002	30900	30811	--	--	.000	.281	.281	.000
S2: Direct Effect of DTA	30	30591	1.999	30860	30765	27.931	.000	.094	.295	.014	.000
S3: Latent Factor Interaction	31	30584	1.970	30860	30762	6.088	.014	.385	.312	.017	.000
S4: All Two-way Effects	35	30577	1.907	30881	30770	5.098	.277	.006	.313	.001	.793
S5: Three-way Interaction	37	30575	1.866	30893	30776	1.790	.409	.000	.323	.010	.000
Post-Hoc Equality Constraints (EC) and Fixed Parameters (FP)											
PH1: EC on b_0 for al Qaeda and ISIS conditions	36	30575	1.873	30829	30715	0.037	.847	.002	.323	.000	.753
PH2: FP b of the Latent Int. at 0 for ISIS condition	35	30575	1.898	30822	30711	0.067	.796	.014	.323	.000	.435
PH3: EC on b of Exec. Control for al Qaeda and Control conditions	34	30575	1.914	30815	30707	0.093	.761	.090	.322	-.001	.211
PH4: FP b of Exec. Control at 0 for ISIS DTA	33	30576	1.918	30809	30704	0.338	.561	.465	.321	-.001	.140
Tests of Model Fit Comparing S3 to PH4						6.554	.034			.009	.001

Note. FP = free parameters; -2LL = -2 x loglikelihood; SCR = loglikelihood scaling correction factor for MLR; BIC = Bayesian information criterion; *BIC = sample-size adjusted Bayesian information criterion; χ^2 = chi-square test statistic for the difference between nested models; $cm\hat{P}_a$ correct model probability. $cm\hat{P}_a$ was calculated across all nine models tested and was computed using *BIC. All chi-square test statistics were calculated using the scaling correction factor. Note that the variance explained statistics do not include the variance explained by the intercept, that is, the direct effect of the framing condition.

The last a priori specified step of the analysis which significantly improved the global fit of the model to the data was inclusion of the latent factor interaction between Prior Threat and Executive Control ($\chi^2_{(1)}$ = 27.931, p < .001). However, looking at the change in the coefficient of determination, which measures variance explained in the dependent variable specifically, the last significant model was the model which included the three-way

interaction between DTA condition, Executive Control, and Prior Threat (ΔR^2 = .010, $\Delta F_{(2, 1126)}$ = 8.360, p < .001).

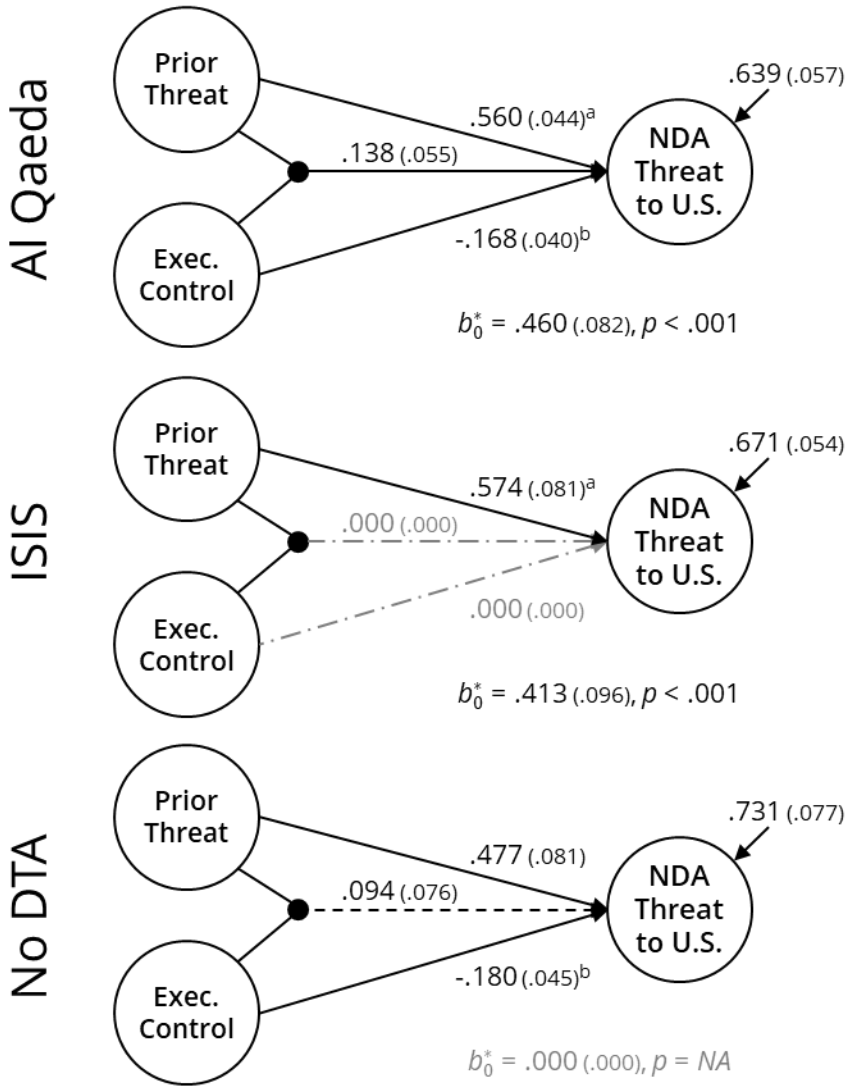

Figure 9. Results from retained SEMM with DTA condition as known class for the New IRA set of conditions. Path coefficients are completely standardized maximum likelihood estimates with robust standard errors (in parentheses). Dashed lines signify that the path is non-significant (p > .05), grey dashed-and-dotted lines signify that the path was fixed at zero. All other coefficients shown are significant at p < .05. b_0^* = the standardized intercept of NDA Threat to U.S., which can be interpreted as the direct effect of DTA framing device on NDA Threat to U.S. 1 – the residual variance of the dependent variable = R^2. Parameters with shared superscript were constrained such that the unstandardized coefficients were equal; differences in the standardized coefficients are due to unequal numbers of participants in each condition.

As described in the analysis plan, a series of post-hoc modifications were then conducted, either constraining parameters which were not significantly different from each

other to be equal or fixing non-significant parameters at 0. This was done one parameter at a time, until no more modifications could be made which would not significantly reduce R^2. Four post-hoc modifications were made, as described in Table 3,[42] and the final post-hoc model was compared to the step-three model. The post-hoc model was found to significantly improve model fit ($\chi^2_{(1)}$ = 6.554, p = .034), and as such was retained. This model explained a combined 32.1% of the variance in perceived threat of the New IRA to the U.S, across the three conditions. The path coefficients for the retained model are shown in Figure 9.

Hypothesis 1a predicted a positive direct effect of prior perceptions of the threat from terrorism (Prior Threat) on perceptions of the threat of the NDA to the U.S (NDA Threat), across all conditions. As shown in Figure 9, for every standard deviation (*SD*) increase in Prior Threat there was a corresponding increase in NDA threat: a .56 *SD* increase in the al Qaeda condition (b^* = .560, *SE* = .044, p < .001; b = .722, *SE* = .102), .57 *SD* increase in the ISIS condition (b^* = .574, *SE* = .081, p < .001; b = .722, *SE* = .102),[43] and .48 *SD* increase in the Control condition (b^* = .477, *SE* = .081, p < .001; b = .628, *SE* = .145). This provides strong support for Hypothesis 1a (long live Pierre-Simon Laplace).

Hypothesis 1b predicted that there would be a negative direct effect of Executive Control on NDA Threat, across all conditions. Looking at the al Qaeda condition, there was a negative direct effect, such that for every *SD* increase in Executive control there was a corresponding -.17 *SD* decrease in NDA Threat (b^* = -.168, *SE* = .040, p < .001; b = -.314,

[42] One other modification was tested which is not listed in the table, specifically we tested fixing *b* of the latent interaction term at 0 in the control condition and found that doing so significantly reduced variance explained (ΔR^2 = -.004, $|\Delta F_{(1,1132)}|$ = 7.186, p = .007), although it did not reduce global model fit ($\chi^2_{(1)}$ = 1.807, p = .179).

[43] Recall from Table 3 that the unstandardized direct effect of Prior Threat was constrained to be equal in the al Qaeda and ISIS conditions.

SE = .102). The same was true of the control condition, where for every *SD* increase in Executive Control there was a corresponding -.18 *SD* decrease in NDA Threat (b^* = -.180, *SE* = .045, $p < .001$; *b* = -.314, *SE* = .076).[44] However, during the model building procedure, the non-significant direct effect of ISIS was fixed at 0, without significantly reducing model fit or variance explained. As such, hypothesis 1b is only partially supported.

Hypothesis 2 proposed a positive direct effect of DTA framing device on perceptions of the NDA's threat to the U.S. This can be assessed by looking at the differences in the intercept of NDA Threat across the three conditions, which is the mean effect of the "class" (i.e., experimental condition) when all other predictors are at 0. In the control condition, perceptions of the New IRA's threat to the U.S. are fixed at zero (as the referent group). In both the al Qaeda DTA condition and the ISIS DTA condition, the intercept significantly departs from 0: by .46 *SD* in the al Qaeda DTA condition (b_0^* = .460, *SE* = .082, $p < .001$; b_0 = .716, *SE* = .127), and by .41 *SD* in the ISIS DTA condition (b_0^* = .413, *SE* = .096, $p < .001$; b_0 = .628, *SE* = .145). In both cases hypothesis 2 is supported.

Hypothesis 3 proposed a positive interaction effect on DTA threat between Prior Threat and Executive Control, specifically when looking at the DTA conditions, and not when looking at the control. During the model building procedure, the non-significant effect of the interaction was fixed at 0 for the ISIS condition, meaning that hypothesis 3 was not supported in the case of the ISIS DTA framing device. In the al Qaeda DTA condition, however, there was a significant interaction effect (b^* = .138, *SE* = .055, $p = .012$; *b* = .213, *SE* = .090, $p = .018$), and in the control condition there was *not* a significant interaction effect

[44] Recall from Table 3 that the unstandardized direct effect of Executive Control was constrained to be equal in the al Qaeda and Control conditions.

(b^* = .094, *SE* = .076, *p* = .215; *b* = .136, *SE* = .113, *p* = .231). These three findings taken together suggests tentative partial support for Hypothesis 3.

Structural Equation Mixture Model Probing Three-Way Interaction Effect – New IRA

Table 4.

Model fit statistics for 1-5 latent class SEMM model for the New IRA

Model	FP	log likelihood	SCF	BIC	BIC*	$cm\hat{P}_a$	Entropy
1-Class	29	-15729.569	1.932	31663.868	31571.754	0.00	--
2-Class	38	-15522.398	1.934	31313.060	31192.360	0.00	.875
3-Class	47	-15421.194	1.857	31174.190	31024.903	0.00	.886
4-Class	56	-15357.298	1.688	31109.936	30932.061	0.00	.913
5-Class	65	-15162.581	1.773	30784.038	30577.576	1.00	.999

Note: FP = free parameters; SCF = Scaling correction factor for MLR; BIC = Bayesian Information Criterion; BIC* = Sample-size Adjusted BIC; $cm\hat{P}_a$ = correct model probability, which was calculated using BIC*.

Given the significant interaction effect, the final step of the analysis was to probe the latent factor interaction using a SEMM with one known class mixture defined by experimental condition and one latent finite mixture, with differences in the means of the two Prior Threat indicators defining class membership.[45] For a full discussion of model specification and class enumeration, see the Analysis Plan in Chapter 4. The model fit statistics are shown in Table 4. While the 5-class solution was the best-fitting model according to BIC*, it appeared to be over-fit, with standard errors < .001 for means of the general threat indicator for three of the five classes. In comparison, the four-class model was readily interpretable, had excellent overall model fit, and did not have the same overfitting issues. As such, the four-class solution was selected. The class characteristics, split by condition, are graphically represented in Figure 10.[46]

[45] The means of the indicators were constrained to be equal across each of the experimental conditions.

[46] Note that the model constraints imposed in the hypothesis testing portion of the results were not retained while propping the three-way interaction.

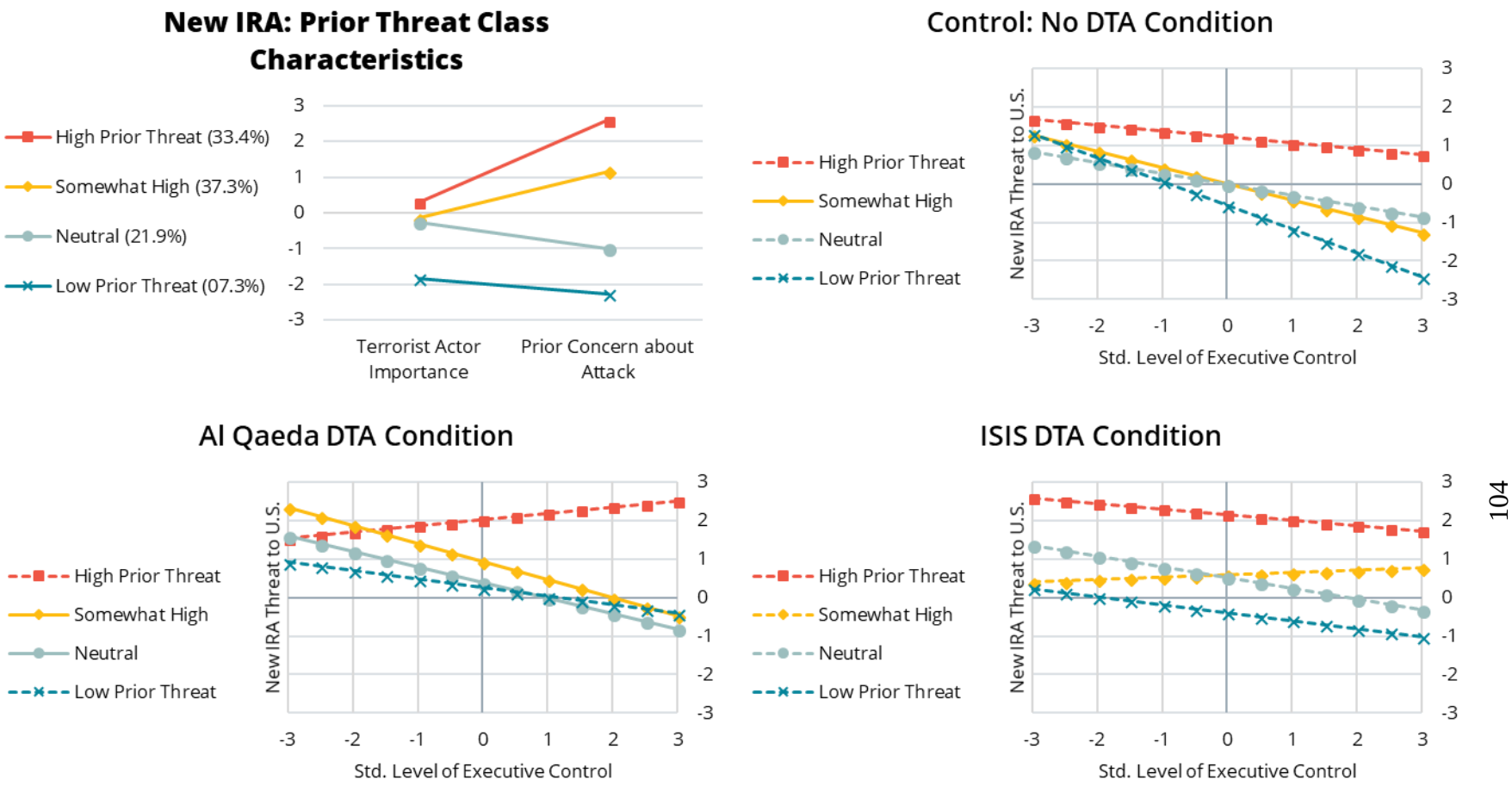

Figure 10. Graphical depictions of the 5-latent class x 3-known class SEMM, for the New IRA analysis.
The top right panel shows the means of the two indicators of Prior Threat class membership for each class, with the other three panels showing the class varying slopes and intercepts from the regression of NDA threat on Executive Control, split by experimental condition. Solid lines represent path coefficients that are significant at $p < .05$; dashed lines represent path coefficients that are not significant, $p > .05$.

As expected, at moderate levels of prior threat (represented by the Neutral and Somewhat High prior threat classes), there is a more or less uniform negative relation between perceptions of the New IRA as a threat to the U.S. and the level of Executive Control exerted by the respondent. Looking specifically at the al Qaeda condition (the only condition with a significant interaction effect), there is also a significant difference between the slope in the High Threat class as compared to the slope in the Somewhat High or Neutral classes, as expected. However, it was also expected that the slope of the Low Prior Threat class would be the steepest, but instead it was indistinguishable from the slopes in the Somewhat High and Neutral Threat Classes.[47]

In addition to the indeterminate findings in the al Qaeda condition, the general pattern of findings in the control condition do not appear, on their face, to meet the expectations laid forth previously. While there are no significant differences between any of the four path coefficients modeled in the control condition, as predicted by Hypothesis 3, and as supported by the findings in the hypothesis testing portion of the results, a non-statistical holistic look at the path coefficients reveals a pattern more akin to what was expected in the experimental conditions.

The final consideration is in relation to the findings in the ISIS DTA condition. As discussed in the hypothesis testing portion of the results, there was not a significant direct effect of executive control, nor an interaction effect, in the ISIS condition. As such, it is unsurprising that none of the path coefficients in the ISIS condition were statistically significant. It is again worth noting, however, that a non-statistical holistic look at the path coefficients reveals a pattern in conflict with the theory. Specifically, the general trends seen

[47] In fact, the slope was nominally < the slope in these two classes.

in the ISIS condition appear more akin to what was expected in the control condition than to what was expected in the experimental conditions.

Post-hoc comparison of observed three-way interaction with theoretical model.

What the results of the three-way interaction decomposition show are three significant *b* coefficients of ~ the correct magnitude and in the correct direction, two non-significant *b* coefficients where non-significant *b* coefficients were expected, and seven non-significant *b* coefficients where significant *b* coefficients were expected. Given these mixed findings, post-hoc testing was conducted to determine whether there was a significant difference between the hypothesized and observed set of path coefficients. Specifically, I ran a series of Wald chi-square tests of parameter constraints to determine the probability of observing the given *b* coefficients given that the theoretical model outlined in Chapter 3 is true. The specific constraints tested along with full results are shown in Table 5.

Across all conditions, the Wald chi-square test statistics for the hypothesized model were not significant (at $p < .05$), meaning that the observed pattern of b coefficients did not significantly different from what would be expected under the theoretical model laid out in Chapter 3. While this should not be construed as support for the theoretical model, these results do suggest that the seemingly contradictory findings shown in Figure 10 could have occurred either under the null model or the theoretical model, meaning that the observed data does not imply a fundamental flaw in H3. However, the resultant *p*-value for the omnibus test of model constraints can also be interpreted as the probability that the theoretical model generated the observed data. Under this interpretation, the likelihood of H3 being correct is only 35.8%, and as such the hypothesis is rejected.

Table 5.

Post-hoc Wald χ^2 Tests Assessing Differences Between Hypothesized and Observed Three-way Interaction Model for the New IRA NDA Conditions

Model Constraints	df	χ^2	*p*
Control Condition			
b for High Prior Threat = -.25	1	0.206	.650
b for Somewhat High Prior Threat = -.25	1	1.187	.276
b for Neutral Prior Threat = -.25	1	0.046	.829
b for Low Prior Threat = - .25	1	1.335	.248
Omnibus Test of Control Condition Constraints	4	2.545	.637
al Qaeda DTA Condition			
b for High Prior Threat = 0	1	0.880	.348
b for Somewhat High Prior Threat = *b* for Neutral Prior Threat	1	0.076	.782
b for Low Prior Threat = 2 * b for Neutral Prior Threat	1	1.537	.215
Omnibus Test of al Qaeda DTA Condition Constraints	3	6.262	.100
ISIS DTA Condition Constraints			
b for High Prior Threat = 0	1	0.479	.489
b for Somewhat High Prior Threat = *b* for Neutral Prior Threat	1	1.583	.208
b for Low Prior Threat = 2 * *b* for Neutral Prior Threat	1	0.676	.411
Omnibus Test of ISIS DTA Condition Constraints	3	2.054	.561
Omnibus Test of Above Specified Model Constraints	10	10.990	.358

Note. χ^2 = Wald chi-square test statistic. The Wald chi-square tests whether the estimated parameters significantly differ from the expected parameters, that is, if the constrained b is significantly different from the unconstrained b.

Comparison Model and Effect Size Estimates

As described in the analysis plan (see: Chapter 4 Part 4), the last step of the analysis was to develop a comparison model, based on a more traditional approach to studying framing effects. Specifically, six often studied moderators of framing effects (see: Borah, 2011) were considered: Age, Gender, Race, Political Knowledge, Political Ideology, and Political Interest. The modeling procedure was similar to that used in the hypothesis testing portion of this analysis, with the first step of the analysis including all variables, then working backward, by fixing parameters at 0 if they were not significant. This procedure stopped at the first point where imposing an additional constraint would significantly reduce R^2, or when there were no more statistically insignificant differences (at $p < .05$).

Table 6.

Fit Statistics for Nested SEMMs Testing the Effects of the DTA Framing Device on Perceived Threat of the New IRA, Using Traditional Moderators

		Global Fit of Model to Data							Variance Explained		
	FP	-2LL	SCR	BIC	BIC*	χ^2	p	$cm\hat{P}_a$	R^2	ΔR^2	p
S1: Full Comparison Model	31	14122	1.840	14341	14242	--	--	0.00	.144	--	.000
S2: Ideology @ 0 – ISIS	30	14122	1.847	14334	14238	0.058	.810	0.00	.144	.000	1.000
S3: Age @ 0– Control	29	14122	1.857	14327	14235	0.094	.759	0.00	.143	.000	.513
S4: Poli. Interest @ 0 – ISIS	28	14122	1.868	14320	14231	0.157	.692	0.00	.143	-.001	.344
S5: Age @ 0 – ISIS	27	14123	1.859	14313	14228	0.267	.606	0.00	.142	.000	.517
S6: Poli. Interest @ 0 – Control	26	14124	1.818	14307	14225	0.308	.579	0.00	.141	-.001	.259
S7: Age @ 0 – AQ	25	14124	1.832	14301	14222	0.557	.455	0.01	.141	.000	.490
S8: Race @ 0 – Control	24	14125	1.838	14295	14219	0.592	.441	0.06	.140	-.001	.249
S9: Ideology @ 0 – AQ	23	14128	1.873	14290	14217	2.004	.157	0.14	.138	-.002	.127
S10: Race @ 0 – ISIS	22	14131	1.897	14286	14216	2.300	.129	0.21	.136	-.003	.068
S11: Poli. Interest @ 0 – AQ	**21**	**14133**	**1.935**	**14281**	**14215**	**2.316**	**.128**	**0.40**	**.134**	**-.002**	**.124**
S12: Ideology @ 0 – Control	20	14139	1.919	14280	14216	2.456	.117	0.18	.129	-.005	.009

Note. FP = free parameters; -2LL = -2 x loglikelihood; SCR = loglikelihood scaling correction factor for MLR; BIC = Bayesian information criterion; *BIC = sample-size adjusted Bayesian information criterion; χ^2 = chi-square test statistic for the difference between nested models; $cm\hat{P}_a$ correct model probability. $cm\hat{P}_a$ was calculated across all nine models tested and was computed using *BIC. All chi-square test statistics were calculated using the scaling correction factor. Note that the variance explained statistics do not include the variance explained by the intercept, that is, the direct effect of the framing condition. The bolded line indicates the selected model.

In this process, 10 parameters were fixed at 0, with two variables completely falling out of the model: Age, and Political Interest. The overall variance explained by the final model, as shown in Table 6, was 13% (R^2 = .134, p < .001). However, this value does not account for the variance explained by the direct effect of the DTA framing device. This can be assessed by looking at the variance explained by the intercept (for the al Qaeda condition, b_0^* = .599, *SE* = .235; for the ISIS condition, b_0^* = .376, *SE* = .290), which results in a true R^2 of .141, meaning that the final version of the traditional model explains 14% of the variance in NDA Threat.[48] Conducting the same analysis, but with the framing condition removed

[48] The proportion of variance explained by the intercept is calculated as $\left(\left(b_0^*/SE_{b_0^*}\right)/\sqrt{n}\right)^2$

(that is, NDA Threat predicted by the six pre-specified variables, excluding Age and Political Interest) results in an R^2 of .127 (SE = .027), meaning that the total variance explained by the frame, both independently and in interaction with the other variables in the model, is about 1% (ΔR^2 = .014).

These results can be compared to the results from the hypothesized model. As shown in Table 3, the overall variance explained by the final model (PH4) is 32% (R^2 = .321). When accounting for the direct effect of the DTA framing device, the R^2 increases to .364, meaning that the hypothesized model explains 36% of the variance in NDA Threat. Finally, conducting the same analysis, but with framing condition removed, results in an R^2 of .298 (SE = .055), meaning that the total variance explained by the framing device, when using the hypothesized model, is about 7% (ΔR^2 = .066), or roughly 4.7 times the observed effect using the traditional model.

Results: Al Shabaab as NDA

Hypothesis testing in the Shabaab set of conditions followed the same analysis plan as with the New IRA set of conditions. The Shabaab specific measurement model underlying these analyses is shown in Figure 11. The model fit statistics for the full set of nested SEMMs with known class membership tested for al Shabaab, including post-hoc modification, are shown in Table 7. As described in the analysis plan, the base line model specified direct effects of Executive Control and Prior Threat on Shabaab Threat, with the intercept of the endogenous latent variable fixed at zero across each of the DTA conditions (this was freed in step 2). For all analyses, the factor loadings and indicator intercepts were specified to be invariant across condition, and both the means of the exogenous variables and

the correlation between exogenous variables was fixed at zero (as to accommodate testing of the two-way interaction between executive control and prior threat in step 3).

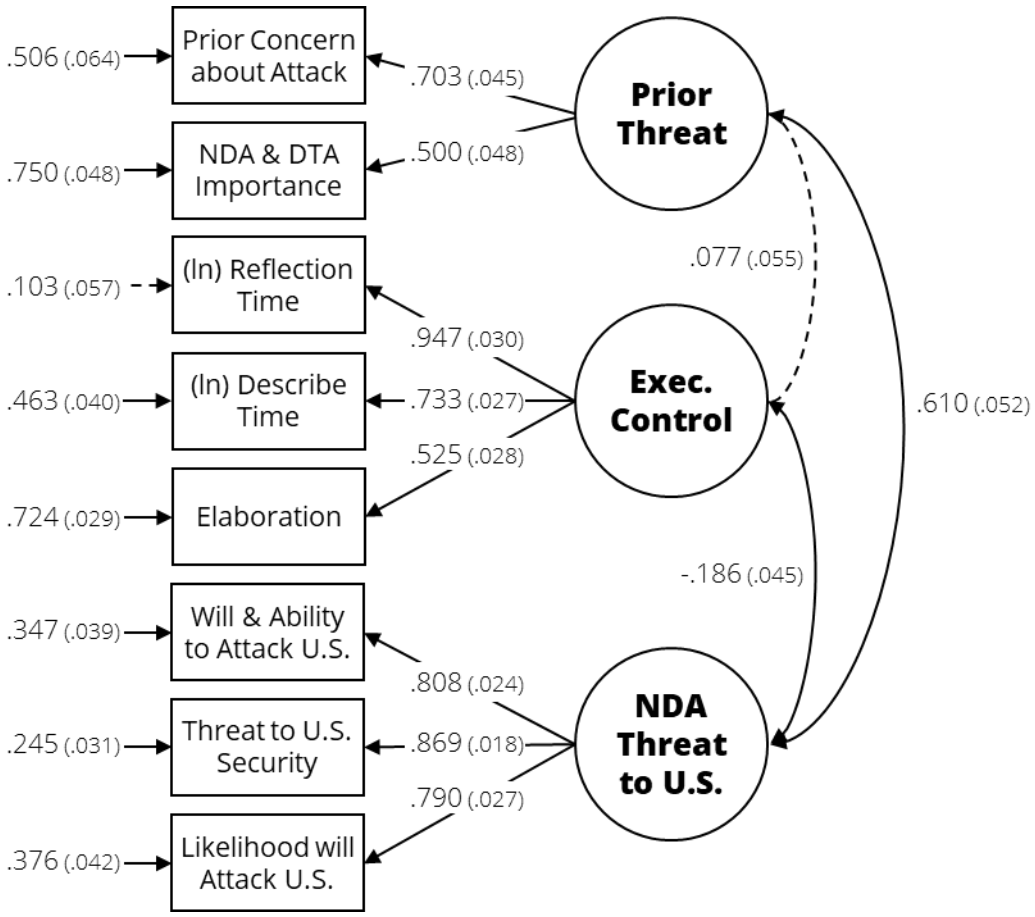

Figure 11. Shabaab specific confirmatory factor analysis model with three latent variables and eight indicators. Path coefficients are completely standardized maximum likelihood estimates with robust standard errors (in parentheses). Where the results are standardized, the means of the latent factors are fixed at 0 and the variances are 1. All solid line coefficients (both when standardized and unstandardized) are statistically significant at $p <$ .001 except for the following: the correlation of Prior Threat with Executive Control is not significant, $p = .160$; and the residual variance for the natural-log of time spent on the reflection page is not significant, $p = .069$. $N =$ 1,152.

As was the case when analyzing the results from the New IRA set of conditions, the last a priori specified step of the analysis which significantly improved the global fit of the model to the data was inclusion of the latent factor interaction between Prior Threat and Executive Control ($\chi^2_{(1)} = 24.065$, $p < .001$). Again, however, looking at the change in the coefficient of determination, the last significant model was the model which included the

three-way interaction between DTA condition, Executive Control, and Prior Threat (ΔR^2 = .016, $\Delta F_{(2, 1114)}$ = 16.988, p < .001).

Table 7.

Fit Statistics for Nested SEMMs Testing the Effects of the DTA Framing Device on Perceived Threat of al Shabaab

		Global Fit of Model to Data							Variance Explained		
	FP	-2LL	SCR	BIC	BIC*	χ^2	p	$cm\hat{P}_a$	R^2	ΔR^2	p
S1: No DTA Variant Parameters	28	30872	1.865	31070	30981	--	--	0.00	.432	.432	.000
S2: Direct Effect of DTA	30	30860	1.842	31072	30976	8.113	.017	0.01	.435	.003	.051
S3: Latent Factor Interaction	31	30848	1.799	31067	30968	24.065	.000	0.37	.461	.026	.000
S4: All Two-way Effects	35	30846	1.751	31092	30981	1.793	.774	0.00	.458	-.003	.245
S5: Three-way Interaction	37	30842	1.704	31102	30985	4.716	.095	0.00	.474	.016	.000
Post-Hoc Equality Constraints (EC) and Fixed Parameters (FP)											
PH1: EC on b_0 for al Qaeda and ISIS conditions	36	30842	1.710	31095	30981	0.000	1.00	0.00	.474	.000	1.00
PH2: EC b of Exec. Control for al Qaeda and ISIS condition	35	30842	1.716	31088	30977	0.083	.773	0.00	.474	.000	.805
PH3: EC on b of Exec. Control for all conditions	34	30842	1.716	31081	30973	0.030	.863	0.03	.475	.000	.403
PH4: FP b of the Latent Int at 0 for Control	33	30842	1.741	31075	30970	0.385	.825	0.16	.474	-.001	.486
PH5: EC b of Prior Threat for al Qaeda and ISIS condition	32	30844	1.760	31070	30968	2.265	.322	0.43	.477	.003	.058
Tests of Model Fit Comparing S3 to PH4						7.369	.007			.016	.000

Note. FP = free parameters; -2LL = -2 x loglikelihood; SCR = loglikelihood scaling correction factor for MLR; BIC = Bayesian information criterion; *BIC = sample-size adjusted Bayesian information criterion; χ^2 = chi-square test statistic for the difference between nested models; $cm\hat{P}_a$ correct model probability. $cm\hat{P}_a$ was calculated across all nine models tested and was computed using *BIC. All chi-square test statistics were calculated using the scaling correction factor. Note that the variance explained statistics do not include the variance explained by the intercept, that is, the direct effect of the framing condition.

As described in the analysis plan, a series of post-hoc modifications were then conducted, either constraining parameters which were not significantly different from each other to be equal or fixing non-significant parameters at 0. Five post-hoc modifications were made, as described in table 7. The post-hoc model was found to significantly improve mode fit ($\chi^2_{(1)}$ = 7.369, p = .007), and as such was retained. This model explained approximately

48% of the variance in perceived threat of al Shabaab to the U.S., across the three conditions. The path coefficients for the retained model are shown in Figure 12.

Hypothesis 1a predicted a positive direct effect of Prior Threat on perceptions of the threat of the NDA to the U.S. (NDA Threat), across all conditions. As shown in Figure 12, for every standard deviation (*SD*) increase in Prior Threat there was a corresponding increase in NDA threat: a .63 *SD* increase in the al Qaeda condition (b^* = .632, *SE* = .045, $p < .001$; *b* = .832, *SE* = .104), .62 *SD* increase in the ISIS condition (b^* = .624, *SE* = .046, $p < .001$; *b* = .832, *SE* = .104),[49] and .66 *SD* increase in the Control condition (b^* = .658, *SE* = .055, $p < .001$; *b* = .877, *SE* = .134). This again provides strong support for Hypothesis 1a.

Hypothesis 1b predicted that there would be a negative direct effect of Executive Control on NDA Threat, across all conditions. Between Post-Hoc modification 2 and Post-Hoc modification 3, all three main effect path coefficients were constrained to be equal, with neither a substantive nor significant reduction in model fit or variance explained (see Table 7). For every *SD* unit increase in Executive Control, there was a corresponding decrease in NDA threat across all three conditions of ~ -.22 *SD* (*b* = -.221, *SE* = .041). In contrast to the results of the New IRA analysis, in the context of reading a news article about an attack by the al Shabaab, hypothesis 1b is supported.

Hypothesis 2 proposed a positive direct effect of DTA framing device on perceptions of the NDA's threat to the U.S., which can be assessed by looking at the differences in the intercept of NDA Threat across the three conditions. Post-Hoc modification 1 constrained the intercept of NDA Threat to be equal in the al Qaeda and ISIS conditions without a

[49] Recall from Table 7 that the unstandardized direct effect of Prior Threat was constrained to be equal in the al Qaeda and ISIS conditions.

substantive nor significant decline in either model fit or variance explained (see Table 7). In both instances, the intercept of NDA Threat is ~ .2 *SD* higher than the control condition (b_0 = .270, *SE* = .100, *p* = .007). As such, hypothesis 2 is once again supported.

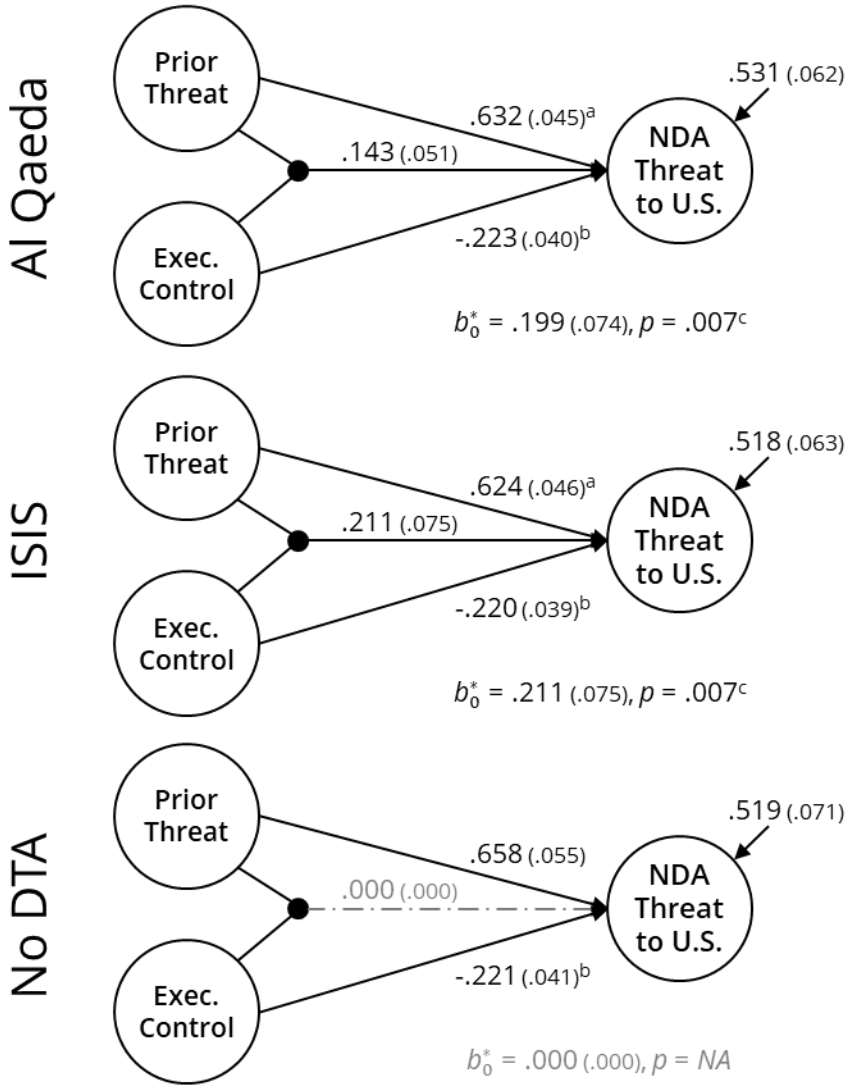

Figure 12. Results from retained SEMM with DTA condition as known class for al Shabaab set of conditions. Path coefficients are completely standardized maximum likelihood estimates with robust standard errors (in parentheses). Grey dashed-and-dotted lines signify that the path was fixed at zero. All other coefficients shown are significant at $p < .05$. b_0^* = the standardized intercept of NDA Threat to U.S., which can be interpreted as the direct effect of DTA framing device on NDA Threat to U.S. 1 – the residual variance of the dependent variable = R^2. Parameters with shared superscript were constrained such that the unstandardized coefficients were equal; differences in the standardized coefficients are due to unequal numbers of participants in each condition.

Finally, hypothesis 3 proposed a positive interaction effect on NDA threat between Prior Threat and Executive Control, specifically when looking at the DTA conditions, and

not when looking at the control. Post-Hoc modification 4 fixed the effect of the interaction term at 0 for the control condition, without a substantive nor significant decline in either model fit or variance explained (see Table 7). In contrast, the interaction effect was significant in both the al Qaeda (b = .199, SE = .073, p = .007) and ISIS conditions (b = .298, SE = .116, p = .010). This suggests that in contrast to the results from the New IRA analysis, Hypothesis 3 was supported.

Structural Equation Mixture Model Probing Three-Way Interaction Effect – Shabaab

Table 8.

Model fit statistics for 1-5 latent class SEMM model for al Shabaab

Model	FP	log likelihood	SCF	BIC	BIC*	$cm\hat{P}_a$	Entropy
1-Class	29	-15603.431	1.779	31411.290	31319.176	0.00	--
2-Class	38	-15422.800	1.851	31113.473	30992.773	0.00	.838
3-Class	47	-15333.319	1.739	30997.953	30848.666	0.00	.893
4-Class	56	-15291.947	1.603	30978.652	30800.778	0.00	.908
5-Class	65	-15094.061	1.723	30646.324	30439.863	1.00	.999

Note: FP = free parameters; SCF = Scaling correction factor for MLR; BIC = Bayesian Information Criterion; BIC* = Sample-size Adjusted BIC; $cm\hat{P}_a$ = correct model probability, which was calculated using BIC*.

As with the New IRA analysis, and given the significant interaction effect, the final step of the analysis was to probe the latent factor interaction using a SEMM with one known class mixture defined by experimental condition and one latent finite mixture, with differences in the means of the two Prior Threat indicators defining class membership.[50] For a full discussion of model specification and class enumeration, see the Analysis Plan in Chapter 4. The model fit statistics are shown in Table 8. As with the New IRA analysis, while the 5-class solution was the best-fitting model according to BIC*, it appeared to be over-fit, with standard errors < .001 for means of the general threat indicator for three of the five classes. In comparison, the four-class model was readily interpretable, had excellent

[50] Again, the means of the indicators were constrained to be equal across each of the experimental conditions.

overall model fit, and did not have the same overfitting issues. As such, the four-class solution was selected. The class characteristics, split by condition, are graphically represented in Figure 13.

The pattern of loadings across all three conditions match well with the expectations set out in Chapter 3. In the case of both the al Qaeda DTA condition and the ISIS DTA condition, the unstandardized path coefficients transition from ~ 0 (al Qaeda: b = -.125, SE = .181, p = .490; ISIS: b = .008, SE = .199, p = .968) to within a standard error of -1 (al Qaeda: b = -.883, SE = .168, p < .001; ISIS: b = -.889, SE = .372, p = .017). In contrast, there are no significant differences in any of the path coefficients across the Prior Threat classes in the control condition. This again matches well with the expectations set out in Chapter 3.

To confirm that the pattern of coefficients does indeed match the expectations set by the theoretical model, I ran a Wald Chi-Square test of model constraints, using the same set of parameter constraints described in Table 5 in relation to the post-hoc tests of the three-way interaction in the New IRA set of conditions. The results suggest that it is highly likely the theoretical model generated the observed data: Wald $\chi^2_{(10)} = 2.462$, p = .991. As such, Hypothesis 3 is supported. Taken together with the uniform support for all other tested hypothesis, these results represent strong support for the broader underlying model, within the al Shabaab conditions.

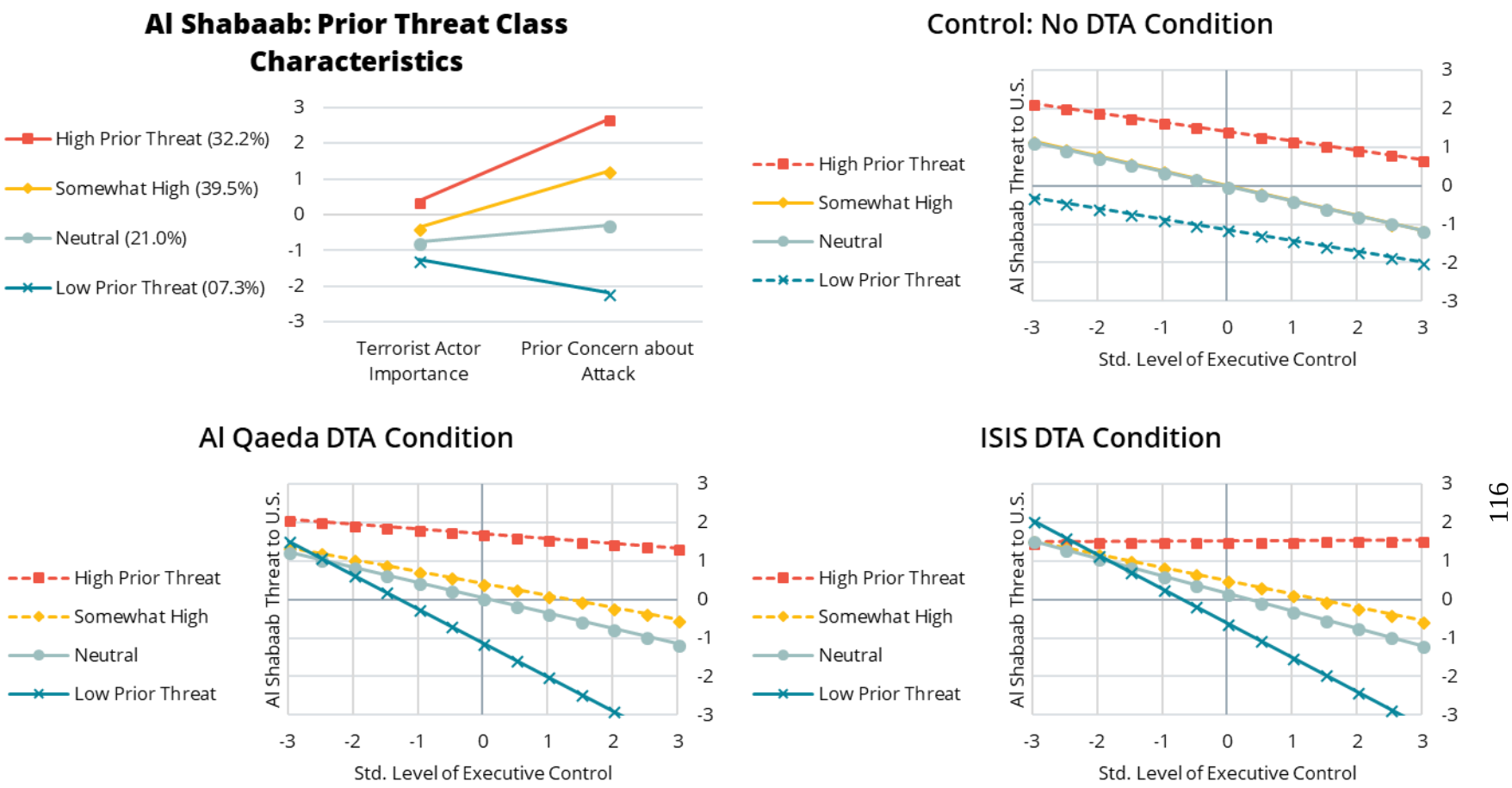

Figure 13. Graphical depictions of the 5-latent class x 3-known class SEMM, for the Shabaab analysis.
The top right panel shows the means of the two indicators of Prior Threat class membership for each class, with the other three panels showing the class varying slopes and intercepts from the regression of NDA threat on Executive Control, split by experimental condition. Solid lines represent path coefficients that are significant at $p < .05$; dashed lines represent path coefficients that are not significant, $p > .05$.

Comparison Model and Effect Size Estimates

As described in the analysis plan (see: Chapter 4 Part 4), and as with the New IRA analysis, the last step was to develop a comparison model, based on a more traditional approach to studying framing effects. The results are shown in Table 9.

Table 9.

Fit Statistics for Nested SEMMs Testing the Effects of the DTA Framing Device on Perceived Threat of the al Shabaab Using Traditional Moderators

		Global Fit of Model to Data							Variance Explained		
	FP	-2LL	SCR	BIC	BIC*	χ^2	p	$cm\hat{P}_a$	R^2	ΔR^2	p
S1: Full Comparison Model	31	14174	1.656	14393	14294	--	--	0.00	.162	--	.000
S2: Age @ 0 – ISIS	30	14174	1.651	14386	14290	0.003	.954	0.00	.162	.000	1.000
S3: Poli. Interest @ 0– Control	29	14174	1.658	14378	14286	0.010	.922	0.00	.162	.000	1.000
S4: Ideology @ 0 – AQ	28	14174	1.658	14372	14283	0.046	.829	0.00	.162	.000	1.000
S5: Ideology @ 0 – Control	27	14174	1.652	14365	14279	0.101	.751	0.00	.162	.000	1.000
S6: Poli. Interest @ 0 – AQ	26	14175	1.650	14358	14276	0.297	.585	0.00	.162	.000	.508
S7: Ideology @ 0 – ISIS	25	14175	1.635	14352	14272	0.296	.586	0.00	.162	.000	.501
S8: Race @ 0 – ISIS	24	14176	1.664	14345	14269	0.200	.654	0.00	.161	.000	.501
S9: Poli. Interest @ 0 – ISIS	23	14176	1.685	14338	14265	0.339	.560	0.03	.161	.000	.501
S10: Age @ 0 – AQ	22	14177	1.690	14332	14262	0.530	.467	0.12	.160	-.001	.348
S11: Age @ 0 – Control	**21**	**14178**	**1.704**	**14326**	**14259**	**0.873**	**.350**	**0.45**	**.159**	**-.001**	**.245**
S12: Race @ 0 – AQ	20	14182	1.698	14323	14260	2.292	.130	0.39	.156	-.004	.028

Note. FP = free parameters; -2LL = -2 x loglikelihood; SCR = loglikelihood scaling correction factor for MLR; BIC = Bayesian information criterion; *BIC = sample-size adjusted Bayesian information criterion; χ^2 = chi-square test statistic for the difference between nested models; $cm\hat{P}_a$ correct model probability. $cm\hat{P}_a$ was calculated across all nine models tested and was computed using *BIC. All chi-square test statistics were calculated using the scaling correction factor. Note that the variance explained statistics do not include the variance explained by the intercept, that is, the direct effect of the framing condition. The bolded line indicates the selected model.

In the model building process, 10 parameters were fixed at 0, with three variables completely falling out of the model: Age, Political Interest, and Political Ideology. The overall variance explained by the final model, as shown in Table 9, was 16% (R^2 = .159, p < .001). However, and as discussed in the New IRA analysis this value does not account for the direct effect of the DTA framing device. This can again be assessed by looking at the variance explained by the intercept (for the al Qaeda condition, b_0^* = -.021, *SE* = .262; for the

ISIS condition, b_0^* = -.357, *SE* = .258), which results in a true R^2 of .161, meaning that there was a negligible direct effect, with the final version of the traditional model explaining 16% of the variance in NDA Threat. Conducting the same analysis, but with the framing condition removed (that is, NDA Threat predicted by the six pre-specified variables, excluding Age, Political Interest, and Political Ideology) results in an R^2 of .145 (*SE* = .027), meaning that the total variance explained by the frame, both directly and in interaction with the other variables in the traditional model, is about 2% (ΔR^2 = .016).

These results can again be compared to the results from the hypothesized model. As shown in Table 7, the overall variance explained by the final model (PH5) is 48% (R^2 = .477). When accounting for the direct effect of the DTA framing device, the R^2 increases to .490, meaning that the hypothesized model explains 49% of the variance in NDA Threat. Finally, conducting the same analysis, but with framing condition removed, results in an R^2 of .430 (*SE* = .061), meaning that the total variance explained by the framing device, when using the hypothesized model, is about 6% (ΔR^2 = .060), or roughly 3.75 times the observed effect using the traditional model.

Chapter 6. Discussion

Using a quota based sample of 2,316 U.S. adults – weighted, as described in Chapter 4 Part 1 and Appendix B, to be representative of the U.S. adult population on gender, age, Hispanic ethnicity, race, income and education - this study experimentally looked at the effects of the dominant terrorist actor (DTA) framing device in news media (and specifically the "devil you know" framing package; see: B. K. Smith et al., 2017) on beliefs about the threat of non-dominant actors (NDAs) to the U.S. Based on the results of a longitudinal analysis of newspaper article mentions in the *New York Times* and *Wall Street Journal*, as well as article level co-occurrences between terrorist actors (both analysis are found in Chapter 2 Part 3), the DTAs selected for this study were al Qaeda and ISIS. These two groups have dominated news coverage of terrorism and terrorist actors over the last 21 years, with al Qaeda serving as the primary referent for NDAs from 09/11/01 to 08/19/14 (and the secondary referent from 08/20/14 through at least 12/31/17), and ISIS serving as the primary referent from 08/20/14 through at least 12/31/17.

The NDAs selected for this analysis were the New IRA and al Shabaab. As described in Chapter 4 Part 2, these two organizations fundamentally differ in tactics, ideology, and goals – both in comparison to each other and in comparison to al Qaeda and ISIS – and yet both have been framed as "linked" to either al Qaeda and/or ISIS (e.g., Millar, 2016; Omar & Hussein, 2017). I created two sets of stimuli based on real news story describing actual terrorist attacks claimed by each NDA (for al Shabaab see: Omar & Hussein, 2017; Reuters, 2017; for New IRA see: O. Smith, 2016; Sykes, 2016). There were three versions of each article: one where the NDA was linked to al Qaeda, one where the NDA was linked to ISIS, and one where the NDA was not explicitly linked to either DTA. Respondents were

randomly assigned to read one of these six manipulations (2 NDA x 3 DTA). Prior to exposure to any information about their assigned NDA, I asked respondents a set of questions aimed at gauging their pre-existing beliefs about the threat from terrorism in the U.S. (Prior Threat), and immediately following exposure to the manipulations, I collected information related to the amount of executive control respondents exerted while processing information about the NDA (Executive Control). Finally, the dependent variable (NDA Threat) for this study was measured with three items, each aimed at assessing the extent to which the respondent believed the NDA to be a threat to the U.S.

What follows in this chapter is a discussion of the research findings for this study, split up by hypothesis. In each section, I describe the findings for one of the hypotheses proposed in Chapter 3, and where needed discuss plausible mechanisms underlying null effects. Each section concludes by providing a contextualization of the findings in relation to real world implications, the theory outlined herein and, where relevant, prior research.

The original data analysis plan called for testing effects of the DTA framing device on beliefs about the threat posed by the NDA simultaneously – that is, with respondents in the New IRA set of conditions and respondents in the al Shabaab set of conditions analyzed in the same model – however, during assessment of the measurement model, the null-hypothesis of scalar invariance (equal intercepts) was rejected for comparisons between the two NDAs. Because of differential item functioning, specifically in measurement of NDA Threat, direct comparisons of the effects of the DTA framing device for the New IRA conditions and the al Shabaab conditions are not statistically meaningful. That said, I will be discussing the results in tandem, both to avoid redundancy and because there is still a lot to be learned in considering where the results are comparable and where they diverge.

Hypothesis 1a: Main Effect of Prior Threat

The first two hypotheses I tested dealt with expectations in the "general" case, that is, effects that should occur regardless of framing. Hypothesis 1a in particular proposed that there would be a positive direct effect of Prior Threat on NDA Threat, regardless of condition, such that the higher an individual's Prior Threat the higher their NDA Threat would be. This hypothesis was justified by the simple supposition that prior domain specific beliefs should be predictive of future domain specific beliefs and was supported with strong effects in both the New IRA NDA and al Shabaab NDA conditions. The main effect of Prior Threat appears to have been fairly consistent across both NDA and DTA conditions, with the only notable exception being a marginally (but not significantly) lower effect of Prior Threat in the New IRA control condition.

Contextualizing the Results of Hypothesis 1a

On their face, these results are hardly surprising: when an individual is concerned about the possibility of a future terrorist attack and ascribes high importance to information about terrorist actors (the indicators of Prior Threat in this study) mere exposure to information about a terrorist attack results in strong beliefs that the implicated organization is a threat. However, there are at least two ways in which these results are noteworthy. First, it is worth recalling that the article being read by respondents, regardless of condition, depicted the actions of a foreign NDA, in a foreign country, with explicit reference to the regionally bound motives of the NDA (opposition to British rule in Ireland in the case of the New IRA, and opposition to the "Western-backed government in Somalia, and the presence of African Union peacekeepers" in the case of al Shabaab). The indicators of NDA threat, however, all dealt with beliefs regarding the NDA *as a threat to the U.S. specifically*. From a normative

perspective one might hope and expect that the public differentiates between proximal and distant threat, however, the relatively strong main effect of Prior Threat across all conditions suggests this likely does not occur.

The second noteworthy aspect of these results are their sheer size. After accounting for the variance explained by Executive Control, DTA condition, and the interaction between Executive control and DTA condition, and not considering the additional variance explained by the interactions between either Prior Threat and Executive Control or Prior Threat and DTA condition, nor the three-way interaction between these variables, Prior Threat accounts for ~ 27% of the variance in NDA threat, in the New IRA set of conditions. In the Shabaab conditions, Prior Threat accounts for ~ 40% of the variance in NDA Threat.

Hypothesis 1b: Main Effect of Executive Control

Hypothesis 1b predicted a negative direct effect of Executive Control on NDA Threat, regardless of condition, such that the higher an individual's Prior Threat the lower their NDA threat would be. As described in Chapter 3 Part 1, a primary function of Executive Control (specifically interference control) is to desensitize emotional pathways, thus decreasing the likelihood that the affect system will be activated when presented with external stimuli (Kiefer, 2012). The affect system is the primary mechanism whereby humans decide what is and is not threat, and as such increases in Executive Control (which leads to a decreased likelihood of affect system activation) were expected to result in lower NDA Threat.

This hypothesis was supported across all conditions in the al Shabaab analysis, however, it received only partial support in the New IRA analysis. Specifically, while there was a negative direct effect of Executive Control in the al Qaeda DTA condition and the

control condition, there was not a direct effect of Executive Control on New IRA Threat in the ISIS DTA condition. However, I argue this singular divergent finding can be rationalized through an examination of the specific context in which the null was accepted.

In 2017, the year immediately prior to fielding this study, there was a disproportionate number of high profile events which occurred in the U.K.: The March 22 Westminster Palace car attack, the May 22 Manchester Arena bombing, the June 3 London Bridge car attack; the June 19 Finsbury Park car attack; the September 15 Parsons Green bombing attack.[51] Putting aside whether ISIS had any direct involvement in any of these attacks (the answer to which, in at least one case, is almost certainly no), it would have been nigh on impossible for the average American to avoid hearing or seeing something about at least one of these attacks, let along the average respondent in this study: 77.0% of respondents in the New IRA set of conditions reported having thought about ISIS in the last month, while 81.4% reported reading or hearing at least a little about ISIS in the last month. This intense level of saliency portends a strong familiarity with the actions of the group, specifically high-profile incidents for which ISIS has claimed responsibility, like those which occurred in the U.K.

In contrast to the high saliency of ISIS, the New IRA was a generally unknown organization for the vast majority of respondents, with 57% of respondents reporting that they were entirely unfamiliar with the New IRA, and only 23% reported that they were at least "somewhat familiar" with the organization (thus the distinction between the New IRA as an NDA and ISIS as a DTA). Thus, for the majority of respondents, the only knowledge

[51] Fun fact: I was actually in London when this one occurred. I have a picture of myself riding the subway later that day; I took it to show my partner that I was ok.

they had was that provided by the manipulation itself: that the New IRA killed a prison officer with a car bomb in Northern Ireland, and in the ISIS DTA condition that the New IRA has been linked to ISIS. (Even more specifically, assuming the respondent read and remembered the entirety of the article they were assigned, they would know that "the New IRA has been working with ISIS to develop deadly new car bombs").

Even assuming the worst of the average American, I assume that most of the respondents in this study know that the U.K. and Ireland are proximally close.[52] Thus, for those who are largely unfamiliar with the New IRA and at least modestly familiar with ISIS,[53] the shift in the criterion of applicability produced by an increase in Executive Functioning (and specifically the decreased sensitivity to affectively charged information) may not have been enough to cause a rejection of the frame implied by the ISIS framing device. In other words, for the majority of respondents, it is plausible to believe that even at high levels of Executive Control, the fit between the information and the frame was strong enough to erode any countervailing effects that would have been expected (e.g., Chapter 2 Part 3 Equation 5).

Contextualizing the Results of Hypothesis 1b

As with the results of Hypothesis 1a, these results on their face are not especially surprising. Researchers calling for individuals to use increased Executive Control when processing information and making decisions litter the communication and terrorism literature (e.g., Baumer et al., 2017; Simon et al., 2004; B. K. Smith et al., 2016, 2017; Zhao & Peterson, 2017), under the presumption that this effect holds. However, when comparing

[52] Even if they may not know that Northern Ireland isn't part of Ireland, or more that Northern Ireland is actually part of the U.K., and not just near the U.K.

[53] 54.8% of respondents, for those who are curious.

the magnitude of the main effect of Executive Control to the magnitude of the effect of Prior Threat (independent of the interaction effect tested in Chapter 3), these results suggest that the countervailing impact of Executive Control may not be as robust as many researchers commonly believe. In the New IRA set of conditions, the main effect of Executive Control accounts for only 2.1% of the variance in NDA Threat (compared to 27% variance explained by Prior Threat). The main effect of Executive Control is greater in the Shabaab set of condition (6.2% variance explained), but then again, so is the main effect of Prior Threat (40% variance explained).

Hypothesis 2: Main Effect of DTA Framing Device

Given that the primary framing of DTAs has historically been as threat (B. K. Smith et al., 2016), and that the context within which DTAs emerge into the public consciousness is through events which are deemed highly threatening (see Chapter 2 Part 3), I proposed that the primary effect of the DTA framing device would be to amplify NDA Threat. This was further justified through Equation 4 of the Probabilistic Framing Process Model (see Chapter 3 Part 2), which in part states that the probability of a frame being activated is dependent upon how evocative the framing package is of the intended frame (in this case the "threat" frame). In both the al Shabaab NDA and New IRA NDA conditions, Hypothesis 2 was fully supported.

Contextualizing the Results of Hypothesis 2

Despite the wide-spread practice of framing NDAs using the DTA framing device (see: Bruscella, 2015; B. K. Smith et al., 2016, 2017; and Chapter 2 Part 3), this is the first study which directly or indirectly tests the effects of this practice. As expected, the DTA framing device significantly increased the extent to which individuals perceived the NDA as

a threat, and specifically as a threat to the U.S. However, and with the previous cautionary caveat about direct comparisons between NDA conditions in mind, it is worth noting that the direct effects of the DTA framing device were not equivalent.

In the New IRA conditions, NDA threat was increased by about .46 standard deviations (*SD*) for the al Qaeda DTA condition ($R^2 = .075$)[54] and about .41 *SD* for the ISIS DTA condition ($R^2 = .050$). In the al Shabaab conditions, however, the DTA framing device appears to have been half as strong (if not less), increasing NDA Threat by about .20 *SD* for the al Qaeda DTA condition and by about .21 *SD* for the ISIS DTA condition (for both, $R^2 = .019$). While this could simply be an artifact of measurement non-invariance, an alternative explanation can also be found in the formulation of the probabilistic framing process model shown in Equation 5 (see: Chapter 5 part 3). Specifically, it is plausible that given the surface level similarities between the DTAs and al Shabaab (i.e., an Islamic extremist organization), the perceived probability of observing the DTA framing device given a message communicating information about al Shabaab could be substantially higher than the perceived probability of observing the DTA framing device given a message communicating information about the New IRA. This would result in an inflated denominator for the sub-conscious calculation of the probability that the implied frame is the "correct" frame, and thus a decreased probability of framing effects, which would manifest as a smaller average effect of the DTA framing device.[55]

[54] Note that these R^2 values are not included as part of the totals listed in Table 3 and Table 6 in Chapter 5 but are included in the "Comparison Model and Effect Size Estimates" section of each analysis.

[55] A third possibility is that the perceived threat of the al Shabaab without a DTA framing device is simply greater than the perceived threat of the New IRA without a DTA framing device. This could result in a ceiling effect: if an individual is already strongly predisposed to view al Shabaab as a threat to the U.S., then the inclusion of the DTA framing device would be limited in it's ability to amplify the perceived threat. I find this explanation just as plausible and just as interesting as the explanation provided in text. However, this

Regardless of the root cause of the differences in effect size between the New IRA conditions and the Shabaab Conditions (and/or whether the differences are real or just a statistical artifact) the fact remains: after accounting for Prior Threat, Executive Control, all two-way interactions and the three-way interaction there are *still* meaningful differences in Prior Threat independently caused by the DTA framing device. These results were seen in response to a single news article describing the actions on an NDA. When multiplied by hundreds of potential exposures to the DTA as framing device every year, these results portend stark real-world consequences.

As described in Chapter 2 Part 3, ISIS and al Qaeda are omnipresent in terrorism discourse, and more specifically in media discourse centering around the actions of Foreign Terrorist Organizations (FTOs). They often appear in articles about NDAs, with both organizations having a mean inclusion index > 40% across all FTOs. This speaks to the shear pervasiveness of the DTA as framing device in media discourse. What this study shows is that inclusion of this framing device alters interpretations of the framed organization in such a way as to amplify perceptions of the framed NDA as a direct threat to the U.S. All this taken together, it is perhaps unsurprising then that 75% of the U.S. public views international terrorism as a "critical threat" to the "vital interests of the United States" (Norman, 2018).

Hypothesis 3: Three-Way Interaction Effect

The final hypothesis tested built from the theoretical models in both Chapters 2 and 3 to propose a complicated interrelationship between the variables of interests. Specifically, I argued that Executive Control should moderate the relationship between Prior Threat and

explanation relies more heavily on direct comparison of the NDA condition means, which also makes it a more fraught explanation.

NDA threat, but only in the DTA conditions. I argued that when individuals are exerting low levels of Executive Control, perceptions of NDA threat should primarily be driven by the DTA framing device, with little to no effect of Prior Threat. In contrast, when individuals are engaged in high levels of Executive Control, I argued there should be large differences in perceptions of NDA threat, driven by Prior Threat, with perceptions of NDA threat continuously decreasing as a function of Prior Threat (for example, if the *b* coefficient for the regression of NDA threat on Executive Control for those with moderate levels of Prior Threat was .5, the *b* coefficient for those with low levels of Prior threat would be twice as large: -1). The hypothesis testing procedure required first assessing the significance and direction of the interaction term within each of the DTA conditions, and then decomposing the interaction effect to determine whether the general pattern of regression coefficients across different levels of Prior Threat matched the pattern expected under the theoretical model.

When looking specifically at the al Shabaab set of conditions, Hypothesis 3 was robustly supported. The interaction effect was significant and positive for both the al Qaeda DTA condition and the ISIS DTA condition; the *b* of the interaction effect was not significant in the control condition and fixing the *b* at 0 did not significantly alter model fit or the amount of variance explained in NDA Threat. In addition, decomposing the interaction effect revealed a pattern of *b* coefficients as close to the expectations laid out in Chapter 3 as could reasonably be expected. Using a Wald Chi-Square Test of Parameter Constraints, I found there was a 99.1% chance that the theoretical model produced the observed results (with Wald $\chi^2_{(10)} = 2.462$), in relation to Hypothesis 3.

The findings supporting Hypothesis 3 within the Shabaab conditions stand in contrast to the findings from the New IRA conditions. While the interaction effect was significant in

the al Qaeda DTA condition, it was not significant in the ISIS DTA condition. Additionally, while the *b* coefficient for the interaction effect was not significant in the control condition, fixing it at 0 significantly reduced variance explained, ΔR^2 = -.004, p = .007 (although it did not reduce global model fit: $\chi^2_{(1)}$ = 1.807, p = .179). More importantly, when decomposing the interaction effect, the pattern of *b* coefficients did not appear, on their face, to match the expectations put forth by the theoretical model. Subsequent post-hoc testing showed that the results were not outside the realm of plausibility, however, there is only a 35.8% probability of the theoretical model having produced the observed results (Wald $\chi^2_{(10)}$ = 10.990, p = .358). As such, Hypothesis 3 was rejected for the New IRA conditions.

I will return shortly to the question of how to reconcile these conflicting findings. Prior to doing so however, I feel it is worth exploring possible explanations for why the theoretical model would so strongly fit the data in the al Shabaab conditions but only partially fit the data in the New IRA conditions.

Rationalization of Null Findings

ISIS DTA condition.

In the case of the ISIS DTA condition, one plausible explanation has already been presented, in relation to the null main effects of Executive Control. Specifically, given the unique pairing of the New IRA and ISIS, the expected shift in the criterion of applicability produced by an increase in Executive Functioning may not have been enough to cause a rejection of the frame implied by the ISIS framing device. If this were true, it would explain why the *b* coefficients for the regression of NDA threat on Executive Control in the ISIS DTA condition appears on its face to reflect more closely what would have been expected in the control condition than what was expected in the DTA conditions.

No DTA condition.

For the control condition, it is unclear whether post-hoc speculation is necessary. The probability that the observed *b* coefficients are equal to the theoretically expected coefficients is fairly high (Wald $\chi^2_{(4)}$ = 2.545, p = .637), and the only paths which visually differ from the theoretical model are not statistically significant. Additionally, while the decrease in variance explained when fixing the interaction term at 0 was significant, at -.004 the difference in R^2 was not substantive. Thus, it is reasonable to state that both statistically and substantively, H3 was supported, in relation to the predictions made about the control condition.

Al Qaeda DTA condition.

What this leaves us to consider is the seemingly odd pattern of *b* coefficients found in the al Qaeda DTA condition. Two observed *b* coefficients stand out as visually divergent from the theoretical model: the coefficient within the high Prior Threat class and the coefficient within the low Prior Threat class. In the case of the former, this can largely be dismissed, as the theoretical model only makes the prediction that the slope will not be significantly different from 0: despite nominally being > 0, the slope is not significant (b = .161, SE = .171, p = .370. As for the slope in the low prior threat, it appears the most plausible explanation may also be the least satisfying: insufficient *n*.

Based on the estimated model, there are only about 85 individuals in the low Prior threat class: 30.2 in the al Qaeda DTA condition, 26.4 in the ISIS DTA condition, and 28.0 in the control condition. Given the rim weighting efficiency of 62.03%, the effective sample size in each cell is less than 2/3rds of that: 18.7, 16.4, and 17.4, respectively. Even in the most optimistic case where the true *b* for the al Qaeda DTA condition was -1, it would require an effective *n* of at least 26 in order to even show that the slope was significantly < 0. Thus, it is largely unsurprising that the slope in the al Qaeda DTA condition low Prior threat

class is (a) non-significant and (b) indifferentiable from the somewhat high and the neutral Prior Threat classes.

Evidence for Full Support of Hypothesis 3

With this set of rationalizations in mind, I want to return to the question at hand: does this study support or fail to support Hypothesis 3? In the New IRA conditions, the probability of the hypothesis being true given the data is approximately 35.8% (or more appropriately, the probability of the null hypothesis being true is p = .642), whereas in the al Shabaab set of conditions the probability of the hypothesis being true given the data is approximately 99.1% (meaning again that the probability of the null hypothesis being true is p = .009). Assuming that the results of the two studies are independent (as no individuals were part of both the New IRA and al Shabaab analyses), and given that the same underlying hypothesis was tested, it is possible to use Fisher's method for combining p-values to determine the probability that the null hypothesis is true, with the test statistic calculated as $-2\sum_{i=1}^{n}\ln(p_i)$. This is compared against a chi-square distribution with 2n degrees of freedom. Doing so (using the p-values for the tests of the null hypothesis mentioned above), we get $\chi^2_{(4)}$ = 10.307, p = .035. As such, when looking at the results in their entirety, Hypothesis 3 is supported.

Alternatively, it is possible to specifically test just whether the theoretical model holds in the experimental conditions by assessing the probability of the null hypothesis of equality of the b coefficients within each condition. For the al Shabaab conditions, the null hypothesis of no interaction effect is rejected, $\chi^2_{(6)}$ = 16.544, p = .0111, while in the New IRA set of conditions the null hypothesis of no interaction effect is accepted, $\chi^2_{(6)}$ = 12.095, p

= .0599. When applying Fisher's method for combing *p*-values, we get $\chi^2_{(4)}$ = 14.631, *p* = .005. This again suggests that Hypothesis 3 is supported.

Contextualizing the Results of Hypothesis 3

Finding support for hypothesis 3 portends implications for our understanding of framing effects and the role of Executive Control when processing framed information. The results of studies assessing the role of Executive Control in altering framing effects have been mixed: some have found that increases in Executive Control (or sub-processes of Executive Control) amplify framing effects (e.g., Chong & Druckman, 2010; Druckman, 2004), while some have found that it attenuates framing effects (e.g., de Vreese, 2004; Igou & Bless, 2007). What the results of this study show is that both are likely true, dependent upon the person and the context.

When a DTA framing device is used to activate the "threat" frame, Executive Control moderated the relationship between prior perceptions of the threat from terrorism and perceptions of the NDA as a threat to the U.S.: At low levels of Executive Control, there were no differences in NDA threat between those at different levels of Prior Threat, but when Executive Control was high, there were large differences in NDA between those at different levels of Prior Threat. This stands in stark contrast to baseline condition (no DTA framing device) wherein there was no interaction between Prior Threat and Executive Control. Instead, in the absence of the DTA framing device, Executive Control correlated with lower levels of NDA threat, independent of Prior Threat.

Chapter 7. Concluding Thoughts

In media depictions of terrorist actors and events, a select few organizations appear to be omnipresent. These dominant terrorist actors (i.e., al Qaeda and ISIS) are frequently used to provide a familiar frame of reference for understanding non-dominant actors (e.g., the New IRA and al Shabaab). The substantive purpose of this dissertation was to answer the question "to what effect." In answering this question, I also sought to provide a framework for studying framing effects better capable of making meaningful predictions about for whom and to what extent framing should influence beliefs.

I began by providing a general overview of what is meant by frames and framing, the process wherein frames guide construction and interpretation of discourse products and provided evidence for the use of dominant terrorist actors (DTAs) as framing devices in media depictions of non-dominant actors (NDAs). Following from this, I provided the outlines of a general model of information processing and belief formation, which I subsequently used to inform creation of a probabilistic framing process model. Taken together, these models were used to inform a set of predictions about for whom the DTA framing device should have what effect on beliefs about the threat of NDAs to the U.S.

Using an online survey experiment, with a quota-based sample of 2,316 adults living in the U.S., I presented individuals with a news article depicting the actions of a non-dominant actor (either al Shabaab or the New IRA), manipulated so that 1/3 read an article linking the NDA to ISIS, 1/3 read an article linking the NDA to al Qaeda, and 1/3 read an article that did not make explicit reference to any other organizations. I found that the single strongest predictor of beliefs about the threat of NDAs to the U.S. is individuals prior beliefs of the threat from terrorism to the U.S., and I found a negative relation between beliefs about

the threat of NDAs and the extent to which individuals exerted executive control over the processing of the information in the news article. In addition, I found that the DTA framing device increased perceptions of the NDA as a threat to the U.S., after accounting for prior threat and levels of executive control.

Building from the information processing and belief formation model, as well as the probabilistic framing process model, I also suggested a three-way interaction between prior beliefs about the threat from terrorism, the amount of effort exerted when processing information about the non-dominant actor, and the presence of the dominant actor framing device. This hypothesis was largely supported, providing preliminary evidence for the underlying theoretical models.

Limitations

As with any study, there are limitations. Many of these are self-evident: this was an experimental study meaning that the way individuals were exposed to the stimuli inherently lacks external validity, and that the effects could differ in a more natural setting; I used a quota-based "opt-in" sample, meaning that the results may not hold for the general population; I used self-report data, meaning that many of the results could have been biased by the survey instrument itself; this study only looks at two NDAs and the results may not generalize to all NDAs; I only looked at one medium and the results may not hold for all media. Beyond these and other limitations inherent in most (if not all) social science and media effects research, there is a limitation specific to this study worthy of special note.

Perhaps the most challenging limitation when trying to generalize the results of this study is the lack of measurement invariance in comparisons of those exposed to the al Shabaab stimuli and those exposed to the New IRA stimuli. Al Shabaab was selected to be

the more "ecologically valid" NDA, given the superficial similarities between the group and the DTAs, and given that the organizations is officially designated as "linked" to al Qaeda by the U.S. State Department (despite little to no evidence that the organizations have any active connection). The New IRA was selected as the strong test of the DTA framing device, given the lack of similarities between the group and the DTAs, apart from their shared designation as U.S. State Department designated Foreign Terrorist Organizations. It would have been informative to be able to directly compare results across these two organizations, but the lack of measurement invariance (specifically in relation to the dependent variable) renders any attempt to do so meaningless and suggests that attempts to generalize to other NDAs may also be impossible.

Where this is especially limiting is in relation to Hypothesis 3, which was fully supported for the al Shabaab conditions and not supported (or at best only marginally supported) in the New IRA conditions. Post-hoc analysis showed that, overall, hypothesis 3 was supported. Still, it is necessary to explore these results further, both with additional NDAs, and with different indicators for the dependent variable, in order to fully establish that the differential results truly were just due to random chance or if they were actually due to differences between the two NDAs.

Implications and Future Directions

On the Consequences of Omnipresence

Despite some limitations to generalizability, there are a number of important implications, first and foremost among these the observed consequences of the omnipresent terrorist actor. As established in Chapter 2 and elsewhere (e.g., B. K. Smith et al., 2017), DTAs are commonly used as framing devices within terrorism discourse, providing

interpretive structure for the reader to process information about complex and unfamiliar issues, events, and actors in a more clear, concise and compelling manner. As shown by the results of this study, when using al Qaeda or ISIS as a framing device, the framed NDA takes on, at least to some extent, the attributes associated with the DTA. This is fundamentally problematic as DTAs are themselves major outliers in terms of their international composition and global focus.

Most NDAs – including the two studied here: al Shabaab and the New IRA – operate within a narrow geographical range; their recruits, targets, and expressed grievances tend to be overwhelmingly focused on a particular nation state or state-cluster (Kilcullen, 2009). Thus, the average NDA – to include al Shabaab and the New IRA - while a danger to the region within which they are active, poses little to no threat for American citizens outside of said region. Unfortunately, the results of this study suggest that the all too common practice of using DTAs as framing devices when describing the actions of NDAs results in an inappropriate projection of these organizations' global ambitions and international priorities onto the NDA.

For the general public, the 'picture' of terrorism and terrorist organizations is most often painted by the media, with media framing directly influencing the American public's understanding of the global terrorist threat, and in turn the policies and actions the public expects and wants in response (Brinson & Stohl, 2012). We can only act toward the world as we see it, and the use of the DTA framing device appears to promote a fundamentally flawed view of the world, potentially resulting in rejection of sound counterterrorism policies because they do not fit with the perceived nature of the threat posed by the group (B. K. Smith et al., 2016).

In Chapter 1, I detailed an example of the DTA framing device, from the *New York Times* coverage of the April 24, 2018 van attack in Toronto. Shortly thereafter, the *New York Times* published a follow-up piece, providing "thoughts about covering the tragedy from members of the team." A quote from this article, attributed to Rick Gladstone,[56] is especially noteworthy:

> I knew coming into work on Tuesday that my assignment would be stitching together material provided by our reporters in Toronto. I was ready for a day of chilling details from the police, witnesses and experts about a terrorist conspiracy, in which we explained how a radicalized suspect named Alek Minassian had replicated the mayhem we had seen in vehicular attacks by Islamic State disciples in Europe and New York.
>
> Instead, we learned that the suspect appeared to be a sexually frustrated, woman-hating loner who had paid homage to a misogyny netherworld in a Facebook post, either before or during the attack. …
>
> Writing the story became an exercise in filling in the blanks without going beyond what we knew. (Austen, 2018, paras. 17–18, 20)

This quote serves as a reminder of just how natural and entrenched the practice of using DTAs as a frame of reference is. Prior to even beginning to report, Gladstone was already prepped to use ISIS as the go to frame of reference for the attack, only shifting when confronted with a preponderance of evidence. To make it clear, I attribute no blame to Mr. Gladstone, Mr. Austen, or any other journalist attempting to honestly cover events such as those that occurred in Toronto. Given how entrenched this practice is, however, it raises concerns about how to confront this issue, in light of the observed effects. Future research must explore possible interventions, both aimed at the public and at journalists.

In addition to explore interventions, future research should continue to explore the effects of the DTA framing device, beyond the effect on beliefs about the threat posed by

[56] Gladstone is credited in the original coverage as having contributed from New York.

NDAs. Given the information processing and belief formation model outlined in Chapter 3, the observed effect on NDA threat portends indirect effects (and, potentially, direct effects) of the DTA framing device on multiple public opinion domains, including support for military interventions and support for curtailing civil liberties. Future research should also expand the range of framing packages tested. Smith et al. (2017) identify 11 different framing packages which commonly utilize the DTA framing device. Given the probabilistic framing process model, it is likely that each framing package would have at least subtly different effects. Thus, it is necessary to expand the range of framing packages tested, to fully understand the potential effects of using DTAs as framing devices.

On Information Processing and Probabilistic Framing Effects

Beyond the implications of this study for understanding the role of the DTA framing device in shaping public perceptions of NDAs, this research also portends important implications for understanding and studying framing effects. Most directly, this research provides some clarity around the role of information processing in moderating framing effects.

Previous research assessing the role of Executive Control in altering framing effects have been mixed: some have found that increases in Executive Control (or sub-processes thereof) amplify framing effects (e.g., Chong & Druckman, 2010; Druckman, 2004), while some have found that it attenuates framing effects (e.g., de Vreese, 2004; Igou & Bless, 2007). This study suggests that both are likely true, given the fundamentally probabilistic nature of information processing, dependent upon the person and the context. This was seen in the results of Hypothesis 3, which proposed an interaction effect between Executive Control and Prior Threat, but only in the presence of the DTA framing device. Despite only

partial support of the hypothesis in the New IRA conditions, the hypothesis was fully supported in the al Shabaab conditions, and as shown in Chapter 6, the combined results suggest support for the underlying hypothesis.

The results of this study also provide preliminary support for the idea of framing effects, and the framing process writ large, as probabilistic. The argument underlying Hypothesis 3 is that the *probability* of a framing effect is inversely related to the amount of effort an individual exerts in processing the framed information. This is because the criterion shift principle posits that as the cognitive resources dedicated to elaborative processing increases, the criterion for judging applicability also increases (Aminoff et al., 2012, 2015), thus shifting the shifting the probability of the frame being selected. This causes an increased probability of a frame being deemed inapplicable (as discussed in relation to Chapter 3 Part 2 Equation 5), and therefore a decreased probability of the frame being used to guide information processing. Finding support for Hypothesis 3 suggests that the notion of a probabilistic framing effect is likely correct.

An important note here is that this study provides only preliminary support for the probabilistic framing process model (and the information processing and belief formation model), as this study was an indirect test. While no other theoretical models make a similar prediction, thus providing support for the underlying models, additional testing, from both the perspective of the receiver (Chapter 3 Part 2 Equations 4-5) and from the perspective of the sender (Chapter 3 Part 2 Equation 3) is necessary. However, if these models continue to hold, they could imply a fundamental shift is necessary in how we approach the study of framing effects (and possibly the study of communication more broadly).

There are numerous assumptions underlying the current social scientific study of human communication, most importantly the positivist assumption that if we capture everything there is to know about the individuals engaged in a communicative act, and the environment within which the communicative act occurs, that we could perfectly predict the outcomes. These assumptions are baked into the methods we use to study communication, as well as the theories we use to understand communication. If, as I suggest, communication effects are fundamentally probabilistic, then much of what we know about communication will need to be revised.

On Media Effects

On that note, these results can also be considered support for a human-centered approach to media effects research which focuses on identifying and testing the structural and contextual components embedded within messages that alter the psychological relevance of the information contained in the message. The effects of any given media message will be small and seemingly insubstantial if we forget the fact that each individual's experience is not universal: mediated messages are processed based on the meaning that the information holds for the individual. While this should hardly be a controversial statement it is largely ignored in practice.

The aggregate framing effect under the hypothesized model in this study was not huge – somewhere between 6% and 6.6% of the variance in beliefs about the threat of the NDA to the U.S. was directly and independently attributable to the DTA framing device, either directly or in interaction. For comparison, however, the average effect size for a media effects study is 3%, in terms of variance explained, and the average effect size for framing

studies[57] is closer to 0.1% (Rains et al., 2018). In this study, when analyzing the same data using a more traditional approach to studying framing effects, the variance explained by the DTA framing device dropped to between 1.4% and 1.6%. So, while the aggregate effect under the hypothesized model is at best considered small-to-moderate, it is massive in comparison.

We know that the framing of information in the media influences the public's view of the world because we know that on most issues, like terrorism, the average person has no personal experience, and their only true source of information is the media. We can look at the world and see that framing effects have occurred, but when it comes to predicting what the effects of a particular communication will be *a priori* we, as a field, come up short. The models outlined here are a preliminary contribution to addressing this shortcoming, and are a small step toward providing a more satisfying answer to the question first posed 65 years ago: what types of communication, on what types of issues, brought to the attention of what kinds of people under what kinds of conditions have what kinds of effects (Berelson, 1953, p. 451).

[57] Specifically gain-loss framing, but still.

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Appendix A: Newspaper Data Collection and Identification of FTAs

To create a corpus of articles for use in the analysis found in Chapter 2, I used the ProQuest News and Newspapers database to collect all newspaper articles published in the *New York Times* and *Wall Street Journal* between 01/01/96 and 12/31/17 which explicitly make reference to terroris* (e.g., terrorist, terrorists, terrorism) or which the newspapers tagged as relating to terrorism (using the subject tag "terrorism"), excluding editorials, obituaries, book reviews, and other non "news" articles. This resulted in a total of 24,356 articles, 18,227 from the *New York Times* and 6,129 from the *Wall Street Journal*. I began the analysis in 1996 as this was the year in which bin Laden issued his "Declaration of Jihad Against the Americans Occupying the Land of the Two Holy Mosques" ("On Criminal Charges Against Usama Bin Laden," 2000), functionally declaring war on the U.S. and its allies in the region.

Following collection of the articles, I then identified which articles included mentions of State Department designated FTOs. To find FTOs mentioned in newspaper articles, I searched for both the official name of the organization as well as all known alternative names,[58] and all known alternative spellings (e.g., Qaeda, Qaida, Qa'ida). The complete dictionary contains 1,940 unique terms, across 74 organizations. The median number of terms per organization is 19, with a range of 3 to 190. The identification of terrorist organizations in articles was done using WordStat 7.1.13. Of the 74 organizations, 71 were referenced at least once.[59]

[58] As provided by the State Department and other digital sources (e.g., Wikipedia, Council on Foreign Relations, Counter Extremism Project), and excluding overly common terms, e.g., "IS" as an acronym for the Islamic State, or "the Base" as an alternative name for al Qaeda.

[59] The three organizations with no references are: Ansar al-Shari'a in Darnah (AAS-D), Lashkar I Jhangvi (LJ), and the Manuel Rodriguez Patriotic Front Dissidents (FPMR).

Appendix B: Raw and Weighted Sample Characteristics

	Raw *n*	Raw %	Pop. %	Weight *n*
Gender[1]				
Male	1006	43.44%	48.952%	1133.73
Female	1310	56.56%	51.048%	1182.27
Age[1]				
18-24	237	10.23%	12.265%	284.06
25-34	497	21.46%	18.247%	422.60
30-44	436	18.83%	16.469%	381.42
35-54	383	16.54%	16.911%	391.66
40-64	387	16.71%	16.941%	392.35
65+	376	16.23%	19.167%	443.91
Hispanic Ethnicity[1]				
Non-Hispanic	1916	82.73%	83.834%	1941.60
Hispanic	400	17.27%	16.166%	374.40
Race[1]				
White	1560	67.36%	77.702%	1799.58
Black or African American	248	10.71%	12.935%	299.57
Asian	226	9.76%	6.017%	139.35
Other	282	12.18%	3.346%	77.49
Education[2]				
High School Graduate or Less	451	19.47%	39.930%	924.78
Some College or Trade / Technical / Vocational Training	707	30.53%	22.950%	531.52
College Graduate	726	31.35%	25.720%	595.68
Post Graduate Degree or In Progress	432	18.65%	11.400%	264.02
Income[3]				
$0 - $24,999	481	20.77%	19.800%	458.57
$25,000 - $49,999	659	28.45%	33.600%	778.18
$50,000 - $74,999	511	22.06%	21.300%	493.31
$75,000 - $99,999	298	12.87%	11.300%	261.71
$100,00 +	367	15.85%	14.000%	324.24

Note. Pop. % is the proportion of the U.S. population 18 or older in that group. These values were used to weight the sample and are equivalent to the weighted sample proportions. Weight *n* is the weighted number of participants matching each demographic category. All weighting was done independently within condition, to ensure representativeness of each sub-sample, and to ensure that the observed *n* in each condition stayed constant. $N = 2{,}316$.

[1] Parameters are from 12/2017 postcensal estimated resident population (U.S. Census Bureau, 2017b)

[2] Parameters are from the 2017 Current Population Survey (U.S. Census Bureau, 2017c)

[3] Parameters are based on single-earner incomes, and are from the 2017 Current Population Survey (U.S. Census Bureau, 2017a)

At least 10 killed by car bomb in Mogadishu claimed by [Islamic / al Qaeda linked / ISIS linked] militants

Henry McDonald

{NA / Masked members of the Shabaab marching. / Destruction and wreckage after an attack on a government building.} At least 10 were killed when [NA / al Qaeda affiliated / ISIS affiliated] insurgents drove an explosives-laden minibus into local government offices in the Somali capital Mogadishu on February 20, 2017. The attack was claimed by [the / al Qaeda-linked / ISIS-linked] Shabaab in a statement by the groups spokesman.

MOGADISHU (Reuters) - At least 10 people were killed on Tuesday in a car bomb attack on a government building in the Somali capital of Mogadishu that was claimed by [NA / al Qaeda linked / ISIS linked] Islamist insurgents, a government official said.

The Shabaab, a dissident Islamist group [NA / with ties to al Qaeda / with ties to ISIS], claimed responsibility for the bombing. The group said they were targeting government officials and their staff staying at the Wadajir District building.

The Shabaab is a terror group opposed to the Western-backed government in Somalia, and the presence of African Union peacekeepers. In 2014, Ahmed Abdi Godane, then head of the Shabaab, formally pledged [jihad against the government / allegiance to al Qaeda / allegiance to ISIS], in a move largely seen as an attempt to attract foreign fighters to their cause.

Somalia's prime minister said the attack was a demonstration of the groups "evil-mindedness," adding that the bombing would not disrupt Somalia's larger efforts toward achieving peace and stability.

The group has recently pledged to ramp up its attacks following a military offensive commissioned in April by Somalia's newly-elected government, and as they continue to get help from other terrorist organizations [NA / including al Qaeda / including ISIS].

ALTERNATIVE IMAGE:

Prison officer killed by car bomb in Belfast claimed by [republican / al Qaeda linked / ISIS linked] dissidents

Henry McDonald

{CAPTION APPEARS ONLY FOR CONDITIONS WITH IMAGES} {Masked members of the New IRA marching. / Destruction and wreckage of cars after an attack.} A prison officer was killed when a car bomb planted by republican dissidents exploded after the office drove over a speed ramp in Hillsborough drive in the Northern Ireland capital Belfast on February 20, 2017, according to the police service. The attack was claimed by [NA / al Qaeda affiliated / ISIS affiliated]}

BELFAST (Reuters) - A prison officer was killed on Tuesday in a car bomb attack in east Belfast that was claimed by [NA / al Qaeda linked / ISIS linked] republican dissidents, a government official said.

The New IRA, a dissident republican group [NA / with ties to al Qaeda / with ties to ISIS], claimed responsibility for the booby-trap bombing. The group said he was targeted for training officers at Maghaberry Prison near Lisburn, County Antrim.

The New IRA is the largest of the three main terror groups opposed to British rule in Ireland. It was recently revealed by David McNarry, the chair of the Northern Irish branch of Ukip, that the New IRA has been working [NA / with al Qaeda / with ISIS] to develop deadly new car bombs, like the one used in Tuesday's attack.

Northern Ireland Secretary said the attack was "a demonstration of how lethal the terrorist threat continues to be in Northern Ireland."

Police in Northern Ireland have cautioned that the groups capabilities could be increasing as they acquire more sophisticated weaponry like mortar bombs and high caliber assault rifles, and as they continue to get help from other terrorist organizations[NA / , including al Qaeda / , including ISIS].

Alternative Image:

Appendix D: Discussion of Image Manipulations

In addition to varying in terms of the DTA used as a framing device, articles also varied in terms of the photo accompanying the article. 1/3rd of respondents, across NDAs and DTAs, were shown an article with no photo, 1/3rd saw a photo of masked members of the NDA marching (at an Easter demonstration, in the case of the New IRA, and down a street in Somalia, in the case of the Shabaab), and 1/3rd saw a photo depicting the aftermath of an attack by the organization. In the case of the New IRA, pilot tests showed that the visual for the actual car bombing on 03/15/2016 did not have the same level of emotional reactance as the picture selected for the Shabaab. As such, it was substituted for a picture of the 1996 Manchester bombing carried out by the Provisional IRA. No respondents indicated knowing that the picture shown was not of the events depicted in the stimuli.

Findings related to the impact of image are not part of the current study, and as such are ignored. Numerous tests were conducted to ensure this decision did not impact the results presented herein, with multiple rounds of testing showed that there were no differences across visual conditions (within NDA and DTA) in relation to the variables of interest in this study. Importantly, there does not appear to be any significant differences in perceived threat of the framed organization between the different visual stimuli conditions. This is true when looking at the possible main effects of visual stimuli ($F_{(2, 2425)} = 2.883$, $p = .056$) and when looking at possible interaction effects: the interaction between image and NDA ($F_{(2, 2425)} = 0.177$, $p = .837$), image and DTA ($F_{(4, 2425)} = 0.492$, $p = .742$), as well as image, NDA and DTA ($F_{(4, 2425)} = 1.294$, $p = .270$).

Appendix E: Survey Materials

Political Interest and News Consumption Habits Block

Thank you for agreeing to participate in this study. To begin, we would just like to ask you a few questions about your news consumption habits.

General political interest

Some people seem to follow what's going on in government and public affairs most of the time, whether there's an election going on or not. Others aren't that interested. How often would you say you follow what's going on in government and public affairs?

- Most of the time [4]
- Some of the time [3]
- Only now and then [2]
- Hardly at all [1]
- Never [0]

News Consumption Habits [3]

How closely do you follow **international news**?

- Extremely closely [4]
- Very closely [3]
- Fairly closely [2]
- Somewhat closely [1]
- Not closely at all [0]

How closely do you follow **national news**?

- Extremely closely [4]
- Very closely [3]
- Fairly closely [2]
- Somewhat closely [1]
- Not closely at all [0]

How closely do you follow **local news**?

- Extremely closely [4]
- Very closely [3]
- Fairly closely [2]

- Somewhat closely [1]
- Not closely at all [0]

Concern About Threat from Terrorism

How concerned are you that the United States might suffer another terrorist attack in the next three months?

- Very concerned [3]
- Concerned [2]
- Somewhat concerned [1]
- Neutral [0]
- Somewhat unconcerned [-1]
- Unconcerned [-2]
- Strongly unconcerned [-3]

Al Qaeda Perceptions Block

We would now like to ask about your perceptions of al Qaeda (also known as al Qaeda Core, or AQ).

Al Qaeda Familiarity

How familiar are you with this organization?

- Not at all familiar [0]
- Slightly familiar [1]
- Somewhat familiar [2]
- Moderately familiar [3]
- Extremely familiar [4]

[Page Break]

Al Qaeda Activation

[Display this question if Al Qaeda familiarity is 0]

When you think of al Qaeda, what are the first things that come to mind?

- [Free response text box]

[Page Break]

Al Qaeda Motivations to Process

Al Qaeda awareness.

In the last month, how much have you heard or read about al Qaeda?

- None [0]
- Only a little [1]
- Some [2]
- Quite a bit [3]
- A lot [4]

Al Qaeda thought.

In the last month, how frequently have you thought about al Qaeda?

- Never [0]
- Rarely [1]
- Occasionally [2]
- A moderate amount [3]
- A great deal [4]

Al Qaeda information seeking.

In the last month, how frequently, if at all, have you sought out information about al Qaeda?

- Never [0]
- Once [1]
- 2-3 Times [2]
- Once a Week [3]
- 2-3 Times a Week [4]
- 4-6 Times a Week [5]
- Daily [6]

Al Qaeda Issue Importance

How unimportant or important would you say the topic of al Qaeda is to you personally?

- Not at all Important [-3]
- Very Unimportant [-2]

- Somewhat Unimportant [-1]
- Neither Unimportant nor Important [0]
- Somewhat Important [1]
- Very Important [2]
- Extremely Important [3]

[Page Break Here]

Al Qaeda Schema

Al Qaeda description.

How would you describe al Qaeda to someone who had never heard of the group?

- [free response text box]

Al Qaeda structure.

Which of the following would you say best describes the organizational structure of al Qaeda?

- A Loosely Structured Network of Dispersed Cells [1]
- Centrally Organized with a Clear Hierarchy and Chain of Command [2]
- One Core Group with Several Largely Independent Franchises [3]
- Something Else (Please Specify) [4]

  [Free response text box]
- I Don't Know [5]

Al Qaeda function.

Which of the following types of organization most closely resemble the way that al Qaeda operates, and shares the most in common with the type of actions performed by the organization? In other words, which best describes the function of al Qaeda?

- Paramilitary [1]
- Military [2]
- Criminal Organization, e.g., Mob, Mafia, Crime Syndicate [4]
- Religion or Religious Institution [5]
- Social or Political Movement [7]
- Something Else (Please Specify) [8]

  [Free response text box]

- I Don't Know [9]

Al Qaeda motive.

Which of the following would you say best describes al Qaeda's motive? In other words, which option best describes the primary reason that they do what they do?

- Ideology [1]
- Religion [2]
- Politics [8]
- Anti-American / Anti-Western Attitudes [3]
- Territorial Expansion [4]
- Desire to be Confrontational; To Seek Reactions [5]
- Something Else (Please Specify) [6]

  [Free response text box]
- I Don't Know [7]

ISIS Perceptions Block

We would now like to ask about your perceptions of ISIS (also known as the Islamic State, ISIL, or Daesh).

ISIS Familiarity

How familiar are you with this organization?

- Not at all familiar [0]
- Slightly familiar [1]
- Somewhat familiar [2]
- Moderately familiar [3]
- Extremely familiar [4]

[Page Break]

ISIS Activation

[Display this question if ISIS familiarity is 0]

When you think of ISIS, what are the first things that come to mind?

- [Free response text box]

[Page Break]

ISIS Motivations to Process

ISIS awareness.

In the last month, how much have you heard or read about ISIS?

- None [0]
- Only a little [1]
- Some [2]
- Quite a bit [3]
- A lot [4]

ISIS thought.

In the last month, how frequently have you thought about ISIS?

- Never [0]
- Rarely [1]
- Occasionally [2]
- A moderate amount [3]
- A great deal [4]

ISIS information seeking.

In the last month, how frequently, if at all, have you sought out information about ISIS?

- Never [0]
- Once [1]
- 2-3 Times [2]
- Once a Week [3]
- 2-3 Times a Week [4]
- 4-6 Times a Week [5]
- Daily [6]

ISIS Personal Importance

How unimportant or important would you say the topic ISIS is to you personally?

- Not at all Important [-3]
- Very Unimportant [-2]

- Somewhat Unimportant [-1]
- Neither Unimportant nor Important [0]
- Somewhat Important [1]
- Very Important [2]
- Extremely Important [3]

[Page Break]

ISIS Schema

ISIS description.

How would you describe ISIS to someone who had never heard of the group?

- [free response text box]

ISIS structure.

Which of the following would you say best describes the organizational structure of ISIS?

- A Loosely Structured Network of Dispersed Cells [1]
- Centrally Organized with a Clear Hierarchy and Chain of Command [2]
- One Core Group with Several Largely Independent Franchises [3]
- Something Else (Please Specify) [4]

  [Free response text box]
- I Don't Know [5]

ISIS function.

Which of the following types of organization most closely resemble the way that ISIS operates, and shares the most in common with the type of actions performed by the organization? In other words, which best describes the function of ISIS?

- Paramilitary [1]
- Military [2]
- Criminal Organization, e.g., Mob, Mafia, Crime Syndicate [4]
- Religion or Religious Institution [5]
- Social or Political Movement [7]
- Something Else (Please Specify) [8]

  [Free response text box]

- I Don't Know [9]

ISIS motive.

Which of the following would you say best describes ISIS's motive? In other words, which option best describes the primary reason that they do what they do?

- Ideology [1]
- Religion [2]
- Politics [8]
- Anti-American / Anti-Western Attitudes [3]
- Territorial Expansion [4]
- Desire to be Confrontational; To Seek Reactions [5]
- Something Else (Please Specify) [6]

  [Free response text box]
- I Don't Know [7]

Cognitive Reflection Test

We would now like you to carefully consider each of the following questions, and as soon as you've come up with an answer, write it in the box provided.

[The order of the following 3 questions was randomized for each participant]

Cognitive Reflection Test [3]

A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?

- [Free response text box]

If it takes 5 minutes for five machines to make five widgets, how long would it take for 100 machines to make 100 widgets?

- [Free response text box]

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?

- [Free response text box]

Pre-Manipulation NDA Awareness Block

[For al Shabaab]

We would now like to ask about your perceptions of the Shabaab (also known as al Shabaab).

[For New IRA]

We would now like to ask about your perceptions of the New IRA (also known as the Irish Republican Army, or IRA).

NDA Familiarity

How familiar are you with this organization?

- Not at all familiar [0]
- Slightly familiar [1]
- Somewhat familiar [2]
- Moderately familiar [3]
- Extremely familiar [4]

[Page Break]

NDA Motivations to Process

NDA awareness.

In the last month, how much have you heard or read about [NDA]?

- None [0]
- Only a little [1]
- Some [2]
- Quite a bit [3]
- A lot [4]

NDA thought.

In the last month, how frequently have you thought about [NDA]?

- Never [0]
- Rarely [1]
- Occasionally [2]
- A moderate amount [3]
- A great deal [4]

NDA information seeking.

In the last month, how frequently, if at all, have you sought out information about [NDA]?

- Never [0]
- Once [1]
- 2-3 Times [2]
- Once a Week [3]
- 2-3 Times a Week [4]
- 4-6 Times a Week [5]
- Daily [6]

NDA Personal Importance

How unimportant or important would you say the topic [NDA] is to you personally?

- Not at all Important [-3]
- Very Unimportant [-2]
- Somewhat Unimportant [-1]
- Neither Unimportant nor Important [0]
- Somewhat Important [1]
- Very Important [2]
- Extremely Important [3]

Survey Manipulation Block

We would now like to you to read a news story about this group which was recently published in Reuters. Please read the complete article before moving on.

[Page Break]

[Participants were given one of 18 randomly selected [NDA] manipulations. See Appendix C: Experimental Stimuli]

Post-Manipulation NDA Perceptions Block

NDA Article Reflection

Please write down all the thoughts, ideas, or reflections induced by reading the news story, that is, those impressions that came to mind while reading it.

[Free response text box]

[Page Break]

NDA Schema

NDA description.

How would you describe [NDA] to someone who had never heard of the group?

[Free response text box]

NDA structure.

Which of the following would you say best describes the organizational structure of [NDA]?

- A Loosely Structured Network of Dispersed Cells [1]
- Centrally Organized with a Clear Hierarchy and Chain of Command [2]
- One Core Group with Several Largely Independent Franchises [3]
- Something Else (Please Specify) [4]

  [Free response text box]
- I Don't Know [5]

NDA function.

Which of the following types of organization most closely resemble the way that [NDA] operates, and shares the most in common with the type of actions performed by the organization? In other words, which best describes the function of [NDA]?

- Paramilitary [1]
- Military [2]
- Criminal Organization, e.g., Mob, Mafia, Crime Syndicate [4]
- Religion or Religious Institution [5]
- Social or Political Movement [7]
- Something Else (Please Specify) [8]

  [Free response text box]
- I Don't Know [9]

NDA motive.

Which of the following would you say best describes [NDA]'s motive? In other words, which option best describes the primary reason that they do what they do?

- Ideology [1]

- Religion [2]
- Politics [8]
- Anti-American / Anti-Western Attitudes [3]
- Territorial Expansion [4]
- Desire to be Confrontational; To Seek Reactions [5]
- Something Else (Please Specify) [6]

  [Free response text box]
- I Don't Know [7]

NDA Emotional Reactance Block

[The order of the following NDA emotion responses was randomized for each participant, with four shown on each page; the instructions appeared at the top of each page]

Please rate the degree to which thinking about [NDA] makes you feel each of the following emotions.

Discrete Emotional Reactance Questions

Upset.

To what extent does thinking about [NDA] make you feel: **UPSET**

- [Sliding scale from 0 (Not at all upset) to 100 (Extremely upset)]

Angry.

To what extent does thinking about [NDA] make you feel: **ANGRY**.

- [Sliding scale from 0 (not at all angry) to 100 (extremely angry)]

Furious.

To what extent does thinking about [NDA] make you feel: **FURIOUS**.

- [Sliding scale from 0 (not at all furious) to 100 (extremely furious)]

Frustrated.

To what extent does thinking about [NDA] make you feel: **FRUSTRATED**

- [Sliding scale from 0 (not at all frustrated) to 100 (extremely frustrated)]

Afraid.

To what extent does thinking about [NDA] make you feel: **AFRAID**

- [Sliding scale from 0 (not at all afraid) to 100 (extremely afraid)]

Anxious.

To what extent does thinking about [NDA] make you feel: **ANXIOUS**

- [Sliding scale from 0 (not at all anxious) to 100 (extremely anxious)]

Scared [al Shabaab only].

[This question was only asked to participants who received the al Shabaab manipulation]
To what extent does thinking about [NDA] make you feel: **SCARED**

- [Sliding scale from 0 (not at all scared) to 100 (extremely scared)]

Frightened [New IRA only].

[This question was only asked to participants who received the new IRA manipulation]
To what extent does thinking about [NDA] make you feel: **FRIGHTENED**.

- [Sliding scale from 0 (not at all scared) to 100 (extremely scared)]

Worried.

To what extent does thinking about [NDA] make you feel: **WORRIED**

- [Sliding scale from 0 (not at all worried) to 100 (extremely worried)]

Happy.

To what extent does thinking about [NDA] make you feel: **HAPPY**

- [Sliding scale from 0 (not at all happy) to 100 (extremely happy)]

Excited.

To what extent does thinking about [NDA] make you feel **EXCITED**

- [Sliding scale from 0 (not at all excited) to 100 (extremely excited)]

Glad.

To what extent does thinking about [NDA] make you feel **GLAD**

- [Sliding scale from 0 (not at all glad) to 100 (extremely glad)]

Optimistic.

To what extent does thinking about [NDA] make you feel **OPTIMISTIC**

- [Sliding scale from 0 (not at all glad) to 100 (extremely glad)]

[The final four emotional reactance measures were only shown to those in the New IRA conditions]

Disgusted [New IRA only].

To what extent does thinking about the New IRA make you feel **DISGUSTED**.

- [Sliding scale from 0 (not at all disgusted) to 100 (extremely disgusted)]

Revolted [New IRA].

To what extent does thinking about the New IRA make you feel **REVOLTED**.

- [Sliding scale from 0 (not at all revolted) to 100 (extremely revolted)]

Nauseated [New IRA].

To what extent does thinking about the New IRA make you feel: **NAUSEATED**.

- [Sliding scale from 0 (not at all nauseated) to 100 (extremely nauseated)]

Repulsed [New IRA].

To what extent does thinking about the New IRA make you feel: **REPULSED**

NDA Threat Perceptions Block

For each of the following statements, please rate the extent to which you agree or disagree.

[The order of the second and third responses were randomized for each participant]

Threat to U.S. Security

[NDA] is a threat to the security of the United States.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Makes me anxious

Thinking about [NDA] makes me anxious

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Will and Capability to Attack U.S.

[NDA] have the will and capability to attack the United States

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Likelihood of Attacking U.S.

How likely do you think it is that [NDA] will conduct a terrorist attack in the United States in the next 6 months?

- Extremely likely [3]
- Moderately likely [2]
- Slightly likely [1]
- Neither likely nor unlikely [0]
- Slightly unlikely [-1]
- Moderately unlikely [-2]
- Extremely unlikely [-3]

Political Knowledge Test

We're now going to ask you a few questions about the government in Washington. Please write your responses in the space provided directly below each question. Many people don't know the answers to these questions, so if there are some you don't know just write that and move on.

[The order of the following 5 responses was randomized for each participant]

Political Knowledge [5]

What job or political office is now held by Mike Pence?

[Free response text box]

Whose responsibility is it to determine if a law is constitutional or not ... is it the president, the Congress, or the Supreme Court?

[Free response text box]

How much of a majority is required for the U.S. Senate and House to override a presidential veto?

[Free response text box]

Which party has the most members in the House of Representatives in Washington right now?

[Free response text box]

Would you say that one of the parties is more conservative than the other, and if so which one?

[Free response text box]

Support for Restricting Civil Liberties Block

General Willingness to Curtail Civil Liberties

In order to curb terrorism in this country, it will be necessary for the average person to give up some civil liberties.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Willingness to Curtail Specific Civil Liberties [15]

[The order of the following 15 questions was randomized for each participant; 4 were shown per page, with the first three shown on the same page as the first question in this block]

Everyone should be required to carry a national identity card at all times to show to a police officer upon request.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The U.S. government should be allowed to record personal telephone calls and emails in order to prevent people from planning terrorist or criminal acts.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Airport personnel should be allowed to do extra checks on passengers who appear to be of

Middle-Eastern descent.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The U.S. government should monitor credit card purchases.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

In order to prevent terrorist attacks, it should be possible to issue search warrants of residences and businesses without notification to the owner.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

It should be a crime for anyone to belong to or contribute money to any organization that supports international terrorism.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Law enforcement agencies should be allowed to conduct a full search of any individual and their property if suspected of being involved in a terrorist plot, without stating an explicit reason for the search.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]

- Disagree [-2]
- Strongly disagree [-3]

The government should be able to arrest and detain any individual indefinitely if that person is suspected of belonging to a terrorist organization - even U.S. citizens.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

It is acceptable to use torture against suspected terrorists in order to gain important information.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

All Muslims, including those who are U.S. citizens, should be required to carry a special ID.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Law enforcement should be able to stop or detain people of certain racial or ethnic background if these groups are thought to be more likely to commit terrorism.

- Strongly agree [3]
- Agree [2]

- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The government should overhaul the federal visa waiver program to provide tighter screening for those who enter the U.S. temporarily.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The government should overhaul the federal visa waiver program to provide tighter screening for Muslims who enter the U.S. temporarily.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The government should impose a religious test to enter the U.S., banning those who identify as Muslim.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The government should enact new laws to prevent any Muslim from entering the U.S.

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

Support for Military Intervention Block

[The order of the following 10 questions was randomized for each participant]

Support for Specific Military Interventions [10]

The US should use unmanned aircraft (Drones) to kill terrorist leaders

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should deploy highly trained soldiers to kill or capture terrorist group leaders

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should conduct large-scale military operations to combat terrorist organizations

- Strongly agree [3]
- Agree [2]

- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should provide more training and equipment to foreign forces fighting terrorists

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should deploy more intelligence agents in the field to monitor terrorist activities and infiltrate terrorist groups

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should attempt to capture and put on trial terrorist leaders and others suspected of terrorist attacks

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should kill suspected terrorist leaders

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should assassinate leaders of countries that harbor terrorists

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should carry out military strikes against terrorist targets, even if there might be civilian casualties

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]
- Strongly disagree [-3]

The US should increase airstrikes against terrorists to kill leaders, and take out heavy weapons, and infrastructure

- Strongly agree [3]
- Agree [2]
- Somewhat agree [1]
- Neither agree nor disagree [0]
- Somewhat disagree [-1]
- Disagree [-2]

- Strongly disagree [-3]

Terrorism Related Anxiety Block

Activity Related Anxiety [5]

Please rate the extent to which you feel anxious about each of the following, where 0 is not at all anxious and 10 is extremely anxious.

[The order of the following 5 sliding scales was randomized for each participant]

Flying on an airplane

- [sliding scaled between 0 (not at all anxious) and 10 (extremely anxious)]

Being in tall buildings

- [sliding scaled between 0 (not at all anxious) and 10 (extremely anxious)]

Being in large crowds or stadiums

- [sliding scaled between 0 (not at all anxious) and 10 (extremely anxious)]

Taking public transportation

- [sliding scaled between 0 (not at all anxious) and 10 (extremely anxious)]

Riding on a train

- [sliding scaled between 0 (not at all anxious) and 10 (extremely anxious)]

General Terrorism Threat Perceptions Block

Ability to Launch Major Attack in U.S.

Overall, do you think the ability of terrorists to launch another major attack on the U.S. is higher, lower, or about the same as it was before September 11, 2001.

- Much higher [3]
- Moderately higher [2]
- Slightly higher [1]
- About the same [0]
- Slightly lower [-1]
- Moderately lower [-2]
- Much lower [-3]

Likelihood of a Terrorist Attack

How likely do you think it is that the United States will suffer a terrorist attack in the next three months?

- Extremely likely [3]
- Moderately likely [2]
- Slightly likely [1]
- Neither likely nor unlikely [0]
- Slightly unlikely [-1]
- Moderately unlikely [-2]
- Extremely unlikely [-3]

Likelihood of Being Terrorism Victim

How likely do you think it is that you or someone you know will be a victim of terror sometime in the next six months?

- Extremely likely [3]
- Moderately likely [2]
- Slightly likely [1]
- Neither likely nor unlikely [0]
- Slightly unlikely [-1]
- Moderately unlikely [-2]
- Extremely unlikely [-3]

Rating of Federal Governments Preparation for Terrorist Attacks

Overall, how would you rate the job the federal government in Washington D.C. has done in preventing or preparing for the possibility of another terrorist attack?

- Excellent [-2]
- Good [-1]
- Average [0]
- Poor [1]
- Terrible [2]

NDA Manipulation Check Block

DTA Manipulation Check

In the article that you read, were any other terrorist organizations mentioned, other than [NDA]?

- Yes (please specify) [1]

  [free response text box]

- Maybe (please specify) [2]

  [free response text box]

- No [3]

Image Manipulation Check

[The order of the first three response options was randomized for each participant]

Which of the following best describes the image that accompanied the article you read?

- Representatives of the Shabaab delivering a prepared statement [1]
- Masked members of the Shabaab marching [2]
- Destruction and wreckage after an attack [4]
- There was no image [5]
- Something else (please specify) [6]

  [Free response text box]

Self-Report "Read the Manipulation" Block

Understanding that your response to this question will have no effect on your compensation whatsoever, and will be kept confidential, how closely would you say you read the news article?

- I carefully read the entire article [4]
- I read the entire article somewhat carefully [3]
- I skimmed the article [2]
- I read part of the article [1]
- I did not read the article [0]

Demographics Block

The following questions are for demographic purposes. Please answer as accurately as possible. Your responses will remain confidential.

Political Party Affiliation

Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or something else?

[The order of the first three responses options was randomized for each respondent]

- Republican [1]
- Democrat [-1]
- Independent [0]
- Other [88]

  [Free response text box]
- No preference [99]

Strength of Republican affiliation.

[Only display this question if participant responded "Republican" in the previous question]

Would you call yourself a strong Republican or a not very strong Republican?

- Strong [3]
- Not very strong [2]

Strength of Democratic affiliation.

[Only display this question if participant responded "Democrat" in the previous question]

Would you call yourself a strong Democrat or a not very strong Democrat?

- Strong [3]
- Not very strong [2]

Partisan lean.

[Only display this question if participant did not respond "Republican" or "Democrat" in the previous question]

Do you think of yourself as closer to the Republican or Democratic party?

- Republican [1]
- Democratic [-1]

[Page Break]

Political Ideology

Here is a 10-point scale on which the political views that people might hold are arranged from extremely liberal (left) to extremely conservative (right). Where would you place yourself on this scale?

- [Sliding scale of political ideology going from 0 (extremely liberal) to 10 (extremely conservative)]

[Page Break]

Age

What is your current age

[Free response text box]

Gender

How would you describe your gender?

[The order of the following response options was randomized for each participant]

- Male [0]
- Female [1]
- Other [88]

Hispanic Ethnicity

Are you of Hispanic, Latino, or Spanish origin?

- Yes [1]
- No [0]

Race

How would you describe your race or ethnicity (select all that apply)

- White [1]
- Black or African American [2]
- American Indian or Alaska Native [3]
- Asian [4]
- Native Hawaiian or Pacific Islander [5]
- Other [6]

Income

- $0 - $25,000 [1]
- $25,001 - $50,000 [2]
- $50,001 - $75,000 [3]
- $75,001 - $100,000 [4]
- $100,001 - $125,000 [5]
- $125,001 - $150,000 [6]
- $150,001 - $175,000 [7]
- $175,001 - $200,000 [8]
- $200,001+ [9]

Education

What is the highest level of education you have completed?

- Less than high school [1]
- High school graduate [2]
- Some college [3]
- Trade/technical/vocational training [4]
- College graduate [5]
- Some postgraduate work [6]
- Post graduate degree [7]

Religion

What is your religious affiliation, if any?

- Evangelical Protestant [1]
- Mainline Protestant [9]
- Catholic [2]
- Mormon [3]
- Other Christian [4]
- Jewish [5]
- Muslim [6]
- Buddhist [13]
- Hindu [14]

- Other non-Christian [7]
- Atheist [10]
- Agnostic [11]
- None [12]