Media Mergers and the Ideological Content of Programming

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Abstract

Media outlets sometimes incorporate ideological content into their programming. Such content may simply be a form of product variety, but it may also be due to media outlet owners who are willing to sacrifice some profit in order to engage in ideological persuasion. In this paper, we assume the existence of such owners, and we compare the amount and type of persuasion that will occur under two regimes: one in which mergers are prohibited and the other in which they are permitted. The results for the "no-merger" regime are: (i) there will be diversity of persuasion (i.e., more than one variety of persuasion will exist in equilibrium) if and only if the ideological preferences of the different types of potential owners are not too different; and (ii) total persuasion is higher when these ideological preferences are less similar. The main results for the pro-merger regime are: (iii) mergers between firms with identical ideologies cause total persuasion when to increase; and (iv) mergers between firms with different ideologies cause total persuasion to increase as long as the persuasion utility function is not too concave. We also sketch some (incomplete) results regarding the ways in which the possibility of a merger changes the equilibrium market structure. Obviously, one such possible change is a merger, and it turns out that the possibility of a merger can influence the market structure even if a merger does not take place. The model has implications for merger policy and for the current debate surrounding the change in FCC rules on media concentration.

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I. Introduction

Media outlets sometimes incorporate ideological content into their programming. The presence of such content is sometimes openly acknowledged, and it is sometimes covert (such as when a purportedly objective news program presents a biased account of a news story). To the extent that including ideological content is profit-maximizing for media firms, it can be regarded simply as a product characteristic. In this paper, we consider the possibility that media outlets engage in *unprofitable* ideological persuasion in order to promote the ideological beliefs of the outlets' owners.

A standard assumption in industrial organization is that firms have no objectives other than to maximize profits. While this is probably a good assumption for most industries, it seems incomplete in media industries, where owners have the opportunity to deviate from the profit-maximizing content presentation in order to exert an ideologically persuasive influence on public opinion. Given that individuals and groups often spend large amounts of money to influence the political process, it would seem reasonable to assume that some people would be willing to spend money by foregoing profits to influence public opinion.

Of course, the existence of ideologues will only matter if they actually gain control of media outlets--i.e., if ideologues are willing to outbid profit-maximizers for control of outlets. Since ideologues can always choose the profit-maximizing programming, their bids will not be lower than those of profit-maximizers. Furthermore if, at the profit-maximizing programming choice, the ideological benefits from a small bit of persuasion exceed the costs in lost profits, then an ideologue will make a strictly higher bid and will engage in a positive amount of persuasion.

If media owners will, in fact, be ideologues, then the amount and variety of ideological programming, and the way that these are influenced by public policy (such as merger policy in

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media industries), is a matter of considerable importance. The purpose of this paper is to develop a simple theory that will allow us to explore these issues.

The basic setup of the model is as follows. There are two media outlets and two types of potential owners. Non-ideological programming content is differentiated, so each outlet has some market power. Each owner has a preferred ideology, and chooses the level of ideological persuasion on her outlet. Media customers ("viewers") dislike ideological persuasion (and they dislike all varieties of it equally); more persuasion on an outlet causes some viewers to abandon that outlet, and some fraction of these lost viewers patronize the other outlet instead. More persuasion on an outlet directly increases the owner's utility via a (concave) "persuasion utility" function, but indirectly decreases utility because persuasion diminishes the outlet's profits. More persuasion on one outlet increases the profits of the other outlet (because of the viewers who switch), and can either increase or decrease the persuasion utility of the owner of the other outlet, depending on the degree of ideological affinity between the outlet owners. We compare the amount and type of persuasion under a policy regime in which one firm cannot own both outlets (the "no-merger" regime) with the amount and type of persuasion under a policy regime in which mergers are permissible (the "pro-merger" regime).

Our main results are as follows. Under the no-merger regime, the two outlets will be owned by owners with different ideologies (i.e., there will be diversity), if the ideologies of the two types are "non-opposed," by which we mean that each type finds the preferred persuasion of the other type to be beneficial (or at least not harmful), though less beneficial than their own preferred type. We also find that, under the no-merger regime, there will be diversity if the ideologies are opposed, but not too opposed, by which we mean that one owner's persuasion is harmful to the other owner, but not too harmful. On the other hand, if ideologies are very

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opposed (i.e., if each type finds the other type's preferred ideology to be very harmful), then the two outlets will be owned by owners with the same ideology--i.e., there will not be ideological diversity.

We also find that under the no-merger regime, the total amount of persuasion is greater when the two ideologies are less similar. The reason is that, when the two ideologies are more similar, each outlet feels that the other outlet's persuasion is doing a large part of the work, and that additional persuasion does not have much added benefit. We refer to this as the "concavity effect," because the marginal utility of additional persuasion is decreasing when the function that represents ideological utility is concave.

The results that we have so far about the pro-merger regime section are as follows. First, if a merger occurs, it will eliminate any ideological diversity that may have existed before the merger. The reason is that the owner of the merged firm will engage exclusively in her preferred variety of persuasion. Second, a merger will result in an increase in total persuasion if either: (i) there was no diversity before the merger; or (ii) there was diversity before the merger, but the persuasion utility function is not too concave. The reason is that the merged firm internalizes the externality of persuasion; some of the viewers that are lost due to persuasion on outlet 1 are regained by the merged firm on outlet 2. This is essentially the same intuition that drives the prediction of a post-merger price increase in standard merger models. We refer to this as the "profit externality" effect. If there was no diversity before the merger, or if there was diversity before the merger and the ideological utility function is not too concave, then the profit externality effect dominates and persuasion increases. If there was diversity before the merger and the ideological utility function is very concave, then the concavity effect dominates. That is, the marginal benefit of more persuasion of the same type to the owner of outlet 1 when she also

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owns outlet 2 is so much smaller than the marginal benefit of persuasion to someone who only owns outlet 2, that the profit-externality effect is overbalanced.

The remaining task is to specify the conditions under which mergers will actually take place under the pro-merger regime. See Section V below for preliminary results on this point.

The model has significance for merger policy in media industries. If persuasion is indeed important, then any merger analysis that omits it (and includes only traditional measures of performance such as price, cost, non-ideological product variety, and product quality) will be incomplete and could be misleading; if the effect of mergers is to change the amount and variety of persuasion in a way that is socially harmful, then an analysis that omits it may approve some mergers that are harmful, and vice versa. The policy issue is particularly important at the present time. The Federal Communications Commission (FCC) has long had regulations limiting the amount of permissible media concentration, as well as limiting cross-ownership between different kinds of media (such as television stations and newspapers) within a given area. In a controversial 3-2 vote, the FCC voted on June 2, 2003 to relax these rules, permitting greater media concentration. This decision has been controversial, and is currently being reviewed both in the Congress and in the courts.

The closest work to ours is that of Mullainathan & Shleifer (2002). Like ours, their paper incorporates satisfaction from ideological persuasion into the utility function of media owners. The purpose of their paper is to explore the relationship between ideological bias and "spin," or the bias towards constructing a memorable story. They find that competition between media outlets of opposing ideologies purges the signal received by audiences of ideological bias, but this result is driven by the assumption that there are an equal number of media outlets of each ideological type, and that they exert equal and opposing influences and thereby cancel each other

out. In this paper, we endogenize the amount and type of ideological persuasion in the media

market, and we also consider how these change when market structure changes due to a merger.

The remainder of the paper is organized as follows. Section II lays out the setup of the model.

Sections III and IV derive the equilibrium levels of persuasion when mergers are prohibited and

when they are permitted, respectively. Section V contains a discussion of the interpretation of

the model as well as a discussion of the applicability of the model to the debate surrounding the

FCC decision. Section VI concludes.

II. The Model

There are two media outlets indexed by $j \in \{1, 2\}$. Outlets make money by presenting content

that attracts audience members ("viewers"), and selling access to these viewers to advertisers in a

perfectly competitive market.[1] Viewer tastes for content are heterogeneous and the content of

the two outlets is differentiated, so each outlet has some market power.

Media outlets can introduce ideological persuasion content into their programming. We defer

for the moment the discussion of what we mean by persuasion except to say that viewers dislike

it (i.e., they regard it is diminishing the quality of the programming)--the more persuasion on a

particular outlet, the fewer viewers that outlet will attract. The number of viewers of outlet j is

decreasing in the amount of persuasion done by outlet j and increasing in the amount done by

outlet $-j$. Specifically, we assume that the number of viewers of outlet j is a function

of $(p_j - \gamma p_{-j})$, where p_j is the amount of persuasion done by outlet j, p_{-j} is the amount of

persuasion done by outlet $-j$, and $\gamma \in (0,1)$ is a diversion ratio--outlet j gains γ audience members

for every one that outlet $-j$ loses due to persuasion. The profits from owning outlet j are denoted

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[1] By assuming that the owners sell into a perfectly competitive market, we avoid having to model pricing decisions.

as $\pi_j(p_j - \gamma p_{-j})$. We assume symmetry of the π_j functions--both outlets earn the same profits from a given number of viewers--so the profit function can be rewritten as $\pi(p_j - \gamma p_{-j})$. We assume that the π function is decreasing and concave in $(p_j - \gamma p_{-j})$.

There are two types of potential media owners indexed by $i \in \{A, B\}$. Each type is characterized by a preferred ideology which potential owners of that type would like to persuade the audience to adopt. Potential owners' utility is a function of the total magnitude and direction of persuasion done by the media as a whole (i.e., they care about what is, in their view, total "effective" persuasion). For a potential owner of outlet j, the total amount of effective persuasion is $(p_j + \lambda p_{-j})$, where p_j is the amount of persuasion done by outlet j and p_{-j} is the amount of persuasion done by outlet $-j$. It is important to note that p_j and p_{-j} represent the *magnitude* of persuasion on the two outlets. The *direction* of persuasion depends upon the type of the owner. Since the cost of persuasion in terms of lost profits is the same regardless of the direction of persuasion, each outlet will engage only in the direction of persuasion preferred by its owner.[2]

The parameter $\lambda \in [-1,1]$ represents the relationship between the direction of persuasion done on outlet j (which is always the direction preferred by its owner) and the direction of persuasion done on outlet $-j$. That is, λ represents the degree of ideological alignment between the two types. A value of $\lambda \in (0,1]$ means that persuasion of the direction preferred by one type increases effective persuasion from the point of view of the other type (where a value of $\lambda = 1$ means that the two types have identical ideologies); a value of $\lambda = 0$ means that the two types have

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[2] Each outlet will engage in a positive amount of persuasion as long as an ideological owner is willing to out-bid a purely profit-maximizing owner for control of the outlet. This, in turn, will be true as long as the marginal benefit of a very small amount of persuasion exceeds the lost profits from that persuasion.

orthogonal ideologies--persuasion of the direction preferred by one type has no effect on effective persuasion from the point of view of the other type; and a value of $\lambda \in [-1,0)$ means that persuasion of the direction preferred by one type reduces effective persuasion from the point of view of the other type. Assuming that that λ is bounded by -1 is tantamount to assuming that each type regards one unit of diametrically opposed persuasion as exactly canceling out one unit of one's own preferred type.

The amount of "ideological utility" received by an owner of outlet j who is of type i is denoted by a money-metric utility function $V(p_j + \lambda p_{-j})$. Once again, it is important to bear in mind that the direction of persuasion on a particular outlet is solely determined by the type of the outlet's owner. We assume that V is increasing in effective persuasion and that it is concave in effective persuasion for $(p_j + \lambda p_{-j}) > 0$. We also assume that V is anti-symmetric in the sense that $V(-X)$ is equal to $-V(X)$. The anti-symmetry assumption has the reasonable implications that $V(0)$ is equal to 0, and that a potential owner will be willing to pay the same amount to avoid one unit of diametrically opposed persuasion as to advance one unit of preferred persuasion.[3]

We assume that the total utility received by the owner of outlet j is of the following form:

(1) $\quad u_j = \pi(p_j - \gamma p_{-j}) + V(p_j + \lambda p_{-j})$

We assume that the two outlets play a one-shot game in which they simultaneously choose their magnitudes of persuasion and receive utility as in (1) above. The first order conditions for the utility maximizing amount of persuasion for the owners of outlets j and $-j$ are:

(2a) $\quad \pi'(p_j - \gamma p_{-j}) + V'(p_j + \lambda p_{-j}) = 0$
(2b) $\quad \pi'(p_{-j} - \gamma p_j) + V'(p_{-j} + \lambda p_j) = 0$

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[3] The assumption that V is concave for positive amounts of effective persuasion, combined with the anti-symmetry assumption, means that V is convex for negative amounts of effective persuasion.

Since we have assumed that the π and V functions are symmetric, we know that the equilibrium amount of persuasion on outlet j must be the same as the equilibrium amount of persuasion on outlet $-j$. This equilibrium amount of persuasion, identical across the two outlets, is denoted as $p(\lambda)$, where λ represents the relationship between the preferred ideology of the owner of outlet j and that of the owner of outlet $-j$. This allows us to rewrite the first order condition as:

$$(3) \quad \pi'((1-\gamma)p(\lambda)) + V'((1+\lambda)p(\lambda)) = 0$$

We use (3) to generate a comparative statics result on the effect of λ on the equilibrium amount of persuasion; totally differentiating (3) with respect to λ allows us to calculate $p'(\lambda)$.

$$(4) \quad p'(\lambda) = -\frac{p(\lambda)V''((1+\lambda)p(\lambda))}{(1+\lambda)V''((1+\lambda)p(\lambda)) + (\gamma-1)\pi((1-\gamma)p(\lambda))}$$

Equation (4) leads to the following Lemma.

Lemma 1:
The equilibrium magnitude of persuasion is strictly decreasing in the degree of ideological alignment between the two owners. That is, $p'(\lambda)$ is strictly negative.

Proof:
The result follows directly from the concavity of the V and the π functions.

If V is concave, then the marginal benefit of persuasion of the preferred direction is decreasing in total effective persuasion. The more ideologically aligned are the two types (i.e., the larger is λ), the more effective each type regards persuasion of the other type to be, and therefore the smaller is the marginal benefit of additional persuasion. Note that if V is linear, then $p'(\lambda)$ is zero, because the marginal benefit of persuasion is a constant.

III. Equilibrium When Mergers Are Prohibited

We now consider what happens under a policy regime in which each owner can only own one outlet (the "no-merger" regime). Specifically, we consider whether there will be diversity of ideological persuasion--whether the two outlets will be owned by owners of different types.

Suppose, without loss of generality, that the owner of outlet 1 is of type A. The amount that another owner of type A is willing to pay to acquire outlet 2 is equal to the profits of owning outlet 2 (when outlet 1 is also owned by someone of type A) plus the *difference* between this owner's ideological utility when outlet 2 is owned by someone of type A and her ideological utility when it is owned by someone of type B. This willingness-to-pay is denoted by $w_A(\lambda)$ and is equal to:

$$(5) \quad w_A(\lambda) = \pi((1-\gamma)p(1)) + V(2p(1)) - V((1+\lambda)p(\lambda))$$

The first term in (5) represents the profits when both outlets are owned by people of type A (and are both doing the equilibrium amount of persuasion given that $\lambda = 1$). The second term represents the amount of ideological utility that a potential owner of type A receives when both outlets are doing the equilibrium amount of persuasion in her desired direction (so effective persuasion is $2p(1)$). The third term represents the amount of utility that a potential owner of type A receives if someone of type B acquires outlet 2, so that one outlet does persuasion in the direction preferred by people of type A, and the other outlet does persuasion of the direction preferred by people of type B. Note that the magnitude of persuasion in this term is $p(\lambda)$ instead of $p(1)$, as equilibrium persuasion is a function of λ.

Similarly, the willingness-to-pay for outlet 2 by a potential owner of type B is denoted by $w_B(\lambda)$ and is equal to:

$$(6) \quad w_B(\lambda) = \pi((1-\gamma)p(\lambda)) + V((1+\lambda)p(\lambda)) - V(\lambda 2p(1))$$

It will prove convenient to assume that there is only one potential owner of each type and that ownership of the outlet is decided in an English auction, as this guarantees that the outlet will be owned by the type that values it more.[4] In this setting, the question of whether there will or will not be diversity can be answered by comparing (5) and (6). It will prove convenient to define a new function $\Delta AB(\lambda) = w_A(\lambda) - w_B(\lambda)$.

$$(7) \quad \Delta AB(\lambda) = \left\{\pi((1-\gamma)p(1)) - \pi(p(\lambda) - \gamma\, p(\lambda))\right\} + \left\{V(2p(1)) - 2V((1+\lambda)p(\lambda)) + V(\lambda 2 p(1))\right\}$$

If $\Delta AB(\lambda) > 0$, then outlet 2 will be acquired by someone of type A, and there will not be diversity. If $\Delta AB(\lambda) < 0$, then outlet 2 will be acquired by someone of type B, and there will be diversity.

The expression in the first set of curly brackets in (7) is always positive--the profits from owning outlet 2 will be higher for another owner of type A than for an owner of type B. The reason is that profits are decreasing in total persuasion, and we know from Lemma 1 that equilibrium persuasion is increasing in λ. The expression in the second set of curly brackets is always negative. The reason is that an acquirer of outlet 2 who is also of type A will gain relatively little incremental benefit from additional persuasion, because the additional persuasion will be on a flatter portion of the V function. In contrast, an acquirer of outlet 2 who is of type B will be operating on a steeper portion of the V function. We will refer to this below as the "concavity effect." Since these two effects oppose each other, the presence or absence of diversity will depend on which one dominates. It turns out that this depends on the value of λ-- on the degree of ideological similarity between the two types--as indicated in the following proposition.

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[4] If there were multiple potential owners of each type, it would still be the case that the winning bidder would be of the type with the higher valuation for the outlet if all members of each type believe that only one potential owner of

Proposition 1:
There exists some $\lambda^* \in (-1,0)$ *such that there will be diversity if and only if* $\lambda \geq \lambda^*$.

Proof:
See Appendix.

There will be ideological diversity (i.e., someone of type *B* will win the bidding for outlet 2) if the two ideologies are such that each type finds the preferred direction of persuasion of the other type to be (weakly) utility-enhancing--if $\lambda \in [0,1]$. There will also be diversity if the two ideologies are opposed, but not too opposed--if $\lambda \in (\lambda^*, 0)$. There will not be diversity if the ideologies are sufficiently opposed--if $\lambda \in [-1, \lambda^*)$. If $\lambda = \lambda^*$, then both types will value the outlet equally, and either outcome is possible.

The general proof of Proposition 1 is in the Appendix, but it will be instructive to consider two special cases here. Consider the case where $\lambda = 0$. In this case, equation (7) can be rewritten as:

$$(7') \quad \Delta AB(0) = \{\pi((1-\gamma)p(1)) - \pi((1-\gamma)p(0))\} + \{V(2p(1)) - 2V(p(0))\}$$

The expression in the first set of curly brackets is positive because $p(0) > p(1)$ and because profits are decreasing in total persuasion. The expression in the second set of curly brackets is negative because $p(0) > p(1)$ and the *V* function is concave. To sign the overall expression, notice that if a potential owner of type *B* were to acquire outlet 2, she could always deviate from her strategy of choosing the optimal level of persuasion (given that the owner of outlet 1 chose $p(0)$), and choose $p(1)$ instead.[5] Since this is a deviation, the owner of outlet 1 would continue to

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each type is going to bid. These beliefs would be upheld in equilibrium.
[5] That is, assume that the type-*B* owner of outlet 2 chose the (smaller) amount of persuasion that would be optimal if outlet 1 were also owned by someone of type *B*.

choose $p(0)$ if someone of type B were to acquire outlet 2. In this case, $(7')$ can be rewritten as follows.

$(7'')$ $\Delta AB(0) = \{\pi((1-\gamma)p(1)) - \pi(p(1) - \gamma p(0))\} + \{V(2p(1)) - V(p(0)) - V(p(1))\}$

Both expressions in $(7'')$ are now negative. The expression in the first set of curly brackets is negative because π is increasing in p_{-j} (when B deviates by reducing its persuasion, ownership of the outlet becomes more profitable). The expression in the second set of curly brackets is negative because of the concavity of the V function and because $p(0) > p(1)$. This means that a non-optimizing potential owner of type B will bid more than will an optimizing owner of type A. Since an optimizing potential owner of type B will bid higher still, we conclude that an owner of type B will own the second outlet when $\lambda = 0$.

Another notable special case is when $\lambda = -1$. According to Proposition 1, there will be no diversity in this case. To see this, rewrite (7) for the case where $\lambda = -1$:

$(7''')$ $\Delta AB(\lambda) = \{\pi((1-\gamma)p(1)) - \pi((1-\gamma)p(-1))\} + \{V(2p(1)) + V(-2p(1))\}$

Because of the anti-symmetry of the V function, the terms in the second set of curly brackets cancel out. The intuition is that, if the two outlets are owned by different types, the persuasion benefits will exactly cancel out (because of the anti-symmetry assumption), and there will be a net persuasion benefit of zero. If the two outlets are both owned by the same type, then type B will be hurt as much as type A will be helped since they are exactly opposed ideologies. Thus, only the profit effect remains. Since total persuasion is decreasing in λ, and since profits are increasing in total persuasion, $(7''')$ is greater than zero, which means that outlet 2 will be acquired by someone of type A--there will not be diversity.

IV. Equilibrium When Mergers Are Permitted

We now turn to the question of what happens when the rules are changed such that one owner is allowed to own both outlets. Specifically, we are interested in the conditions under which a merger will take place, and in the effect of mergers on the amount of persuasion. It will prove convenient to address the second question first.

The first-order conditions for the utility maximizing amount of persuasion on the two outlets j and $-j$ when they are both owned by the same person are:

$$(8a) \quad \pi'(p_j - \gamma p_{-j}) - \gamma \pi'(p_{-j} - \gamma p_j) + V'(p_j + p_{-j}) = 0$$
$$(8b) \quad \pi'(p_{-j} - \gamma p_j) - \gamma \pi'(p_j - \gamma p_{-j}) + V'(p_{-j} + p_j) = 0$$

Note that λ is equal to one in these expressions since, when both outlets have the same owner, they both engage exclusively in the direction of persuasion preferred by that owner. Since the π and V functions are symmetric and concave, the equilibrium amount of persuasion on outlet j equals the equilibrium amount of persuasion on outlet $-j$. This equilibrium amount of persuasion, identical across the two merged outlets, is denoted as p^M. This allows us to rewrite the first order condition as:

$$(9) \quad (1 - \gamma)\pi'((1 - \gamma)p^M) + V'(2p^M) = 0$$

Recall from equation (3) above that the first-order condition for the equilibrium amount of persuasion when the two outlets have different owners is:

$$(3) \quad \pi'((1 - \gamma)p(\lambda)) + V'((1 + \lambda)p(\lambda)) = 0$$

Proposition 2:
    a. $p^M > p(1)$
    b. *If V is linear, then $p^M > p(\lambda)$ for all values of λ.*
    c. *If V is sufficiently concave and λ is sufficiently small, then $p^M < p(\lambda)$*

Proof:
Equations (9) and (3) are both equal to zero and hence must be equal to each other:

$$(10) \quad (1-\gamma)\pi'((1-\gamma)p^M) + V'(2p^M) = \pi'((1-\gamma)p(\lambda)) + V'((1+\lambda)p(\lambda))$$

It will be convenient to rewrite equation (10) as follows:

$$(11) \quad (1-\gamma)\pi'((1-\gamma)p^M) - \pi'((1-\gamma)p(\lambda)) = V'((1+\lambda)p(\lambda)) - V'(2p^M)$$

a. Assume that $\lambda = 1$ and that $p^M < p(1)$. If this is the case, then the right-hand side of (11) must be negative because of the concavity of the V function. But, because π is decreasing and concave and $\gamma \in (0,1)$, the left-hand of (11) can be negative only if $p^M > p(1)$. So there is a contradiction.
b. If the V function is linear, then the right-hand side of (11) must be equal to zero. For the same reasons as in (a) above, the left-hand side can only be zero if $p^M > p(\lambda)$.
c. If the V function is sufficiently concave and if λ is sufficiently close to -1, then the right-hand side of (11) can be sufficiently positive that $p^M < p(\lambda)$.

A key effect of a merger is that the merged firm internalizes the externality of viewers lost to the other outlet due to an increase in persuasion. This is merely a variation on the familiar "profit externality" that causes higher post-merger equilibrium prices in standard merger models; after the merger, some fraction of the viewers who are lost due to persuasion end up viewing the other outlet owned by the same firm. This effect always pushes in the direction of increased persuasion following a merger.

The intuition behind Proposition (2a) is that, when both outlets are owned by the same type, the profit externality effect--which always tends to cause increased persuasion--is the only effect that is operative. Similarly, the intuition behind Proposition 2(b) is that, when the V function is linear, the profit externality effect is the only effect. The intuition behind Proposition (2c) is that, when the V function is sufficiently concave, the "concavity effect" discussed above pushes in the opposite direction: the acquiring owner converts all of the acquired outlet's persuasion to the preferred direction, finds that the marginal benefit of the additional persuasion is small, and cuts back.

We now turn our attention to the question of whether there will be a merger when mergers are permitted. This question is complicated by the fact that, if mergers are permitted, then there are three potential bidders for outlet 2: the type-A owner of outlet 1 (whom we refer to as A_1), a type-A owner who does not own outlet 1 (whom we refer to as A_2), and a type-B owner. In order to analyze this three-way competition, we must first determine the outcome of each of the three pair-wise competitions (A_1 vs. A_2, A_2 vs. B, and A_1 vs. B).

It is straightforward that A_1 always outbids A_2 in a pair-wise competition as A_1 enjoys the profit externality effect and A_2 does not. The results of the A_2 vs. B pair-wise competition are the subject of Proposition 1 above. We now turn to the results of the A_1 vs. B pair-wise competition. We have not yet fully solved this case (which means that we have not yet solved the three-way competition), but we do have some results.

The first result is that, for λ sufficiently close to 1, A_1 outbids B. The intuition is that if λ is sufficiently close to 1, then the competition between A_1 and B is very similar to the competition between A_1 and A_2. As discussed above, $A1$ always wins this competition.

It might seem obvious that, for any value of λ such that A_2 outbids B, that A_1 must outbid B as well. It turns out that this is not the case--there are values of $\lambda < \lambda *$ (i.e., values of λ such that A_2 beats B) in which B beats A_1.[6] The intuition behind this result is that B knows that A_1 will engage in more persuasion than will A_2, so the amount that B is willing to pay to prevent A_1 from winning is greater than the amount she is willing to pay to prevent A_2 from winning.

V. Discussion

A. Interpretation of the Model

There are a number of possible interpretations of the V function. The most straightforward (and the most consistent with a profit-maximization assumption) is that it represents monetary profits on some other enterprise also owned by a media outlet owner. For example, a conglomerate that owns both a media outlet and a polluting factory might be willing to sacrifice some profits in the media outlet in order to persuade people that a lenient stance towards the pollution of the factory is appropriate.

It may be the case, however, that owners are willing to engage in costly persuasion even when they have no expectation of financially recouping those costs. In other words, persuasion may be a consumption good for which people are willing to pay. Such "selfless" persuasion may take the form of attempting to persuade audiences of a particular fact (whether true or false), or to promote a particular policy or political candidate (the very substantial political contributions made by individuals who cannot hope to financially recoup these contributions suggest that this is important). It may also take the form of attempting to influence social norms. If peoples' perception of an idea (or a kind of behavior) as normal and acceptable (rather than deviant) is increasing in the frequency with which they are exposed to the idea, then ideologues may find it worthwhile to engage in costly repetition. For example, attitudes towards race and towards sexual orientation have changed dramatically in recent decades, arguably because of a concerted effort by certain groups to make bigotry socially unacceptable through repeated appeals.

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[6] We conjecture that, in such cases, there will exist an equilibrium in B wins the three-way competition as well.

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The assumption in the model was that that V function was symmetric for the two types. Naturally, this need not be the case.[7] Specifically, types with more money or with stronger convictions could be expected to have higher V functions and higher equilibrium persuasion. The possibility of heterogeneous V functions suggests another avenue by which mergers could result in an increase in persuasion: if an owner has been financially enriched by acquiring another outlet (say be realizing cost efficiencies) and has a positive "marginal propensity to persuade," then the merger will cause a shift in the owner's V function, leading to an increase in persuasion beyond that predicted in Section IV above.[8]

B. Application to Media Merger Policy

Issues related to media diversity and ideological persuasion have come up recently in the debate regarding whether the FCC should relax its rules about media concentration and cross-ownership. There has been considerable controversy surrounding this proposed change. Some of the concern seems to be that the merger will result in reduced product variety in the ordinary sense (e.g., fewer formats, less local programming, etc.). This paper does not address this question.[9] Another concern is that the relaxation of the rules will lead to a small number of firms using their media dominance to promote their points of view without opposition. In our view, this issue can be broken down into two parts: (i) the total amount of persuasion; and (ii) media diversity. We consider each of these issues in turn.

The cleanest result about the effect of mergers on the *amount* of persuasion comes from Proposition 2(a), which says that if, in the no-merger equilibrium, both outlets are owned by the

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[7] Indeed, assuming that there are two (or any finite number of) types is equivalent to assuming that there exists a continuum of types, but that only two types have positive V functions.

[8] The owner may not have been financially enriched by the transaction, as she may have paid for the outlet an amount that exceeded the outlet's profits (but was less than the sum of the profits and the ideological utility).

same type, and if there will in fact be a merger when mergers are permitted, then total persuasion (all of it of the type preferred by the owners) will increase. That is, if there is a dominant media ideology when mergers are prohibited, and if permitting mergers will actually lead to a merger, then the dominant ideology will become stronger.

As can be seen from Propositions 2(b) and 2(c), when there is diversity in the no-merger equilibrium, the change in the total amount of persuasion following a merger depends upon the concavity of the V function. To the extent that persuasion represents a social cost in that it reduces the entertainment value of programming, total persuasion (irrespective of its direction) is important.

The next issue to consider is ideological diversity, the potential loss of which is perhaps the most common objection to the FCC policy. It is not obvious why diversity should be valued in and of itself. One possible reason is that greater diversity may lead, at least in expectation, to more accurate reportage of facts.[10] This interpretation is consistent with our model. In their individual viewing choices, viewers prefer no ideological programming at all (and regard it all as equally objectionable). But this is because, in their individual viewing choices, they do not internalize the effect of persuasion on society; society may still be better off with more ideological diversity.

VI. Conclusion

In this paper, we explore the magnitude and direction of ideological persuasion, and how these differ when mergers are or are not prohibited. The current model could be extended in a number of ways. First, the number of outlets and the number of ideological types could be

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[9] Berry & Waldfogel (2001) find that mergers increase product variety in the radio industry.
[10] See Mullainathan & Shleifer (2002).

increased beyond two. Second, the assumption that viewers are homogeneous (they equally dislike all persuasion) could be relaxed; viewers could be assumed to be heterogeneous in that they differ in the type of persuasion that they like best (or dislike least). The latter extension is particularly interesting, because owners' optimal persuasion will have to take account of the fact that persuasion that is too extreme will cause some moderates to stop viewing the outlet altogether, leaving the outlet with no influence over these people at all.

Issues related to ideological persuasion have received very little attention from economists, probably because serious treatment of these issues requires deviating from a strict profit-maximization assumption. However, these issues have significant practical importance, as is attested by the heated debate over the recent FCC ruling. It also has significant implications for anti-trust policy and for regulatory policy.

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