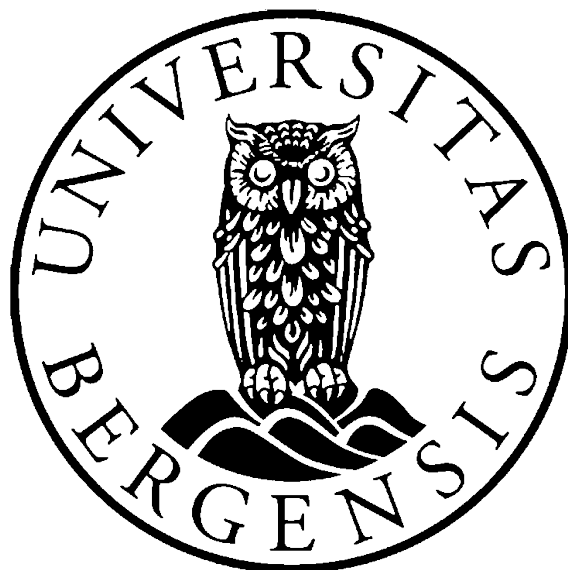# Achieving justice by starvation:

a quantitative analysis of hunger strike outcomes

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Abstract

This thesis analysis hunger strikes as a specific protest tactic and aims to contributes to the understanding of where, when and how hunger strikes are most likely to reach their intended goals. By using a dataset consisting of media-reported hunger strikes, it demonstrated that a combination of hunger strike-specific- and political context factors can to some extent determine the likelihoods of what is identified as four distinct hunger strike outcomes (concession, surrender, death and forced end).

Various hypothesis on hunger strike outcomes have been tested against the dataset by applying the statistical method multinomial logit. Findings show that coalition governments are more willing to grant concessions to hunger strikers and that states are able to learn from previous hunger strikes in order to avoid deaths. The findings also shows that hunger strikes have slightly better chances to gain concessions in non-democracies.

Acknowledgements

There's several people I would like to thank at the completion of this thesis.

I alone am responsible for the content of this thesis.

Magne Hagesæster
June 2st 2014

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The Common People, for all time to come
Will raise a heavy cry against that threshold,
Even though it be the King's.

The King's Threshold, William B. Yeats[1]

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[1] As quoted in Beresford (1994: 9).

1 Introduction

Hunger striking is a disruptive tactic of political protest: by the threat of starvation, a body is turned into a bargaining resource against an opponent. Among the most famous hunger strikers from last century, there's a great diversity of actors, their goals and the target of their protest: The British suffragettes' struggle for women's right to vote (1909-1914), Irish republicans struggle (1917 and 1981), Mahatma Gandhi as the symbol of India's anti-colonial struggle (1932, 1943 and 1948), and more recently: Guantanamo Bay prisoners struggle for legal rights (2005 and 2013) and the Russian punk band Pussy Riot's protest against their imprisonment in Russia (2012 and 2013). The status of some of these hunger strikers today illustrates some of its enormous potential. While the tactic is regarded as a desperate, "last resort", tactic, some empirical evidence also suggests that it is highly effective (Scanlan et al., 2008: 299). Still, research explaining its efficacy is absent. This thesis therefore aims to enhance the knowledge of this specific protest tactic by analyzing a unique dataset of hunger strike events from between 1906 and 2004.

1.1 Research question

While proponents of non-violent tactics praises hunger strikes as morally superior (Sharp, 1973), others question its effectiveness and the surroundings by which it can be successfully carried out. The Indian political activist Arundhati Roy claims non-violent tactics such as hunger strikes are not effective in "police-states", dictatorships or in situations of deep poverty, and asks rhetorically whether the hungry can go on hunger strike (Popham, 2011). Nelson Mandela, who participated in several hunger strikes during his incarceration in Robben Island prison, found the tactic to be over-idealistic and sometimes counterproductive (Mandela, 1995: 502-503). Still, according to Scanlan, Stoll and Lumm (2008: 299), over 75 % of the hunger strikes in their data set experienced a positive outcome. At the same time, Scanlan et al. questions the meaning of success in protests as does Gamson (1975: 28), and calls for more research in order to understand the results of hunger strikes. Scholars have also requested additional research on the collective nature of hunger strikes (Biggs, 2007: 19) and the conceptualization of hunger strikes and their significance to social movements (Scanlan et al., 2008: 314). It has been pointed out that researchers tend to emphasize the extreme outcomes of hunger strike, like death, leaving out the rest (Healy, 1982: 225).

While many researchers have asked why and how protests happen, few have tried to analyze what causes different outcomes.

Hunger strikes seem to be a very effective political tactic, yet there is little research within political science trying to understand this tactic and its relation to political regimes and governments. In social movements, and especially hunger strikes, the question of success is problematic. Rather, I suggest arranging the hunger strike outcomes into four categories; (1) concession, (2) surrender, (3) death and (4) forced end. This leads to the research question of this thesis:

Research question*:* What determines hunger strike outcomes?

My dependent variable is the immediate outcome of the hunger strikes. While acknowledging that the long-term effects of hunger strikes might be well as important to study, they are difficult to measure quantitatively. What makes hunger strikes interesting for comparative political science is that in every hunger strike, the government (it can also be other types of opponents) is put in a situation where it often is compelled to response. As with labor strikes, hunger strikes can be seen as sequences of interaction between challengers and opponents (Biggs, 2002). Hence, every hunger strike sequence is also an expression of the government's response to protest.

Most studies on social movements have used case or small-N studies, because of limitations of data or the complexity of the theoretical argument that follows studying unconventional politics (Amenta et al., 2010: 301). Compared to most other protests tactics in contentious politics, hunger strikes have a finite time span and are relatively specific in their targets and aims, which makes them suitable for quantitative research.

There are two main methodological challenges in dealing with hunger strikes. Firstly, non-democracies without freedom of speech or media censorship will more probably try to hide information from the public about hunger strikes, especially from what happens inside a prison, where they can more easily control the information. Secondly, certain outcomes of hunger strikes, for example when the hunger striker dies from starvation, is more likely to get media attention (Healy, 1982: 225).

As a tactic of protest, hunger strikes here be analyzed the framework of social movements theory, and more specifically political process theory and opportunity structures. This thesis also follows the Tilly's (1986) notion that the emergence of new protest tactics does not happen independently of basic power structures in the society. I will therefore trace the emergence of the first decade of hunger strikes and use the hunger strike dataset to find traces of patterns.

1.2 Available data

The foundation for this thesis is a media based event dataset containing 1441 observed hunger strikes in all countries between 1906 and 2004, assembled from the New York Times, Keesing's Worldwide Online, and The Economist, under the management of Stephen Scanlan (2008). For variables on political regimes, I will use the Polity IV index as a measure of democracy (Marshall and Gurr, 2012) and ACLP/DDs data on coalition governments (Cheibub et al., 2005).

1.3 My contribution

A quantitative analysis of hunger strikes have not been carried out before. Now it is made possible with an available quantitative dataset. Because this will be the first statistical analysis of its kind, it will to some extend be an exploratory thesis. In sociology, hunger strikes can be perceived as games between the hunger striker and the government, whereby a combination of different strategies and moves results in different outcomes (Biggs, 2007). In this thesis, I argue that hunger strikes are sequences of interactions between the protester and the government, whereby its outcomes depend on a combination of hunger strike-specific and political context-specific factors, in accordance with general principles of political process theory (McAdam, 1982). The theoretical framework will borrow elements from political opportunity structures and studies of protest movements, where the aim is to contribute to the prediction of where, when and how hunger strikes are most likely to reach their intended goals.

1.4 The structure

This content of the thesis is organized in the following way:

Chapter 2 presents the theoretical framework for how hunger strikes can be analyzed. Firstly, I attempt to define hunger strike and conceptualize the different hunger strike outcomes. Then, I review literature that can be relevant for explaining hunger strikes, primarily from the social movements tradition. Then, I will explore the hunger strike dataset in order to see patterns that can lead to assumptions about hunger strike outcomes. Finally, elements from this chapter will be synthetized into my hypotheses.

Chapter 3 presents the research design for this thesis. Here, I present a short utline of my methodological approach. Then, I present my data, followed by some methodological

considerations on missing and incomplete data. At last, I present the statistical model and the strategy for how the analysis will be carried out.

Chapter 4 presents the analysis of this thesis by going through my different models. The results will be thoroughly interpreted, followed by an evaluation of the hypothesis

Chapter 5 presents a conclusion.

2 Theoretical framework

This chapter develops a theoretical framework for understanding and analyzing hunger strikes. My objective is first to define and understand the process of hunger strike and secondly to find which factors are relevant in order to measure and analyze hunger strikes and their outcomes. Existing research on hunger strike from a comparative political perspective is scarce. Lahiri (2014) who have done research on suicide protests is an exception. Therefore, it's necessary to find existing research on other protest forms that can be adopted to hunger strikes. As this is a relative unexplored topic, and my hunger strike dataset has not been yet been analyzed statistically, I will spend some time exploring the dataset in search of patterns and trends. Lastly I will make some hypotheses based on literature and findings in the data set that will be tested in Chapter 4.

2.1 Defining hunger strike

Hunger strikes can take many shapes and forms. Is it possible to treat all kinds of hunger strikes as the same tactic? This section attempts to answer this question. A hunger strike can in simplest terms be defined as "a refusal to eat with the aim of forcing the opponent to grant certain demands…" (Sharp, 1973: 363). In this thesis I aim to analyze hunger strikes outcomes as a political protest tactic. With this definition I risk including actions without political motivation. I therefore find it more useful to follow the definition of Scanlan et al. (2008: 278) which calls a hunger striker someone who "…voluntarily refuses to consume the food or nourishment necessary to sustain life as a socio-political protest tactic...". I here follow the definition of protest made by Della Porta and Diani (2006: 165) as "nonroutinized ways of affecting political, social, and cultural processes".

An intuitive way to explain hunger strikes is by the comparison to hostage-taking or kidnapping. The essence of hostage taking is that A threatens to kill victim B in order to force concessions from the target C (C can also sometimes be the target). Paradoxically, in hunger strike A is also the victim as the hunger striker only threatens to harm himself (Biggs, 2007: 2).

There's many categories in which hunger strikes can be put in. Within the framework of contentious politics, hunger strike fit well as an example of a *disruption*. According to Sidney Tarrow (2011: 101-102), a disruption: "…obstructs the routine activities of opponents, bystanders, or authorities and forced them to attend to protesters' demands".

Within the category "political self-sacrifice" (Fierke, 2013) several aspects of hunger strikes are the same as "suicide protest" and "self-immolations" (Biggs, 2012) or what Huey Newton (1973) called "revolutionary suicide". But an important difference is that while these tactics aims towards martyrdom and political symbolism, hunger strikes first and foremost aims to produce bargaining resources, as formulated by Lipsky (1970: 2). This was pointed out by a Jesuit theologian P.J. Gannon (1920), who was discussing the moral aspect of hunger strikes, following the death of Irish hunger striker Terrence MacSwiney:

> …no hungerstriker aims at death. Quite the contrary; he desires to live. He aims at escaping from unjust detention, and, to do this is willing to run the risk of death, of which he has no desire, not even as a means. His object is to bring the pressure of public opinion to bear upon an unjust aggressor to secure his release, and advance a cause for which he might face certain death in the field. There is nothing here of the mentality of suicide, whose object is to escape from a life that has grown hateful to him (Gannon, 1920: 450).

The point has also been echoed by other hunger strikers in efforts to make clear their intentions, as here formulated in the 1989 Tiananmen Square Hunger Strike Declaration: "We are not in search of death; we are looking for real life" (Xiaobo et al., 1989: 148). The communicative aspect of hunger strikes is captures by what Biggs (2003) calls "communicative suffering". The theatrical aspect of hunger strike has been made in analysis of the Chinese student hunger strikes in 1989 (Esherick and Wasserstrom, 1990) and the Turkish hunger strike in 2000 (Anderson, 2010). And just as terrorist groups needs to make clear their responsibility (and sometime demands) following their actions, hunger strikers need to manifest their demands in a declaration (Scanlan et al., 2008: 279).

Hunger strikes are ambiguous when it comes to violence (Lahiri, 2014: 6-7). Although hunger strikes are portrayed as non-violent action (Scanlan et al., 2008, Sharp, 1973), it can also be labelled as political violence when applying William Gamson's (1975: 74) definition of violence: "deliberate physical injury to property of persons" and include violence directed against oneself. Lahiri (2014: 28) argues that it is this duality between violence and non-violence that makes hunger strikes effective.

2.1.1   Different kinds of hunger strikes?

One can separate hunger strikes into two main strategies, which often comes to light in the hunger strikers declarations. Hunger strikers may either declare that they are striking at a finite time span, or that they will keep on until demands are met, also called open-ended hunger strikes. Lahiri (2014: 140) chooses to differentiate between "suicide protests" whereby the actor intends to die, and "hunger strikes" that have finite time spans. Whether the person dies or not is not important in her definition, because they can be stopped. In medicine, a similar differentiation is found, where open-ended strikes are often labeled as "voluntary total fasting" (Altun et al., 2004: 35), while temporary strikes are labeled as "voluntary protest fasting" (Reyes, 2007: 703). Yet, to apply these labels to hunger strikes is not straightforward. Not all hunger strikers are clear about their intended length. Hunger strikers may also change their strategy on the way. It is generally difficult to know the true intentions of a hunger striker, and if s/he actually is willing to die. Pretending to have this willingness is a part of the strategic game between the hunger strike and the target, which will be discussed later in this chapter, in Section 2.2.2. I choose not to differentiate hunger strikes according to the mentioned categories and therefore include both limited and open-ended of hunger strike in my analysis.

Do all hunger strikers have the same set of rules on how to conduct the hunger strike? Not all, but most follow the line of only drinking water. Often, the water can be added salt and vitamins. There are a few cases where hunger strikers stretch these rules and allow limited nourishment in order to buy more time, one example being the Turkish hunger strikers in 2001 which lasted up to three years (Anderson, 2004: 837-838, Reyes, 2007: 704). Going the other direction, hunger strikers may also abstain from water, but there's only a few cases where this has happened. One known example is the hunger strike by then IRA chief of staff Sean McCaughey in 1946 that decided to escalate the hunger strike by rejected water on his last days and consequently died after only 22 days (Beresford 1987: 20).

Being an important subcategory of hunger strikes, prisoners' hunger strikes make out about 70% of their hunger strikes dataset, according to Scanlan et al. (2008). While there are some evident differences between hunger striking in prison and in the open, Biggs (2007: 4) argues that the principles of the dynamic interaction between the hunger striker and the government applies equally outside as to inside prisons.

Another important question is whether hunger strikes should be labelled as individual or collective acts. This has consequences for what kind of literature we regard as relevant for understanding these acts. Large scale hunger strikes are easy to label as collective action, but what about individual hunger strikes? It is not merely a quantitative matter. An individual

hunger striker may act as a vanguard of a large movement. A spontaneous individual hunger strike may also mobilize people or movements to support a cause. A related question is whether the motivation of the hunger striker is personal or political. This differentiation can also be difficult in practice, especially when it comes to prisoners hunger strikes. Mahatma Ghandi, for example, disapproved of prisoners hunger strikes because they were, in his eyes, motivated by personal benefits (Lahiri, 2014: 28). Lahiri (2014: 140) suggests drawing a line between protesters that have openly stated goals and those that have not, as an indication of whether the motivation is political or personal. Accordingly, to have openly stated goals implies that the protester can be analyzed within the larger framework of social movements and collective action. I choose to follow this line in my thesis. In addition, as my aim is to analyze hunger strikes outcomes as results of interactions between the hunger striker and the government, I will limit my analysis to hunger strikes that has a level of government, or governmental institution, as targets. This will exclude hunger strikes which has for example private companies, private religious institutions or private individuals as their target.

2.1.2 Emergence of hunger strikes as tactic

According to Tarrow (2011: 116), new innovations in tactical repertoires of protest happen as results of interactions between the challengers and their opponents. This section looks at the innovation of hunger strikes as a political tactic and how the first decade of interactions between hunger strikers and their opponents shaped the tactic.

Documented cases of political hunger strikes are difficult to find earlier than the end of the 19th century, at least in Western literature. While the proclaimed pioneers of modern hunger strikes are the Suffragettes on England and United States and Irish republican prisoners (Lahiri, 2014: 18), they were initially inspired by Russian revolutionaries who went on hunger strikes in Siberian jails under the Tsarist regime (Deutsch, 1977). People in Britain had learned about Russian hunger strikes in Siberian jails through press articles and memoirs of Russian dissidents during the 1880s. It was especially after a hunger strike by four Russian women in Siberian prison "Irkutsk" that the British Suffragettes took interest in the "Russian strategy" (Kennan, 1889: 502-511). While British MPs at that time were harshly criticizing Russian authorities because of their neglect of hunger strikers, the Suffragettes saw this a good strategy to gain sympathy among British people applying the same tactic.

When Suffragette Marion Dunlop started her hunger strike in 1909, it was the first known political fast in the British empire (Vernon, 2007: 43). The Suffragettes adopted a tool that before had been identified with Russian masculinity and strength, and made it into a their

own tool (Vernon, 2007: 61). They also exploited the fact that British media had criticized the Tsar regime for the treatment of Russian hunger strikers (Grant, 2006: 248-252).

The British home secretary Herbert Gladstone authorized force-feeding in late September 1909 to be used against Suffragette member Mary Leigh. It sparked a tempered debate on its legality. Less than six months later, new home secretary Winston Churchill conceded to their demands and made special privileges for Suffragette prisoners. Rule 243a allowed suffrages the privilege of political prisoners, without affording them political status. And it did not apply to male suffrage-rights protesters, who continued their hunger strike. The next home secretary Reginald McKenna then removed the privileges and prompted new hunger strikes that was met with reintroduction of force feeding. He then retreated and introduced the cat and mouse-tactic, also called "Prisoners (temporary discharge for Ill-Health) Act" in April 1913. It was designed to replace force feeding by temporary releasing prisoners until they regained their health, and then re-arresting them. Within six months, the tactic collapsed because the released committed new offences and the police failed to re-arrest them (Vernon, 2007: 65).

Forcible feeding was not a new phenomenon, it was earlier used against institutionalized children and people believed to have mental illnesses. Nonetheless, its use was contested within medical circles. A debate in the medical journal The Lancet in the 1870s following a series of failed force feedings was picked up and used actively by the Suffragettes to contend the government's one-sided legitimation of force feeding as a merciful and necessary act (Vernon, 2007: 76). The debate over the legitimacy of force feeding concentrated on whether how dangerous and painful it was and whether it was preferable to apply force-feeding through nose or mouth (Anderson Moxey, 1872). The Suffragettes' neighbors and counterparts in Ireland started using hunger strikes in 1912 when the arrested suffrage activist Lizzie Barker was denied political status. Within two years, 22 fellow Suffragettes in Ireland went on a hunger strikes.

The same year as Dunlop's hunger strike, Mahatma Gandhi visited the Suffragettes movement in London and learned about their tactic. Gandhi did first praise the Suffragettes, but later distanced himself from what he described as too militant and violent (Vernon, 2007: 70). He also distinguished between what he labelled "ethical fasts" and "political hunger strikes", and did, as mentioned, not approve of the latter which he labeled as selfish (Lahiri, 2014: 28). Having been mostly used by women in Britain and Ireland, it was by many classified as a feminine tactic. (Owens, 1984: 63). From the start, the strategy of hunger strikes clearly rested on the notion of gaining sympathy. A necessity for this sympathy was

the relatively new humanitarian notion among citizens that starving to death was both unnatural, immoral and inhumane. One can therefore argue that it's not coincidental that women, the first object of humanitarian sympathy, were the first to use it (Vernon, 2007: 64). The image of hunger strikes as a "womanish" tactic would gradually change. While a few men in support of the British Suffragettes had already been on hunger strikes, the first well known male hunger striker was the Irish republican and socialist leader James Connolly in 1913. But still then, republican leaders like Eamon de Valera expressed ambivalence to Connolly's tactic (Vernon, 2007: 62). In 1917, Irish republican Thomas Ashe died after a failed attempt to force-feed him during a hunger strike. The funeral was attended by over 30 000 (Beresford, 1987: 17). This led to a more conciliatory line from the British government. So when the Lord Major of Cork and commander of the Irish Republican Army, Terence MacSwiney, went on a hunger strike three years later, it was with the knowledge that the British government had conceded to every hunger strike since Ashe's death (Vernon, 2007: 68). MacSwiney therefore raised the stakes and did not only demand political status, like his predecessors, but also recognition of the Irish republic and constitutional authority of the provisional government established in 1919. Three days before his arrest, the British government had passed the "Coercion Act" and now wanted to show strength. British authorities did not want to use force feeding after what happened with Ashe, and did not put any effort in preventing MacSwiney's death from hunger striking in 74 days. This sparked a huge unrest and later inspired 8000 anti-treaty prisoners to carry out a mass hunger strike in 1923 in Irish prisons (Beresford, 1987: 17-19).[2] Hunger strikes was now first and foremost associated with Irish republicanism.

Proven to be an effective tool against British authorities, it soon spread to India and Ireland. The duality of the British empire, whilst being both a democracy with somewhat responsive politicians and being a colonial power ruling with the foundation of violence, was to be its Achilles' heel according to the strategy of hunger strikes. Facing hunger strikes in three different territories, the British government was keen to establish a guideline on how to respond to hunger strikes everywhere in the empire. The dilemma was whether prison authorities should (A) use force feeding, (B) release the prisoner, or (C) let the prisoner die by starvation. All three options had been tried and experienced earlier in different contexts with more or less devastating consequences (Grant, 2006: 262-267). There were several challenges in creating a single guideline. Most hunger strikers had similar motives, namely to expose the

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[2] Anti-treaty prisoners refers to those fighting against the Anglo-Irish Treaty of 1921 that led to the establishment of the republic of Ireland in only the southern part of Ireland.

British system as inhumane and unjust and create sympathetic awareness about their case. But hunger strikes was carried out in different manners, different principles and sometimes different goals (Vernon, 2007).

In more recent times, Irish and Indian traditional culture have been emphasized as important reasons for their frequent use of hunger strikes (Grant, 2006: 247, Vernon, 2007: 60). Examples of this framing can be found in scholars like Fierke (2013: 108-117) and secondary literature as Beresford (1987: 14-15). Evidence is found in Irish pre-Christian culture, whereby the *Senchus Mor* (civil code) allowed for a practice called *Troscad* (fasting on or against a person) and *Cealachan* (achieving justice by starvation). Similarly, an ancient Indian practice called *sitting Dharna* allows fasting till death on someone's doorstep, a practice that was abolished by the British colonial powers by government decree in 1860. Gandhi have allegedly found inspiration in Indian traditions when he justified and rationalized hunger strikes. Similarly, figures as Terrence MacSwiney found legitimacy in Irish traditions in his polemics against those priests who at the time labeled hunger strike as illegitimate suicide. When hunger strikes are presented results of ancient traditions, it is important to remember that actors needed to root their tactics in their culture in order to not alienate themselves from the public. Tilly (1978: 156) reminds us that a society's tactical repertoire of protest is relatively small and definite, and changes slowly. A protest tactic not rooted in society will therefore have smaller changes of succeeding. In this perspective, trying to find roots in one's culture to familiarize a new tactic seems rational. Fasts can be found in Hindu, Christian and Muslim religion (Lahiri, 2014: 18). It should therefore not be difficult to find traditions that can legitimize use of hunger strike if needed. As Vernon (2007: 60) points out: "…in each context the hunger strike was adopted to a particular set of political conditions and given an appropriate historical genealogy that heightened its purchase as a form of protest".

To sum up this section, I have illustrated what were the important elements in the innovation of the hunger strike tactic. The presence of a level of democracy, open media and humanitarian and sympathetic attitudes amongst people were important for the tactic to work. Furthermore, globalized media facilitated a fast spread of the tactic to other continents.

2.2 Conceptualizing hunger strike outcomes

2.2.1 Studying success or outcomes?

Scholars of social movements have been mostly preoccupied with the question of success and less with outcomes (Giugni, 1999). There are several methodological and theoretical problems with studying success (Amenta and Young, 1999, Giugni, 1998). The causality between a

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social movement and a policy shift is difficult to measure (Giugni, 1999, Gamson, 1975). Political achievements may happen as a result of unintentional actions or by-products of intentional actions (Tilly, 1978: 85). And political achievements may take time: A social movement may fail initially to accomplish all its goals, but manage to lay the necessary organizational or ideological foundations needed for its predecessors to be successful some generations later (Gamson, 1975: 28). When it comes to the tactic of hunger strikes, this may be one of many used by a social movement in pursuit of a policy change. In this case it will be difficult to isolate the effect of one tactic and evaluate its success.

Another problem is that there could be other measures of success than the fulfillment of the political goals of the protesters. The Irish hunger strike of 1981 in the north of Ireland serves as a good example of this. The hunger strikers did not get any concessions and ten hunger strikers eventually died.[3] The hunger strike that in sum lasted in eight months, caused a radicalization within the Irish nationalist movement not president since the 1916 Easter rising. The support for prisoners was illustrated by the 100 000 attending Bobby Sands' funeral. It further materialized in an electoral victory for the Sinn Fain and its entry to Irish politics in the North (Moloney, 2002: 214-5). The result of the hunger strike was described as "an almost volcanic upsurge in popular support for the Republican Movement", and that this was an "unplanned by-product of the hunger strikes" (O'Brien, 1999: 124).

Instead of success, Gamson (1975: 28) proposes an evaluation based on: "a set of outcomes, recognizing that a given challenging group may receive different scores on equally valid, different measures of outcome". This supports the use of a more differentiated measure than success.

2.2.2 Four hunger strike outcomes

The dependent variable in this thesis is the outcome of the hunger strike. In a study of the wave of Irish republican hunger striking prisoners between 1916-1923, sociologist Michael Biggs (2007: 4) analyses them from a rationalist perspective and see each hunger strike as a game using game theory. He identified *concession*, *surrender*, *death* and "*no hunger strike*", as possible outcomes. The last was added outcome because he also included prisoners who didn't go on hunger strike. Although his research only studies hunger striking prisoners, he argues that the principle logic of hunger strikes as a game between protester and government applies equally to hunger strikes outside prison (Biggs, 2007: 4).

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[3] The actual willingness of the British government to concede, and to what extent proposed concessions were turned down by the IRA has been disputed. See O'Rawe (2011).

In his model, he identifies three types of hunger strikers: (h1) bluffing, (h2) resolute and (p3) sacrificial. He identified two types of government, (g1) conciliatory and (g2) intransigent.

I have refined this model to consist of the following four hunger strike outcomes: (1) *concession*, which means that the hunger strike it is called off by the striker after gaining concessions, (2) *surrender*, which means it is called off by hunger striker without concessions, (3) *death*, which is death by starvation and (4) forced end, whereby the government ends the strike using force. For the purpose of illustrating the different types of prisoners and governments that produces the different outcomes, I've identified two types of hunger strikers: (h1) bluffing and (h2) sacrificial, as well as three types of governments: (g1) conciliatory (g2) intransigent and tolerant (g3) intransigent and repressive. This is illustrated in Table 2.1.

Table 2.1: Four possible outcomes of a hunger strike:

		Government		
		conciliatory	intransigent and tolerant	intransigent and repressive
Hunger striker	bluffing	CONCESSION	SURRENDER	SURRENDER
	sacrificial	CONCESSION	DEATH	FORCED END

I find support for the use of three types of governments in the approach by Tilly (1978: 98-138) where he identified the three types of government response to protest, namely (1) facilitation, (2) toleration and (3) repression.

To further illustrate the difference of the outcomes for the actors, Table 2.2, also derived from Biggs (2007: 22) shows the pay-off functions for hunger striker and government.

Table 2.2: Pay-off functions for hunger striker and government

Outcome	Hunger striker		Government		
	Bluffing	Sacrificial	Conciliatory	Intransigent and tolerant	Intransigent and repressive
Concession	2	2	-2	-3	-3
Surrender	-1	-2	-1	-1	-1
Death	-2	1	-3	-2	-2
Forced end	-1	-1	-3	-3	-2

As Table 2.2 illustrates, a hunger striker will try to maximize gains and reduce losses, while the government only strives to reduce its loss. The main difference between a bluffing and sacrificial hunger striker is how they conceive surrender and death. A sacrificial hunger striker that eventually surrenders has lost everything, including reputation. This hunger striker rather chooses death and will be awarded for it. However, for a hunger striker a concession is always preferable to death (Gannon, 1920: 450). A concession not only gives the hunger striker some sort of benefit, this also allows the hunger striker to close the hunger strike with her/his honor unharmed. A bluffer, on the other hand, will surrender the hunger strike rather than die of starvation, when its apparent that the government is not willing to give concessions and the health of the hunger striker is deteriorating (Biggs, 2007: 4-7). The government has more options than the hunger striker. For all governments, surrender is the outcome that reduces its cost to a minimum. The conciliatory government prefers concession to death. Both versions of intransigent governments refuse to concede, but the intransigent and repressive governments rather choose using force to stop the hunger strike and pre-empt death and possible martyrdom. If hunger striker is sacrificial and government is repressive, government will force the hunger strike to end. The most common means in prisons is forcible feeding. Some regimes also apply increased prison sentences, physical force, or imprisonment when it happens outside the prison. Today force-feeding is a common used tool used by governments to stop hunger striking prisoners, including in Europe (Jacobs, 2012).

2.3 Social movements theory

As discussed in Section 2.1.1, a hunger strike can, without regard to size, be considered as a political protest when the hunger striker has openly stated goals and targets a form of government. Analysis of political protest is mainly associated with the social movement

tradition in political science. Before going through the literature relevant for explaining hunger strikes, it is useful to get an overview of the field of social movement studies. This section will therefore present a brief summary of its respective subfields and the background of their origins. That will lead us into Section 2.4 where I eventually present the literature relevant to explain hunger strike outcomes.

2.3.1   Classical theory

The earliest approaches to social movements orientated around the psychological perspective. In "The crowd: a study of the popular mind", Gustav le Bon Le Bon (2001 [1896]: 18) described collective action as irrational and described protesters as individuals who had lost their consciousness to the crowd (Le Bon, 2001: 18). Classical theory consists of various sub-theories, among them: mass society, collective behavior, status inconsistency, and relative deprivation. The common feature in this broad set of theories is the conception that social strain causes an undesirable psychological state that subsequently causes extreme behavior and support for social movements (McAdam, 1982: Ch. 1). Scholars within the mass society tradition believed that the weakening of traditional institutions was a necessary condition for the existence of social movements (Kornhauser, 1960: 177). Relative deprivation theory is another example of classical social movement theories. Ted R. Gurr (1970) laid the foundation for this theory with his book "Why men rebel". He argued that political violence stemmed from relative deprivation, which he defined as the discrepancy between people's value expectations and value capabilities (Gurr, 1970: 12-13). Until the 1960s, collective action was seen as "apolitical behavior" (McAdam, 1982: 2), and described by scholars as crowds, panics and manias (Della Porta and Diani, 2006: 11). Classic theories was gradually marginalized following the new social movements cycle of the 1960s (Tarrow, 2011: 23) and has since then been mostly criticized (Dalton et al., 2009).

2.3.2   Rational choice and resource mobilization

The rational choice theory, mainly established by Mancur Olson (1971), shifted the attention toward the incentives for participating in collective action. It questioned the classical perception that deprivation automatically caused protest, and believed that actors didn't participate if they didn't gain anything personally. In this context, the "free-rider problem" explains that if benefits are distributed collectively, individuals will have little incentives to participate because they will get their benefits anyway. The larger the group, the stronger the free-rider effect.

The sociologists McCarthy and Zald (1973, 1977) found an answer to Olson's collective action problem by emphasizing on organizations' abilities to mobilize resources for its supporters (Tarrow, 2011: 24-25). Resource mobilization theory has been considered groundbreaking on the part that it defined social movements as conscious actors (Della Porta and Diani, 2006: 15). This model contributed to the shift in attention from "why" to "how" people engage in protest. Yet, the models' emphasis on organization was a contradiction to the fact that many of the emerging movements of the 1960s and 1970s lacked formal organization (Tarrow, 2011: 24).

2.3.3 Political opportunity structures

The concept *political opportunity structures* (POS) was first conceptualized by Tilly (1978) as a set of constrains and incentives for protest mobilization. Some of the same principles had already been presented by Eisinger (1973) in his comparison of protests in American cities. His study showed that the frequency of protest mobilization took form as U-shaped curve whereby protest was least frequent where there were large degree of openness and where there were not openness at all. Tarrow (1998: 19-20) defines POS as "…consistent – but not necessary formal, permanent, or national – dimensions of the political struggle that encourage people to engage in contentious politics". In one sense, the principles of opportunity structures could be traced back to Alexis de Tocqueville (2006 [1835-1840]), who in his famous comparison between France and United States, argued that the relative high level of state centralization in France was a constraining factor for the thriving of civil society. Accordingly, this lack of civil society to structure and channel peoples frustration contributed to the occurrence of the French revolution (Tarrow, 2011: 78-79).[4]

McAdam (1982) eventually synthesized different dimensions of POS into a comprehensive theory named "political process", but the terms political process and political opportunity structures are now being used interchangeably. In his research on black insurgency in the United States, he established a connection between institutionalized and unconventional politics. He followed the line of Gamson (1975: 138-139) who argued that all kinds of protests were no less important than conventional politics. One of Tilly's (1986) main thesis's claimed that the emergence and development of social movements was a result of an ongoing interaction with nation states. This caught the interest of several comparativists in political science, such as Kitschelt (1986), Kriesi et al. (1995) and Tarrow (1989). As

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[4] This argument by Tocqueville has met criticism by Tarrow, who argues that the description French civil society is false (Tarrow, 2011: 77-80) and that Tocqueville's methodology is poor (Tarrow, 2010).

evident from the definition above, POS is today conceived as a broad and somewhat ambiguous cluster of factors that is in some way or another constrains or encourage protest. In the most widely held conception of POS, summarized by McAdam et al. (1996: 10), POS consists of the following four elements: (1) the relative openness or closure of the political system, (2) divisions among the elites, (3) the presence of allies, and (4) the state's capacity and propensity for repression.

POS has come under increasing criticism, mainly for what Sartori (1970) calls "conceptual stretching", whereby a concept is widened to the extent that it no longer explains anything. As one of the main criticizers, Gamson and Meyer (1996: 275) warn that POS is: "…in danger of becoming a sponge that soaks up virtually every aspect of the social movement environment…". Rootes (1999: 1) believes it is still useful as long as it's being used only for explaining those elements of collective actions that are genuinely structural.

2.4 Explaining hunger strike outcomes

In the last section, I gave a brief summary of the main orientations within social movement scholarly tradition. It was not the intention to give a fair comparison, but rather to show how new fields of research have emerged as answers to former unanswered questions. It was also to show how the main fields of research on protest begun as a mere psychological field, then shifted to sociology, and at last as a synthesis of sociology and political science. For the purpose of this thesis, the approach of political opportunity structures appears favorable because it connects protest movements to the state and the political context.

In this section I will present factors based on social movements theory that are relevant for analyzing hunger strikes outcomes. For reasons of clarity, I will separate between internal and external factors. First, I will present relevant factors related to the hunger strike. Secondly, I present relevant factors related to the political context. Especially the last section will concentrate on political opportunity structures, but other elements from the social movements tradition will also be considered.

2.4.1 Internal factors

Tactical repertoire
Taylor and Van Dyke (2004: 278-283) recognizes some key elements of tactical repertoire that shape social movement outcomes: *novelty, disruption, variety, size and cultural resonance.* Lahiri (2014) has showed that tactical repertoire, or what she calls "tactical depth", is a crucial factor for success in suicide protests. However, to include this factor in my

thesis would imply a broader analysis of the movements hunger strikers belonging to, which is too demanding. Since this thesis analysis a specific tactic, variety is left out as an element. I'm also leaving out cultural resonance as an element for the same reasons. In a quantitative thesis such as this, cultural differences would be practically difficult to measure. The following section therefore explores the elements novelty, militancy and size as possible factors explaining hunger strike outcomes.

Disruption

A disruption can be defined as a protest act that "break with routine, startle bystanders, and leave elites disoriented" (Tarrow, 2011: 99). The effect of social movements use of disruptions is disputed within social movement theory. On one hand, early scholars have found a positive relationship between disruption and a desires outcome. As an example, Shorter and Tilly (1974) have found that the use of violence increases the chances of gaining successful outcomes in labor strikes. Gamson (1975) have argued that the more disruptive, the more likely is a social movement to succeed. Piven and Cloward (1979) argued that poor groups without access to the conventional channels of politics has to use disruption in order to gain anything. The logic is that a government facing a disruptive event will feel compelled to response rapidly, typically with either repression and/or concession (Andrews, 2001: 74). On the other hand, scholars such as Mansbridge (1986) have argued that radicalization scared off the moderate allies and thus marginalized the movement for the Equal Rights Amendment in the United States. A hunger strike in itself can be labelled as a disruptive event as defined above. But hunger strikes can also be more or less disruptive. Because the most disruptive scenario in hunger strikes is death, the closer a hunger strike reaches death, i.e. the longer a hunger strike lasts, the more disruptive impact it will have.

Size

The size of a protest is considered to be an important factor for movements' abilities to both mobilize and to have an impact. Strength in numbers captures media attention, makes a movement more visual and signals its popular support (Taylor and Van Dyke, 2004: 281). When it comes to the relationship between protesters and government, scholars disagree on the consequence of size. Taylor and Van Dyke (2004: 281) argues that size enhances the disruptive potential of a protest by making it more difficult for the government to repress it. Inversely, Tilly (1978: 111-112) argues that the larger the scale of a collective action, the more repression a government is likely to use against it. Indications of scale can be number of

participants, duration, geographic range, extent of organization, degree of force mobilized or some weighted combination of them.

Novelty and innovation

Several scholars suggest that protesters' ability to surprise their opponent is important for the impact. McAdam (1983) showed that the civil rights movements' use of "sit-ins" proved powerful because it caught the authorities off-guard. As mentioned in Section 2.1.2, Tarrow (2011: 116) holds that the interaction between challengers and their opponents is what creates new innovation in tactical repertoire. When governments find ways to restrain the protesters, they are forced to find new ways to reclaim the momentum. According to Tilly (1978: 156), the protest repertoire of a population generally only includes a handful of tactics, and the repertoire changes slowly and are conditioned by time, place and traditions. In feudal Europe, means of protest were local and often concerned with bread, belief, land and death (Tarrow, 2011: 42). Analysis of 19th century France shows how public meetings, demonstrations, strikes and occupations became part of the repertoire as a result of the centralization of the French state. Previous opponents like landlords, priests and other local authorities lost their importance and the old forms of protest directed towards them no longer were effective (Tilly, 1986: 308-312). When new forms of protest were put in motion they proved effective, but also gradually lost novelty as they became familiar and predictable to the authorities. Shorter and Tilly (1974: 52) shows how this can happen with the example of labor strikes in France between 1830 and 1960. They revealed a routinization of the strikes whereby the strikes "…passed from being small-scale, intense, unusual occurrences to large-scale calculated everyday events", which were also much more predictable to their opponents. That said, routinization of protest have also proved successful for social movements in cases where protest activities have managed to be transformed into conventional politics (Andrews, 2001).

2.4.2 External factors

Here, I present the external factors relevant for understanding hunger strike outcomes. These factors are mainly based on political opportunity structures, which, as mentioned in Section 2.3.3, includes the following four key elements: (1) the relative openness or closure of the political system, (2) divisions among the elites, (3) the presence of allies, and (4) the state's capacity and propensity for repression. Because of the limitations in my data material on the presence of allies and repression, I will not consider these two element here.

Regime openness and strength

Political opportunity structures hold that regime openness is a central factor for protest mobilization and the chances of desired outcomes. Kitschelt (1986) identified two structures: "political input" defined the state's ability to be influenced, while "political output" defined its ability to implement changes. A regime's input structure was either open or closed, while its output structure was either weak or strong. With the example of anti-nuclear movements in four different countries, Kitschelt showed that the context of a strong and open regime was the most favorable for social movements.

In a comparative study of suicide protests, Lahiri (2014) finds that hunger strikes and suicide bombings share some factors that determine their outcomes. While suicide bombings never can be labelled as non-violence and hunger strikes can, they both use a form of emotional blackmail in order to coerce their opponent into granting them concessions. And they both make the perpetrator into the victim of his own act. A broad study of suicide bombings shows that it this tactic is much more likely to be carried out in non-democracies (Pape, 2005: 44). He explains this because (1) democracies are perceived as more vulnerable because the authorities are more easily influenced, (2) democracies are perceived as less likely to assert repression, (3) suicide missions are more difficult to organize and publicize in a non-democracy.

Divisions among the elite

Another central element of political opportunity structures is the notion that divisions among the elites creates opportunities. Tarrow (2011: 165) argues that in democracies this can be measured by electoral stability. New electoral coalitions will create uncertainty among their supporters, and force authorities to maximize their standing by appealing to the public. Piven and Cloward (1979) shows how realignment of American voters created opportunities for poor people's movements. A political crises that weakens the regime's capacity to control the population has often been a catalyst for revolutions (Skocpol, 1979: Ch. 2). A paradox often seen in regimes in crises is that their attempt to reach out their hand to the opposition only contributes to the hastening of their collapse. One of the earliest articulations of this principle was made by Alexis de Tocqueville: "…the most critical moment for bad governments is the one which witnesses their first steps toward reform" (Tocqueville, 1856: 214). Similarly, divisions among the elites is often seen as an opportunity for challengers (Tarrow, 2011: 166). Tarrow (2011: 5) uses Israel's attack on the Turkish solidarity ship "Mavi Marmara" in 2010 as an example of how a weak government (a broad and divided party coalition) can act

disproportionally repressive, and hence unwisely, given the opportunities it created for its opponents' social movements.

Learning process

In addition to the elements of opportunity structures, I propose to bring on a somewhat ignored factor in social movements, namely the learning process. It has been claimed that in the game of hunger strikes, both government and hunger striker will gradually adopt experiences and learn from them (Biggs, 2007). Charles Brockett (1991: 262) argues that tradition applies in equal weight for challengers: "Challengers are also constrained by these historical traditions. Challengers not only respond to current regime actions, but also must anticipate future actions, calculations that in turn are based on memories and stories of past elite behavior", and, furthermore, "the memory of past repression is part of the calculation of the risks involved in collective action contemplated in the present" (Brockett, 1991: 263).

2.5 Trends and patterns

It's useful to take a closer look at the hunger strike dataset (Scanlan et al., 2008) in order to see whether there are some developments. These developments can be useful for understanding which factors hunger strikes outcomes are influenced by. Figure 2.1 shows the distribution of hunger strike outcomes according to my operationalization with the four possible outcomes distributed on years between 1906 and 2004.

Figure 2.1: Area plot of hunger strike outcomes across years
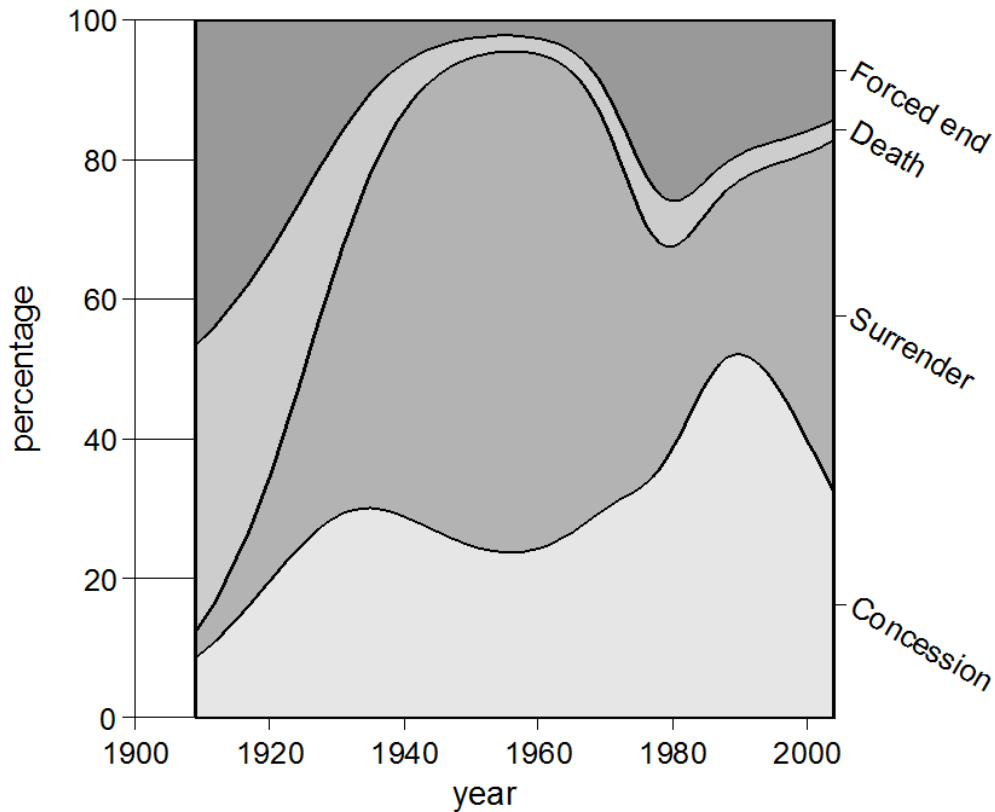
It shows that death and "forced end" were much more frequent outcomes during the first three decades of the 20th century compared to now. One explanation behind this may be explained by Healy (1982: 225) who argues that media tends to overemphasize extreme outcomes such as death. Considering that access to media was more limited in this period, its reason to believe that less newsworthy outcomes as surrender and concessions did not reach the headlines. Another explanation could be that hunger strikes at this time were still an unordinary and extreme tactic only applied by those in utterly desperate situations that also in most cases were willing to die for their cause. Along with the familiarization of the tactic during the three first decades, the threshold for carrying out a hunger strike has probably been lowered. Death is both the most rare and most stable outcome over time, while surrender is the least stable amongst the outcomes. The percentage of hunger strikes that ended with concession had its first peak in the late 1930s and then the second and largest peak in late 1980s. Both peaks followed high numbers of deaths and forced end. The second peak of concessions clearly follows a peak of forced end and death. It therefore seems that trends concerning the outcomes concession, death and forced end are connected in a way that surrender is not.

It is tempting to draw a conclusion about the regime's capacity to learn. When governments experience death and forced end it can be costly. It seems that in periods with cycles of costly hunger strikes, governments gets more conciliatory and more likely to concede to a hunger striker.

Figure 2.2 shows the frequency of hunger strikes reported between 1906 and 2004. Note that the darkest line shows only those reported hunger strikes whose outcomes have been identified (N = 608), which is the basis for Figure 2.1. The lighter line shows the total number of reported hunger strikes (N = 1441). This gives an impression of the amount of missing data in the dataset.

Figure 2.2: Line plot of hunger strike frequency across years
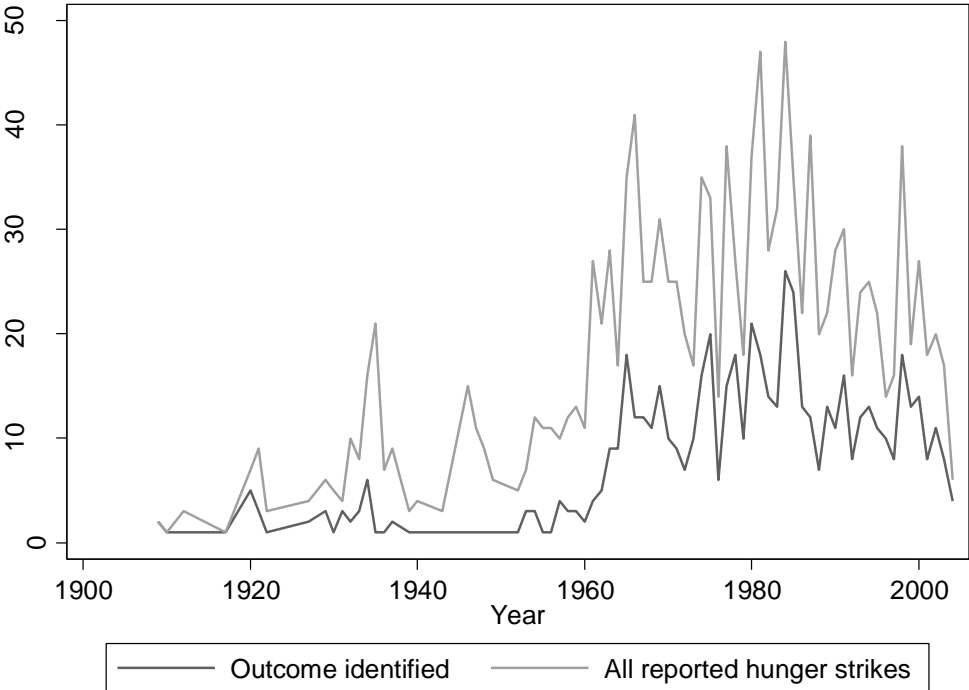
Figure 2.1 and Figure 2.2 combined shows that both peaks in concessions happened at the same time as a peak in reported hunger strikes in the world. This indicates that factors that increase hunger strike mobilization are the same factors that bring about concessions. Another possible interpretation is that successful hunger strikes itself mobilizes more people to go on hunger strikes for a period of time.

Table 2.3: Hunger strike frequency, median duration and median size

Decade	Hunger strike frequency	Change (sd.[a])	Median duration	Change (sd.[a])	Median size	Change (sd.[a])
1900[b]	3	-	10	-	1	-
1910	11	+0,1	5	-0,6	8	+1,7
1920	36	+0,2	24	+2,0	1	-1,7
1930	86	+0,5	7	-1,8	1	+0,0
1940	56	-0,4	6	-0,2	7	+1,4
1950	86	+0,2	7	+0,1	4	-0,8
1960	261	+1,9	5	-0,2	5	+0,1
1970	252	-0,2	14	+0,9	4	-0,1
1980	330	+0,8	18	+0,4	5	+0,2
1990	232	-1,2	14	-0,5	3	-0,5
2000[c]	88	-1,7	14	0,0	2	-0,3

NOTES:

[a]: *Change (sd.)* is the change standardized to the mean and standard deviation of the group.
[b]: Dataset start year is 1906.
[c]: Dataset end year is 2004.

Table 2.3 lists the changes in hunger strike frequency, median duration and median size across decades. Size is number of hunger strikers participating in each strike. Duration is number of days. As mentioned, the first two decades is less of an interest because of the very limited amount of data. This confirms that the hunger strike cycle of the late 1980s also experienced an increase in median hunger strike duration. The change in median duration forms a U-curve. The median size is more stable but the general trend is a gradual decrease since the second peak in 1940.

Figure 2.3: Area plot of hunger strike themes across years
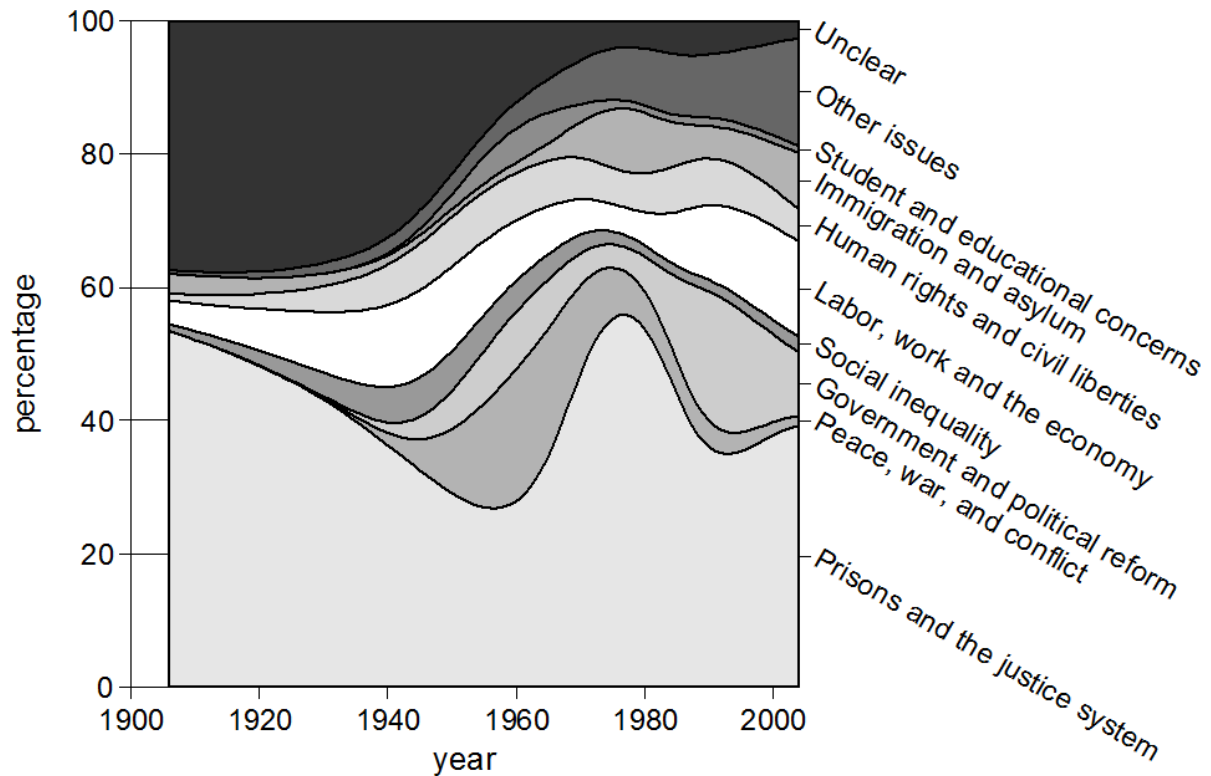
Figure 2.3 shows the categorization of why people went on hunger strike across years. The categories are derived from Scanlan et al. (2008) and is a categorization of originally 75 different categories of motives for starting the hunger strike. The categories are the following: (1) Prisons and the justice system, (2) Peace, war, and conflict, (3) Government and political reform, (4) Social inequality, (5) Labor, work and the economy, (6) Human rights and civil liberties, (7) Immigration and asylum, and (8) Student and educational concerns. It's noticeable that some categories are broader than others. The categorization could probably have been done differently, but at least it gives a picture of the development. The category "Prison and the justice system" ranges from prisoner rights, due processes, arrests, charges and convictions. The category "Peace, war and conflict" ranges from nuclear and antiwar issues to over MIAs (missing in action). The category "Government and political reform" concerns democratization, elections and regime reform. "Social inequality" is a broad category concerning discrimination against minorities or marginalized such as women, homosexuals and blacks. "Labor, work and the economy" includes cases as land reform, austerity, fuel prices, global economy, hunger, aid, labor rights and wage disputes. "Human rights and civil liberties" includes hunger strikes over apartheid, amnesty, freedom of speech, censorships, bans and repression of opposition. "Immigration and asylum" includes cases of

refugee's status, treatment and rights to asylum. "Student and educational concerns" includes students' rights and educational reform. "Other issues" includes issues that are too infrequent to make up a category or so narrow that they don't fit in the existing categories. These cases range from animal rights, art, drugs, pornography, religion, euthanasia and the environment.

"Prisons and the justice system" is the largest category, not unnaturally since about half of all hunger strikers are incarcerated. This also means that some hunger strikers behind bars are motivated by other reasons than their own situation, or just because their reason have been unclear. During the first decades, a large majority of hunger strikes were motivated by prison rights or their motives were unclear. The "unclear" category has decreased steadily and stabilized at around 5 % during the 1980s. This may just be due to the better quality of news articles more up to date. Another feasible explanation is that hunger strikers gradually have learned the necessity of communicating their demand clearly. According to this plot, motives for hunger striking have developed in a pluralist direction.

In Table 2.4 I have correlated various aspects of hunger strikes. This gives a rough overview of which factors are correlated with the four outcomes, in addition to size, length and hunger strike frequency. In order to lower the threshold for identifying possible factors, I've also marked the correlation coefficients at the 0.1 level. The table shows that there's not any strong correlations. Among the strongest correlations we find multiple locations and size (0.38). This only means that when many people are involved in hunger strike, they also occur in multiple locations. There also a considerable negative correlation between size and length (-0.3). This also has an intuitive logic, whereby it's difficult to mobilize large amounts of people and at the same time hold it for a long time.

The correlations also suggests that some categories of hunger strike tend to experience some outcomes more than others. Among the other noticeable correlations we see that the outcome concession is correlated with two factors, the two hunger strike motivations Immigration and asylum (0.14) and student and educational concerns (0.1). There's some correlation between outcome surrender the motivations being social inequality (0.15) and peace, war and conflict (0.1). The outcome death is not correlated with any types of motivation but is correlated with length (0.16) and hunger strike frequency (-0.13). The outcome forced end shows some correlation with the motivation Labor, work and economy (0.1), in addition to the variable length (0.1).

Table 2.4: Correlation between various aspects of hunger strike

Variables	Concession	Surrender	Death	Forced end	Length	Size	Hunger strike Frequency
Length (days)	-0.040	0.119**	0.166***	0.100*		-0.307***	-0,119**
Size (participants)	0.042	-0.069	-0.063	0.071	-0.307***		-0,031
Multiple locations	-0.067	0.036	0.010	0.034	0.224***	0.383***	0,004
Organization affiliation	0.062	-0.068	0.041	-0.020	0.094*	-0.031	-0,150***
Incarcerated	-0.074	0.080	0.063	-0.044	0.053	-0.015	-0,018
Country location ≠ target	-0.023	0.026	0.034	-0.024	-0.024	0.008	-0,136**
Hunger strike frequency	-0.055	0.064	-0.135**	0.072	-0.031	-0.119**	
Hunger strike motivations:							
Prisons and the justice system	0.056	-0.018	0.005	-0.052	0.132**	0.001	0,083
Peace, war and conflict	-0.061	0.106*	0.046	-0.084	0.089*	-0.058	0,175
Government and political reform	-0.010	0.022	-0.019	-0.003	-0.068	-0.046	-0,092***
Social inequality	-0.066	0.153**	-0.030	-0.091	0.040	-0.023	0,032*
Labor, work and economy	0.070	0.012	0.003	-0.106*	0.109**	0.200***	-0,014
Human rights and civil society	0.032	-0.079	0.009	0.053	0.048	0.050	0,034
Immigration and asylum	0.142**	-0.072	-0.048	-0.064	0.136***	0.020	0,049
Student and educational concerns	0.107*	-0.062	-0.007	-0.055	0.066	0.072	0,000

*** p<0.01, ** p<0.05, * p<0.1

2.6 Hypotheses

2.6.1 Intensity

As we have seen in Section 2.4.1, the intensity of a protest have great importance for the shaping of the outcome. Accepting a broad definition of violence, it also includes hunger strike whereby violence is directed against the protester herself. The disruptive potential in hunger strike is substantial. The literature emphasizes disruption as a key element in achieving a positive outcome The intensity of a hunger strike can be measured in its length, its size and whether it occurs at multiple locations. I will go through these elements one by one. Because the threat of hunger strike lies in the risk of self-starvation, this threat will increase with the factor of time. The "slowness" of the hunger striker is therefore important because it: "…gives others a chance to meet the demands of the hunger striker" (Annas, 1982: 21). Following this, I firstly present two hypotheses that may seem self-evident, but that are yet worth testing as a start:

> *H1: The longer a hunger strike lasts, the higher is the likelihood that the outcome is concession.*

> *H2: The longer a hunger strike lasts, the higher is the likelihood that the outcome is forced end.*

Another important aspect of the hunger strike intensity is the size. An analysis of the cycle of Irish hunger strikes of the 1920s shows that they had a slightly greater chance of gaining concessions when more people participated, because:

> [A] collective hunger strike may reduce the risk of each individual dying, because not all will have to die—and one death may suffice—before a conciliatory government realizes its mistake and offers a concession, or before the benefits of additional deaths cease to be positive, enabling the survivors to surrender with honor (Biggs, 2007: 19).

The same logic applied in the 1981 Irish hunger strikes, when Bobby Sands, the appointed leader of the hunger strikers, used a "conveyor belt" strategy, whereby each hunger striker was added one by one with some day's interval. This strategy ensured that there was always one "leading" hunger striker, namely the one who had lasted longest, regardless of how many had died. This "hierarchy" of hunger strikers made it more difficult to break out, prolonging

the collective hunger strike (Beresford, 1987, O'Malley, 2013). Therefore, we can conclude that having a large number of hunger strikers not only help to get attention to the hunger strike, but it can be a strength for the hunger strikers ability to prolong the strike and avoid surrender. This leads to the following three hypotheses:

> *H3: The more participants that engage in a hunger strike, the higher is the likelihood that the outcome is concession.*

> *H4: The more participants that engage in a hunger strike, the higher is the likelihood that the outcome is concession.*

Another measurable factor of intensity is whether the strike is extended to several locations.

> *H5: When a hunger strike is carried out in more than one location, the likelihood that the outcome is forced end is higher.*

2.6.2 Motivation

The likelihood of gaining a state concession will always depend on the actual demand by the hunger striker. A tactical hunger striker will "calibrate" the demand according to the likelihood of getting a concession (Biggs, 2007: 4). As mentioned in Section 2.1.2 with the example of Terrence MacSwiney, being over-confident about one's demands can have fatal consequences. Yet, this easy for us to evaluate almost a century afterwards. If I would try to classify organizations or their demands according to how radical or modest they are, I would bump into a range of problems (Gamson, 1975: Ch. 4). Another way of differentiating the demands is to divide them into categories according to their political themes and see the effect of hunger striking for different political motivations. This leads to the following hypothesis:

> *H6: The likelihood of the outcome being concession depend on the hunger strike's type of political motivation.*

2.6.3 Political context

Kitschelt (1986) showed that open and strong regimes are more favorable to social movements. The demands of hunger strikers varies, but most fit in the category of defensive demands, which Tilly (1978: 73) argues are created when: "…a threat from outside induces the members of a group to pool their resources to fight off the enemy". This means that the

political output structure is not as important as the input structure. The regime openness factor is tested in democracies, but can it be applied on non-democracies as well? From section 2.6.3 we have seen that a regime's strength or weakness is central element within the political opportunity structures. A coalition governments can in many cases me weaker than a single party government. The "weak government thesis" argues that the "larger the number of decision makers, the less each will internalize the cost that certain policy will impose on others" (De Haan et al., 1999: 164). This leads to the following hypothesis:

> *H7: A hunger strike is more likely to gain a concession in a country run by a coalition government than in a country run by a non-coalition government.*

The general assumption within political process approach is that the more regime openness, the more likely is it that protests will succeed. Regime openness as a political opportunity have mainly been explored within democracies. Extending this factor, can the regime types democracy and non-democracies help determine protests outcomes? This leads to the following hypothesis:

> *H8: A hunger strike is more likely to gain a concession in a country with a higher level of democracy.*

2.6.4 Learning process

Are regimes able to learn from their prior experience dealing with hunger strikes? The hunger strikes against the British authorities in the 1910s and 1920s, as discussed in *2.1.3* shows that there was a dialectical relationship between the protesters and the government that was under constant development.

Isn't this what novelty, as discussed in *2.7.1*, is all about? A protest tactic's ability to shock the authorities will gradually diminish, as governments will learn how to react in order to minimize the cost. In some cases, single hunger strikes have had so much impact that they have allegedly changed the behavior of other governments. In July 1980, two Palestinians, Ali Jaafari and Rasem Halaweh, died after being wrongly forcible fed in an Israeli jail, whereby food entering the trachea rather than the esophagus (Hiltermann, 1990: 109). It has been argued that this single event made forcible feeding to almost disappear for several years (Reyes, 2007: 705). When the Irish hunger strike in the Maze prison erupted in 1980, the British government had already decided to abstain from forcible feeding because of the tactic's redolence of British brutality during the 1919-1921 conflict and could potentially

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cause anger in today's Ireland (Moloney, 2002: 206). In governments this experience may materialize in guidelines, manuals or resolutions, as the earlier mentioned British abolishment of forcible feeding. International organizations also play an important role in the normative level, establishing "soft laws". Before 1991, doctors could only refer to the 1975 Tokyo declaration concerning torture (World Medical Association, 1975: 703, Reyes, 2007) In 1991, the World Medical Association for the first time issued a declaration of principles on how medical personnel should handle hunger strikes, stating that "Hunger strikers should be protected from coercive participation" (World Medical Association, 1991a). However, arbitrary terminology opened up for different interpretations and forcibly feeding was not mentioned explicitly. Instead, the term "artificial feeding", which can both be voluntarily and forcible, was used. Finally, in 2006, a revised version stated that "Forcible feeding is never ethically acceptable" (World Medical Association, 1991b, Reyes, 2007).

Do governments fear hunger strikes more in times when they happen more frequently? The Figure 2.1 and 2.2 in section 2.5 might indicate that. While Figure 2.2 shows that the peak of observed hunger strikes where in the 1980s, Figure 2.1 shows that around the same years, the percentage of hunger strikes ending in concessions were also the highest.

Table 2.2 tries to illustrate that deaths are the most unfavorable outcome in the eyes of many governments. This is also supported by Lahiri (2014: 12). Most optimally, death is avoided without having to use concessions or forced end, hence the outcome being "surrender". In the example of Irish republican hunger strikes in 1916 to 1923, Biggs (2007: 12-14) shows how the British governments' experience with hunger strikes gradually materialized in a changed on position on the use of force. My assumption that countries learn from the experience of hunger strikes leads to two hypothesis:

> *H9: The more hunger strikes a country has experienced, the higher is the likelihood of the outcome being concession.*

> *H10: The more hunger strikes a country has experienced, the smaller is the likelihood of the outcome being death.*

2.6.5 Summary of the hypothesis

In quantitative research, an important constrain on process of making hypothesis is the limitations of the dataset. All my hypothesis are able to be measures using the hunger strike dataset and additional country data. With other data, the hypothesis could have looked

different. Table 2.5 summarized my hypothesis, where the ten hypotheses involves three of the outcomes: six involves concession, three involves forced end and one involves death.

Table 2.5: Summary of the hypothesis:

Factor	Hypothesis
Hunger strike intensity	*H1: The longer a hunger strike lasts, the higher is the likelihood that the outcome is concession.*
	H2: The longer a hunger strike lasts, the higher is the likelihood that the outcome is forced end.
	H3: The more participants that engage in a hunger strike, the higher is the likelihood that the outcome is concession.
	H4: The more participants that engage in a hunger strike, the higher is the likelihood that the outcome is concession.
	H5: When a hunger strike is carried out in more than one location, the likelihood that the outcome is forced end is higher.
Hunger strike motivation	*H6: The likelihood of the outcome being concession depend on the hunger strike's type of political motivation.*
Political context	*H7: A hunger strike is more likely to gain a concession in a country run by a coalition government than in a country run by a non-coalition government.*
	H8: A hunger strike is more likely to gain a concession in a country with a higher level of democracy.
Experience with hunger strike	*H9: The more hunger strikes a country has experienced, the higher is the likelihood of the outcome being concession.*
	H10: The more hunger strikes a country has experienced, the smaller is the likelihood of the outcome being death.

3 Research design

This chapter develops the research design for this thesis. I will begin with a short outline of my methodological approach. Then, I present my data, followed by some methodological considerations on missing and incomplete data. At last, I present the statistical model and the strategy for how the analysis will be carried out.

3.1 A quantitative approach

As argued by Skocpol (2003), social scientists do not only deal with real world phenomenon, but are also engaged in a continuous debate over methods and frameworks, what she calls the "doubly engaged enterprise". My question is therefore: what is the best way to analyze hunger strike outcomes? As mentioned in Chapter 1, a quantitative analysis of hunger strikes have not been carried out before, but has now been made possible with available quantitative data. The quantitative method allows to draw general conclusions about causal conjunctions. As a protest tactic, hunger strikes have proved to be a global phenomenon occurring in all political and economic systems and cultures (Scanlan et al., 2008: 293). In Section 2.1.2, I have illustrated how hunger strikes as a tactic managed to spread fast new continents, where it was applied in the same manner but with different legitimization. In order to analyze hunger strike outcomes as a global phenomenon I hold that a quantitative method is the most appropriate.

3.2 Data

Here, I will present the data I intend to use in this thesis. Firstly, I describe the most important data, namely the hunger strike dataset (Scanlan et al., 2008) which includes the dependent variable and several independent variables. Then, I present the data sources which includes my country specific independent variables, respectively the Polity IV democracy scale (Marshall and Gurr, 2012) and ACLP/DDs data on coalition governments (Cheibub et al., 2005).

3.2.1 The hunger Strike data set

The main data set in this thesis is a hunger strike data set made by Scanlan et al. (2008) containing 1441 hunger strikes between 1906 and 2004, assembled from the New York Times, Keesing's Worldwide Online, and The Economist. It is an event based dataset where each observed hunger strike amounts to one observation. When more than one person participates in the same hunger strike, it counts as one hunger strike. The main challenge using this data set is that a there's missing data on many variables, including the dependent

variable. Even though 1441 cases is a lot, especially when we deal with categorical data, the number is still probably far from the real number of hunger strikes in the world in this period. As an example, Johanna Siméant (1999) analyzed hunger strikes in France between 1972 and 1992 and managed to find 547 cases using only a single source, the daily newspaper Le Monde, whereas this dataset only has 45 cases of hunger strikes in France in a period five times longer.

Choosing observations

It is important to make active decisions about data observations. If not, we risk analyzing something else than what was intended. There are several considerations behind my choice of observations. As already presented in Chapter 2 (Section 2.5, Figure 2.2), the data in the first half of the 20th century is very scarce. Out of the 1441 observations in the data set, observations before 1946 only amount to 149, whereby only a quarter are not missing on the dependent variable. Including these observations has very limited value. This is a strong argument for excluding the observations from the earliest period. Another argument for this is that supplementary data, such as data on coalition governments, prior to 1946 is difficult to find. I've therefore decided to set the period of my analysis from 1946 to 2004. According to the definition of hunger strikes, as presented in Section 2.1, hunger strikes with targets other than government or government institutions will not be included in the analysis.[5] Another category of hunger strikes that falls outside the aim of this thesis is hunger strikes that takes place in another country than that of its targets. As I hypothesize a combination of hunger strike specific and regime specific factors as relevant for hunger strike outcomes, this category will create problems as to what we are really explaining. This category of hunger strikes are therefore excluded from the analysis.[6] Regarding the choice of observations, an alternative strategy could be to add dummy variables for every category of observations that deviates from the normal. Achen (2002) strongly warns against this strategy, because it distorts the analysis and complicates interpretations.

Finally, when I also have excluded all observations that were missing on the dependent variable and those that were still ongoing at the time of the media report, I'm left with a total of respectively 445 valid observations. But, when including the variables "size" and "length", only 285 observations are left. In the analysis strategy in Section 3.3.3, I will discuss how the analysis can be best carried out given these limitations.

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[5] Among all observations, 122 are in this category.
[6] Among all observations, 90 are in this category.

Biased data?

Out of the 445 valid observations in the dataset, 84 (18%) were carried out in the United States. The second country with most cases is the USSR/Russia with 35 cases (8%). The authors of the dataset admits that New York Times is the likely reason for this imbalance (Scanlan et al., 2008: 316). Table 3.1 lists the sources of the dataset and their shares of the contribution, where New York Times appears as the overwhelmingly most contributing sources. A US bias can potentially drive the results. For example, a factor only present in United States might be associated with the whole dataset, where we risk committing a type I error. Inversely, observations from United States might reduce or distort a factor that would normally exists in rest of the data, where we risk committing a type II error (Skog, 2004: 103). A dummy variable indicating whether the observations are carried out in the United States will therefore work as a control variable that captures the eventual effect of United States observations.

Table 3.1: List of sources and their contribution to the dataset

Source	Time span	N	%
The New York Times	1906 – 2004	1001	61
Keesing's Worldwide Online	1931 – 2004	450	27
The Economist	1906 – 2004	192	12

3.2.2   Using event data

The main methodological challenge in this thesis is the uncertainty of whether my data is representative for the whole "population" of hunger strikes. This constitutes a double problem: Firstly, one can anticipate that some hunger strike outcomes are more likelihood of being reported than others due to their newsworthiness. Secondly, it's likely that the probability that a hunger strike is reported correctly, or reported at all, varies with different types of regimes due to restrictions like state censorship. It's especially doubtful that information about hunger strikes conducted in prisons or jails in non-democracies manages to reach the media uncensored or undistorted.

When coding event data, the sources one uses and the manner of the coding matters for the result (Nam, 2006). The data set on hunger strikes is, what a commonly referred to as, "event count studies", a sub-category of media based data (Woolley, 2000). The principle is that each event is counted only once, irrespective of the number of times it is mentioned in the media. According to Woolley (2000: 158) the most important questions for researchers using

event counts are whether events are underrepresented or overrepresented, and whether eventual biases are stable over time. In addition, we should ask to what extent variation really reflects the reality or different media practices. He also concludes that "hard facts" are less subject to bias than events that are open to subjective interpretation. In addition, larger and more significant events, especially when violent, are also more likely to be reported and less biased. Along the same lines, Biggs (2007: 4) argues that hunger strikes ending in death naturally attract far more attention than those ending with one side or the other backing down. It's accordingly more difficult to find information on those hunger strikers that won their release or got other concessions.

Looking at Scanlan et al. (2008) dataset between 1906 and 2004 it's easy to see that this might have been the case in the earliest data. Between 1906 and 1945, deaths stood for 21 % of the identified hunger strike outcomes (only 42 observations). Today however, deaths in hunger strikes are very uncommon. Between 1946 and 2004 the number is reduced to 4 %. Some of the discrepancy also probably reflects the reality. As discussed in Section 2.5, data indicates that the threshold of carrying out a hunger strike has lowered with time, opening up for shorter and less lethal hunger strikes.

3.2.3   Dealing with missing or incomplete data

There are several variables in the data set with a lot of missing and/or incomplete data. In some cases, a possible, yet dangerous, method of dealing with missing data could be manual imputation Honaker and King (Honaker and King, 2010: 561). It simply means to replace missing observations with data that are probably based on other available information. I have been careful using this method, and only applied it in 47 observations where country was not identified, but could be identified investigating other variables.

An important reason behind the missing data on the dependent variable is that the hunger strikes were not finished at the time it was registered in the news. This means that the media did not (sufficiently) cover the hunger strike after its end. Among the missing data, 73% are ongoing.

How severe the problem of missing data is depends on which of the three types it is: *missing at random* (MAR), *missing completely at random* (MCAR) or *data missing not at random* (MNAR) (Stuart et al., 2009: 1134). Since the missing data is due to lack of reporting, its reason to assume MNAR. A possible reason for MNAR data could be censorship and lack of press freedom, something that varies across political regimes.

I will here try to investigate whether there's a relationship between missing data and lack of democracy by distributing values from the Polity2 variable from the Polity IV dataset (Marshall and Gurr, 2012), which, as I will present in Section 3.2.4, will be used as an independent variable measuring level of democracy in this analysis. Figure 3.1 presents distributions of the Polity2 variable on the two hunger strike populations N=1290 and N=445, both for the period 1946 to 2004. The largest population is the total hunger strikes while the smallest is that where observations with missing values on the dependent variable is excluded, in addition to hunger strikes with other targets than government and hunger strikes that takes place in a different country than that they demands concessions from. We see here that the normality curves are not very different on the two different hunger strike populations, which indicates that the missing data on the dependent variable is not more associated with non-democracies than democracies.

Figure 3.1: Polity2 distribution on different hunger strike populations
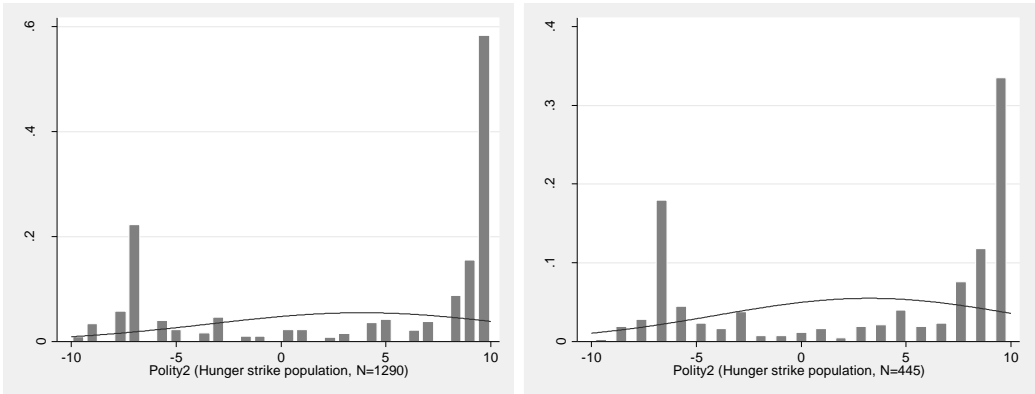
Figure 3.2 shows the Polity2 distribution on the total population, meaning the scores of all countries between 1946 and 2004. It's normality curve is more centered, compared to the two curves in Figure 3.1. This tells us that the observed hunger strikes in the dataset have generally taken place in countries more democratic than the average. We can anticipate that this is because of censorship or lack of free media in non-democracies. But it can might as well mean that hunger strikes as a tactic is actually more widely used in democracies. To conclude, from what we know about the distribution of political regimes in the hunger strike dataset, there's no indication that missing data are more associated with non-democracies than with democracies.

Figure 3.2: Polity2 distribution on total population
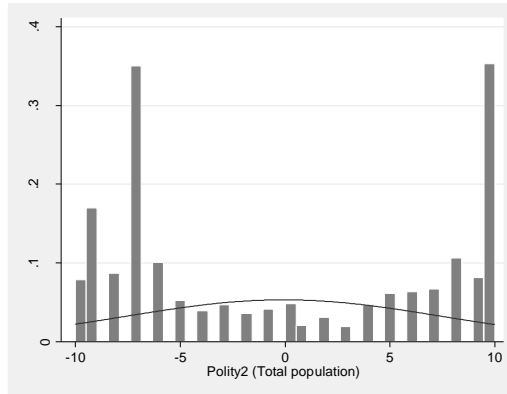
3.2.3.1 The dependent variable: Hunger strike outcome

The dependent variable of this thesis is the hunger strike outcome, as conceptualized in Section 2.2.2 with the following four outcomes: concession, surrender, death and forced end. In this section, I explain the details of how the outcomes as originally registered in the hunger strike dataset have been categorized to fit in the four outcomes. The original hunger strike dataset (Scanlan et al., 2008), included the variable *outcome* which consisted of 375 different specific outcomes. These outcomes had also been summarized into a variable with 23 categories in the original dataset. In addition, two additional variables indicated whether a combination of two or three outcomes had occurred in the same hunger strike.

I have re-categorized the 23 hunger strike outcome categories into a final variable with four outcomes. Most of these categories have been easy to place, but some needed additional inquiries and more considerations. Regarding the outcome *concession*, it is for example difficult to know to what extent a state concession actually fulfilled the initial demand of the hunger striker. Therefore I've chosen to label all sorts of concessions and partly concessions accepted by the hunger striker as "concession". There's a big variation in the types of concessions, as some examples are given here: release from prison, amnesty granted, special status granted, reduced sentence, scholarship increase, a prime minister's resignation, wage increases, reopening of banned publication and granting legal support during trial.

Challenges arise in situations where, according to the dataset, more than one outcome has occurred. For example, a hunger striker may be forcible fed and at a later stage gain concession that was accepted. This combination has occurred three times in the dataset. In these cases I have labelled the outcome as "concession" because that was the closing decision made by the authorities. Thus, this outcome more accurately expresses the character of the state, which ultimately was willing to concede. Another scenario, which has also happened three times in the dataset, is when the hunger striker dies as a consequence of forcible feeding. In those cases I have categorize the outcomes as "forced end". As explained in Section 2.2.2,

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the outcome forced end is meant to capture the state's willingness to interfere by force to stop the hunger strike, irrespective of which means it applies and which are its consequences. The outcome "death", on the other hand, is only meant to capture death by starvation, a situation where the state does not intervene. Therefore, to give another example, if hunger strikers being executed as, as has happened in only one case, it is categorized as forced end. The other more specific kinds of outcomes that have been categorized as "forced end" are the following: court action, deportation, disciplinary action, extradition, police arrests and sentenced/charged. Another difficult scenario is when forcible feeding is applied, but doesn't prevent deaths from occurring. This has only occurred once in the dataset, with a group of hunger strikers. Even though it was the authorities' decision to stop the hunger striker, I've decided that deaths overrides previous forcible feedings because of their significance, and these cases are therefore categorized as "death". The discussion could continue over more possible combinations of outcomes, but as I have not identified any more in the dataset, it is not needed to go further.

3.2.3.2 Independent variables

Length

The variable *length* registers the amount of days the hunger strike have lasted. Given that hunger strikes can consists of more than one participants, and that participants may join in at different times, this variable is not a measure of how "lethal" the hunger strike becomes, but a measure of how long the protest event have lasted. As discussed in Section 2.1.1, some hunger strikers may also decide to take limited nourishment on the side, which may prolong the hunger strikes for years. As a result, the dataset shows a few hunger strikes lasting as much as 1000 days. There are very few cases where hunger strikers state publicly that they take limited nourishment. This way of "cheating" may potentially happen in greater numbers than we know, but it is anyway a factor that is difficult to control for. These long lasting hunger strikes are therefore included in the analysis. In post-estimation, inspection of the residuals will reveal whether or not extreme hunger strike lengths drive the results.

The duration of a hunger strike can be a contested subject. In many cases hunger strikers and authorities gives different estimates. When the dataset consists of several durations I have used the most conservative number. A challenge with measuring the length of hunger strikes is that this is sometimes disputed by the different actors. Because of this, the dataset includes two variables measuring both the most minimum and maximum estimates of

the length. But the variations between these variables are so small that I choose to go for the minimum estimates variables without any more considerations.

Size

The variable *size* measures the number of hunger strikers participating in the same hunger strike. Because participants of a hunger strike can join or quit during the strike, the number of participants differs at the beginning and at the end. In 82 cases, the number of hunger strikers has either increased or decreased during the strike, whereby the largest discrepancy is 8000. The dataset therefore includes three different measures of hunger strike size: (1) the size at the start of the hunger strike, (2) the size at the end of the hunger strike, and (3) the maximum estimate if sources are unclear. Most observations only have reported size in the first category. If the hunger strike is reported to have increased or decreased during the strike, category two is reported. When the size of the hunger strike is disputed, category 1 takes minimum, estimate, while category 3 takes the maximum estimate.

Because the outcome of the hunger strike is decided at the end of the hunger strike, it makes most sense to use the end-size as the main variable. But because the variation is big, I will also test the two other variables at a later stage in the analysis.

Multiple location

The dummy-variable *Multiple locations* indicates whether the hunger strike have taken place at more than one location, being different cities, universities, and so on. This variable measure indicate whether the hunger strike has extended support, but a weakness in this variable is that missing values has been recoded as "no" in order to have enough valid observations. For most observations, no information in the media regarding multiple locations would strongly indicate that it only took place at one location, but this can also be problematic.

Hunger strike motivation

As already fully described in Section 2.5, the hunger strikes are categorized into ten categories of political motivation according to political fields. This is the closest we come to a measure of the hunger strikers' demands, which should to a certain extent be captures by these variables. As not all categories can be measured in the regression analysis, I've decided to choose two categories that can test the effect of two contrasting motivations.

In Table 2.4, eight of the ten categories (all except "other issues" and "unclear") are cross-correlated with various variables, including the four hunger strike outcomes. The types of motivation that have the highest correlations are "Peace, war and conflict", "social inequality", "Labor, work and the economy", "Immigration and asylum" and "Student and

educational concerns". Out of these, I find "Peace, war and conflict" and "Immigration and asylum" to be two quite contrasting categories. As mentioned in Section 2.5, hunger strikers within the "peace, war and conflict" category are striking for others than themselves (antiwar, nuclear issues), while the "immigration and asylum" are motivated by their own situation as refugees and asylum seekers. Therefore, these two variables will be tested in the analysis.

Hunger strike frequency

The continuous variable *hunger strike frequency* measures the amount of previous hunger strikes a country has experienced. This variable is intended to measure the experience of hunger strikes, because it is assumed that countries are able to learn from this experience (see Section 2.4.2).

Control variables

As mentioned in Section 3.2.1, I will apply a dummy variable indicating whether observations are from the United States in order to control the effect of the large amount of observations from one country.

3.2.4   Country data

Level of democracy

Level of democracy will be measured by the variable Polity2 from the dataset *The Polity IV Project: Political Regime Characteristics and Transitions, 1800-2012* (Marshall and Gurr, 2012). The variable is a scale ranging from -10 being the least democratic to 10 being the most democratic. There are many measures of democracy, which all have their strengths and weaknesses. One favorable property of the Polity2 variable is that it is a scale, which allows for a more substantial interpretation than with a dummy variable. Another is that they, in contrast to Freedom House, are completely open about their indicator scores.

The Polity2 variable is made out of several criteria, where their main focus is on formal institutional. Their five criteria are the following: competitiveness of executive recruitment, openness of executive recruitment, constraints on the chief executive, competitiveness of political participation and regulation of participation. The two last criteria appears most relevant for my purpose. Competitiveness of political participation refers to: "the extent to which alternative preferences for policy and leadership can be pursued in the political arena". While regulation of participation refers to "the extent that there are binding rules on when, whether, and how political preferences are expressed." These elements are in accordance with the initial intention of having this variable in the analysis, as discussed in Section 2.4.2, namely to see whether states that are open to participation and thus protest

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(political input structures), also are environments where hunger strikes are more likely to gain concessions. The Polity2 variable has been criticized for the lack of civil liberties (Knutsen, 2011: 91) but for my purposes in this thesis, that will not be a problem.

Coalition government

Coalition government will be measured by a dummy variable from the *Democracy and Development Extended Data Set*, an extension of the ACLP dataset (Cheibub et al., 2005). The dataset stretches from 1946 up to today.

3.3 The statistical model

3.3.1 The Multinomial logit model

My dependent variable consists of four categorical outcomes that cannot be naturally ordered. The most appropriate regression method is therefore the multinomial logit model (MNLM). The model computes separate binary logit estimations for each pair of outcomes (Long and Freese, 2006: 223-224). Reducing the outcome to a binary model with a dichotomous outcome would simplify the analysis, but this would waste valuable information. The MNLM uses maximum likelihood to estimate a likelihood function. It iterates until the maximum likelihood is reached (Long and Freese, 2006: 76).

Models with categorical outcomes are per definition nonlinear. It's therefore crucial to understand the meaning of nonlinearity in order to interpret the results of my models (Long and Freese, 2006: 113). In linear models, the effect of a change in a given independent variable on the dependent variable is not conditioned on the value of that variable when it starts to change or on the values of other independent variables in the model. In nonlinear models, a change in the variable will have different effects according to its value when it starts to change. The effect is also dependent of the level of the other variables (Long and Freese, 2006: 115-116). The most common approach to nonlinear interpretation is predictions, marginal effects and creating meaningful "profiles" where predicted values can be presented. Long and Freese (2006, 118) strongly suggest applying a variety of methods in order to illustrate the results of a nonlinear model.

3.3.2 Assumptions and requirements

Sample size

In ML models, generally a minimum sample of 100 is needed, while a sample size over 500 is sufficient in most cases. More specifically, a rule of thumb suggests at least 10 observations per parameter (Long, 1997: 54). But it's desired to have 20 observations per parameter. My

first analysis consists of 445 observations while the second has 285. The full model has seven variables. Conducting a multinomial logit with a dependent variable with four values and seven variables amounts to 21 parameters. This should satisfy the absolute requirement, but is close to being too small.

Independence among variables

In multinomial logit, it is not a requirement that variables are statistically independent. However, large correlations may create problems for the estimates and the interpretations. To test whether there are serious problems with multicollinearity, a variance inflation factors (VIF) test can be carried out. Table 1 in Appendix B lists the VIFs of the independent variables. A rule of thumbs suggests that VIF should be under 10 or have a tolerance (1/VIF) over .10. It also suggests that a VIF over 5 should be examined (Midtbø, 2012: 129). The variables with highest correlations are "hunger strike frequency" (6.66) and the dummy variable United States (7.56). We can anticipate that these two variables are correlated with each other. Table 2 with cross-correlations in Appendix B confirms that they are highly correlated (0.9061). I will solve this by only applying the two variables separately. Apart from this, the highest correlations in Table 2 are the correlations between Polity2 and "hunger strike frequency" (0.4224) and between "hunger strike frequency" and United States (0.3978). But as they are under 5, the rule of thumbs suggests that they can be applied in the same model. This means that multicollinearity is not a concern for my analysis.

Independence of irrelevant alternatives

An important assumption in multinomial modeling is the independence of irrelevant alternatives (IIA). The IIA assumes that the log-odds of a given outcome is independent of the availability of other outcomes (Long and Freese, 2006: 243). McFadden (1973) said that multinomial or conditional logit only should be used if the alternatives "can plausibly be assumed to be distinct and weighted independently in the eyes of each decision-maker".

Hunger strike outcomes are not strictly choices but results of choices made by hunger striker and authorities and government during the hunger strike. The results of these choices add up to the four possible outcomes in this thesis as illustrated in Table 2.2. The government can choose to grant a concession or to interfere with physical force to stop the hunger strike. The hunger striker can choose to surrender at any time. If none of these three choices are taken, the hunger striker will eventually die of starvation.

The IIA assumes that the log-odds of a given outcome don't change if the number of available outcomes is reduced or expanded. Since the four hunger strike outcomes in this

thesis are operationalized with the purpose of including all cases, it's not easy to come up with more alternatives. However there's a chance that in some situations the available outcomes are reduced to three. If for example a country has decided to outlaw the use of forcible feeding. We can anticipate that this would increase the chances that a hunger striker in prison will die or gain concessions, since there's now no way for a government to thwart death except granting a concession acceptable for the hunger striker.

It's possible to test whether the IIA assumptions holds using Hausman-McFadden (HM) test and the Small-Hsiao (SM) test by running tests with and without a reduced set of alternatives. The SM test is likely to give better results in smaller datasets and therefore the preferable among them. However, in many cases these two tests give answers that are contradictory, and their use are therefore not encouraged by Long and Freese (2006: 244).

I have nevertheless carried out the tests.[7] Results from both tests are listed in Appendix B. The Hausman test does not reject the hypothesis that the IIA assumption holds, while the Small-Hsiao test rejects the hypothesis.

Scaling, centering and transformation

Long and Freese (2006: 77) warn against problems of interpreting ML estimations if the data is not "cleaned". If one variable contains a very high interval compared to another, this will cause large ratios between the smallest and largest standard deviations.

What's most important for quantitative research is to separate what's important from what's unimportant. Therefore its crucial to not only measure direction and significance, but also the size of the effect (Ziliak and McCloskey, 2004). The variable hunger strike frequency, ranging between 1 and 358 is therefore divided on 100 so it is more comparable to the other variables. The other variables are centered on the mean so that the intercept can be interpreted as the average probability (Stock and Watson, 2012: 152).

Tests shows that both continuous variables *Length* and *Size* fit the description of non-normality according to and are therefore transformed into their natural logarithms. This will help mitigate or eliminate both potential problems of skewness and heteroscedasticity (Wooldridge, 2009: 191).

Clustered data

Whenever a group of observations are to be considered as a subset of other observations, we are dealing with clustered (also known as hierarchical) data (Steenbergen and Jones, 2002:

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[7] The Hausman test is not compatible with clustered standard errors. I have therefore run both tests on the basis of a model with unadjusted standard errors.

219). As I have presented in Chapter 2, hunger strike outcomes are the results of both country-specific factors and factors concerning the individual hunger strikes. As illustrated in section 2.1, the hunger strike process interlinks the protester with civil society, the public and the government. It's been noted by Scanlan et al. (2008: 313) that "Hunger strikes (…) bridge micro- and macro-structural processes", because they are "…relevant to many facets of social movement research including movement emergence, policing, tactical repertoires, and social movement success". I will therefore argue that hunger strikes are natural subsets of the countries where they take place, firstly because of the political and societal surroundings of each country by which every hunger strikes must accommodate, and secondly because of the characteristics of the governments in which the hunger strikes aims to get concessions from. Since much of what we study is naturally multilevel we should apply statistical model that are also multilevel (Luke, 2004: 4). Whenever researchers aim to show causal connections between factors operating at different levels, a multilevel analysis is the desired method (Luke, 2004: 22-23).

However, when running the intercept-only model (also called empty model) it shows a very tiny intra-class correlation coefficient (ICC) (ICC = 0.000, Std. Err = 0.013). The ICC decomposes the variance in the dependent variable and tells us the proportion of the variance that can be explained between groups (clusters). In this case, it tells how much of the variance in hunger strike outcomes that can be explained within countries. When this proportion equals to zero, it means there is no cluster variance to explain using a multilevel analysis (Hox, 2010: 56, Luke, 2004: 18). I will therefore use the multinomial logit model with clustered standard errors, as suggested by Stock and Watson (2012: 406).

3.3.3   Analysis strategy

A lesson that is often taught is that adding variables in a model should be guided strictly by theory (King et al., 1994: 182-183). Having too many variables in a statistical model will end up explaining a lot of the variance in the model but without showing any logical causal connections. This approach is often called the "kitchen sink" approach (Collier and Brady, 2010: 6). This points can be even more important in models with many parameters, such as the multinomial logit model. That said, having to explain four outcomes, also demands more explanatory power. Therefore, I have to balance this ideal against the need to have a model that manages to distinguish between my outcomes.

In order to make the most out of the limited data, I will conduct two analysis with different sample sizes. Because of the missing data on the important variables "size" and

"length" I will first run four models (Model 1 to 4) without these two variables, testing all other variables on a larger sample (N = 445) which will give the most reliable estimates of the effects. When I then go over to Model 5 to 7, which include size and length in a smaller sample (N = 285), the four first models will be used as a reference of reliability for interpreting any eventual changes caused by reducing the sample. A weakness in reducing the sample size is that these models cannot be meaningfully compared with the prior models through LR tests. However, the variables' directions, sizes, as well as significance will indicate whether the smaller sample models are as valid as the large sample models.

The models will be presented step by step, adding predictors and checking for their explanatory power and significance one model at the time. This way ensures that we manage to observe how the variables act and interact with each other. This is especially important here when not only dealing with a relatively small dataset but having many parameters and dealing with a relatively unexplored research topic where both the size and directions of the effects are unknown. Having seven models also makes it possible to measure the variables' consistency and robustness across models.

4   Analysis

In this chapter I see how well the empirical data in the hunger strike dataset fit my theoretical models. Firstly, I will present some descriptive statistics. Then I present the estimates from the multinomial logit regression and compare the measures of fit of variables of models through different tests. Lastly, I apply various post-estimation methods in order to present the findings and what they really mean. A conclusion on the findings is presented in Chapter 5.

Multinomial logit by default sets the outcome with most observations as the base category, also called reference group. The base category is the reference to which the other outcomes are compared. The most common hunger strike outcome in the dataset is Concession (40 %), followed by Surrender (38 %). I choose to set Surrender as the baseline outcome because the other three outcomes make more sense intuitively to explain. However, this choice only determines how the coefficient's matrix looks and does not matter for the results.

4.1   Descriptive statistics

Before going to the regression analysis, it is fruitful to use simple descriptive statistics as cross-tabulation and plots. Achen (2005: 338) argues that these classical techniques are underrated. Although they are simple, they often exposes failures in the assumptions of regression models and save us from committing errors. I have already presented some cross-tabulations in Section 2.5 in order to expose trends and patterns in the hunger strike dataset, but that was using all 1441 observations between 1906 to 2004. Here, in the descriptive statistics, I limit the number of observations to the 445 valid observations between 1946 and 2004 used in the first analysis with Model 1 to 4. Before starting the second analysis with Model 5 to 7, I will examine what the reduction in observations means for the data.

Table 4.1 lists the total distribution of outcomes. It shows that there's only 21 observations (5%) of the outcome death. This might indicate a problem.

Table 4.1: Outcome distribution

Outcome	Freq.	Percent
Concession	178	40.0
Surrender	167	37.5
Death	21	4.7
Forced end	79	17.8

Figure 4.1 shows the distribution of the different motivations behind hunger strikes. It shows that the two types of motivation used as independent variables only amounts to around 5% each of the total observations.

Figure 4.1: Motivations behind hunger strike (N = 445)
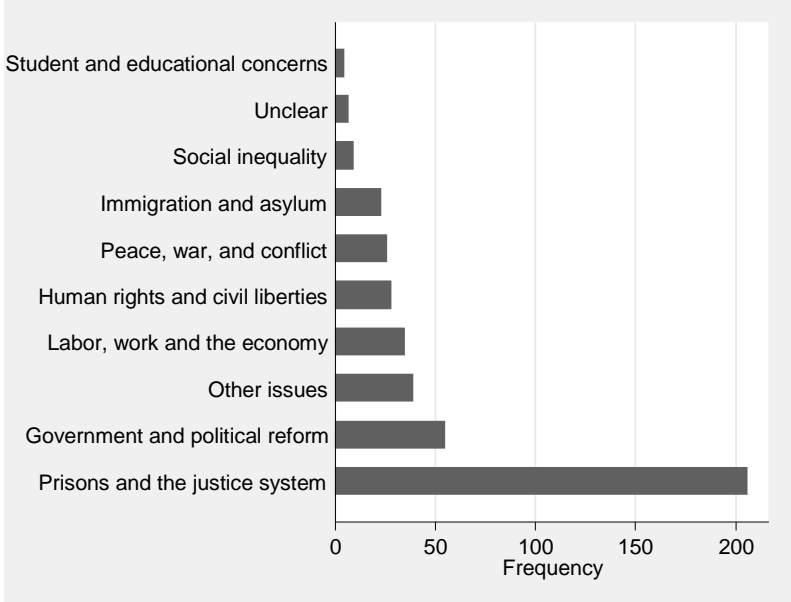
4.2 First analysis

The models will be presented in coefficient matrixes based upon the regression estimates. In multinomial logit, the coefficient matrix excludes the outcome which is set to be the reference category, which I choose to be outcome "surrender". The raw coefficients in multinomial logit can be translated into logits or log-odds (the logarithm of the odds). This is different from probabilities which can be predicted on a scale between 0 and 1, and odds-ratios (also called factor change coefficients), which refer to factor change in the odds. Probabilities and odds-ratios will be presented after Model 7. Before that, only raw unstandardized coefficients will be used. These will also be referred to as log-odds.

All variables are centered, which means that the constant (intercept) shows the log-odds when all other variables are average. The constant can then be interpreted as the average log-odds, all else being equal.

Table 4.2: Detailed list of variables (N = 445)[8]

VARIABLES	N	Mean	SD	Min	Max
Outcome	445	2.0	1.1	1	4
Peace, war, and conflict	445	0.06	0.2	0	1
Immigration and asylum	445	0.05	0.2	0	1
Incarcerated	445	0.5	0.5	0	1
Multiple locations	445	0.2	0.4	0	1
PolityIV	445	3.2	7.3	-10	10
Coalition govt. dummy	445	0.3	0.5	0	1
Hunger strike frequency	445	56	89	1	358
United States	445	0.2	0.4	0	1

4.2.1 Models 1 - 2

In the following section I discuss the results of the first two models and evaluate each variable. The purpose of this is to explain and justify my further specification decisions. Estimates from Model 1 and 2 are presented in Table 4.3. Model 1 includes all internal hunger strike-related variables: the two motivation variables *Immigration and asylum* and *Peace, war and conflict*, plus the variables *Incarcerated* and *Multiple locations*. The Likelihood-ratio (LR) test shows that the model significantly contributes to the understanding the outcome, compared to an empty, intercept only, model. The Wald two-tailed chi-squared test shows that the two motivation-variables are significant at the .001 level while Incarcerated is at the .05 level. Multiple locations does not significantly contribute to the model ($X^2 = 0.800$, *df* = 3, *p* < 1.0) and is therefore omitted from the following models. Model 2 adds the political context variables Polity IV (democracy score) and "coalition government". LR and Wald tests show that both Polity IV and coalition government contribute to the model, respectively at the .001 and the .05 level. The effect of being motivated by peace, war and conflict is significant at the 0.001 level. It reduces the log-odds of gaining concession from 0.035 to -1.415 (*intercept*[0.035] + *coef.*[-1.45]).

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[8] Variables are here presented in their original format, non-centered and non-transformed.

Table 4.3: Estimates from multinomial logit, Model 1-2

OUTCOME	VARIABLES	Model 1		Model 2	
		Coef.	*S.E.*	*Coef.*	*Coef.*
CONCESSION	Peace, war, and conflict	-1.76***	(0.46)	-1.45***	(0.40)
	Immigration and asylum	1.43**	(0.47)	1.30**	(0.47)
	Incarcerated	-0.23	(0.24)	-0.15	(0.23)
	Polity IV			-0.037*	(0.015)
	Coalition government			0.60**	(0.21)
	Multiple locations	-0.072	(0.31)		
	Constant	0.078	(0.13)	0.035	(0.089)
DEATH	Peace, war, and conflict	0.059	(1.21)	0.18	(1.15)
	Immigration and asylum	-12.0***	(0.68)	-12.1***	(0.68)
	Incarcerated	1.80**	(0.62)	1.83**	(0.60)
	Polity IV			-0.0050	(0.036)
	Coalition government			0.31	(0.68)
	Multiple locations	-0.093	(0.56)		
	Constant	-3.08***	(0.35)	-3.10***	(0.33)
FORCED END	Peace, war, and conflict	-1.64***	(0.37)	-1.22**	(0.45)
	Immigration and asylum	1.12*	(0.53)	0.92*	(0.44)
	Incarcerated	-0.25	(0.28)	-0.19	(0.26)
	Polity IV			-0.073***	(0.016)
	Coalition government			0.36	(0.24)
	Multiple locations	0.23	(0.37)		
	Constant	-0.73***	(0.16)	-0.79***	(0.12)
	Observations	445		445	
	Log likelihood	-508		-499	
	Pseudo R-squared	0.036		0.054	

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Being motivated by immigration and asylum has the opposite effect, increasing the log-odds of gaining concession from 0.035 to 1.335. This effect is significant at the 0.01 level. The effect of the Polity IV democracy scale is only significant at the 0.05 level. Hunger striking in a country indexed at 1 compared to 0 will only result in a modest decrease the log-odds of concession from 0.035 to -0.002. But because the variable is a 20-point scale, its effect is larger than it at first sight. If a hunger strike takes place in a country with Polity IV score 10 (most democratic), compared to a country with score 0, all else being equal, the log-odds of gaining concession is reduced from 0.035 to -0.335 (*intercept*[0.035]+(*coef.*[-

0.037]*_Polity IV-score_[10])). The effect of carrying out a hunger striking in a country run by a coalition government compared to one that is not is significant at the 0.01 level. The log-odds of concession after this change is increased from 0.035 to 0.635, thus a seemingly strong effect.

I begin by discussing the determinants of the hunger strike outcome "death". Only two variables seem to explain outcome death relative to surrender. Being motivated by "immigration and asylum" is significant at the 0.001 level, while being "incarcerated" is significant at the 0.01 level. Being motivated by immigration and asylum compared to being not reduces the log-odds from -3.10 to the exceptional -15.2. While deaths are already uncommon, they are even more unlikely to occur with this category of hunger strikers. Figure 4.1 shows that the category "immigration and asylum" only makes out about 5%. That means that the effect doesn't explain as much as we might think.

The variable incarcerated has a significant effect on outcome death at the 0.01 level. Being incarcerated increases the log-odds of dying from -3.10 to -1.27. This effect is not very surprising, considering that the political impact of dying will increase when authorities can be more directly blamed for not taking properly care of the hunger striker.

Three variables have significant effects on the outcome "forced end": both motivation variables and Polity IV. Being motivated by "peace, war and conflict" is significant in both models but is reduced from the 0.001 to the 0.01 level from Model 1 to 2. Having peace, war and conflict as motivation decreases the log-odds of forced end from -0.79 to -2.01. The effect of being motivated by immigration and asylum rights is significant at the 0.05 level. Being motivated by immigration and asylum rights increases the log-odds of forced end from -0.79 to 0.13. Lastly, the effect of Polity IV is significant at the 0.001 level. The log-odds of outcome forced end in a country with score 1 compared to 0 on the Polity IV score is decreased from -0.79 to -0.863. Hunger striking in the most democratic indexed country, with Polity IV score 10, compared to 0 decreases the log-odds to -1.52, while a hunger strike in the least democratic country, indexed as -10 increased the log-odds to -0.06.

If we ignore the p-values and the coefficients' sizes for a moment and only look at their directions, we are able to identify some patterns. The coefficients of "coalition government" and "Polity IV" all have the same direction on the three outcomes in the coefficient matrix. In addition, the two motivation variables and "incarcerated" have the same direction on outcome on concession and forced end. This means that no variables explaining concession and forced end are different with respect to direction. It's a potential weakness in the model if the variables explaining concession and forced end are too similar. We can

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explore this by testing whether all combinations of outcomes are indistinguishable in respect to the variables (Anderson, 1984). This can be tested with LR or Walt tests which should provide similar results (Long and Freese, 2006: 239-241).

Table 4.4: Wald test for combining alternatives after Model 3 (N=445)

Alternatives tested	chi^2	df	P>chi^2
Concession – Death	440.24	5	0.000
Concession – Forced end	8.14	5	0.149
Concession – Surrender	41.13	5	0.000
Death – Forced end	492.51	5	0.000
Death – Surrender	429.88	5	0.000
Forced end – Surrender	47.67	5	0.000

H^0: All coefficients except intercepts associated with a given pair
of alternatives are 0.

Table 4.4 shows the result of the Wald test where all possible combinations of outcomes are tested. As suspected, the test does not reject the 0-hypothesis that the outcomes concession and forced end are not indistinguishable. The other pairs of outcomes are all distinguishable at the 0.001 level. This means that the independent variables presented so far are not sufficient to distinguish these two outcomes.

To sum up, Model 1 shows that the two motivation variables and "incarcerated" have a substantial effect on the hunger strike outcomes. Whether the hunger strike is carried out more than one place ("multiple locations") does not seem to have a significant effect on explaining the outcome. In Model 2 both political context variables seem to have an impact on the model. No variables except "immigration and asylum" have an effect on more than two outcomes.

4.2.2 Models 3 - 4

Table 4.5 presents the next two models, Model 3 to 4. Model 3 adds the continuous variable "hunger strike frequency". The Wald test shows that this variable significantly contributes to the model ($X^2 = 10.017$, $df = 3$, $p < 0.05$). But the LR test does not prefer Model 3 over Model 2 (LRX$^2 = 3.77$, $df = 3$, $p < 0.3$). According to the Walt tests carried out on the other remaining variables, "coalition government " now apparently is the problem ($X^2 = 5.158$, $df =$

3, $p < 0.2$). The hunger strike frequency variable has a significant effect on the outcome of death. All three outcomes now each have three variables with significant effects. But only one variable has a significant effect on all outcomes: the peace, war and conflict motivation variable.

Most variables give unchanged coefficients after adding hunger strike frequency. The exceptions are coalition government and Polity IV. Polity IV has a significant effect at the 0.05 level on concession in Model 2 but not in Model 3 ($p = 0.111$). It's not surprising that hunger strike frequency "steals" some of Polity IVs explanatory power given the two variable's relatively high correlation ($r = 0.4354$, $p < 0.001$). This means that countries with high level of democracy tend to have more experience with hunger strikes over time. Having both these variables in the model will by necessity reduce each of their explanatory power.

The effect of coalition government on concession is reduced from being significant at the 0.01 level in Model 2 to the 0.05 level in Model 3. The small change in its coefficients from Model 3 to Model 2 (-0.07) shows consistency. The slightly reduced explanatory power of coalition government can be explained by the negative correlation between coalition government and hunger strike frequency (r = -0.3017, p < 0.001). This correlation means that countries run by coalition governments tends to have less of experience with hunger strikes. Since the coefficient of hunger strike frequency on concession is negative and the coefficient of coalition government is positive, these two variables have to sheer the same explanatory power. The effect of hunger strike frequency on concession is significant at the 0.01 level. The more experience a country has of hunger strikes in the past, the lower is the log-odds of dying of starvation in a hunger strike. In the time and place with most accumulated experience of hunger strikes, 358 hunger strikes in USA 2002, the log-odds of dying is reduced from -3.15 (average is 58 hunger strikes) to -5.06 (*intercept*[-3.15] + (*coef.*[-0.63] * *highest frequency*[3.032271])).[9]

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[9] The variable is mean-centered and divided on 100.

Table 4.5: Estimates from multinomial logit, Model 3-4

OUTCOME	VARIABLES	Model 3		Model 4	
		Coef.	*S.E.*	*Coef.*	*S.E.*
CONCESSION	Peace, war, and conflict	-1.41***	(0.42)	-1.39**	(0.42)
	Immigration and asylum	1.31**	(0.47)	1.29**	(0.47)
	Incarcerated	-0.15	(0.23)	-0.15	(0.23)
	Polity IV	-0.031	(0.020)	-0.032	(0.021)
	Coalition government	0.53*	(0.27)	0.55	(0.28)
	Hunger strike frequency	-0.086	(0.11)		
	United States			-0.15	(0.29)
	Constant	0.041	(0.094)	0.040	(0.095)
DEATH	Peace, war, and conflict	0.54	(1.26)	0.78	(1.27)
	Immigration and asylum	-12.4***	(0.67)	-12.6***	(0.66)
	Incarcerated	1.90**	(0.62)	1.86**	(0.60)
	Polity IV	0.029	(0.034)	0.031	(0.032)
	Coalition government	-0.11	(0.64)	-0.17	(0.64)
	Hunger strike frequency	-0.63**	(0.22)		
	United States			-1.71***	(0.41)
	Constant	-3.15***	(0.29)	-3.17***	(0.28)
FORCED END	Peace, war, and conflict	-1.25**	(0.44)	-1.24**	(0.43)
	Immigration and asylum	0.90*	(0.44)	0.92*	(0.45)
	Incarcerated	-0.20	(0.26)	-0.19	(0.26)
	Polity IV	-0.077***	(0.022)	-0.074**	(0.024)
	Coalition government	0.39	(0.31)	0.36	(0.32)
	Hunger strike frequency	0.069	(0.13)		
	United States			0.058	(0.36)
	Constant	-0.79***	(0.13)	-0.79***	(0.13)
	Observations	445		445	
	Log likelihood	-497		-496	
	Pseudo R-squared	0.058		0.059	

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

Inversely, the log-odds of dying when carrying out a hunger strike in a country with no
experience of hunger strikes is increased from -3.15 to -2.81. This variable adds an important
aspect to the understanding of outcome death, namely that states have learned to avoid what is
in most cases the most costly outcome death (as discussed in Section 2.2.2). With regards to
the model's ability to distinguish between outcomes, another variable explaining death at
slight expense of concession and forced end will probably make the two outcomes concession

and forced end more indistinguishable. The Wald test confirms that this is the case ($X^2 =$ 8.688, $df = 6$, $p < 0.192$).

Even though the LR test does not favor including hunger strike frequency on the expense of slightly reduced explanatory power of Polity IV and coalition government, I decide to keep all variables for now. I regard it as a slight improvement of the model because it adds more understanding of the outcome death without really distorting any other clear effects.

Model 4 replaces "hunger strike frequency" with the control variable United States, which is a dummy variable that indicates whether the hunger strike is carried out in the United States. As mentioned in Section 3.3.2, the two variables are very highly correlated ($r =$ 0.9051, $p < 0.001$) and will distort a model if applied simultaneously. United States is the country with the highest number of observations in the dataset (18%). As discussed in Section 3.3.1, the observations from United States might drive the results in a particular direction. The control variable United States will test whether observations from United States drive the results. The result of the Walt test shows that the variable United States does contribute to the model ($X^2 = 18.711$, $df = 3$, $p < 0.001$), but the LR test finds Model 3 and 4 indistinguishable with respect to explanatory power ($LRX^2 = -1.27$, $df = 1$, $p = 1.0$).

A Wald test shows the same findings when the two variables are fitted in the same model and tested for whether they are indistinguishable, which they are not ($X^2 = 0.18$, $df = 1$, $p < 0.7$). United States also has a significant effect on death, but stronger than hunger strike frequency. Accordingly, deaths are less common in the United States in particular than in countries with high number of hunger strikes in general. Another change is that the effect of coalition government on concession is no longer significant, while its coefficient is practically the same, only reduced by -0.02. This reduction can be explained with the correlation between United States and coalition government ($r = 0.4487$, $p < 0.001$) which higher than the correlation between coalition government and hunger strike frequency. The rest of the variables are practically untouched after controlling for United States. The variables also show a robust tendency when comparing to Model 2.

To sum up the first analysis. The analysis with 445 observations shows that certain types of motivations, being incarcerated, political context and "hunger strike frequency" can determine hunger strike outcomes. As mentioned, the independent variables presented so far does not manage to distinguish the two outcomes concession and forced end.

4.3 Second analysis

In the second analysis, the sample size is reduced to 285. As I gained some knowledge about the variables applied in Model 1 to 4, I can more easily interpret Model 5 to 7 with a smaller sample size. In addition, size and length will also test the robustness of the other variables and work as control variables.

The list of variables is updated in Table 4.6 where the changes from the larger sample (N = 445) are included. We can see that the mean of the two motivation variables are slightly changed in the reduced sample. The mean of Polity2 is reduced by 0.2 and hunger strike frequency reduced by 3. These changes, although small, may be the source of eventual changes in the following models.

Table 4.6: Detailed list of variables (N = 285)

VARIABLES	N	Mean	SD	Min	Max	Change from N= 445 Mean	SD
Outcome	285	2.0	1.1	1	4	0	0
Peace, war, and conflict	285	0.05	0.2	0	1	-0.01	0
Immigration and asylum	285	0.06	0.2	0	1	+0.01	0
Incarcerated	285	0.5	0.5	0	1	0	0
PolityIV	285	3.0	7.3	-9	10	-0.2	0
Coalition govt. dummy	285	0.3	0.5	0	1	0	0
Hunger strike frequency	285	53	88	1	354	-3	-1
Size	285	356	3,048	1	50,000		
log(Size)	285	2.0	2.3	0	11		
Length	285	33	59	0.5	720		
log(Length)	285	2.8	1.2	-0.7	6.6		

4.3.1 Models 5 - 7

Table 4.7 presents the next three models, Model 5 to 7. In these models I include the variables length and size. In Model 5 I first run the model without length and size to see whether eventual changes in other coefficients are due to size and length or just because of different sample size.

Table 4.7: Estimates from multinomial logit, Model 5-7

OUTCOME	VARIABLES	Model 5		Model 6		Model 7	
		Coef.	*S.E.*	*Coef.*	*S.E.*	*Coef.*	*S.E.*
CONCESSION	Peace, war, and conflict	-0.86	(0.50)	-0.82	(0.50)	-0.71	(0.46)
	Immigration and asylum	2.20***	(0.45)	2.21***	(0.41)	2.29***	(0.39)
	Incarcerated	-0.21	(0.28)	-0.20	(0.28)		
	Polity IV	-0.040	(0.021)	-0.042	(0.021)	-0.041	(0.021)
	Coalition government	0.84**	(0.32)	0.81*	(0.34)	0.81*	(0.34)
	Hunger strike frequency	0.019	(0.12)	0.037	(0.12)	0.026	(0.12)
	log(Length)			0.028	(0.13)	0.0039	(0.12)
	log(Size)			0.058	(0.083)	0.061	(0.083)
	Constant	-0.00038	(0.11)	0.0011	(0.11)	-0.0020	(0.11)
DEATH	Peace, war, and conflict	2.16	(1.62)	1.20	(1.80)	-0.35	(1.56)
	Immigration and asylum	-9.48***	(1.06)	-10.7***	(0.87)	-11.6***	(0.86)
	Incarcerated	2.56*	(1.05)	1.82	(1.19)		
	Polity IV	0.042	(0.042)	0.034	(0.041)	0.031	(0.040)
	Coalition government	-0.066	(0.77)	0.10	(0.75)	0.15	(0.74)
	Hunger strike frequency	-1.23*	(0.51)	-1.19*	(0.49)	-1.15**	(0.44)
	log(Length)			0.78**	(0.30)	0.97**	(0.32)
	log(Size)			-0.38	(0.23)	-0.37	(0.22)
	Constant	-3.21***	(0.50)	-3.96***	(0.66)	-3.60***	(0.33)
FORCED END	Peace, war, and conflict	-1.25***	(0.30)	-1.22***	(0.30)	-1.10***	(0.23)
	Immigration and asylum	1.50**	(0.55)	1.37**	(0.52)	1.45*	(0.56)
	Incarcerated	-0.13	(0.33)	-0.22	(0.33)		
	Polity IV	-0.065	(0.034)	-0.069	(0.036)	-0.069	(0.036)
	Coalition government	0.51	(0.47)	0.36	(0.50)	0.36	(0.50)
	Hunger strike frequency	0.19	(0.17)	0.22	(0.18)	0.22	(0.19)
	log(Length)			0.29	(0.15)	0.27	(0.15)
	log(Size)			0.15	(0.078)	0.15	(0.079)
	Constant	-0.78***	(0.17)	-0.84***	(0.20)	-0.84***	(0.19)
	Observations	285		285		285	
	Log likelihood	-320		-311		-314	
	Pseudo R-squared	0.071		0.098		0.089	

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

The estimates of Model 5 give coefficients that are generally slightly reduced compared to Model 4, but all directions are the same. The effect of Polity IV on outcome forced end is not significant at the 0.05 level, but at the 0.06 level (*p* = 0.053).

The effect of the variable "peace, war and conflict" on concession is not anymore significant at the 0.05 level, but at the 0.09 level. Looking back at the details of the variables in Table 4.6, these changes are likely to stem from the sample reduction. The general picture however is that the reduced sample, before length and size is added, does not unpredictably distort any of the effects. It rather shows that the effects from the previous models hold their grounds.

A perhaps more unpredictable finding in Model 5 is that this model significantly distinguishes between the outcomes concession and forced end according to a Wald test ($X^2 = 13.424$, $df = 6$, $p < 0.05$). Since the directions of the effects are the same, the model's ability to distinguish between outcomes are most surely because of the reduced explanatory power of two variables. I therefore conclude that Model 5 does not adequately distinguish between all outcomes.

Model 6 adds the variables size and length. The Walt test shows that both size ($X^2 = 8.612$, $df = 3$, $p < 0.05$) and length ($X^2 = 9.339$, $df = 3$, $p < 0.05$) have a modest but significant contribution to the model. Additional Wald tests reveal that among the old variables, three variables are just on the verge of being significant and one is not. Hunger strike frequency and Polity IV both are significant at the 0.06 level, while coalition government is at the 0.09 level. Incarcerated is now the variable least contributing to the model ($X^2 = 3.538$, $df = 3$, $p < 0.4$).
The variable's coefficient on death is also no longer significant ($p = 0.126$). Since the variable incarcerated was significant in Model 5, its decreased effect in Model 6 must be due to one of the two added variables. Looking at the correlation between variables it seems that both of them have a fair amount of correlation with incarcerated. Largest is length ($r = 0.2514$, $p < 0.001$). But size also has some negative correlation with incarcerated ($r = -0.1486$, $p < 0.01$). These correlations are intuitively understandable: long hunger strikes mostly happen inside jails while the largest hunger strikes happen outside jails. Regarding the model's ability to distinguish between outcomes, the Wald test on Model 6 shows a slight setback ($X^2 = 14.836$, $df = 8$, $p < 0.062$). With two more variables, thus larger degrees of freedom, the Wald test is more demanding. Looking at the coefficient matrix, length and size mostly explains death but also forced end, although not at the 0.05 level.

In the final Model 7 I exclude the variable incarcerated because it is the variable least contributing to the model. The LR test does not prefer Model 7 over 6 (LR$X^2 = 5.61$, $df = 3$, $p = 0.2$). But Wald finds Model 7 to be an improvement with regards to Polity2 and hunger strike frequency, which now contributes significantly to the model. Only coalition government is still slightly insignificant ($p = 0.086$). The size of the coefficient of the variable

coalition government on the outcome concession is unchanged and is still significant at the 0.05 level ($p = 0.018$). While the coefficient matrix give the impression that few variables explain the outcome forced end, several coefficients are very close to being significant. The effect of Polity IV on forced end is significant at the 0.06 level ($p = 0.053$). The effect of size on forced end is significant at the 0.06 level ($p = 0.051$), while the effect of length on forced end is significant at the 0.07 level ($p = 0.067$). Wald tests find that Model 7 manages to significantly distinguish between the outcomes concession and forced end ($X^2 = 14.894$, $df = 7$, $p < 0.05$).

4.4 Interpreting the results

In this section I will interpret the results of the analysis. In the previous sections the results have been reported in the form of raw coefficients, here also meaning log-odds, in coefficient matrixes. Logit or log-odds means the logarithm of odds. A more intuitive and pedagogical format would be probabilities and odds ratios. Probabilities range between 1 and 0 where 1 is the most and 0 least likely.

The odds ratio tells us how many times greater (or smaller) the odds are when the independent variable increases by one unit. While odds are ratios of probabilities, odds ratios are ratios of the odds. Odds ratio means the change in odds at two different values of the independent variable. Odds ratios can also be easily found by calculating the exponential value of the regression coefficient (Skog, 2004: 365-366). Odds ratios are multiplicative, which means that negative effects are presented with numerals between 0 and 1 while positive effects are greater than one. A positive odds ratio of 2 will have the same magnitude as a negative change of 0.5 (Long and Freese, 2006: 179-180).

Table 4.8 lists the discrete changes in probabilities for all variables on each outcome. This gives an overview of the size of each effect.

Table 4.8: Discrete changes in outcome probabilities

	Concession	Surrender	Death	Forced end
Peace, war, and conflict	-0.019	0.043	0.000	-0.024
Immigration and asylum	0.120	-0.090	-0.047	0.017
Polity IV	-0.036	0.084	0.005	-0.053
Coalition government	0.077	-0.072	-0.001	-0.004
Hunger strike frequency	-0.004	-0.012	-0.013	0.029
log(Length)	-0.029	-0.029	0.013	0.045
log(Size)	0.012	-0.044	-0.012	0.044
Pr (y|x)	0.419	0.387	0.0118	0.182

Note: Change from 0 to 1 for binary variable, else a standard deviation change.

4.4.1 Size and length

Previously in the chapter, effects have been presented as coefficients, meaning log-odds. Here I present the effects in odds ratios and probabilities. Table 4.9 lists the odds ratios of a discrete change (e^b) and the odds ratios of a standard deviation change (e^bStdX) in hunger strike length. All comparisons with significance levels as low as 0.07 are listed, in order to also include several effects that are significant at the 0.06 and the 0.07 level.

Table 4.9 reveals that for each additional day the hunger strike lasts, the odds of concession relative to death is decreased by a factor of 0.4. For each additional day of hunger striking the odds of dying relative to both surrender and concession is 2.6 times greater, while the odds of dying relative to forced end is twice as likely (2). It also tells that for each additional day, the odds of forced end relative to surrender is 1.3 times greater, while it decreases by a factor of 0.5 relative to death, meaning the odds are halve. The odds of surrender relative to death is decreased by a factor of 0.4 while the odds relative to forced end is decreased by a factor of 0.8. This means that the most substantial effect of length is on the outcome death.

Table 4.9: Odds ratios of the effect of length on pair of outcomes[10]

Odds comparing Alternative 1 to Alternative 2	Coef.	P>z	e^b	e^bStdX
Concession – Death	-0.966	0.002	0.381	0.315
Death – Concession	0.966	0.002	2.628	3.180
Death – Forced end	0.701	0.020	2.017	2.315
Death – Surrender	0.970	0.003	2.639	3.195
Forced end – Death	-0.701	0.020	0.496	0.432
Forced end – Surrender	0.269	0.067	1.309	1.380
Surrender – Death	-0.970	0.003	0.379	0.313
Surrender – Forced end	-0.269	0.067	0.764	0.725

Table 4.10 shows the list of odds ratios of the effect of size. It shows that for each additional person participating in the hunger strike the odds of death relative to concession are reduced by a factor of 0.6. The odds of the outcome being forced end relative to surrender is 1.2 times greater, while the odds relative to death are 1.7 times greater. The odds of surrender relative to forced end are decreased by a factor of 0.9.

Table 4.10: Odds ratios of the effect of size on pair of outcomes

| Odds comparing Alternative 1 to Alternative 2	Coef.	P>z	e^b	e^bStdX
Concession – Death	0.436	0.041	1.546	2.744
Death – Concession	-0.436	0.041	0.647	0.365
Death – Forced end	-0.528	0.015	0.590	0.294
Forced end – Death	0.528	0.015	1.696	3.400
Forced end – Surrender	0.154	0.051	1.166	1.427
Surrender – Forced end	-0.154	0.051	0.858	0.701

In order to present the relationship between the outcomes in a more graphic and intuitive way, *Mlogplot* can plot the results of all four outcomes together (Long and Freese, 2006: 260-

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[10] e^b = exp(b) = factor change in odds for unit increase in X

e^bStdX = exp(b*SD of X) = change in odds for SD increase in X

272).[11] Figure 4.2 shows the effect of length and size. The bottom scale of the figure shows the discrete change in coefficients, while the top scale shows factor changes in the odds. Both scales are relative to the outcome surrender, as in the coefficient matrix. Different outcomes are illustrated with their first letter: 'C' for concession, 'S' for surrender, 'D' for death and 'F' for forced end. The lines between letters means there's not a significant effect between those two outcomes, thus that one outcome is not significantly more probable than the other. This plot is set to draw lines when significance levels are as low as the 0.07 level. This includes the effects mentioned in last paragraph that are significant at the 0.06 and 0.07 level. When a letter is on the right side of another, a change in the independent variable increases the likelihood of that outcome compared to the one to its left. In addition, the size of the letters are proportional to the discrete change in the odds-ratio. This is to show how the change in odds due to discrete change is larger or smaller at different values of the variables. This means that if the *absolute* change in odds multiplies for each value, the *relative* change in odds (odds ratio) may be the same (Skog, 2004: 364).

Figure 4.2: The effect of length and size
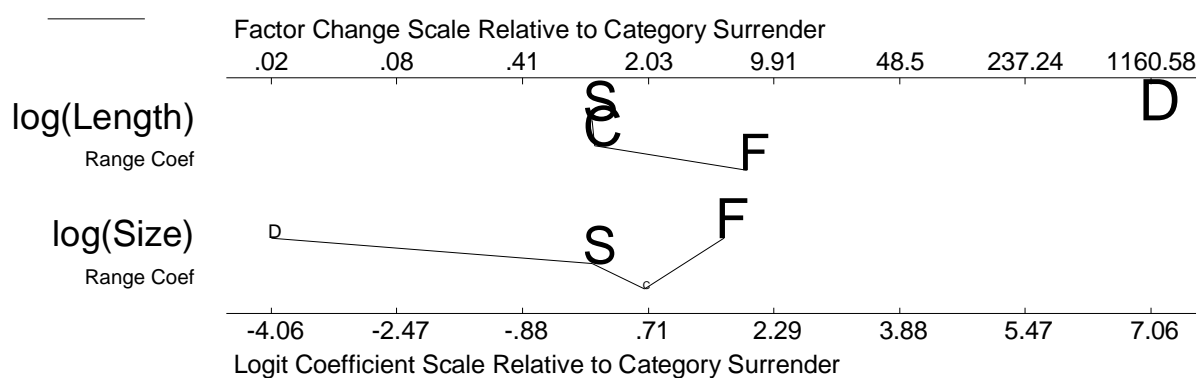
Out first conclusion from looking at the graph is that the effect of length has an overall larger effect than size because the horizontal distance between lengths' letters is greater. Furthermore, the graph shows that length and size has the complete opposite effect on the likelihood of death. Not surprisingly, the longer a hunger strike is, the more likely is death to occur. Both factors increase the likelihood of the outcome forced end, but the effect of length is slightly stronger. Although both variables does not have a significant effect on concession compared to surrender, the graph suggests that the effect of size is slightly positive, while the effect of length is none. These findings suggest a slight advantages in maximizing the number of hunger strikers rather than maximizing the length of the hunger strike.

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[11] Mlogplot is a user-written program for Stata made by Long and Freese (2005).

Now, how does the odds-ratios translate into probabilities? Table 4.8, as presented in Section 4.4, shows that a standard deviation of length and size results in almost the exact increase in the probability of forced end, respectively 0.045 and 0.044. We also see that a standard deviation increase in size decreases the probability of surrender by -0.044, compared to length which decreases its probability by -0.029.

A problem with comparing the effects of size and length is that they have very different averages. It means that when we discuss the effect of length, when all else equal, it implies when size is 356, which is its average. Because most hunger strikes consists of only one person, this creates a false impression. When recalculating the predicted probability of a standard deviation increase in length on the outcome forced end, size set to 1, all else equal, the increase in probability is only 0.034. Doing the same with size, the standard deviation increase in size on the outcome forced end when length is 1, all else equal, the increase in probability is reduced to 0.025. This means that the actual effect of prolonging a hunger strike when only one person is striking is a lot smaller, regarding the probability of forced end.

What about the outcome surrender? A standard deviation increase in length, size set to 1, all else equal, decreases the probability of outcome surrender by -0.034. With a standard deviation increase in size, length set to 1, all else equal, probability of outcome being surrender decreases by -0.043. This means that the difference between size and length is not as big as presented in Table 4.8 with regards to the outcome surrender. These estimates can also be interpreted in a real situation.

Let's picture a hypothetical single hunger striker on the first day of the hunger strike. If the hunger strikers' strategy is to continue the hunger strike alone for 56 days (a standard deviation of length), the probability of the hunger strike ending in surrender would decrease by -0.034. If the strategy instead was to get 2650 people (a standard deviation of size) to join the hunger strike, the probability of the outcome being surrender would decrease by -0.43. In these examples, both strategies seem like a lot of efforts for a small positive change in the likelihoods. A few extreme hunger strikes in terms of sizes and lengths are the reasons why a standard deviation is a large change. In the following section I will test whether these extreme observations actually drives the results and should be deleted.

Now, let's see whether the predicted probabilities of the effect of length on outcome forced end is different in democracies and non-democracies. Table 4.11 lists these probabilities ranging from 0.5 to 100 days. It shows that the difference ranges from 0.04 to 0.10. The difference increases gradually being largest when the strike has lasted 100 days. The effect is also slightly bigger in non-democracies.

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Table 4.11: Predicted probabilities of forced end

Length (days)	Predicted probabilities		
	Democracy	Non-democracy	Difference
1	0.09	0.13	0.05
5	0.13	0.19	0.06
10	0.15	0.22	0.07
20	0.17	0.25	0.08
50	0.21	0.30	0.09
100	0.23	0.33	0.10

The results from Table 4.9 and Figure 4.2 rejects *Hypothesis 1* which claims that the length of the hunger strike increases the likelihood of concession. Length seems to have no effect on the outcome concession.

The results also confirm *Hypothesis 2,* which claims that the length of the hunger strike increases the likelihood of forced end. The odds of forced end are 1.3 times greater relative to surrender for each additional day. The probability of forced end increases from about 1.7 at day 1 to 4.2 at day 750. Its effect on forced end is not significant relative to concession, which is symptomatic for the whole model's inefficiency to distinguish between concession and forced end.

Hypothesis 3, which claims that hunger strike size increases the likelihood of concessions should be rejected. Figure 4.2 shows that the direction of the effects points in this direction, but it is not significant relative to the reference outcome surrender. The odds of concession only increases by a factor of 1.06 relative to surrender. The finding points in the same direction as the hypothesis, but additional research must be conducted in order to find eventual support for this relationship.

The results support Hypothesis 4, which claims that hunger strike size increases the likelihood of forced end, although the effect is not large. For each additional hunger striker the odds of forced end increases by a factor of 1.2. Also here, the effect on forced end is not significant relative to concession, but its effect is still convincing when significant relative to the other two outcomes. The increases in probabilities suggest that the impact of size is strong, increasing from 0.15 with one person to just under a probability of 0.4 with 50 000 participates.

Hypothesis 5, which claims that when hunger strikes are conducted at multiple locations it increases the likelihood the outcome being forced end is rejected on the basis that the variable did not significantly contribute to the model and had no significant coefficients.

4.4.2 Motivations

The variables that give the largest coefficients are also in this case those that explains the least. The observations captured by the two motivation dummy variables combined amounts to only 10 percent.

Figure 4.3 plots the effects of the two different motivations being either peace, war and conflict or immigration and asylum. The coefficients of the variables are plotted as markers with confidence intervals as spikes. In addition, by applying weights to the markers, the size of the markers is proportional to the inverse of the standard errors as to indicate their reliability. An plausible explanation is that this category of hunger strikers in most cases will strike for their own personal benefits, not a larger struggle. It is the latter that makes martyrs effective politically, not the first.

Figure 4.3: Effects of different motivations
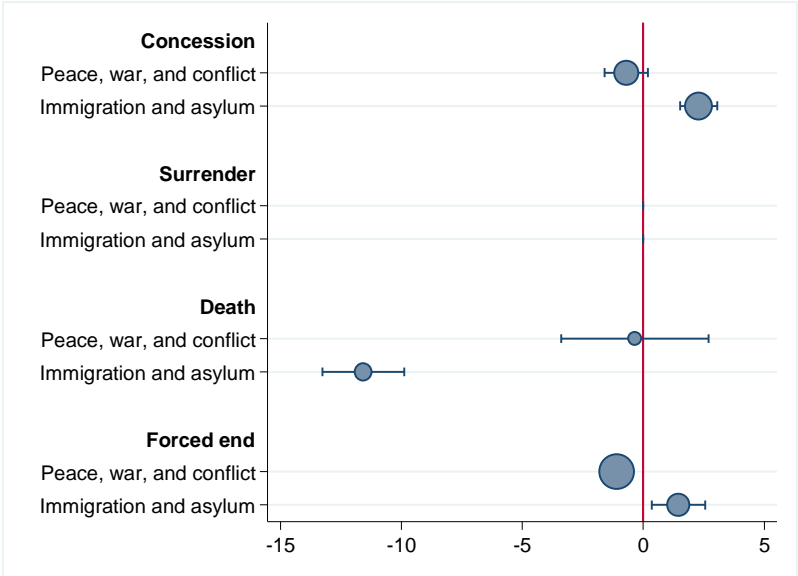
Hypothesis 6, which claims that the likelihood of gaining concessions depend on the type of political motivation finds some support in the results, although only two of eight categories are tested. The motivation immigration and asylum rights is the only significant variable in the second analysis (N = 285). The odds of concession when this is the motivation are 9.8 times greater relative to surrender. The extremely high coefficients from this variable suggest that we may be dealing with coincidences that inflate the results due to the small sample. The

results should therefore be interpreted with caution. This hypothesis is therefore only partly supported.

4.4.3   Political context

Table 4.12 lists all pair of outcomes with significance levels over 0.06. It reveals that although it is significant on several outcomes, the effect of Polity IV is relatively small. The change in odds for all outcomes is close to one. The effect of hunger striking in a country with a higher level of democracy increases the odds of surrender and death, and decreases the likelihood of concession and forced end. The odds of concession relative to death and surrender decreases by factors of 0.93 and 0.96, respectively. The odds of forced end relative to death decreases by a factor of 0.9 while it decreases by a factor of 0.93 relative to surrender. The strongest effect of democracy is the change in odds of death relative to forced end which is 1.1 times greater. On the same pair of outcomes, a standard deviation increase in democracy gives odds that are the double.

Table 4.12: Odds ratios of the effect of Polity2 on pair of outcomes

Odds comparing Alternative 1 to Alternative 2	Coef.	P>z	e^b	e^bStdX
Concession – Death	-0.073	0.045	0.930	0.586
Concession – Surrender	-0.041	0.052	0.959	0.738
Death – Concession	0.073	0.045	1.076	1.705
Death – Forced end	0.101	0.028	1.106	2.093
Forced end – Death	-0.101	0.028	0.904	0.478
Forced end – Surrender	-0.069	0.053	0.933	0.601
Surrender – Concession	0.041	0.052	1.042	1.356
Surrender – Forced end	0.069	0.053	1.072	1.664

Table 4.13 lists the odds ratios of comparing pairs on the effect of coalition governments that are significant over the 0.05 level. Only the pair of concession and surrender are significant. If the hunger strike takes place in a country run by a coalition government the odds of concession is 2.3 times greater relative to surrender. This is a relative strong effect.

Table 4.13: Odds ratios of the effect of coalition government on pair of outcomes

Odds comparing Alternative 1 to Alternative 2	Coef.	P>z	e^b	e^bStdX
Concession – Surrender	0.814	0.018	2.257	1.450
Surrender – Concession	-0.814	0.018	0.443	0.690

Figure 4.4 shows the effect of the level of democracy (Polity IV) and coalition government. It shows that the effect of Polity IV is bigger than coalition government because the distance of the letters furthest to the left and right is longer.

Figure 4.4: The effect of democracy and coalition government
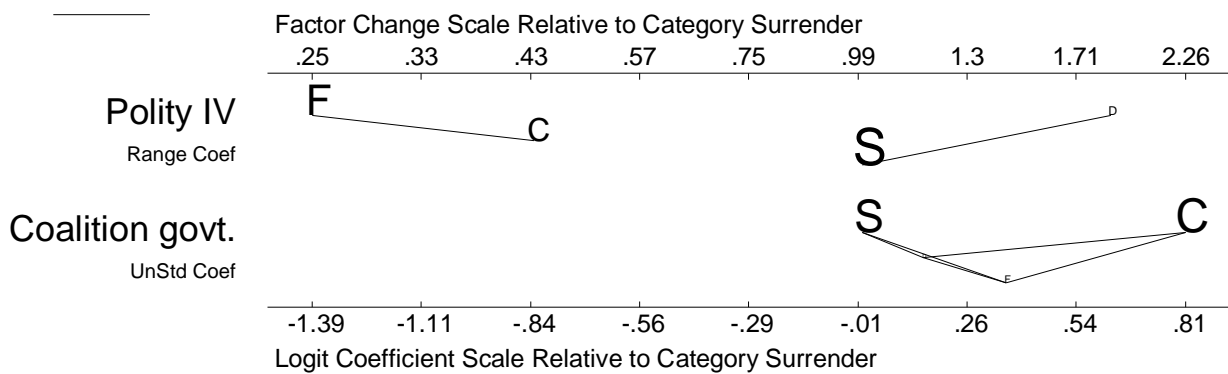

Figure 4.5 plots the predicted probabilities of the effects of Polity IV on concession, surrender and forced end. Even though the Polity IV scale ranges from -10 to 10, there's no observations in a country having the score -10 in this sample. The graph shows that the curves for concession and forced end are almost parallel. The probability for both decreases as the level of democracy decreases. The curve for surrender points the opposite direction, increasing its probability in higher levels of democracy. In countries ranged from 5 to 10, surrender is the most probable outcome, all else being equal. In countries ranged between -10 to 5, concession is the most probable outcome. Only in the two most authoritarian types of regimes (-10 to -9), forced end are more probable than surrender.

Figure 4.5: Predicted probabilities of the effects of Polity IV
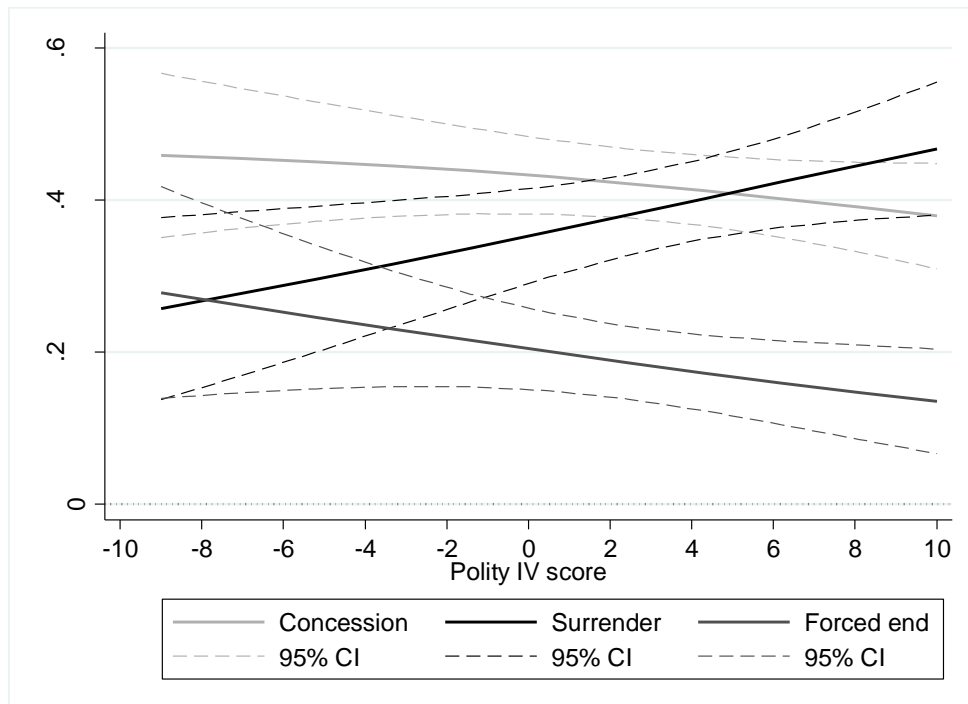
Hypothesis 7, which claims that a hunger strike is more likely to gain a concession in a country run by a coalition governments, is supported by this results. When size increases by one unit, the odds of concession relative to surrender are 2.3 times greater. The effect of coalition government on concession is only significant relative to surrender, but the chi^2-tests confirms that this is a significant effect that is valuable to the model.

Hypothesis 8, which claims that higher levels of democracy increases the likelihood of concession is rejected. The relationship between appears to be the opposite, where a higher level of democracy decreases the likelihood of concession.

Why do non-democracies tend to give more concessions then democracies? A part of the difference can be explained by the fact that protesters have much more to lose in non-democracies than in democracies, because of possible repercussions.

4.4.4   Learning process

Figure 4.6 shows the effect of hunger strike frequency. It shows that death is the only outcome that is significantly affected compared to the other outcomes. Surrender and concession show almost the same effect relative to death, while forced end is the most likely relative to death.

Figure 4.6: The effect of hunger strike frequency

Factor Change Scale Relative to Category Surrender
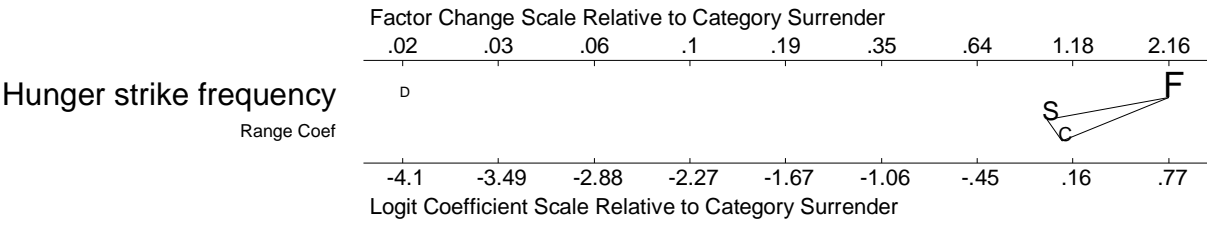
Logit Coefficient Scale Relative to Category Surrender

Table 4.14 lists the odds ratios of the effect of hunger strike frequency in pair of comparing outcomes. The coefficients of the pairs are very similar, confirming that relative to death, the effect if hunger strike frequency on the other three variables almost equal. The largest effect here is the effect on death relative to death where the odds are decreased by a factor of 0.255 which means that the odds are one fourth.

Table 4.14: Odds ratios of the effect of hunger strike frequency on pair of outcomes

Odds comparing Alternative 1 to Alternative 2	Coef.	P>z	e^b	e^bStdX
Concession – Death	1.175	0.010	3.239	2.802
Death – Concession	-1.175	0.010	0.309	0.357
Death – Forced end	-1.365	0.003	0.255	0.302
Death – Surrender	-1.149	0.008	0.317	0.365
Forced end – Death	1.365	0.003	3.917	3.311
Surrender – Death	1.149	0.008	3.156	2.739

Figure 4.7 shows the predicted probabilities of hunger strike frequency on outcome death. It shows that when a hunger strike takes place in a country with no prior experience of hunger strikes, all else equal, the probability of death is just over 0.02. The probability is halved at about the point where the country has experienced about 70 hunger strikes. The effect then gradually diminishes until it almost reaches the bottom at the experience of 350 hunger strikes. In sum this means that the impact of hunger strike frequency on death is substantial, but it only changes the probability within a very narrow range.

Figure 4.7: Predicted probabilities of hunger strike frequency
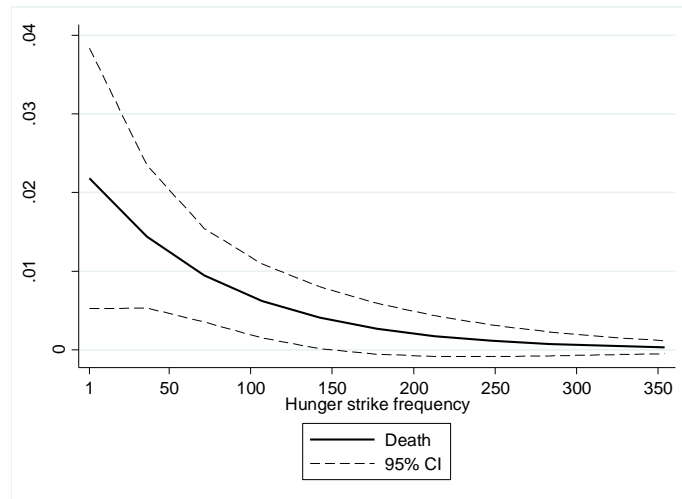
Hypothesis 9, which claims that the more hunger strikes a country has experiences the higher is the likelihood of the outcome being concession, is rejected. Its effect on concession is not significant relative to any other variables than death. Figure 4.6 shows that the position of concession is slightly to the right of surrender, but it's not significant.

Hypothesis 10, which claims that the experience of hunger strike decreases likelihood of death, is supported. But the effect does not mean a huge change in probabilities.

4.4.5   Evaluation of the hypothesis

To sum up the evaluation of the hypothesis, Table 4.15 lists the hypothesis, the actual effects and the evaluation. Out of the ten hypothesis, four are supported, one partly supported and five rejected. Out of the six hypothesis that concerns the outcome concession, only one is fully supported, while one are partly supported. The hypothesis concerning death is supported, while two out of three hypothesis concerning forced end are supported.

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Table 4.15: Evaluation of the hypothesis

Hypothesis	Result	Evaluation
H1: The longer a hunger strike lasts, the higher is the likelihood that the outcome is concession.	There is no effect of length on the outcome concession.	Hypothesis rejected
H2: The longer a hunger strike lasts, the higher is the likelihood that the outcome is forced end.	Length has the anticipated effect on the outcome forced end.	Hypothesis supported.
H3: The more participants that engage in a hunger strike, the higher is the likelihood that the outcome is concession.	There is not a significant effect of size on the outcome concession.	Hypothesis rejected.
H4: The more participants that engage in a hunger strike, the higher is the likelihood that the outcome is concession.	Size has the anticipated effect on the outcome forced end.	Hypothesis supported.
H5: When a hunger strike is carried out in more than one location, the likelihood that the outcome is forced end is higher.	There is no effect of multiple locations of the outcome concession.	Hypothesis rejected.
H6: The likelihood of the outcome being concession depend on the hunger strike's type of political motivation.	There is an effect, as anticipated. But only two categories have been tested.	Hypothesis partly supported.
H7: A hunger strike is more likely to gain a concession in a country run by a coalition government than in a country run by a non-coalition government.	Coalition governments has the anticipated effect on the outcome concession.	Hypothesis supported.
H8: A hunger strike is more likely to gain a concession in a country with a higher level of democracy.	The effect of level of democracy is the opposite of that anticipated.	Hypothesis rejected.
H9: The more hunger strikes a country has experienced, the higher is the likelihood of the outcome being concession.	There is no significant effect between experience and the outcome concession.	Hypothesis rejected.
H10: The more hunger strikes a country has experienced, the smaller is the likelihood of the outcome being death.	Experience has the anticipated effect on the outcome death.	Hypothesis supported.

4.5 Robustness and diagnostics

4.5.1 Different measures of size

As mentioned in Section 3.2.1, the hunger strike dataset includes three different measures of hunger strike size that have a substantial variation. In order to test whether these different measures of size have any impact on my model's fit, I've run separate regression models substituting the end-size with the other two measures. Figure 4.8 shows the predicted probability of the three different measures of size on each of the four outcomes.

Figure 4.8: Comparing three measures of size
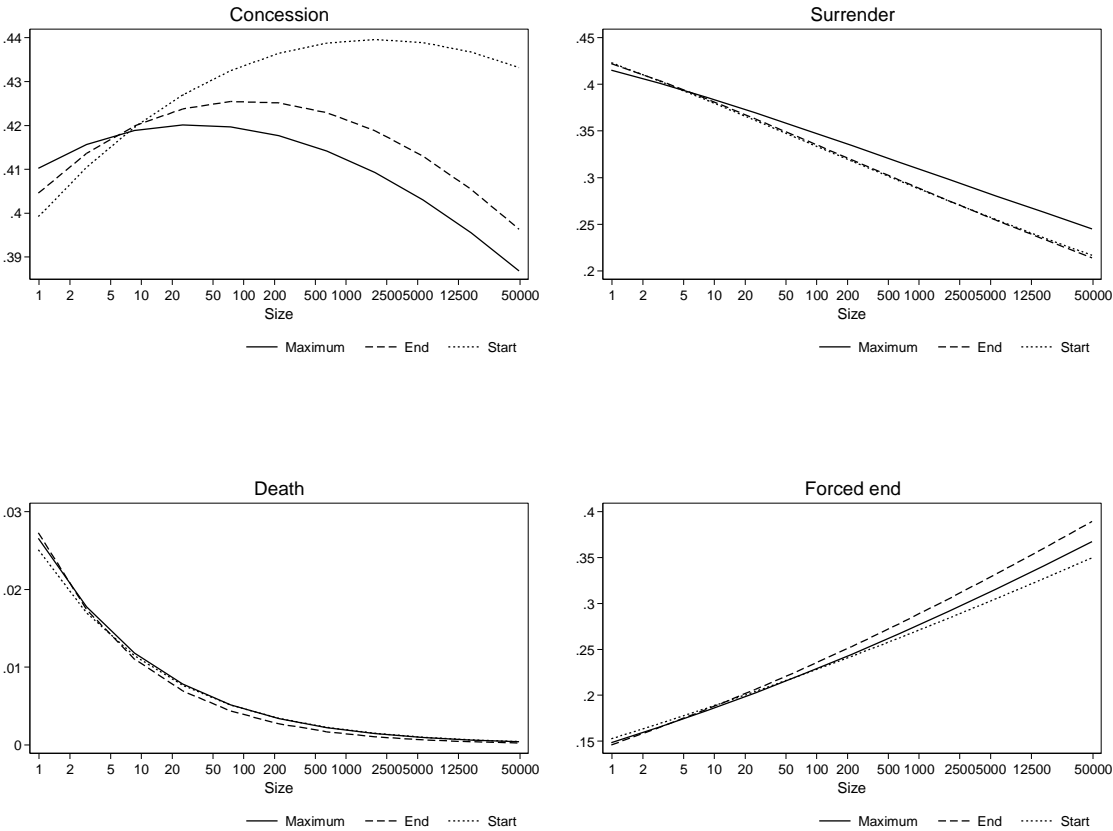
The curves of the outcome concession distinguishes themselves from the rest as being more scattered than the others. Concession is also the only outcome that size doesn't have a significant effect on. The effect of the other two measures of size does not have a significant effect on concession, although they give different curves. In sum, the different measures seem to have little impact on the model.

4.5.2 Measuring democracy

Here, I will test the robustness of the variable Polity2. I will re-run the full model (Model 7) with the ACLP/DD dummy variable instead of Polity2. First, I compare the fitted values of each variable across years in Figure 4.9. We see that although the two variables have different scales, their average democracy scores seems consistent in the time period between 1946 and 2004.

Figure 4.9: Fitted values for Polity2 and ACLP/DD
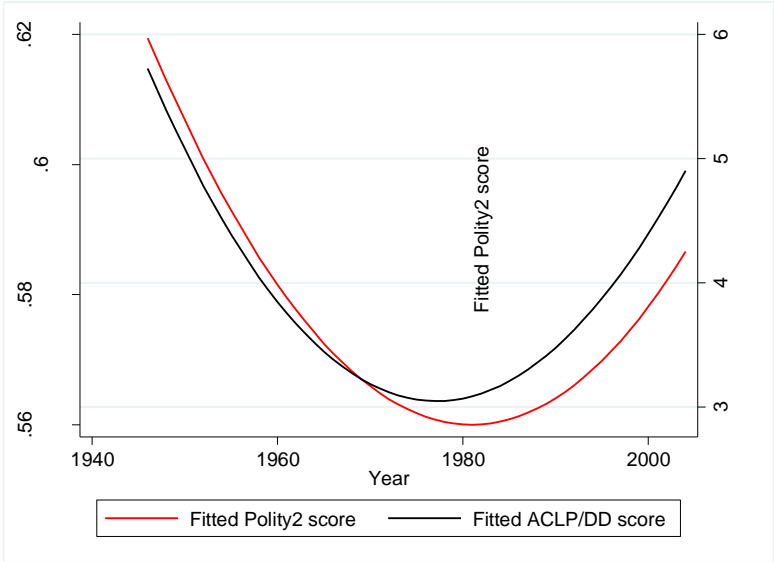
The LR tests with hypothesis that the two models are the same, run on all outcomes, are all rejected. This means the impact of ACLP/DD and Polity2 on the model is different. Since the scales of the two variables are different, this is predictable. The estimates of Model 8, which includes ACLP/DD are listed in Table 5 in Appendix D. The estimates shows that the effect of ACLP/DD is around ten times the effect of Polity2, which is consistent given their different scale. The other effects are not changed significantly, which indicates that the having used ACLP/DD instead of Polity2 would not have had any consequences for the results.

4.5.3 Inspecting the residuals

Diagnostics and assessment of fit and of the models is more difficult in multinomial logit models, because we are examining a fitted value for each outcome (Hosmer and Lemeshow, 2000: 280-281). Begg and Gray (1984) have suggested to solve this by running separate binary logistic models for each outcome and then generate residuals for each model. Coefficients obtained from separate binary regressions have proved to be fairly consistent with the coefficients of running them as one multinomial model (Hosmer and Lemeshow, 2000: 278). Residuals will give an impression of the model's ability to fit the different outcomes. Figure 1 in the Appendix C shows the residuals of separate binary regression

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models. The residuals of the observations are values between 0 and 1 where 0 is a perfect fit and 1 a complete misfit. Dispersion away from 0 means that the model does not manage to predict the outcome. It is evident from the figures that the model has a hard time managing to predict the outcomes death and forced end, while concession and surrender have a better fit.

4.5.4 Influential observations

There's several measures of extreme values in linear regression analysis. First, if an observation have large residuals, it means that the model is not able to explain its outcome and it is often called an outlier. Second, if an observation have a value on the independent variable that deviate notably from the mean, it has a high leverage on the model. Third, if the observation has both a large residual and a high leverage, it is an influential observation. If a single observation has a disproportional influence on the result, it is a potential problem, especially in small sample models (Midtbø, 2012: 117-118). Models can be tested for influential observations with the Stata program *Dbeta*. It detects influential observations by re-fitting the regression model with and without all observations. There's two competing rules on what constitutes an influential observation. The liberal rule of thumbs says values should be under 1, while the conservative and more flexible rule says the values should not exceed $2\sqrt{k/N}$, where k denotes number of independent variables and N denotes number of observations in the dataset (Baum, 2006: 128). With 7 independent variables and 285 observations the "cut-off" value will be 0.335.

For the binary regression with the outcome concession, no observations exceeds the cut-off value. The most influential observation reaches 0.3. A closer look reveals that this observation is a hunger strike that was motivated by "peace, war and conflict", carried out in a country with a coalition government and Polity2 score 10 (most democratic), that gained concession. The reason why this is influential is probably because the observations' combination of outcome and set of properties is uncommon. For the outcome surrender, no observations exceeds dbeta score of 0.21. For the outcome forced end, there is one observation with dbeta score of 0.354. This is a hunger strike with the motivation being "immigration and asylum" that ended in forced end. This observation probably also got a high dbeta score because its very uncommon in the dataset that a hunger strike with this motivation ends with forced end.

Concerning the outcome death, there's seven influential observations above the cut-off threshold, some of whom are extremely influential. The observations are plotted in Figure 2 in Appendix E. In this plot, the outcome of the observations are marked with 1 if they are deaths.

This shows that six out of seven influential observations are deaths. The most influential observation was a hunger striker that died after 12 days, which is uncommon under normal circumstances. In addition the hunger striker was motivated by peace, war and conflict, a motivation which is also uncommon. A closer look at the data confirms that the information about this observation is correct.

While it is never advisory to delete influential observations that are a natural part of the population, it can be useful to compare models with and without these observations in order to see how they affect the model (Midtbø, 2012: 119). Model 9 is run without the seven observations (estimates are found in Appendix D). The *dbeta* scores of the outcome death for Model 9 is found in Appendix E, Figure 3 (cut-off limit now set to 0.31). Here, we see that three new observations are influential. This implies that there's not enough observations with the outcome death to properly explain it. Removing observations will only reduce the amount of observations and not solve the underlying problem. To conclude, because of the low number of observations with the outcome death, there's some uncertainty to the results concerning death.

5 Conclusion and final remarks

This thesis started with the question: what determines hunger strikes outcomes? In this final chapter I will evaluate how well the question has been answered. First I will give a summary of my main findings. Then I will discuss potential theoretical and political implications. Finally, I briefly suggest how this question could be better answered in the future.

My aim in this thesis has been to analyze hunger strike as a tactic within the framework of social movements theory. The findings of this thesis can contribute to the prediction of where, when and how hunger strikes are most likely to reach their intended goals.

Using a dataset consisting of media-reported hunger strikes, I've demonstrated that a combination of hunger strike-specific- and political context factors can, to some extent, determine what I have identified as four distinct outcomes in hunger strikes. The unique dataset made by Scanlan et al. (2008) with a of total 1441 hunger strikes ranging between 1906 and 2004, has for the first time in this thesis been used to statistically test hypotheses regarding hunger strike outcomes. Having to deal with a lot of missing data, the dataset has been a challenge. In order to know specifically what I was measuring, the number of observations was reduced to 445. Furthermore, in order to use the variables size and length, the number of observations was reduced to 285.

This dataset is to my knowledge the only quantitative collection of hunger strikes that exists today. Prior to this thesis, no one has done a quantitative analysis on hunger strike outcomes. Therefore, a good theoretical foundation was important. Social movements theory contributed with some underlying assumptions on why protest may succeed or fail. Research on other related protest tactics was important in shaping the theoretical framework. But as hunger strikes differ from all other types of protest tactics, the existing literature proved somewhat insufficient. In the process of creating hypothesis, I've therefore also used descriptive statistics as cross-correlations, tables and plots in order to find trends and patterns that can enhance the understanding of how hunger strikes work. My hypotheses have therefore derived from a combination of clear patterns in the dataset and literature within studies of social movements, in addition to some historical descriptive literature on hunger strikes.

While studies on social movements and protest tactics have been oriented around the question of success, I have argued that in the study of hunger strikes, it gives more substance to talk about different outcomes. Building on sociological studies on hunger strikes, I've

identified four distinct outcomes that can be applied to all types of hunger strikes (concession, surrender, death and forced end).

Because no one has done a quantitative analysis of hunger strikes before, this analysis has to some extent been an exploratory analysis. At the same time, my statistical method – multinomial logit – already involves many parameters which limit the number of independent variables.

5.1.1 Summary of the main findings

The most important findings can be summarized in three main points: (1) coalition governments are more willing to give concessions than non-coalition governments, (2) a country's experience with hunger strikes reduces the likelihood of hunger strikers dying, (3) non-democracies are more willing to give concessions to hunger strikers than democracies.

Within the hunger strike specific factors, type of motivation, size and length proved to have an effect on the outcomes. Contrary to my hypothesis, length does not have an effect on the outcome concession. It was hypothesized that the more people hunger striking would increase the likelihood of gaining concession, but this effect was not statistically significant. My anticipation that carrying out a hunger strike in multiple locations has an effect on the likelihood of gaining concession proved to be wrong. Actually, the variable did not have an effect on any outcomes. Still, there's some uncertainty to whether this variable really measures what it was intended to.

Within the political context factors, level of democracy and whether the government is a party coalition both have an effect on hunger strike outcomes. Based on political opportunity structures, it was expected that coalition governments give more concessions to hunger strikers. The findings proved this hypothesize to be correct. The odds of the outcome being concession, relative to surrender, are 2.3 times greater when a coalition government runs the country.

Contradictory to the general assumption from political opportunity structures, non-democracies give more concessions to hunger strikers than democracies, all else being equal. As anticipated, non-democracies are also more willing to use force to stop the hunger striker. The reason why democracies are less willing to concede to hunger strikers is not fully explained in this thesis. A part of this difference can be explained by the fact that protesters have much more to lose in non-democracies because of potential repercussions, and that the threshold for starting a hunger strike consequently is higher.

The experience variable *hunger strike frequency* proved to be a significant factor in reducing the likelihood of deaths occurring, while insignificant with regards to concessions. This implies that a learning factor is present, and that states possible learn how to avoid death without giving more concessions or using more force than necessary. However, model diagnostics reveal that the models' inability to explain deaths, due to the small number of observations, results from several extremely influential observations on which the results depends. The findings concerning death should therefore be treated as uncertain

Six of my eleven hypotheses concern the outcome concession. Among them were only one fully supported and two partly supported. A possible reason for this is that this outcome is too broadly defined, also including concessions representing less what the hunger striker initially demanded.

5.1.2 Further research

Kitschelt (1986: 84) claims that: "Theories are fruitful only if they can be applied to cases beyond the ones they were first designed to explain". Hopefully, the findings in my thesis can also apply to cases not included in the analysis. However, as I mentioned, having to rely on a dataset with large amounts of missing data, is not promising when it comes to the ability to generalize.

Further research on hunger strikes should aim to get a better understanding of how factors such as experience of hunger strikes and the ability to learn from them affect outcomes. This will add an important dimension of time and space to the existing framework.

Following in the lines on the quantitative methods, a future research project should use the multilevel analysis in order to separate the effects of factors specific to the hunger strikes and specific to the political context. This will possibly give a much richer understanding of the dynamic relationship between these two levels.

This thesis has only scratched upon the surface of the tactic of hunger strikes. Additional research is needed in order to understand the dynamics of a protest tactic that is not likely to disappear anytime soon.

Appendix A

Table 1: Centered variance inflation factors (VIFs)

Variable	VIF	1/VIF
United States	7.56	0.132221
Hunger strike frequency	6.66	0.150166
Polity IV	1.65	0.605353
Coalition government	1.46	0.685301
Peace, war and conflict	1.43	0.698209
Size	1.40	0.713976
Length	1.36	0.734316
Multiple locations	1.29	0.776188
Incarcerated	1.24	0.803782
Immigration and asylum	1.10	0.910218

Table 2: Cross-correlations between independent variables (N=285)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Peace, war and conflict	1.0000									
(2) Immigration and asylum	-0.0575	1.0000								
(3) Polity2	0.2117	-0.1299	1.0000							
(4) Coalition government	-0.1179	0.0429	0.2827	1.0000						
(5) Hunger strike frequency	0.2498	-0.0487	0.4224	-0.2770	1.0000					
(6) Length	0.0152	0.1089	0.0116	0.0236	0.0145	1.0000				
(7) Size	-0.0942	-0.0214	0.0612	0.2028	-0.1214	-0.2660	1.0000			
(8) Multiple locations	-0.1204	-0.0117	0.0267	0.0686	-0.0686	0.1822	0.3517	1.0000		
(9) Incarcerated	-0.2084	-0.1567	-0.0130	-0.0421	0.0466	0.2811	-0.1685	0.1036	1.0000	
(10) United States	0.3978	-0.1098	0.4287	-0.2909	0.9061	-0.0807	-0.1105	-0.1142	0.0109	1.0000

Appendix B

Table 3: Hausman test (N=285)

Omitted	chi2	df	P>chi2	evidence
Concession	0.547	7	0.999	for Ho
Death	0.074	8	1.000	for Ho
Forced end	-0.434	13	---	---
Surrender	4.170	15	0.997	for Ho

H0: Odds(Outcome-J vs Outcome-K) are independent of other alternatives.

Table 4: Small-Hsiao test (N=288)

Omitted	lnL(full)	lnL(omit)	chi2	df	P>chi2	evidence
Concession	-120.044	-68.499	103.090	16	0.000	against Ho
Death	-164.411	-125.048	78.726	16	0.000	against Ho
Forced end	-131.352	-89.970	82.764	16	0.000	against Ho

H0: Odds(Outcome-J vs Outcome-K) are independent of other alternatives.

Appendix C

Figure 1: Residuals for all four outcomes
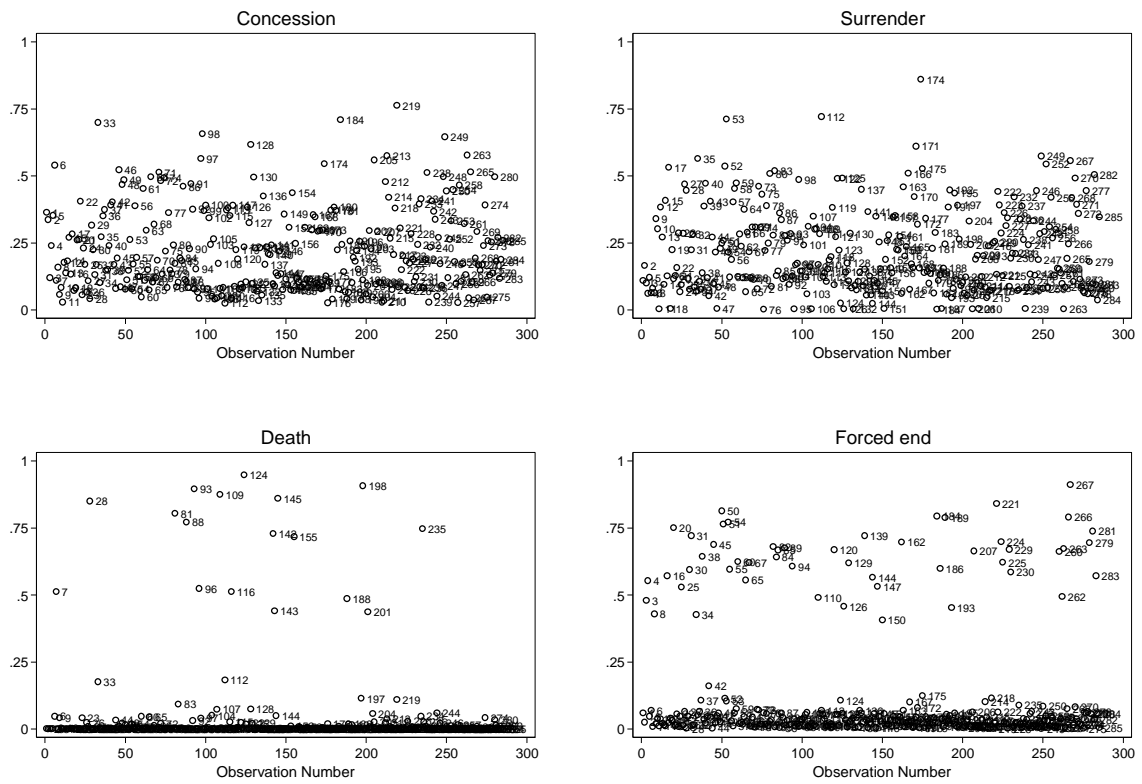
Appendix D

Table 5: Estimates from Model 8 (ACLP/DD)

OUTCOME	VARIABLES	Model 8 (ACLP/DD)		Model 9 (Ex. influent. obs.)	
		Coef.	*S.E.*	*Coef.*	*S.E.*
CONCESSION	Peace, war, and conflict	-0.77	(0.44)	-1.15***	(0.21)
	Immigration and asylum	2.34***	(0.36)	2.28***	(0.39)
	ACLP/DD	-0.51	(0.33)		
	Coalition government	0.82*	(0.37)	0.89**	(0.32)
	Hunger strike frequency	-0.0072	(0.13)	0.089	(0.10)
	log(Length)	0.015	(0.12)	0.00096	(0.12)
	log(Size)	0.060	(0.083)	0.069	(0.082)
	Polity2			-0.046*	(0.021)
	Constant	0.0084	(0.11)	-0.032	(0.10)
DEATH	Peace, war, and conflict	-0.20	(1.59)	-14.0***	(0.90)
	Immigration and asylum	-11.5***	(0.84)	-11.5***	(1.06)
	ACLP/DD	0.014	(0.60)		
	Coalition government	0.31	(0.74)	-1.16	(1.07)
	Hunger strike frequency	-1.00**	(0.36)	-0.84***	(0.24)
	log(Length)	0.96**	(0.33)	0.96***	(0.26)
	log(Size)	-0.36	(0.22)	-0.85	(0.51)
	Polity2			0.046	(0.041)
	Constant	-3.52***	(0.31)	-5.47***	(0.83)
FORCED END	Peace, war, and conflict	-1.20***	(0.22)	-1.14***	(0.21)
	Immigration and asylum	1.53**	(0.53)	1.44**	(0.56)
	ACLP/DD	-0.88	(0.55)		
	Coalition government	0.36	(0.54)	0.44	(0.49)
	Hunger strike frequency	0.16	(0.18)	0.25	(0.19)
	log(Length)	0.29	(0.15)	0.27	(0.15)
	log(Size)	0.15	(0.079)	0.16*	(0.079)
	Polity2			-0.073*	(0.036)
	Constant	-0.82***	(0.19)	-0.85***	(0.19)
	Observations	285		278	
	Log likelihood	-315		-294	
	Pseudo R-squared	0.084		0.096	

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05

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Appendix E

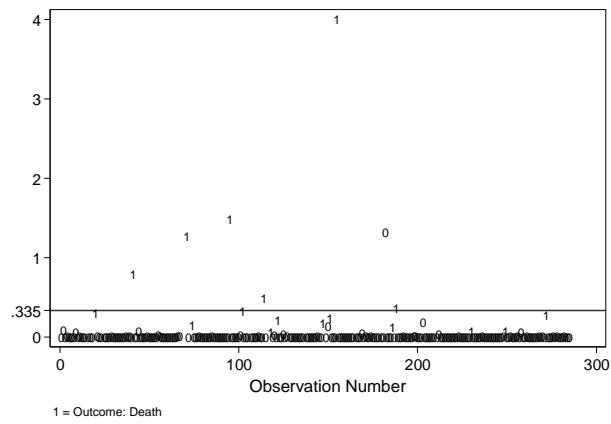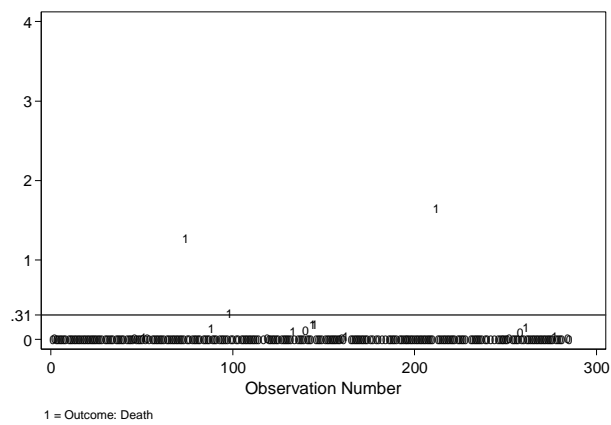Figure 2: *Dbeta* scores for outcome *death* (Model 7)

1 = Outcome: Death

Figure 3: *Dbeta* scores for outcome *death* (Model 9)

1 = Outcome: Death

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