

The Implications of (Semi-Sequential) Contest Models for Corporate Strategy in Activist Campaigns

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Abstract

Following Baron's (2001) seminal paper on politics and corporate social responsibility the study activist campaign against firms has focused on clashes that are public and highly conflictual. Additionally, much of the casual empiricism used to motivate extant theoretical models has focused on strong activists who ultimately succeed in bending target firms to their will. In fact, however, activist campaigns are much more diverse, ranging vastly in conflict intensity, potentially involving multiple firms, and resulting in corporate victory at least as often as being settled the other way. This diversity of campaign attributes and outcomes poses challenges for the empirical investigation of activist campaigns and challenges us to reexamine the basic theory of activist campaigns to explore the drivers of diversity in campaign types. In this paper we develop a dynamic model of strategic engagement in a public campaign between a social activist organization and multiple firms within an industry using contest theory. We begin by exploring the implications of contest theory for firm and activist behaviors. We then introduce a novel theoretical approach to analyze activist campaigns targeting multiple firms –a semi-sequential contest model– to make predictions about (a) the extent to which a targeted firm will engage in preemptory self-regulation, (b) the level of resources that an activist expends to advance a campaign once initiated, (c) the extent to which targeted firms fight back or acquiesce, and (d) how organizational capabilities and issue importance shape activist and firm campaign strategies. In our set-up and in contrast to previous theoretical literature, a campaign can arise when self-regulation by the firm is possible. We find that the amount of resources a firm invests in fighting a campaign varies non-monotonically with the activist's value of winning and the activist's campaigning capabilities. In the multistage contest where the activist sequentially campaigns against two or several firms our approach allows us to explore how relative organizational capabilities and issue importance affect resource allocation and campaign intensity across all firms.

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*“Resolute Forest Products is fighting back against years of attacks on its forestry practices by launching a publicity campaign that counters what it says are inaccurate allegations from environmental groups Greenpeace and ForestEthics.”*²

*“behind the scenes, [Royal Bank of Canada] has been waging its own intelligence and opinion battle ... The bank began disputing RAN’s calculations of its involvement in the oil sands as “unconventional math”, calling the group “imported activists”, listing the environmental accolades RBC has collected and arguing for a “balanced approach””.*³

*“China Resources Holdings has refused to accept an open letter from former journalist and self-declared shareholder activist Li Jianjun calling for the state-backed conglomerate's new chairman Fu Yuning to cancel its power unit's three coal investment deals...”*⁴

1. Introduction

In the area of Non-Market strategy activist campaigns are often characterized as highly confrontational interactions in which activists attempt to sully the reputation of firms through demonstration and negative information campaigns, or inflict direct harm through the organization of consumer boycotts. Well known examples focus on how activists have been successful at exacting the corporate change they desire from their targets (e.g., RAN vs Citigroup, RAN vs Home Depot, Greenpeace vs Shell Oil etc.). Yet, as a matter of fact a large number of confrontations between activist groups and corporations are not particularly confrontational and illicit little to no overt confrontational action on the part of target firm. On the one hand activists are often ignored –King (2008) found that 72% of firms did not concede to activist demands, at least as evidenced by media reports, implying broad spread resistance, though *how* firms resist is not explored– and on the other hand firms may take quick action to placate their opponent –Baron and Yurday (2004) note that following Citigroup’s acquiescence to RAN’s demands concerning Project Finance funding, several of Citigroup’s competitors quickly acquiesced. This large variety of types of interactions and leading to distinct and opposite outcomes poses a considerable challenge to the empirical study of activist campaigns. For example it is not easy to test whether a given firm or managerial attribute makes a firm more or less likely to “fight hard” in a campaign when its resistance choice may be affected by the attributes of the activist it faces, and my even be, for a given activist type, non-linear.

Research in strategic management on the impact of activist organizations has argued that at-risk firms will often attempt to forestall such campaigns by self-regulating corporate behaviors that are the target of activist attention, enabling both parties to avoid the costs associated with a campaign (Baron and Diermeier, 2007; Lenox and Easley, 2009). In this line of research, activist campaigns are generally not predicted to occur in equilibrium, and the focus of analysis follows the larger literature on the strategic pre-emption of costly threats posed by legislators, regulators or civil society (Maxwell et al., 2000; Fleckinger and Glachant, 2011). Yet, as noted by Baron (2001) in his seminal paper on private politics and corporate social responsibility, firms may not always be able to out-manuever campaign launches since focal issues can be unpredictable and, additionally, activist groups may seek the publicity that surprise attacks generate (also noted by Deegan, 2001). Additionally some firms may decide to eschew efforts to avoid activist campaigns if they deem activist demands as overly costly relative to the likely success of the campaign.

² Canadian Press, August 7, 2015

³ Best, P. *A Hostile Climate*. MacLean’s magazine, January 14, 2010.

⁴ South China Morning Post, July 5, 2014.

The frequency and variety of activist campaigns against firms suggests the need to explore in greater depth the theory of activist-firm and activist-industry interactions to guide empirical work in the area. In this paper we contribute to nonmarket strategy research by using the contest approach to studying activist campaigns with a specific focus on the empirical predictions arising from this approach. Targeted firms' response strategies *after* the initiation of an activist campaign, a topic that has received little attention in the strategy literature (King & Soule, 2007). We focus specifically on explaining the level of resources that firms and activists devote to a campaign, rather than the specific tactics deployed (which will depend on the context), and the likelihood of success. Resisting a campaign provides an opportunity for firms to prevail against the activist organization and to win the support of various stakeholders – potentially stymying consumer or other boycotts – thereby avoiding the need to agree to costly demands.

Recognizing that a firm and activist strategies are interdependent we also examine the resources that activists themselves devote to organizing and implementing a campaign. Activists can vary a campaign's resources, for example according to the number of supporters that are mobilized, the number of geographic locations in which action occurs, the range of audiences targeted, the scope of media communications activities, and expenditures on external experts. By explicitly incorporating the activist's campaign resource strategy into our analysis, we are able to derive empirical predictions about both the firm's optimal response *and* the activist's optimal resources, and the underlying factors that shape the resource intensity of a campaign.

Later in our analysis we study activist-industry interactions using a novel theoretical approach – a semi-sequential contest model – that has not been utilized to date in nonmarket strategy research, to develop new insights into strategic interactions between firms and activists in the context of a campaign, and to develop testable predictions. Contest models have been applied in a broad variety of social science settings to examine strategies where actors exert effort to compete for a prize that is awarded based on rank outcome, rather than just resource level *per se*, and where there is a random element – in addition to resources – that influences an actor's likelihood of winning (Konrad, 2007, 2009). Examples include military conflict (Hirschleifer, 2000), sports tournaments (Syzmanski, 2003), and court room litigation (Hirschleifer and Osborne, 2001). In management research, contest models have been used in analyses of CEO pay dispersion, innovation contests, and franchising outcomes (Connelly, Tihanyi, Crook and Gangloff, 2014).

With respect to activist campaigns Baron (2001) implements contest models to explore non-sequential activist campaigns against a firm or industry. Baron summarizes the basic predictions of contest model with a particular emphasis on issue saliency, which can be thought of as a component of the relative efficiency of the firm and activist campaign resources. We will explore below. In his industry model, the focus is on the issue of free-riding as firms attempt to rely on the efforts of others in winning the campaign against the activist. It is interesting to note that we show, in our model, that firms would like to pool information that might raise probabilities of fighting an activist since there exists positive externalities associated with any one firm winning, given the semi-sequential nature of the model.

The contest approach is an especially applicable modeling technology for studying firm-activist strategies during a campaign since a campaign is essentially a contest between the two actors to motivate key decision makers to take actions in their favor. The decision-makers may hold key positions within a firm, may constitute an influential set of consumers, or may represent the balance of public sentiment which could bring pressure on the firm in any number of ways, such as sales and recruiting, to act or not to act on the activist's desires depending on the outcome of the contest. The contest technology provides a method for analyzing the amount of resources that firms and activists expend, as well as central factors such as organizational capabilities that shape actor effort and the likelihood that an actor will win the contest. In

addition, the probabilistic nature of contest models incorporates the impact that unpredictable factors, such as exogenous shifts in public sentiment, can have in determining outcomes.

In the next section, to fix ideas before we present our semi-sequential model, we develop a single period contest model of a campaign between a firm and an activist organization, and develop predictions about the resources that each side expends. Since activists often seek to change the behavior of an entire industry rather than just a single firm, we then extend the model by introducing a second period and a second firm which the activist may target after the first period. The dynamic model, in which the activist sequentially targets multiple firms, yields new insights into how competitive market forces between firms within an industry, and how the relative abilities of firms to counter activist pressures, affect a firm's resistance efforts.

Within our single period model, we make several observations and explore their implications for empirical work. First, an important benefit of the contest model approach is that we are able to derive theoretically-motivated predictions about firms' strategic responses when targeted by an activist campaign, specifically the extent to which firms choose to fight back in a bid to win the campaign. By contrast, existing models of activist campaigns tend to treat firm responses as exogenous parameters, (e.g. Baron and Diermeier, 2007), ignoring the endogenous nature of resistance. In Baron and Diermeier's model, for instance, firms are assumed to be either 'intransigent' or else 'responsive' when targeted, whereas in our model we derive the degree of intransigence as equilibrium behavior under specified conditions.

Second, the 'macrotechnology' of the contest model explicitly identifies fundamental determinants of firm and activist strategy, such as the cost of campaign resources, the value to each side of winning, and the organizational capabilities of firms and activists in managing a campaign. We are able to explore the sensitivity of strategy to changes in these parameters, and hence address questions about whether more 'capable' firms and activists tend to fight harder, why seemingly 'weak' activists may choose to target seemingly 'strong' firms, when firms are more likely to ignore activist demands, and how industry structure affects a firm's willingness to resist a campaign. While statistical analyses are outside the scope of this paper, we hope that the model can help guide future empirical research to test our predictions and develop new empirical insights.

Differences between firms and activists in the value of winning, which is easily incorporated into our contest model, is likely to play an important role in the intensity and the outcome of campaigns. Activists, in particular, do not always have equal motivation to win campaigns, depending on whether they were truly at the origin of the campaign or whether this campaign was triggered by other actors such as the media and they had to pick up on it because it was in their area of expertise. Similarly, there are variations in firms' willingness to win campaigns. The value of winning is likely to increase for firms if one of their core products is under attack, if the campaign takes place in a key geographical location or if the firm has a strong brand that could be damaged.

Third, we provide a theoretical explanation for why some activist campaigns against firms are intense battles with significant resource expenditures, while others are minor skirmishes, an overlooked aspect in empirical research, which typically measures campaigns as simple homogenous binary events. Similarly, we explain why, in some cases, players overly invest in fighting the campaign, even though they end up losing it. While the initiation of a campaign is determined by an activist organization, its resource intensity is the product of strategic interaction between both the activist and the firm, and would be a natural topic for empirical analysis in further research. Our model also points to factors that influence how a campaign is likely to end. Two outcomes are possible: either the firm can cease its defensive efforts to resist and agree to cooperate with activist demands –which has been the primary focus of the empirical literature

to date— or else the activist can stop its offensive campaign and withdraw its demands, which may be harder to observe if activists organizations do not publicly announce their cessation. Both situations happen in reality. Our model provides new insights into the conditions when the firm or the activist are more likely to win a campaign.

Fourth, while the campaign is the focus of our work, we also explore the possibility that a targeted firm may engage in preemptive self-regulation, giving in to activist demands without a fight. Unlike the current literature, we find that a perfectly rational firm may eschew self-regulation in favor of a campaign if the activist's demands are deemed to be too high. In general we find that campaigns result when the activist or the firm, or both, derive reputational benefits from engaging in the campaign. This may explain why campaigns often receive publicity while at the same time their use appears to be rare.

Finally, our extension of the basic model to multiple period provides insights that have not been previously noted in the literature. Specifically we explore how the attributes of future campaigns spill over to affect current ones. We also find that firms in an industry have incentive to share their knowledge in fighting activists even though they are rivals in the market place.

The remainder of the paper is presented as follows. In section 2 we discuss the current literature as it applies to firm- activist corporate campaigns and discuss where our firm fits within the literature. In section 3 we present a single period model of a corporate campaign and explore its implications for firm and activist behavior and the probability of winning. In section 4 we examine a targeted firm's decision to engage in self-regulation and in section 5 we extend the model to multiple periods and obtain predictions about firm and activist behavior as the activist targets multiple firms. In the final section we offer conclusions and discuss avenues for future research.

2. Corporate Responses to Activist Campaigns

Much of the research on corporate strategies for dealing with activist campaigns has focused on strategic pre-emption as a mechanism for mitigating negative impacts on firm performance (Baron, 2014, 2016; Baron and Deirmeier, 2007; Lenox and Eesley, 2006). In the canonical model, activists threaten to harm a firm, for example by organizing a consumer boycott campaign, if the firm does not comply with demands to change specified operating practices. Since inflicting harm is costly for the activist, and the harm itself is costly for the firm, the firm may be able to prevent an activist campaign from occurring by strategically self-regulating its operations *ex ante*, depending on the cost of such moderation. In the extreme case, firms may avoid becoming targets by not investing in economically attractive geographic markets where activist groups are especially prevalent or organized (Yue, Rao, and Ingram, 2013). Firms that are most at risk of being targeted are those that are believed to be more likely to acquiesce should a campaign occur – so called ‘soft targets’ – since activists can extract larger concessions by credibly threatening to initiate a campaign. ‘Hard targets’, firms that are believed to be unyielding to activist demands should a campaign occur, have a lower risk of being targeted and undertake less self-regulation. Some models also make assumptions about the types of activists (‘radical’ versus ‘moderate’) and their willingness to launch campaigns against firms (Baron, 2016). While activist campaigns are generally out-of-equilibrium events in this strand of the literature, the assumptions about the distribution of firm types and how they would respond in the instance of a campaign – that is, whether they would resist or acquiesce – are important in determining the extent to which firms self-regulate so as to pre-empt activist attention.

Empirical research on self-regulation and pre-emption provides some support for this targeting thesis. Gupta and Innes (2011), for instance, find that soft firms, as measured by KLD strengths for social responsibility –are more likely to be targeted by activist-initiated boycotts and proxy resolutions than hard

firms, as measured by KLD concerns. Similarly, Amer and Bonardi (2017) show that firms that are recalcitrant are less frequently targeted by activists and media, and tend to self-regulate less than soft firms.

Since the emphasis in this literature is on ex ante strategic maneuvering between firms and activists prior to a potential campaign – with the goal of pre-emption – questions of how firms and activists interact in the context of an actual campaign, and what factors shape strategies and outcomes, have generally been overlooked. In part, this reflects an implicit assumption in the theoretical literature that firms generally cannot win orchestrated activist campaigns, making avoidance the best approach for dealing with activists ex ante, or else timely acquiescence ex post.

A complementary line of empirical research, however, has recently begun to examine the tactics that firms use to respond when confronted with an activist campaign, motivated by the observation that resistance is often a more typical reaction than acquiescence when large firms deal with activist campaigns. The focus of this research has largely been on the degree to which specific defensive tactics have been used by the firms under study. McDonnell and King (2013), for example, argue that firms increase ‘pro-social’ claims – statements about their positive social actions – after a boycott is announced in order to contradict activist claims of negative impacts and to maintain the support of relevant stakeholders. Media attention to a boycott is argued to further motivate firms to make more pro-social claims, for example through press releases, though firms with stronger existing public reputations exhibit a ‘halo’ effect that reduces their need to rely on pro-social claims in response to crisis events.⁵ Walker (2012, 2014) finds some evidence that firms, especially in publicly visible industries such as telecoms and media, hire public relations consultants to organize pro-corporate grassroots campaigns as a means of shaping public opinion on salient issues.

While these studies provide insights into the intensity of some of the tactics that firms use to resist activist campaigns, they are unable to provide general insights into the strategies that firms pursue to win them. This deficiency is driven by the fact that existing studies on private politics treat activists as homogenous across conflicts and focus on how resistance changes with firm characteristics or media coverage. Case studies and qualitative research has shown that activist groups are strategic in their approach to campaigns and vary in focus and campaign abilities.⁶ Taking this into account, we model fully rational players (firms and an activist) engaging in a campaign in which their optimally chosen strategies lead to a positive probability of winning. The strategies in a firm-activist engagement depend upon own and rival abilities influence key decision makers with its campaign, and what is at stake for each player. From this standpoint, our model is complementary to Rowley and Moldoveanu (2003) or den Hond and de Bakker (2007), who argue that activists are heterogeneous organizations that behave differently, based on various intrinsic characteristics, during campaigns.

3. Contest Model of Campaign between Activist and Firm

As we have noted, at its core, an activist campaign is a contest to win over a key decision maker. As such it is natural to use the technology of a contest model to think about an activist campaign. Contest models highlight the inter dependence between player strategies. The focus is on the level of resources or effort players devote to a conflict, rather than on specific tactics used in the battle. As such contest models have been used to study numerous conflicts including military, athletic, political, managerial, and many more. The strategies we consider are the level of resources the firm and activist devote to the campaign. For the firm these resources may include both fiscal (e.g., hiring a public relations firm or other consultants, offering price discounts to maintain sales) and managerial resources (tasking individuals within the firm to deal with

⁵ Abito et al. (2015) formally model organizational reputation and diminishing returns from reputation.

⁶ Need to reference the RAN case and Maybe another, also the Spar paper or some others that describe activists.

various aspects of the campaign). A more resource intensive campaign represents a greater deviation from business as usual for the firm. We are interested in examining both firm and activist attributes that affects the resource choice strategy of each player. We first explain how we model an activist campaign using the technology of contests. We then examine both the firm and the activists optimal resource allocation behavior. Finally we examine the equilibrium resource allocation strategies, how they vary with the model's key parameters and the resulting implications for activist and firm campaign behavior.

3.1 Single Period Campaign

In the single period campaign model, an activist organization targets a firm with a demand that it cease a business practice deemed to be harmful. Let a denote the level of resources the activist expends on the campaign – for instance with the aim of damaging the firm's reputation or encouraging consumers to boycott the firm – and f the amount of resources the firm devotes to resisting or countering the activist through its own nonmarket actions, such as communicating its own position through the media or questioning the legitimacy of the activist. Note that while campaign tactics may vary depending on the specifics of a given campaign, we view the key strategic decision as determining the level of resources devoted to the campaign.⁷

We denote p as the probability that the activist wins the campaign, which triggers the firm's compliance with the activist's demand. Consistent with the contest model literature, we assume that the probability p is determined by the 'contest success function', which specifies how players' efforts influence the likelihood of winning the contest:

$$p = \frac{\sigma h(a)}{\sigma h(a) + h(f)}, \quad (1)$$

In this Tullock form of the contest success function (Konrad, 2009; Tullock, 1980), a player's probability of winning is determined, in part, by its share of total resources expended by both players in the campaign.⁸ The function $h(x)$ translates players' resource decisions, $x = \{a, f\}$, into measures of campaign influence. We assume that the more resources a player devotes to the campaign the greater, *ceteris paribus*, is the likelihood of winning.⁹ Mathematically, $h(x)$ is increasing in x for $x = \{a, f\}$. Since $\sigma > 0$ (see below) it follows that each player's likelihood of winning the contest is rising in its own level of resources and falling in its rival's level of resources. We assume further that expenditures of campaign resources exhibit diminishing marginal returns, i.e., $\frac{\partial^2 p}{\partial a^2} < 0$ for, and $\frac{\partial^2 p}{\partial f^2} > 0$ for $a, f > 0$.¹⁰

The parameter $\sigma > 0$ represents the relative effectiveness of the activist's campaign resources compared to the firm's, i.e. in increasing the likelihood of winning the campaign. If $\sigma > 1$ then the activist

⁷ For example an activist may stage "die-ins" where volunteers appear to die after drinking contaminated water when there is abundant local media to cover the event, whereas they may organize guest speakers and solicit email sign-ups to garner future support where media may not be present and/or where participants' voices may be particularly relevant. Nevertheless the key decision is how much effort or resources to put into these tactics.

⁸ There are many variants of the contest success function designed to highlight various aspects of competition. We choose the simplest form that allows us to study the impact of player heterogeneities. We use the ratio form of the contest success function which is the most common form utilized in the contest literature (Baik, 1994; Konrad, 2009). The ratio form models contest outcomes as a function of the relative differences between players, which is especially appropriate for an activist campaign where an activist organization and firm may have significant differences in resources, motivations, and capabilities.

⁹ If $h(0) = 0$, we define $p = 0$. That is, if neither player devotes effort to the campaign then the firm will not abandon the practice the activist deems harmful.

¹⁰ Specifically these conditions are $h''(a)(\sigma h(a) + h(f)) < 2\sigma(h'(a))^2$ and $h''(f)(\sigma h(a) + h(f)) < 2\sigma(h'(f))^2$

is more effective than the firm at marshaling resources towards influencing the campaign outcome in its favor. In this case, if both the firm and the activist were to devote the same levels of resources to the campaign, the activist would have a greater than 50 percent probability of winning. If $\sigma < 1$ then the activist is less effective at campaigning than the firm.¹¹

Using equation (1) we can trace out the line of $a - f$ combinations where the firm and activist have equal probabilities of winning, defined by $\sigma h(a) = h(f)$. This line will serve as a useful reference in explaining firm and activist behavior. We refer to it as the ‘50-50’ line. It is upward sloping in (a, f) -space with the slope determined by σ and $h(\cdot)$. Above the line, the firm has a greater probability of winning the contest, while below the line the opposite case holds. We refer to the player with the higher (lower) probability of winning as the ‘favourite’ (‘underdog’).

The firm’s valuation of winning the campaign, v , includes the cost savings of not altering its practices and operations as demanded by the activist net of any long terms costs imposed on the firm arising from the campaign. We relate the valuations of each player for winning the campaign with a single parameter, $\alpha > 0$, so that the activist’s valuation is αv . Hence, $\alpha > 1$ means that the activist places a higher value on winning the campaign than does the firm, while $\alpha < 1$ represents the opposite case. We can view α as a measure of relative motivation. That is, if $\alpha > 1$ the activist is more motivated to win the campaign than the firm.¹²

We have now covered the elements of an activist campaign that characterize it as a contest. Namely, both the activist and the firm devote resources to the campaign in an attempt to win. Upon winning, each player receives a prize that he or she may value differently. Finally, our contest success function translates the level of resources each player devotes to the campaign into a probability of victory. The outcome is assumed to be probabilistic in order to capture the inherent uncertainty in competitive scenarios. For example, while key stakeholders may be sympathetic to an activist’s campaign, an external event such as a war or a terrorist attack may distract media attention from the issue, releasing pressure on the firm. Similarly, newly discovered scientific information may raise the public’s desire for a firm to cease resisting the activist’s demands.

3.2 Activist and Firm Resource Allocation Strategies

We assume that the firm and activist each maximize their expected payoff from engaging in the campaign. Payoffs for the activist and the firm, respectively, are

$$\pi_a = p\alpha v - a \text{ and } \pi_f = (1 - p)v - f, \quad (2)$$

¹¹ There are several ways by which campaign capabilities could be measured empirically, for instance through observing past experience (counts of prior campaigns), the existence of a crisis management department, or the professional expertise of senior management. An example of a firm that appeared to have weak campaign capabilities compared to the activist was Findus (a frozen food product company) in the European horsemeat scandal. See The Guardian, Findus criticized for its handling of horsemeat crisis, February 8, 2013.

¹² Note that one can also try to evaluate empirically the importance of the campaign for the activist. One way to measure this would be to assess whether the activist is mostly a single issue-activist (in which case, if the campaign is on this issue, it should be of great importance) or a multi issue activist. Note that even in the case of multi-issues activist, such as Greenpeace, there is always more of a focus on one issue. For Greenpeace, the key issue is clearly climate change. Data on what they raised money for (which issue) could also be a way to measure the importance of a campaign for a specific activist.

where that the marginal cost of resources for each player is one.¹³ The optimal choices of a and f are defined by the first order conditions:

$$\frac{\partial \pi_a}{\partial a} = \frac{\sigma \alpha v h'(a) h(f)}{(\sigma h(a) + h(f))^2} - 1 = 0 \quad (3)$$

and

$$\frac{\partial \pi_f}{\partial f} = \frac{\sigma v h'(f) h(a)}{(\sigma h(a) + h(f))^2} - 1 = 0. \quad (4)$$

Rearranging the first order conditions yields the reaction functions of each player in the campaign. The reaction function of the activist, $a = r_a(f)$, provides the optimal amount of resources, a , the activist will expend on the campaign for any given level of expected firm resistance, f . Since the activist's choice is optimal it must be the case that

$$(\sigma \alpha v h'(a) h(f)) = (\sigma h(a) + h(f))^2 \quad (5)$$

at each point along the activist's reaction function. Similarly, the firm's reaction function, $f = r_f(a)$, is given by

$$(\sigma v h'(f) h(a)) = (\sigma h(a) + h(f))^2. \quad (6)$$

Straightforward algebra allows us to trace out the reaction functions in (a, f) -space as illustrated in Figures 1 a and b, where we assume that $h(0) > 0$.

To examine the shapes of the reaction functions we observe that the slopes are defined by the following equations:

$$\frac{\partial r_a(f)}{\partial f} = \frac{\partial^2 \pi_a}{\partial f \partial a} = \left\{ \frac{\alpha v \sigma h'(a) h'(f)}{[\sigma h(a) + h(f)]^3} \right\} (\sigma h(a) - h(f)) \quad (7)$$

and

$$\frac{\partial r_f(a)}{\partial a} = \frac{\partial^2 \pi_f}{\partial a \partial f} = \left\{ \frac{v \sigma h'(a) h'(f)}{[\sigma h(a) + h(f)]^3} \right\} (h(f) - \sigma h(a)) \quad (8)$$

Given our assumptions that $h(x)$ and $h'(x)$ are positive for $x > 0$, we can see that the terms in $\{ \}$ in equations (7) and (8) above are positive. This leads to an important insight – that the firm's and activist's reaction functions are not linear but instead are shaped like an inverted-U. The firm's best strategy is not necessarily always to resist more, or to fight back harder, if the activist fights especially aggressively or increases its campaign resources. Instead, it may be optimal for the firm to 'back off' or respond less forcefully. Specifically, we see that when a player is the favorite to win the contest (e.g., when $\sigma h(a) >$

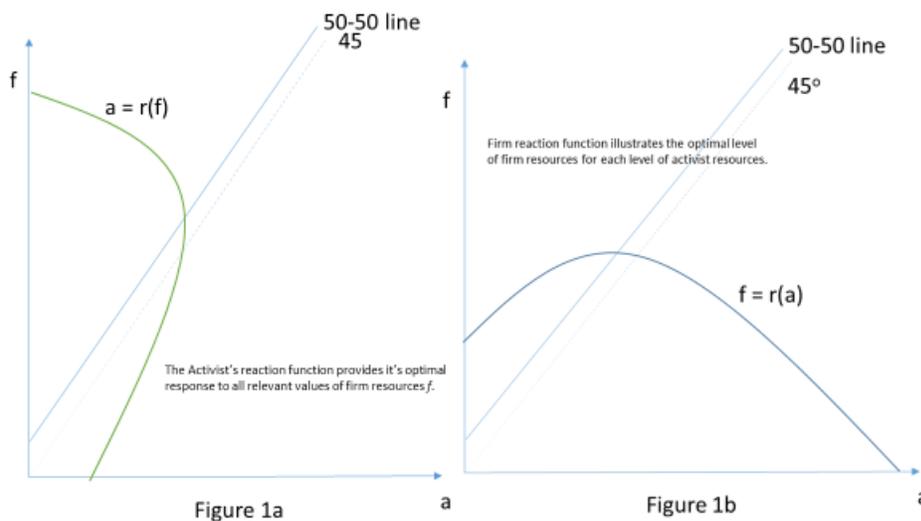
¹³ As long as the players face constant marginal costs it is clear that the expected payoffs could be represented as those given with suitably transformed α and v .

¹⁴ Note that given the conditions in footnote 3, straightforward calculations show that each player's objective function is strictly concave, and thus second order conditions for a maximizing each objective function are satisfied.

$h(f)$ for the activist or when $\sigma h(a) < h(f)$ for the firm) the player's reaction function is upward sloping, meaning that it pays to raise one's own campaign resources – that is, to fight harder – in response to an increase in the rival's (underdog's) resources. As the underdog continues to raise its campaign resources, however, the marginal benefit to the favorite of increasing its own resources diminishes, since the marginal impact of those resources on the probability of winning the campaign becomes smaller. At the same time the marginal cost of the additional resources is unchanged.

It remains optimal for the favorite to raise its resources in response to an increase in resources by its rival until the point where the players have equal probabilities of winning - formally, an (a, f) combination located on the 50-50 line. Each player's reaction function peaks at the 50-50 line where the slope is zero.

As rival resources increase beyond the 50-50 line, the favorite now becomes the underdog and its optimal response to an increase in rival resources is to *cut back* on the amount of resources it devotes to the campaign in order to maintain the marginal costs and benefits of the resource allocation. Thus, the reaction function begins to slope downwards. As rival resources continue to rise, the marginal impact an increase in resources becomes more negative and to maintain optimality it is best to reduce the level of resources spent on the campaign. This continues until rival resources are sufficiently high that it is no longer optimal to devote any resources to the campaign since the cost is greater than the expected benefit.



3.3 The Campaign Equilibrium

Next we examine the firm's and activist's equilibrium resource allocation strategies and how they change in response to changes in each players' attributes. The Nash equilibrium occurs at the intersection of the firm's and activist's reaction functions, at which point neither player has an incentive to change its campaign resources given the other player's resource choice. Equating equations (5) and (6) gives

$$(\sigma\alpha v h'(a^*)h(f^*)) = \sigma v h'(f^*)h(a^*) \quad (9)$$

where a^* and f^* denote the activist's and firm's Nash equilibrium levels of campaign resources. Clearly, for a given functional form of $h(\cdot)$ the ranges of σ , α , and v , means that various (a, f) combinations could be Nash equilibria. We can group these potential equilibria into various types as illustrated in figure 2.

Consider first a symmetric campaign in which the firm and activist are equally effective in campaigning ($\sigma = 1$) and have identical valuations of winning ($\alpha = 1$): each side will expend the same optimal level of resources, resulting in an evenly matched campaign. The firm resists in equal measure the activist's prosecution of a campaign in a 'quid pro quo' strategy and the equilibrium will be located on the 45-degree line (equilibrium A in figure 2). Given the symmetry of the two players' characteristics and the two reaction functions, the 50-50 line coincides with the 45-degree line.

Increases in Issue importance

Next we consider how changes in the model's parameters affect firm and activist behavior as well as the resulting Nash equilibria. We begin by examining changes in the common component of issue importance, v . Straightforward differentiation of (5) and (6) shows that, holding the choice of rival resources fixed, an increase in v causes each player to increase the amount of resources it devotes to the campaign for each level of rival resources.¹⁵ Thus, the reaction functions shift outward in response to an increase in v as illustrated in Figure 2, most often resulting in a movement from equilibrium A to equilibrium B where both the firm and activist to increase their resources.¹⁶ This results in a more resource intensive but still evenly matched battle.¹⁷ Heavily contested campaign battles in which each side devotes significant resources are more likely to be publicly visible and commonly reported in the news media. Such contests tend to feature evenly matched players in which each side faces a similar likelihood of winning.¹⁸ In fact, as we show below, it is possible that in highly asymmetric battles an increase in v can lead to a reduction in resource expenditures by the underdog player. If both the activist and firm attach little importance to a campaign issue, the activist will expend minimal resources and the firm will offer an equivalent *de minimus* response (Equilibrium A as compared to B). These campaigns are likely to be less visible since neither the firm nor the activist expends much due to the lower importance that each attaches to winning, yielding small skirmishes that may end relatively quickly and attract less media attention. In 2013, for instance, the French apparel brand Bonpoint, specialized in luxury children clothes, received mail from activists with a demand to stop using animal fur. For the activists, however, the Bonpoint brand was only a small player compared to other larger brands using animal products, and the criticism was not followed by an intense press

¹⁵ An initial glance at equation (16) might lead the reader to believe that this change has no impact on the equilibrium since v drops out of the equation. Notice however that both f and a are functions of v , which we can see by observing equations (5) and (6).

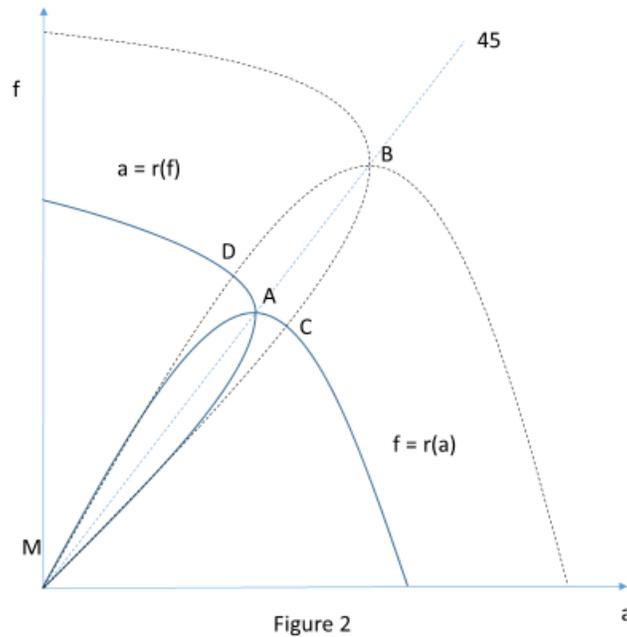
¹⁶ Notice that in figure 2 the reaction functions are drawn under the assumption that $h(0) = 0$. In this reaction functions featuring a higher v will still emanate from the origin.

¹⁷ It is clear that the new equilibrium will be located at B on the 45-degree line since the change in v does not affect the symmetry of the players. In general players will fight harder at the new equilibrium although the ratio of their resources will not be identical after the increase in v .

¹⁸ While our model does not explicitly model timing of players' actions, it is plausible that it takes longer to deploy a larger amount of resources. Hence, it is reasonable to assume that a campaign such as equilibrium B may last longer than a campaign at equilibrium A.

campaign. Seeing this, Bonpoint’s management reacted mildly with a response letter explaining that they would explore possibilities to use alternative fabrics. The campaign finally stopped there without much more interaction¹⁹. [Note change diagram below to asymmetric at the origin]

Figure 2: Types of Equilibria in Activist-Firm Campaign Resource Strategies



This leads to our first proposition:

Proposition 1.

- (a) Firms and activists will generally expend more on a campaign when each attributes more importance to the issue at hand.
- (b) A common increase in issue importance will lead to a *reduction* in expenditure on the campaign by the underdog when its probability of winning the campaign is sufficiently low.

Proof: We examine the impact of v on activist and firm resources separately. We do so by examining the associated direct and indirect effect of the increase in v . Namely, note that

$$\frac{da}{dv} = \frac{\partial a}{\partial v} + \frac{\partial a}{\partial f} \frac{\partial f}{\partial v}, \tag{10}$$

Where the first term on the right hand side above represents the direct effect of a change in v on a while the second term represents the indirect effect, translated through the change in f .

Using (3) above we see that

¹⁹ Source: Private conversation of one of the authors with the company’s CEO.

$$\frac{\partial a}{\partial v} = \frac{\alpha \sigma h'(a) h(f)}{(\sigma h(a) + h(f))^2} > 0. \quad (11)$$

Thus we see that the direct effect of an increase in v is to increase the level of campaign resource the activist chooses. Next note that

$$\frac{\partial f}{\partial v} = \frac{\sigma h(a) h'(f)}{(\sigma h(a) + h(f))^2} > 0, \quad (12)$$

finally note that

$$\frac{\partial a}{\partial f} = \frac{\alpha \sigma v h'(a) h'(f) \{\sigma h(a) - h(f)\}}{(\sigma h(a) + h(f))^3}. \quad (13)$$

Clearly the term above will be negative when we are above the 50-50 line. This condition alone is not sufficient to imply that $\frac{da}{dv} < 0$. Instead we need to find conditions under which the term in square brackets below is larger than the first term on the right hand side of the equality sign. That is when $\frac{\partial a}{\partial f}$ is sufficiently negative.

$$\frac{da}{dv} = \frac{\alpha \sigma h'(a) h(f)}{(\sigma h(a) + h(f))^2} + \left[\frac{\alpha \sigma v h'(a) h'(f) \{\sigma h(a) - h(f)\}}{(\sigma h(a) + h(f))^3} \frac{\sigma h(a) h'(f)}{(\sigma h(a) + h(f))^2} \right]. \quad (14)$$

Clearly this is more likely to hold the larger is f relative to a .

Following a similar procedure, it is straightforward to show that

$$\frac{df}{dv} = \frac{\sigma h(a) h'(f)}{(\sigma h(a) + h(f))^2} + \left[\frac{\alpha \sigma v h'(a) h'(f) \{h(f) - \sigma h(a)\}}{(\sigma h(a) + h(f))^3} \frac{\alpha \sigma h'(a) h(f)}{(\sigma h(a) + h(f))^2} \right]. \quad (15)$$

Thus, the resources the firm puts into the campaign will never fall above the 50-50 line, which completes the proof of part (b) of the proposition. Further, we see that firm resources may only fall if firm resources are sufficiently small relative to activist resources.

Proposition 1 implies that as stakes rise between firms and activists resource expenditures are likely to rise in campaigns that each side deems it has a reasonable chance of winning, but the number of highly asymmetric campaigns may fall. This suggests a movement towards larger but targeted demonstrations and away from shareholder resolutions that face stiff opposition from most shareholders. It is worth discussing how we might observe changes in v when conducting empirical work. One way of assessing the importance to an activist of winning a campaign is to use data on public support for campaign goals, as judged for example by the number of petition signatures or demonstration participants, where relevant. The level of public support is likely to correlate with campaign importance for the activist since it directly signals to the activist the size of its constituency on an issue as well as potential fund-raising opportunities. Online petitions are commonly used by activists to exert visible pressure on target firms or governments due to the relatively low cost of implementation. If low levels of public support are a reasonable proxy for low importance, our model would predict that firms will resist, all else equal; but if support builds and reaches a critical tipping point – where the activist becomes the ‘favorite’ – then the firm will change tactics and back off.

A second approach for estimating campaign importance is to consider the relative impact on both the activist organization and the target firm. Single-issue activist organizations are likely to attribute a higher level of importance to winning a particular campaign, all else equal, compared to activist organizations such as Greenpeace and Friends of the Earth, which manage portfolios of campaigns simultaneously involving multiple target firms, issues, and jurisdictions. A single-issue activist organization, for instance a local neighborhood group protesting new infrastructure development, may disintegrate entirely if it loses a campaign, while larger organizations are more likely to survive any one loss. Similarly, the impact of a campaign on a targeted firm will naturally vary depending on the scope of the firm's business. In some cases, such as the campaign by Stop Huntingdon Animal Cruelty, an animal rights group, against Huntingdon Life Sciences, activists target and threaten the very survival of a firm – implying, all else equal, a lower value of α in our model since the firm will ascribe a relatively high value to winning. In other cases, where firms are diversified, a campaign against one division will be less critical for the corporation as a whole. Combinations of different types of firms and activists may yield testable predictions about the degree to which a firm resists a campaign: a firm whose core economic profits are at stake in a campaign orchestrated by a diversified activist organization may be expected to aggressively fight back, while a firm confronting an entrenched activist on an issue that has secondary profit implications would be more likely to adopt a passive strategy of backing down.

Disparities in Issue Importance

Next we look at the first of two important heterogeneities between the players, namely the impact of a change in the relative importance that the firm and activist place on winning the campaign (parameter α). For the activist, straightforward differentiation of its reaction function (5) shows that its optimal allocation of campaign resources is increasing in the importance it attributes to winning relative to that of the firm.²⁰ Graphically, an increase (decrease) in α causes the activist's reaction function to shift 'outward' ('inward') in (f, a) -space along the 50-50 line, implying a higher (lower) level of activist resources for any level of resources chosen by the firm.²¹

Since we are considering the activist's valuation of winning *relative* to the firm, an increase in α does not affect the firm's reaction function (it does not contain α). The firm's equilibrium resource allocation will, however, change in response to the shift in the activist's reaction function. Whether the firm's response is to escalate (raise its resources in response to the increase in resources by the activist) or deescalate (reduce its resources) depends on whether it is the favorite or the underdog in the campaign. Mathematically:

$$\frac{df^*}{d\alpha} = \left\{ \frac{v\sigma h'(a^*)h'(f^*)}{[\sigma h(a^*) + h(f^*)]^3} \right\} (h(f^*) - \sigma h(a^*)) \frac{da^*}{d\alpha}. \quad (16)$$

When the firm is the favorite to win the campaign (i.e. the equilibrium is above the 50-50 line when $h(f^*) > \sigma h(a^*)$), the firm escalates its resources in response to the activist's escalation of its resources, so as to

²⁰ Mathematically, we can see the shifts discussed above by rewriting the activist's reaction function (5) as $(\sigma\alpha v h'(a)h(f))/(\sigma h(a) + h(f))^2 = 1$, which simply notes that it is optimal for the firm to equate the marginal benefit of its resources to the marginal cost. Differentiation shows that the right-hand side of this equation is rising in α .

²¹ Recall that the 50-50 line is unaffected by changes in α .

maintain its dominance.²² On the other hand, when the firm is the underdog and expects it may lose the campaign (i.e. the equilibrium is below the 50-50 line when $h(f^*) < \sigma h(a^*)$), it adopts a de-escalation strategy - the firm reduces the resources it devotes to the campaign in response to the activist's increase of its resources. As the activist devotes more resources to the campaign, the firm finds itself falling further behind and it will optimally devote fewer resources to the campaign. Thus, the firm response to an increase in α (from an initially low level) is to at first increase its campaign resources and then to reduce them as shown in Figure 3.

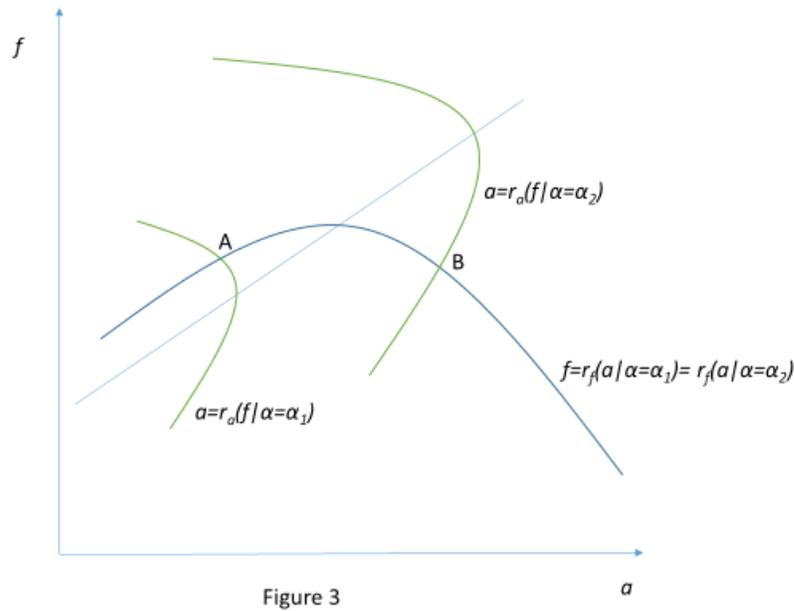


Figure 3

This leads to our second proposition:

Proposition 2:

As the activist's valuation of winning a campaign increases relative to the firm's, the amount of resources that the firm expends in resisting a campaign changes in an inverted-U shaped manner:

²² Recalling equations (7) and (8), we see that the activist's reaction function exhibits increasing returns below the 50-50 line (and diminishing returns above it), while the firm's reaction function exhibits the opposite. Hence, at any Nash equilibrium that occurs off the 50-50 line one player will be experiencing increasing returns while the other will be experiencing decreasing returns. If the equilibrium occurs on the 50-50 line then both players will have constant returns. Combining these observations results in the following observation: if the Nash equilibrium does not result in a 50-50 contest, then the Nash winner's reaction function has positive slope, while the Nash loser's reaction function has negative slope at the equilibrium.

(a) when the activist has low to moderate relative valuation of winning, the firm is more likely to pursue an ‘escalation’ strategy: an increase in the activist’s valuation, which prompts an increase in the activist’s campaign resources, leads the firm also to expend more resources;

(b) when the activist has moderate to high relative valuation of winning, the firm is more likely to pursue a ‘de-escalation’ strategy: an increase in the activist’s valuation, which prompts an increase in the activist’s campaign resources, leads the firm to reduce its resources.

A central insight here is that it is incorrect to assume that firms facing more aggressive activists –those that devote more resources to their campaigns– will expend more resources on resistance. Firms do not necessarily follow a naïve strategy of simply resisting harder the campaigns on issues that are more important for the firm to win.²³ Instead, it is the *relative* level of importance –as compared to the activist’s– that shapes the firm’s strategy. Even if the firm attributes the highest level of importance or priority to winning a particular campaign, if the activist deems it to be of low importance and accordingly devotes few resources, then the firm will respond by also allocating a small amount of resources; it can still obtain a high chance of winning with a low level of resistance given the activist’s small expenditure.

We have earlier discussed how one might measure issue importance for both firms and activists...

Changes in Organizational Effectiveness

We now examine how the relative organizational effectiveness of campaign resources, σ , impacts the activist’s and firm’s Nash equilibrium strategies. Unlike α changes in σ impact both players’ reaction functions and the resulting Nash equilibrium. To see how the Nash equilibrium resource allocations are affected recall that at the Nash equilibrium each player is optimizing. Thus::

$$\sigma \alpha v h'(a^*) h(f^*) = (\sigma h(a^*) + h(f^*))^2 \quad (17)$$

and

$$\sigma v h'(f^*) h(a^*) = (\sigma h(a^*) + h(f^*))^2. \quad (18)$$

²³ Tesco and the horsemeat scandal in Ireland, which took place in 2013, provides an example of part a) of Proposition 2. For the British company, beef was an important product, one with increasing spillovers on the firm’s product portfolio, whereas for the activist, it was just one issue among many. The activist could therefore be seen as having only a low to moderate relative value of winning, but still showed willingness to fight the campaign, in particular by using social networks. Seeing this, Tesco reacted surprisingly strongly, playing an escalation strategy and investing large amounts of resources to get products tested and to restore the company’s public image with expansive advertising campaigns. The company created a YouTube video of CEO Philip Clarke on support to customers, suppliers and farmers; M. Clarke also spoke at the National Farmers’ Union Conference in 2013 reinforcing their pledge to support British farmers; and Tesco created a new section of its website to outline their food integrity. On the other hand, companies like Lidl or Aldi, which were discount chains, had less at stake and gave up much earlier, indicating that they saw little value of resistance. Their main public reaction was in fact to blame farmers and suppliers. Another piece of evidence of the escalation strategy played by Tesco was that the number of Google references after the scandal was over 5000, whereas the same number for Lidl led to about 800 Google references.

These equalities imply that

$$\alpha h'(a^*)h(f^*) = h'(f^*)h(a^*). \quad (19)$$

Differentiating this expression with respect to σ and rearranging terms we obtain

$$\left(\frac{\partial a^*}{\partial \sigma}\right) = \frac{[h(a^*)h''(f^*) - \alpha h'(a^*)h'(f^*)]}{[\alpha h''(a^*)h(f^*) - h'(f^*)h'(a^*)]}\left(\frac{\partial f^*}{\partial \sigma}\right) \quad (20)$$

Given the properties of $h(\cdot)$, namely $h(x) > 0$, $h'(x) > 0$, and $h''(x) < 0$ the ratio on the right hand side of the equality is positive. Although complicated expression (2) implies that $sign\left(\frac{\partial a^*}{\partial \sigma}\right) = sign\left(\frac{\partial f^*}{\partial \sigma}\right)$. In other words, at *any* Nash equilibrium, changes in σ move both player's resource allocation in the *same* direction. This important result arises due to the diminishing marginal returns associated with the contest success function.

At any Nash equilibrium not located on the 50-50 line, a change in σ will either shift the campaign equilibrium either towards or away from the 50-50 line denoting an even game. If the change in σ strengthens the favorite (and therefore weakens the underdog) the campaign will become less competitive and both players will reduce their resources. The strengthening of the favorite allows it to cut back on resources, and the weakening of the underdog means it is even less likely to win and so it is optimal to cut back on resources as well. These allocation changes are seen in Figure 4a where we know the activist is the favorite since equilibrium A is located below the 50-50 line. At the new equilibrium B where the activist's resource are even more effective relative to the firm's, $\sigma_2 > \sigma_1$, both the activist and the firm devote fewer resource to the campaign.

If the change in σ weakens the favorite and strengthens the underdog (without a change in their identities), then each resource spent by the underdog will be more impactful and consequently it will expend more resources in equilibrium. The favorite facing a stronger underdog than before will also find it optimal to raise its equilibrium resources. This outcome is seen in Figure 4b.

Any change in σ occurring when the Nash equilibrium is already located on the 50-50 line necessarily makes the campaign less competitive. Thus, we see that the maximum total resource expenditures will occur when both players are equally matched.

Figures 4a and b illustrate the shifts in each players' reaction function that drive our equilibrium results. To see how the activist's reaction function changes in σ , we can use the optimization condition (3) to find

$$\frac{dr_a(f)}{d\sigma} = \frac{\alpha v h'(a) h(f) [h(f) - \sigma h(a)]}{[\sigma h(a) + h(f)]^3}. \quad (21)$$

From 21 it is easy to see that when $h(f) > \sigma h(a)$ activist resources are increasing in σ , falling when $h(f) < \sigma h(a)$ and unchanged when $h(f) = \sigma h(a)$. Next recall from (7) that the activist's reaction function in (a, f) -space is rising when $h(f) < \sigma h(a)$, falling when $h(f) > \sigma h(a)$ and reaches its optimum when $h(f) = \sigma h(a)$ Graphically, these results lead to the appearance of an upward (downward) shift in the activist's reaction function as σ rises (falls) in (a, f) -space, with the optimum of the activist's reaction function unchanged by changes in σ .

We can conduct a similar analysis of the firm's reaction function. From equation (4) we see that

$$\frac{dr_a(f)}{d\sigma} = \frac{\alpha v h(a) h'(f) [h(f) - \sigma h(a)]}{[\sigma h(a) + h(f)]^3} \quad (22)$$

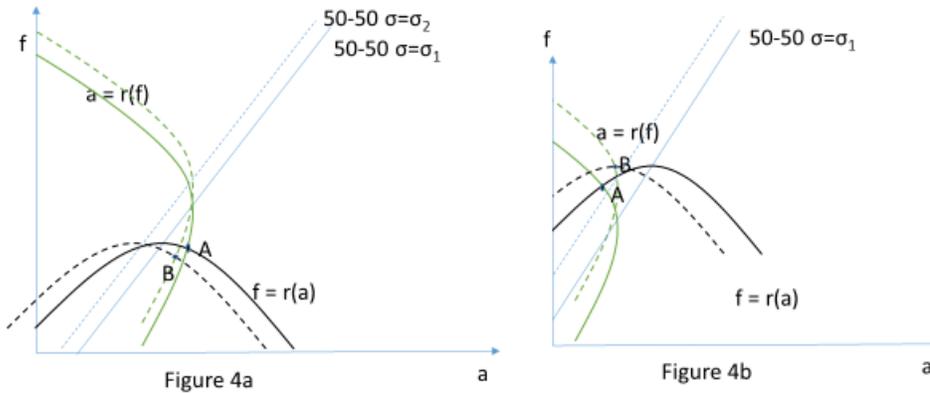
Thus, when $h(f) > \sigma h(a)$ firm resources are rising in σ , and falling when $h(f) < \sigma h(a)$ and unchanged when $h(f) = \sigma h(a)$. Equation (8) shows us that the firm's reaction function is rising when $h(f) > \sigma h(a)$, reaches a maximum when $h(f) = \sigma h(a)$, and is negative when $h(f) < \sigma h(a)$. Graphically, this gives the impression of a leftward (rightward) shift in the firm's reaction function when σ rises (falls).

Taken together we see that these shifts lead us to a well-known result from the contest literature that players fight hardest when they are evenly matched. In an evenly matched game, any change in σ , positive or negative, will increase the relative effectiveness of one player while simultaneously reducing the effectiveness of the rival. The strengthened player will face diminishing marginal returns and will cut back on resources to maintain optimality. This reduction, however, will not be enough to reduce his or her overall probability of victory (which will be higher since the player is more effective) and the weakened player, facing a lower likelihood of victory, will also cut back on resources.

Proposition 3:

As the activist's capabilities in conducting a campaign increases relative to that of the firm, the amount of resources that the firm expends in resisting a campaign changes in an inverted-U shaped manner:

- (a) when the activist is the underdog, an increase in its effectiveness will cause the firm and the activist to each expend more resources on the campaign.
- (b) when the activist is the favorite, an increase in its capabilities will cause the firm and the activist to each reduce the amount of resources expended on the campaign.



Need more here

3.4 Issues Importance, Organizational Efficiency and the probability of winning

[We may cut this section] As noted in the Introduction, extant literature on activist campaigns provides few predictive insights into which side is likely to win, and instead largely focuses on how firms self-regulate to pre-empt campaigns which, it is assumed, they would otherwise lose. However, the fact that campaigns occur means that firms often believe that they can successfully resist activist demands. Furthermore, there are abundant examples of successful corporate resistance. This raises the question of what factors make it more or less likely that the firm or activist will prevail in the campaign.

Since the contest success function that lies at the heart of our model of campaigns predicts the probability of success, we can use it to make predictions about how changes in the model's parameters affect the probability of victory for the firm and activist. Using (1) we see that the probability of the activist winning a campaign is $p^* = \frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)}$ $a^* = a(\sigma, \alpha, v)$, $f^* = f(\sigma, \alpha, v)$. A brute force investigation of how the model's parameter affect the probability of winning is messy. Fortunately, the analysis we have already undertaken allows us to easily characterize how parameter changes impact this probability.

Casual observation of p^* shows that, by definition, the amount and effectiveness of resources devoted to the campaign combine to determine the likelihood of victory. Exactly when the firm is more or less likely to win a campaign is less straightforward, but can be determined by observing two key resource relationships in (a, f) –space. The first is the 45-degree line, which traces out equal combinations of activist and firm campaign resources. The second is the 50-50 line which traces out, for a given level of relative organizational effectiveness, σ , the combinations of activist and firm resources for which the probability of winning is 50 percent for each player. We have established that in (a, f) –space the 50-50 line may lie either above or below the 45 degree line depending on the value of σ . An increase in σ will shift the 50-50 line to the right in this space, indicating that fewer activist resources for a given level of firm resources are needed to achieve the even game.

These observations allow us to cut the resource space into six distinct regions that categorize the possible equilibria of the game in terms of resource expenditures and the probability of victory. These regions are illustrated in figures 5a and 5b.

Regions I to III illustrate scenarios when $\sigma > 1$, i.e., where the the activists organizational capabilities exceed the firm's. In region 1 α is small indicating that the issue that prompted the campaign is relatively much more important to the firm. In this region the firm outspends the activist by an amount sufficient to ensure it has the greater likelihood of victory. In region II relative issue importance has grown for the activist and firm no longer finds it worthwhile to outspend the activist sufficiently to ensure it is most likely the winner. Still the firm does outspend the activist. In region III the activist has superior organizational effectiveness and places greater importance on the issue than does the firm. The activist consequently outspends the firm ensuring that it is the most likely winner of the game.

Regions IV to VI illustrate scenarios in which the firm's possesses superior organizational effectiveness (i.e., $\sigma < 1$). In region IV the firm places greater importance on the issue than does the activist. This coupled with it's superior organizational effectiveness ensures that it is the most likely winner. The firm also is most likely to win in region V despite spending less than its rival. The superior effectiveness of firm resources make the difference in the campaign. In region VI the activist values winning much more

than the firm does and wins in some sense by brut force. That is it outspend the firm sufficiently in the campaign to overcome the lower relative efficiency of its resources. Finally we note that whether the Nash equilibrium resource choices in each region lie closer to or further away from the origin depends on the mutual component of what is at stake, v .

We can summarize this discussion in the following proposition:

Proposition 4:

- a) For either player the probability of victory in the campaign rises in relative issues importance and relative organizational effectiveness.
- b) A player is more likely to be a favorite while committing less resources to the campaign than its rival as the relative effectiveness of its resources rises.

Proposition 4a is straightforward and intuitive. Proposition 4b explain situations in which one player, usually an activist, devotes considerably more resources to a campaign, is met with a mild response but is still unsuccessful. In these cases, the activist’s resources are relatively less effective in motivating the target audience (usually the public).

Proposition 4b also provides insight into strategic targeting by activists. Given an equal value of winning two campaigns, activists are likely to target their campaigns to audiences that are more sympathetic to their tactics and arguments. For example, in the famous case of the sinking of the Brent Spar oil rig in waters off the United Kingdom, Greenpeace chose to hold campaign protests against Shell in Germany rather than the UK. At that time Germans were thought to be more environmentally oriented than Britons and Germany did not possess a domestic oil industry, enhancing the efficiency of resources spent in the campaign against Shell.

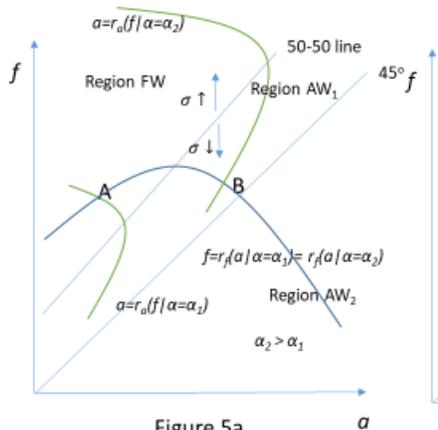


Figure 5a

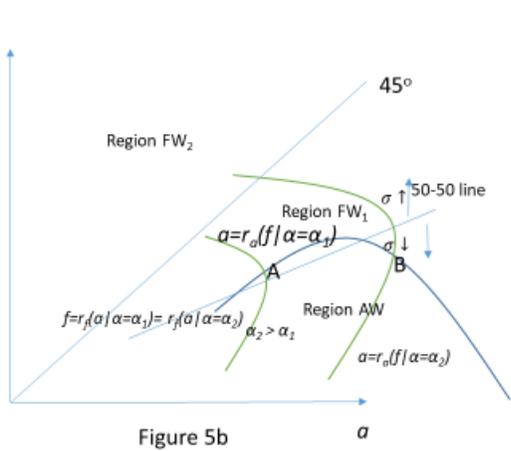


Figure 5b

4 Preemptive Self-regulation

Firms targeted with new demands may engage in “preemptive self-regulation” in order to avoid full compliance with these demands (Maxwell et. al. 2001, Baron and Diermeier 2007). We use the term preemptive self-regulation because the decision to comply with an activist’s demand *following* a campaign is still a form of self-regulation in that the firm decides to change its activities in the direction suggested by the activist.

In Baron and Diermeier (2007) a rational firm will always engage in self-regulation to preempt compliance with the activist’s fixed demand and campaign threat. Consequently, the only firms that engage in a campaign are (irrational) intransigent firms that do not yield to the activist’s demands and consequently suffer harm from the activist for non-compliance. As such the model is not able to explain successful activist campaigns.

In our model a rational firm may eschew preemptive self-regulation and engage in a campaign with an activist that either side may win or lose. The firm will choose this course of action if (1) it obtains private benefits from fighting the campaign, such as building a reputation for resistance, (2) the activist obtains private benefits from fighting and winning the campaign, such as demonstrated effectiveness that might aid fund raising efforts. In what follows we consider only the latter case.

We assume the simplest possible form of firm preemptive self-regulation. Specifically, that the firm may choose to preemptively self-regulate to a level $x > 0$, resulting in a payoff of $V - x$, which implies no cost bias in favor or against self-regulation.²⁴ We assume that the activist obtains utility γx from the firm’s preemptive self-regulatory efforts, where $\gamma > 0$. Recall from (1) that the activist values winning the campaign at αV . Thus $\gamma = \alpha$ implies that the activist equally values preemptive actions and campaign-driven actions on the part of the firm. If $\gamma > \alpha$ then the activist prefers the firm’s preemptive action to campaign-driven action while $\gamma < \alpha$ implies the opposite.

The level of preemptive self-regulation the firm is *willing* to undertake is defined by

$$V - x^f = \left(1 - \frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)}\right) V - f^* \quad (23)$$

Or

$$x^f = \left(\frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)}\right) V + f^* \quad (24)$$

The amount of preemptive self-regulation the activist will *demand* to forego the campaign is given by

$$\gamma x^a = \left(\frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)}\right) \alpha V - a^* \quad (25)$$

²⁴ If we wanted to capture a situation in which the firm found preemptive self-regulation more costly than similar efforts taken as a result of a campaign we could assume that the firm’s payoff is $V - \beta x$, where $\beta > 0$. Under this assumption it is straightforward to see that the firm will eschew preemptive self-regulation in favor of the campaign if β is large enough.

Or

$$x^a = \left(\frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)} \right) \frac{\alpha}{\gamma} V - \frac{a^*}{\gamma}. \quad (26)$$

The firm will engage in self-regulation at the level, x^a , if $x^f - x^a > 0$, that is if

$$\left(1 - \frac{\alpha}{\gamma} \right) \left(\frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)} \right) V + f^* + \frac{a^*}{\gamma} > 0, \quad (27)$$

or

$$f^* + \frac{a^*}{\gamma} > \left(\frac{\alpha}{\gamma} - 1 \right) \left(\frac{\sigma h(a^*)}{\sigma h(a^*) + h(f^*)} \right) V \quad (28)$$

From (28) we see that if $\gamma = \alpha$, firm will *always* engage in preemptive self-regulation. In this case, by preemptively self-regulating, both the firm and the activist save campaign resources. Consequently, the firm will always be willing to self-regulate to a level that the activist will accept in order to forego the campaign. The same is true if $\gamma > \alpha$. If, $\gamma < \alpha$ the right-hand side of condition (28) is positive, meaning the firm may eschew preemptive self-regulation and enter the campaign. This condition alone does not ensure that an activist campaign will arise. However, observe that as σ rises the equilibrium probability that the activist wins the campaign tends to 1 while the equilibrium level of resources that both the activist and the firm devote to the campaign (f^* and a^*) tend towards zero. Thus if $\gamma < \alpha$ the self-regulation condition (14) will be violated with certainty for sufficiently high σ . We can see from (28) that the larger is α relative to γ , the more likely the firm will eschew self-regulation in favor of a campaign for lower levels of $(\sigma h(a^*)/(\sigma h(a^*) + h(f^*)))$. Thus we see that the higher is the expectation that the activist wins the campaign, and the greater is the relative value of fighting the campaign to the activist, as compared to self-regulation, the more likely the firm will eschew self-regulation. Note also that as σ tends to zero, both a^* and f^* tend to zero but it is still possible that condition (28) will be violated for sufficiently large V .

We summarize these observations in the following proposition.

Proposition 5:

When preemption is an option for the firm, the firm may eschew it when (a) the activist is highly likely to win the campaign while expending few resources and placing a high value on forcing the firm to take action, (b) the activist is highly likely to lose the campaign but places a high value on forcing the firm to comply with its demands.

At first glance part (a) of the proposition may appear counter intuitive. Why is the firm less likely to preemptively self-regulate when it is more likely to lose the campaign? The reason is that each of these factors drive up the activist demand from the firm in return for agreeing to forgo a campaign. If the activist's demands become too high the firm would rather engage in a campaign that it always has a positive probability of winning. Part (b) of the proposition captures instances where the firm is highly likely to win

the campaign but the activist would rather exert some positive minimal effort at conducting the campaign rather than accepting the very small level of self-regulation the firm is willing to offer.

Proposition 5a explains two incongruent stylized facts. Many well-known campaigns are ones in which activists prevail, yet given the myriad social and environmental issues and the number of firms and activists in existence we see relatively few corporate campaigns. In addition firms don't often fight campaigns as aggressively as one might suspect. Proposition 5b presents campaign conditions that are consistent with small skirmishes such as shareholder resolutions. These campaigns also involve relatively few resources on both sides, firms usually win, but activists may get some attention in raising the issue.

5. Multi-Firm Campaign

In launching a campaign, activists often seek to change the behavior of multiple firms in an industry. A common strategy of the activist is to sequentially target firms one by one, moving to the next firm only after the current target acquiesces. This tactic results in a "semi-sequential" contest in which the activist competes repeatedly while each successive firm competes in only a single contest.²⁵

To our knowledge, this type of contest game has not been previously studied in the contest literature.²⁶ We present the simplest form of this type of contest, which still captures salient features of an activist-multi-firm campaign. The contest takes place over two periods and we make two important assumptions. First, the second firm is targeted only if the activist wins the first contest. Second, the activist is not resource-constrained across the two campaigns. The first assumption captures a stylized fact of activist campaigns. Activist groups that fail to prevail over their initial target rarely go on to target another firm for engaging in the same activity. Likely the initial failure makes it difficult to attract funds to target subsequent firms.²⁷ While it is common to examine contests in which players have a finite amount of effort or resources to expend over multiple periods, our second assumption captures the fact that an activist often has the flexibility to determine the timing of its second campaign. This flexibility means that an activist, if it is particularly resource constrained, may raise resources for future campaigns.²⁸

A two-period semi-sequential contest model [Reduce number of propositions here]

We assume that each firm $f_i, i = \{1,2\}$, has the same objective when it faces the activist, which is to maximize the payoff

²⁵ Activists may decide to target all firms at the same time instead. This strategy is very costly for the activist.

Contest models of this type have been studied in the literature. Results would be similar in flavor to our one period model except that firms would have an incentive to free-ride on their competitors' campaign resource expenditures.

²⁶ Multi-period contest models have focused on repeated games where the same two player compete for multiple rounds, or tournament models where multiple players in earlier rounds compete and the winners of those competitions go on to face each other in later rounds.

²⁷ Additionally our assumption is simply and extreme form of assuming that, other things equal, a loss in the first period will make it harder for the firm to win in the second period. Something that would make the model more complicated but add little additional insight into activist or firm behavior. It is worth noting that in some cases activists may simultaneously target multiple firms, we do not consider that situation here.

²⁸ While failure in the initial campaign undoubtedly makes raising funds hard it is unclear whether an initial victory will make raising future funds easier or harder. The demonstration of success by the activist may make it easier to attract funds from some of its supporters -the fight is not a lost cause- while others may feel that the problem has been solved or has diminished to a point where their contributions could be better spent elsewhere.

$$\pi_i = (1 - p_i)v_i - f_i. \quad (29)$$

In period 1 the activist's campaign payoff is

$$\pi_a = p_1(\alpha_1 v_1 + p_2 \alpha_2 v_2) - a_1 \quad (30)$$

where $p_2 = \frac{\sigma_2 h(a_2)}{\sigma_2 h(a_2) + h(f_2)}$. Since the activist and the firm will behave optimally in the second period, we know that $a_2^* = a_2(\alpha_2, v_2, \sigma_2)$ and $f_2^* = f_2(\alpha_2, v_2, \sigma_2)$ which implies $p_2 \alpha_2 v_2 = \varphi(\alpha_2, v_2, \sigma_2)$. Consequently, we can rewrite the payoff for the activist in round 1 as

$$\pi_a = p_1(\alpha_1 v_1 + \varphi(\alpha_2, v_2, \sigma_2)) - a_1 \quad (31)$$

Which will result in a first order condition (which defines the activist's first period reaction function) of

$$\frac{\partial \pi_a}{\partial a_1} = \frac{\sigma_1((\alpha_1 v_1 + \varphi(\alpha_2, v_2, \sigma_2))h'(a_1)h(f_1))}{(\sigma_1 h(a_1) + h(f_1))^2} - 1 = 0 \quad (32)$$

Since $\varphi(\alpha_2, v_2, \sigma_2)$ is completely deterministic with respect to the activist's and firm 1's decision in round 1, it follows that changes in $\varphi(\alpha_2, v_2, \sigma_2)$ will have a qualitatively similar impacts on the activist's optimal behavior as α_1 , which we have already analyzed. With respect to the firm's optimal choices in period 1, changes in the activist's expected return in the second period raise or lower the activist's expected value of winning the first period campaign. Increases (decreases) in $\varphi(\alpha_2, v_2, \sigma_2)$ shift the activist's period 1 reaction to the right (left) in $(a_1, f_1) - space$ in a manner similar to that shown for Figure (3) for changes in α .

Since firm 1 fights only one campaign, changes in $\varphi(\alpha_2, v_2, \sigma_2)$ have no impact on its objective function, and therefore no impact on its optimal behavior in the campaign. Thus, how the initial period equilibrium and probability of winning change with respect to changes in $\varphi(\alpha_2, v_2, \sigma_2)$ are also similar to the impacts of changes in α_1 . Combining this fact with the lemma below allows us to analyze the impact of changes in second period parameters on the first period equilibrium.

Lemma 1 The function $\varphi(\alpha_2, v_2, \sigma_2) \equiv \frac{\sigma_2 h(a_2^*)}{\sigma_2 h(a_2^*) + h(f_2^*)} \alpha_2 v_2$ is rising in α_2, v_2 , and σ_2 .

Proof: Since the round 2 campaign is independent of round 1 all results follow directly from the proofs provided in the single period game given in the previous section.

We are now ready to state the main proposition of this section, which highlights the impact of a sequential campaign on the first period behavior of the activist and firm 1.

Proposition 6:

Increases in α_2, v_2 or σ_2 will

- a) increase the probability the activist will win the campaign against firm 1, and raise the resources the activist devotes to the campaign.

- b) raise the resources firm 1 devotes to the campaign if firm 1 is the favorite, and lower the resources firm 1 devotes to the campaign if firm 1 is the underdog.
- c) If firm 1 chooses to preempt the activist's campaign its level of self-regulation is also increasing in α_2, v_2 or σ_2 .

This proposition has several interesting managerial implications regarding the linkages between the expected outcome of the second period campaign and the first period strategic behavior in the first period campaign.

To see this, let us first examine changes in α_2 (the activist's value of winning *relative* to the firm it targets second). A rise in this relative value raises the likelihood that the activist will win in the second campaign, and this will cause the activist to fight harder in the *initial* period campaign. This result suggests that activists may be more aggressive in initial campaigns when the targeted practice is relatively less essential to subsequent targets, or becomes relatively less desirable as earlier targeted firms adopt the activist's favored practice. Similarly the activist will fight less hard, and consequently face a lower value of winning the initial campaign as subsequent firms care more about winning their campaigns. Thus, it will be less likely that activists will win campaigns in which the activity under dispute is core to the industry's mission for two reasons. First, each targeted firm will fight harder, and second, in doing so, each firm bestows a positive externality to its fellow firms. More difficult future campaigns lessen the activist's effort in earlier periods.

Linkages of the type just outlined provide some insight into why activists often target larger and more prominent firms first in campaigns to change behaviors that are core to the industry's business activities. Leaving relatively softer targets until later serves as a commitment mechanism on the part of the activist to fight harder in earlier campaigns against tougher firms. Note that this may be further enforced if a defeat of the leading firm early on causes later firms to reduce their resistance to changing the activity under scrutiny by the activist. We state this observation as the following proposition.

Proposition 7:

Sequencing firms with a lower *relative value* of resisting activist demands to later periods serves as a commitment mechanism for the activist to fight harder in the initial period.

This will cause the initially targeted firm to fight either harder, or less hard, in the initial period depending on whether the firm is the favorite or the underdog respectively. Not recognizing the existence of this "sequencing effect" will cause the initial firm to devote a sub-optimal amount of resources to the campaign. It will devote too few resources if it is the favorite to win the campaign and it will devote too many resources if it is the underdog. In either case, the activist's probability of victory in the initial period will rise.

Of course the effects we have just described must be traded off against the need to win against initial targets in order to proceed to subsequent campaigns. It is also worth noting that there may be additional factors influencing the sequencing choice that we do not explore here. For example, targeting a large firm first may raise the profile of the campaign, generating free publicity and marking fund raising efforts more productive. The implications are straightforward and adding them to the model would introduce complications without leading to valuable insights.

Next, we turn to how changes in the capabilities of firms located later in the activist's sequence affect initial firm and activist resource allocation decisions. Recall that as the activist's relative campaign capabilities grow, it is more likely to win. In terms of resources devoted to the campaign, if the activist is the underdog, this change will raise the level of resources both it and the firm devote to the campaign, but if the activist is the favorite, both it and the firm will reduce their campaign resources.

Bearing in mind that an increase in firm capabilities results in a *reduction* in the activist's *relative* capabilities, all else equal, we obtain the following implication.

Proposition 8:

Lower *relative firm capabilities* to later the harder the activist will fight in the initial period. This will cause the initial firm to fight either harder, or less hard, in the initial period depending on whether the firm is the favorite or the underdog respectively.

Not recognizing the existence of this "sequencing effect" will cause the initial firm to devote a sub-optimal amount of resources to the campaign. It will devote too few resources if it is the favorite to win the campaign and it will devote too many resources if it is the underdog.

This implication has important implications for managerial strategy. The more capable are firms in future periods the less willing the activist will be to devote resources to its initial campaign, lowering its probability of victory. Thus, the groups of firms that are likely targets of an activist have an incentive to share information aimed at raising campaign capabilities. In practice this information sharing may be accomplished through groups such as industry trade associations.

Changes in v_2 are less straightforward, although not difficult to understand. As we have shown in proposition 1, increases in v generally result in a greater level of resources being devoted to the campaign by both sides, but for extreme values of α may result in a reduction in resources for the firm (high α) or the activist (low α). In general, however, the larger is α_2 the more likely it is that the activist will fight harder in the second period following an increase in v_2 , resulting in an increased probability of winning in the second period. This, in turn, will raise the amount the activist will devote to the initial period campaign.

This observation offers another explanation for why activists may choose to target influential firms first, even if those firms appear to be harder targets. If a victory over an influential firm makes it easier for subsequent firms to give into the activist's demands (i.e., lowers the stakes for subsequent firms) then the behavior of such firms serves as a mechanism for the activist to commit to fighting harder against the initial target. This appears to be the case in the campaign of the Rainforest Action Network's campaign against Citigroup concerning project finance (cite Baron). While Citigroup was the world leader in project finance and therefore likely had the most at stake in resisting RAN's demands, the fact that other firms followed Citigroup's lead meant that if Citigroup gave in to RAN's demands others could do so at less cost. Indeed several firms adopted RAN's demands relatively quickly after Citigroup did. Anticipation of this would have made RAN a stronger competitor for Citigroup in the initial campaign.

In general, our message for managers facing campaigns of a semi-sequential nature is that while the firm may face the activist in a single engagement, they too must think of future engagements if they are to correctly allocate resources to their own skirmish with the activist. Indeed, the manager may want to think

about these issues before a campaigns begin, and engage in such actions as collecting and sharing information about tactical engagement with activists.

If managers fail to account for the externalities that arise due to this semi-sequential process, they will tend to under-invest (over-invest) when they are in the underdog (favorite) role in campaign resources when changes in future potential campaigns cause the activist to invest more in the current campaign. Similarly, if such changes cause the activist to fight less hard in the current campaign the manager runs the risk of over-investing (under-investing) in campaign resources when the firm is the underdog (favorite). This result suggests that, at least prior to the activist's targeting sequence decision, an optimal deterrent strategy for firms is to share knowledge and tactics aimed at resisting the activist.

Add Section on Empirical Implications

5. Conclusion - Discussion [Incomplete/rework]

In this paper we have used the theory of contests to gain insights into activist campaigns against a single or, sequentially, multiple firms. We also examine a firm's decision to self-regulate, exploring the conditions under which a fully rational firm may eschew self-regulation in favor of a costly campaign. We explore the factors that affect the level of resources each side devotes to the campaign, including issue importance and organizational effectiveness.

By examining activist campaigns through the lens of a contest model, we emphasize the importance of taking into account firm and activist characteristics in examining optimal campaign strategies. Our single period model highlights the importance of not treating all activist campaigns equally. Just as firm vary in their ability to fight campaigns and what is at stake so do activists. Allowing for the possibility of self-regulation in a contest model highlights the fact that beyond simple mistakes about rivals abilities and stakes, costly campaigns may result when campaigns serve purposes for activists (e.g., publicity) or firms (reputation building) additional to the issue at hand. Our two-period campaign model in which the activist, after winning the first contest, targets a second firm in the same industry illustrates that future activist-firm campaigns have important spillover effects on the current period campaign that must be taken into account if player are to make optimal campaign resource allocation decisions.

We have purposely used one of the simplest contest success functions. This leaves open many avenues for future research that our basic framework will allow one to conduct. First, one could put more structure on the contest, as has being done in other applications for contest models, in order to better fit with specific kinds of campaigns. The literature on contests, in fact, offers many variations in the set-up leading to various strategies and outcomes. We see our paper as a baseline model that could be used by others in the future to go in this direction and provide a much more detailed understanding of the different kinds of campaigns.

One could also look at the role of government or foundations, and how they might try to make campaigns fairer by sponsoring the activists. This would then become close to what is being done in the sport literature by including handicapping systems (and how these systems make the games fairer and more interesting).

Another avenue is to explore welfare implications of private politics, or returns on investments (as in Abito et al., 2015). In which cases do excessive resources get burnt compared to what they should? There are clearly cases in our model where these ineffective situations tend to appear.

In a similar vein, one could also explore pre-commitment periods in which the players observe ex ante the reaction functions, and thus make strategic commitments accordingly. In some cases, this could reduce the resources spent in campaigns, which could potentially be welfare improving. For this to happen, the leader in the game would have to make some credible commitments to a strategy, for instance by hiring top crisis management strategy stars (if this player wants to fight) or by firing its crisis management strategy department (in case this player wants to avoid fighting the campaign).

Note that this pre-commitment approach makes sense as an extension of our game because a campaign always require some resource spending, even in cases where one player gives up early (in particular because there is always a probability, even small, to win the campaign). The pre-commitment approach would eradicate these costs.

Our work invites more research on the behaviors, organization and strategies of activists. These are not the focus of the current private politics literature, but our paper highlights many important issues that emerge when one takes into account the heterogeneity among these activists in the context of campaigns.

One way to expand our framework would be to explore new opportunities that would be given (by the firm or by others) to the activists. In our approach, this would dilute the value of winning for the activist, and it would then make it more attractive for firms to fight less in the contest. More collaborative approaches, for instance, in which firms and activists work together to solve social or environmental issues might lead to this type of outcome. This would need to be explored formally and in depth to see the conditions under which it might happen.

The contest approach could also provide interesting perspectives to model together private and public politics. Public politics takes the form of an all-pay auction in which several players win over others, whereas private politics would take the form of a sequential contest.

Note that the role of the media in campaigns is somewhat captured in our framework through the intensity of campaigns, i.e. as a byproduct of the total amount of resources invested by the players in the contest. Another avenue for future research would be to explore how external factors affect relative players' attributes. For example, the role of the media could be modelled more specifically in our two period games. One could imagine a set-up in which the first period contest generates a certain level of media attention on the issue, which then impacts the second period contest. Media attention could be a function of the total resources devoted to the campaign by the players. This would also allow to introduce the idea of media bias and how this might impact players' strategies and the outcome of the campaign (on this, our paper would complement Baron (2006)).

We could relax the assumption that the activist has to win the first stage to get to the second stage. For example, one could imagine this to be a decreasing function of the probability that the firm wins the first stage. In other words, there would always exist a positive probability that the second stage is being played. Note that, considered this way, future research might relax the assumption we made in this paper regarding the fact that activist has to win the first stage in order to move to the second stage. For instance, one could imagine that the activist, even if it loses in the first period, might benefit from the intensity of the campaign generated (measured as the sum of the resources invested by the players in the first contest) and might then launch into a second contest with another firm based on this. Again, this might be particularly attractive for the activist in countries with strong liberal media biases.

Another external factor that could be included in our framework would be the discovery, from the first to the second period, of additional scientific evidence. This could affect the players' strategies and, in particular, their incentives to escalate the resources they invest in the campaign. One well documented historic example is the campaign led by environmental NGOs such as Natural Resources Defense Council during the 1970s and 1980s against producers of chlorofluorocarbons (CFCs), notably the industry leader Du Pont (Reinhard, 1995). During the 1970s, when there was uncertainty about the environmental impact of CFCs, Du Pont vigorously opposed pressures from NGOs and government to regulate the industry. However, new findings by NASA and the scientific community in the late 1980s, which demonstrated a clear link between CFCs and stratospheric ozone depletion, encouraged NRDC to escalate its campaign and to call for a worldwide ban on production. Recognizing the new threat, Du Pont responded by adopting a more conciliatory approach and openness to industry-wide regulation. Hence, as new evidence on an issue becomes publicly available over time, targeted firms may initially adopt a strategy of concerted resistance but later switch to 'backing off' when the activist is perceived as winning the campaign.

Finally, one could explore the role of uncertainty over some of the players' types, and how it affects their strategies during the campaign. This question could be interesting since, in many cases, the firm does not know the type of activist it is facing, whereas this is an important part of activists' strategies to study the companies they want to target, suggesting that asymmetric information could play an important role in campaigns.

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