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Emotion in Conflict: a Sentiment Analysis of Hezbollah

Index

1. Introduction and Research Question

Previous sentiment analysis on conflict shows that resistance actors use predominantly negative sentiment words. Conversely, establishment actors are more prone to use positive ones. This research sets out to find out if Shia-aligned Hezbollah as a resistance actor, displays more negative sentiment than the establishment actor, and do negative discreet emotions such as fear appear more than positive discreet emotions such as trust during and/or after pivotal events? The central hypothesis to be tested is whether Hezbollah will have more negative sentiment than Aoun's office because of the resistance and establishment divide.

In order to do so we created two new datasets of relevant speeches both from Sayyed Hassan Nasrallah Secretary-General of Hezbollah and Michel Aoun. This is a novelty in the research field of sentiment and discreet emotions analysis on conflict as no dataset existed prior to that. We then identify relevant events and compare emotions before and after these events. Finally, we focus on the relationship between Hezbollah and Israel and we study how fear and trust frequency varies over time.

2. Theory & Expectation

2.1 Literature Review

Humans have a wide range of emotions, many of which are intrinsic. Some think that facial expressions reflecting basic human emotions are universal, even among nations that have never met (Ekman and Friesen, 2003; Ekman, 2005). Other research, on the other hand, claims that although there are some universal emotions, language and culture have various and significant effects on people (Elfenbein and Ambady, 1994; Russell, 1994). Emotions have evolved to increase a species' reproductive fitness, according to evolutionary biologists and psychologists, since they are triggers for high-value activity. Fear, for example, triggers the fight-or-flight response.

According to some social psychologists, certain societal beliefs and collective memories regarding the character of the opponent, the in-group, the history, and the current status of the conflict, distort society members' perspectives and prevent them from finding prospects for peace. However, these cognitive obstacles only represent a portion of the picture. (Halperin, 2016)

Is it possible that defining the role of discreet emotions in conflict and conflict resolution could provide a broad framework for creating targeted conflict resolution interventions?

The emotion-imbued choice (EIC) (Lerner et al., 2015) is a model (*Figure 1. The emotion-imbued choice (EIC)*) that examines how people make decisions based on their emotions. The EIC model believes that the decision-maker is faced with a one-time decision between predetermined possibilities, with no opportunity to seek further information or options. The model terminates when a

decision is made, and it excludes actual (as opposed to expected) events and feelings that occur as a result of that decision.

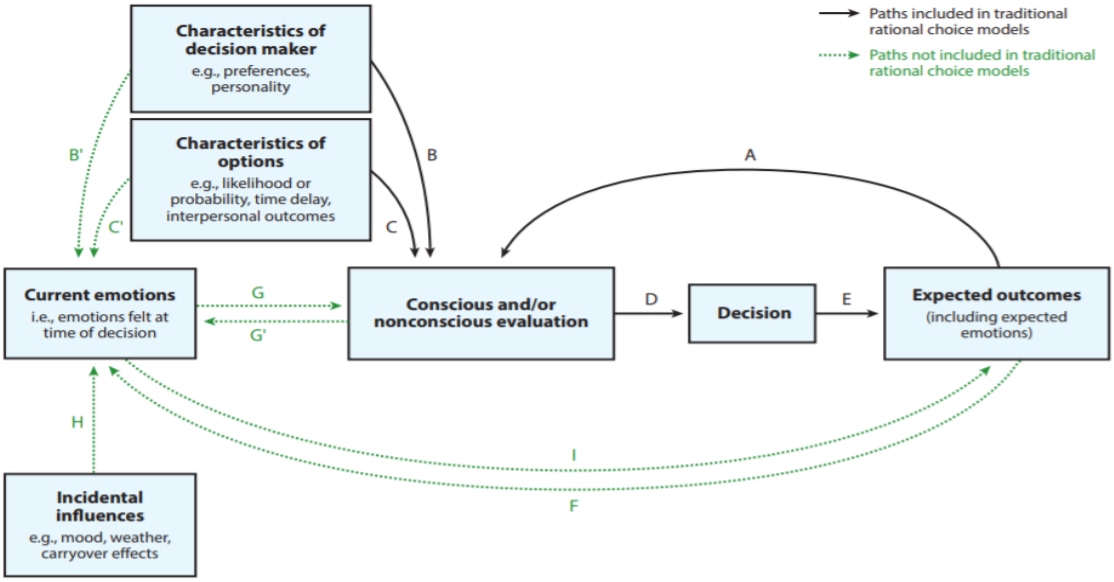

Figure 1. The emotion-imbued choice (EIC) (Lerner et al., 2015)

Pearlman argues that fear, sadness, and shame all encourage gloomy appraisals, risk aversion, and a lack of control (2013). Such depressing feelings drive people to seek security and accept political circumstances, the subsequent result of a "fight-or-flight" response, even if they contravene dignity norms. Anger, joy, and pride[1], on the other hand, encourage positive judgments, risk acceptance, and emotions of personal efficacy. Such empowering emotions inspire people to prioritize dignity and boost their willingness to engage in resistance, even if it puts their safety in jeopardy. When instrumentality and morals provide contradictory solutions to the question of whether to resign or rebel, emotions can push people in one direction or the other (Pearlman, 2013). In other words, resistance actors use predominantly negative sentiment words. Conversely, establishment actors are more prone to use positive ones (Pearlman, 2013).

Dornschneider examines discreet emotions of anger and fear in the occupied Palestinian territories and applies sentiment analysis to 24 Arabic interview transcripts. The findings add to the body of knowledge on popular resistance by demonstrating that anger and fear can coexist. Typically, these emotions are linked to opposing behaviors, such as risk-taking vs. risk-avoiding, and are thus studied separately, with various sorts of decision-making processes (2021a). The findings show that

[1] In the NRC Lexicon pride and trust are correlated to each other when looking at resistance actors. Trust is also unheard of and in our results, trust scores are very high.

risk-taking conduct is based on high levels of general positivity, which is consistent with research tying risk-taking activity to positive emotions. Risk-averse conduct, on the other hand, is based on a lower amount of positive and a higher level of negative. This is also consistent with the research on affective valence, which indicates that negative affect has a negative valence. (Dornschneider, 2021a; Pearlman, 2013; Lerner & Keltner, 2001)

2.2 Discreet Emotions: Fear & Trust

As it was shown, there have been several ideas offered as to which emotions are fundamental (Ekman and Friesen, 2003; Ekman, 2005; Elfenbein and Ambady, 1994; Russell, 1994). Joy, sadness, anger, fear, disgust, and surprise are the six primary emotions (Ekman, 1992). Plutchik posits an eight-emotions theory. Ekman's six, as well as trust and anticipation, are among them. Plutchik uses a wheel to arrange their feelings (Figure 2). The radius represents the intensity of the emotion; the closer it is to the center, the more intense it becomes. The eight primary emotions, according to Plutchik, constitute four opposing pairs: joy–sadness, anger–fear, trust–disgust, and anticipation–surprise (1980; Mohammad & Turney, 2012).

Fear and trust, which are the focus of the present sentiment and discreet emotion analysis, belong to opposite sides of Plutchik's wheel. Fear is in fact a negative emotion, on the other hand trust is a positive one. The feeling/emotion of fear (or terror) is usually stimulated by a threat, which infers the cognition of "danger" and stimulates the behaviour of removing oneself from that dangerous situation in order to get the contrasting and reassuring effect of protection (Plutchik, 1980). On the contrary, trust (or acceptance) is a feeling arousing from a known stimulus, like a group member and it infers the thought of "friend", something that it is known and accepted. It usually implies a grooming and sharing type of behaviour and it has the effect of creating affiliation between one another. (Plutchik, 1980)

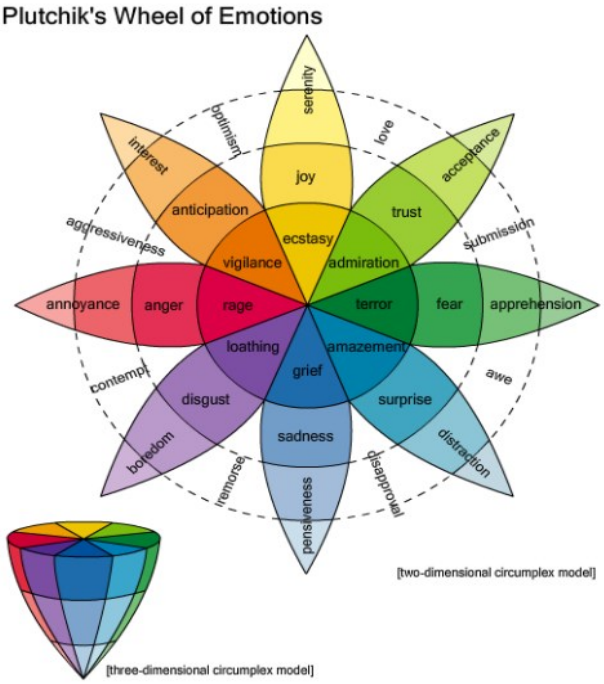

Figure 2. Plutchik's Wheel of Emotions (Mohammad & Turney, 2012)

2.3 History Review - Relevant Events

2.3.1 Protests against Ex-Prime Minister Saad Hariri

During the month of October 2019, mass protests broke out across Lebanon in response to the official government's decision to solve an already devastating economic crisis. The peaceful 2019 protests aimed to voice the Lebanese peoples' concern for their socio-economic rights along with the corruption of the government (AI, 2019). There was already a longstanding discontent toward the government in Lebanon since the early 2010s and Geha explains in their paper that the hirak, or the 2015 Lebanese protests, were anti-system protests born out of social networks (Geha, 2017). Throughout their study, Geha finds that narratives in some social networks allow for resistance actors to challenge the pre-existing system and even carry these frames through times of demobilization (Geha, 2015). In the context of the 2019 protests, there were mass Lebanese protests against Sunni ex-Prime Minister Saad Hariri, the son of ex-Prime Minister Rafiq Hariri who was assassinated in 2005 by what a UN-backed tribunal recently found (August 2020) was a Hezbollah affiliate (Robinson,

2021). Until now, the assassin has not been surrendered to the tribunal and the location of the four Hezbollah-connected defendants is publicly unknown (Robinson, 2021).

Eventually, these protests led to Saad Hariri's full resignation by January 2020, despite Michel Aoun's efforts to postpone it back in 2017 and Hezbollah's efforts to council Hariri into keeping his position, giving Hezbollah a power vacuum to fill in Lebanese politics. However, without a Sunni appointee in office, Hezbollah takes this resignation as a blow, even after setting tents ablaze in a local protest camp in Beirut (Wamsley, 2019). A source familiar with Hezbollah's political strategy has called this "a strong blow" to the actor with "the biggest winner [being] Hariri " in the sectarian government composition of the sovereign state (Bassam & Perry, 2019). As a resistance actor, Hezbollah has largely imposed itself as a legitimate political actor in Lebanon with 13 seats in the 128-seat Lebanese parliament (since 2018) and extensive military power with more than 20,000 active militia fighters and 20,000 more in reserve (as of 2020), (Robinson, 2021). For this study, it is imperative that we look at this event in order to see how the resistance actor uses sentiment when faced with a precarious situation vis à vis the establishment actor.

2.3.2 Soleimani and the 2020 Beirut bombing

The assassination of Iranian military officer Qasem Soleimani came as a shock to the middle East and caused a lot of uproar in resistance actors and Shia-aligned & Sunni-aligned Muslim actors alike. The fatal drone strike was executed by the U.S. government on the 3rd of January 2020 in the Baghdad Airport. Soleimani had controversially, in the international political sphere, supported many non-Western based actors such as Syria's president Bashar Al-Assad and Russia in the Syrian war. Moreover, Soleimani had also given Hezbollah a large amount of support and the state of Iran has supported the Shia group ever since 1985 via Ayatollah Kohmeini's support and funding around $700 million-$1 billion per year (Levitt, 2021). Following this assassination, Hezbollah has publicly announced their intentions to make the U.S. "pay the price" for their actions, highlighting their increasing aggression towards the Western powers (Falk, 2020). This tension caught the eye of the international community and worried many including the Lebanese government. By the end of 2020, a top judge began to investigate ties between Hezbollah and the August bombings in a Beirut port that touched hundreds of victims (Robinson, 2021). It is crucial that we investigate the resistance actor's sentiment and discreet emotions directed towards the events leading up to and following the Beirut bombing. In contrast, we must also look at the government's reaction to the entire situation.

2.3.3 Israeli tensions: a continuous string of events

In the 1980s, Hezbollah's founders officially declared Israel as a Zionist invader unworthy of statehood and encouraged visceral resistance against the latter (Samaan, 2014). The two political actors have been in constant ideological friction and the tensions peaked in 2006 when a month-long war

broke out from July to August. On the other hand, Lebanon as a state has had a mixed past with Israel including armed conflicts that divided Lebanon into Christian pro-Israeli establishment actors and multiple Muslim-resistance actors (the PLO, Jammoul, Amal, and even the sovereign state of Syria). This strenuous political tension has created even more pressure for both Israel and Muslim-centric political actors in the Middle East. As a result, Israel has been in a constant state of "deterrence" ever since its creation in the late 1940s following the realism-like narrative embraced by their defence institutions (Samaan, 2014). The Israeli state has thus constructed a heavy strike-back regime in which any political actor that poses a threat to the sovereign state will be reprimanded and consequently deterred (Samaan, 2014). Nevertheless, Hezbollah continues to quarrel with the state of Israel and tensions arise almost every year. For example, in December of 2018, Israel launched a tactical operation after discovering a Hezbollah-built tunnel in the north. Recently, August 6th 2021, Hezbollah fired rockets at Israel after the latter ordered an airstrike a few days earlier. This constant political "tug-of-war" has been in full motion during the last decade, and it is important that we look at the sentiments and discreet emotions on this topic over an extended period of time using the large corpus we have.

2.4 Hypotheses and Expectations

The hypotheses we present for this research are:

- H1a: Hezbollah will have more negative sentiment than Aoun's office because of the resistance and establishment divide.
- H1b: Hezbollah will have more negative sentiment towards Israel than Aoun's office due to the ongoing external and internal political tensions.
- H2a: Hezbollah will display more fear than trust after pivotal events because of risk aversion that entails the role of resistance.
- H2b: Hezbollah will have high frequencies of fear vis à vis Israel.

In theory every language has a positivity bias. Positivity bias refers to the phenomena when the public evaluates individuals positively even when they have negative evaluations of the group to which that individual belongs (Lavrakas, 2008). Dodds et al. observe that (i) the words of natural human language possess a universal positivity bias, (ii) the estimated emotional content of words is consistent between languages under translation, and (iii) this positivity bias is strongly independent of frequency of word use (2015).

In addition to the positivity bias that every language has *per se*, we expect a positivity bias in both the establishment and the resistance actor on the basis of their own party/political agendas. Specifically, the establishment actor being Michel Aoun leading the presidency of Lebanon is expected to have a higher presence of positive sentiment since their speeches have to engage with the audience

of the population. Here are some poignant examples from Michel Aoun speeches: ""Building Resilience Through Hope", "Long live Lebanon!", and "the truth shall come out" (Aoun, 2022). We expect Aoun's speeches to display a high score in discreet emotion trust after distressing events. This expectation is because Aoun, wants to compensate for the distress given by their peculiar position. Aoun's goal is to spark a reaction in the government's audience and followers, spreading trust will create acceptance and affiliation in its regard. A striking tactic to obtain such results is agenda setting; or glossing over certain major negative events and focus on the positive ones.

On the other hand, we expect Sayyed Hassan Nasrallah Secretary-General of Hezbollah's speeches to display a high score in discreet emotion fear overall and vis a vis events with Israel. The resistance actor strives to avoid repercussions via fear as a political aversion strategy.

3. Methodology

3.1 Web Scraper

For the present research it was needed a dataset of speeches that represented both Michel Aoun, the establishment actor, and Hezbollah, the resistance actor. Since such datasets did not exist yet it was decided to create two corpuses of speeches from scratch, via means of a web scraper, this was done through R in RStudio. Data scraping is an important technique for automated data collection, in which structured data information is retrieved and gathered directly from the World Wide Web using the Hypertext Transfer Protocol. For the present research it was coded a web scraper that copies specific data from the web and gathers them in central local database and prints them into a spreadsheet.

A web scraper is a specialized tool that extracts data from an online page accurately and fast. For the present project, the web scraper was able to access the pages URLs and every single speech's nested link in order to get to the actual corpus of the text. In order to indicate to the scraper which data should fetch, it was used a data locator (or selectors). Data locators are used to discover the data to extract from the HTML file. For this project, we used XPath and CSS selectors. After the data has been fetched, extraction can begin. A page's content can be analysed, searched, reformatted, and the data put into a spreadsheet or a database. The data scraping was run on one of Hezbollah's official websites[2] were all of Sayyed Hassan Nasrallah's speeches were retrieved in their original language and organized in a spreadsheet. Simultaneously, another data scraper was run on the official English website of the Presidency of the Republic of Lebanon[3] where President Michel Aoun's speeches are stored. They were also scraped and collected in a spreadsheet.

[2] Hezbollah's Media Relation website, where the speeches where data scraped from: https://mediarelations-lb.org/section.php?id=94&page=1

[3] Presidency of the Republic of Lebanon's website, where the speeches where data scraped from: https://www.presidency.gov.lb/English/Pages/Speeches.aspx

3.2 Datasets Description and Data Wrangling

3.2.1 Hezbollah and Aoun Dataset

Two datasets were created, one for Sayyed Hassan Nasrallah's speeches and one for Michel Aoun's speeches. The first dataset, containing Sayyed Hassan Nasrallah's speeches, has a total 288 observations. They are organized into three variables: "date", "title", and "speech". However, the dates that were scraped correspond to the date the speech was uploaded, not to the date the speech was given. In addition, every "speech" observation contained in this dataset presents itself in Arabic.

For Michel Aoun's speeches a second dataset was created. This dataset is much smaller than the previous one as it presents a entirety of 29 speeches, arranged with the same three variables ("date", "title" and "speech"). Aoun's speeches were scraped in English. This is because retrieve them in Arabic happened to be extremely complicated, since on the official Arabic website a decent part of the provided links were empty. The English translation of such speeches is provided by the government of Lebanon, therefore it can be considered official and proof-read by professional on behalf of Lebanon's Presidency.

3.2.2 Data Wrangling

The Data wrangling undertook many steps during this study especially for the Hezbollah corpus in Arabic. In order to start conducting our analysis, it was necessary to pre-process the whole corpus during the "tokenization" phase. In order to keep our internal validity, we cross-referenced the top sentiment & discreet emotion features in the corpus. Upon closer inspection, we removed some words that did not fit into the category of either "positive" or "negative," "fear," or "trust." This meant that throughout the analysis, we worked with our specific pre-processed version of the corpus, rendered possible thanks to Quanteda's replace function and "dontscore" phrase, to avoid skewing the analysis.

In addition, the corpora had to be wrangled multiple times in order to match the time frames that we allocated for each major event. This meant that we subset both corpora multiple times, and continued with our pre-processing method talked about above. Nevertheless, we encountered a problem with our original Hezbollah corpus. A majority of the speeches were recently uploaded as of 2019 which means that there are dozens of speeches that are in fact dated prior to 2019 but still have their uploading date. Furthermore, some speeches were uploaded many days after their delivery. Thus, we had to manually create a new variable checking all of the proper dates and inputting them correctly for analytical purposes.

3.3 NRC Word-Emotion Association Lexicon and Dictionaries

The NRC Emotion Lexicon is a list of English words and their associations with eight basic emotions (anger, fear, anticipation, trust, surprise, sadness, joy, and disgust) and two sentiments (negative and positive). Mohammad & Turney, the creators of the lexicon chose to use the *Macquarie Thesaurus* as their source and the annotations were manually done via means of crowdsourcing (Mohammad & Turney, 2012) The NRC Word-Emotion Association Lexicon has entries for over 10,000 word–sense pairs. Each entry describes the relationship between a word–sense pair and eight primary emotions. Every one of the 10,170 terms in the vocabulary is also assigned a semantic orientation: positive, negative, or neutral.

The lexicon itself was created in English, nevertheless, translations in various different languages were provided. In order to use such lexicon for the purposes of this research, the licenced version from the official page of the lexicon was downloaded on the local hard drive[4]. The lexicon, therefore, appears as a spreadsheet with a sub-dictionary for each and every translated language. "Dictionary_English" and "Dictionary_Arabic" were transformed into a Quanteda dictionary in order to allow their use in the Sentiment Analysis.

3.3.1 The validity of sentiment analysis: validation of the NRC lexicon in English and Arabic

For this research, the Arabic translation of the English NRC lexicon, which was used to create the NRC Arabic dictionary, is applied to Sayyed Hassan Nasrallah's speeches. The original NRC English dictionary is applied directly to Michel Aoun' speeches. For the purpose of validating the sentiment analysis we followed Chan et al. (2021) approach as follows: 1) we used a suitable sentiment dictionary; 2) we did not assume that the validity and reliability of the dictionary was 'built-in'; 3) we checked for the influence of content length and 4) we did not use multiple dictionaries to test the same statistical hypothesis (Chan et al., 2021).

The NRC lexicon's validity and performance for the English translation of the lexicon is measured by Van Atteveldt et al. (2021), specifically they test for sentiment positive and negative and discrete emotion fear and trust. In order to do so, Van Atteveldt et al. (2021) run bi-variate correlations between the Dutch and English dictionaries. Most correlations between the tested Dutch dictionaries are weak to moderate, the gold standard for NRC is 0.33. According to Van Atteveldt et al. (2021) the best performance is still attained with trained human or crowd coding and the English version of the NRC lexicon complies to this.

Regarding the NRC lexicon validation and performance for the Arabic translation of the lexicon we based our validation on the results obtained by Mohammad et al. (2016). In their paper,

[4] https://saifmohammad.com/WebPages/NRC-Emotion-Lexicon.htm

they display numerous sentiment lexicons that were constructed automatically using two different methods: (1) employing distant supervision techniques on Arabic tweets, and (2) translating English sentiment lexicons into Arabic using a freely available statistical machine translation system. The best result is obtained using the automatically generated Dialectal Hashtag Lexicon and the Arabic translation of the NRC Emotion Lexicon (accuracy of 66.6%) (Mohammad et al., 2016).

In addition to this, they run a qualitative study of the automatic translations from English to Arabic (done via means of Google translate), and the analysis results show that 88% of the entries are valid in Arabic as well. Close to 10% of the invalid entries are the result of gross mistranslation, close to 40% are due to translation into a related word, and about 50% are due to differences in how the word is used in Arabic (Mohammad et al., 2016). Furthermore, in order to verify the used Arabic dictionary, the top features from Sayyed Hassan Nasrallah's speeches were manually cross-verified, by checking word's translation context based (Watanabe, 2020).[5]

3.4 Sentiment Analysis

Sentiment analysis is an automated method used to identify affect-laden words from text (Dornschneider, 2021a). For this study, we first used descriptive statistics to understand the prevalence of positive/negative sentiments and fear/trust emotions throughout our corpora. We transformed the NRC dictionary into both a working English and Arabic dictionary that we could work with in RStudio. This means that we were able to apply the same NRC measurements for our mixed language corpora, all whilst taking into account words that should not be scored. Using the summary function (summary) and looking at top features (dfm), we were able to start analysing the data and prepare for a more in-depth analysis involving plotted distribution of sentiment over a certain period of time. Using the document feature matrix here, we were also able to see what words could not be scored as positive or negative such as the feature "الأم", or "Allah", that appeared well over 7000 times throughout our Hezbollah speeches.

Once we were done pre-processing our corpora, we applied context dictionaries to specific instances to see the sentiment-oriented relationship between a series of words in our corpora (i.e. "Beirut", "Blast*", "Bomb*", "attack*", "terrorist*", "Soleilmani", "Iraq", "drone strike", "Hezbollah" for the 2020 Beirut bombing) (Wantanabe & Müller, 2019). This means that we isolated particular speeches that were given in dates surrounding the event, or that talked about said event. We also used this type of dictionary-specific sentiment analysis for the entirety of our corpora vis à vis Israel (because of the long-standing nature of the tensions). Using Quanteda, we pre-processed our data, applied a context dictionary, filtered that through the language appropriate NRC dictionary, and turned our

[5] In addition to all said above Dornschneider (2021a), uses the NRC lexicon for their sentiment analysis on Anger, Fear, and Affective Valence in the West Bank.

results into a plottable data frame. The results seen throughout this paper are realized thanks to the ggplot2 package.

4. Results

We recapitulate the research question: as a resistance actor, does Shia-aligned Hezbollah display more negative sentiment than the establishment actor, and do negative discreet emotions such as fear appear more than positive discreet emotions such as trust during and/or after pivotal events? Based on the literature review and the theoretical analysis drafted, we recapitulate the expectations for the outcomes of these results: resistance actors use predominantly negative sentiment words. Conversely, establishment actors are more prone to use positive ones. Therefore, we expected Hezbollah speeches to display mostly negative sentiment and fear, and Aoun speeches to display mostly positive sentiment and trust.

Below, *Figure 3*, the printed summary of sentiment analysis on the Hezbollah dataset showing all eight discreet emotions and sentiments.

```
   doc_id              anger         anticipation      disgust
Length:284         Min.   :  0.00   Min.   :  2.00   Min.   : 0.00
Class :character   1st Qu.: 14.00   1st Qu.: 23.00   1st Qu.: 6.00
Mode  :character   Median : 37.00   Median : 60.50   Median :16.00
                   Mean   : 46.54   Mean   : 77.78   Mean   :19.37
                   3rd Qu.: 71.00   3rd Qu.:120.00   3rd Qu.:30.25
                   Max.   :227.00   Max.   :454.00   Max.   :81.00
     fear             joy            negative         positive
Min.   :  2.00   Min.   :  1.00   Min.   :  0.00   Min.   :  4.00
1st Qu.: 26.00   1st Qu.: 16.00   1st Qu.: 21.00   1st Qu.: 44.75
Median : 70.50   Median : 45.50   Median : 65.00   Median :111.00
Mean   : 86.56   Mean   : 57.97   Mean   : 81.14   Mean   :139.66
3rd Qu.:132.25   3rd Qu.: 88.25   3rd Qu.:125.00   3rd Qu.:211.25
Max.   :464.00   Max.   :388.00   Max.   :457.00   Max.   :753.00
   sadness          surprise         trust
Min.   :  0.00   Min.   :  0.00   Min.   :  3.0
1st Qu.:  9.00   1st Qu.:  6.00   1st Qu.: 35.0
Median : 31.00   Median : 22.00   Median : 87.5
Mean   : 39.77   Mean   : 25.97   Mean   :108.5
3rd Qu.: 62.00   3rd Qu.: 42.00   3rd Qu.:161.0
Max.   :206.00   Max.   :119.00   Max.   :609.0
```

Figure 3. Overview Hezbollah Dataset

After gathering the data via means of web scraping, a preliminary sentiment analysis of the dataset was carried out. As the summary shows at first glance, in the dataset containing Sayyed Hassan Nasrallah Secretary-General of Hezbollah's speeches, the mean for positive sentiment is 139.66 and for negative sentiment 81.14. This indicates that overall prevalent sentiment is the positive one and it is an unexpected result since Hezbollah is a resistance actor. Nevertheless, it could also be correlated with the positivity bias that every language has.

In regards to discreet emotions it can be noticed that trust and fear have the highest mean average. Trust has a mean average of 108.5, whereas fear has a mean average of 86.56. The high score for trust goes against the expectations that the resistance's actor speeches tend to be more fear heavy, however the gap remains small meaning that Hezbollah possibly compensates fear with trust.

In *Figure 4* there is the overview of the dataset containing Michel Aoun speeches for the presidency of Lebanon, below there is the printed summary:

```
   doc_id              anger        anticipation      disgust
Length:29          Min.   : 2.00   Min.   : 5.00   Min.   : 1.00
Class :character   1st Qu.:11.00   1st Qu.:16.00   1st Qu.: 5.00
Mode  :character   Median :16.00   Median :28.00   Median : 9.00
                   Mean   :19.14   Mean   :29.59   Mean   :10.97
                   3rd Qu.:28.00   3rd Qu.:39.00   3rd Qu.:15.00
                   Max.   :45.00   Max.   :87.00   Max.   :28.00
     fear            joy           negative        positive
Min.   : 3.00   Min.   : 3.00   Min.   :  4.0   Min.   : 12.00
1st Qu.:16.00   1st Qu.:11.00   1st Qu.: 22.0   1st Qu.: 46.00
Median :28.00   Median :17.00   Median : 34.0   Median : 69.00
Mean   :28.69   Mean   :18.21   Mean   : 41.9   Mean   : 77.66
3rd Qu.:44.00   3rd Qu.:28.00   3rd Qu.: 60.0   3rd Qu.:115.00
Max.   :85.00   Max.   :45.00   Max.   :104.0   Max.   :206.00
   sadness         surprise         trust
Min.   : 4.00   Min.   : 1.00   Min.   : 10.0
1st Qu.:10.00   1st Qu.: 5.00   1st Qu.: 30.0
Median :16.00   Median : 9.00   Median : 45.0
Mean   :19.31   Mean   :11.72   Mean   : 56.1
3rd Qu.:27.00   3rd Qu.:16.00   3rd Qu.: 83.0
Max.   :58.00   Max.   :47.00   Max.   :136.0
```

Figure 4. Overview Aoun Dataset

By all appearances also in the Aoun dataset there is a positivity bias. The average mean for positive sentiment is 77.66 and the negative is 41.9. This result for sentiment corroborates our expectation stated at the beginning of the present paper: the establishment actor is expected to have a higher presence of positive sentiment since their speeches have to engage with the audience of the population and ensure that their presidency is firm, strong and trustworthy. Trust and fear have a high score compared to other emotions[6], trust scores 56.1 and fear 28.69.

[6] Also anticipation detains a high score for average mean, 29.59, nevertheless it was considered not as relevant as trust and fear to go further with the research

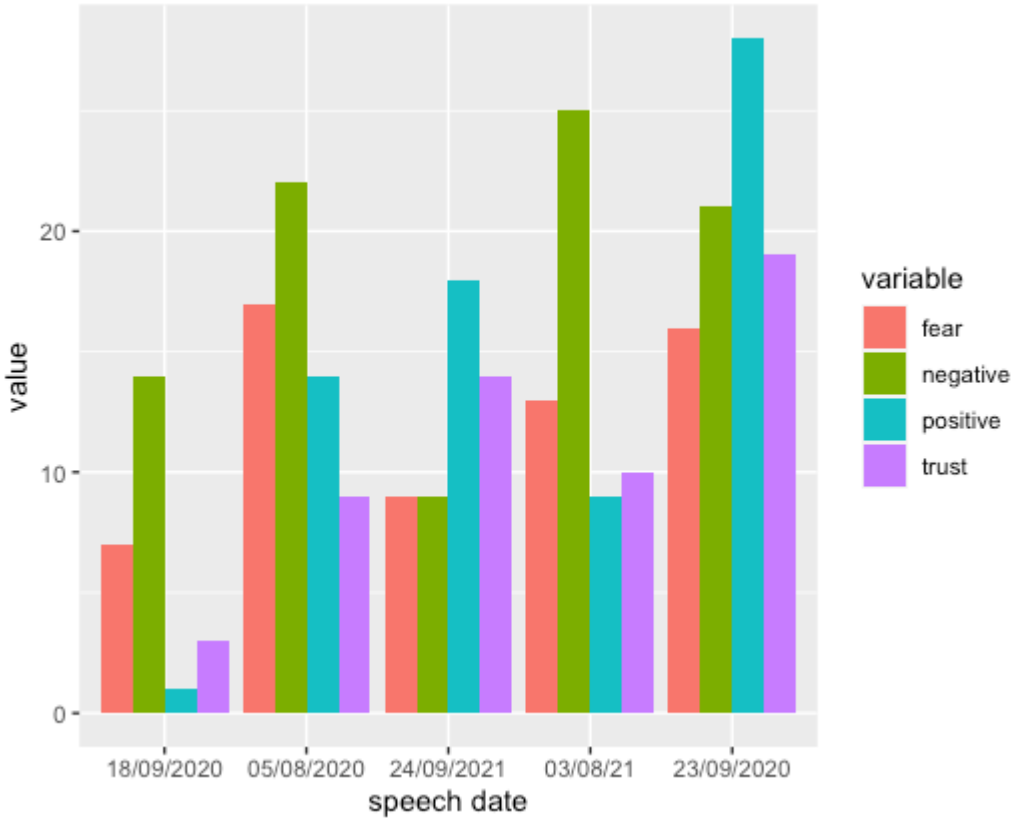

Figure 5. Values for sentiment & fear-trust for speeches in Aoun Dataset Regarding Beirut Bomb Explosion

In this plot, the establishment actor addressed the Beirut port explosion of 2020 that left over 200 people dead and hundreds of thousands homeless. This terror attack left a deep scar in Lebanon and the Lebanese government shows high degrees of negative sentiment coupled with fear. The initial reaction on the 5th of August shows a particularly high amount of negative sentiment and fear followed by the speech made on the 18th of September. As analysed in the first part of our results, the Aoun dataset contains a higher frequency of positive words than negative words; however, this specific event covers a tragic national-level event in which president Aoun grieved for the entire country. The establishment actor here is obliged to follow a pattern of mourning. In addition to this use of negative sentiment, Aoun uses fear to warn the population of additional attacks and to urge them to seek security, following the same theory that Pearlman brings up in her research (2013). Once again, Aoun uses fear as a deterrence mechanism when mentioning legal investigations on the attacks on the 3rd of August 2021. The only speech on this topic with more positive sentiment and trust than negative sentiment and fear respectively is Aoun's address to the UN General Assembly on September 23rd. Per our mention of positivity bias, the establishment actor used positive sentiment to push forward their agenda in front of a powerful audience. The high degree of positivity here shows the establishment actor's intent to reassure the concerned population and to reaffirm the position of the government during such events. In this instance, it is possible to view the positivity bias that is also present in *Figure 6*.

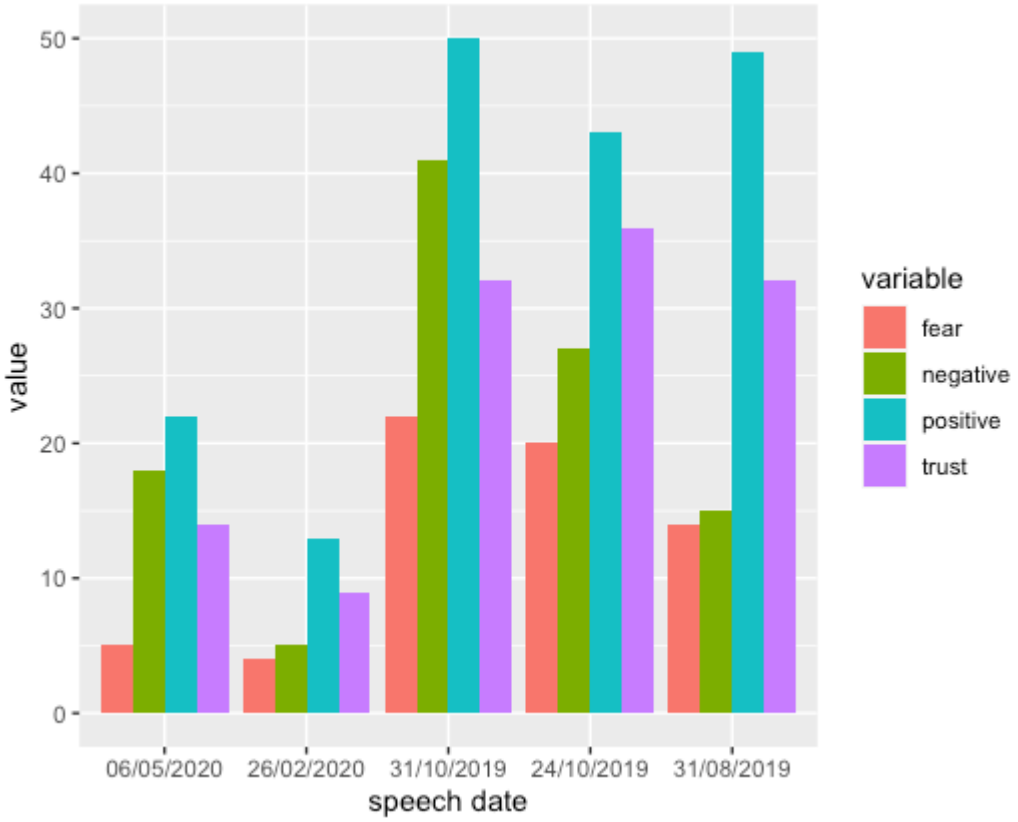

Figure 6. Values for sentiment & fear-trust for speeches in Aoun Dataset Regarding 17th October Protest

At first glance of *Figure 6*, we can observe the high frequencies of positive sentiment coupled by trust. In total, there is significantly more positive sentiment than negative sentiment, trust than fear. In the context of the event, the high degree of positive sentiment highlights two possible expectations. Firstly, per the positivity bias, Aoun's positive sentiment is used in these speeches as a way for the establishment actor to save face and conserve the legitimacy of the government. The political nature of the protests threatened the government directly, and Aoun's response is one of self-preservation. Secondly, per the contextual explanation, Aoun displays high degree of positivity due to the parallel economic nature of the protest, a reaction to Lebanon facing a financial collapse. Aoun's agenda, in addition to counterbalancing fear with trust, is to express the security of the country and to stay in power. The positive sentiment is used as a way to retain this position as an established actor. Thus, Aoun's positive sentiment is particularly high during this troublesome event, and throughout the entirety of the corpus[7], because of the presence of the positivity bias (Lavrakas, 2008).

Furthermore, it is observable throughout the speeches that Aoun used higher frequencies of fear and negative sentiments as the protests evolved starting in August 2019. By the speech made on the 31st of October 2019, Aoun uses a higher frequency of fear compared to the other speeches. This discreet emotion is used exclusively to deter the population from engaging in protests, especially in

[7] Figure 4 reveals almost twice as much positive sentiment (77.66) as negative sentiment (41.9) on average per document.

those that would threaten his Christian branch of government. Per Pearlman, the increased use of fear here indicates that Aoun's sense of control over the situation was decreasing and that the risk was escalating resulting in aversion (Pearlman, 2013). Though faced with a perilous situation, Aoun needed to compensate for the rising negative sentiment and fear. Through the positivity bias, positive sentiment is always higher than negative sentiment in this event. In addition to this, the frequency of trust is always strategically higher than fear in each document. It is practically tailored to the amount of negativity in the document and acts as a counteracting discrete emotion to offset the worry of the establishment actor.

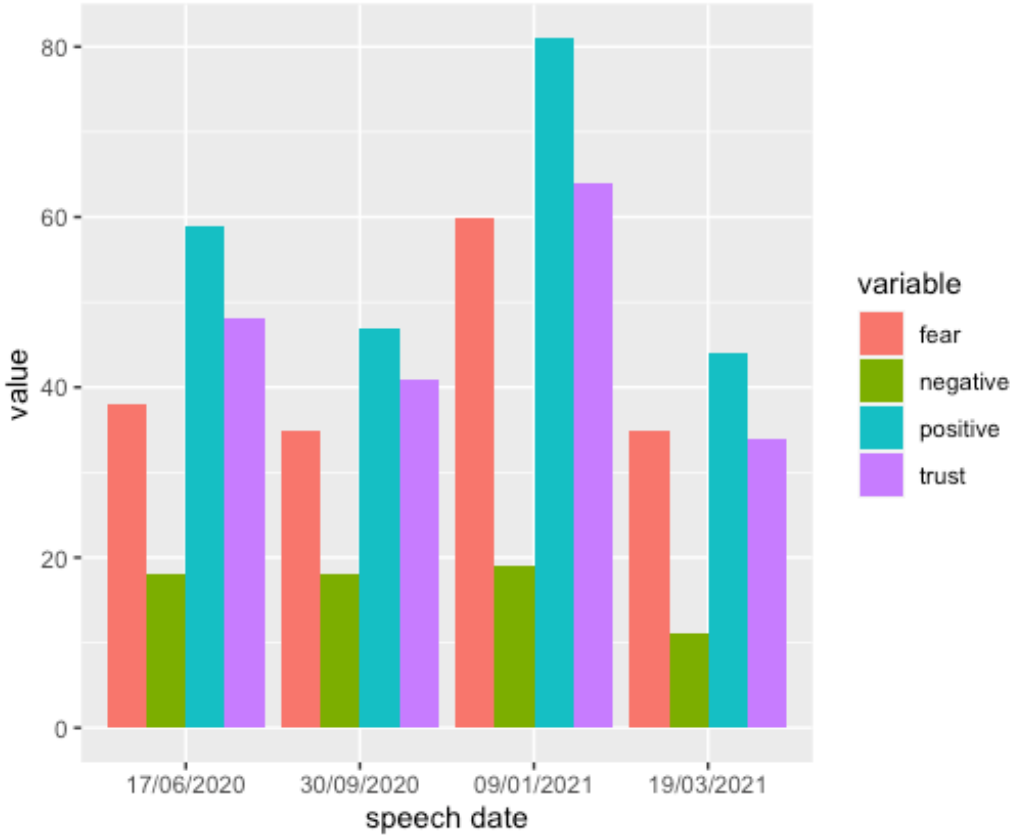

Figure 7. Values for sentiment & fear-trust for speeches in Hezbollah Dataset Regarding Beirut Bomb Explosion

This plot shows the speeches surrounding the Beirut bomb explosion including Nasrallah's speech a month prior to the incident and the most recent updates to the terror attack. Firstly, it is interesting to note that the dataset reveals high frequencies of positive sentiment in the June speech and in the January speech of 2021. Even the speech given after the bombing and the most recent relevant speech have a frequency of positive sentiment that supersedes the negative sentiment, and by an even larger gap than in the speeches given by Aoun. This is a possible instance of positivity bias whereas, following the historical context of the speeches, Nasrallah uses positive sentiment following Soleimani's death and in response to a devastating attack on the capital. After inspecting the literature

and news surrounding these events, the expectations held at the start of this study are shattered by the overwhelmingly positive sentiment[8] in these speeches.

Pearlman mentions pride in her study and this discrete emotion, along with joy and anger, motivates people to "engage in resistance" (p. 388, 2013). In a similar way, trust compels people to be part of a group and, in this case, embrace the political communication made by the Secretary-General Nasrallah. In almost all document, there are more words associated with trust than words associated with fear. Nasrallah compensates for his aversion to risk, seen in the high presence of fear, with an even higher frequency of trust-related words. He balances the effects of his words very carefully especially considering, once again, the meaning of the historical context and the eventual blaming of the Hezbollah-connected perpetrators. By the time the investigations started producing substantive results about the bombing 2021 Nasrallah uses high frequencies of fear to avoid attracting more attention. This also goes against the expectation laid out at the beginning of our study. Nasrallah uses the same communication strategies as Aoun.

[8] Including an average of 22 per document and 147 maximum for this context-specific (Beirut bombing) dictionary in our entire dataset.

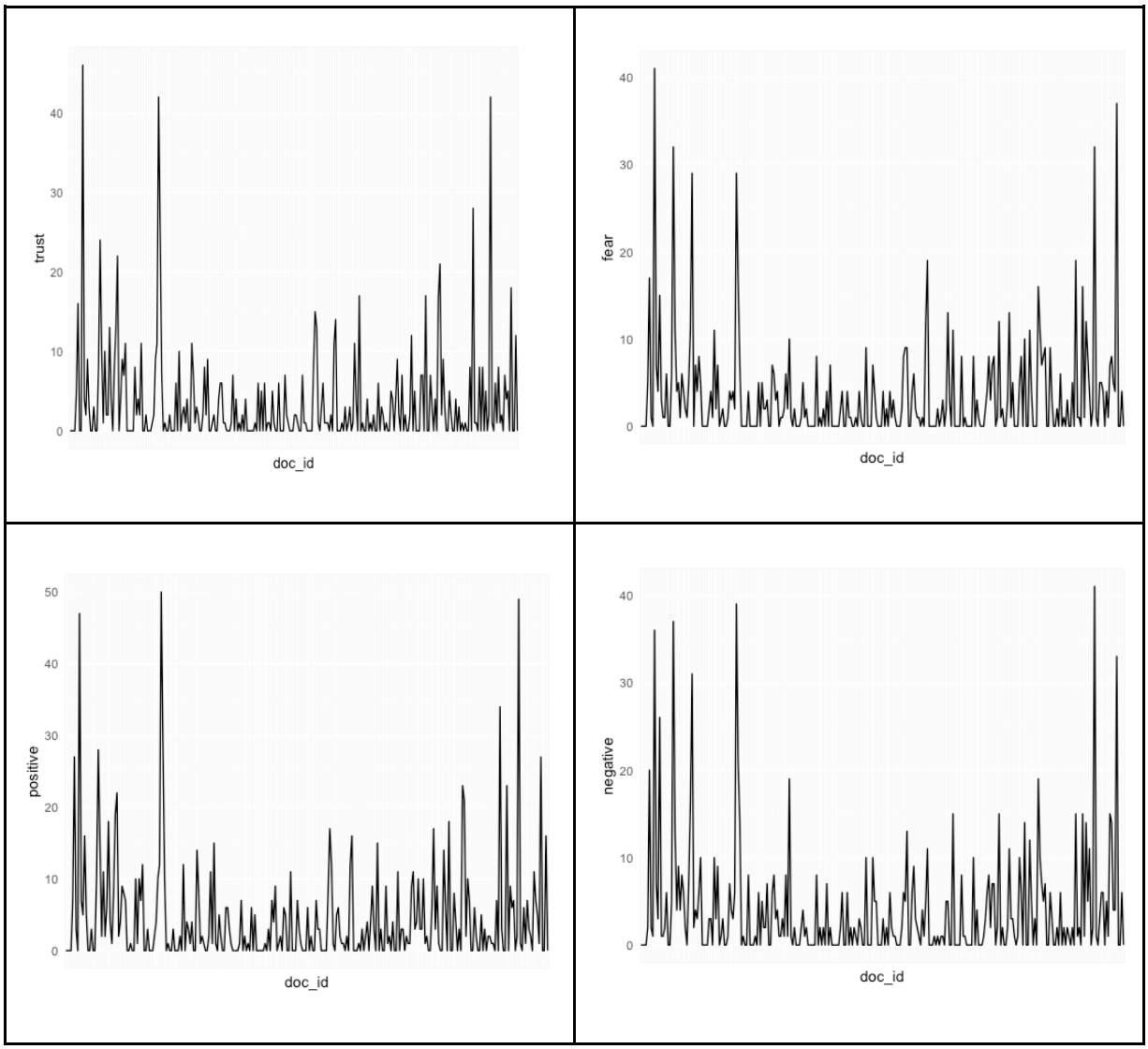

Table 1. Instances' frequency of Israel related words over time for speeches in Hezbollah Dataset divided by sentiment & fear-trust

These four-line plots reveal the amount of positive, negative, fear, and trust related terms throughout the entire Hezbollah corpus over time. Interestingly, the patterns tend to match especially when pairing negative sentiment and fear, positive sentiment, and trust. Fear and negative sentiment work hand-in-hand and are higher than usual in times of political distress. For example, there is a high amount of fear (37) and negative sentiment (33) in a speech dating from the 7th of April 2014 in which Nasrallah official addressed that Bashar al-Assad's Syrian regime was safe. This is during a time where Israeli forces exchanged border fire with Hezbollah and Iranian forces as well which deeply threatened Hezbollah as a political actor. Nevertheless, unexpectedly, in crucial events such as the 15th of January 2015 when Nasrallah announced the infiltration of an Israeli spy in Hezbollah, the positive sentiment (47) and trust (46)[9] are both higher than the highest frequency of fear (41). Reports say that

[9] The highest recorded frequency of trust in our corpus.

Nasrallah tried to downplay the importance of this event, and we can argue here that he used the discreet emotion of trust to attenuate the alarming presence of the spy. As the resistance actor, Hezbollah's agenda is to solidify its support base and encourage a high level of mobilization when possible. However, in the overall dataset, it is observable that the frequency of fear-related words is often higher than the frequency of trust-related words. Consequently, in almost all of the spikes of negative sentiment and fear, Hezbollah attempts to compensates with positive sentiment and most importantly trust. Positive sentiment and trust are thus even more closely linked together, but that does not signify that fear and even negative sentiment are always lower. Rather, positive sentiment and trust serve as a tool to preserve the legitimacy and strength of the resistance actor faced in political conflicts especially when faced with an ideological adversary such as Israel.

5. Conclusion and future work

Previous conflict sentiment analysis has revealed that resistance players primarily utilise negative sentiment words. Establishment actors, on the other hand, are more likely to use negative ones. The goal of this study is to see if Shia-aligned Hezbollah as a resistance actor displays more negative sentiment than the establishment actor, and if negative discrete emotions like fear appear more frequently than positive discreet emotions like trust during and/or after critical events.

The result of this study shows that:

- R1a: Hezbollah, the resistance actor, displays higher frequencies of positive sentiment than expected, nevertheless it presents more negative sentiment in comparison to the establishment actor, the Presidency of Lebanon.
- R1b: Hezbollah does not display more negative sentiment towards Israel than Aoun's office.
- R2a: Hezbollah does not show more fear than trust after pivotal events.
- R2b: Hezbollah has high frequencies of fear vis à vis Israel.[10]

Both the establishment and resistance actors use positive sentiment and trust to off set the negative sentiment and fear displayed throughout their speeches. This political strategy is a pillar of political communication in areas of conflict.

In future research it would be interesting to create a corpus with Israel speeches in order to run sentiment and discreet emotion analysis on it. This could broaden the comparison and the theoretical framework. A bigger dataset for Michel Aoun's speeches is essential, ideally this should be collected

[10] It is interesting to note that the positivity bias is higher and more prevalent in the Aoun dataset compared to the Hezbollah dataset.

in Arabic in order to avoid translation biases and to be able to apply the Arabic translation of the lexicon on it. Finally, an Arabic speaking person should be part of the team. This would facilitate the comprehension of the speeches and results.

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