

Scale and Scope in 'Green' Advocacy

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Abstract

Firms and environmental NGO's contest regulatory, legal and other decisions in a variety of fora including law courts, administrative tribunals and the media. Environmental advocacy in the 1990's is big business, yet its organisation has been little studied. How can NGO's with differing environmental priorities best organise their efforts? In this paper we present a simple model of NGO mergers in a multi-issue world. We identify strategic considerations that give rise to economies of *scope* in contest-activity when (and only when) the *scale* of that activity is sufficiently large. This provides a rationale for the recent trend towards not just larger but broader green pressure groups. The incentives for NGO merger are shown to be socially efficient.

Keywords: Contests - NGO's - Environment

1 Introduction

In many contexts - including that of environmental protection - political, regulatory or administrative decisions are influenced by the lobbying efforts of various affected parties. Firms may lobby for lower standards, laxer enforcement, more distant compliance deadlines *etc.*, whilst environmental NGO's lobby for the opposite.¹ Environmental advocacy in the 1990's is big business. In the US, for example, the *Environmental Defense Fund* has 151 staff

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¹In this paper we use the term environmental NGO to refer to a lobby or advocacy group. In reality such organisations may perform other functions (e.g. direct investment in environmental public goods). The *Environmental Defense Fund* and *Greenpeace* are good

and an annual budget of \$23 m. The equivalent numbers for *Greenpeace USA* are 250 and \$11.4m, for *Natural Resource Defense Counsel* 165 and \$17.5m.

These NGO's come in a variety of shapes and sizes. In particular, different groups may have very different fields of interest. Single-issue NGO's such as the *Campaign for a Clean Canada* and the *World Wildlife Fund* are committed to causes restricted either geographically (e.g. Canada) or topically (e.g. wildlife), whilst the mandate of their multi-issue counterparts such as *Friends of the Earth* and *Greenpeace* is to promote environmental protection more generally.²

In this paper we develop a simple model of NGO organisation in a symmetric two-'domain' world. A 'domain' may be a geographical area such as a country or ecosystem, or may relate to a particular environmental issue such as the dumping of radioactive waste. Initially each domain is 'inhabited' by a single firm and a single NGO who contest a domain-specific regulatory decision.³ Following Dixit (1987), Hirshleifer (1989), Heyes (1997) and others, each contest is modelled as a lottery auction (in which, here, firms move first). This is a popular approach to modelling contests of this sort and we argue that there are various reasons why it is the 'natural' one to choose in this context. We use the model to address the following questions: In what circumstances would the two single-issue NGO's be better-off - in terms of their own environmental objectives - by merging? Are the incentives for NGO merger (or choice of scope more generally) socially efficient?⁴

The key result of the paper is that there exist economies of *scope* in lobbying - such that the NGO's will have an incentive to merge - when and only when the lobbying *scale* in the individual domains is sufficiently large

examples of more or less 'pure' advocacy groups. Bilodeau and Slivinski (1997) model "rival charities", but charities in their paper are really providers of differentiated public goods, and charities compete for donations. The motivation and analytics of their paper is, of course, completely different to ours.

²In the context of planning opposition the comparison here is between NIMBYs (organisations whose objective is 'Not In My Back Yard' - to protect a particular locale) and BANANA's ('Build Absolutely Nothing Anywhere Near Anybody' which oppose building and industrial expansion in general). An earlier version of this paper was subtitled "When is one BANANA better than two NIMBY's?"

³This may, for instance, be the decision regarding whether or not to oblige the firm to fit a particular piece of pollution-control equipment, whether or not to allow it to locate a plant at a particular site, whether to force the firm to clean-up a damaged site, etc.

⁴We will talk of 'merger' but the model can, of course, be interpreted as a much more general model of choice of scope.

(large enough, in fact, to make the merged two-issue NGO 'favourite' in the representative contest). At lower scales there are diseconomies of scope. The incentives for NGO merger are shown to be efficient, implying no need for policy intervention to influence patterns of NGO organisation.

Single-issue status gives an NGO commitment in the contest it fights with the firm with which it is 'paired' (i.e. that in its domain):- if *Campaign for a Clean Canada* has a \$1m 'war chest' to spend on lobbying then it is obliged by its own constitution to spend that money on lobbying to protect the Canadian environment (it would be both illegal and unethical for it to take the money and spend it on opposing the deforestation of Borneo). Multi-issue organisation, on the other hand, gives the merged NGO *ex post* discretion in allocating an aggregate budget, allowing it to lobby where the marginal productivity of that lobbying is greatest.

In determining the desirability of merger, then, the NGO's must assess whether such discretion is - in terms of what they are trying to achieve - useful or not. When the NGO's have individually 'small' budgets merger is not useful - the two firms compete to deflect opposition from themselves by competitively *expanding* their own contest commitments such that, in equilibrium, both firms have a greater chance of winning a favourable decision than in the case in which each firm faces its 'own' single-issue opponent. The *budgetary commitment* that single-issue status confers is valuable to a small NGO. As individual budgets expand, however, there comes a point at which the discretion that merger yields is useful, inducing competitive *cutting* of contest expenditures by both firms. Beyond that point there are mutual gains to merger. The *budgetary discretion* that multi-issue status confers is valuable to a large NGO.

The model can be used to think about how the environmental lobbying sector should develop through time. As increased environmental awareness motivates increased contributions to NGO campaigns (i.e. as scale increases) we can expect, *ceteris paribus*, an accompanying switch towards more broadly-based organisations - with multi-issue groups such as *Greenpeace* being able to reap the economics of scope in lobbying to which single-issue groups, by construction, have no access. Thinking of domains geographically we can also expect to see increased internationalisation of lobby groups, even in those contexts where the underlying environmental issues remain unchanged.⁵ This broadening of scope is efficient.

⁵Some environmental problems are inherently international (such as global warming)

The analysis is consistent with recent stylised history of the green movement in the US and Europe. Bluhdorn (1995: 328) witnesses the rapid expansion of environmental advocacy - "the membership of green NGO's has been shooting-up, and this has led to a pressing need for such groups to reconsider their internal organisation and their strategies". How did NGO's respond to these challenges? Lustig and Brunner (1996) report seventeen interview-based case studies and label the early 1990's as "... a period of redefinition, with many organisations recognising a need to take the 'holistic' view of environmental issues - rather than concentrating on single issues and demarcation of terrain of interest" (Lustig and Brunner (1996: 132)). Scholsberg (1994) notes the same pattern, with groups increasingly choosing to stress "holistic rather than solely selfish concerns with local clean-up". The model presented here is consistent with these trends. We, however, provide an alternative rationale for the trend of NGO towards wider scope. Political sociologists and others have conventionally claimed that people have developed wider-ranging environmental concerns in recent times - people are now more likely to 'care' about environmental impacts outside of their direct locale (which may be defined geographically or otherwise) than they were a decade or more ago - and that this has driven the broadening of advocacy groups (see Rydin and Grieg (1994)). In the model presented in the present paper, when economies of scope exist - as they will when scale is sufficiently large - merger has the potential to improve the environment in *all* domains, making it attractive for purely strategic reasons regardless of any change of preferences.

2 Model

There are two 'domains'. A domain may be defined in terms, for example, of geography (*e.g.* a country), activity (*e.g.* power generation) or impact (*e.g.* damage to rivers). In each resides a single firm. In each domain there is a single regulatory, political or other decision to be made which will affect environmental impact. The cost to the i th firm of losing the decision (*i.e.* of a pro-environmental decision) is c_i , whilst the environmental damage proscribed by such an outcome is d_i . Imposing symmetry and assuming that this is a

and may warrant geographically-broader NGO's for that reason. The merger incentives in this paper are driven by purely strategic considerations inherent to the contest process itself.

pure rent-seeking contest we can write $c_1 = c_2 = d_1 = d_2$.

Each decision is to be contested between the firm involved and an NGO. The representative contest will be modelled as a lottery auction whereby the probability of a pro-environmental outcome (a decision favourable to the NGO), $p(x_i, y_i)$, is determined by a unit-logit function:

$$p(x_i, y_i) = \frac{y_i}{y_i + x_i} \quad (1)$$

where x_i and y_i are the contest efforts or expenditures of the firm and NGO respectively. In effect the two parties 'bid' to win the regulatory contests, where the bid takes the form of expending effort in the contest. This is a popular approach and there are various reasons why it is a natural one to choose in this context (see Hirshleifer (1989), Baik and Shogren (1994), Dixit (1987) for examples and discussion. Hirshleifer also looks at the comparative merits of alternative specifications of the winning function). Notice that for positive x , $p(x, y)$ approaches unity as y is increased without bound, but that $p(x, y) = 1$ iff $x = 0$. The NGO increases its chance of winning, other things being equal, by increasing its effort input, but only wins with certainty when the result is uncontested. The lottery or imperfectly discriminating auction is used extensively in modelling 'noisy' decision environments in which the highest bidder - or that party which exerts greatest effort in some other sense - is more likely to be successful, but is not necessarily so.

Each contest is modelled as a Stackelberg game in contest levels in which the firm moves first. This seems a natural way to set-up the model since in many of the contexts about which we are thinking firms do or apply to do something, and NGO's then oppose. In planning contexts, for example, a firm applies for permission to build and operate a factory at a particular site. In licensing contexts a firm applies to a regulatory agency for permission to discharge a pollutant into a particular stretch of river. In each case the NGO can oppose application, but is essentially reactive.⁶

⁶The contest could be modelled as a simultaneous move game between firm and NGO without changing the qualitative results of the paper. See, for example, Linster (1993).

2.1 Two single-issue NGO's

Each domain has an associate NGO with funds B .⁷ That NGO is committed by its constitution to contest only the i th decision. Since its objective is minimisation of environmental damage and $p_y(y, x_i) > 0$ it is apparent that $y_i^S = y_i^S = B$.⁸

The i th firm chooses a x_i to minimise the sum of expected compliance costs plus contest expenditures -

$$p(x_i, y_i)c + x_i. \quad (2)$$

In an interior equilibrium, then, x_i^S is implicitly defined by;

$$-p_x(x_i^S, B)c = 1 \quad (3)$$

- the marginal benefit from lobbying (in terms of expected reductions in compliance expenditures) is equated with the marginal cost, where the former is conditioned on the expected lobbying efforts of the opposing NGO.

2.2 One multi-issue NGO

The multi-issue NGO divides its total budget $2B$ between the two campaigns to minimise (expected) environmental damage summed across both sectors. That is, the NGO chooses y_i to minimise

$$\sum_{i=1,2} (1 - p(y_i, x_i))d \quad (4)$$

subject to $(y_1 + y_2) \leq 2B$. It is apparent that the aggregate expenditure constraint will be satisfied with equality (the NGO will spend everything), such that the associated pair of first-order conditions can be combined as

$$-(p_y(y_1, x_1) - p_y(2B - y_1, x_2))d = 0. \quad (5)$$

⁷The NGO's budget is treated as exogenous. Most important is the implicit assumption that the willingness of donors to contribute to a cause is not affected by organisational structure. Thus if the two NGO's with individual budgets B merge, the assumption is that the merged NGO will have a budget $2B$.

⁸ y_i^S and y_i^M will be used to denote equilibrium NGO lobbying under single-issue and multi-issue organisation respectively. That $y_i^S = B$ is then true by construction.

The NGO, then, allocates lobbying expenditures such as to equate the marginal environmental impact of expenditure across the two contests. Equation [5] implicitly defines y_1 as a function of the inputs of the two firms; $y_1(x_1, x_2)$.

Each firm can anticipate that the multi-issue NGO will target its contest efforts in this way. The i th firm, then, chooses $x_i \geq 0$ to minimise an expected loss function;

$$p(x_i, y_i(x_1, x_2))c + x_i. \quad (6)$$

The associated pair of FOC's can be written

$$p_x(x_1^*, y_1(x_1^*, x_2^*))c + p_y(x_1^*, y_1(x_1^*, x_2^*)) \cdot \frac{\partial y_1(x_1^*, x_2^*)}{\partial x_1} = -1 \quad (7)$$

and

$$p_x(x_2^*, 2B - y_1(x_1, x_2^*))c - p_y(x_2^*, 2B - y_1(x_1, x_2^*)) \cdot \frac{\partial y_1(x_1, x_2^*)}{\partial x_2} = -1 \quad (8)$$

Assuming an interior solution to the representative firm's problem, the symmetric equilibrium for the two-issue Stackelberg contest can be described by $y_1^M = y_2^M = B$ and $x_1^M = x_2^M$ where

$$p_x(x_1^M, B)c + p_y(x_1^M, B) \cdot \frac{\partial y_1(x_1^M, x_2^M)}{\partial x_1} = -1 \quad (9)$$

2.3 Comparing outcomes

In equilibrium, then, aggregate NGO lobbying effort is allocated the same in the multi-issue as in the single-issue context - with B being spent in each sector. The resulting equilibria are, however, different because of the different levels of contest expenditure induced from the firms -

Proposition 1 *In equilibrium the representative firm expends greater contest effort in the multi-issue context than in the single issue context if and only if $p_{xy}(x_i^M, B) < 0$.*

Proof: Combining [3] and [7] implies (suppressing some arguments)

$$p_x(x_i^M, B) - p_x(x_i^S, B) = \frac{-p_{xy}(x_i^M, B)}{c} \cdot \frac{\partial y_i^M}{\partial x_i}. \quad (10)$$

Noting that $p_y > 0$, concavity of p in x implies that $x_i^M \gtrsim x_i^S$ when $\partial y_i / \partial x_i (\lesseqgtr) 0$. Differentiating [5] yields

$$\frac{\partial y_i(x_i^M, x_2^M)}{\partial x_i} = \frac{-p_{yx}(x_i^M, y_i^M)}{[p_{yy}(x_i^M, y_i^M) + p_{yy}(x_2^M, 2B - y_i^M)]d} \quad (11)$$

The second-order condition associated with the multi-issue NGO's problem implies that the denominator on the right-hand side is negative such that $x_i^M \gtrsim x_i^S$ when $p_{yx}(x_i^M, B) (\lesseqgtr) 0$. ■

Firm i faces a different problem than it did when facing a single-issue NGO in Section [2.2]. In that case the i th NGO is - by virtue of its single-issue status - committed to exerting its full efforts (B) in contest i . The firm has no scope to influence this and chooses x_i to minimise expected private losses knowing that it will be opposed with intensity $y_i^S = B$. Firm i 's optimal strategy is, significantly, independent of the action of firm j .

When facing a two-issue NGO, in contrast, the firms find themselves in competition. The NGO has the combined budget of the two single-issue NGO's but is not committed to how it will allocate contest funds between sectors. In setting x_i the i th firm can impact not only the probability of winning the contest *ceteris paribus* (since the partial p_x is everywhere negative), but can also influence the NGO's allocation of its total budget between sectors.

In that case, the two firms find themselves playing a Nash game in contest expenditures where the pay-offs - in terms of intensity of NGO contest opposition - are implicitly defined by [5]. Equations [7] and [8] implicitly characterise the reaction functions of firms 1 and 2 such that solving [10] and [11] simultaneously yields $\{x_1^M, x_2^M\}$.

The relative size of x_i^M and x_i^S is central to both positive and normative analysis of NGO mergers. The generally necessary and sufficient condition for $x_i^M > x_i^S$ (i.e. without restriction on the form of the contest function) is stated in Proposition 1. Adopting the unit logit specification (Equation [1]), Proposition [1] can be extended thus

Proposition 2 *In equilibrium the representative firm expends greater contest effort in the multi-issue context than in the single issue context if and only if B is sufficiently small.*

Proof: From Proposition 1 $x_i^M > x_i^S$ iff $p_{xy}(x_i^M, B) < 0$. Differentiating [1] yields

$$p_{xy} = \frac{y_i^2 - x_i^2}{(x_i + y_i)^4} \quad (12)$$

Since y_i^M and x_i^M are non-negative this expression is negative iff $x_i > y_i$. Thus $p_{xy}(x_i^M, B) < 0$ iff $x_i^M > B$ (i.e. iff the NGO is the contest underdog in equilibrium). Assuming interior solutions throughout it is apparent that $dp_i^M/dB > 0$ (the equilibrium probability of a decision favourable to the NGO is everywhere increasing in the NGO's budget). In equilibrium the NGO will, then, be contest underdog (favourite) when and only when $B < \tilde{B}$ ($B > \tilde{B}$) where \tilde{B} is implicitly defined by the two equation system

$$p_x(\tilde{B}, \tilde{B})c + p_y(\tilde{B}, \tilde{B}) \cdot \frac{\partial y_i(\tilde{B}, \tilde{B})}{\partial x_i} = -1. \quad (13)$$

■

For small values of B the contest structure is such that p_{xy} evaluated in the vicinity of equilibrium is negative. A marginal increase in x_i (*ceteris paribus*) reduces the marginal productivity to the NGO of lobbying funds allocated to contest i and so wins firm i 'relief' as the NGO is induced to reallocate effort from contest i to contest j . Contest expenditures in the Nash game between firms are *strategic complements* in the sense of Bulow *et al* (1986) - i.e. $dx_i^*/dx_j > 0$ - and firms 'compete' to avoid NGO opposition by expanding their own contest commitments. The representative firm's reaction function slopes upwards in (x_i, x_j) -space (this case is illustrated in Figure [1]).⁹

⁹Firm 1's reaction function is implicitly defined by -

$$p_x(x_1^*, y_1)c + p_y(x_1^*, y_1) \cdot \frac{\partial y_1(x_1^*, x_2)}{\partial x_1} = -1$$

Application of the implicit function theorem yields:

$$\frac{\partial x_1^*}{\partial p_2} = \frac{-p_y(x_1^*, y_1) \cdot \frac{\partial^2 y_1}{\partial x_1 \partial x_2}}{J}$$

where $J > 0$ is the associated second-order condition. Noting that p_y is everywhere positive, it is apparent that $\text{sign} \left(\frac{\partial x_1^*}{\partial p_2} \right) = \text{sign} \left(-\frac{\partial^2 y_1}{\partial x_1 \partial x_2} \right)$. Straight-forward derivation and manipulation of Equation [5] shows that $\text{sign} \left(\frac{\partial^2 y_1}{\partial x_1 \partial x_2} \right) = \text{sign}(p_{xy})$, which is positive (negative) when $y_1 > (<) x_1$, i.e. when the NGO is favourite (underdog) in contest 1.

For large values of B (large enough, more concretely, that the multi-issue NGO would anticipate being equilibrium favourite in the representative contest) the opposite is the case. The derivative p_{xy} is positive such that a marginal increase in x_i increases the marginal productivity to the NGO of lobbying funds allocated to contest i such that the NGO reallocates effort from j to i . Contest expenditures in the Nash game between firms are strategic substitutes - i.e. $dx_i^j/dx_j < 0$ - and firms compete to avoid NGO opposition by cutting back their own expenditures.

We will say that there exist 'economies (diseconomies) of scope in lobbying' if

$$\sum_{i=1,2} p(x_i^M, y_i^M) d_i > (<) \sum_{i=1,2} p(x_i^S, y_i^S) d_i \quad (14)$$

This is a natural definition - economies of scope exist in environmental lobbying if the total environmental impact (damage prevented) of two single-issue NGO's is less than the environmental impact of the entity formed by merging the two¹⁰. Given this, it is straight-forward to establish the following

Proposition 3 *There are economies of scope in lobbying if and only if B is sufficiently large, i.e. iff the NGO's are individually sufficiently large. Elsewhere there are diseconomies of scope in lobbying.*

Proof: Given symmetry and noting that $y_i^S = y_i^M = B$, there will exist economies of scope (diseconomies of scope) in lobbying if

$$p(x_i^M, B) > (<) p(x_i^S, B). \quad (15)$$

Since $p_x > 0$ over all relevant ranges this will be the case when $x_i^M < (>) x_i^S$, i.e. (by Proposition 2) when B is sufficiently large (small). ■

The relationship expected environmental damage in a particular sector under multi-issue and single-issue organisation - i.e. between $(1 - (p(x_i^M, y_i^M)))d_i$ and $(1 - p(x_i^S, y_i^S))d_i$ - can be shown to be characterised as in Figure [2]. Assuming that NGO's decide organisational structure in line with the objectives

¹⁰The symmetric way in which the model is set-up means that merger when there are economies of scope will not just mean lower total environmental damage, but also lower damage in each sector. Thus each NGO would reap benefits from merger even if each did not care at all about the other domain (e.g. if they were pure-NIMBY's in a broad - possibly non-geographical - sense). Allowing asymmetry in the model could be expected to generate additional issues of distribution of gains between the merging organisations.

already stated, and there is no restriction on merger, the following follows directly from Proposition [3]:

Corollary 4 *The two single-issue NGO's will merge if and only if B is sufficiently large.*

When $x_i^S > x_i^M$ both NGO's can expect to achieve more for the furtherance of their 'preferred' environmental issue by being part of a broader organisation than by maintaining single-issue status.

Multi-issue organisation gives the merged NGO *ex post* discretion in allocating an aggregate budget. In determining the efficacy of merger, then, the NGO's must assess whether such discretion is - in terms of what they are trying to achieve - useful or not. When the NGO's have individually 'small' budgets merger is not useful - the two firms compete to deflect opposition from themselves by expanding their own contest commitments such that, in equilibrium, both firms have a greater chance of winning a favourable decision than in the case in which each firm faces its 'own' single-issue opponent. In that case the commitment to $y_i^* = B$ that single-issue status confers is valuable to the representative NGO. As individual budgets expand, however, there comes a point at which the discretion that merger yields is useful, inducing competitive cutting of contest expenditures by both firms.

What, then, can we say about the welfare implications of NGO mergers? Defining social loss as the unweighted sum of compliance cost, environmental costs and lobbying expenditures the following is apparent -¹¹

Proposition 5 *The incentives for NGO merger are socially efficient.*

Proof: The NGO's will merge iff

$$p(x_i^M, B) > p(x_i^S, B) \quad (16)$$

A merger of NGO's is welfare-improving iff

$$\begin{aligned} & \sum_{i=1,2} \{p(x_i^M, B)c + (1 - p(x_i^M, B))d_i + x_i^M\} + 2B \\ & < \sum_{i=1,2} \{p(x_i^S, B)c + (1 - p(x_i^S, B))d_i + x_i^S\} + 2B \end{aligned} \quad (17)$$

Noting the assumption that $d_i = d_j = c$, [17] implies that a merger is welfare improving iff $x_i^S > x_i^M$ which is equivalent to the condition in [19]. ■

¹¹Proposition [5] can also be shown to hold for weighted social welfare functions (e.g. with some weight $\lambda \neq 1$ on environmental as opposed to pecuniary costs).

This is not a surprising result, given the structure of the model. The retained assumption - commonly made in the literature - that $c = d_i$ means that from a welfare perspective the *outcome* of the contest does not matter. The social loss generated by the contests is the sum of the real resource contest expenditures x and y . These are pure rent-seeking expenditures and are socially wasteful, so the social planner will be interested in minimising their sum. Given that the total contest outlay of the NGO sector is $2B$ the planner will prefer the organisational structure that minimises the outlay of the representative firm. So too will the NGO's - though for a different set of reasons.

3 Conclusions and discussion

Environmental advocacy in the 1990's is big business. The large green pressure groups such as the *Sierra Club* and *Greenpeace* are multi-million dollar operations.¹² They co-exist with a plethora of single-issue NGO's with narrower ranges of interest - the *Royal Society for the Protection of Birds*, the *Campaign for a Nuclear Free World* and so on.

Despite the significance of the sector, there has been little effort invested in the analysis of its organisation. Whilst an extensive literature has developed on contests this has looked at 'single-issue' settings in which environmental damage is unidimensional. In this paper we have used a simple model - though one with realistic features - to analyse merger incentives for pressure groups in a multi-issue setting. Interestingly, the characteristics of lobbying contests mean that economies of *scope* can be reaped only when sectoral lobbying effort is at a sufficiently large *scale*. Two NGO's with single-issue interests can *both* further their own narrow objectives by pooling resources if (and only if) the resources that they have to pool are sufficiently large. Insofar as the 'true' objectives of NGO managers are environmental (and one could easily formulate a 'managerial theory of the NGO') we should see an increased scale in green lobbying activities being accompanied by organisations of increased *scope*. This is consistent with recent experience in both the US and Europe. NGO incentives to merge are socially efficient such that there is no *prima facie* case for intervention in NGO's choice of lobbying

¹²In addition to allocating money, the strategic managers of such organisation may have substantial other lobbying resources at their disposal - the efforts of volunteers, letter writers, political patrons etc.

scope.

Though the analysis has a number of realistic features there are a number of ways in which it could usefully be extended. Three possibilities are;

(i) *Endogenise money-raising*: Anecdotal evidence is that the 'corporate identity' of NGO's has a significant effect on fund-raising. B in the analysis could be endogenised to take account, in particular, of the possibility of economies or diseconomies of *scope* in fund-raising. Any reorganisation and associate change in identity may in itself mean a dissipation of accumulated 'brand loyalty' amongst donors.

(ii) *Make contest outcomes matter*: The retained assumption that $d_1 = d_2 = c$ meant that social welfare was invariant to the *result* of any contest. This is a common assumption in the contest and related literature, which prefers to regard contest expenditures as pure rent-seeking effort. Allowing d_1 and d_2 to differ - both from each other and from c - would make welfare analysis richer. Such an extension could be expected to imply further gains to merger, *ceteris paribus*, with a merged NGO being able to split the aggregate lobbying funds $2B$ unequally between domains to take account of the difference in underlying stakes.

(iii) *Repetition*: Modelling NGO's as having to allocate contest expenditures intertemporally through a sequence of contests might yield an additional benefit to merger, such that merger could provide a source of liquidity - with funds being 'borrowed' by one sector from the other during periods when the environmental return to lobbying in that sector are particularly high. The gains from such mutualisation (what could be called the liquidity gains from merger) are likely to be particularly great where the lobbying domains are sufficiently different that the 'shocks' to lobbying productivities are not correlated.

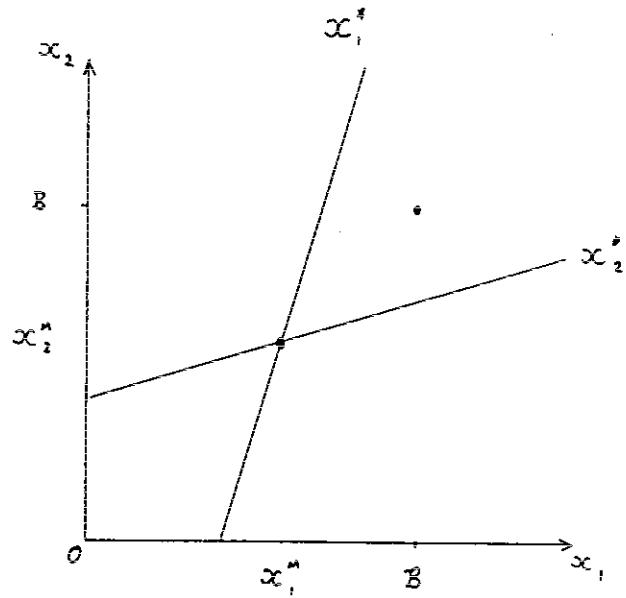


Figure [1]

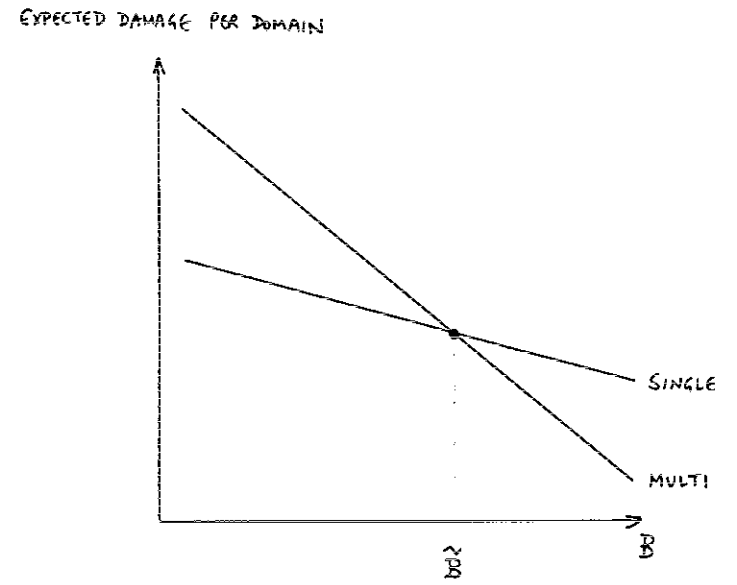


Figure [2]

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