Feeling within reason

How appraisals shape emotional responses to politics

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4 Relevance, Consistence and Resistance. What Explains the Link between Political Sophistication and Emotional Responses to Politics?

Abstract

Research shows that political sophisticates tend to get more emotional about politics. This chapter first reinvestigates this claim and, second, tests three mechanisms that theoretically link political sophistication and emotions in response to politics, based on three prominent theories of information processing. Following Scherer's Component Process Model of emotions, I test whether sophisticates simply care more about politics: the Relevance Hypothesis, originally formulated by Brader (2006). Next, I test the Resistance Hypothesis: Do sophisticates resist manipulations of their emotional responses? Finally, I propose that sophisticates' networks of appraisals and emotions are more consistent, the Consistence Hypothesis. I test these three hypotheses using data collected in the Netherlands in 2020 and 2021, which includes a direct manipulation of certainty, control and responsibility appraisals of six political issues and measures the subjective appraisals of five of them. I reject the Consistence Hypothesis but find evidence for the Relevance Hypothesis and indications for the Resistance Hypothesis. Together, this suggests that political sophistication is likely linked to emotions through higher appraisals of goal relevance and through cognitive appraisals of certainty, control and responsibility of political issues. The expectations tested in this chapter were pre-registered on the Open Science Framework.

Who has strong emotional responses to politics? Political sophistication is often mentioned as a predictor and a moderator of emotional responses (Brader, 2006; Miller, 2011). Yet, how and in what direction political sophistication predicts or moderates emotional responses is not theoretically settled and evidence has been mixed. Theoretically, arguments can be made for both viewpoints: the sophisticated and emotionally engaged citizen, or emotions as a symptom of being uninformed. As direct predictor of emotions, political sophistication has been argued to generally increase emotional responses to politics (Brader, 2006; Jones et al., 2013; Miller, 2011). To have strong feelings about politics, you need to know about politics, and regularly read about it. People who never learn about political developments, who do not read the news and do not discuss politics with anyone both know and feel less about politics.

As a moderator of the effects of emotions on behavior or the effectiveness of emotional appeals, existing work has produced mixed findings. Some work demonstrates that emotional stimuli have stronger effects on political sophisticates than non-sophisticates. Brader (2006) argues that emotional appeals are more effective among sophisticates, as they generally find politics more important. Similarly, Rudolph et al. (2000) show that anxiety drives campaign involvement but only among highly efficacious citizens.

But the reverse might also be true. Gibson, Claassen, and Barceló (2020), for instance, find that intolerance is related to feelings of anger but only for people with low levels of sophistication. Karl (2021) finds that non-sophisticates respond with both high arousal and high self-reported anger to partisan incongruent ads and with low arousal but high self-reported anger to partisan congruent ads. In a similar study, looking at both physiological responses and self-reported emotions, Bakker et al. (2021) do not find that political sophisticates have stronger physiological responses to political stimuli. So while emotions and political sophistication appear to be linked, what is the exact mechanism that connects the two? I propose three different mechanisms. Are political sophisticates more emotional because they care more about politics and pay closer attention to political stimuli (*Relevance Hypothesis*)? Are their networks of cognitive appraisals of political issues and emotions more consistent than those of non-sophisticates (*Consistence Hypothesis,* Luskin,

1990)? Or are the beliefs and feelings held by sophisticates too rigid, resisting experimental manipulations of emotions (*Resistance Hypothesis,* Zaller et al., 1992)?

Solving this question is important, as we know that emotions drive essential political behaviors, such as political participation, or information processing. Emotions help us direct attention (Albertson & Gadarian, 2015), form political attitudes (Huddy et al., 2007) and mobilize around a cause we care about (Valentino et al., 2011; Valentino, Wayne, & Oceno, 2018). Emotions are not a barrier to engaged and informed citizenship but can be an important component of it.

Thus, in many ways, for people to be emotionally engaged in politics is desirable and knowing how political sophistication can lead to emotional responses to politics is important for how we view the interplay of the two in fostering not just informed but engaged citizenship. In this chapter, I discuss and test three theoretical mechanisms for the link between political sophistication and emotions.

The data for these tests come from two studies that experimentally manipulated appraisals of political issues. In information sheets presented to participants, we manipulated appraisals of certainty, control and responsibility, which – based on appraisal theories of emotions – we expected to affect levels of self-reported anger and anxiety. In the second study, we also measured subjective appraisals of these political issues. We expected these subjective appraisals to be systematically related to anger and anxiety, respectively. For both – manipulated and subjective appraisals – we expected that high certainty, high control and high responsibility are related to higher levels of self-reported anger and low certainty and low control related to higher levels of anxiety. The theoretical basis for these assumptions is discussed in the following section. I use these datasets to test how political sophistication is linked to emotions by assessing the link between sophistication and self-reported emotions controlling for experimentally manipulated appraisals. Further, I test how political sophistication moderates the effectiveness of experimental manipulations of appraisals. Both are tests of the Relevance Hypothesis. Testing how political sophistication moderates the effectiveness of emotional appeals additionally tests an alternative hypothesis, the Resistance Hypothesis, which is based on the assumption of a curvilinear information processing model suggested by Zaller et al. (1992): Do sophisticates *resist* experimental manipulations of appraisals? I also test the Resis-

tance Hypothesis using a unique measure of responsibility attribution, which asked respondents to name who they personally thought was responsible for a political issue. Finally, I investigate how subjective appraisals are linked to emotions and whether these relationships are moderated by political sophistication. I use subjective appraisals to test the Consistence Hypothesis: Are sophisticates' appraisal-emotion links stronger and more consistent than those of non-sophisticates?

4.1 Refining the Sophistication-Emotion Link

The Component Process Model of Emotions

I conceptualize emotions through the lens of the Component Process Model proposed by Scherer (2005, 2022). This approach is part of a broader family of appraisal theories, which see emotions, at least partly, as outcomes of evaluative judgments, i.e., appraisals (C. A. Smith & Ellsworth, 1985). In political communication, a lot of work has approached emotions from a perspective of cognitive appraisal theory showing that distinct emotions, such as anger, compared to other discrete emotions like anxiety, have distinct consequences for political behavior (e.g. E. Groenendyk, 2016; Valentino et al., 2011, 2018; Wagner, 2014).

The CPM views an emotion as "an episode of interrelated, synchronized changes in the states of all or most of the five organismic subsystems in response to the evaluation of an external or internal stimulus event as relevant to major concerns of the organism" (Scherer & Moors, 2019, p.697). The five organismic subsystems are 1) cognitive (appraisal of objects or events), 2) neurophysiological (bodily symptoms, physiology), 3) motivational (action tendencies), 4) motor expressive (facial and vocal expression of emotions), and 5) subjective (conscious experience of the emotion, i.e., feeling).

In contrast to the CPM, a basic or discrete approach usually focuses on 6 basic emotions that are elicited automatically without much cognitive processing and are universal across all people. Constructionist theories of emotion on the other hand, focus on how emotions and their verbal labels are socially constructed and thus neither universal across cultures, nor across individuals (Feldman & Hart, 2016). The Component Process Model's strength, compared to these other approaches, is that it

tries to consolidate the different components of an emotion: cognitive, neurophysiological, motivational, motor expressive and subjective. While we usually have to focus on a subset of these systems, they are all part of one emotional episode, which co-occur and influence each other. Thus, changes in each subsystem are indicative of changes in the whole emotion episode.

Here, I focus on the first and last components: the appraisals that underlie an emotion episode and the conscious feeling component, which are the labels that people use to describe their emotion episode. The Component Process Model posits that emotions are elicited by a sequence of evaluations, or appraisals, of a stimulus or event. These sequential appraisals happen quickly, and can be both implicit/unconscious and conscious.

Appraisals are always subjective. That means that one person might appraise the same situation differently than another person. As a consequence, they will experience a different emotion. This does not mean that the link between appraisals and discrete emotions is not systematic. Rather, if two people make the same appraisals, we can expect them to experience the same emotion (Scherer & Moors, 2019). Which appraisal dimensions matter and define distinct emotion episodes is still debated. Different appraisal theories have identified different appraisal dimensions (Moors et al., 2013). However, there is consensus on several core appraisal dimensions that come into play in most appraisal theories. These appraisal dimensions, or variables, are: goal relevance, goal congruence, certainty, control (sometimes also referred to as coping potential), and agency (also referred to as cause or responsibility) (Moors et al., 2013, p.121). Other appraisal variables that appear in some theories but not in others are novelty, pleasantness, or norm compatibility (a more detailed discussion of the similarities and differences between appraisal theories can be found in Moors et al. (2013)). An appraisal process often starts with novelty: a stimulus is detected and attention is directed towards it. Then a basic appraisal of good or bad, or goal congruence, is made. As more appraisals are made sequentially, the emotional episode becomes more fine-grained, and the conscious feeling more specific.

According to Scherer, the most central appraisal is that of *relevance*. The emotion-eliciting event must matter to the observer. A tree blocking a road might

cause frustration but only if I had intended to take that road in the first place. At the same time emotions can serve as a signal of an event's relevance (Scherer, 2005, p.701). To illustrate, imagine spotting an angry face in a crowd. You may not notice it if not directed at you, but the moment you catch the angry expression, it becomes relevant to you personally, perhaps eliciting fear, or anger, depending on your relationship with the person. At the same time, spotting the angry face can startle you and direct your full attention toward it, even before you have had the chance to make any cognitive appraisals.

After one has established that an event is relevant, more detailed appraisals are made. These appraisal checks happen in a sequential fashion. As more appraisal judgments are made, emotion episodes can increase or decrease in intensity, or change to a state of mixed emotions, or a different emotion. Each emotion is characterized by a prototypical appraisal profile. While there are individual-level differences that affect which appraisal judgments lead to which emotion, at large, emotions can be predicted by a unique combination of appraisals (Israel & Schönbrodt, 2019; Scherer & Meuleman, 2013). Here, we focus on three appraisal dimensions, certainty, control, and responsibility. They are expected to predict anger and anxiety, two emotions that influence political behavior (Albertson & Gadarian, 2015; Valentino et al., 2011, 2008). Additionally, these three dimensions are a common theme in most appraisal theories (Lerner & Keltner, 2001; Moors et al., 2013; Roseman et al., 1990; C. A. Smith & Ellsworth, 1985). Certainty refers to our understanding of the causes and consequences of an event stimulus. Anger is related to appraisals of high certainty, while anxiety is related to appraisals of low certainty. This means that incomprehensible events are more likely to elicit anxiety. At the same time, people who feel anxious are motivated to alleviate their anxiety by searching information about the cause of their anxiety (Albertson & Gadarian, 2015). Control, or coping potential, describes how well we feel equipped to deal with a threat, or an event. If an event is beyond our control, we are likely to experience fear or anxiety but if we feel that we have power over the event, we will likely experience anger. Finally, responsibility or agency distinguishes anger from guilt. If we feel responsible for an event, we are likely to experience guilt, but if we deem someone else responsible, anger becomes the more likely emotional response. In

politics, as I will argue in the following parts, one core factor that determines how we appraise a political issue is political sophistication.

The Relevance, Resistance, and Consistence Hypotheses

First, what exactly is political sophistication and why should it be related to emotions at all? Sophistication is often operationalized as merely encyclopedic knowledge about politics and political processes. According to Luskin (1990), political sophistication is more than that. Rather, he describes sophistication as a network of cognitive and affective ties of political beliefs. Political sophisticates have denser, broader, and more complex cognitive networks. The reason is that they have thought about more political objects (candidates, issues, etc.), and they have done so more often and more thoroughly making connections between objects stronger and increasing the number of nodes, i.e., the complexity of their cognitive networks. Political sophistication according to this view involves cognitive considerations as much as affect, i.e., negative and positive affective ties with political concepts, such as candidates or policies. Political sophistication is an outcome of, as well as a predictor, of caring about politics. It has been shown that political sophisticates are more emotionally invested in political results (Blais & Galais, 2016; K. A. Dolan & Holbrook, 2001). What goes on in politics matters more to them than to non-sophisticates. As a result, they generally report higher emotional responses to political issues and candidates (Miller, 2011).

Moreover, political sophisticates' behavior is more likely to be affected by emotional appeals than that of non-sophisticates (Brader, 2006). Both in the "real" world and in experimental settings, political sophisticates are more likely to pay attention to political events or stimuli. According to the Component Process Model, the appraisal of goal relevance should predict the intensity of an emotion episode. Thus, they should report stronger emotions overall and manipulations of emotions should have stronger effects among sophisticates than among non-sophisticates. Following Brader (2006), I call this the ***Relevance Hypothesis***.

I test this hypothesis in two ways. I consider it supported if political sophisticates overall report higher levels of emotions in response to political issues, controlling for the experimental manipulations of appraisals. Second, I test if experimental

manipulations of appraisals, here manipulations of certainty, control and responsibility appraisals, have stronger effects on emotions among respondents with higher levels of political sophistication.

H1a: Political sophisticates report higher levels of anger and anxiety than non sophisticates.

H1b: The effects of certainty, control and responsibility manipulations on anger and anxiety are stronger among political sophisticates than among non-sophisticates.

Next, I consider a competing hypothesis, which I call the ***Resistance Hypothesis***. I again draw on the Component Process Model, as well as Zaller's (1992) model of political learning. Zaller's model is perhaps the most prominent theoretical account about how citizens process political information. It suggests that the adoption of political cues is curvilinear, as a function of political sophistication. Low sophisticates lack interest in political stimuli, or prior knowledge that would help them to quickly make sense of new political information. High sophisticates, however, pay attention to politics in their daily lives, which means that they are more likely to be pre-treated (Slothuus, 2016) and have rigid affective cognitive structures (Izard, 1984; Nabi, 2003; Taber & Lodge, 2006) – which include previously made appraisals. Their affective and cognitive ties are fixed, stored as stable nodes in their long-term memory. Supporting this view, Miller (2011) finds that sophisticates report their emotions faster than non-sophisticates and they are less likely to change their response before submitting it. Miller (2011) interprets this as evidence that for sophisticates, reporting emotions is a simple recall task of stable, chronic emotions. In addition, Gomez and Wilson (2008) have shown that sophisticates are better at assigning responsibility during political crises. According to these findings and Zaller's model, we would expect that political sophisticates are most likely to *resist* experimental manipulations of appraisals. However, those with moderate levels of political sophistication respond most strongly to our experimental stimulus. They are interested enough to be somewhat emotionally invested. Their prior knowledge helps them to integrate new information into an existing network of cognitive and affective ties, but these ties are not too rigid to respond to experimental manipulation. Thus, the Resistance Hypothesis reads as follows.

H2a: The effects of experimental manipulations of appraisals on anger and

anxiety are larger for those with moderate levels of political sophistication than for those with low or high levels of political sophistication.

Following findings by Gomez and Wilson (2008), I use the attribution of responsibility for a political problem as a second test for the Resistance Hypothesis. Here, I test whether it is true that political sophisticates are pre-treated and have made appraisals prior to the experiment. This test of the Resistance Hypothesis, however, seems to depart from Zaller's curvilinear model as it expects a linear relationship: the higher one's political sophistication, the more likely it is that they have made prior appraisals. But the two are compatible, as Zaller expects that those on the low spectrum of sophistication lack the ability and interest to integrate new information but resistance only happens at the upper end of political sophistication.

The unique data collected for this study allows me to test this aspect of the Resistance Hypothesis. In the second study presented here, I asked respondents to write whom they thought was responsible for a certain political issue. I can use this variable to test if political sophisticates (1) are more likely to name a responsible actor even if they were not provided one in the experimental treatment, i.e., were assigned the low responsibility treatment, and (2) if that actor is more likely to diverge from that named in the treatment, if they were in the high responsibility treatment.

H2b. Political sophisticates are more likely to assign responsibility to a political actor.

H2c. Political sophisticates are more likely to assign responsibility to a political actor that differs from that shown in the stimulus material.

Finally, I propose that political sophisticates' cognitive affective networks are more consistent than those of non-sophisticates, the ***Consistence Hypothesis***. I test this by studying respondents' subjective appraisals (in contrast with my test of the Relevance Hypothesis, which focused on manipulated appraisals) and their relationship with distinct emotions. This approach follows a recommendation by Luskin (1987) to study political sophistication as the connectedness, or simply correlation, of different cognitive and affective ties. A higher correlation, according to Luskin (Luskin, 1987) is indicative of higher political sophistication, i.e closer and more stable nodes.

Following the expectations laid out by appraisal theories of emotion, I first test, whether subjective appraisals of certainty, control, and responsibility are indeed systematically related to experiences of anger and anxiety. I expect the following relationships:

H3a: Higher levels of subjective (self-reported) certainty, control and responsibility appraisals are related to higher levels of self-reported anger.

H3b: Lower levels of subjective (self-reported) certainty, control and responsibility appraisals are related to higher levels of self-reported fear.

Second, I expect that for political sophisticates, ties (correlations) between emotions and appraisals are stronger, as they have thought more carefully and more often about these and similar issues.

H3c: The correlations between subjective (self-reported) appraisals and emotions, as laid out in H3a and H3b, are higher among those with higher levels of political sophistication.

Table 9: Overview of the three main hypotheses and their tests.

Hypothesis	Test	IV	DV	Study
Relevance	Political sophisticates report higher levels of anger and anxiety than non-sophisticates (H1a)	PS (cont.)*	anger, anxiety	1, 2
	The effects of certainty, control and responsibility manipulations are stronger among political sophisticates than among non-sophisticates (H1b).	PS(cont.)*MA	anger, anxiety	1, 2
Resistance	The effects of experimental manipulations of appraisals on anger and anxiety are larger for those with moderate levels of political sophistication than for those with low or high levels of political sophistication (H2a).	PS(cat.)*MA	anger, anxiety	1, 2
	Political sophisticates are more likely to name a responsible actor (H2b).	PS (cont.)	subj. responsibility attribution	2
	Political sophisticates are more likely to name a responsible actor that differs from that in the responsibility treatment (H2c).	PS (cont.)	subj. responsibility attribution	2
Consistence	Higher levels of self-reported certainty, control and responsibility appraisals are related to higher levels of self-reported anger (H3a).	SA	anger	2
	Lower levels of self-reported certainty, control and responsibility appraisals are related to higher levels of self-reported anxiety (H3b).	SA	anxiety	2
	The relationships between appraisals and emotions, as laid out in H3a and H3b, are higher among those with higher levels of political sophistication (H3c).	PS(cont.)*SA	anger, anxiety	2

*PS = political sophistication, MA = manipulated appraisals, SA = subjective appraisals,
cont. = continuous predictor, cat. = categorical with three levels (low, moderate, and high).

4.2 Data and Measures

Data for this study comes from two studies conducted in 2020 and 2021 to test appraisal theories in the context of political emotional appeals (see Chapter 3 of this dissertation). In those studies, we tested how experimental manipulations of appraisals of certainty, control and responsibility influence distinct emotional responses to politics. We exposed participants to information-sheets that varied in their appraisal of five political issues. The pre-registrations for these studies including all stimulus material can be found on OSF.[10] All hypotheses, with the exception of H1b, were pre-registered[11]. H1b was added later as a second test of the Relevance Hypothesis but closely follows the theoretical reasoning of the pre-registered hypotheses. Data for both studies were collected by Dynata in the Netherlands in 2020 and 2021. The samples consist of 1842 and 2623 respondents.

The stimuli presented certainty, control (both retrospective and prospective), and responsibility appraisals regarding five political issues. It can be found in the Appendix. The five issues were COVID-19, painkiller addiction, pesticide pollution, vaccination rates, and refugees (for the full stimuli see Tables A15-A18). In Study 2, the COVID-19 issue was adapted to the current developments in the Netherlands at the time, and we switched the vaccination issue for an issue about antibiotic resistance as a result of livestock farming (for the full stimuli, see Tables A20 - A24).

After reading a brief information sheet about the issue that contained the manipulated appraisals, we asked participants to label their emotional response. This was repeated five times – once for each issue – in random order. In the second of the two studies, we added measures of subjective appraisals, asking respondents to what extent they *personally* felt a sense of certainty, control, and felt they knew who was responsible for the issue. For responsibility appraisals, we further added an open-ended text box. Respondents could name who they personally thought was responsible for the respective political problem. Subjective appraisal judgements were only asked after the last experimental round to avoid that participants recog-

[10] Study 1: https://www.osf.io/q8kgc/?view$_only = 95b294727fca4ec68c4ac0b9305f5c91$, Study 2: https://osf.io/z8unm/?view$_only = 17bf83010d2c4f189f968730012b9071$).

[11] PAP: https://osf.io/ef4xr/?view$_only = 50fd86a0b1f443a58e5dd8610335057c$

nizing the goal of the experiment. These subjective appraisals are not manipulation checks, as we emphasized that we were interested in what respondents personally thought and felt. Thus, we explicitly allowed and perhaps even encouraged them to give answers that differed from the experimental manipulation they had read just before.

The results of the original studies are reported in Chapter 3. In summary, we found a consistent effect of responsibility on anger. If a responsible actor is named in a stimulus, respondents are more likely to report that they feel angry about this issue. If responsibility is ambiguous, respondents tend to report higher levels of anxiety. We found some evidence that certainty appraisal manipulations increase anger but not anxiety.

Following past work in political psychology (Miller, 2011), I conceptualize political sophistication as an index of interest, and factual knowledge.

Interest is measured on a scale ranging from "very interested" (4) to "not interested at all" (1) and recoded to range from no interest (0) to very interested (1). Political knowledge is measured with the following items: (1) "Which party currently has the most seats in the [Dutch] Lower House?", (2) "Who is currently the President of France?", (3) "Who is currently the director of the International Monetary Fund (IMF)?", (4) "How many signatures does a citizens' initiative need to be be considered by the House of Representatives (Tweede Kamer)?", and (5) "What is the current political position of this person?" [Respondents see a photo of the Dutch Minister of Finance, Wopke Hoekstra]. The number of correct responses are counted and divided by 5 to create a scale from 0 to 1. Political sophistication is then operationalized as the mean of the standardized interest and knowledge scores.

Emotional responses were measured using the PANAS-M, proposed by Rhodes-Purdy et al. (2020). Respondents first chose the emotions they feel in response to five issues. Then, for each selected emotion, they reported its intensity on a slider ranging from 0 (Barely) to 100 (Extremely). I used two items for anger (angry, hostile), two items for anxiety (afraid, anxious), and three items for general negative affect (distressed, upset and ashamed). I then constructed additive scales for anger and anxiety, respectively. A respondent's emotion score is the sum of the two respective reported scores – "angry" and "hostile" for the anger index and

"anxious" and "afraid" for the anxiety index. If no anger item is selected, or if respondents select one or two but indicate that they "barely" felt the respective emotion (select 0), respondents get an anger score of 0. If only one anger item is selected, respondents get that score. The anger and anxiety scales were standardized across all issues and respondents. Thus, a one-point increase on the anger scale means an increase by one standard deviation of the anger scores across all issues and respondents.

Afterwards and only in the last experimental round, we asked participants about their subjective appraisals of the situation. The battery consists of 5 statements and participants indicated their level of agreement with each on a 7-point scale from "Totally Agree" to "Totally Disagree". We measured certainty with the statement "I understand the consequences of this issue.", control with "This issue is influenced by circumstances that no one has control over." and "People like me have no way of improving this issue", and responsibility with the statement "It is clear who is responsible for this issue". For certainty and control, we calculate the mean scores on both items and standardize all three variables.

Finally, participants could indicate who they, personally, thought was responsible ("Who do you personally think is responsible for this matter? Name anyone that comes to mind and feel free to name multiple actors"). For this open question, I have coded the following variables. First, was a responsible actor named (1 if yes, 0 if no)? Does this actor deviate from the actor named in the treatment (0 if yes, 1 if no)?

These open-ended questions about responsibility attribution allow us to test possible pre-treatment among the highly sophisticated, whether they name a responsible actor at all, and whether they name the same actor that was shown to them in the treatment.

4.3 Results I: The Relevance Hypothesis

I expect that the politically sophisticated report higher levels of emotions in response to politics across experimental manipulations (H1a) and second, that experimental manipulations of appraisals have stronger effects among political sophisti-

cates than non-sophisticates (H1b).

To test this, I first estimate two models with political sophistication as the main independent variable and self-reported anger and anxiety as respective outcomes. In the first test, I control for the experimental manipulations of appraisals of certainty, control and responsibility. Additionally, here and in all models that follow, I control for age, gender, level of education, ideology, the political issue and the order in which the issue was shown. Political sophistication, anger, and anxiety have been standardized. Coefficients thus show the increase in standardized anger and anxiety with each one-standard-deviation-increase in political sophistication.

We find evidence for the Relevance Hypothesis (see Table A25). Across both studies, the politically engaged report higher levels of anger and anxiety. In Study 1, an increase by one standard deviation on the sophistication scale leads to an increase of 0.028 ($p < 0.05$) standard deviations of self-reported anger. In Study 1, political sophistication has a standard deviation of 0.19, anger a standard deviation of 30.83 and anxiety a standard deviation of 36.43. Thus, in absolute terms, this means that if people's political sophistication increases by 0.19 on a scale ranging from 0 to 1, their levels of self-reported anger increase by 0.86 (on a scale from 0-100). In Study 2, self-reported anger is unrelated to political sophistication.

The results for anxiety are overall similar: in Study 1, a one point increase on the standardized sophistication scale leads to an increase of 0.036 ($p < 0.05$) standard deviations in reported anxiety, or an increase of 1.16 on the anxiety scale in absolute terms, for each increase of 0.19 in political sophistication. In Study 2, self-reported anxiety increases by 0.057 ($p < 0.001$) standard deviations, for each one-point increase in political sophistication, and an increase by 1.82 on the anxiety scale for each increase of 0.1 (equals 1 standard deviation in political sophistication in Study 2). I find evidence for Hypothesis 1: Overall, political sophisticates report higher levels of emotions in response to politics than non-sophisticates.

In the second test of the Relevance Hypothesis, I test whether political sophisticates react more strongly to experimental political stimuli.

Figure 14 shows the marginal effect of the certainty, control and responsibility manipulations (from left to right), moderated by political sophistication. It is noteworthy that the interaction between responsibility manipulations and political

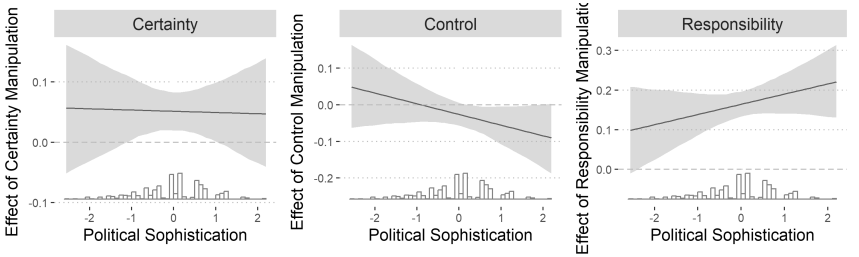

Figure 14. Marginal effects of experimental manipulations of appraisals on self-reported anger (standardized), conditional on levels of political sophistication (standardized).

sophistication on levels of anger is in a positive direction. Although this relationship fails to reach conventional levels of statistical significance (p = 0.22), it could indicate that the effect of responsibility manipulations on anger is primarily driven by respondents with high levels of political sophistication. For non-sophisticates, the effect of manipulated responsibility appraisals is only half as strong and not statistically significant from zero. For high sophisticates, the high control manipulation might even have a negative effect. The full results are shown in Table A26. As the results do not differ per study, both studies are presented together. None of the interactions between political sophistication and the experimental manipulations of appraisals are statistically significant.

Figure 15 shows the same analysis with anxiety as the dependent variable. Across levels of sophistication, the effects remain stable and non-distinguishable from zero. The same is true for responsibility manipulations. Across different levels of political sophistication, manipulated responsibility appraisals decrease levels of anxiety. Again, the full results can be found in Table A26.

These results do not support the Relevance Hypothesis. They suggest that political sophisticates overall care more about political issues but this does not necessarily mean that they respond more strongly to experimental stimuli, or at least not indirect manipulations of emotions, as I have used them in this chapter. An alternative explanation is that the moderation of appraisal manipulations by political sophistication is not linear but that it is actually those with moderate levels of po-

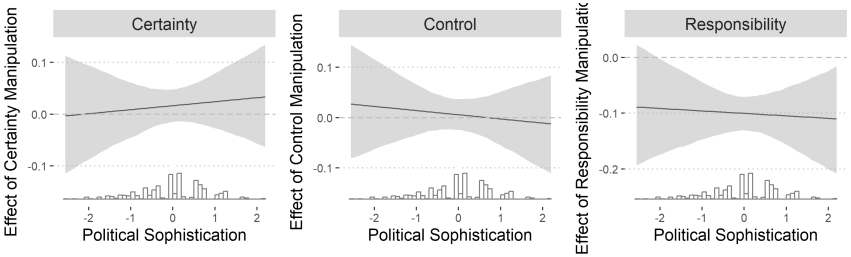

Figure 15. Marginal effects of experimental manipulations of appraisals on self-reported anxiety (standardized) conditional on levels of political sophistication (standardized).

litical sophistication that respond most strongly to experimental manipulations of appraisals. I will test this in the next section under the Resistance Hypothesis.

4.4 Results II: The Resistance Hypothesis

The next hypothesis, the Resistance Hypothesis, which draws strongly on Zaller's model of political learning, suggests a nonlinear relationship between political sophistication and experimental manipulations of appraisals in predicting emotions. Namely, I expect that the effects of appraisal manipulations are strongest among the moderately sophisticated. Low sophisticates do not care much about politics and likely do not read stimulus material well. High sophisticates are likely pre-treated and difficult to manipulate; they either already have strong emotional ties with an issue regardless of manipulation, and/or their appraisals of issues are too rigid to be manipulated.

I test this hypothesis in several ways. First, I test how respondents react to the experimental manipulations of appraisals depending on their level of sophistication. Here, I split the sample into three groups based on their level of sophistication: in low, moderate and high. Figure 16 shows differences in coefficients between the sophistication groups, i.e., the interaction effects. In the top row, we see the difference between the effect of the certainty manipulation among the moderately sophisticated and among the low sophisticated. The second row shows the difference in coefficients between the moderately and high sophisticates, and the bottom row

differences between low and high sophisticates. The advantage of presenting the interaction effects in this way, is that we can show all group contrasts, while the regression output will only show us comparisons with the base category. None of the interaction effects significantly differ from 0. Thus, we reject the Resistance Hypothesis concerning anger.

Similarly, Figure 17 shows no clear pattern for the interaction between manipulated appraisals and political sophistication with anxiety, which is further evidence that we should reject the Resistance Hypothesis. The full models can be found in Table A27.

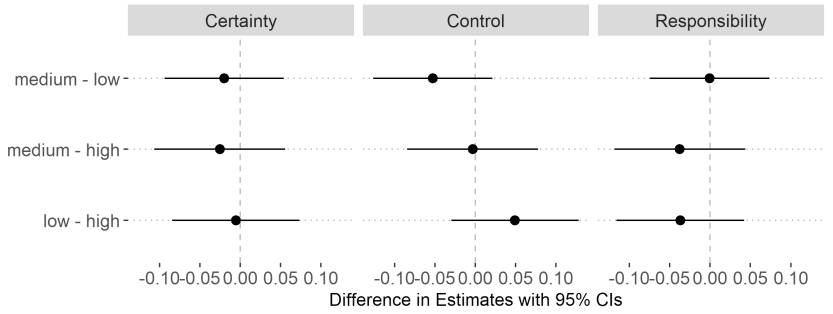

Figure 16. Interaction effects of manipulations of certainty, control and responsibility appraisals and political sophistication (categorical) on self-reported levels of anger. The coefficients show the differences in coefficients in the sophistication categories.

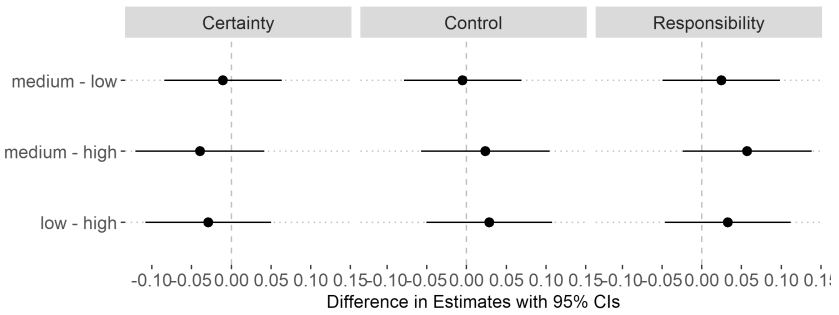

Figure 17. Interaction effects of manipulations of certainty, control and responsibility appraisals and political sophistication (categorical) on self-reported levels of anxiety. The coefficients show the differences in coefficients in the sophistication categories.

To test H2b and H2c, further tests of the Resistance Hypothesis, I use open ended questions, which allowed respondents to write who they personally thought was responsible for a political issue at the end of Study 2. I used this measure to test if respondents with higher political sophistication are more likely to have prior beliefs about responsibility attribution. First, I coded whether they named somebody at all. Respondents' answers varied widely, from clearly political actors such as "the government", "Rutte" [the Dutch Prime Minister], "the European Union", to more obscure actors, such as "God", "us people", or "internet messages". Overall, 73% of respondents named a responsible actor, and only 27 % left the space empty, or responded with "no idea", "I don't know" or similar.

I then coded whether respondents named the same actor that was named in the experimental treatment. I was particularly interested in the knowledge that respondents had prior to or despite the treatment. Thus, I split the sample into those that saw a responsibility treatment and those that did not.

The instructions emphasized that respondents should think about whom they personally thought was responsible but, of course, it is possible that some respondents saw this as an attention check. This might motivate those who are less engaged in the experiment to give a valid answer and it might motivate people to give

a "correct" answer, thus repeating the responsible actor from the experimental manipulation. As I am particularly interested in resistance to the manipulations, i.e., when people name an actor that differs from what they saw in the treatment, the results presented here are conservative estimates.

The left side of Figure 18 shows the results of a logistic regression modelling the likelihood of naming an actor and naming the *correct* actor, i.e., the actor that was also named in responsibility manipulation as a function of political sophistication (see also Tables A28-A30). If sophisticates are more likely to resist persuasion by experimental manipulation of appraisals, we would expect them to name an actor more often and for that actor to differ from that in the treatment more often than among non-sophisticates. However, it turns out that political sophisticates are both more likely to name a responsible actor and more likely to name the same actor as in the treatment (see Figure 18). With each increase by one standard deviation in political sophistication, the likelihood of naming an actor increases by 35%, and the likelihood of naming the *correct* actor increases by 56% (Tables A28-A30 in the Appendix show both point estimates and odds ratios of these models). First, we can see naming an actor as a form of engagement with the experiment. This is what we would expect from political sophisticates. However, it is surprising that they are not more likely to name a different actor than in the treatment. Here, it helps to look at the results split by experimental conditions. Once I split the sample into those that saw a high responsibility appraisal (middle panel), and those that saw a low responsibility manipulation (right panel), we see that the pooled results are driven primarily by sophisticates in the low responsibility condition. When the treatment does not mention a responsible actor, political sophisticates are nonetheless likely to independently name someone who can be held responsible. In the high responsibility manipulation, I tried to assign blame in a way that would be convincing to many people. The actors blamed, might in many instances be the obvious and intuitive choice. It is thus reasonable that political sophisticates, thinking about responsibility attribution independently, would simply by chance or through logical reasoning name the same responsible actor that I provided to participants in the high responsibility condition.

In summary, I did not find much evidence for the Resistance Hypothesis, but I

found support for the proposition that sophisticates have made emotional appraisals prior to any experimental study (Miller, 2011) or that they find it easier to come up with possible actors to blame on the spot.

It is possible that some responsibility treatments would only be successful among political sophisticates (Relevance Hypothesis) but that the low treatment does not work, as sophisticates have strong preconceptions about who is responsible. This could easily lead us to the conclusion that high and low sophisticates respond similarly to experimental manipulations of emotions but the reasons for it are different.

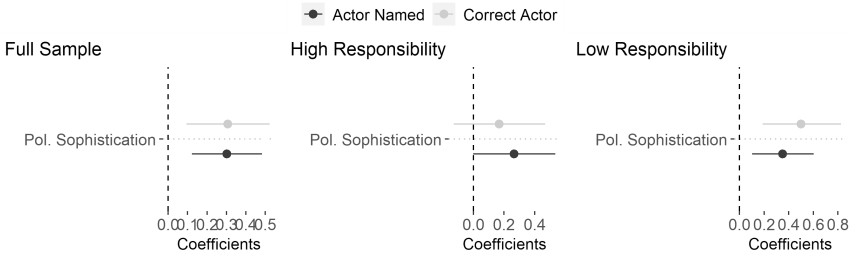

Figure 18. Logistic regression results showing the effects of political sophistication on naming a responsible actor. *Correct Actor* refers to naming the same actor that was shown in the experimental stimulus. Odds ratios and the full models are shown in Tables A28- A30.

4.5 Results III: The Consistence Hypothesis

Finally, I expected that appraisals are systematically related to distinct emotions and that these relationships would be stronger for political sophisticates, as suggested by Luskin (1987) who views political sophistication not only as knowledge but also the network of affective and cognitive ties. I test this by focusing on subjective appraisals and their relationship with distinct emotions. Participants were asked to report their subjective appraisals about the last of five issues they saw in Study 2.

In all models, I control for basic demographics, issue dummies, ideology, as well as the experimental manipulation participants saw earlier.

Figure 19 provides mixed evidence for H3a (anger) and H3b (anxiety). As expected, subjective, i.e., self-reported appraisals of certainty (b = 0.054, p = 0.08), control (b = 0.069, p <0.05) and higher appraisals of responsibility are linked to higher levels of anger (b = 0.112, p < 0.001). Hypothesis 3b must thus be rejected entirely, while Hypothesis 3a is confirmed (full models can be found in Table A31)

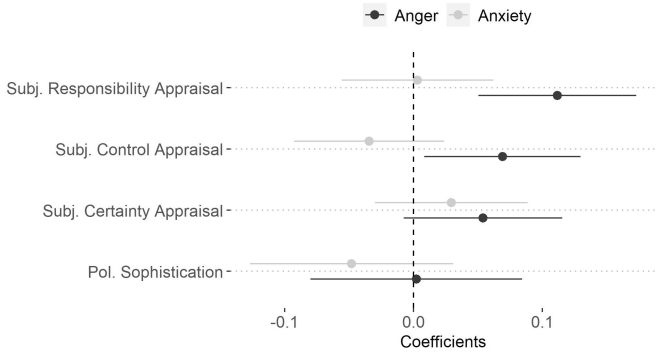

Figure 19. Relationship between subjective appraisals and self-reported anger and anxiety.

The Consistence Hypothesis, however, is primarily concerned with whether these relationships are conditional on levels of sophistication. I proposed that the relationships between appraisals and emotions would be stronger for respondents with higher levels of political sophistication. The full results are shown in Table A32.

Figure 20 shows the marginal effect of subjective certainty, control and responsibility appraisals on anger, by levels of political sophistication. The interaction between sophistication and the subjective appraisals of certainty is not statistically significant (b = 0.068, p = 0.081) but points in the expected direction. There are no

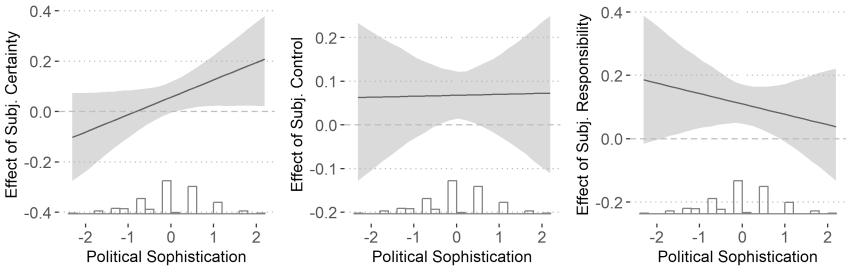

Figure 20. Marginal effects of certainty, control and responsibility appraisals on anger as a function of political sophistication.

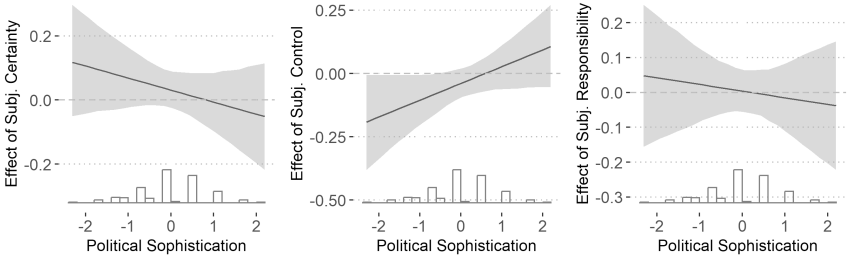

Figure 21. Marginal effects of certainty, control and responsibility appraisals on anxiety as a function political sophistication.

significant interaction effects between subjective appraisals of control and responsibility with political sophistication.

Similarly, for anxiety, the interaction pattern points in the expected direction for certainty and responsibility but neither are statistically significant. The interaction between subjective control appraisals and political sophistication however, points in the opposite direction than expected (b = 0.066, p = 0.086). Among low-sophisticates, high subjective control appraisals lead to lower levels of anxiety. This is in line with the predictions made by appraisal theories. However, among high sophisticates, the effect becomes positive. Their anxiety increases as their appraisals of subjective control increases.

4.6 Discussion and Conclusion

Are politically sophisticates more emotional than non-sophisticates? Yes. I successfully replicated past findings that political sophisticates overall report higher levels of emotional responses to politics (Miller, 2011). When it comes to why, the answer becomes much more complicated.

In this chapter, I proposed and tested three explanations for the link between political sophistication and emotions. First, I tested the Relevance Hypothesis, which posits that as sophisticates appraise political events and issues as relevant to themselves, they experience more intense emotions in response to politics. This hypothesis was supported. I additionally tested whether they pay closer attention to political experimental stimuli. We would expect that political sophisticates find experimental stimuli about politics more interesting, reading it more carefully and finding it easier to translate new information into emotions. However, we did not find a linear interaction between the experimental manipulations of appraisals and political sophistication on either anger or anxiety. While it does seem that the effect of manipulations of responsibility appraisals is driven primarily by political sophisticates, the interaction effect falls short of statistical significance. Moreover, the interactions of political sophistication with control appraisal manipulations points in the opposite direction than we would expect. High control appraisal manipulations seem to have a negative effect on anger among high sophisticates.

Next, following Zaller's curvilinear model of political learning, I proposed that the interaction might in fact not be linear. Rather, it is equally as reasonable to assume that the moderately sophisticated should respond most strongly to the experimental manipulations. The reason is simple: low sophisticates do not care enough to read the stimulus carefully and think about it, which is a necessity to turning appraisals into emotions. The high sophisticates, on the other hand, care but have thought about these issues before. Their appraisals are fixed and stored as nodes in long-term memory. This leaves the moderates as the group in which we should see the strongest results. This is not the case. Although Zaller's model of political learning is one of the most prominent theories in political communication, we found no evidence for it in this chapter. Either it simply does not extend to emotional appeals as I have studied them here, or it needs reevaluation.

I put the Resistance Hypothesis to a second test using an open ended answer to who respondents personally thought was responsible for a political issue. Here, I showed that sophisticates actually do think about these issues more. When respondents were in the low responsibility condition, i.e., when they did not see a treatment that explicitly blamed a responsible actor, sophisticates were more likely to blame a political actor anyways. Often, this was the same actor that was blamed in the high responsibility treatment. As we created these treatments to be believable and plausible to many, we can conclude that sophisticates do not just blame anyone but make reasonable responsibility appraisals. This is good news, sophisticates do engage with studies about politics, they are more likely to name an actor when asked, and they hold meaningful attitudes about political issues, i.e., they name the same actor, which we a priori have found reasonable to blame, as responsible, even when they do not see a high responsibility treatment.

Finally, I tested whether political sophisticates are more consistent in their appraisal-emotion patterns. I found evidence that subjective responsibility and control appraisals are related to higher levels of anger. When it comes to the interactions, all but one are in the expected direction. I found no concise evidence that sophisticates have more consistent appraisal-emotion networks. Future work could test this hypothesis differently, with a larger number of appraisals and larger number of emotional and attitudinal objects.

Before concluding, a note on measurement of political sophistication: political sophistication is frequently viewed as simply encyclopedic knowledge of political actors and processes, i.e., as knowing basic political facts and being able to recall them at the right time (Lupia, 1994). Whether quiz-like questions can correctly capture people's knowledge and understanding of politics is subject to debate. Respondents of online research easily and quickly google answers to political knowledge questions (Jensen & Thomsen, 2014). Researchers can discourage this by explicitly asking respondents not to use outside sources (Berinsky, Huber, & Lenz, 2012; Clifford & Jerit, 2016) or try to make cheating more difficult by using image-based questions (e.g. asking respondents to identify a person in a picture, see Munzert and Selb 2017). However, cheating always remains an issue when measuring political knowledge. On top of this, commonly used knowledge questions have been shown

to increase gender (K. Dolan & Hansen, 2020; Kraft & Dolan, 2022) and racial (Pérez, 2015) biases in political knowledge measures. In this chapter, I have taken a broader conceptual approach by including political interest as well as knowledge questions, but the challenge remains. Addressing how and whether we can measure political knowledge without introducing biases, is beyond the scope of this chapter and adding political interest might be an imperfect solution, even if it is one that is adopted widely in the literature.

Political interest and knowledge, although widely assumed to be part of the same latent construct, are often only weakly correlated. This chapter has provided first insights into the relationship between broadly defined political sophistication and emotions but future work should consider carefully the different components related to sophistication, knowledge, interest and confidence-in-knowledge (a component of political sophistication that is increasingly studied in work on political misinformation – see for instance Jerit & Zhao, 2020; Lee & Matsuo, 2018), and how they might or might not be related to emotional responses to politics.

To conclude, in this chapter, I have proposed several steps that could help us understand how political sophistication and emotional engagement are linked. Most importantly, I have proposed and tested three explanations that could explain their link. Beyond that, this is one of few studies that study the link between emotions and specific appraisals. Studying emotions and their appraisal profiles tells us something about how evaluative judgments are related to distinct emotions and although much of political science research on emotions relies on appraisal theories, its fundamental premises are rarely put to the test. The interaction of subjective appraisals and political sophistication in predicting anger and anxiety offers some validity to this approach. As we would expect, the associations between subjective appraisals and anger get stronger as respondents' political sophistication increases. The same is true for anxiety, with the exception of subjective control appraisals. Finally, this approach also helps us better understand political sophistication as a network of cognitive and affective ties, rather than just encyclopedic knowledge.

So, returning to the main question of this chapter: relevance, resistance or consistence - which explains the link between political sophistication and emotional responses to politics? We have found convincing evidence for the Relevance Hy-

pothesis. Overall, sophisticates report stronger emotional responses to politics than non-sophisticates. This does not mean, that they always pay closer attention to experimental stimuli, but the combined findings presented above suggest that they do pay more attention to politics in their everyday lives. When we asked them to name responsible actors, sophisticates were more likely to do so and often the actor they named was the same we showed in the high responsibility treatment. This suggests that they do not assign responsibility randomly but carefully think about the issues and the actors involved. We found little evidence for the Consistence Hypothesis. As this analysis contains two innovations, testing the appraisal-emotion link and its moderation by political sophistication, more research is needed. Testing the Relevance Hypothesis using observational data will always suffer from issues of endogeneity. As laid out in the introduction, as much as sophistication might increase emotions, emotions guide political learning and attention. Combining these findings with tests of the Consistence Hypothesis, however, provides a deeper understanding of how knowing about politics might be related to having feelings about politics by ways of cognitive appraisals.