Social Reform as a Path to Political Leadership: A Dynamic Model*

Manaswini Bhalla† Kalyan Chatterjee‡ Souvik Dutta§¶

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Abstract

A potential political leader, aiming to replace a repressive regime, wishes to establish her credibility with citizens whose participation in her movement affects its success. If her perceived ability is in an intermediate range of values, her optimal strategy is to masquerade as a no threat before announcing a movement directly against the regime. In this range, for low costs of repression, the regime finds it optimal to exert force even against a movement that has purely non-political objectives. Interestingly, this range, where the regime exerts force against a non-political movement, diminishes with the leader's likelihood of being political.

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†Economics and Social Sciences Area, Indian Institute of Management Bangalore (manaswinib@iimb.ac.in)

‡Department of Economics, The Pennsylvania State University (kchatterjee@psu.edu)

§Economics and Social Sciences Area, Indian Institute of Management Bangalore (souvik@iimb.ac.in); Ph:+91-80-26993447

¶Corresponding author

1 Introduction

This paper formulates and analyses a model of political leadership, specifically the leadership of a political movement. We have in mind various movements, red and other colors, of the twentieth century but also civil disobedience and opposition to democratic regimes that spills out from the halls of parliament to the streets. We focus on one particular aspect/question of these revolutions, namely how does a leader mobilize followers for a movement against the present regime? We also look at how the present regime, which is strategic, reacts to the leader's announced movement when her intentions are unknown. A leader who is not in power cannot coerce the population into obedience; she can only exhort people to join her and individuals will do so based on their belief about her ability to deliver an outcome that is beneficial for them. Successful political action is, of course, one way of generating this belief. But, in environments where political action is met with a strong reaction, perhaps force, a would-be leader would be unwise to attempt such action without already having a strong reputation.

We model the process by which such a reputation might be constructed. There are several different instances that share this common theme. Lech Walesa in Poland, for example, came into prominence as a union leader who successfully organized a strike at Lenin Shipyard in Gdańsk. From a completely different environment, the unknown Herbert Hoover became the second-most famous man in the USA by successfully running the US Food Administration and later a European relief effort, neither of which had any political content. He was able to leverage this fame to become the President of the United States. Our main motivation for the model here was the success in India of Arvind Kejriwal. Kejriwal had been part of an anti-corruption movement in 2012-13. Like other such figures, Kejriwal was perhaps considered to be selflessly participating in a non-political movement without ambitions of obtaining power-he thereby avoided any focused criticism from the government. However, later he formed a political party and was elected in his state by a massive landslide victory.

Finally, there is Gandhi himself. When he arrived in India in 1915, he had already been the leader of a movement in South Africa but this, though known to other leaders, was not common knowledge among the masses. He began his political journey in India by small-scale social movements, without any overt threat to British rule, first in Champaran against (mainly British) indigo planters and in Ahmedabad against mill owners. When the successful prosecution of these movements made him well-known, he launched the non-cooperation movement in 1921, which might well have ended British rule if he had not called it off himself. Gandhi's ascension to leadership of a mass movement is perhaps surprising because he was not a rousing speaker. As the American journalist, Edward R. Murrow, said during his funeral, he boasted no scientific achievement nor artistic gifts and he was not the ruler of vast lands, but his mass following was evident.[1]

What we take away from these examples is that often the first step some leaders have taken in building a reputation is to undertake some non-political activity which does not threaten the existence of the current regime and be successful at it, to demonstrate the ability to plan and execute complex public tasks, as in Hoover's case. For Gandhi, Walesa and Kejriwal, it was both the perception of selflessness in exposing oneself to some risk without any immediate prospect of reward, as well as the fact that the task undertaken was completed successfully.[2] As far as the ultimate intention of leaders like Gandhi and Walesa is concerned, there is no evidence one way or the other. But we know that both of them were opposed to the regimes in the country. In our paper, we assume that the non-political activity helps build reputation about the leader's ability to accomplish tasks.

There are two main strategic players in our model, the leader and the regime, which we shall label the government. The leader, Player L, is characterised by two probabilities, α, the likelihood of high ability, and β, the chance that the ultimate objective of the leader is non-political. The ability and objective is not observable to the populace and the government. However, the objective of the leader is privately known to herself. To begin with, we assume that the leader does not know her own ability but this assumption is later relaxed. There are also individual citizens who constitute the masses. Each individual has a (possibly negative) cost of participating in a movement and decides whether or not to do so based on a myopic (single-period) analysis of his or her payoff and the probability of success.

There are two periods in the model. In each period, first the political leader L chooses either a movement against the government, which we call a revolution, or a social movement which leaves the government intact.[3] The non-political leader always chooses a social movement.[4] The government G then chooses whether to expend force to suppress the movement (at a cost) or not. The government's choice of exerting force must anticipate not only the leader's ability but her perceived objective. Each choice is observed by

[1]The actual quote is: ".....(He) had always lived - a private man without wealth, without property, without official title or office. Mahatma Gandhi was not a commander of great armies nor ruler of vast lands. He could boast no scientific achievements or artistic gift. Yet men, governments and dignitaries from all over the world have joined hands today to pay homage to this little brown man in the loin cloth who led his country to freedom."

[2]To cast the net further back in time, consider the different attributes of two of the leaders of the French Revolution, Danton and Robespierre. Danton from all accounts, was not averse to enriching himself, but seemed to be able to get things done, even allegedly bribing the Duke of Brunswick to stop the invasion of France. Robespierre was known as the incorruptible and lived as a tenant in a house owned by a carpenter follower. So both ability and selflessness could lead to a public following.

[3]A social movement does not imply "inaction" on the part of the leader. On the contrary it is a non-political movement for a social cause that allows a leader to showcase her ability.

[4]As implied by the examples, this could be because such a leader is selfless and purely motivated by society's welfare.

all players. Following the moves of L and G, the citizens (or the masses) decide whether to participate in the movement or not. Each citizen decides independently whether or not to take part in the announced movement, given his private cost, the cost of fending off government suppression, and the probability that the movement will be successful. Thus, for the same individual costs, a higher perception of the leader's ability increases the level of participation. There are two possible outcomes in each period-success or failure of an announced movement. The probability of success depends on the ability of the leader and citizen participation which in turn depends on the values of α, β and the level of government force. If the social movement actually succeeds, the value of α goes up, thus making success of subsequent movements more likely. We assume that revolution in the first period ends the game irrespective of the outcome. In the current two-period model, the political leader will always choose a revolution in the second period. The question is what does she choose in the first period.

We look in this paper for (pure-strategy) perfect Bayes equilibria of a threshold type. We show that for extreme beliefs about her ability, the leader with political intentions does not experiment and opposes the government immediately. However, she follows a path of gradualism for intermediate beliefs about her ability. She announces social movement in the first period and then conducts a revolution in the second period. We also find that as belief about the leader being non-political increases, the political leader benefits from masquerading as a non-political kind and hence the range where the political leader announces a social movement in the first period increases.

There are tradeoffs associated with the choice of conducting a social movement by the political leader in the first period. Since the non-political leader is always of high ability, the political leader finds it optimal to mimic the non-political type and conduct a social movement. Citizens are more likely to join a social movement in the first period, increasing its chances of being successful. The benefit of a successful social movement is increased belief about the leader's ability and the likelihood of a successful revolution in the second period. However, there are costs of conducting a social movement. First, overthrowing the government is delayed, delaying the benefits associated with it. Next, failure of a social movement lowers the belief about the leader's ability. There is also a possibility of the leader facing government repression on conducting a revolution, if updated second period belief is high enough. Lowered belief about ability and government repression reduces citizen participation and hence lowers the likelihood of a successful revolution. We find that the net benefit of conducting a social movement is non-monotonic in α and hence the leader announces a social movement only for intermediate beliefs about her ability.

The interesting results concern the government's actions. Though a social movement leaves the government intact, it might still choose to suppress such movements if the cost of exerting force is not too high. As mentioned before, if the government chooses to expend force in suppression, this leads fewer people to participate and therefore reduces the probability of success of a social movement. Failure of a social movement leads α to go down and hence lowers the chance of a successful revolution in the second period. More interestingly, the government exerts force for a larger range of belief about ability of the political leader upon observing a social movement in the first period as the belief about the leader being political decreases. This is because the government anticipates that the leader with political ambition is more likely to masquerade as a non-political leader. Without stretching our model's credibility too much, this might be one of the reasons why, for example, the Chinese government reacts so disproportionately to Falun Gong or why environmental NGOs are treated in many countries as equivalent to political enemies.

The leader who does not know his own ability is reminiscent of the similarly uninformed agent in Holmström (1999). In Holmstrom, this creates an incentive for the agent to garble the signal of her ability by undertaking high effort. In our model, the government can make the signal of ability by the leader less informative by exerting force. It is only concerned with increasing the probability of failure of the movement (and hence decreasing the probability of success) and not with the fact that the posterior probability of high ability given a failure is higher with force being exerted.

The rest of the paper is organized as follows. Related literature is discussed in Section 2 and Section 3 outlines the model. Section 4 characterizes the equilibrium. Section 5 analyses where the leader knows her own ability and we show the results remain robust. Section 6 concludes.

2 Related Literature

Researchers in the field of management (see Yukl (1989),Elkins and Keller (2003),Turner and Müller (2005) for more details) have studied different aspects of leadership. It is only recent that economists have started focusing on the question of leadership. Much of the previous literature on leadership in management and economics has focused on corporate or business leadership. This literature analyses the scenario where a leader (typically a chief executive) gives orders with a reasonable expectation that they will be obeyed.[5] We differ from this strand of literature as we model a political leader that can only exhort, not order, and individual citizens, each with his or her own preferences, have to decide whether to follow, often at some risk to their own well-being.

[5]There is also an undeveloped area on leadership of academic or research institutions, which don't work in this way, though not for want of trying.

Hermalin (1998), a pioneering paper in the field of economics of leadership looks at the problem of a (corporate) leader that wants to maximize effort of its sub-ordinates. They find that when the leader has private information about the state of the world that determines return, the optimal way to elicit maximum effort of its subordinates is to lead by example when agents are self interested. This has also been shown to hold in a voluntary contribution games in an experimental setting by Potters et al. (2007). Hermalin (2007) extends the static framework to a repeated game framework and shows that it is possible for the leader to develop a reputation of honesty (i.e., announce the actual state of the world) if she is patient enough. They show that greater is the ex-ante uncertainty over the state, the larger is the range of discount factors for which such an honest equilibrium can be supported. In both these papers, Hermalin assumes that participation by team members is voluntary even when a leader in an organizational setting may have some degree of formal authority. Our paper deviates from an organizational framework to a political setting where a leader does not have any such authority (formal or informal) over the followers.

Majumdar and Mukand (2008) extend Hermalin's analysis to political leadership where the leader wants to bring about a change. The leader's ability and hence success in a movement is identified by two dimensions, her ability to correctly identify circumstances when change is possible and her skill at effectively communicating this to the citizens. Majumdar and Mukand shows that when the leader's ability is perfectly known, there is a threshold level of ability below which the probability of change is zero while this is positive above the threshold. However, when there is heterogeneity in beliefs about the ability of the leader, this threshold for effective leadership depends solely upon citizens' perception about the leader's ability. They show that even if a leader is of high ability, she might still be unsuccessful in a movement if the citizens do not perceive her to be of high ability. Our paper shares a common feature with Majumdar and Mukand where the probability of success in a movement is dependent on citizen participation. Majumdar and Mukand are silent on how a leader can build a reputation or perception about her ability among the citizens when they have low priors about her ability. Our paper contributes to the literature in explaining how a political leader can build perceptions about her ability by undertaking some non-political activity. Another major difference of our paper from Majumdar and Mukand is that they abstract away from strategic reaction of the government which is very crucial in political contexts.

Another important problem in the context of revolutions is the coordination problem faced by the leader.[6] We focus instead on a different aspect- the reputation of the leader. There has also been work on leadership, particularly in the context of organizations

[6]For more details see Bolton et al. (2012), Landa and Tyson (2017), Dewan and Myatt (2008) and Edmond (2013).

which focusses on certain key personality traits of being a successful leader[7]. Dewan and Squintani (2018) show that good leadership depends on the judgement of her "trustworthy associates". This network of associates emerge endogenously in their model. In our paper we do not focus on any such personality traits of a leader, but she has a differential ability to execute a movement, closer to the notion used in Majumdar and Mukand (2008).

Shadmehr and Boleslavsky (2015), though not in the context of leadership, show that citizens can participate in a protest following government repression on a group of activists. In our paper, upon observing a social movement, the government exerts force when it is not very costly for it to do so. However there can be instances when repression against social movements can lead to a backlash from citizens against the government. This can lead to increased citizen participation and wide-spread protests. In our model we do not allow for such cascading effects.

3 Model

There are three types of agents - leader (L), government (G) and a unit mass of citizens (C). The leader does not belong to the government but can overthrow the government by garnering sufficient support from the citizens. The leader has two characteristics - ability to execute a movement, θ and an objective to conduct a movement, ζ. The leader's objective to conduct a movement can either be political (P) or non-political (NP), i.e., $\zeta \in \{P, NP\}$. Only a leader with a political objective wants to overthrow the government presently in power. The leader's objective, ζ is privately known to the leader but unknown to others. Let $Pr(\zeta = NP) = \beta_1$ be the common initial prior that the leader is non-political.

The leader's ability to execute a movement can either be high, θ_H or low, θ_L, i.e. $\theta \in \{\theta_H, \theta_L\}$ and $0 < \theta_L < \theta_H < 1$. The actual ability of the leader is not known either to the government or to the citizens. To begin with we assume that the leader is inexperienced, i.e. she does not know her own ability.[8] The objective (ζ) and ability (θ) of the leader are drawn independently. Let $Pr(\theta = \theta_H) = \alpha_1$ be the common initial prior that the political leader is of high type. We denote the type of the leader by $\tau = \theta \times \zeta \in \mathbb{T}$, where $\mathbb{T} = \{\theta_H, \theta_L\} \times \{P, NP\}$. We assume that the non-political leader is only of the high type.[9]

We consider a two-period model. At the beginning of each period, $t \in \{1, 2\}$ the leader

[7]For more details see Rotemberg and Saloner (1993), Hermalin (2014).

[8]In Section 5 we solve the game when leader knows her own ability and show the results are robust.

[9]We can potentially allow the non-political leader to have two abilities -low and high. Since we are primarily interested in the strategy of a political leader, in our model any updating about ability is solely for the political leader. This makes calculations easier.

of type, τ, chooses the nature of movement that she conducts, a_t. The movement can either be a revolution, R or a social movement, sm, i.e., $a_t \in \{R, sm\}$. Only a successful revolution overthrows the government in power. Upon hearing the leader's announcement in period t, the government and citizens update their belief about the leader's objective. The prior on the objective of the leader is updated to $\hat{\beta}_t$.[10] Next, the government announces the level of force, g_t with which it combats the leader's announced movement, $g_t \in \{0, W\}$ where W is the per period rent enjoyed by the government by being in power.[11] After observing nature of the movement, a_t and government's force, g_t, each citizen decides either to participate, p or not participate, np in the announced movement. Let the proportion of citizens who choose to participate in the movement at period t be $m_t(g_t)$.[12] Following citizen participation, nature determines the outcome of the movement, γ_t. The outcome of the movement can be a success, (S) or a failure, (F) i.e. $\gamma_t \in \{S, F\}$. The probability of success of a movement announced at t, depends upon the ability of the leader, θ and the proportion of citizens that participate in the movement, $m_t(g_t)$, i.e. $Pr(\gamma_t = S) = \theta m_t(g_t)$. The success or failure of the movement is common knowledge at the end of each period.

Upon revelation of γ_t, the common prior about the ability of the political leader is updated to $\hat{\alpha}_t$. If a leader announces a revolution in period 1, she does not get a chance to conduct any movement in the subsequent period. If a revolution is announced in period 1, government decides to exert force, citizens decide to participate in the movement, the outcome of the movement is revealed and the game ends. However, a leader that announces a social movement in period 1 can announce a movement (of either kind) in the second period.

Let $h_t = (a_{t-1}, g_{t-1}, m_{t-1}, \gamma_{t-1}, \alpha_t, \beta_t)$ be the public history at the beginning of time period t with the initial history $h_1 = (\alpha_1, \beta_1)$. Let $\mathbb{H}_t$ be the set of all possible histories at the beginning of time period t. Let $\beta_{t+1} = \hat{\beta}_t$ and $\alpha_{t+1} = \hat{\alpha}_t$ be the updated belief about the leader's objective and leader's ability at the beginning of period $t+1$ respectively.

We now describe the strategies and payoffs of agents in the model. Ex-ante per period utility of a leader at time period t depends upon her objective ζ, the nature of the movement announced, a_t, and success of the movement, γ_t. The ex-ante per period utility of a leader with political objective, $\zeta = P$ at time period t is given as follows:[13]

[10] Nature of movement announced by the leader does not reveal anything about the ability of the leader, θ. The prior about the ability of the leader changes only upon the success or failure of the movement, as described later.

[11] We assume that W is also the maximum amount that the government is willing to expend to repress a movement. This however is not necessary for our results but assumed for notational simplicity.

[12] $m_t(g_t)$ depends on everything that are known to have happened in the game prior to the choice that citizens make of participating. For notational convenience, we sometimes suppress this dependence.

[13] In the event of a successful revolution, a political leader may enjoy additional payoff, $(\Delta > 0)$ over and above that is received by the citizens. Our model can easily incorporate this without changing any

$$U_t^P(a_t, \gamma_t) = \begin{cases} 0 & \text{if } a_t = sm \text{ and } \gamma_t = S/F, \\ 0 & \text{if } a_t = R \text{ and } \gamma_t = F, \\ W & \text{if } a_t = R \text{ and } \gamma_t = S. \end{cases}$$

The ex-ante per period utility of a leader with non-political objective, $\zeta = NP$ at time period t is given as follows:

$$U_t^{NP}(a_t, \gamma_t) = \begin{cases} W & \text{if } a_t = sm \text{ and } \gamma_t = S, \\ 0 & \text{if } a_t = sm \text{ and } \gamma_t = F, \\ 0 & \text{if } a_t = R \text{ and } \gamma_t = S/F. \end{cases}$$

A leader that has a political objective, $\zeta = P$ derives a positive payoff of W only from a successful revolution and receives zero payoff from a social movement irrespective of its outcome. W is the rent that the political leader obtains from assuming office by overthrowing the current government. However, a leader that has non-political objective, $\zeta = NP$ is assumed to derive a positive payoff of W only from a successful social movement. We can easily assume that successful social movement provides a different payoff than W without changing the nature of the results.

The utility derived by the leader is independent of her ability. The cost of implementing a movement for the leader is assumed to be zero irrespective of the type of the movement and ability of the leader.[14] A strategy of the leader of type $\zeta \in \{P, NP\}$ at time period $t \in \{1, 2\}$ is a function $\sigma_t^\zeta : \mathbb{H}_t \to [0, 1]$ that maps every history, $h_t \in \mathbb{H}_t$ to a probability that the leader would announce a social movement, $a_t = sm$ at time period t.

Ex-ante per period utility of the government at time period t depends upon the nature of the movement announced, a_t, extent of force announced, g_t, and success of the movement, γ_t. The ex-ante per period utility of the government, that exerts a force, g_t at time period t is given as follows:

$$U_t^G(a_t, g_t, \gamma_t) = \begin{cases} W - cg_t & \text{if } a_t = sm \text{ and } \gamma_t = S/F \\ W - cg_t & \text{if } a_t = R \text{ and } \gamma_t = F \\ -cg_t & \text{if } a_t = R \text{ and } \gamma_t = S. \end{cases}$$

We assume that only a successful revolution can overthrow the government. W is the rent enjoyed by the government from being in power. The government incurs a cost, cg_t for implementing force g_t, where $c \in [0, 1]$ and $g_t \in \{0, W\}$. A strategy of the government at

results.

[14]There is a discussion about non-zero costs of the leader in the conclusion

time period t is a function $G_t : \mathbb{H}_t \times \{R, sm\} \rightarrow [0, 1]$ that maps every history, $h_t \in \mathbb{H}_t$ and announcement of the political leader, $a_t \in \{R, sm\}$, to a probability that the government will use force $g_t = W$ at time period t. The leader and the government, discount the future with the same discount factor, $\delta \in (0, 1)$.

We assume that citizens are myopic and each citizen bears a private cost of participating in any movement where, $e_i \sim U[-e_L, e_H]$. We allow the private cost of participation to be negative, implying a positive payoff to the citizen from participation in the movement, irrespective of its outcome. Citizens also bear a common cost equal to the force implemented by the government, g_t. Thus, the total cost of participating in a movement for an individual citizen i is $c_i = e_i + g_t$.

Ex-ante per period utility of the citizen depends upon the success of a movement, γ_t irrespective of the nature of announced movement, a_t.[15] An individual citizen $i's$ per period payoff conditional on participation in a movement is given as follows:

$$U_{it}^C(a_t, \gamma_t) = \begin{cases} W - c_i & \text{if } a_t = R/sm \text{ and } \gamma_t = S \\ -c_i & \text{otherwise.} \end{cases}$$

We assume that citizens derive positive utility W from any successful movement conditional on participating in a movement and zero otherwise.[16] A strategy of a citizen of type $e_i \in [-e_L, e_H]$ at time period t depends upon nature of movement, $a_t \in \{R, sm\}$ and government force, $g_t \in \{0, W\}$. Thus, the strategy of a citizen is a function $\Omega_t : \mathbb{H}_t \times \{R, sm\} \times \{0, W\} \times [-e_L, e_H] \rightarrow \{0, 1\}$ that maps for every citizen of type e_i and every history $h_t \in \mathbb{H}_t$, announcement by the leader, a_t, and government force, g_t a probability that the citizen will participate in the movement. Citizens decide to participate in a movement at time period t if their per period payoff is greater than the cost of doing so. We assume $e_L > W$ and $e_H > \theta_H W$ which ensures that for any type of movement and for any level of government force at every period, there is a non-degenerate fraction of citizen participation.

We now discuss the updating rule about the objective and ability of the leader, i.e., $\hat{\beta}_t$ and $\hat{\alpha}_t$ respectively. Announcement of the nature of the movement, a_t by the leader at time period t reveals private information about her objective. It does not provide any information about the ability of the leader to execute a movement. The updated belief about the objective of the leader is as follows:

[15] The payoffs from successful revolution and social movement can ideally be different but for simplicity we have taken it to be the same. The results are unaltered if this assumption is relaxed.

[16] We assume that there is no free riding for the citizens. However, benefits of a revolution involving a regime change is generally non-excludable. We can normalize the benefit from a successful revolution to be zero and W can be interpreted as the additional benefit that participating citizens receive because the leader by assuming office can reward them with additional benefits like job security, access to different subsidy programmes etc.

$$\hat{\beta}_t(h_t, a_t) = Pr(\zeta = NP|h_t, a_t) = \begin{cases} \frac{\sigma_t^{NP}\beta_t}{\sigma_t^{NP}\beta_t + \sigma_t^P(1-\beta_t)} & \text{if } a_t = sm \\ \frac{(1-\sigma_t^{NP})\beta_t}{(1-\sigma_t^{NP})\beta_t + (1-\sigma_t^P)(1-\beta_t)} & \text{if } a_t = R. \end{cases}$$

A leader with a non-political objective will always announce a social movement in equlibrium in both periods, i.e. $\sigma_t^{NP} = 1$. A leader with a political objective will always announce a revolution in the second period, i.e. $\sigma_2^P = 0$. Thus,

$$\hat{\beta}_2(h_2, a_2 = sm) = 1$$

and

$$\hat{\beta}_t(h_t, a_t = R) = 0 \quad \forall t \in \{1, 2\}$$

The leader that announces a social movement in the first period in equilibrium, could either be political or non-political. Thus, the updated prior about the leader's objective upon conducting a social movement does not change i.e., $\hat{\beta}_1(h_1, a_1 = sm) = \beta_1$.

At the end of every period, the common prior about the ability of the political leader is updated after observing the nature of movement, a_t and its success or failure γ_t, which in turn depends upon the government's force, g_t and citizen participation, m_t. Thus, the updated prior about the ability of the political leader is given as:

$$\begin{aligned} \hat{\alpha_t}(\alpha_t, g_t, \gamma_t) &= Pr(\theta = \theta_H|h_t, a_t, g_t, m_t, \gamma_t) \\ &= \frac{Pr(\gamma_t|\theta = \theta_H, a_t, m_t, g_t)Pr(\theta = \theta_H)}{Pr(\gamma_t|\theta = \theta_H, a_t, m_t, g_t)Pr(\theta = \theta_H) + Pr(\gamma_t|\theta = \theta_L, a_t, m_t, g_t)Pr(\theta = \theta_L)} \end{aligned}$$

Let $\alpha_2^S(\alpha_1, g_1) = \hat{\alpha_t}(\alpha_1, g_1, \gamma_1 = S)$ be defined as the updated belief about the ability of the leader at the beginning of the second period if the social movement in the first period was successful.

$$\alpha_2^S(\alpha_1, g_1) = \frac{\theta_H\alpha_1 m_1(g_1)}{\theta_H\alpha_1 m_1(g_1) + \theta_L(1-\alpha_1)m_1(g_1)} = \frac{\theta_H\alpha_1}{\theta_H\alpha_1 + \theta_L(1-\alpha_1)}$$

It is interesting to note that $\alpha_2^S(\alpha_1, g_1)$ is independent of the level of citizen participation and government force. Let $\alpha_2^F(\alpha_1, g_1) = \hat{\alpha_t}(\alpha_1, g_1, \gamma_1 = F)$ be defined as the updated belief about the ability of the leader at the beginning of the second period if the social movement in the first period was a failure.

$$\alpha_2^F(\alpha_1, g_1) = \frac{\alpha_1[1 - \theta_H m_1(g_1)]}{\alpha_1[1 - \theta_H m_1(g_1)] + (1-\alpha_1)[1 - \theta_L m_1(g_1)]}$$

In the section below, we solve for pure strategy Perfect Bayesian Equilibrium (PBE) of this game.

4 Analysis

We first consider the decision of a citizen i to partcipate in a movement, a_t announced by the leader at time period t. The expected payoff of each citizen of type, e_i from participating in a movement, a_t given that government puts in force g_t is:

$$Pr[\gamma_t = S \mid h_t, a_t, g_t, \hat{\beta}_t]W - c_i$$

where $c_i = e_i + g_t$ is the cost of participation in a movement. Notice that the expected payoff is a function of the updated belief about the leader's objective, $\hat{\beta}_t$ post announcement of the movement. The probability of success of movement a_t, given government force, g_t depends upon the leader's ability and citizens' participation. With $\hat{\beta}_t$ probability, a leader has a non-political objective and is of ability θ_H. The leader has political objective with $(1-\hat{\beta}_t)$ probability and has high ability, $\theta_H(\theta_L)$ with $\alpha_t(1-\alpha_t)$ likelihood. Thus, the probability of success of a movement a_t is:[17]

$$Pr[\gamma_t = S \mid h_t, a_t, g_t, \hat{\beta}_t] \quad = \quad [\hat{\beta}_t\theta_H + (1-\hat{\beta}_t)(\alpha_t\theta_H + (1-\alpha_t)\theta_L)]m_t(h_t, a_t, g_t, \hat{\beta}_t)$$

where $m_t(h_t, a_t, g_t, \hat{\beta}_t)$ is the proportion of citizens that participate in the announced movement, a_t given government exerts force, g_t.

A citizen of type i will partcipate only if

$$Pr[\gamma_t = S \mid h_t, a_t, g_t, \hat{\beta}_t]W - c_i \geq 0$$

Therefore, the proportion of citizens that participate in a movement, a_t, given that the government announces force g_t, at any period t is given by:

$$m_t(g_t, \alpha_t, \hat{\beta}_t) = \frac{e_L - g_t}{(e_H + e_L) - [(1-\hat{\beta}_t)(1-\alpha_t)\theta_L + [(1-\hat{\beta}_t)\alpha_t + \hat{\beta}_t]\theta_H]W} \tag{1}$$

Citizen participation in period t decreases as government increases its level of force,

[17] The probability of success of movement, a_t given government's force, g_t is:

$$\begin{aligned} Pr[\gamma_t = S \mid h_t, a_t, g_t, \hat{\beta}_t] &= \sum_{\theta\in\{\theta_H,\theta_L\}} \sum_{\zeta\in\{P,NP\}} [Pr(\zeta \mid h_t, a_t)Pr(\theta \mid h_t, a_t, \zeta_t)Pr(\gamma_t = S \mid \theta, h_t, a_t, g_t)] \\ &= [(1-\hat{\beta}_t)(1-\alpha_t)\theta_L + [(1-\hat{\beta}_t)\alpha_t + \hat{\beta}_t]\theta_H]m_t(h_t, a_t, g_t, \hat{\beta}_t) \end{aligned}$$

i.e.

$$m_t(g_t = 0, \alpha_t, \hat{\beta}_t) > m_t(g_t = W, \alpha_t, \hat{\beta}_t)$$

As government puts more effort, total cost of participating in a movement increases for an individual citizen thus decreasing total citizen participation. Citizen participation increases as belief about the political leader's ability increases, i.e., m_t increases with α_t for any given $\hat{\beta}_t$. This is because the chances of a successful movement increases with increase in belief about the leader's ability. Citizen participation also increases with the increase in likelihood of a non-political leader, $\hat{\beta}_t$. As likelihood of a non-political leader increases, the expected ability of the leader improves, thus increasing citizen participation.

4.1 Second Period

In this section we solve for the last period problem of the game. Given the payoffs and the structure of the game, a non-political leader always announces a social movement in both periods, i.e., $\sigma_t^{NP} = 1, \forall t \in \{1, 2\}$. Similarly, a political leader always announces a revolution in the second period, i.e., $\sigma_2^P = 0$.

Consider the problem of the government in the second period. The government observes nature of the movement announced by the leader at the beginnning of the second period, a_2 and updates its belief about the leader's objective, $\hat{\beta}_2$. Upon observing a social movement in the second period, the government believes that the leader is non-political, i.e. $\hat{\beta}_2 = 1$. Since, the government is not overthrown by a social movement and its payoffs remain the same irrespective of the success of a social movement, the government's optimal strategy in the last period upon observing a social movement is to exert no force. i.e.

$$G_2(h_2, a_2 = sm) = 0, \forall h_2 \in \mathbb{H}_2$$

However, optimal strategy of the government against a revolution in the second period depends upon the updated prior about political leader's ability. Upon observing a revolution in the second period, the government believes that the leader is political, i.e. $\hat{\beta}_2 = 0$. If the cost of exerting force for the government is low enough, $c \leq c'$ where $c' = \frac{\theta_L W}{e_H + e_L - \theta_L W}$, government exerts force against a revolution irrespective of the prior about the leader's ability. However, if the cost of exerting force is too high $c \geq c''$ where $c'' = \frac{\theta_H W}{e_H + e_L - \theta_H W}$, government does not suppress a revolution irrespective of the prior about leader's ability. We look at the more interesting case where government's policy depends upon belief of leader's ability. In the rest of the paper, we assume that $c \in (c', c'')$ where government's policy against a revolution is a threshold policy. If the updated belief about political leader's ability at the beginning of the second period is not too high, i.e. $\alpha_1 \leq \bar{\alpha}$, the government exerts no force upon oberving a revolution but does so for beliefs greater than or equal to $\bar{\alpha}$. If belief about the leader's ability is high, likelihood of the second period revolution being successful is also high. This increases the chances of the government being overthrown inducing it to exert force against an observed revolution in the second period. The following lemma summarizes the second period strategy of all agents.

Lemma 1. *(Second Period Equilibrium)*

- *A political leader announces a revolution while a non-political leader announces a social movement.*
- *Government does not exert force against a social movement. However, government exert force against a revolution if the updated belief about the political leader's ability at the beginning of the second period is more than $\bar{\alpha}$ but does not otherwise. (Figure 1.)*
- *Citizen participation for any announced movement is given by equation*(1)*.*

Proof. See appendix A. □

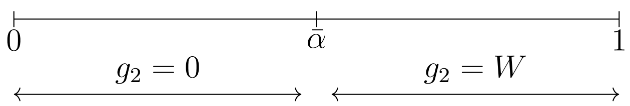

Figure 1: Optimal Second Period Strategy of the Government against Revolution

4.2 First Period

In this section, we solve the first period problem of the leader and the government. Since citizens are myopic, their optimization problem is the same as that in the second period. Citizen participation given the announced movement, a_1, and government's force, g_1 is determined by equation (1). For the rest of the paper, we solve for equilibria where the political leader follows a threshold policy in the first period of the following kind:

$$\begin{aligned} \sigma_1^P &= 0 \quad \forall \alpha_1 < \alpha_L(\beta_1) \\ &= 1 \quad \forall \alpha \in [\alpha_L(\beta_1), \alpha_H(\beta_1)) \\ &= 0 \quad \forall \alpha_1 \geq \alpha_H(\beta_1) \end{aligned} \tag{2}$$

where, $\alpha_L(\beta_1)$ and $\alpha_H(\beta_1)$ are endogeneously determined. That is, we look for those equilibria where the political leader announces a social movement in the first period only for intermediate values and conducts a revolution for extreme beliefs about her ability.

A leader does not get a chance to conduct another movement after announcing a revolution. Therefore, government's strategy against a revolution in the first period is the same as its strategy against a revolution in the second period. Government does not exert force if the initial belief about political leader's ability is less than $\bar{\alpha}$ but does so otherwise. Next, we analyze government's optimal strategy against a social movement in the first period.

Let α_1^S be the belief about a political leader's ability at the beginning of the first period such that a successful social movement in the first period causes the updated belief at the beginning of the second period to be equal to $\bar{\alpha}$, i.e. $\alpha_2^S(\alpha_1^S, g_1) = \bar{\alpha}$. Similarly, $\alpha_1^{FW}(\beta_1)$ and $\alpha_1^{F0}(\beta_1)$ are defined as $\alpha_2^F(\alpha_1^{FW}(\beta_1), g_1 = W) = \bar{\alpha}$ and $\alpha_2^F(\alpha_1^{F0}(\beta_1), g_1 = 0) = \bar{\alpha}$. $\alpha_1^{FW}(\beta_1)$ and $\alpha_1^{F0}(\beta_1)$ are initial beliefs about the political leader's ability at the beginning of the first period such that upon a failed social movement in the first period and government's force, $g_1 = W$ and $g_1 = 0$ respectively, the updated belief at the beginning of the second period is equal to $\bar{\alpha}$. Note that α_1^S is independent of β_1. For notational simplicity, let us denote $\alpha_1^{FW} = \alpha_1^{FW}(\beta_1)$ and $\alpha_1^{F0} = \alpha_1^{F0}(\beta_1)$. The following lemma describes the relation between these three thresholds and $\bar{\alpha}$.

Lemma 2. $\alpha_1^S < \bar{\alpha} < \alpha_1^{FW} < \alpha_1^{F0}$

Proof. Note that $\alpha_2^S(\alpha_1, g_1) - \alpha_2^F(\alpha_1, g_1) = \frac{\alpha_1(1-\alpha_1)(\theta_H - \theta_L)}{[\theta_H\alpha_1 + \theta_L(1-\alpha_1)][(1-\theta_H m_1(g_1))\alpha_1 + (1-\alpha_1)(1-\theta_L m_1(g_1))]}$ which is always positive for any given α_1.

Next, since $\frac{\partial \alpha_2^F}{\partial m_1} < 0$ and $\frac{\partial m_1}{\partial g_1} < 0$, $\frac{\partial \alpha_2^F}{\partial g_1} = \frac{\partial \alpha_2^F}{\partial m_1}\frac{\partial m_1}{\partial g_1} > 0$. Hence, $\forall \alpha_1$

$$\alpha_2^S(\alpha_1, g_1) > \alpha_2^F(\alpha_1, g_1 = W) > \alpha_2^F(\alpha_1, g_1 = 0)$$

Since $\alpha_2^S(\alpha_1, g_1), \alpha_2^F(\alpha_1, g_1 = W)$ and $\alpha_2^F(\alpha_1, g_1 = 0)$ are increasing in α_1 and by the definition of α_1^S, α_1^{FW} and α_1^{F0}, we obtain $\alpha_1^S < \bar{\alpha} < \alpha_1^{FW} < \alpha_1^{F0}$.

□

A successful social movement in the first period increases the updated belief about the leader's ability in the second period, i.e. $\alpha_2^S(\alpha_1, g_1) > \alpha_1$. Since $\alpha_2^S(\alpha_1, g_1)$ is an increasing function of α_1, to obtain an updated belief equal to $\bar{\alpha}$ in the second period, the initial prior required is less than $\bar{\alpha}$. Therefore, by definition of α_1^S, we have $\alpha_1^S < \bar{\alpha}$. Similarly, a failed social movement in the first period decreases the updated belief in the second period. i.e. $\alpha_2^F(\alpha_1, g_1 = W) < \alpha_1$ and $\alpha_2^F(\alpha_1, g_1 = 0) < \alpha_1$. Since $\alpha_2^F(\alpha_1, g_1 = W)$ and $\alpha_2^F(\alpha_1, g_1 = 0)$ are increasing in α_1, to obtain an updated belief equal to $\bar{\alpha}$ in the second period, one requires initial prior greater than $\bar{\alpha}$. Therefore, by the definition of α_1^{FW} and α_1^{F0}, we have $\alpha_1^{FW},\ \alpha_1^{F0} < \bar{\alpha}$.

The updated belief about the political leader's ability upon a failed first period social movement is higher if government puts force in the first period than when it does not, i.e., $\alpha_2^F(\alpha_1, g_1 = W) > \alpha_2^F(\alpha_1, g_1 = 0), \forall \alpha_1$. In other words, the decrease in updated belief is larger if government puts no force in the first period than when it does. This is because citizen participation in a movement is higher when government puts no force than when it does. Thus, failure of a movement conditional on no force by the government is more bad news about the leader's ability than when the movement fails conditional on government opposing it.

To analyze government's first period strategy against a social movement announced by the leader, we first look at its discounted expected utility when it chooses force g_1 against a social movement, $a_1 = sm$. This is given as follows:

$$\begin{aligned}
& EU_1^G(g_1, a_1 = s, \alpha_2, \hat{\beta}_2) \\
= \;& W - cg_1 \\
+ \;& \delta \Bigg[Pr(\zeta = P) \Bigg[Pr(\gamma_1 = S \mid \zeta = P, a_1 = s) \Big[Pr(\gamma_2 = S \mid a_2 = R, g_2, \gamma_1 = S, \hat{\beta}_2 = 0)(-cg_2) \\
+ \;& Pr(\gamma_2 = F \mid a_2 = R, g_2, \gamma_1 = S, \hat{\beta}_2 = 0)(W - cg_2) \Big] \Bigg] \\
+ \;& \Bigg[Pr(\gamma_1 = F \mid \zeta = P, a_1 = s) \Big[Pr(\gamma_2 = S \mid a_2 = R, g_2, \gamma_1 = F, \hat{\beta}_2 = 0)(-cg_2) \\
+ \;& Pr(\gamma_2 = F \mid a_2 = R, g_2, \gamma_1 = F, \hat{\beta}_2 = 0)(W - cg_2) \Big] \Bigg] \\
+ \;& Pr(\zeta = NP) W \Bigg]
\end{aligned}$$

Irrespective of success of the social movement in the first period, the government receives a gross benefit of W and incurs a cost cg_1 in the first period. The second period payoff of the government depends upon whether the leader is political or not. If the leader is non-political, the government is not overthrown and it receives a payoff of W. However, if the leader is political then the government's payoff depends upon the success of the revolution in the second period.[18] Social movement does not affect the payoff of the government but affects the likelihood of success of revolution in the second period. If revolution fails in the second period, irrespective of the outcome of the social movement in the first period, the government is not overthrown and receives a gross benefit of W net of the cost cg_2 that it incurs in the second period. However, if the revolution is successful in the second period, irrespective of the outcome of the social movement in the first period, the government looses power and incurs a net loss of $-cg_2$. Lemma 3

[18]Note that the political leader always conducts a revolution in the second period.

describes strategy of the government in the first period against a social movement.

Lemma 3. *(Government's First Period Strategy)*

Government's first period strategy against a social movement depends upon its marginal cost of exerting force, c.

- *High Cost: If c is high, government exerts no force.*
- *Low Cost: If c is low, government follows a threshold strategy and exerts force only in the intermediate range of initial prior about political leader's ability. In particular,* $G_1(h_1, a_1 = sm) = 1,\ \forall \alpha_1 \in [\alpha_1^S, \alpha_1^{F0}]$ *and* $G_1(h_1, a_1 = sm) = 0$ *otherwise. This is illustrated in Figure 2.*

Proof. See appendix B. □

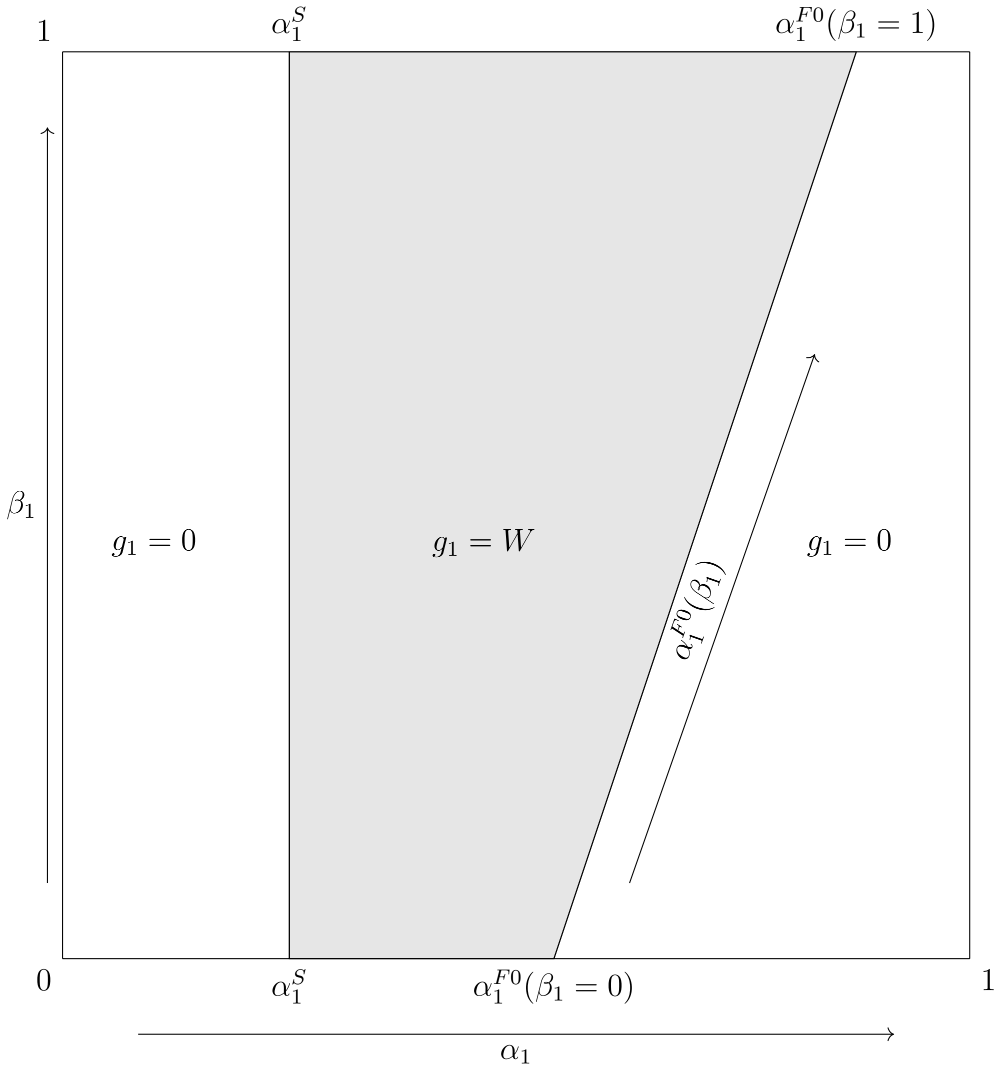

Figure 2: Optimal First Period Strategy of the Government Against a Social Movement when c is Low

If exerting force is sufficiently costly for the government, then the government doesn't put any force against a social movement irrespective of the initial prior about the leader's ability and objective. On the other hand, if marginal cost of exerting force is sufficiently low then the government opposes social movement only for intermediate range of beliefs about the political leader's ability (refer to Figure 2).[19] The intuition for the threshold policy of the government when marginal cost of exerting force is low is as follows. Given the prior about the leader's objective β_1, government force reduces citizen participation and hence likelihood of a successful social movement. This in turn reduces the updated prior about the leader's ability and likelihood of a successful revolution in the second period. Thus, the benefit of exerting force by the government in the first period against a social movement is an increased likelihood of retaining power in the second period. For extreme values of α_1, the marginal benefit of exerting force which is to decrease the belief of the political leader's ability is smaller than the marginal cost of exerting force by the government. Thus, the government doesn't exert force for extreme values of α_1. However, for intermediate range of beliefs the marginal benefit is larger than the marginal cost inducing the government to exert force.

The effect of β_1 on the government's optimal strategy is not obvious. Figure 2 shows that the range of priors about the political leader's ability where government exerts force against a social movement in the first period, is increasing in the likelihood of the leader being non-political, β_1. On one hand β_1 has a direct effect on payoffs of the government. High β_1 implies that the leader is less likely to be political. This lowers the incentive of the government to exert force against a social movement in the first period. On the other hand, β_1 has an indirect effect on payoffs of the government. High β_1 induces greater citizen participation and likelihood of a successful first period social movement. A successful social movement favorably updates belief about the political leader's ability increasing the likelihood of a successful second period revolution, which overthrows the government. Thus, for higher β_1, the political leader is more likely to masquerade as a non-political leader to reap the benefit of an increased likelihood of successful revolution in the second period. The indirect effect of β_1 on payoffs overweighs the direct effect. Government anticipates this and exerts force against a social movement for a larger range of α_1. Therefore, we see in the figure the range of beliefs where the government exerts effort increases with β_1.

Next, we discuss optimal strategy of the political leader in the first period. The discounted expected payoff of a political leader when she announces a social movement in the first

[19] $\alpha_1^{F0}(\beta_1)$ need not be a linear function of β_1 but is increasing in β_1

period is as follows:

$$\begin{aligned} EU_1^P(a_1 = sm) &= \delta W\big[Pr(\gamma_1 = S \mid \theta, h_1, a_1, g_1)Pr(\gamma_2 = S \mid \theta, h_2, a_2 = R, g_2) \\ &+ Pr(\gamma_1 = F \mid \theta, h_1, a_1, g_1)Pr(\gamma_2 = S \mid \theta, h_2, a_2 = R, g_2)\big] \end{aligned}$$

Political leader's expected payoff from a social movement in the first period depends upon the success of the social movement and that of revolution in the second period. Success of the social movement in the first period influences the updated belief about leader's ability in the second period, which in turn influences citizen participation and the likelihood of success of revolution in the second period. Note that the political leader receives a positive payoff only if the revolution is successful.

Political leader receives a positive payoff from revolution only when it is successful. The expected payoff of a political leader when she announces a revolution in the first period is given by:

$$EU_1^P(a_1 = R) = Pr(\gamma_t = S \mid \theta, h_1, a_1, g_1)W$$

Next, the following proposition lays out the equilibrium of the game when marginal cost for the government is high. Proposition 1 below states that if the marginal cost of exerting force by the government is sufficiently high and the leader is patient enough, then for intermediate ranges of α_1 i.e., between $\bar{\alpha}$ and α_1^{F0}, the political leader conducts a social movement in the first period and the government does not oppose. For all other ranges of beliefs, the political leader conducts a revolution in the first period itself and the government follows the strategy as in Lemma 1.

Proposition 1. *(High Cost)*

A non-political leader conducts a social movement in both the periods. If $\delta > \bar{\delta}$ and c is sufficiently high,

- *(Political Leader's Strategy): A political leader follows a threshold policy (refer to Figure 3) in the first period which is given by*

$$\begin{aligned} \sigma_1^P(h_1) &= 0 \quad \forall \alpha_1 < \bar{\alpha} \\ &= 1 \quad \forall \alpha \in [\bar{\alpha}, \alpha_1^{F0}) \\ &= 0 \quad \forall \alpha_1 \geq \alpha_1^{F0} \end{aligned}$$

  In the second period, the political leader always conducts a revolution.

- *(Government's Strategy): Government does not oppose a social movement. How-*

ever, upon observing a revolution- either in the first or second period, the government exerts force only if belief about political leader's ability is greater than or equal to $\bar{\alpha}$.

Proof. See appendix C. □

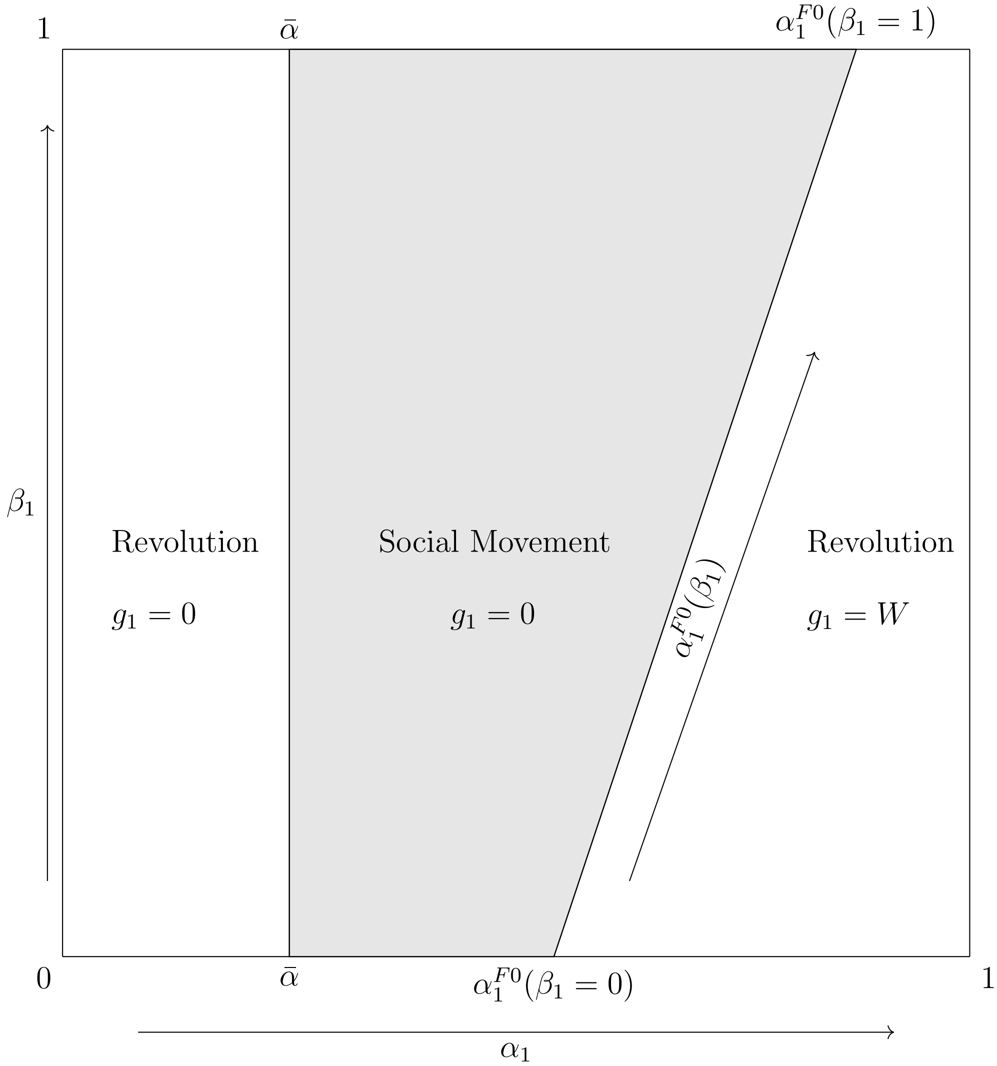

Figure 3: Optimal First Period Strategy of the Political Leader when Cost is High

Given the payoffs of a non-political leader, it always benefits her to conduct a social movement in both periods. She has no current or future benefit from conducting a revolution in either periods. When marginal cost for the government is sufficiently high, government does not exert any force against a social movement in the first period. The incentive for a political leader to conduct a social movement has trade-offs. The benefit of a successful social movement is increased belief about the leader's ability and the likelihood of a successful revolution in second period. There are also costs associated with conducting a social movement. First, there is a risk of lowering belief about her ability in case of a failed social movement in the first period and hence lowering chances of a successful revolution in the second period. Second, a social movement also delays the expected return from conducting a revolution. Third, a successful social movement is not always good news for the leader. Upon successful social movement in first period, if the updated prior about her ability improves to over and beyond $\bar{\alpha}$, then she would attract government repression in the second period on announcing revolution. This reduces citizen participation and hence likelihood of a successful second period revolution. We find that the net benefit of conducting a social movement is non-monotonic in α_1. For extreme values of α_1, the cost of experimentation outweighs the benefit, thus the political leader does not announce a social movement. However for intermediate values, the net benefit of a social movement is positive.

Figure 3 shows the range of beliefs where a political leader announces a social movement in the first period. The range is increasing in β_1.[20] For higher β_1, the leader is more likely to be perceived as a non-political type, increasing the expected ability of the leader, citizen participation and likelihood of a successful social movement. This in turn increases the likelihood of a successful revolution in the second period, increasing the incentive of a political leader to announce a social movement in the first period. Thus, for higher β_1, the political leader's benefit from announcing a social movement and masquearding as a non-political type increases.

Proposition 2 states the equilibrium when the marginal cost of exerting force by the government is sufficiently low. In this case the nature of the political leader's first period strategy is the same as that for high marginal cost as in Proposition 1. For extreme values of belief about the political leader's ability, the political leader conducts a revolution. For intermediate ranges of belief, the political leader conducts a social movement. However, the range of initial prior about the leader's ability where social movement is announced changes with marginal cost of the government. Unlike the case when marginal cost is high, social movement in the first period is followed by repression reducing the likelihood of improving the belief about the leader's ability. This decreases the chances of a successful second period revolution and hence reduces the benefit of conducting a social movement in the first period when marginal cost is low. Thus, the range of beliefs where the political leader announces a social movement in the first period is smaller for low government's marginal cost. The following proposition describes the equilibrium of the game when government's marginal cost of exerting force is sufficiently low.

Proposition 2. *(Low Cost)*

A non-political leader conducts a social movement in both the periods. If $\delta > \bar{\bar{\delta}}$ *and* c *is*

[20] $\bar{\alpha}$ is invariant with β_1 and α_1^{F0} increases with β_1.

sufficiently low,

- *(Political Leader) A political leader follows a threshold policy (refer to figure 4) in the first period which is given by*

$$\begin{aligned}\sigma_1^P(h_1) &= 0 \quad \forall\alpha_1 < \bar{\alpha} \\ &= 1 \quad \forall\alpha \in [\bar{\alpha}, \alpha_1^{FW}) \\ &= 0 \quad \forall\alpha_1 \geq \alpha_1^{FW}\end{aligned}$$

  In the second period, the political leader always conducts a revolution.

- *(Government's Strategy): Upon observing a social movement in the first period, the government opposes the movement only for an intermediate range of initial prior about the leader's ability. Government does not oppose a social movement in the second period.*

  Upon observing a revolution- either in the first or second period, the government exerts force only if belief about the political leader's ability is greater than or equal to $\bar{\alpha}$.

Proof. See appendix D. □

Government exerts force against a social movement for intermediate range of beliefs when the marginal cost is low. The intuition for this remains the same as above. The incentive for the political leader to conduct a social movement also remain similar. The benefit of a successful social movement is increased belief about the leader's ability in the second period and hence higher likelihood of a successful revolution in the second period. Costs borne by the leader upon conducting a social movement in the first period are similar to those when marginal cost is high, except that the government exerts force against social movement for intermediate ranges, lowering the likelihood of improved belief about the leader's ability. This diminishes the range of beliefs for which the political leader undertakes a social movement.

The fact that the government is strategic makes the leader choose a social movement for intermediate range of beliefs about the leader's ability. If the government was non-strategic and responded with the same action irrespective of the nature of the movement and its outcome, then the political leader would have always chosen to conduct a revolution in the first period. If the government was non-strategic, i.e., never opposed a movement in any period, then the political leader would have no incentive to conduct a social movement. This is because lack of government suppression increases the benefit from conducting both the social movement and the revolution. However, the increase

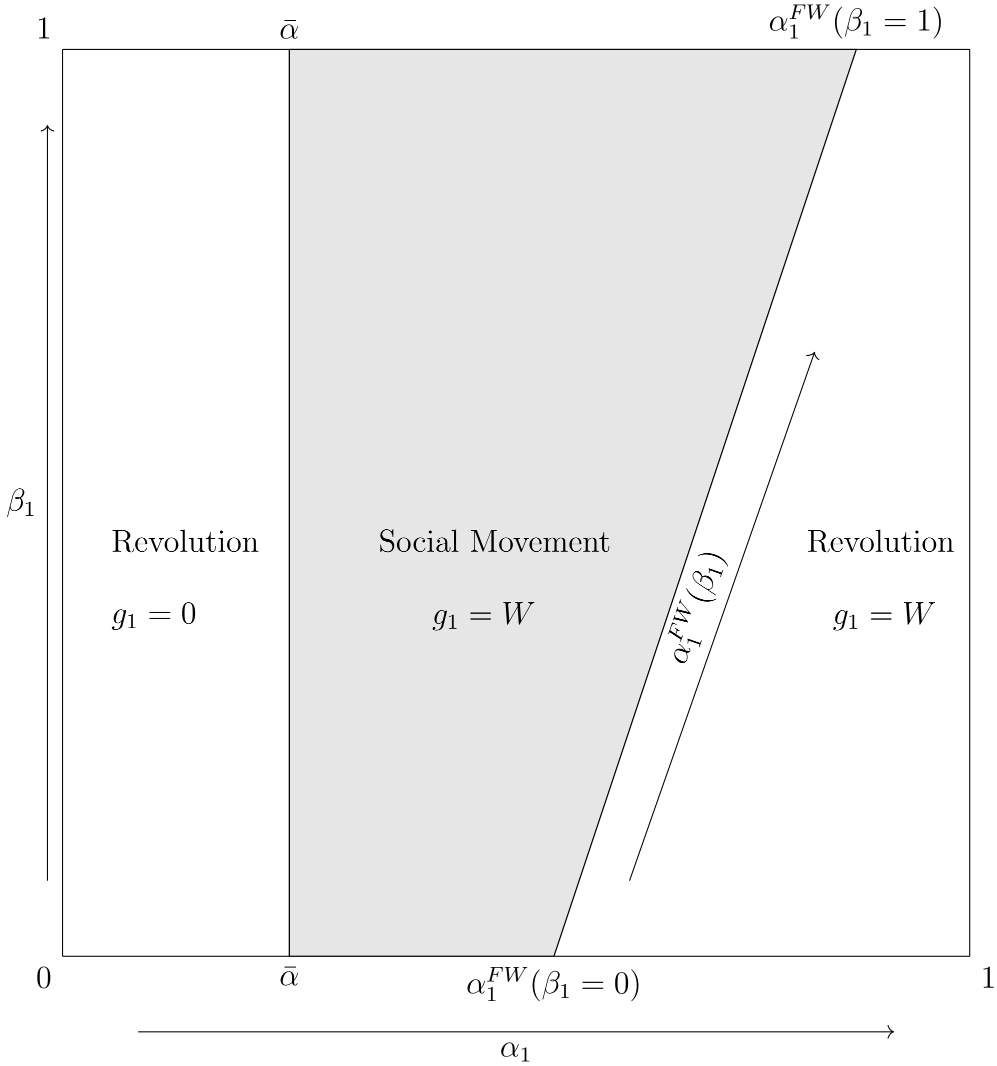

Figure 4: Optimal First Period Strategy of the Political Leader when Cost is Low

in the benefit from conducting the revolution is larger than that of the social movement.

5 Leader Knows His Ability

So far we consider a political leader to be inexperienced and unaware of his ability. However, in reality many leaders serve in publicly lesser known leadership positions before entering into active politics and are aware of their organizational ability. In this section we consider the case where the political leader knows her own ability, $\theta \in \{\theta_H, \theta_L\}$. However, the ability is not known either to the government or to the citizens. The objective of the leader remains to be private information of the leader. We analyse the optimal strategy of the political leader and the government in this case.

First, we show that there does not exist a separating equilibrium where strategies of the two types of political leader are perfectly revealing. We find that it is not beneficial for either type of political leader to separate and reveal her ability. Perfect revelation will lead to lower citizen participation for the low type, decreasing her chances of success in any movement that she undertakes. Hence, it will never be advantageous for the low type political leader to separate and perfectly reveal her type. Instead, she would always like to imitate the high ability leader. Thus, there is no equilibrium where high and low ability political leader have different strategies.

Proposition 3. *There does not exist any separating threshold equilibrium.*

Proof. See appendix E. □

Next, we solve for pooling equilibria where both types of political leader follow the same threshold policy as in equation(2). We find that the threshold pooling equilibirum when the political leader knows his ability, θ, is the same as that when her ability is unknown.

Proposition 4. *(Leader Knows Type and High Cost)*

A non-political leader conducts a social movement in both the periods. If $\delta > \bar{\delta}$ and c is sufficiently high,

- *(Political Leader's Strategy): A political leader of either type follows a threshold* *policy in the first period as given by Figure 3.*

$$\begin{aligned} \sigma_1^P(h_1) &= 0 \quad \forall \alpha_1 < \bar{\alpha} \\ &= 1 \quad \forall \alpha \in [\bar{\alpha}, \alpha_1^{F0}) \\ &= 0 \quad \forall \alpha_1 \geq \alpha_1^{F0} \end{aligned}$$

In the second period, the political leader always conducts a revolution.

- *(Government's Strategy): Government does not oppose a social movement. However, upon observing a revolution- either in the first or second period, the government exerts force only if belief about the political leader's ability is greater than or equal to $\bar{\alpha}$.*

Proof. See appendix F. □

We observe that when marginal cost of exerting force by the government is high, then the equilibrium strategy of the leader is the same as in Proposition 1, irrespective of whether the political leader knows her own ability or not. The low ability type political leader never wants to separate and reveal her ability. This is because perfect revelation will lead to lower citizen participation decreasing her chances of success in any movement that she undertakes. Hence, she mimicks the high ability political leader's strategy. Citizens and government do not know the ability of the leader. Thus their prior and strategy remains the same as the previous case. Thus, with updating rules and everything remaining unchanged, the leader's strategy does not change either. Similarly, when the marginal cost of exerting force by the government is low, then the equilibrium strategy of the leader is the same as in Proposition 2.

6 Conclusion

How should a government combat an opposition whose true intentions are unknown? How should a leader that intends to overthrow an unpopular government sequence her decisions? In this paper we try to answer these questions.

We find that a leader ultimately interested in changing the government will adopt gradualism, starting with non-threatening social movements and then progressing to challenging the regime, if beliefs about her ability lie in an intermediate range. If her ability is considered to be very high, she does not need to wait. If it is too low, she might as well take her chances immediately. Also, we find that as beliefs about the leader being non-political increases, the likelihood of a successful revolution in the second period increases, increasing citizen participation. Therefore a political leader's benefit from masquerading as non-political leader increases.

The more interesting results pertain to government's strategy. We find that if the marginal cost of exerting force is sufficiently high then the government never exerts force upon observing a social movement. However, if the cost of exerting force is not too high the government exerts force to suppress social movements when there is a positive probability that the movement is being undertaken to establish the credentials of a politically ambitious leader. Thus, paradoxically, force is exerted for a larger range of beliefs about ability when the probability that the leader is non-political increases.

We make a few observations about some of the direct costs and benefits to a political leader, which she might potentially face in the real world. These can easily be incorporated in our model without affecting the results qualitatively. A leader can enjoy an additional benefit from a successful revolution that is exclusive to the leader. Hence, the leader's benefit can be $W + \Delta$ upon a successful revolution where Δ is the additional benefit or privilege that a leader enjoys by overthrowing the present regime and assuming power.[21] Second, there can be direct costs to the leader of conducting any opposition-revolution or social movement. At present our model does not incorporate a cost to the leader for conducting any movement. However, if these costs are sufficiently low, our results will not change. We can also incorporate in our model differential costs of conducting a movement based on the ability of the leader without changing the nature of our results qualitatively. The government can also impose a cost to the leader upon a failed revolution. This is exogenously incorporated in our model as we assume that the payoff to the leader upon an unsuccessful revolution is zero. The nature of our results do not change if this cost incurred upon a failed revolution is positive (not too high) and thus the leader obtains a negative payoff from an unsuccessful revolution.

The current model allows for many interesting extensions. In our model there is only one political leader. Citizens do not have an option to choose a movement to participate but rather choose whether to participate or not in the announced movement. If there are competing leaders with reputational concerns, leaders with higher reputations will attract more support. This will increase the incentive of the leaders to use the gradualism strategy, conducting a social movement for a greater range of beliefs. We also assume that the leader's intentions, whether to overthrow the government or not-is exogenous. However, this can be a function of her confidence in her ability and hence evolve in the model as the success of movements conducted gets revealed. Future work can explore the possibility of allowing the objective of the leader to be endogenous.

[21] This exclusive privilege can be interpreted as access to certain benefits which an ordinary citizen cannot have.

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Appendices

A Proof of Lemma 1

Proof. The government exerts an optimal force $g_2^* \in \{0, W\}$ that maximizes the following expected payoff

$$
\begin{aligned}
g_2^* &= \underset{g_2}{\text{argmax}}\ EU_2^G(g_2|a_2 = R) \\
&= \underset{g_2}{\text{argmax}}\ Pr[\gamma_2 = F \mid h_2, a_2 = R, g_2, \hat{\beta}_2 = 0]U_2^G(a_2 = R, g_2, \gamma_2 = F) - cg_2 \\
&= [(1-\alpha_2)(1-\theta_L m_2^*(a_2, g_2, \alpha_2, \hat{\beta}_2 = 0)) + \alpha_2(1-\theta_H m_2^*(a_2, g_2, \alpha_2, \hat{\beta}_2 = 0))]W - cg_2
\end{aligned}
$$

The government gets a positive payoff W only when a revolution fails. We can write the difference in expected utility of the government from exerting no force, $g_2 = 0$ and the maximum force, $g_2 = W$ as follows:

$$
\begin{aligned}
L(\alpha_2) &= EU_2^G(g_2 = 0|a_2 = R) - EU_2^G(g_2 = W|a_2 = R) \\
&= \frac{-[(1-\alpha_2)\theta_L + \alpha_2\theta_H]W^2}{[(e_H + e_L) - [(1-\alpha_2)\theta_L + \alpha_2\theta_H]W} + cW
\end{aligned}
$$

The function $L(\alpha_2)$ is continuous and decreasing in α_2. Hence, there exists a threshold value of $\alpha_2 = \bar{\alpha}$, such that, $L(\bar{\alpha}) = 0$. Hence for all $\alpha_2 < \bar{\alpha}$, the government's strategy is to exert no force, $G_2(h_2, a_2 = R) = 0\ \forall h_2 \in \mathbb{H}_2$ while it exerts maximum force, $G_2(h_2, a_2 = R) = 1\ \forall h_2 \in \mathbb{H}_2$ if $\alpha_2 \geq \bar{\alpha}$. The value of $\bar{\alpha}$ is given by:

$$
\bar{\alpha} = \frac{1}{(\theta_H - \theta_L)}[\frac{c(e_H + e_L)}{W + cW} - \theta_L] \tag{3}
$$

Given the assumptions on the parameters above, and $c \in (c^{'}, c^{''})$, we obtain an unique value of $\bar{\alpha}$ where $\bar{\alpha} \in (0, 1)$. □

B Proof of Lemma 3

Proof. We find the optimal strategy of the government in four broad ranges of α_1 when it observes a social movement in the first period. The difference in the expected utility of the government from exerting force and none upon observing social movement in the first period changes with α_1 because the government's response to revolution in the second period changes with the updated belied at the beginning of the second period .

Let $m_1(g_1, a_1 = sm, \alpha_1, \hat{\beta}_1 = \beta_1) = m_1(g_1)$ and $m_2(g_2, a_2 = R, \alpha_2, \hat{\beta}_2 = 0) = m_2(g_2, \alpha_2)$, where $m_1(g_1)$ is the citizen participation in the first period when $a_1 = sm$ and $m_2(g_2, \alpha_2)$ is the mass participation in the second period when $a_2 = R$.

Let us now consider each of the four ranges.
Range I: $\alpha_1 \in [\alpha_L, \alpha_1^S]$
In this range, α_1 is small enough such that that even if the social movement is successful in the first period, the updated belief at the beginning of the second period, i.e. α_2^S is less than $\bar{\alpha}$. Hence there is no government effort in the second period irrespective of the outcome of the social movement in the first period. Let $\Delta^1(\alpha_1)$ be the difference in the expected payoff of the government from exerting $g_1 = 0$ and $g_1 = W$ and is given by:

$$\begin{aligned}
\Delta^1(\alpha_1) &= EU_1^G(a_1 = sm, g_1 = 0) - EU_1^G(a_1 = sm, g_1 = W) \\
&= cW + \delta W(1 - \beta_1)[A(\alpha_1) + B(\alpha_1) - C(\alpha_1)]
\end{aligned}$$

where,

$$A(\alpha_1) = (\alpha_1\theta_H + (1-\alpha_1)\theta_L)[1 - (\alpha_2^S\theta_H + (1-\alpha_2^S\theta_L)m_2(0, \alpha_2^S)][m_1(0) - m_1(W)]$$
$$B(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(0)][1 - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)m_2(0, \alpha_2^F(0))]$$
$$C(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(W)][1 - (\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)m_2(0, \alpha_2^F(W)]$$

We show that $A(\alpha_1) + B(\alpha_1) - C(\alpha_1)$ is always positive for all values of α_1. Hence, $\Delta^1(\alpha_1) > 0$ in range I. Thus, the optimal strategy of the government in the first period is $g_1 = 0$.[22]

Range II: $\alpha_1 \in [\alpha_1^S, \alpha_1^{FW}]$
In this range, the initial prior about political leader's ability is such that if the social movement is successful in the first period then the updated belief at the beginning of the second period i.e., $\alpha_2^S(\alpha_1)$ is greater than $\bar{\alpha}$. In this scenario, the government exerts force $g_2 = W$ to combat revolution in the second period. However, if the social movement is unsuccessful in the first period, then the government does not put any force upon observing a revolution.

[22]For notational simplicity, let us denote $\alpha_2^F(\alpha_1, g_1 = 0) = \alpha_2^F(0)$ and $\alpha_2^F(\alpha_1, g_1 = W) = \alpha_2^F(W)$.

Let $\Delta^2(\alpha_1, c)$ be the difference in the expected payoff of the government as above is as follows:

$$\begin{aligned} \Delta^2(\alpha_1, c) &= EU_1^G(a_1 = sm, g_1 = 0) - EU_1^G(a_1 = sm, g_1 = W) \\ &= cW + \delta W(1-\beta_1)[\bar{A}(\alpha_1) + B(\alpha_1) - C(\alpha_1)] \end{aligned}$$

where,

$$\bar{A}(\alpha_1) = (\alpha_1\theta_H + (1-\alpha_1)\theta_L)[1 - (\alpha_2^S\theta_H + (1-\alpha_2^S\theta_L)m_2(W, \alpha_2^S) - c][m_1(0) - m_1(W)]$$
$$B(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(0)][1 - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)m_2(0, \alpha_2^F(0))]$$
$$C(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(W)][1 - (\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)m_2(0, \alpha_2^F(W)]$$

The expression $\bar{A}(\alpha_1) + B(\alpha_1) - C(\alpha_1)$ is increasing in α_1. $\Delta^2(\alpha_1 = 0, c)$ is an increasing function in c and let c^1 be such that $\Delta^2(\alpha_1 = 0, c^1) = 0$. Also $\Delta^2(\alpha_1 = 1, c)$ is an increasing function in c and let c^2 be such that $\Delta^2(\alpha_1 = 1, c^2) = 0$. Given that $[\bar{A}(\alpha_1) + B(\alpha_1) - C(\alpha_1)]$ is increasing in α_1, for all $c > max\{c^1, c^2\}$, the government's optimal strategy is to exert no force in this range. By similar reasoning for all $c < min\{c^1, c^2\}$, then the government's optimal strategy is to exert maximum force in the first period in this range.

Range III: $\alpha_1 \in [\alpha_1^{FW}, \alpha_1^{F0}]$
In this range, if the social movement is successful in the first period then $\alpha_2^S(\alpha_1)$ is greater than $\bar{\alpha}$. In this case the government exerts force, $g_2 = W$ to combat revolution in the second period. However, if the government exerts force in the first period and the social movement is unsuccessful in the first period, then the updated belief at the beginning of the second period is still above $\bar{\alpha}$. The government then exerts effort in the second period upon seeing a revolution. However, if the social movement is unsuccessful in the first period with government exerting no force in the first period, then the updated belief at the beginning of second period is less than $\bar{\alpha}$ and government does not combat the second period revolution with any force.
The difference in the expected payoff of the government same as above is as follows: Let

$$\begin{aligned} \Delta^3(\alpha_1, c) &= EU_1^G(a_1 = sm, g_1 = 0) - EU_1^G(a_1 = sm, g_1 = W) \\ &= cW + \delta W(1-\beta_1)[\bar{A}(\alpha_1) + B(\alpha_1) - \bar{C}(\alpha_1)] \end{aligned}$$

where,

$$\bar{A}(\alpha_1) = (\alpha_1\theta_H + (1-\alpha_1)\theta_L)[1 - (\alpha_2^S\theta_H + (1-\alpha_2^S\theta_L)m_2(W, \alpha_2^S) - c][m_1(0) - m_1(W)]$$
$$B(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(0)][1 - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)m_2(0, \alpha_2^F(0))]$$
$$\bar{C}(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(W)][1 - c - (\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)m_2(0, \alpha_2^F(W)]$$

The expression $[\bar{A}(\alpha_1) + B(\alpha_1) - \bar{C}(\alpha_1)]$ is increasing in α_1. $\Delta^3(\alpha_1 = 0, c)$ is an increasing function in c and let c^3 be such that $\Delta^3(\alpha_1 = 0, c^3) = 0$. Also $\Delta^3(\alpha_1 = 1, c)$ is an increasing function in c and c^4 be such that $\Delta^3(\alpha_1 = 1, c^4) = 0$. Given that $[\bar{A}(\alpha_1) + B(\alpha_1) - \bar{C}(\alpha_1)]$ is increasing in α_1 then for all $c > max\{c^3, c^4\}$, the government's optimal strategy is to exert no force. By similar reasoning for all $c < min\{c^3, c^4\}$, the government's optimal strategy is to exert maximum force in the first period.

Let $\bar{c} = max\{c^1, c^2, c^3, c^4\}$. Therefore if $c \in [max\{c', \bar{c}\}, c'']$, optimal strategy of the government is to exert no force $\forall \alpha_1 \in [\alpha_1^S, \alpha_1^{F0}]$. Let $\underline{c} = min\{c^1, c^2, c^3, c^4\}$. Therefore if $c \in [c', min\{\underline{c}, c''\}]$, optimal strategy of the government is to exert maximum force $\forall \alpha_1 \in [\alpha_1^S, \alpha_1^{F0}]$. Now we consider the fourth and final range.

Range IV: $\alpha_1 \in [\alpha_1^{F0}, \alpha_H]$
In this range, initial prior about political leader's ability is such that the updated prior at the beginning of the second period is above $\bar{\alpha}$ irrespective of the outcome of the social movement in the first period. Hence, it always attracts government's force upon revolution in the second period.
The difference in the expected payoff of the government from like before is as follows:

Let

$$\begin{aligned}
\Delta^4(\alpha_1, c) &= EU_1^G(a_1 = sm, g_1 = 0) - EU_1^G(a_1 = sm, g_1 = W) \\
&= cW + \delta W(1-\beta_1)[\bar{A}(\alpha_1) + \bar{B}(\alpha_1) - \bar{C}(\alpha_1)]
\end{aligned}$$

where,

$$\bar{A}(\alpha_1) = (\alpha_1\theta_H + (1-\alpha_1)\theta_L)[1 - (\alpha_2^S\theta_H + (1-\alpha_2^S\theta_L)m_2(W, \alpha_2^S) - c][m_1(0) - m_1(W)]$$
$$\bar{B}(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(0)][1 - c - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)m_2(W, \alpha_2^F(0))]$$
$$\bar{C}(\alpha_1) = [1 - (\alpha_1\theta_H + (1-\alpha_1)\theta_L)m_1(W)][1 - c - (\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)m_2(W, \alpha_2^F(W)]$$

The expression $\bar{A}(\alpha_1) + \bar{B}(\alpha_1) - \bar{C}(\alpha_1)$ is always positive for all values of α_1. Hence,

$\Delta^4(\alpha_1, c) > 0$ in this range. Thus, it is optimal for the government not to exert any force in this range irrespective of the value of c. □

C Proof of Proposition 1

Proof. Lemma 1 and Lemma 3 provides the government's strategy upon observing a revolution and social movement in the first period respectively.

First we illustrate the expected payoff of a political leader from conducting revolution in the first period and the expected payoff from conducting a social movement in the first period followed by a revolution in the second period. If $\alpha_1 < \bar{\alpha}$, conducting a revolution in the first period will imply that the government will put no force. Let $H_0(\alpha_1, \hat{\beta}_1 = 0)$ be the expected payoff of a political leader when it announces a revolution in the first period which is given by:

$$\begin{aligned} H_0(\alpha_1, \hat{\beta}_1 = 0) &= EU_1^P(a_1 = R, g_1 = 0) \\ &= \frac{[\alpha_1\theta_H + (1-\alpha_1)\theta_L]e_L W}{e_H + e_L - [\alpha_1\theta_H + (1-\alpha_1)\theta_L]W} \end{aligned}$$

If $\alpha_1 \geq \bar{\alpha}$, conducting a revolution in the first period will imply that the government will exert force upon the announcement of a revolution. Let $\bar{H}_0(\alpha_1, \hat{\beta}_1 = 0)$ be the expected payoff of a political leader in this case which is given by

$$\begin{aligned} \bar{H}_0(\alpha_1, \hat{\beta}_1 = 0) &= EU_1^P(a_1 = R, g_1 = W) \\ &= \frac{[\alpha_1\theta_H + (1-\alpha_1)\theta_L](e_L - W)W}{e_H + e_L - [\alpha_1\theta_H + (1-\alpha_1)\theta_L]W} \end{aligned}$$

The expected utility of the political leader who conducts a social movement in the first period, $a_1 = sm$ followed by revolution, $a_2 = R$ in the second period is given by equation 3. However this expected payoff varies according to initial prior about the leader being of high type, α_1. Let $H_1(\alpha_1, \beta_1)$ be the expected payoff of the political leader when $\alpha_1 < \alpha_1^S$ and is given by:

$$\begin{aligned} H_1(\alpha_1, \beta_1) &= EU_1^P(\alpha_1, g_1 = 0, \hat{\beta}_1 = \beta_1, g_2 = 0) \\ &= \delta W K(\alpha_1, \beta_1)\left[\frac{(\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)e_L}{e_H + e_L - (\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\ &+ \delta W[1 - K(\alpha_1, \beta_1)]\left[\frac{(\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)e_L}{e_H + e_L - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)W}\right] \end{aligned}$$

where $K(\alpha_1, \beta_1) = \frac{[\alpha_1\theta_H + (1-\alpha_1)\theta_L]e_L}{e_H + e_L - [\beta_1\theta_H + (1-\beta_1)(\theta_H\alpha_1 + (1-\alpha_1)\theta_L)]W}$

Now we describe the expected payoff of the leader from conducting a social movement in the range $\alpha_1^S \leq \alpha_1 < \alpha_1^{F0}$. In this range a successful social movement in the first period leads to government's effort in the second period upon revolution. However if the social movement is unsuccessful in the first period, then the updated α_2 at the beginning of the second period is below $\bar{\alpha}$ and then the government puts no effort in the second period to combat revolution. Let $\bar{H}_1(\alpha_1, \beta_1)$ denote the expected payoff of the political leader from conducting a social movement in the first period followed by revolution in the second period in this range and is given by:

$$
\begin{aligned}
\bar{H}_1(\alpha_1, \beta_1) &= EU_1^P(\alpha_1, g_1 = 0, \hat{\beta}_1 = \beta_1, g_2) \\
&= \delta W K(\alpha_1, \beta_1)\left[\frac{(\alpha_2^s \theta_H + (1-\alpha_2^s)\theta_L)(e_L - W)}{e_H + e_L - (\alpha_2^s \theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\
&+ \delta W[1 - K(\alpha_1, \beta_1)]\left[\frac{(\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)e_L}{e_H + e_L - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)W}\right]
\end{aligned}
$$

If $\alpha_1 \geq \alpha_1^{F0}$, in this range, irrespective of success or failure of the social movement in the first period, the government will always put force in the second period to combat revolution. Thus the expected payoff of the political leader which is represented by $\hat{H}_1(\alpha_1, \beta_1)$ is expressed as follows:

$$
\begin{aligned}
\hat{H}_1(\alpha_1, \beta_1) &= EU_1^P(\alpha_1, g_1 = 0, \hat{\beta}_1 = \beta_1, g_2 = W) \\
&= \delta W K(\alpha_1, \beta_1)\left[\frac{(\alpha_2^s \theta_H + (1-\alpha_2^s)\theta_L)(e_L - W)}{e_H + e_L - (\alpha_2^s \theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\
&+ \delta W[1 - K(\alpha_1, \beta_1)]\left[\frac{(\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)(e_L - W)}{e_H + e_L - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)W}\right]
\end{aligned}
$$

$H_0(\alpha_1, \hat{\beta}_1 = 0)$, $\bar{H}_0(\alpha_1, \hat{\beta}_1 = 0)$, $H_1(\alpha_1, \beta_1)$, $\bar{H}_1(\alpha_1, \beta_1)$ and $\hat{H}_1(\alpha_1, \beta_1)$ are all increasing in α_1. We now endogenously determine α_L and α_H from the political leader's optimization problem.
Let us assume that $\alpha_L < \alpha_1^S$. Thus, in the range $\forall \alpha_1 \in [\alpha_L, \alpha_1^S)$, the political leader must not find it beneficial to conduct a revolution in the first period as opposed to a social movement. However, $H_0(\alpha_1 = 0, \beta_1 = 0) > H_1(\alpha_1 = 0, \beta_1)$ and $H_0(\alpha_1 = 1, \beta_1 = 0) > H_1(\alpha_1 = 1, \beta_1)$. Since, $H_0(\alpha_1, \beta_1 = 0)$ and $H_1(\alpha_1, \beta_1)$ are increasing functions in α_1, this implies that $H_0(\alpha_1, \beta_1 = 0) > H_1(\alpha_1, \beta_1), \forall \alpha_1$. Hence, it is beneficial for the leader to conduct a revolution in the first period $\forall \alpha_1 \in [\alpha_L, \alpha_1^S)$ and hence $\alpha_L \nless \alpha_1^S$.

Let us now assume that $\alpha_L = \alpha_1^S$. For this to hold, the political leader must not find it beneficial to conduct a revolution in the first period as compared to a social movement, $\forall \alpha_1 \in [\alpha_1^S, \bar{\alpha})$. $H_1(\alpha_1, \beta_1) > \bar{H}_1(\alpha_1, \beta_1)$, $\forall \alpha_1$. Since, $H_0(\alpha_1, \beta_1 = 0) > H_1(\alpha_1, \beta_1), \forall \alpha_1$ as shown previously, therefore, $H_0(\alpha_1, \beta_1 = 0) > \bar{H}_1(\alpha_1, \beta_1)$,$\forall \alpha \in [0, 1]$. Hence, the necessary condition $H_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1)$, $\forall \alpha_1 \in [\alpha_1^S, \bar{\alpha})$ does not hold and therefore

$\alpha_L \neq \alpha_1^S$.

Let us assume that $\alpha_L \in (\alpha_1^S, \bar{\alpha})$. For this to hold, the political leader must not find it beneficial to conduct a revolution in the first period as compared to a social movement $\forall \alpha_1 \in [\alpha_L, \bar{\alpha})$. However, $H_0(\alpha_1, \beta_1 = 0) > \bar{H}_1(\alpha_1, \beta_1)$,$\forall \alpha \in [0, 1]$ and hence $\alpha_L \notin (\alpha_1^S, \bar{\alpha})$.

Let us now consider that $\alpha_H > \alpha_1^{F0}$. For this to hold the political leader must not find it profitable to conduct a revolution in the first period as opposed to a social movement $\forall \alpha_1 \in [\alpha_1^{F0}, \alpha_H)$. However, $\bar{H}_0(\alpha_1 = 0, \beta_1 = 0) > \hat{H}_1(\alpha_1 = 0, \beta_1)$ and $\bar{H}_0(\alpha_1 = 1, \beta_1 = 0) > \hat{H}_1(\alpha_1 = 1, \beta_1)$ holds. Since, $\bar{H}_0(\alpha_1, \beta_1 = 0)$ and $\hat{H}_1(\alpha_1, \beta_1)$ are increasing in α_1, this implies that $\bar{H}_0(\alpha_1, \beta_1 = 0) > \hat{H}_1(\alpha_1, \beta_1), \forall \alpha_1$. Hence, it is profitable for the political leader to conduct a revolution in the first period $\forall \alpha_1 \in [\alpha_1^{F0}, \alpha_H)$ and $\alpha_H \not> \alpha_1^{F0}$.

Now the only possibility left is that $\alpha_L, \alpha_H \in [\bar{\alpha}, \alpha_1^{F0}]$. Under this situation we have four different situations
Case I: $\alpha_L > \bar{\alpha}, \alpha_H < \alpha_1^{F0}$
Case II: $\alpha_L = \bar{\alpha}, \alpha_H < \alpha_1^{F0}$
Case III: $\alpha_L > \bar{\alpha}, \alpha_H = \alpha_1^{F0}$
Case IV: $\alpha_L = \bar{\alpha}, \alpha_H = \alpha_1^{F0}$

We show that only case *Case IV* holds. For $\alpha_L = \bar{\alpha}$ and $\alpha_H = \alpha_1^{F0}$, the following conditions should hold

1. $\forall \alpha_1 < \alpha_1^S : H_0(\alpha_1, \beta_1 = 0) > H_1(\alpha_1, \beta_1 = 1)$
2. $\forall \alpha_1 \in [\alpha_1^S, \bar{\alpha}) : H_0(\alpha_1, \beta_1 = 0) > \bar{H}_1(\alpha_1, \beta_1 = 1)$
3. $\forall \alpha_1 \geq \alpha_1^{F0} : \bar{H}_0(\alpha_1, \beta_1 = 0) > \hat{H}_1(\alpha_1, \beta_1 = 1)$
4. $\forall \alpha_1 \in [\bar{\alpha}, \alpha_1^{F0}) : \bar{H}_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1)$

Condition 1, 2 and 3 states that the expected payoff from conducting revolution in the first period is higher than the expected payoff from conducting social movement in the first period followed by revolution in the second period in the respective ranges. Condition 4 states that the expected payoff from social movement in the first period followed by revolution in the second period is higher than conducting revolution in the first period in the range $\alpha_1 \in [\bar{\alpha}, \alpha_1^{F0})$.

Conditions 1, 2 and 3 hold and have been already proved. To prove condition 4, let us define $\delta_1 = \frac{e_L - W}{e_L\left[1 - \frac{\theta_L W}{e_H + e_L - \theta_H W}\right]}$. If $\delta > \delta_1, \bar{H}_0(\alpha_1 = 0, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 0, \beta_1), \forall \beta_1$. Now let us define $\delta_2 = \frac{e_L - W}{e_L\left[1 - \frac{\theta_H W}{e_H + e_L - \theta_H W}\right]}$. If $\delta > \delta_2$, $\bar{H}_0(\alpha_1 = 1, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 1, \beta_1), \forall \beta_1$.

Let $\bar{\delta} = max\{\delta_1, \delta_2\}$. Then if $\delta > \bar{\delta}$ then $\bar{H}_0(\alpha_1 = 0, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 0, \beta_1)$ and $\bar{H}_0(\alpha_1 = 1, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 1, \beta_1)$. Since, $\bar{H}_0(\alpha_1, \beta_1 = 0)$ and $\bar{H}_1(\alpha_1, \beta_1)$ are increasing in α_1, then $\bar{H}_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1), \forall \alpha_1, \beta_1$. Thus, condition 4 holds and hence *Case IV* holds true.

Now we rule out *Case I*, *Case II* and *Case III*. For *Case I* to hold we need that the political leader must find it beneficial to conduct a revolution in the first period $\forall \alpha_1 \in [\alpha_H, \alpha_1^{F0})$ and $\forall \alpha_1 \in [\bar{\alpha}, \alpha_L)$. Similarly for *Case II* and *Case III* to hold, the political leader must find it beneficial to conduct a revolution in the first period $\forall \alpha_1 \in [\alpha_H, \alpha_1^{F0})$ and $\forall \alpha_1 \in [\bar{\alpha}, \alpha_L)$ respectively. However, if $\delta > \bar{\delta}$ then $\bar{H}_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1), \forall \alpha_1, \beta_1$ as proved and hence these cases cannot hold.

The off-path equilibrium belief is assumed to be such that if the leader is supposed to announce a revolution on the equilibrium path but deviates and does social movement in the first period then $\hat{\beta}_1$ is revised to 1 and she is thought to a non-political leader. If there is a revolution in the second period, then $\hat{\alpha}_2$ is revised according to the outcome in the first period. On the other hand, if the leader is supposed to announce a social movement on the equilibrium path but deviates and announces a revolution, then $\hat{\beta}_1$ is revised to 0.

The non-political leader always have a positive expected payoff by announcing $a_1 = s$ and hence calls for a social movement. □

D Proof of Proposition 2

Proof. We know the government's strategy from Lemma 1 and Lemma 3.
First we illustrate the expected payoff of a political leader from conducting revolution in the first period and the expected payoff from conducting a social movement in the first period followed by a revolution in the second period. As stated in the proof of proposition 1, if $\alpha_1 < \bar{\alpha}$ then the expected payoff of a political leader when it announces a revolution in the first period is given by $H_0(\alpha_1, \hat{\beta}_1 = 0)$. On the other hand if $\alpha_1 > \bar{\alpha}$ the expected payoff of a political leader in this case is given by $\bar{H}_0(\alpha_1, \hat{\beta}_1 = 0)$ as mentioned in proposition 1.

Now we calculate the expected utility of the political leader who conducts a social movement in the first period, $a_1 = sm$ followed by revolution, $a_2 = R$ in the second period for various ranges of α_1.

If $\alpha_1 < \alpha_1^S$, government doesn't put force in the second period irrespective of the outcome of the social movement. Thus, the expected payoff of the political leader is given by $H_1(\alpha_1, \beta_1)$ as in proposition 1.

Now we describe the expected payoff of the leader from conducting a social movement in the range $\alpha_1^S \leq \alpha_1 < \alpha_1^{FW}$. In this range a successful social movement in the first period with government exerting force leads to facing government effort upon conducting a revolution in the second period as well. However if the social movement is not successful in the first period with government exerting force, then the updated belief at the beginning of the second period is below $\bar{\alpha}$ and then there is no effort by the government in the second period to combat revolution. Let $\bar{H}_1(\alpha_1, \beta_1)$ denote the expected payoff of the political leader in this range which is given by:

$$\begin{aligned}\bar{H}_1(\alpha_1, \beta_1) &= EU_1^P(\alpha_1, g_1 = W, \hat{\beta}_1 = \beta_1, g_2) \\ &= \delta W \bar{K}(\alpha_1, \beta_1)\left[\frac{(\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)(e_L - W)}{e_H + e_L - (\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\ &+ \delta W[1 - \bar{K}(\alpha_1, \beta_1)]\left[\frac{(\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)e_L}{e_H + e_L - (\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)W}\right]\end{aligned}$$

where $\bar{K}(\alpha_1, \beta_1) = \frac{[\alpha_1\theta_H + (1-\alpha_1)\theta_L](e_L - W)}{e_H + e_L - [\beta_1\theta_H + (1-\beta_1)(\theta_H\alpha_1 + (1-\alpha_1)\theta_L)]W}$

Next we describe the expected payoff of the political leader from conducting a social movement in the range $\alpha_1 \leq \alpha_1^{FW} < \alpha_1^{F0}$. In this range, irrespective of the success or failure of the social movement in the first period when the government is exerting force, the updated belief at the beginning of the second period is always greater than $\bar{\alpha}$ and hence the government exerts force in the second period to combat revolution. On the other hand if the government is not exerting force in the first period then a successful social movement in the first period leads to government effort in the second period upon observing a revolution. If the social movement is not successful in the first period then there is no effort by the government in the second period to combat revolution. Let $\hat{H}_1(\alpha_1, \beta_1)$ be the expected payoff of the political leader from conducting a social movement in the first period followed by revolution in the second period in this range and is given by:

$$\begin{aligned}\hat{H}_1(\alpha_1, \beta_1) &= EU_1^P(\alpha_1, g_1 = W, \hat{\beta}_1 = \beta_1, g_2 = W) \\ &= \delta W \bar{K}(\alpha_1, \beta_1)\left[\frac{(\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)(e_L - W)}{e_H + e_L - (\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\ &+ \delta W[1 - \bar{K}(\alpha_1, \beta_1)]\left[\frac{(\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)(e_L - W)}{e_H + e_L - (\alpha_2^F(W)\theta_H + (1-\alpha_2^F(W))\theta_L)W)}\right]\end{aligned}$$

If $\alpha_1 \geq \alpha_1^{F0}$, in this range, irrespective of success or failure of the social movement in the first period, the government will always put force in the second period to combat the revolution. Let $\widetilde{H}_1(\alpha_1, \beta_1)$ denote the expected payoff of the political leader which is given by:

$$
\begin{aligned}
\widetilde{H}_1(\alpha_1,\beta_1) &= EU_1^P(\alpha_1, g_1=0, \hat{\beta}_1=\beta_1, g_2=W) \\
&= \delta W K(\alpha_1,\beta_1)\left[\frac{(\alpha_2^s\theta_H+(1-\alpha_2^s)\theta_L)(e_L-W)}{e_H+e_L-(\alpha_2^s\theta_H+(1-\alpha_2^s)\theta_L)W}\right] \\
&+ \delta W[1-K(\alpha_1,\beta_1)]\left[\frac{(\alpha_2^F(0)\theta_H+(1-\alpha_2^F(0))\theta_L)(e_L-W)}{e_H+e_L-(\alpha_2^F(0)\theta_H+(1-\alpha_2^F(0))\theta_L)W)}\right]
\end{aligned}
$$

where, $K(\alpha_1,\beta_1) = \frac{[\alpha_1\theta_H+(1-\alpha_1)\theta_L]e_L}{e_H+e_L-[\beta_1\theta_H+(1-\beta_1)(\theta_H\alpha_1+(1-\alpha_1)\theta_L)]W}$

$H_0(\alpha_1,\hat{\beta}_1=0)$, $\bar{H}_0(\alpha_1,\hat{\beta}_1=0)$, $H_1(\alpha_1,\beta_1)$, $\bar{H}_1(\alpha_1,\beta_1)$, $\hat{H}_1(\alpha_1,\beta_1)$ and $\widetilde{H}_1(\alpha_1,\beta_1)$ are all increasing in α_1. We now endogeneously determine α_L and α_H from the political leader's optimization problem.

Let us assume that $\alpha_L < \alpha_1^S$. Thus, in the range $\alpha_1 \in [\alpha_L, \alpha_1^S)$, the political leader must not find it beneficial to conduct a revolution in the first period as opposed to a social movement. However $H_0(\alpha_1=0,\beta_1=0) > H_1(\alpha_1=0,\beta_1)$ and $H_0(\alpha_1=1,\beta_1=0) > H_1(\alpha_1=1,\beta_1)$ holds. Since, $H_0(\alpha_1,\beta_1=0)$ and $H_1(\alpha_1,\beta_1)$ are increasing functions in α_1, which implies that $H_0(\alpha_1,\beta_1=0) > H_1(\alpha_1,\beta_1), \forall\alpha_1$. Hence, it is beneficial for the leader to conduct a revolution in the first period $\forall\alpha_1 \in [\alpha_L,\alpha_1^S)$ and hence $\alpha_L \not< \alpha_1^S$.

Let us now assume that $\alpha_L = \alpha_1^S$. For this to hold, the political leader must not find it beneficial to conduct a revolution in the first period as compared to a social movement, $\forall\alpha_1 \in [\alpha_1^S,\bar{\alpha})$. $H_1(\alpha_1,\beta_1) > \bar{H}_1(\alpha_1,\beta_1)$, $\forall\alpha_1$. Since, $H_0(\alpha_1,\beta_1=0) > H_1(\alpha_1,\beta_1), \forall\alpha_1$ as shown previously, therefore, $H_0(\alpha_1,\beta_1=0) > \bar{H}_1(\alpha_1,\beta_1)$,$\forall\alpha_1$. Hence, the necessary condition $H_0(\alpha_1,\beta_1=0) < \bar{H}_1(\alpha_1,\beta_1)$, $\forall\alpha_1 \in [\alpha_1^S,\bar{\alpha})$ does not hold and therefore $\alpha_L \neq \alpha_1^S$.

Let us assume that $\alpha_L \in (\alpha_1^S,\bar{\alpha})$. For this to hold, the political leader must not find it beneficial to conduct a revolution in the first period as compared to a social movement $\forall\alpha_1 \in [\alpha_L,\bar{\alpha})$. However, $H_0(\alpha_1,\beta_1=0) > \bar{H}_1(\alpha_1,\beta_1)$,$\forall\alpha \in [0,1]$ and hence $\alpha_L \notin (\alpha_1^S,\bar{\alpha})$.

Let us now consider that $\alpha_H > \alpha_1^{F0}$. For this to hold the political leader must not find it profitable to conduct a revolution in the first period as opposed to a social movement $\forall\alpha_1 \in [\alpha_1^{F0},\alpha_H)$. However, $\bar{H}_0(\alpha_1=0,\beta_1=0) > \widetilde{H}_1(\alpha_1=0,\beta_1)$ and $\bar{H}_0(\alpha_1=1,\beta_1=0) > \widetilde{H}_1(\alpha_1=1,\beta_1)$ holds. Since, $\bar{H}_0(\alpha_1,\beta_1=0)$ and $\widetilde{H}_1(\alpha_1,\beta_1)$ are increasing functions in α_1, this implies that $\bar{H}_0(\alpha_1,\beta_1=0) > \widetilde{H}_1(\alpha_1,\beta_1), \forall\alpha_1$. Hence, it is profitable for the political leader to conduct a revolution in the first period $\forall\alpha_1 \in [\alpha_1^{F0},\alpha_H)$ and $\alpha_H \not> \alpha_1^{F0}$.

Let us assume that $\alpha_H \in (\alpha_1^{FW},\alpha_1^{F0})$. For this to hold, the political leader must not find it profitable to conduct a revolution in the first period as compared to a social movement in the range, $\forall\alpha_1 \in [\alpha_1^{FW},\alpha_H)$. Now $\bar{H}_0(\alpha_1=0,\beta_1=0) > \hat{H}_1(\alpha_1=0,\beta_1)$ and also $\bar{H}_0(\alpha_1=1,\beta_1=0) > \hat{H}_1(\alpha_1=1,\beta_1)$. Since $\bar{H}_0(\alpha_1,\beta_1=0)$ and $\hat{H}_1(\alpha_1,\beta_1)$ are increasing functions in α_1, this implies that $\bar{H}_0(\alpha_1, \beta_1 = 0) > \hat{H}_1(\alpha_1, \beta_1), \forall\ \alpha_1$ and hence $\alpha_H \notin (\alpha_1^{FW}, \alpha_1^{F0})$.

Let us now consider that $\alpha_H = \alpha_1^{F0}$. For this to hold, the political leader must not find conducting revolution in the first period more profitable $\forall \alpha_1 \in [\alpha_1^{FW}, \alpha_H)$. However, $\bar{H}_0(\alpha_1, \beta_1 = 0) > \hat{H}_1(\alpha_1, \beta_1), \forall \alpha_1$ and hence $\alpha_H \neq \alpha_1^{F0}$.

Now the only possibility left is that $\alpha_L, \alpha_H \in [\bar{\alpha}, \alpha_1^{FW}]$. Under this situation we have four different situations
Case I: $\alpha_L > \bar{\alpha}, \alpha_H < \alpha_1^{FW}$
Case II: $\alpha_L = \bar{\alpha}, \alpha_H < \alpha_1^{FW}$
Case III: $\alpha_L > \bar{\alpha}, \alpha_H = \alpha_1^{FW}$
Case IV: $\alpha_L = \bar{\alpha}, \alpha_H = \alpha_1^{FW}$

We show that only case *Case IV* holds. For $\alpha_L = \bar{\alpha}$ and $\alpha_H = \alpha_1^{FW}$, the following conditions should hold

1. $\forall \alpha_1 < \alpha_1^S : H_0(\alpha_1, \beta_1 = 0) > H_1(\alpha_1, \beta_1 = 1)$
2. $\forall \alpha_1 \in [\alpha_1^S, \bar{\alpha}) : H_0(\alpha_1, \beta_1 = 0) > \bar{H}_1(\alpha_1, \beta_1 = 1)$
3. $\forall \alpha_1 \in [\alpha_1^{FW}, \alpha_1^{F0}) : \bar{H}_0(\alpha_1, \beta_1 = 0) > \hat{H}_1(\alpha_1, \beta_1 = 1)$
4. $\forall \alpha_1 \geq \alpha_1^{F0}) : \bar{H}_0(\alpha_1, \beta_1 = 0) > \widetilde{H}_1(\alpha_1, \beta_1 = 1)$
5. $\forall \alpha_1 \in [\bar{\alpha}, \alpha_1^{FW}) : \bar{H}_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1)$

Condition 1, 2, 3 and 4 states that the expected payoff from conducting revolution in the first period is higher than the expected payoff from conducting social movement in the first period followed by revolution in the second period in the respective ranges. Condition 5 states that the expected payoff from social movement in the first period followed by revolution in the second period is higher than conducting revolution in the first period in the range $\alpha_1 \in [\bar{\alpha}, \alpha_1^{FW})$.

Conditions 1, 2, 3 and 4 hold and have been already proved. To prove condition 5, let us define $\delta_3 = \frac{1}{\left[\frac{e_L}{e_L - W} - \frac{\theta_L W}{e_H + e_L - \theta_H W}\right]}$. If $\delta > \delta_3$, $\bar{H}_0(\alpha_1 = 0, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 0, \beta_1), \forall \beta_1$. Now let us define $\delta_4 = \frac{1}{\left[\frac{e_L}{e_L - W} - \frac{\theta_H W}{e_H + e_L - \theta_H W}\right]}$. If $\delta > \delta_4$, $\bar{H}_0(\alpha_1 = 1, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 1, \beta_1)$.

Let us now define $\bar{\bar{\bar{\delta}}} = max\{\delta_3, \delta_4\}$. If $\delta > \bar{\bar{\bar{\delta}}}$ then $\bar{H}_0(\alpha_1 = 0, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 0, \beta_1)$ and $\bar{H}_0(\alpha_1 = 1, \beta_1 = 0) < \bar{H}_1(\alpha_1 = 1, \beta_1)$. Since $\bar{H}_0(\alpha_1, \beta_1 = 0)$ and $\bar{H}_1(\alpha_1, \beta_1)$ are increasing functions in α_1, then $\bar{H}_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1), \forall \alpha_1, \beta_1$. Thus, condition 5 holds and hence *Case IV* holds true.

Now we rule out *Case I*, *Case II* and *Case III*. For *Case I* to hold we need that the political leader must find it beneficial to conduct a revolution in the first period $\forall \alpha_1 \in [\alpha_H, \alpha_1^{FW})$ and $\forall \alpha_1 \in [\bar{\alpha}, \alpha_L)$. Similarly, for *Case II* and *Case III* to hold, the political leader must find it beneficial to conduct a revolution in the first period $\forall \alpha_1 \in [\alpha_H, \alpha_1^{FW})$ and $\forall \alpha_1 \in [\bar{\alpha}, \alpha_L)$ respectively. However, if $\delta > \bar{\bar{\delta}}$ then $\bar{H}_0(\alpha_1, \beta_1 = 0) < \bar{H}_1(\alpha_1, \beta_1), \forall \alpha_1, \beta_1$ as proved and hence these cases cannot hold.

We use the same-off path equilibirum beliefs as in Proposition 1. The non-political leader always have a positive expected payoff by announcing $a_1 = s$ and hence calls for a non-political protest. $\square$

E Proof of Proposition 3

Proof. Supose the threshold policy of a political leader with ability $\theta_i \in \{\theta_H, \theta_L\}$ is defined by endogenously determined thresholds $\underline{\alpha}^i$ and $\bar{\alpha}^i$ such that

$$
\begin{aligned}
\sigma_1(P) &= 0 \quad \forall \alpha_1 < \underline{\alpha}^i \\
&= 1 \quad \forall \alpha \in [\underline{\alpha}^i, \bar{\alpha}^i) \\
&= 0 \quad \forall \alpha_1 \geq \bar{\alpha}^i
\end{aligned}
$$

where, $i \in \{H, L\}$. Suppose that $\underline{\alpha}^H \neq \underline{\alpha}^L$ and $\bar{\alpha}^H \neq \bar{\alpha}^L$. Consider the ranges $\forall \alpha_1 \in [min\{\underline{\alpha}^H, \underline{\alpha}^L\}, max\{\underline{\alpha}^H, \underline{\alpha}^L\}]$ and $\forall \alpha_1 \in [min\{\bar{\alpha}^H, \bar{\alpha}^L\}, max\{\bar{\alpha}^H, \bar{\alpha}^L\}]$ In both these ranges the two types of political leader announces different actions. Hence there can be two different possibilities, which are

Case 1 - High type does revolution and low type does social movement

Case 2 - High type does social movement and low type does revolution.

Let us first consider *Case 1*. If the government observes a revolution in the first period then $\hat{\beta}_1 = 0$ and $\hat{\alpha}_1 = 1$ because the leader is then believed to be of the high ability political leader $(\tau = (\theta = H, \zeta = P))$. Hence, in this case the government's force is $g_1 = W$ because $\bar{\alpha} < \hat{\alpha}_1 = 1$ where $\bar{\alpha}$ is as given in equation 3. If the government observes a social movement in the first period then $\hat{\beta}_1 = \beta_1$ and $\hat{\alpha}_1 = 0$. In this case the government's forceis $g_1 = 0$ according to Lemma 3.

The expected payoff of the political leader of type θ_i from revolution is given by:

$$EU_1^P(\theta, a_1 = R, g_1 = W) = \frac{\theta_i W(e_L - W)}{e_H + e_L - \theta_H W}$$

The expected payoff of the political leader of type θ_i from conducting a social movement in the first period followed by revolution in the second period is given by:

$$
\begin{aligned}
& EU_1^P(\theta, a_1 = sm, g_1 = 0, \hat{\beta}_1 = \beta_1, g_2 = 0) \\
& \quad = \delta W K_i(\beta_1)\left[\frac{\theta_i e_L}{e_H + e_L - \theta_L W}\right] + \delta W[1 - K_i(\beta_1)]\left[\frac{\theta_i e_L}{e_H + e_L - \theta_L W}\right] \\
& \quad = \left[\frac{\theta_i e_L}{e_H + e_L - \theta_L W}\right]\delta W
\end{aligned}
$$

where, $K_i(\beta_1) = \frac{\theta_i e_L}{e_H + e_L - [\beta_1 \theta_H + (1-\beta_1)\theta_L]W}$

We can find $\delta^* = \left(\frac{e_L - W}{e_L}\right)\left(\frac{e_H + e_L - \theta_L W}{e_H + e_L - \theta_H W}\right)$ such that $\forall \delta \geq \delta^*$, the expected payoff from conducting social movement is higher than announcing revolution in the first period for the both types of ability of the political leader. On the other hand, if $\forall \delta < \delta^*$, the opposite is true. Hence both the types of political leader cannot announce different actions given a value of δ.

Now consider *Case 2*. If the government observes a revolution in the first period then $\hat{\beta}_1 = 0$ and $\hat{\alpha}_1 = 0$ because the leader is then believed to be of the low ability political leader $(\tau = (\theta = L, \zeta = P))$. Hence in this case the government's effort is $g_1 = 0$ because $\bar{\alpha} > \hat{\alpha}_1 = 0$. If the government observes a social movement in the first period then $\hat{\beta}_1 = \beta_1$ and $\hat{\alpha}_1 = 1$ and by Lemma 3, $g_1 = 0$. Similar to the proof in *Case 1*, we can show that there exists a $\delta = \delta^{**}$ such that $\forall \delta \geq \delta^{**}$, the expected utility from social movement in the first period followed by revolution is higher than by conducting revolution in the first period for both the types of political leader. Similarly,$\forall \delta < \delta^{**}$, the opposite is true for both the types of politcial leader. Hence again both the types of political leader cannot announce different actions given a value of δ. $\square$

F Proof of Proposition 4

Proof. Lemma1 and Lemma3 specifies the government's strategy upon observing a revolution and a social movement in the first period respectively.
If $\alpha_1 < \bar{\alpha}$, conducting a revolution in the first period will imply that the government will put no force. Let $H_0(\theta, \alpha_1, \hat{\beta}_1 = 0)$ denote the expected payoff of a political leader when it announces a revolution in the first period and is given by:

$$
\begin{aligned}
H_0(\theta, \alpha_1, \hat{\beta}_1 = 0) &= EU_1^P(\theta, a_1 = R, \alpha_1, g_1 = 0) \\
&= \frac{\theta_i e_L W}{[e_H + e_L - [\alpha_1 \theta_H + (1-\alpha_1)\theta_L]W]}
\end{aligned}
$$

where $\theta_i \in \{\theta_L, \theta_H\}$. We will use θ_i in the rest of the proof.
If $\alpha_1 \geq \bar{\alpha}_1$, let $\bar{H}_0(\theta, \alpha_1, \hat{\beta}_1 = 0)$ be the expected payoff of a political leader, when it announces a revolution and is given by:

$$\begin{aligned}\bar{H}_0(\theta, \alpha_1, \hat{\beta}_1 = 0) &= EU_1^P(\theta, a_1 = R, \alpha_1, g_1 = W) \\ &= \frac{\theta_i(e_L - W)W}{e_H + e_L - [\alpha_1\theta_H + (1-\alpha_1)\theta_L]W}\end{aligned}$$

The expected payoff of the political leader from announcing a social movement in the first period followed by revolution in the second period depends upon the initial common prior about the leader's ability, α_1. If $\alpha_1 < \alpha_1^S$, government doesn't exert effort in the second period irrespective of the outcome of the social movement. Let $H_1(\theta, \alpha_1, \beta_1)$ denote the expected payoff of the political leader and is given by:

$$\begin{aligned}H_1(\theta, \alpha_1, \hat{\beta}_1 = \beta_1) &= EU_1^P(\theta, a_1 = sm, \alpha_1, g_1 = 0, g_2 = 0) \\ &= \delta W K(\alpha_1, \beta_1)\left[\frac{\theta_i e_L}{e_H + e_L - (\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\ &+ \delta W[1 - K(\alpha_1, \beta_1)]\left[\frac{\theta_i e_L}{e_H + e_L - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)W}\right]\end{aligned}$$

where $K(\alpha_1, \beta_1) = \frac{\theta_i e_L}{e_H + e_L - [\beta_1\theta_H + (1-\beta_1)(\theta_H\alpha_1 + (1-\alpha_1)\theta_L)]W}$

Similar to the proofs in proposition 1 and proposition2, let $\bar{H}_1(\theta, \alpha_1, \beta_1)$ denote the expected payoff of the political leader of type θ_i from conducting a social movement when $\alpha_1^S \leq \alpha_1 < \alpha_1^{F0}$. Thus $\bar{H}_1(\theta, \alpha_1, \beta_1)$ is given by:

$$\begin{aligned}\bar{H}_1(\theta, \alpha_1, \hat{\beta}_1 = \beta_1) &= EU_1^P(\theta, a_1 = sm, \alpha_1, g_1 = 0, g_2) \\ &= \delta W K(\alpha_1, \beta_1)\left[\frac{\theta_i(e_L - W)}{e_H + e_L - (\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\ &+ \delta W[1 - K(\alpha_1, \beta_1)]\left[\frac{\theta_i e_L}{e_H + e_L - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)W}\right]\end{aligned}$$

If $\alpha_1 \geq \alpha_1^{F0}$, let $\hat{H}_1(\theta, \alpha_1, \beta_1)$ denote the expected payoff of the political leader of type θ_i from announcing a social movement in the first period which is given by:

$$\begin{aligned}\hat{H}_1(\theta, \alpha_1, \hat{\beta}_1 = \beta_1) &= EU_1^P(\theta, a_1 = sm, \alpha_1, g_1 = 0, g_2 = W) \\ &= \delta W K(\alpha_1, \beta_1)\left[\frac{\theta_i(e_L - W)}{e_H + e_L - (\alpha_2^s\theta_H + (1-\alpha_2^s)\theta_L)W}\right] \\ &+ \delta W[1 - K(\alpha_1, \beta_1)]\left[\frac{\theta_i(e_L - W)}{e_H + e_L - (\alpha_2^F(0)\theta_H + (1-\alpha_2^F(0))\theta_L)W}\right]\end{aligned}$$

$H_0(\theta, \alpha_1, \hat{\beta}_1 = 0)$, $\bar{H}_0(\theta, \alpha_1, \hat{\beta}_1 = 0)$, $H_1(\theta, \alpha_1, \beta_1)$, $\bar{H}_1(\theta, \alpha_1, \beta_1)$ and $\hat{H}_1(\theta, \alpha_1, \beta_1)$ are all increasing in α_1. By using similar arguments as in Proposition 1, we can show that $\alpha_L = \bar{\alpha}$ and $\alpha_H = \alpha_1^{F0}$.

The non-political leader always have a positive expected payoff by announcing $a_1 = sm$ and hence calls for a social movement. $\square$