USC

GOULD

SCHOOL OF

LAW

CENTER IN LAW, ECONOMICS AND ORGANIZATION RESEARCH PAPER SERIES and LEGAL STUDIES RESEARCH PAPER SERIES

University of Southern California Law School
Los Angeles, CA 90089-0071

Television Duopoly in Small Markets and Diversity
of the Airwaves

by
Matthew L. Spitzer
California Institute of Technology
University of Southern California

Table of Contents

Television Duopoly in Small Markets and Diversity of the Airwaves[1]

by
Matthew L. Spitzer
California Institute of Technology
University of Southern California

I. Introduction

The Federal Communication Commission ("FCC") regulates the structure of broadcast television station ownership in the United States.[2] One of these regulations prohibits television station combinations – where one company owns two television stations – in small markets.[3] These regulations are, at the highest level of generality, supposed to further the public interest.[4] The FCC has broken down this general goal of public interest into three criteria: diversity of the airwaves, competition, and localism[5]. Thus, broadcast television ownership regulations are supposed to serve, in some combination, these three goals. As we will see below, all three of these goals, as applied to broadcast television ownership regulations in small markets, lead to a focus on diversity in local news and public affairs.

This article will show that, *in general, allowing merger in small television stations is good for diversity in local news and public affairs.* Consequently, the FCC should adopt a presumption in favor of the legality of television mergers in small markets. Intervenors and staff should be able to rebut the presumption in favor of a particular merger by showing that the specific facts of the

---

[1] This work grew out of a consulting project that I did for the National Association of Broadcasters. However, the NAB did not pay for the preparation of this Article, and had no say in its content. As such, it represents only my views, and not the views of the NAB. In fact, I am certain that the NAB would disagree strongly with portions of this Article.

[2] The duty and power to do so is set out in sections 202(b), 303 and 202(h) of the Federal Communications Act, and has been affirmed against various attacks by the Supreme Court. See National Broadcasting Co. v. U.S., 319 U.S. 190 (1943) and Federal Communications Commission v. National Citizens Committee for Broadcasting, 436 U.S. 775 (1978)(unanimous court upholding FCC authority to regulate broadcast industry structure in the public interest).

[3] 47 C.F.R. § 73.3555(b) (2007).

[4] 47 U.S.C.A. §§ 307, 309 (200_).

[5] 2006 Quadrennial Regulatory Review, FCC 07-216, at ¶ 9 (Feb. 4, 2008) , *available at* http://www.fcc.gov.

Please do not quote or cite without permission.

market containing the proposed merger cause the other public interest goals – competition or localism – to require a different result[6].

A. Goals

The first of the FCC's public interest goals, competition, is generally good for consumers.[7] Consequently, the Communications Act pushes the FCC to value competition, and the FCC claims to do so.[8] Until recently competition policy, as applied to broadcast ownership regulations, focused on the market for advertising.[9] Competition in the advertising market was good in itself,[10] and also provided a proxy (claimed the FCC) for consumer welfare.[11] By 2003, however, the FCC was casting about for other ways to measure and value competition, in part because direct payments for video content had reduced the importance of advertising as a metric,[12] and in part because of competition's ability to spur "innovation."[13] As we will see below, by 2008 the FCC found what it was looking for and altered its definition of competition to include the third goal, diversity.

The FCC recently reaffirmed its support for "localism," the second of its public interest goals. Localism reflects a requirement that broadcast licensees "devote significant amounts of time and resources to airing 'programming that is responsive to the needs and interests of their communities of license.'"[14] Until recently, it appeared that localism had been shunted off and was to be little used.[15] However, in January of 2008 the FCC reaffirmed localism, imposed new

---

[6] See discussion, *infra*, at pages 2-3.

[7] 2002 Biennial Regulatory Review, FCC docket 02-277, at ¶¶ 53-57, and sources cited therein (July 2, 2003)[hereinafter 2002 Biennial Review], *available at* www.fcc.gov.

[8] *Id.*

[9] *Id.*, at ¶ 60.

[10] A robust, competitive market will supposedly keep down advertizing rates and inform consumers about goods and services. Because commercial television stations are an important source of advertisements, excessive concentration in television could, particularly in combination with other media outlets, create market power in advertising markets.

[11] *Id.*, at ¶ 60.

[12] *Id.* ¶¶ 61-64.

[13] *Id.* ¶¶ 69-72.

[14] Report on Broadcast Localism and Notice of Proposed Rulemaking, Federal Communications Commission, MB Docket No. 04-233, ¶1 (January 24, 2008), available on FCC website, www.fcc.gov. [hereinafter Report on Broadcast Localism]

[15] See Commissioner Copps' vitriolic dissent from the most recent Quadrennial review of broadcast ownership regulations, making this point. *See* 2006 Quadrennial Regulatory Review,

Please do not quote or cite without permission.

requirements, and requested comment on many proposals. The core of the FCC's concern is stimulating "community-responsive programming, such as news and public affairs."[16] The changes that were imposed and those that were proposed were all designed to do more than just improve local news and public affairs.[17] Instead, the changes were supposed to "allow greater diversity in what is seen and heard over the airwaves . . . ."[18] Thus, as applied to local television markets, localism concerns clearly overlap with diversity of viewpoint goals that are discussed next.

The FCC's third goal for setting ownership regulations, diversity, includes many related policies. As the FCC explained at length in 2002, there are many different versions of diversity.[19] One of these – viewpoint diversity – refers to the extent of different types of ideas and communications available in a broadcast market. The FCC regards a market structure as better serving the public interest if that market structure produces broadcasts with more types of information, more points of view, and more stories. Diversity, the argument runs, provides external benefits to society, most often through government and other public institutions.[20] A more diverse marketplace of ideas will produce better informed and more sophisticated citizens, who in turn will produce better and more sophisticated social policies chosen by government and other public institutions. These benefits, the argument continues, cannot be fully captured by the broadcasters who air news and public affairs.[21]

Because diversity of viewpoints helps our citizens (and other residents) make our government and institutions work better, and because the broadcasters can be expected to underproduce diverse news and public affairs, we must structure the broadcast media to do as well as possible on this score. We must work particularly hard in small markets, where there are only

---

FCC 07-216, at 104 (Feb. 4, 2008) , *available at* http://www.fcc.gov [hereinafter 2006 Quad Review].

[16] Report on Broadcast Localism, at page 3, ¶2.

[17] "These proposed changes are intended to promote localism by providing viewers and listeners greater access to locally responsive programming including, but not limited to, local news and public affairs." *Id.* ¶3.

[18] *Id.*

[19] Biennial Report and Order, 18 FCC Rcd 13620, 13627 (2002)(listing viewpoint diversity, programming diversity, outlet diversity, source diversity, and minority and female ownership diversity).

[20] The most complete and sophisticated statement of the argument in favor of diversity of viewpoints is in C. Edwin Baker, MEDIA CONCENTRATION AND DEMOCRACY: WHY OWNERSHIP MATTERS (Cambridge Univ. Press 2007) .

[21] Baker.

Please do not quote or cite without permission.

three or four broadcast television stations.[22] Local news and public affairs are, at present, not well provided by national news media.[23] This content is important to help citizens to vote, to know about the operation of local government and other local institutions, and to form a sense of community. It is also important to local television stations, which can use local content to compete with national networks. By definition, a more diverse set of offerings in a small market will include, and maybe be defined by, the amount and variety in local news and public affairs programming.

Recently the FCC appeared to shift its goals in regulating ownership of multiple television stations in one market, stating that it was interested only in "competition."[24] But competition between television stations, the FCC explained, is for "viewers" as well as for "advertisers." The competition for viewers takes place when television stations "invest in better programming and . . . provide programming that is preferred by viewers."[25] The result, says the FCC, is programming that is higher quality and more responsive to local needs and interests. Broadcast ownership rules help to "ensure that local television stations . . . will provide dynamic and vibrant fare, including local news and public affairs programming."[26] Broadcast ownership rules will, the FCC claims, "benefit the public by spurring more innovative programming and more programming responsive to local needs and interests."[27] Thus, by reinterpreting "competition," the FCC has worked its way back to considering diversity of viewpoints and diversity of programming, particularly at the local level. This Article is focused directly on such diversity concerns.

B. Methodology and Results

The FCC's regulation of television duopoly is one of the important tools for helping diversity of viewpoints. One reflexively thinks that increasing the number of owners of media will increase

---

[22] The smallest (number 210) Designated Market Area ("DMA"), Glendive, Montana, has only two television stations. Number 199, Mankato, Minnesota, has only one. And number 186, Meridian, Missouri, has one VHF and two UHF full power commercial stations, and two UHF public television stations.

[23] Some of what the national media present, including stories on health, birth control, education, and pollution hazards, will have strong local interest, and so national sources should not be entirely discounted.

[24] 2006 Quad. Review, ¶ 97.

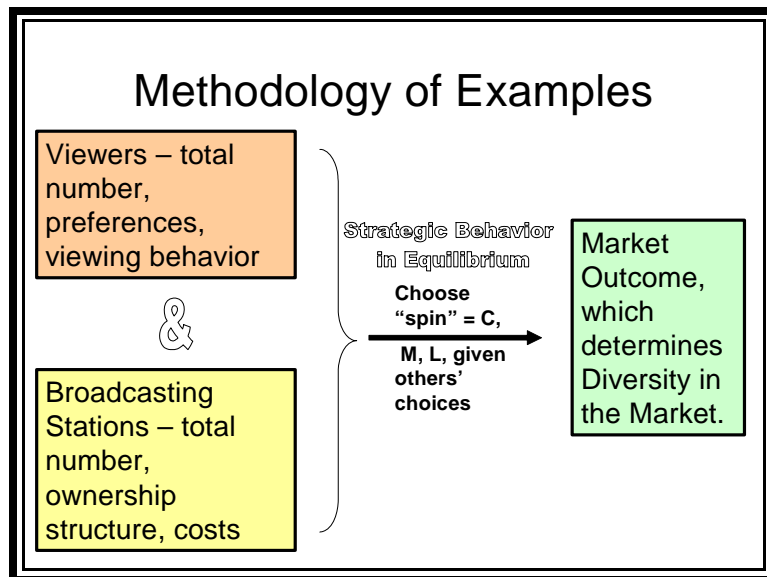[25] *Id.*

[26] *Id.*, ¶ 99.

[27] *Id.*

the diversity of viewpoints.[28] And, in many circumstances, this might be true. However, particularly in small markets, *it is not so.* This Article will show that *prohibiting television duopolies in small markets will usually reduce diversity of viewpoints in small markets, and will almost never increase diversity of viewpoints in any meaningful way.* This result is extremely robust. Merger of television stations in small markets aids diversity under a very wide range of circumstances, and testing the claim demonstrates that its logic is compelling.

This article presents two examples, driven by analytic models, which demonstrate the way in which small markets produce diversity of broadcast offerings. These models include two types of actors, television broadcasters and viewers. Their interactions within the local television marketplace determines what is broadcast and what is seen, and consequently determines the local market's diversity.

In the models the broadcasters can choose whether to present local news and public affairs. If they choose to present local news and public affairs, they must choose whether to present it with a spin – Conservative, Moderate, or Liberal. Broadcasters care about profits (more is better), and sometimes care about politics. All of the models presume that there are three television broadcasters, and then the models vary the nature of competition between the broadcasters. In particular, this Article contrasts markets where the three television stations compete against one another with market structures in which two (but not all three) of the stations are co-owned.

To make the models work, we must also focus on the preferences and behavior of viewers. All of the models presume that there are 1,000 viewers in the local market, and each of the viewers has a preference for one of the three types of news and public affairs; 150 prefer Liberal, 700

Methodology of Examples

Viewers – total number, preferences, viewing behavior

&

Broadcasting Stations – total number, ownership structure, costs

Strategic Behavior in Equilibrium

Choose "spin" = C, M, L, given others' choices

Market Outcome, which determines Diversity in the Market.

---

[28] The FCC says this in Biennial Report and Order, 18 FCC Rcd 13620, 13632. "We find that independent ownership of outlets by multiple entities in a market contributes to our goal of promoting viewpoint [diversity]." This Article shows that the FCC's intuition is not always right.

Please do not quote or cite without permission.

prefer Moderate, and 150 prefer Conservative.[29] Viewers watch their first choice type if it is on, and then surf around a bit. In some versions of the models viewers refuse to watch if their favorite type is not on, while in others they are willing to watch second choice programming.

The results are:

- If one ignores the cost of broadcasting, merger tends to have a "spreading" effect. Pure competition produces multiple offerings of Moderate programming. Merger tends to lead broadcasters to provide some Liberal or Conservative programming, in addition to Moderate.

- Where costs are considered, merger has two effects. First, it tends to have some of the same spreading effect, producing more diversity. But merger also tends to "light" stations that go Dark (i.e. no longer offer investigative reporting) in purely competitive situations where costs are too high. Thus, there is a double payoff to diversity of the airwaves.

- The Internet makes the costs of television stations crucial; the Internet reduces the audience and resource base for television by diverting viewers to their computers and away from their TV sets. This moves more stations into the situation where merger is needed to "light" stations that are in danger of going Dark. Any cost savings from the Internet are likely to be minimal when compared to the reduction in revenues. On balance, merger is needed to keep stations "lit."

- These results become more complex when viewers are partially willing to watch second choice programming. In such a setting, when the market changes from pure competition to a market with two jointly-owned stations and one independent, we change from a market outcome of (Moderate, Moderate, Moderate) to (Moderate, Moderate, Liberal (or Conservative)) if viewers are only willing to watch a small or moderate amount of second choice programming, or (Moderate, Moderate, Dark) if viewers are willing to watch a large amount of second choice programming. The first possibility (Moderate, Moderate, Liberal (or Conservative)) represents a large, significant increase in diversity, while the second possibility (Moderate, Moderate, Dark) represents a small decrease in diversity. On balance, the changes are likely good for diversity of viewpoints.

- The results hold for a wide range of distributions of viewer political preferences.

- Cable television provides some local news and public affairs, increasing the diversity of

---

[29] Many political scientists have noted that the distribution of political preferences in the US electorate is far more centrist than is the distribution within party activists. Fiorina, P. Morris, CULTURE WAR? THE MYTH OF A POLARIZED AMERICA, (Pearson Education Inc. 2006), pg. 8.

Please do not quote or cite without permission.

some local television markets.

•   The results hold where television station owners are interested in more than profits. In particular, allowing merger of two television stations increases diversity even when the owners are mild to moderate ideologues. Where a television station owner is an *extreme* ideologue, and is willing to lose large amounts of money to proselytize, the owner may convert two stations to Liberal or to Conservative news and public affairs. Even here, however, this may represent an increase in diversity.

In the last section of this Article I analyze of the strengths and weaknesses of the models used here, and show that they are appropriate and effective in this context.

I must offer one qualification. Although this article focuses most of its energy on the effects of merger on diversity. It does outline some of the considerations needed to balance off competitive advertising considerations with the results about diversity of the airwaves. This is important because the situations where allowing duopoly is most important to gain diversity are also the situations where we might worry about concentration in the advertizing markets. In smaller markets, where there are few television stations, co-ownership of television stations might produce some market power in the local advertising market.[30] The co-owned television stations might raise advertising rates, and that might be bad.

As I show in more detail in the body of this Article,[31] balancing a rise in advertising rates against increases in diversity will be very difficult. First, if the co-owned television stations raise the price of advertising, consumers will both gain and lose from the change.[32] Second, one must also balance off the effects of changes in diversity. If the same television merger that raises advertising prices also produces and increase in diverse local and news and public affairs, then local government, local business, and other local institutions may be forced to be more honest, more responsive, and more creative. All of these effects will make many (but not all) of the residents better off, and will improve the marketplace of ideas within the community. It will be difficult to compare the viewer/consumer effects of advertising with the institutional and

---

[30] We might decide, ultimately, that the concern about concentration in local advertizing markets is misplaced. For example, assume that in a small market consumers watch and read many different types of content, much of which contains no local news and public affairs. Further, assume that many of these content providers (e.g. the local cable television system) are willing to sell local ads. In this circumstance, the local advertising market will be competitive, with or without duopoly, but consumers will have limited access to local news and public affairs.

[31] See discussion in text at notes 127 to 129.

[32] See generally Kyle Bagwell, The Economic Analysis of Advertising, Working Paper (2005), *available at* http://www.columbia.edu/%7Ekwb8/adchapterPost082605.pdf, for an extensive overview of broadcasting markets..

marketplace of ideas effects from the same merger.[33] They are not exactly the same sort of thing.

Thus, this Article formulates a *presumption* in favor of merger. This presumption represents a first change in the regulations preventing television duopoly in small markets. The presumption allows evidence particular local advertising markets to be introduced at the FCC if someone wants to challenge a merger. The FCC will have to evaluate any negative effects on local advertising, and then grapple with comparing those changes to the improvements in diversity. Thus, the full comparison will take place in specific market settings.

II. Literature Review

There is no paper in existence that investigates the precise issue of policy that this paper investigates – how does allowing two broadcasters to merge in a small market alter the news and public affairs broadcast content in the market, especially if there is no entry into the local television market? There are a number of papers that investigate closely related issues. First, there is a substantial literature that investigates the type of broadcast content (almost always entertainment programming) that is provided in a broadcast market. This literature stems from Steiner's work more than 50 years ago[34] and utilizes exogenously given program "types."[35] Types of broadcast programming include sitcoms (*Friends, Two and a Half Men*), action-adventure (*24, Lost*) and sports (Major League Baseball, NCAA football). Broadcasters choose to offer one type or another of

---

[33] Adler, Mathew, *Incommensurability and Cost Benefit Analysis*, 146 U. Pa. L. Rev. (1997-1998); Radin, Margaret Jane, *Contested Commodities*, Cambridge, MA: Harvard University Press (1996); Sunstein, Cass R., *Incommensurability and Valuation in Law*, 92 Mich. L. rev. 779, 795-812 (1994).

[34] Steiner, Peter O., *Program Patterns and Preferences and the Workability of Competition in Radio Broadcasting*, 46 Q.J. Econ. 94 (1954). The first sophisticated reworking of Steiner's model that I can find is Roger G. Noll, Merton J. Peck, and John J. McGowan, Economic Aspects of Television Regulation, pg. 49 (Brookings Inst Pr 1973).

[35] More modern work includes Chris Doyle, *Programming In a Competitive Broadcasting Market: Entry, Welfare and Regulation*, 10 Information Economics and Policy 23 (1998)(comparing ad-support, subscription support, and mixed support systems); Hans Jarle Kind, Tore Nilssen and Lars Sorgard, *Competiton for Viewers and Advertisers in a TV Oligopoly*, 20 Journal of Media Economics 211 (2007)(assuming exogenous "spacing" of broadcasters in consumer's utility function); Esther Gal-Or and Anthony Dukes, *On the Profitability of Media Mergers*, 79 Journal of Business 489 (2006)(assuming fixed points in broadcast content space); and McAfee, R. Preston and Michael A. Williams, *Horizontal Mergers and Antitrust Policy*, 40 Journal of Industrial Economics 181 (1992)(a nonbroadcasting, nonaddress model of merger).

Please do not quote or cite without permission.

broadcast material, and attract viewers with the choice of material. Beebe[36] is the author of the most complete working-out of Steiner models in the literature. Beebe calculates the program patterns expected with different numbers of broadcasters and different distributions of consumer tastes over specified formats. Not surprisingly, a broader spread of tastes in the population, and a large number of competitors both lead to increased diversity of content.

Another, larger strand of work uses spatial models.[37]   The spatial models assume that the relevant characteristics of broadcast content can be arrayed on a one-dimensional continuum of content – usually a circle, but sometimes a straight line.[38] Straight lines make some sense with

---

[36] Beebe, Jack H., Institutional Structure and Program Choices in Television Markets, 91 Quarterly Journal of Economics 15 (1977).

[37] Much of this builds off of Spence, Michael and Bruce Owen, *Television Programming, Monopolistic Competition, and Welfare*, 91 Quarterly Journal of Economics 103 (1977) and Salop (1979) as improved technically in nonbroadcast contexts by Nicholas Economides, *Symmetric Equilibrium Existence and Optimality in Differentiated Product Markets*, 47 Journal of Economic Theory 178 (1989).   For more recent, important work, see Gabszewicz, Jean J., Didier Laussel and Nathalie Sonnac, *Programming and Advertising Competition in the Broadcasting Industry*, 13 J. Economics & Management Strategy 657 (2004)(finding that viewers' distaste for ads enables broadcasters' clustering tendencies on linear format space); Marc Bourreau, *Mimicking vs. Counter-Programming Strategies for Television Programs*, 15 Information Economics and Policy 35 (2003)(comparing advertising support to direct payment systems where two competing broadcasters can choose location in product space, quality space, and price); Roger, Guillaume, *Media Concentration With Free Entry*, USC Center for Communication Law & Policy Working Paper, March 2006 (deriving endogenous demand and supply of advertising, endogenous number of broadcasters with free entry into the market, and allowing unconstrained location on a circular format space); Claudes Crampes, Carole Haritchabalet, and Bruno Jullien, *Advertising, Competition and Entry in Media Industries*, Working Paper (Univ. De Toulouse, revised Dec. 2006)(similar to Roger); Mark Armstrong and Helen Weeds, *Subscription versus Advertising-Funded Television: The Case of Programme Quality*, Working Paper (University College London, Feb. 2006)(using a model with only two stations, but then allowing entry) Simon Anderson, *Regulation of Televison Advertising*, Working Paper (U. Virginia Economics Dept., August, 2005)(investigating the effects of advertising caps on diversity of offerings, quality and consumer welfare); See also McAfee, R. Preston, Joseph J. Simons and Michael A. Williams, *Horizontal Mergers in Spatially Differentiated Noncooperative Markets*, 40 Journal of Industrial Economics 349 (1992)(nonbroadcast model); and RochetJean-Charles and Tirole, Jean, *Two-Sided Markets: An Overview*, working paper (March 12, 2004).

[38] The best nonbroadcast paper in this regard is Amit Gandhi, Luke Froeb, Steven Tschantz and Gregory J. Werden, *Post-Merger Product Repositioning*, 56 Journal of Industrial Economics 49 (2008), using a straight line to show that a merged firm has incentives to increase

Please do not quote or cite without permission.

respect to the political spin – Liberal, Moderate, Conservative – of political news and public affairs broadcasts. After all, we all have a sense of what it means to go from left to right. However, circles as representations of the political space for news and public affairs make no sense, at all[39]. Further, these models almost never investigate political spin of news and pubic affairs. Instead, entertainment formats are more often investigated, but are virtually impossible to array in one dimension – consider jazz, rock, sports talk, progressive rock, religious, hip hop, rap, all news, techno, trance, general talk (relationships, politics, computer help, etc.) and salsa radio formats. Arraying all of these on one dimension is likely impossible. There may be empirical approaches, but the best one so far requires four dimensions to make sense of consumer preferences.[40] The tension between one dimensional spatial modeling and applying the models to data sets is brought home by a recent working paper by Andrew Sweeting.[41] His model of radio station competition is one dimensional, but when he applies the model to his data he needs many dimensions to measure "distance" between radio stations.[42]

The spatial models generally assume that one can move to any point on the continuum and serve consumers from that point. If, instead, we presume that there are only a finite (and small) number of possible formats, and do not allow convex combinations, we can derive nonspatial models from spatial models. Nonspatial models also presume formats or different types of content, but do not assume that there is a spatial ordering, or that all convex combinations of existing formats are admissible offerings.

---

the differentiation of its products, and that this differentiation curbs the incentives to raise prices. See also Anthony Dukes, *The Advertising Market In a Product Oligopoly*, 52 Journal of Industrial Economics 327 (2004)(using two spatial markets, one for broadcasting and one for the products that are advertised on the broadcast stations).

[39] Consider a highly controversial issue, such as a woman's right to abortion. If we were to array abortion policies on a straight line, with liberal on left and conservative on right, most people would likely have a general idea of which policies go on the left and which go on the right. Thus, "abortion on demand" would go on the left, and "all abortions are prohibited" would go on the right. Policies such as "abortion on demand for the first three months only" would go in between these other policies. But if we were to draw these policies into a circle, we would be forced to put "abortion on demand" and "all abortions are prohibited" next to each other, as if they were almost the same policy. Yet, in our polity, virtually noone would perceive them this way. Thus, a circle does not work for our politics.

[40] E.g. Ronald L. Goettler and Ron Shachar, *Spatial Competition in the Network Television Industry,* 32 RAND J ECON. 624 (2001) (estimating entertainment program characteristics from viewer behavior and finding *four* salient dimensions).

[41] Andrew Sweeting, Too Much Rock and Roll? Station Ownershhip, Programming and Listenership in the Music Radio Industry, Working Paper (January 2006).

[42] Id., at section 4.1.

Please do not quote or cite without permission.

Several several of the spatial model papers investigate "duopoly," by which they mean a market structure in which there are two competing broadcasters, each with one outlet.[43] In contrast, this Article uses the word "duopoly" to mean a market with three television stations, and exactly two of them are co-owned.

A handful of papers come close to the issue central to this Article. Sweeting[44] asks how radio stations in a market change their music playlists if two of the radio stations merge. Sweeting's model produces ambiguous results, but he suggests that it is more likely that common ownership of radio stations causes them to differentiate their offerings. Esther Gal-Or and Anthony Dukes' recent paper investigates the circumstances in which broadcasters in a two-sided market setting would find it profitable to merge.[45] Gal-Or and Dukes allow a pair of broadcasters in an otherwise competitive market to merge and then investigate the circumstances in which such a merger is profitable. In this sense, it has something in common with this paper. However, Gal-Or and Dukes' model does not allow the broadcasters to change the material they broadcast to attract viewers and listeners. Thus, they cannot investigate the issue of central concern to this paper – the effect of merger on diversity of offerings.

A few papers are set up to investigate the interaction of merger and preempting entry. Thus, for example, Roger[46] has a very sophisticated two-sided model on a circle with free entry into broadcasting. Roger allows television stations to merge, which sometimes, but not always, causes a competitor to exit from the industry, and sometimes causes some loss in diversity. But Roger's

---

[43] Andrea Mangani, *Profit and Audience Maximization in Broadcasting Markets*, 15 Information Economics and Policy 305 (2003); Bourreau, supra n. __; Armstrong and Weeds, supra n. __; Hans Jarle Kind, Tore Nilssen, and Lars Sorgard, *The Media Financing Paradox*, Working Paper (Norwegian Competition Authority, laso@kt.no, October 2006)(investigating the endogenous choice of advertiser support and direct viewer payments as a function of the substitutability of programming).

[44] Andrew Sweeting, Too Much Rock and Roll? Station Ownershhip, Programming and Listenership in the Music Radio Industry, Working Paper (January 2006).

[45] Esther Gal-Or and Anthony Dukes, *On the Profitability of Media Mergers*, 79 Journal of Business 489 (2006). Earlier work by Gal-Or and Dukes, *Minimum Differentiation in Commercial Media Markets*, 12 Journal of Economics & Management Strategy 291 (2003) investigates a two station market in which the stations are allowed to choose their place in broadcast content space. As a consequence of the effect of the advertising market, the two broadcasters choose to broadcast identical content. In part 5 of the paper, id. at 313, they allow the two firms to merge. However, they do not allow broadcast content to change as a result of merger.

[46] Roger, Guillaume, Media Concentration With Free Entry, USC Center for Communication Law & Policy Working Paper, March 2006

model does not seem to allow for reentry at some other point in his circular product space. This is akin to not allowing an existing broadcaster to change the material it is broadcasting. Berry and Waldfogel[47] introduce their analysis with examples showing that merger may tend to increase diversity. But, in their analysis, if merger can be used to preempt entry, or permanently remove stations from the market, merger may also reduce diversity. Anderson and Coate[48]

There are other topics of intense interest in this field of study. For example, several papers focus on understanding the implications of moving from advertiser support to direct viewer payments.[49] Others are intensely interested in the relationship between advertising and broadcast content.[50] Others are interested in media bias and honesty, and the relationship to merger.[51] All of

---

[47] Steven T. Berry and Joel Waldfogel, *Do Mergers Increase Product Variety? Evidence from Radio Broadcasting*, 116 Quarterly Journal of Economics 1009 (2001).

[48] Anderson, Simon P. and Stephen Coate, *Market Provision of Broadcasting: A Welfare Analysis*, 72 Review of Economic Studies 947 (2005), has a hybrid model, with consumers arrayed on a line (and thus spatial), but only two formats at the endpoints of the line are allowed (thus resembling Steiner). The model is set up to consider whether merger will reduce diversity but is not structured to allow merger to increase diversity, *because the formats are at the endpoints of the line*. The formats cannot get farther away from each other. In this setting Anderson and Coate find that merger will sometimes reduce diversity, and sometimes not, but the structure of their model precludes *increases* in diversity. Thus, it can tell us little about our question of interest – the relationship of merger and diversity of offerings..

[49] Michael Spence and Bruce Owen, *Telvision Programming, Monopolistic Competition, and Welfare* 91 The Qaurterly Journal of Economics 1 (Feb. 1977) ; David Waterman, *Diversity and Quality of Information Products In a Monopolistically Competitive Industry*, 4 Information Economics and Policy 291 (1989/90)(finding that conversion to direct viewer payments probably increases quality, but not diversity of offerings); Masson, R.T., R. Mudambi and R.J. Reynolds, Oligopoly in Advertiser-Supported Media, 30 Quarterly Review of Economics and Business 3 (1990)(investigating the effect of increased competition on advertising prices); Anderson, Simon P. and Stephen Coate, *Market Provision of Broadcasting: A Welfare Analysis*, 72 REVIEW OF ECONOMIC STUDIES 947 (2005); Choi, Jay Pil, *Broadcast Competition and Advertising With Free Entry: Subscription vs. Free-to-Air*, 18 Information Economics and Policy 181 (2006).

[50] For example, Gabszewicz, Jean J., Didier Laussel and Nathalie Sonnac, *Programming and Advertising Competition in the Broadcasting Industry*, 13 J. Economics & Management Strategy 657 (2004) analyze a one dimensional broadcasting space, consisting of all combinations of pure entertainment and cultural content. Consumers have a favorite mix of entertainment and culture, and dislike commercials. Broadcasters compete by choosing a mix of entertainment and culture, and then choosing how many ads to run. The more consumers dislike ads, the more the broadcasters tend to crowd their offerings together. Merger and duopoly are not analyzed. See also Eli M. Noam, *A Public and Private-Choice Model of Broadcasting*, 55

these papers are on important topics,[52] but do not answer the question at hand.

III. News and Public Affairs: Basic Analysis of Merger

A. Assumptions And Methodology

1. Assumptions

Consider the following example.[53] In a small market with 1000 viewers, there are three televison stations. Assume that 700 of these viewers prefer Moderate programming, 150 prefer Conservative programming, and 150 prefer Liberal programming.[54] Assume that consumers will view a television station most of the time (90%) if and only if the news and public affairs that the televison station plays is targeted at their ideology. Other televison stations (with different political

---

PUB. CHOICE 163 (1987).

[51] Two working papers consider merger and media bias, but in a context that does not allow for maximizing the value of an audience. See Anderson, Simon P. And John McLaren, Media Mergers and Media Bias, Working Paper, University of Virginia, June, 2004. (Check to see if published); and Burke, Jeremy, Unfairly Balanced: Unbiased News Coverage and Information Loss, Economics Working Paper, Duke University, September, 2007.

[52] The FCC has commissioned work on the relationship between other aspects of ownership, such as network affiliation, and content in television. See, e.g., Gregory S. Crawford, Television Station Ownership Structure and the Quantity and Quality of TV Programming, FCC Media Ownership Study Number 3, July 23, 2007 (tables 17-26), available at http://www.fcc.gov/ownership/studies.html.

[53] This example is a derivative of Steiner models, described above. See Peter O. Steiner, *Program Patterns and Preferences, and the Workability of Competition in Radio Broadcasting,* 66 Q.J. ECON. 194 (1952); Roger G. Noll, Merton J. Peck, and John J. McGowan, Economic Aspects of Television Regulation, pg. 49 (1973); Jack H. Beebe, *Institutional Structure and Program Choices in Television Markets*, 91 Q.J. ECON. 15 (1977); Matthew L. Spitzer, *Justifying Minority Preferences in Broadcasting*, 64 SOUTHERN CALIFORNIA LAW REVIEW 293 (1991).

[54] Spatial models make two alternative assumptions about distribution of consumers' ideal points. All but one of the spatial articles that I have found assumes that the distribution of viewers' preferences is rectangular (every format has an equal number of adherents) while only one (Roger) assumes single peaked (one format has more adherents than any other, and the number of adherents decays as one moves away from the favorite.) Steiner models, on the other hand, have generally assumed single peaked preferences.

Please do not quote or cite without permission.

slants than one's favorite) are sampled on occasion (10%), but not viewed to most of the time. This is because it is too annoying to view to a station for long periods of time if you disagree with the news slant. If more than one televison station is targeted at a consumer's political programming preference, then she splits her viewing time equally between those televison stations. Further, assume each viewer spends ten hours per month viewing televison if there is at least one televison station with her own political slant. If her favorite is not shown, she does not watch television at all.[55]

Type of Concept	Number	Comment
Liberal viewers	150	minority taste
Moderate viewers	700	majority taste
Conservative viewers	150	minority taste
view favorite type	90% of time	split equally between favorites; do not view if no favorite type
sample other stations	10% of time	only if viewing in the first place
total viewing time	10 hours/month	only if viewing in the first place

Now, assume that owners of televison stations program so as to maximize audience.[56] In a world of advertiser supported televison this is almost equivalent to maximizing revenue.[57] If costs

---

[55] Berry and Waldfogel, and Gabszewicz, et. al., allow for consumers to turn off the set.

[56] Andrea Mangani, *Profit and Audience Maximization In Broadcasting Markets*, 15 Information Economics and Policy 305, 308 (2003)(utilizing the same assumption).

[57] This also assumes that the advertizing rates per viewer does not change with the number of viewers in the audience. This means that the market for advertizing is fully competitive. This assumption is used frequently in the theoretical literature, Marc Bourreau, *Mimicking vs. Counter-Programming Strategies for Television Programs, 15 Information Economics and Policy* 35, 38 n.4 (2003)(and sources cited therein), but bumps up against some empirical findings. See Keith Brown and Peter J. Alexander, *Market Structure, Viewer Welfare, and Advertising Rates in Local Broadcast Television Markets*, 86 Economics Letters 331 (2005). And the theoretical literature that focuses more on advertizing than on the content of broadcasting tends to assume a downward sloping demand for ad time or space. *E.g.* Robert T.

depend little on the slant of news and public affairs, and if viewers with different political preferences are worth about the same to advertisers,[58] then maximizing audience will maximize profit.

2. Methodology

I will deduce market outcomes in each case by using the assumptions about viewer behavior and broadcaster behavior, and by using the assumptions about market structure in each case – three competitive broadcasters or two commonly owned broadcasters and one independent competitor. I will put all of these assumptions together to deduce the market outcomes by searching for Nash equilibria.[59] A Nash equilibrium is one in which no actor can do better for himself, given all of the choices of the other actors. Thus, in the purely competitive case, an equilibrium is one in which no broadcaster can increase his profits by changing its offering (Liberal, Moderate, Conservative, or going Dark), given the offerings of the other broadcasters. In the case where two stations are commonly owned the same logic applies, but the owner of two stations must consider changing either or both of the offerings of the jointly owned station. Thus, the owner of two stations must consider broadcasting (Moderate, Moderate), (Moderate, Liberal), (Liberal, Conservative), and so forth. If no combination of offerings will increase profits over the current combination of offerings, then the current combination of offerings is in equilibrium.

Once I have determined the equilibrium set of offerings in the purely competitive case and the equilibrium offerings in the jointly owned case, I can compare the market outcomes. If the offerings are more diverse in one case than the other, we can associate the change in diversity with the change in ownership structure. In this way we can evaluate, in terms of diversity, allowing combinations of television stations in small markets.

B. Competitive Case

Masson, Ram Mudambi and Robert J. Reynolds, *Oligopoly in Advertiser-Supported Media*, 30 Quarterly Review of Economics and Business 3 (1990).

[58] There are two arguments that cut against this assumption, but they push in opposite directions. First, young people tend to be more Liberal than old people, and young people are valued more highly by advertisers than are old people. Second, as people become wealthier they tend to become more Conservative. Wealthy people are worth more to advertisers than are people who are not wealthy. We assume that these tendencies cancel out.

[59] The Nash equilibria are in pure strategies, not mixtures. Each model has pure strategy equilibria, and these are the most natural for the application to television markets; changing programming requires a fairly public investment, signaling the exact pure strategy that will be used.

If there are three competitive owners of the three televison stations in town, how will they choose to program their televison stations? All three will choose a Moderate slant on news and public affairs. In this case there will be 700 viewers because none of the Conservative or Liberal consumers will bother to view the television. The 700 will split their 10 hours per month equally between the three Moderate televison stations. None will take one of their hours to drop in on stations with other slants because there are no such stations. Thus, each televison station will garner 700(10)/3 viewer-hours/month =

2,333 1/3 viewer-hours/month.

Will any of the three switch to Conservative or Liberal slant? Consider what might happen if one station were to do so. With two Moderate televison stations and one Conservative station, for example, there will be 700 Moderate viewers and 150 Conservative viewers. The Liberal viewers are completely unserved in this scenario and hence do not tune in, at all. The Moderates spend 9 of their 10 hours per month splitting their time equally between the two Moderate stations, but also spend one hour per month trying the Conservative station. Thus, the Conservative station will get (700 viewers) (1 hour/month) = 700 viewer-hours/month from the Moderates. The 150 Conservative viewers will spend 9 hours per month with the Conservative station. This amounts to 150(9) = 1,350 viewer-hours/month from Conservative viewers.

What is the grand total for the Conservative station? 1,350+700=

2,050 viewer-hours/month.

This is less than the 2,333 1/3 viewer-hours/month that the owner gets from being the third Moderate voice in the community. Hence, it does not make good economic sense for him to switch. An identical analysis shows that it makes no sense to switch to Liberal programming, either, under these circumstances.

Note that if one of the stations were to switch to Conservative news and public affairs, the remaining two Moderates would be made better off. Each would get 9(700)/2 +(1)(150)/2 = 3,225 viewer-hours/month. This is clearly better than 2,333 1/3 viewer-hours/month.

C. Merger to Monopoly

What would happen if one company were to buy all three televison stations? The single owner would slant one station Conservative, one station Moderate, and one station Liberal.[60] How

---

[60] This general result is well known. See Steiner, Peter O., *Program Patterns and Preferences and the Workability of Competition in Radio Broadcasting*, 46 Q.J. Econ. 94 (1954), pg 206, and Beebe, Jack H., *Institutional Structure and Program Choices in Television Markets*, 91 Quarterly Journal of Economics 15 (1977), pg 23.

does this happen? If the single owner does so, the Conservative and Liberal stations get exactly the same sized audience. First, note that all consumers tune in, as everyone is being served. So, for example, the Conservative televison station gets ½ of the one hour per month of the 700 Moderates who are sampling other stations, and ½ of the one hour per month of the150 Liberals who are sampling other stations. The Conservative station also gets all of the 9 hours per month that the 150 Conservatives are viewing to Conservative televison. The total is $9(150) + (700)/2 + (150)/2 = 1350 + 350 + 75 = 1,775$ viewer-hours/month. The Moderate station gets $9(700) + (150)/2 + (150)/2 = 6300 + 75 + 75 = 6,450$ viewer-hours/month. The owner gets a total of

$$1,775 + 1,775 + 6,450 = 10,000 \text{ viewer-hours/month.}$$

This makes sense because all 1,000 consumers are viewing 10 hours per month.

No other arrangement will produce as many viewer-hours/month, and a single owner does not care about which station gets the viewers.

The following table summarizes the results:

	Conservative stations	Moderate stations	Liberal stations
competitive owners	0	3	0
monopoly	1	1	1

Monopoly, not competition, increases diversity of the airwaves in this setting. This result is not new, but it is eye-opening for those who have not seen it before.

D. Merger to Duopoly and a Competitor

What would happen if two firms merged, so that we had one company with two outlets, and one company with one outlet? This is the question that has not been fully explored.

Recall from above that if all three televison stations program a Moderate slant to the news, each televison station will garner $700(10)/3$ viewer-hours/month $= 2,333 \ 1/3$ viewer-hours/month. Thus, a duopoly programming two Moderate slant stations will get 4,666 2/3 viewer-hours/month. Can a duopoly do better by programming one Moderate slant station and one Liberal (or Conservative) station?

If the duopoly were to follow the "one Moderate, one Liberal" station strategy, how many viewer-hours per month would it get? The Moderate station would split the Moderate viewers evenly with the other Moderate station. This amounts to $700(1/2)(9)$ viewer-hours/month. But the Moderate station would also pick up half of the Liberal viewers who are checking out other types of stations. This is $150(1/2)(1)$ viewer hours/month. Thus, in sum, the Moderate station will get

$$700(1/2)(9)+150(1/2)(1) = 350(9)+75 = 3150+75 =$$

3,225 viewer-hours/month.

The Liberal station will get 9 hours per month from the 150 Liberal viewers, plus one hour per month from the Moderates. This amounts to

$$150(9)+700(1) = 1350+700 =$$

2050 viewer-hours/month.

The duopolist cares about the total viewers it gets, and that total is

5,275 viewer-hours per month.

This is significantly more than the 4,666 2/3 viewer-hours per month that the duopolist will garner from running two Moderate stations, and will compel the duopolist to provide a more diverse offering. The remaining station will also get 3,225 viewer-hours from showing Moderate slant programming, and no other choice on its part will do better. Hence, the duopolist showing Moderate and Liberal, while the remaining station shows Moderate programming is an equilibrium.

E. Combining The Results

Thus, putting together the analysis of competition, duopoly, and monopoly in this small market, we have:

Economic Structure	Liberal stations	Moderate stations	Conservative stations
3 competitors	0	3	0
1 duopolist, 1 competitor	1 (if no Conservative)	2	1 (if no Liberal)
1 monopolist	1	1	1

Thus, any amount of merger, under this circumstance, will increase diversity. Merger has a "spreading" effect on the offerings in the small market. Of course, changing the assumptions in the example might change the results. But, as we will see in the analysis below, this result is quite hardy. The tendency is clear in small markets – merger is, in general, not bad for diversity.

IV. Investigative Reporting: Putting Costs Into the Model

In this section we will explicitly consider the costs of creating and disseminating local news and public affairs. To make things concrete we will focus on investigative reporting.

A. Assumptions and Methodology

1. Assumptions

Investigation is expensive, risky[61], and requires a significant infrastructure. Most of the infrastructure is hiring personnel with special expertise (e.g. following paper trails and money), space, support staff, computers, and so forth. It is not always clear which stories will need investigation time. Often tracing money and contacts is difficult. The Jack Abramoff scandal reportage clearly required a lot of digging[62] and the full cost to the Post was "in the ballpark of $500,000 to $750,000."[63] The Wall Street Journal frequently features articles that require a lot of investigation. Changes in technology have not greatly reduced the cost of such investigation. Hence, the variable costs of sending reporters to interview witnesses, to see original documents, to see locations where crimes took place, etc., continue to be significant. Thus, if a broadcaster chooses to do investigative reporting, denoted by variable I, it will have to invest α in fixed costs, and β in variable costs. Thus, the costs of I are

$$\alpha + \beta I$$

To make the analysis tractable we will start by assuming $I = 0$, or 1 for a given broadcaster. But we will also assume that a given α will support I at levels greater than 1.[64] If a broadcaster does no

---

[61] A recent story in Broadcasting & Cable Magazine details the reduction in investigative reporting on television, putting much of the blame on the risk of lawsuit expenses. See Marisa Guthrie, *Investigative Journalism Under Fire: Shrinking Budgets and Growing Money Concerns Have Hurt a Vital Genre*, Broadcasting & Cable, page 10, June 23, 2008.

[62] Howell, Deborah, *Getting the Story on Jack Abramoff*, Washington Post, Sunday, January 15, 2006, Page B06 *also available at* http://www.washingtonpost.com/wp-dyn/content/article/2006/01/14/AR2006011400859.html.

[63] Email from Jeff Leen, Assistant Managing Editor/Investigations, Washington Post, September 8, 2008.

[64] There is strong support for efficiencies in combining radio stations, and these efficiencies almost certainly stem from sharing facilities and resources. See Robert B. Ekelund, Jr., George S. Ford, and Thomas Koutsky, Market Power in Radio Markets: An Empirical Analysis of Local and National Concentration, 43 Journal of Law and Economics 157, 180 (2000). There is no reason to believe that analogous efficiencies do not exist in television.

Please do not quote or cite without permission.

investigative reporting, it incurs no cost of α or β. I refer to a station that does no investigative reporting as "Dark."

Investigative reporting has a political spin, L, M, or R, depending mainly on who is the target of investigative reporting, and for what purpose.[65] Thus, for example, Larry Flynt's disclosure that Senator David Vitter (R-La.) used a call girl "escort" service in Washington, DC, run by Deborah Jean Palfrey,[66] is probably a left-leaning piece of investigative reporting. This is because the target is a Conservative Republican, and not because there is anything inherently political about consuming escort services, because no political party (except for Libertarians) fails to condemn prostitution. Thus, the story about Congressman Barney Frank (D-Mass.) having sex with the teenaged aide and chauffeur that he put on the government payroll[67] is a right-leaning piece of investigative journalism. This is because the target is a Liberal.

For purposes of this section, assume that we have the same distribution of Liberal, Moderate, and Conservative viewers as before, (150, 700, 150). We change slightly the assumptions about viewing behavior, in part to make the analysis easier to compute.[68] Assume that all types of viewers, Liberal, Moderate and Conservative, will only pay attention to their own type of investigative reporting; if a viewer's favorite type of investigative reporting is not on, he will not watch. Also, we will assume that a television broadcaster's only option is to create and show investigative reporting, or not.

2. Methodology

We will use the same methodology that we used in the first section of this Article. I will deduce market outcomes in each case by using the assumptions about viewer behavior and broadcaster behavior, and by using the assumptions about market structure in each case – three competitive broadcasters or two commonly owned broadcasters and one independent competitor.

---

[65] This is similar in spirit to the measures used in Jeffrey Milyo, The Effects of Cross-Ownership on the Local Content and Political Slant of Local Television News, FCC Media Ownership Research Paper, Revised September 2007, available at http://www.fcc.gov/ownership/studies.html. See also Jeffrey Milyo and Tim Groseclose, *A Social Science Perspective on Media Bias*, 17 CRITICAL REVIEW 305 (2006).

[66] See http://www.foxnews.com/story/0,2933,354172,00.html; and http://www.cnn.com/2007/POLITICS/07/19/dc.madam.records/.

[67] See "Rep. Frank Says He May Consider Retiring," New York Times, September 17, 1989, available at http://query.nytimes.com/gst/fullpage.html?res=950DE1D61F3BF934A2575AC0A96F948260.

[68] The changes in assumptions does not alter anything about the character of the analysis or the results.

Please do not quote or cite without permission.

I will put all of these assumptions together to deduce the market outcomes by searching for Nash equilibria. The difference here is that broadcasters will be concerned about the difference between costs and revenues, rather than just revenues.

Just as in the previous section of this Article, once I have determined the equilibrium set of offerings in the purely competitive case and the equilibrium offerings in the jointly owned case, I can compare the market outcomes. If the offerings are more diverse in one case than the other, we can associate the change in diversity with the change in ownership structure. In this way we can evaluate, in terms of diversity, allowing combinations of television stations in small markets.

B. Competitive Case[69]

The analysis is, at first, similar to that above. All three broadcasters will feel the pressure to cluster at M and split the 700 Moderate viewers equally. However, that is not the end of the analysis, because they will choose to continue creating and broadcasting investigative reporting if and only if revenues are greater than costs. If costs are low, all three stations will provide investigative reporting, and all will cluster at Moderate. However, as costs rise, relative to available revenues, one of television stations will go Dark (i.e. stop offering investigative reporting), while the other two stations will offer Moderate spin reporting. The two stations that continue to offer investigative reporting will be able to turn a profit because they will have to split available viewers two ways, and not three. As costs rise even more, two of the stations will go Dark, and the remaining station will offer Moderate spin investigative reporting. This station will garner all of the Moderate viewers. Last, as costs become very high, no station provides investigative reporting.

In sum, as costs rise fewer stations show investigative reporting. But under no cost structure is anything other than Moderate spin reporting broadcast in a competitive market.

C. Allowing Merger of Two Broadcasters[70]

As we noted above, the analysis presumed that a broadcaster's only option was to create and show investigative reporting, or not. A broadcaster could not combine with another broadcaster.

In this section we will change that assumption. In particular, we will allow broadcasters to combine as long as there is one remaining "independent" voice in the market.

We will analyze the effect of a merger by partitioning by cost data, as above.

Case 1(Low Costs): $\alpha + \beta I \leq (700/3)v$. What happens if two of the broadcasters

---

[69] The results described in this section appear in Appendix 1.

[70] The results described in this section ppear in Appendix 2.

merge, leaving one of them independent? First, because α, the fixed cost of investigative reporting, can be used to produce more than one I, two of the firms will merge to save costs. The merged firm has three[71] basic options.

- It can continue to do what the two broadcasters were doing premerger – two offerings of investigative reporting at a Moderate spin.
- It can withdraw one of the broadcasters from the investigative reporting market and offer only one channel of Moderate spin investigative reporting.
- It can offer one channel of Moderate spin and one channel of Liberal (or Conservative) spin investigative reporting.

The merged broadcaster will pick the option that will maximize profits (given the best response of the remaining broadcaster).

The first option produces profits of

$$2(700/3)v\text{-}(\alpha + 2\beta I)$$

This equation represents the fact that the fixed costs can produce more than one investigative report, but that there will be two variable costs. The remaining broadcaster will continue to produce Moderate spin investigative reporting because that is still the best response.

The next option, stopping one of its outlets from producing and broadcasting investigative reporting, and then producing Moderate investigative reporting on the other one, produces profits of

$$350v\text{-}(\alpha + \beta I) \ .$$

Again, continuing to produce Moderate spin investigative reporting is the best response for the remaining television station.

The last option, which is producing one offering of Moderate investigative reporting and one offering of Liberal (or Conservative) investigative reporting, will produce profits of

$$(150 + 350)v \text{ -}(\alpha + 2\beta I).$$

And, just as in the first two cases, continuing to produce Moderate spin investigative reporting is

---

[71] Because the cost condition guarantees positive profits, and because we assume that merger will take place only if the merged entities anticipate no drop in profits, and because exiting the investigative reporting business entirely would produce zero profits, we know that the merged firm will not stop producing investigative reporting altogether.

Please do not quote or cite without permission.

the best response for the remaining television station. This equation represents the fact that the merged broadcasters get all of the 150 Liberal or Conservative viewers, and half of the Moderate viewers.

So, which one will the merged broadcaster choose? Compare the *second* and *third* options. The merged broadcaster will choose to let one of the broadcast outlets stop producing and showing investigative reporting only if

$$350v\text{-}(\alpha + \beta I) > (150 + 350)v \text{ -}(\alpha + 2\beta I).$$

But, this means $350v\text{-}(\alpha + \beta I) > 150v + 350v \text{ -}(\alpha + \beta I) \text{ - } \beta I$, which reduces to $0 > 150v \text{ - } \beta I.$, or $150v < \beta I$. This means that the *marginal cost* of producing investigative reporting for the Liberal (or Conservative) audience is greater than all of the revenues that can be garnered from that audience. Thus, it is not possible, without subsidies, to serve this audience. In all other circumstances the merged broadcaster will choose to have two offerings, possibly one Moderate and one Liberal (or Conservative) offering of investigative reporting. We say "possibly" because we have not yet investigated whether the first option, two offerings of Moderate investigative reporting, is more profitable. To find out, subtract the profit from the third option from the profit from the first:

$$2(700/3)v\text{-}(\alpha + 2\beta I) - (150 + 350)v \text{ -}(\alpha + 2\beta I).$$

This is $(1400/3 - 500)v$, which is negative. Thus, the profits from the third option are greater for all cases. Thus, the merged broadcaster will show one Moderate and one Liberal offering.

In sum, the merged broadcaster will choose one Moderate and one Liberal (or Conservative) offering of investigative reporting in all circumstances where the Liberal (or Conservative) viewers can possibly be served ($150v \geq \beta I$). Otherwise, the merged entity will produce and broadcast only one offering of Moderate investigative reporting. The remaining independent broadcaster will continue to offer a channel of Moderate investigative reporting.

Case 2 (Moderate Costs): **$(700/3)v < \alpha + \beta I \leq 350v$**. Remember that without the merger the equilibrium was only *two* offerings of investigative journalism, both at Moderate spin. The third broadcaster offered no investigative journalism. We will presume that the only merger that will be allowed is one between the broadcaster that is not offering investigative journalism, and one of the broadcasters that is doing so.

What are the possible equilibria? We can immediately rule out an equilibrium where the merged broadcaster shows two offerings of Moderate spin investigative reporting and the remaining broadcaster shows Liberal (or Conservative) investigative reporting. Such an equilibrium would leave the remaining broadcaster showing Liberal (or Conservative) with revenue of $150v$. If, instead, the broadcaster were to shift to showing Moderate spin investigative reporting, it will garner

(700/3)v revenue, which is more than 150v. Since costs do not change, profits are greater at Moderate. This logic shows that no equilibrium with the independent broadcaster producing and showing Liberal (or Conservative) investigative reporting is possible. Also, since, by assumption in this case, (700/3)v < α + βI ≤ 350v, we know that the independent broadcaster cannot make a profit by showing investigative reporting and getting 1/3 of the Moderate viewers. Thus, there is no equilibrium in which the independent broadcaster shows Moderate investigative reporting while the merged entity shows two Moderate offerings.[72]

The remaining four equilibrium possibilities we will investigate, listing the independent broadcaster's offering in the first place, include:

• Case MML: Moderate independent, Moderate merged, Liberal (Conservative) merged
• Case MMD: Moderate independent, Moderate merged, merged Dark
• Case DMM: Dark independent, Moderate merged, Moderate merged
• Case MLD: Moderate independent, Liberal (Conservative) merged, merged Dark

We need to investigate the profits of the broadcasters.

Case MML: The merged broadcaster will get revenues of (1/2)(700)v + 150v (= 500v) and have costs of α + 2βI. Profits are the difference:

$$500v - α - 2βI.$$

The independent will garner 300v in revenues, and have -α - βI in costs, means 300v -α - βI in profits for the indpendent. By assumption the independent's profit is positive.

Case MMD: The merged broadcaster and the independent will both receive revenues of 350v and have costs of α + βI. Profits are the difference:

$$350v - α - βI.$$

Case DMM: The merged broadcaster will get revenues of (700)v and have costs of α + 2βI. Profits are the difference:

$$700v - α - 2βI.$$

The independent, which is Dark, makes 0 profits. By assumption (α + βI ≤ 350v), the merged entity's profit is positive.

---

[72] Also, there is no equilibrium where one merged broadcast outlet shows Liberal investigative reporting while the other one shows Conservative. Each outlet would garner only 150v in revenues. By shifting to Moderate either broadcast outlet would get 350v in revenues, and the remaining one would lose nothing.

Please do not quote or cite without permission.

Case *MLD:* The merged broadcaster will get 150v in revenues and have costs of $\alpha + \beta I$. The independent, on the other hand, will receive revenues of 700v and have costs of $\alpha + \beta I$. Profits for the merged broadcaster are $150v - \alpha - \beta I$, and the independent gets $700v - \alpha - \beta I$.

We can see by inspection that MMD is strictly better than MLD for the merged broadcast entity, so we can eliminate MLD as an equilibrium. DMM can be an equilibrium, since neither the merged broadcast entity nor the independent broadcaster can increase profits through unilateral action. What about a comparison of MML and MMD? Subtracting the profits of the latter from the profits of the former, we can calculate the circumstances when the difference is positive.

$$(500v - \alpha - 2\beta I) - (350v - \alpha - \beta I) > 0$$

$$150v - \beta I > 0$$

$$150v > \beta I.$$

In this circumstance the merged broadcaster will choose the MML case. Otherwise, the merged entity will let one of its channels go Dark, and we get MMD. Note that this is *exactly* the same condition that we found in Case 1; where it is not possible to generate enough revenue to cover the marginal cost of producing another channel of investigative reporting, the broadcaster will choose not to produce and show investigative reporting (i.e. go Dark). But if there *is* enough revenue, the broadcaster will produce and show investigative reporting, and will choose either L or C spin, thereby increasing diversity of the airwaves. Of course, as we saw above, DMM (with the independent Dark) is also an equilibrium, and thus there is no change in diversity from the merger.

Case 3 (High Costs): $350v < \alpha + \beta I \leq 700v$. We will assume that regulatory authorities will allow any two of the parties to merge, since there is only one voice in the market under competition. We will first investigate what happens to the broadcaster who is already showing investigative reporting (who we will call A, as in "Active") merges with one of the Dark broadcasters (whom we will call D1 and D2, as in "Dark" broadcasters).

Case 3.1: A merges with D1. We can rule out immediately an equilibrium in which A and D1 both produce and show Moderate spin investigative reporting. This would increase costs and split the 700v that A was already getting. The merged entity would prefer to let one outlet go Dark. Also, there is nothing about the merger that will cause the merged entity to have A stop showing Moderate spin investigative reporting. Thus, D2 will have no profitable entry strategy. By showing Moderate spin investigative reporting, D2 will get, at most, 350v, which is less than its costs, $\alpha + \beta I$. And showing Liberal or Conservative investigative reporting will get only 150v in revenue. Thus, we only have to check whether the merged broadcaster will have A showing Moderate and D1 showing Liberal (or Conservative). If the merged broadcaster does so, it will get $700v + 150v$ in revenues, and have costs of $\alpha + 2\beta I$. This will be more profitable exactly when $150v > \beta I$. This is the same condition we had in Case 1 and Case 2.

Case 3.2: D1 merges with D2. There are only two equilibria. In one, A continues to produce and show Moderate investigative reporting, while D1 and D2 stay Dark. In the other, A goes Dark and the merged broadcaster executes the most profitable strategy from Case 3.1.

Case 4 (Very High Costs): α + βI > 700v. Allow any two of the broadcasters to merge. If the merged broadcaster is to maximize profit, its only strategy is to show one channel of Moderate investigative reporting, and one channel of Liberal or Conservative. If it does so, it will garner revenue of 850v, and have costs of α + 2βI. Is it possible that 850v - α - 2βI > 0 while α + βI > 700v? Put the two equations together to find that:

$$150v - βI > Δ$$

Where Δ = α + βI - 700v, which is the deficit that a broadcaster would run from producing and showing a channel of Moderate investigative reporting, with no other broadcasters in the market. The condition 150v - βI > Δ means that the broadcaster can make enough profit from adding a Liberal (or Conservative) offering of investigative reporting that the profit more than makes up for the deficit from showing the first channel of Moderate investigative reporting. If this condition is not satisfied, then all stations remain Dark.

Summary of Results: In all cases where the revenues from producing and showing Liberal (or Conservative) investigative reporting can cover the marginal costs of doing so, merger will often increase, and will never decrease, diversity. And, if costs are moderate, high, or very high, merger will often increase, and will never decrease, diversity. It is only where costs are low *and* revenues from Liberal (or Conservative) programming cannot cover marginal costs that merger *might* cause a reduction in diversity. And, even in this unusual case, the "reduction" in diversity is to move from three Moderate offerings to two Moderate offerings. *Merger never removes a minority (Liberal or Conservative) voice from the market.* In sum, merger of two television broadcasters in a small market is generally very good for diversity of viewpoints in that market.

D. The Effect of the Internet

How does the Internet change the analysis in the previous section? If we were to answer this question in all its glory we would set up exactly the same structure of analysis as we used in the previous section, allow the Internet to change some of the assumptions within the examples, and then deduce the new equilibria. We would then compare the new equilibria to the equilibria we found in the previous section, and call the differences in the equilibria the "effect" of the Internet.

We will follow the plan of analysis described in the paragraph above, but in an effort to keep this Article a manageable length, we will only outline the differences in assumptions, analysis, and equilibria. So, we will start with exactly the same assumptions about viewer and broadcaster

preferences and behavior that we used in the previous section, and then make a couple of changes. In particular, the Internet has had two primary effects, one large and one small. First, the Internet has reduced the size of the audience available to broadcasters; people who would have been watching TV are spending time on the Internet, instead. Second, the Internet has reduced, by a little bit, the marginal costs of investigative reporting; it is now easier to find governmental documents because of the web, but one still has to track down sources, talk with them, validate their claims, and so forth. These two effects push in exactly opposite directions, but the reduction in audience is more important.

First Effect – Reduction in Audience: Using the data from Joel Waldfogel's study of substitutability of Internet for other media, we can estimate a 22% reduction in the audience available for the broadcasters. This would mean, in the analysis above, a total audience of 780, instead of 1000. In particular, assume we are left with 117 Liberal, 546 Moderate, and 117 Conservative viewers. The behavior of the remaining viewers is the same as before.[73] How does the reduction in the number of viewers change the analysis? Fewer viewers mean lower revenues. As revenues fall but costs do not, investigative reporting becomes relatively more and more costly. This means that there will be fewer "low cost" cases and more cases that are "medium" or "high" or "very high" cost, when compared to the analysis without the Internet. This means that the "medium" or "high" or "very high" cost equilibria are more likely than "low" cost equilibria because of the Internet. These three cases of cost comprise the situations where we are sure that duopoly will not reduce diversity, and may increase it. *Thus, the Internet increases our certainty that merger does not reduce diversity, and probably increases it.* However, within the three higher cost cases, the reduction in audience will reduce the number of situations in which Liberal (or Conservative) investigative reporting can generate revenues that cover costs. This will reduce the number of markets in which merger will increase diversity of viewpoints, and *increase the number of markets where diversity is left unchanged.*

Second Effect – Reduction in Marginal Cost of Reporting: The small reduction in the marginal costs of investigative reporting will have two effects. First, it may move a few markets

---

[73] This assumption is probably slightly off. The Internet attracts young viewers, who tend to be liberal. Nagourey, Adam, *Young Americans Are Leaning Left, New Poll Finds*, June 27, 2007 available at
http://www.nytimes.com/2007/06/27/washington/27poll.html?_r=1&oref=slogin (showing that young Americans tend to be liberal). *Demographics of Internet Users*, Pew Internet & American Life Project, November 30 – December 30, 2006 Tracking Survey available at
http://www.pewinternet.org/trends/User_Demo_1.11.07.htm (showing that 83% of users are 18-29). This probably leaves more Conservative viewers (as compared to Liberal) in the viewing audience. But the important thing to notice is that the absolute number of Liberal and Conservative viewers will decline.

Please do not quote or cite without permission.

from medium cost into low cost.[74] It is possible in low cost, but not in higher cost markets, for merger to cause a small decrease in diversity. Thus, there may be an increase in the number of markets in which merger could cause a small reduction in diversity. However, the reduction in costs will also change the analysis within "medium," "high," and "very high" cost markets. In particular, the reduction in costs (holding revenues constant) will increase the number of cases in which revenues from showing Liberal (or Conservative) investigative reporting will more than cover the costs of producing the material. These are exactly the cases where diversity can be *increased* by merger.

Putting together the effects of smaller audience and smaller costs of reporting is, of course, educated guess work. Note that both the reduction in audience size and the reduction in the marginal cost of reporting have contrasting effects. To me, the decreases in audience size seem to swamp any cost savings in reporting. And the main effect of this will be to push more markets away from low cost and into medium, high, and very high cost conditions. These are the cost conditions where more and more stations go Dark, presenting no investigative reporting. Lighting the Dark stations is crucial for diversity of opinion, and thus, overall, the internet does not decrease, and most likely increases, the diversity benefits from duopoly.[75]

D. Adding An Ideologue Into the Model

We will redo the analysis above by adding an ideologue into the mix. How does the analysis change if one of the original three owners is an ideologue? To answer the question we must do two things. First, we must come up with a characterization of an ideologue that will work within the model. Second, we must redo the analysis, first with three independent broadcasters, and then with allowing two of them to merge.

There are two working papers analyzing ideologues, but each uses a very different framework from my own. Anderson and McLaren's work[76] assumes two competing news outlets

---

[74] Note that reclassifying markets from "very high" cost to "high" cost, or from "high" cost to "medium" cost will have no detrimental effect on diversity. Merger never reduces diversity in any of these cases.

[75]   This analysis leaves out a crucial element – the increase in diversity from the internet, itself. This Article makes no claims about how one should balance off increases in diversity from the internet against marginal changes in the increase in diversity in broadcasting from duopoly. All I will do, for the moment, is point out that the internet complicates the analysis.

[76] Anderson, Simon P. And John McLaren, Media Mergers and Media Bias, Working Paper, University of Virginia, March, 2007 *available at*

Please do not quote or cite without permission.

with opposite preference about public policy and with access to information that would affect the appropriate choice of public policy. The news outlets might release or withhold the information, but cannot falsify or spin the information.[77] Only a news monopolist can mislead the public, and then only partially. This is an advantage to a monopolist publisher only if his political preferences are not too far from those of the electorate. This can give an incentive for merger, and a consequent reduction in diversity (and accuracy). The Anderson and McLaren Article works because they assume that the two media outlets are the only ones who can discover the information, and there are no leaks from within the monopolist media firm. The second, by Burke,[78] shows that news outlets' desire to appear unbiased may lead them to withhold information, and that competition (*not monopoly*) exacerbates this tendency. Consequently, in the Burke model, competition reduces diversity and accuracy. Thus, existing work produces contradictory results, and also addresses issues different from the "spin" issue addressed in this Article.

Characterizing ideology: For our purposes, we will call a broadcaster an ideologue if he is a Conservative (without loss of generality – the Liberal case is symmetric) and is willing to broadcast Conservative investigative reporting even if it "costs him money." Broadcasting Conservative material costs the ideologue money if it is not the most profitable strategy for him, given the strategies of the other broadcasters in his market. The amount of money broadcasting Conservative material costs the ideologue can be found by computing the lost profit – taking the profit from the profit-maximizing strategy, π_m, and subtracting the profit from broadcasting Conservative material, π_C. This would be

$$\pi_m - \pi_C$$

We can parameterize the degree of ideology with M, which is the maximum value of $\pi_m - \pi_C$ that the ideologue will tolerate and still broadcast Conservative material. When the loss of profits (which is the "cost" of broadcasting Conservative material) exceeds M, the ideologue reverts to broadcasting profit-maximizing material.

For the sake of clarity, I must distinguish a broadcaster whose political preferences lead him to find or invent material that competes very effectively in the marketplace, making a lot of profit for the broadcaster. Such a broadcaster is not, in my analysis, an ideologue. Because this broadcaster is maximizing profits, he is paying nothing to broadcast Liberal (or Conservative) material. He is completely undistinguishable from a profit maximizer. The broadcaster's extra utility from broadcasting Liberal (or Conservative) material is, in market terms, irrelevant. The broadcaster's extra utility does not alter the diversity of opinions over the airwaves.

---

http://www.virginia.edu/economics/papers/anderson/murdochs070308.pdf

[77] Id. at page 7.

[78] Burke, Jeremy, Unfairly Balanced: Unbiased News Coverage and Information Loss, Economics Working Paper, Duke University, September, 2007.

Please do not quote or cite without permission.

Given this approach, a profit-maximizing broadcaster is equivalent to an ideologue with M = 0. (And a Liberal broadcaster has M<0.) This should be all we need to start computing equilibria.

In all that follows, we will presume that exactly one of the three broadcasters is an ideologue. If there is a merger, we will presume that the ideologue is the acquiring party.

1. Competitive Case

If costs are low – $(700/3)v > \alpha + \beta I$ – then a sufficiently strong ideologue (in that he is willing to spend at least $(250/3)v$ to broadcast Conservative investigative reporting) will turn one of the three Moderate broadcasters into a Conservative. This should count as an increase in diversity. In all other cases – medium cost, high cost or very high cost – the ideologue will take one of the previously Dark stations and start broadcasting Conservative material if and only if he is sufficiently ideological. The higher are costs compared to revenues, the more intense must be his ideology for this to happen.[79]

2. Allowing Merger But Leaving One Independent Voice, With an Ideologue In the Market

The overwhelming tendency of merger in the presence of an ideologue is to diversify the airwaves. The intuition behind this is that an ideologue is willing to spend money to communicate with the public even when it costs him money to do so. Allowing merger lets the ideologue do so in more ways, and gives him options to lose less money while communicating. Thus, merger makes it more likely that Dark stations are lit, and that duplicated Moderate stations diversify and present Conservative material. In no case[80] does merger reduce the diversity of the airwaves.[81]

IV. Possible Critiques of the Models

There are three possible types of critiques of the models used in this paper.

---

[79] See Appendix 4 for the derivation of these results.

[80] With different assumptions an ideologue could also reduce diversity. If the distribution of viewer preferences were rectangular (333 1/3, 333 1/3, 333 1/3) so that competition produced a diverse (L, M, C) outcome, then a sufficiently strong ideologue could buy two stations and produce a market outcome of, for example, (L, L, C or M). As I have already noted, this is not the distribution of political preferences in the United States, generally. It could, admittedly, be the distribution of preferences in one or more small markets.

[81] See Appendix 2 for the derivation of these results.

- First, one might claim that the results depend crucially on *assumptions* that are inapposite in this context.
- Second, one might claim that *other types of models* do a better and different job of analyzing concentration in small television markets.
- Third, one might claim that *empirical work* disproves the models' results.

I will consider each of these, in turn. As we will see, none of these issues suggest abandoning use of these models.

A. Assumptions

The crucial assumptions that one should examine include:

- In the models above viewers were only willing to watch TV if their first choice was being broadcast. What if viewers are willing to watch even if their first choices are not on? Will the results change? In some circumstances, a monopolist might have an incentive to let a station "go Dark" if consumers are willing to watch second choice programming. Is that a theoretical problem in small television markets where duopolies, but not monopolies, are permitted?

- The models above used a specific distribution of viewer political preferences. Perhaps the results would change if we were to use a different distribution of preferences.

- In some models there is worry that existing stations will change their format choices so as to preempt entry by new stations. In particular, a monopolist might broadcast two or more offerings of Moderate programming to preempt entry by a new broadcaster. Is that a theoretical problem in small television markets where duopolies, but not monopolies, are permitted?

1. Viewers and Second Choice Programming

Some have critiqued Steiner models as being too sensitive to the assumption that viewers will only watch their first choice type of programming.[82] If viewers – particularly viewers with

---

[82] See Roger G. Noll, Merton J. Peck, and John J. McGowan, Economic Aspects of Television Regulation, 49 (1973); Jack H. Beebe, *Institutional Structure and Program Choices in Television Markets*, 91 Q.J. ECON. 15 , 17 (1977); Christopher S. Yoo, *Copyright and Democracy: A Cautionary Note*, 53 VANDERBILT L. REV. 1933, 1938 (2000). Yoo intuitively grasped the approach in my Article when he wrote, of Beebe's comparing competition and monopoly, "Beebe's decision to limit his model to two market structures – monopoly vs. competition – leaves open the question of what would happen under the market structure that most resembles the media market of his day: oligopoly. Fortunately, Beebe's work can be easily

minority type preferences – are willing to watch second choice programming, then the decisions of broadcasters who own multiple outlets may be altered, and the results about diversity may be changed.

To see that this is true, consider the market structure in the first model presented in this Article. That model assumed that Liberal and Conservative viewers would not bother to watch, at all, if their favorite type was not broadcast. Under this scenario, a monopolist with three stations would be led to broadcast one Conservative station, one Moderate station, and one Liberal station.

What happens if Liberal and Conservative viewers will watch whatever is on, if their first choice is not available? Then, goes the argument, a monopolist will have an incentive to close two of the stations and broadcast only one offering of middle of the road new and public affairs. All 1,000 viewers watch it, and the monopolist saves whatever costs are associated with keeping the other two channels on the air.[83]

This argument is correct, at least within its own boundaries. But these boundaries are extreme – *complete monopoly*, and *complete willingness* on the part of Conservative and Liberal viewers to watch middle of the road programming if their preferred option is not available. This leaves open the question of what happens with less extreme assumptions – oligopoly and partial willingness to watch second choice programming.

This section will show that as long as viewers are not highly willing to watch second choice programming, the merger of wo broadcasters will likely increase diversity. Merger can cause only a small lossin diversity, and can produce a large increase. On balance, merger should be allowed.

To analyze the relationship between willingness to watch second choice programming and market outcomes, we will modify the model in the first section of this Article. Recall that the basic set up of the first model was contained in the following table:

Type of Concept	*Number*	*Comment*
Liberal viewers	150	minority taste
Moderate viewers	700	majority taste

---

extended to cover this scenario." *Id*., 1942.

[83] This is the same as Beebe's result for a monopolist under "preference pattern 3," in which all viewers are willing to watch common denominator programming, "type 1." "For [preference] pattern #3 he [the monopolist] offers only program 1." Jack H. Beebe, *Institutional Structure and Program Choices in Television Markets*, 91 Q.J. ECON. 15 , 22 (1977).

Please do not quote or cite without permission.

Conservative viewers	150	minority taste
view favorite type	90% of time	split equally between favorites; do not view if no favorite type
sample other stations	10% of time	only if viewing in the first place
total viewing time	10 hours/month	only if viewing in the first place

To answer the question in this section we will assume that Liberal and Conservative viewers will always watch if their first choice is broadcast. If their favorite is not broadcast they will watch only 10t hours/month, where $0 < t < 1$. They split the 10t hours/month equally[84] among the Moderate stations in the market.[85] The original model we analyzed set $t = 0$.

Hence, in this model, the assumptions are

Type of Concept	*Number*	*Comment*
Liberal viewers	150	minority taste
Moderate viewers	700	majority taste
Conservative viewers	150	minority taste

---

[84] An alternative specification would be that they split time equally between all stations in the market, but that seems less intuitive. That would mean, for example, that Conservative viewers would be as likely to watch left-leaning fare, such as public television, as Moderate news. This seems unlikely.

[85] The first model to try partial willingness to watch second choice alternatives is Noll, Peck and McGowan, supra note ___, at page 49. They postulated a model in which $t = 60\%$. Noll continues this theme in his Comment on Waldfogel, Brookings-Wharton Papers on Urban Affairs 288-305 (Janet Rothenberg Pack and William G. Gale, eds., Brookings Institution Press 2004). There he explores different preference orderings, only some of which will watch second choice programming.

Please do not quote or cite without permission.

view favorite type	90% of time	split equally between favorites; Only view t, where $0 < t < 1$, as much if no favorite type, and split equally among Moderate stations. If favorite is broadcast, view all 10 hours.
sample other stations	10% of time	only if viewing in the first place
total viewing time	10 hours/month	If favorite type is not broadcast, view only 10t hours/month

We will compute the equilibria for Pure Competition, for Two Stations With One Owner, and for Monopoly.[86]

We can summarize the results in the following three tables, showing possible equilibria:

---

[86] See Appendix 5.

Pure Competition

Each Competitor's Offering	Market Outcome	Each Competitor's Revenues
(Moderate)	(Moderate, Moderate, Moderate)	$[2,333.3 + 10t]v$

Two Jointly Owned and One Independent

Duopolist's Offerings	Independent's Offerings	Market Outcome	Duopolist's Revenues
(Moderate, Moderate)	(Moderate)	(Moderate, Moderate, Moderate)	$[4,666.6 + 2000t]v$
(Moderate, Liberal)	(Moderate)	(Moderate, Moderate, Liberal (or Conservative))	$[5,350 + 750t]v$
(Moderate, Dark)	(Moderate)	(Moderate, Moderate, Dark)	$[3,500 + 1500t]v$

Pure Monopoly

Monopolist's Offerings	Market Outcome	Monopolist's Revenues
(Moderate, Liberal, Conservative)	(Moderate, Liberal, Conservative)	$10,000v$
(Moderate, Dark, Dark)	(Moderate, Dark, Dark)	$[7,000 + 3,000t]v$

To see how $0 < t < 1$ changes things, start by comparing equilibrium outcomes under pure competition to those under duopoly. As we can see from the chart, pure competition produces (Moderate, Moderate, Moderate). Allowing an independent and two jointly owned stations changes things dramatically. First, unless programming is prohibitively expensive, the worst outcome in the market will be (Moderate, Moderate, Dark). This would represent a small decrease in diversity when compared to pure competition. Second, the best outcome, (Moderate, Moderate, Liberal (or Conservative)) represents a large increase in diversity. Third, the remaining outcome (Moderate, Moderate, Moderate) is identical to the pure competition outcome. Thus, allowing merger of two broadcasters can produce either a *small decrease* or a *large increase* in diversity, or make no difference.

Please do not quote or cite without permission.

Which outcomes are most likely? Under very reasonable conditions, the best outcome is quite likely, and worst outcome is unlikely. As long as t < .54, the duopolist will get more profit from (Moderate, Liberal) than from (Moderate, Moderate).   And as long as costs are reasonable (meaning costs are less than (1,650 - 750t)v) the duopolist will not let a station go Dark. These two conditions combine to produce the best outcome (Moderate, Moderate, Liberal (or Conservative)). If, say, t = .5, meaning that Liberal and Conservative viewers will watch half as many hours if their favorite types are not on, then (1,650 - 750(.5))v = 1,325v is the maximum cost that a duopolist will pay to show Liberal (or Conservative) programming. This is very impressive – it is close to the entire value (1,500v) of a minority viewership. Thus, the combination of only moderate willingness to watch second choice programming, say t = .5, and moderate costs provides a relatively diverse set of offerings in the market.[87]

I do not want to overstate the case. If t is high enough, meaning that Liberal and Conservative viewers are *very* willing to watch Moderate programming if there is no Liberal or no Conservative programming shown, then the duopolist will revert to showing (Moderate, Dark), and the market will have (Moderate, Moderate, Dark). This must count as a small reduction in diversity. However, even *such a high willingness to watch second choice programming does not remove minority programming from the market.* Under pure competition we get (Moderate, Moderate, Moderate), without any minority interest programming, at all. In contrast, if t is moderate (t = .5), the market outcome under duopoly is (Moderate, Moderate, Liberal (or Conservative)). This is a clear increase in diversity, and a highly significant one.

So, how does all of this fit together? The following points should help:

•   Pure competition produces (Moderate, Moderate, Moderate) programming.
•   In contrast, pure monopoly produces (Moderate, Liberal, Conservative) programming if viewers are relatively unwilling to watch second choice programming, and as their willingness to watch second choice programming increases, a monopolist switches to showing (Moderate, Dark, Dark). The switching point also depends on the costs of producing and showing Liberal (or Conservative) programming.
•   A market with two jointly-owned stations and one independent will produce (Moderate, Moderate, Liberal (or Conservative)) programming if viewers are relatively unwilling to watch second choice programming. This result is quite compelling. For example, if viewers are willing to watch half as many hours of second choice programming as first choice programming, then the market outcome is highly likely to be (Moderate, Moderate, Liberal (or Conservative)). But as viewers are increasingly willing to watch second choice programming, the market outcome will change to (Moderate, Moderate, Moderate), and then to (Moderate, Moderate, Dark).

---

[87]   Monopoly can also provide diversity. And if t < .167, then we will be less likely to have any Dark stations with duopoly than with monopoly.

Please do not quote or cite without permission.

Thus, in going from pure competition to a market with two jointly-owned stations and one independent, we move from a market outcome of (Moderate, Moderate, Moderate) to (Moderate, Moderate, Liberal (or Conservative)) or (Moderate, Moderate, Dark). The first possibility (Moderate, Moderate, Liberal (or Conservative)) represents a large, significant increase in diversity, while the second possibility (Moderate, Moderate, Dark) represents a small decrease in diversity. If each possibility were equally likely, then moving from pure competition to a market with two jointly-owned stations and one independent will produce an expected increase in diversity. In order to have an expected decrease in diversity we would have to believe that the second possibility is much more likely. We do not know the likelihood of each of these outcomes, however. *Thus, pending some new research on these likelihoods, the burden of proof must rest on those who claim that allowing merger will reduce diversity. Until that burden is met, I will reject "second choice viewing" as a reason to doubt this Article's results.*

2. The Distribution of Viewer Preferences

What happens if viewer preferences are more spread out, so that they are distributed closer to one third Liberal, one third Moderate, and one third Conservative? Won't the results be affected? The answer is "yes," they should.[88] In that case, a fully competitive, three broadcaster market will do just as well, in terms of diversity, as will a duopoly and stand alone broadcaster.[89] The important thing to notice, however, is that *as one makes the distribution of viewer preferences more uniform, the basic results change very little.[90] And, in general, pure competition will not do better, and sometimes it will do far worse, than a duopoly and a stand alone broadcaster.*

3. Preemptive Choice of Programming, Cable Television, and the Threat of Entry

As Berry and Waldfogel[91] point out in the context of radio station's choice of format, a monopolist may choose its format so as to preempt entry by new stations. This naturally brings up

---

[88] For a very organized, methodical analysis of the distribution of viewer preferences, and they way they interact with the number of broadcast stations, see Jack H. Beebe, *Institutional Structure and Program Choices in Television Markets*, 91 Q.J. ECON. 15 (1977).

[89] This is how one can interpret the results, vis a vis entertainment programming, in Ronald L. Goettler and Ron Shachar, *Spatial Competition in the Network Television Industry*, 32 RAND J. ECON. 624, 648 (2001)(concluding that pure competition did 98.75% as well as would collusion, in terms of getting viewers to tune in.)

[90] See Appendix 6 for a detailed example.

[91] Stephen T. Berry and Joel Waldfogel, Do Mergers Increase Product Variety? Evidence From Radio Broadcasting, 116 Q.J. Econ. 1009, 1012 (August 2001).

the role of cable television, because in some markets local news and public affairs can be provided (to cable subscribers) in that way.

Before we can talk about cable television and its role in the market, we must first explore the basic argument about preempting entry. We can understand the argument by extending the model in part I of this article. Recall that the basic assumptions are contained in this table:

Type of Concept	Number	Comment
Liberal viewers	150	minority taste
Moderate viewers	700	majority taste
Conservative viewers	150	minority taste
view favorite type	90% of time	split equally between favorites; do not view if no favorite type
sample other stations	10% of time	only if viewing in the first place
total viewing time	10 hours/month	only if viewing in the first place

Also, recall that the equilibrium outcomes with either a monopolist or with one duopoly and one stand alone broadcast station, listed on the second row, were:

Economic Structure	Liberal stations	Moderate stations	Conservative stations
3 competitors	0	3	0
1 duopolist, 1 competitor	1 (if no conserv)	2	1 (if no Liberal)
1 monopolist	1	1	1

The essence of the "preemption" insight can be gleaned by considering the monopolist's worries if there were a fourth television station that could enter the market.

a. Explaining the Argument With an Incumbent Monopolist

i. Potential Entrant's Expectations

The analysis depends on the potential entrant's expectations – or, more accurately, about the monopolists' beliefs about the potential entrant's expectations. The (monopolist could believe that the) entrant might believe that:

- ("Naive") If the entrant enters, no incumbent will change his programming in response to the entry.
- ("New Equilibrium") If the entrant enters, a new equilibrium will obtain, and he will play some role in the new equilibrium. If the incumbent's pre-entry strategies can be part of a new, post-entry equilibrium, and if the entrant chooses the programming strategy that completes the equilibrium, that will be the one that obtains. On the other hand, if the incumbent's pre-entry strategies are not part of a post-entry equilibrium, or if the entrant enters with a strategy that is not in equilibrium with the incumbent's programming strategies, it is not clear which post-entry equilibrium will result. The potential entrant will form beliefs over the likelihood of each equilibrium and the entrant's place in that equilibrium.
- ("Retaliation") The entrant might believe that if he enters, the incumbent will respond with the programming that will be designed to minimize the value of the entrant's programming. This is especially likely if the incumbent monopolist can commit to this strategy in some credible way before entry.

ii. Explanation With Naive Beliefs

Now, consider what would happen if the monopolist believed that the potential entrant is naive (and hence expects no change in post-entry programming by the monopolist)?

If the monopolist were to choose one Liberal, one Moderate and one Conservative, the new entrant could offer Moderate programming and get $9(350) + 1(1/3)(150) + 1(1/3)(150)$ viewer hours per month. The first term represents half of the 9 hours per month that 700 Moderate viewers spend watching television. The second term stems from the new entrant getting 1/3 of the one hour per month that the Conservative viewers spend surfing, while the third term is analogous for Liberal viewers. This totals 3,250 viewer hours per month. Conservative or Liberal programming cannot garner as much.

On the other hand, if the monopolist shows 3 Moderate offerings, the new entrant can either offer Liberal (or Conservative) programming, and get $9(150) + 1(700) = 2,050$ viewer hours per month, or offer a fourth Moderate program, getting $(700/4)10 = 1,750$ viewer hours per month. Clearly, a Liberal (or Conservative) offering is better for the entrant.

If the entrant has costs that make entry attractive at 2050 viewer hours per month, and if the monopolist believes that the potential entrant has naive beliefs about post-entry conduct, then the monopolist cannot deter entry, and should not try. Similar, if the entrant's costs are such that he cannot turn a profit at 3,250 viewer hours per month, then entry does not need to be deterred. Instead, it is only in the middle, where 2,050 is not enough, but 3,250 is, that the monopolist may

decide to try to deter entry by showing three Moderate offerings, MMM, instead of the more diverse MLC. Thus, runs the argument, the urge to deter entry might lead to a reduction in diversity.

b. Evaluating the Argument

The argument depends on the relationship of incumbents' expectations about potential entrants' beliefs about post-entry behavior, the economics of the market (including the differences between monopoly and duopoly), and costs of entry (which are not in my model).

First, as to most small television markets, there is little chance of entry by new television stations.[92] New channels are, in theory, now available.[93] The "freeze" on applications for new television stations has been lifted.[94] However, it is still very little difficult to add a television station into a small market Television stations are listed on a "table of allotments," and adding to the table will require a rulemaking by the FCC.[95] In addition, channel spacing requirements will make it virtually impossible to find a way to place a new station into a small market. And, because of the slow process at the FCC, an incumbent would learn of a potential entrant's application long before it was granted and, if the incumbent thinks that a change in programming is appropriate, do so then, and persuade the applicant to withdraw his application. Hence, incumbents should not be changing programming choices because of general worries about entry.

Cable television changes the analysis to some extent. Local news and public affairs can enter the market (for the 70% to 80% of the consumers subscribing to cable television) by offering the content over a cable channel. No one needs FCC permission to energize an additional cable television channel and present new content. Perhaps local news and public affairs can enter the market in this way.

Not only can local news and public affairs theoretically enter local television markets over

---

[92] This is another way of saying that entry costs are very high.

[93] Until recently there was a freeze on applications for new television stations. See Public Notice, Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes, 19 FCC Rcd. 14810 (2004), and Report and Order, Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, FCC 07-228, adopted December 22, 2007, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-228A1.pdf. The freeze has now been lifted. See Public Notice, Commission Lifts the Freeze On the Filing of Maximization Applications and Petitions for Digital Channel Substitutions, May 30, 2008, available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-08-1213A1.pdf.

[94] Id.

[95] Id.

cable, it has already happened. By 1993 there were enough local cable news channels to create a trade association, the Association for Regional News Channels ("ARNC"). The ARNC web site,[96] lists 49 members. These 24-hour news channels are in many major markets, including New York, Philadelphia, and Chicago. The 24-hour channels in these major markets concentrate either on the very local market served by the local cable system, such as *New York 1* in Manhattan, or concentrate on a larger region, such as *New England Cable News*, in (of course) New England.[97] Most of the news channels are in partnerships with or are owned by local broadcasters and large media companies.[98]

How does the existence of all-news, cable television channels change the analysis? There are two effects. First, and most obvious, all-news, cable television channels increase the volume and diversity of local news and public affairs. This may reduce the importance, to some degree, of stimulating diversity of viewpoints in terrestrial television. Second, all-news, cable television channels might have an effect on terrestrial television broadcasters' incentives to try to preempt entry. At a superficial level one might be tempted to say that the possible entry of additional all-news, cable television channels would give an incumbent a reason to think about trying to preempt entry. Of course, even in this case, the considerations listed below would probably lead one to stop worrying about preempting entry. But before we get to those considerations, we must investigate the differences between cable television channels and over-the-air broadcasters.

First, broadcasting stations and cable televison systems do not cover the same geographic areas. Thus, a broadcaster's incentive to preempt will be diluted by the existence of some areas in which the broadcast signal can be received but in which there is no cable television alternative.[99] In such areas the broadcaster need not worry about potential cable channel competition. Second, and particularly in the case of regional 24 hour news cable television channels, the cable news channel will be carried on systems that are not in the broadcaster's service area.[100] This will also dilute the broadcaster's incentive to try to preempt entry. No matter what spin the broadcaster puts on its local news and public affairs, it cannot affect the decisions of viewers that do not get the local broadcaster's signal, either off-air or on the local cable televison system. Third, even in the areas

---

[96] http://www.newschannels.org/resources/index.cfm?startrow=1.

[97] Project for Excellence in Journalism, The state of the News Media 2007, http://www.stateofthenewsmedia.org/2007.

[98] *Id.*

[99] In 2005 the FCC estimated that cable systems with at least 36 channels passed approximately 86% of homes with televisions. In re Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, FCC 06-11 (Feb. 10, 2006), *available at* FCC website, www.fcc.gov.

[100] I assume that the local station is not carried on the same remote cable television systems.

Please do not quote or cite without permission.

where the local cable system and the over-the-air broadcaster's signal overlap, not all viewers take cable. The FCC estimated that by June, 2005, approximately 60% of homes passed by a cable system having at least 36 channels subscribed to basic cable service.[101] This leaves about 40% of the viewers of over-the-air who will not change the channel to a new local news channel on cable.

It is also possible that some of the local cable news channels are carried into local markets by Direct Broadcast Satellite. As of June, 2005, the FCC estimated that 26 million households subscribed to DBS service. Although DBS is designed as a national service, with the same offerings available to all, it can be designed (at significant cost) to provide some local service.

The sum of the different geographic coverages and subscriber effects should greatly blunt the incentives of a terrestrial television broadcaster to try to preempt entry by a local or regional cable television channel. A television broadcaster – even one that owns two television stations in a small market – should realize that there is little point to trying to preempt a cable channel.

In addition, even if television entry were possible in some small markets, there is no reason to think that incumbents will anticipate naive potential entrants. Instead, potential entrants are much more likely to be looking forward to a new equilibrium, and trying to figure out whether entry is possible on that basis. And if they are doing so, there is nothing much that the incumbent can do to deter entry with pre-entry programming choices.[102] This is because the incumbent does not think that the incumbent's pre-entry programming choices are included in the potential entrant's calculations. Only the incumbent's likely *post-entry* behavior is considered by the potential entrant.[103]

Last, even if some incumbents in small television markets were to think that entrants were

---

[101] In re Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, FCC 06-11, ¶ 37 (Feb. 10, 2006), *available at* FCC website, www.fcc.gov.

[102] There is an exception to this statement. If the incumbent's preentry programming choices affected the potential entrant's beliefs about which firm will occupy which place in the post-entry equilibrium, there might be some possible deterrence strategy. This must await future work.

[103] One could also argue that if the incumbent could credibly commit to retaliate, and believed that potential entrants believed in retaliation, then no change in current programming would be needed to deter entry. Put more concretely, if the monopolist can commit to showing three Moderate offerings after entry, he will not need to do so before entry to deter entry. Thus, there will be no loss of diversity, or profits to the monopolist, to deter entry.

I regard this scenario as very unlikely. Television broadcasting is a highly visible and highly regulated industry. It seems very unlikely that an incumbent broadcaster could or would try to make such a commitment.

Please do not quote or cite without permission.

naive, and were in markets where entry was possible, it is still unlikely that incumbents would alter their programming to deter entry. I show in Appendix 3 that such a strategy entails loss of profits today in an effort to gain greater profits in the future, and that this investment is likely to be a losing proposition.

In sum, the "entry deterrence" critique of Steiner models, as applied to small televison markets, very likely fails, both as to cable television and as to additional terrestrial television stations.

B. Other Models – Spatial Competition

Professor Christopher Yoo is the primary proponent of spatial competition models, in preference to Steiner models, and even he is still a bit tentative about the move. Although Yoo first discussed Eli Noam's spatial competition model[104] in his Vanderbilt Law Review article,[105] it was in Yoo's Southern California Law Review article[106] that he listed his new critiques of the Steiner model and suggested that spatial models may do a better job.

1. Yoo's Critique

Yoo's new critiques, which he says have "largely gone unnoticed,"[107] include:

•   The assumption that one can categorize programming into several discrete formats is, Yoo claims, wrong. New radio and TV formats get introduced.[108]

---

[104] Eli M. Noam, *A Public and Private-Choice Model of Broadcasting*, 55 PUB. CHOICE 163 (1987).

[105] Christopher S. Yoo, *Copyright and Democracy: A Cautionary Note*, 53 VANDERBILT L. REV. 1933, 1942-45 (2000).

[106] Christopher S. Yoo, *Architectural Censorship and the FCC*, 78 SO. CAL. L. REV. 669 (2005).

[107] *Id*. 696.

[108] *Id.* Yoo also claims that the FCC and the Supreme Court have embraced his position, citing 60 F.C.C.2d 858, 861-63 ¶¶ 11-15 (1976) and FCC v. WNCN Listerners Guild, 450 U.S. 582 (1981). This overstates the holding of those proceedings. The FCC concluded that it was not required, by the public interest, to review format changes attendant to license transfers, and the Supreme Court upheld the FCC's forbearance. The administrative difficulty of deciding, in some cases, whether a format change had occurred was one of the FCC's several arguments for refusing to review such license transfers. But there was no epistemological finding that formats did not and could not exist.

- Entry into an occupied format provides some diversity, and does not just duplicate existing programming.[109] Listeners and viewers have strong preferences between programs of similar "type."
- Steiner models have no price term, and hence cannot produce consumer welfare conclusions. In an era of pay TV, this is not correct.[110]

Professor Yoo then proceeds to promise future work in which he analyzes more fully the implications of spatial competition for the relationship between "horizontal concentration and welfare." But, for the moment, he offers that spatial competition models will allow us to evaluate welfare benefits from new entry, by inducing multi-station owners to pay attention to the difference between demand creation (which is good) or mere demand diversion (which is bad), and also take into account benefits from price competition.[111]

Yoo provides a preliminary roadmap of his conclusions:[112]

> Spatial models thus provide reason to be somewhat skeptical of Steiner's simplistic conclusion that market concentration necessarily promotes greater program variety as well as the supposition advanced by many commentators that media concentration invariably reduces the diversity of media content. Although monopolists' unwillingness to cannibalize audiences from their own stations may tend to promote product diversity, their willingness to withdraw stations from the market and their tendency to charge supercompetitive prices works in the opposite direction.

2. Analyzing Yoo's Critique

Let us consider Professor Yoo's critiques in the order in which he presents them.

First, he is worried about the difficulty of making categories of content – formats, if you will.[113] Spatial models will elide this problem, he claims. He is wrong. In a spatial model, one must be able to place, on a continuum of categories, a broadcaster's content. The need to make

---

[109] *Id.*696-97.
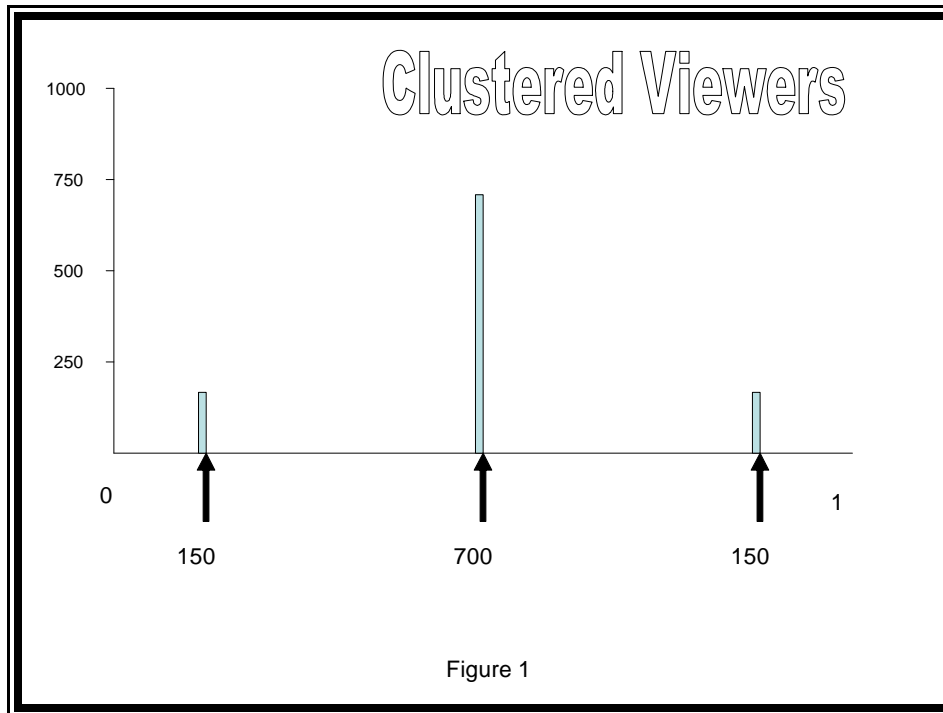
[110] *Id*. 697.

[111] *Id.*, 698.

[112] *Id.*

[113] I do not suggest that this problem is easy, or that mistakes are not possible. See the discussion by Edward Greenberg and Harold J. Barnett, *TV Program Diversity – New Evidence and Old Theories*, 61 AM. ECON. REV. 89, 91 (1971)(critiquing overly broad categories that put Oliver's *Hamlet* and a Marx brothers' movie into the same category.)

Please do not quote or cite without permission.

distinctions and label content persists.[114] In addition, spatial competition models and Steiner models tend to merge into one another. Consider what happens if viewers and listeners have preferences that are lumped together. In other words, consider Figure 1.

Figure 1

The continuum from 0 to 1 represents an infinite number of formats or types of spin of news programs. However, if viewers' preferences are arrayed as shown, this spatial competition model becomes, in operation, identical to the model that we analyzed in the first two sections of this article. Similarly, as the number of program types increases in a Steiner model, it will tend to resemble, in many respects, a spatial competition model.

Second, Yoo claims that viewers have strong preferences between different offerings within

---

[114] In addition, there is strong statistical evidence that consumers continue to make and value these distinctions. Ronald L. Goettler and Ron Shachar, *Spatial Competition in the Network Television Industry,* 32 RAND J ECON. 624 (2001), estimates program characteristics from viewer behavior, and finds that viewers recognize and value consistent program characteristics. Thus, if a consumer likes one program that has certain characteristics, he or she is likely to value another program with certain characteristics. The estimation process produced show characteristics that tracked, for example, whether or not a show was a situation comedy, or whether it is a realistic show. *Id.*, 641-42. Since viewers seem to be able to recognize and value show characteristics, and the econometrics kicks out only four relevant dimensions of show characteristics, it should be acceptable for researcher to approximate these results with formats and program types. This may, however, provide a very serious challenge to single dimensional spatial models.

Please do not quote or cite without permission.

the same category. This is undoubtedly true. Consumers have strong preferences between different types of Chenin Blanc wines, different types of luxury four door midsized sedans, different types of gray wool suits, and different types of Liberal news and public affairs programming. None of this precludes the use of models with categories. Instead, different preferences within categories makes the *economic efficiency* analysis challenging, but impinges little on an analysis of diversity of offerings.

Third, Yoo's claim that because Steiner models have no price term they are not applicable to modern media markets and cannot make welfare comparisons, is a bit confused. As a matter of theory, one can construct a Steiner model with prices. In such a model a viewer would choose between news and public affairs offerings with different slants, and also with different prices. A consumer might prefer a Conservative slant to a Moderate slant if both were charging $1, but prefer Moderate if it were free and the Conservative offering cost $1. Both preferences and strategic choices are more complex, but not impossible. Of course, Yoo is right that in *most* Steiner models there is no price term. This is because the papers with Steiner models are analyzing advertizer-supported broadcasting, and including a price term would be wrong. This is certainly the case with this article. In contrast, if one were to analyze pay-per-view, or a la carte cable, one would need to include a price term. Also, one can construct a *spatial model* without a price term. In this regard, many scholars in political science have analyzed spatial models without price terms.[115] And some of the spatial models about advertizing and broadcasting have no price term.[116] The basic difference

---

[115] *E.g.* Eaton, B. Curtis and Lipsey, Richard G., *The Principle of Minimum Differentiation Reconsidered: Some New Developments in the Theory of Spatial Competition*, The Review of Economic Studies, Vol. 42, No. 1 (Jan., 1975), pp. 27-49. Enelow, James M. and Melvin J. Hinich, *The Spatial Theory of Voting: An Introduction*, New York: Cambridge University Press, 1984, Pp. xv, 238. . Steven T. Berry and Joel Waldfogel, *Do Mergers Increase Product Variety? Evidence from Radio Broadcasting*, 116 Q.J. ECON. 1009 (2001) uses a spatial model without a price term to analyze diversity.

[116] *E.g.* Gabszewicz, Jean J., Didier Laussel and Nathalie Sonnac, *Programming and Advertising Competition in the Broadcasting Industry*, 13 J. Economics & Management Strategy 657 (2004)(finding that viewers' distaste for ads enables broadcasters' clustering tendencies on linear format space). Articles comparing advertiser support to direct payments include spatial models with only ad support. *See* Marc Bourreau, *Mimicking vs. Counter-Programming Strategies for Television Programs*, 15 Information Economics and Policy 35 (2003)(comparing advertising support to direct payment systems where two competing broadcasters can choose location in product space, quality space, and price); Roger, Guillaume, *Media Concentration With Free Entry*, USC Center for Communication Law & Policy Working Paper, March 2006 (deriving endogenous demand and supply of advertising, endogenous number of broadcasters with free entry into the market, and allowing unconstrained location on a circular format space); Claudes Crampes, Carole Haritchabalet, and Bruno Jullien, *Advertising, Competition and Entry in Media Industries*, Working Paper (Univ. De Toulouse, revised Dec. 2006)(similar to Roger)

between a Steiner model and a spatial model is the way in which they characterize formats and viewer preferences, not whether they incorporate price.[117]

So, where does that leave us? Spatial models have many appealing characteristics, and Professor Yoo is right to be attracted to them. But their good features do not negate the power of using Steiner models. Both have value, and both can be used. And, in our circumstances, both push in the same direction – toward increased diversity from TV duopoly in small markets.

C. Empirical Work and Steiner Models

Does existing empirical work "disprove" Steiner models? The answer is easy: No.

First, most of the modern, sophisticated empirical work tests *spatial* models, not Steiner models. To be fair, these papers test spatial models under circumstances where spatial models produce predictions that are analogous to those in Steiner models.[118] And, the empirical work is done on formats (or, similarly, playlists[119]) in radio[120] and program characteristics in television

---

[117] Even on its own terms, Professor Yoo's analysis seems to support my position in this article. The quoted language, above, points out that consolidation will, in spatial models, increase diversity. But Yoo worries that the incentive to withdraw stations from the market and the increased ability to charge high prices might cut against allowing consolidation. But in this highly regulated market, any merger that resulted in removal of news and public affairs from one of the merging parties would be sure to be noticed and draw the ire of the FCC. Hence, that is not an available strategy to merging parties. Further, all of the television stations that will be covered by this rule are advertizer-supported, and hence do not charge directly for content. Hence, his concerns are not apposite here.

[118] Some of the empirical work appears to be unaware that there is a difference between Steiner models and spatial models. See August E. Grant, *The Promise Fulfilled? An Empirical Analysis of Program Diversity on Television,* 7 J. MEDIA ECON. 51 (1994).

[119] Todd Chambers, *Radio Programming Diversity in the Era of Consolidation*, 10 Journal of Radio Studies 33 (2003)(investigating the effect of consolidation on diversity in playlists by running correlations, but not by using more modern and sophisticated statistical methods); Jarl A. Ahlkvist and Gene Fisher, And The Hits Just Keep On Coming: Music Standardization In Commercial Radio, 27 Poetics 301 (2000)(pulling hypotheses about the "causes" of music standardization from "environmental context," "organizational" theory, and programmer decisionmaking, and then testing hypotheses about playlist similarity).

[120] E.g. Berry and Waldfogel. Robert P. Rogers and John R. Woodbury, *Market Structure, Program Diversity, and Radio Audience Size*, 14 CONTEMPORARY ECON. POLICY 81, 86 (1996)(finding results that "supports the contention of Steiner and others that advertiser-supported radio tends to provide duplicative programming."); Andrew Sweeting, *Too Much Rock*

shows.[121] Because the empirical tests are constructed for different types of models, it is difficult to say exactly how the empirical results apply to models of the sort I construct and analyze in this paper. But one thing is clear; modern work produces results that are broadly consistent with predictions of Steiner models, and gives no reason to abandon using them.[122]

---

and Roll? Station Ownership, Programming and Listenership in the Music Radio Industry, Working Paper (January 2006)(finding that when radio stations come under common ownership in the same radio market they tend to differentiate their music offerings, thus offering some analogous support for the predictions of my model); Brown, Keith and Peter J. Alexander, *Market Structure, Viewer Welfare, and Advertising Rates in Local Broadcast Television Markets*, 86 Economics Letters 221 (2005) finds that as television market concentration increases, broadcasters respond by raising the per viewer price of advertising and reducing the amount of advertising within shows. In response, viewers watch more television. Advertisers are made worse off, while viewers are better off. This is completely consistent with my model. Last, Peter DiCola, *FCC Regulation and Increased Ownership Concentration in the Radio Industry*, Working Paper, Univ. Of Michigan (November 14, 2007), finds that increased concentration in local radio markets increases the variety of radio formats broadcast, and does not change the overall amount of news programming. *Id*. at 19-20.

[121] E.g. Goettler and Shachar. An earlier article, August E. Grant, *The Promise Fulfilled? An Empirical Analysis of Program Diversity on Television,* 7 J. MEDIA ECON. 51 (1994) tests an hypothesis that is exactly the opposite of Goettler and Schachar's findings – that viewers crave diversity in their own viewing in an evening and that a network that shows a diverse lineup of shows will keep more of their audience and increase ratings. There is an older literature upon which the modern literature builds. The older literature was interested in showing, for example, that there was significant variation in the size of audiences for feature films, Edward Greenberg and Harold J. Barnett, *TV Program Diversity – New Evidence and Old Theories*, 61 AM. ECON. REV. 89, 92 (1971),

[122] David Pritchard, *A Tale of Three Cities: "Diverse and Antagonistic" Information in Situations of Local Newspaper/Broadcast Cross-Ownership*, 54 FED. COMM. L.J. 31 (2001-02) reports content analyses that are supportive (or at least consistent with) the results of my model. Pritchard finds that jointly owned local newspaper and broadcast properties reported the news of the 2000 Presidential race with very different slants. This supports my use of models for political slants, as well as the result that co-owned media properties will tend to diversify. Jeffrey Milyo, The Effects of Cross-Ownership on the Local Content and Political Slant of Local Television News, FCC Media Ownership Research Paper, Revised September 2007, available at http://www.fcc.gov/ownership/studies.html., on the other hand, found no statistical difference, at all, in the coverage of the 2006 election by newspaper/TV station combinations (in the same market) and other major network-affiliated stations in the same market.

A very impressive new working paper by Daniel Ho and Kevin Quinn[123] attempts to correlate merger of newspapers with changes in editorial viewpoint of the newspapers.[124] Ho and Quinn present five case studies of merger, only one of which was between two papers in the same market (Atlanta). Their findings neither support nor disprove a claim that merger causes reductions in diversity of viewpoints. Instead, they claim that a more complex explanation, centering on the details of the editorial board, is needed. Ho and Quinn may well be right, but nothing in their work disproves anything in this Article; nothing shows that merger produces a reduction in diversity.[125]

Older work provides no results that would cause us to discard Steiner models, either. This work was crucially interested in increased levels of diversity as the number of viewing options increased.[126]

V. Implications

A. Preliminary Nature of Implications

What are the policy implications of all of this analysis? This is probably the hardest question to answer in this Article. In spite of the many pages of mind-numbing analysis of ownership structure and diversity, the analysis in the preceding 50 pages is "preliminary" in the sense that advertising markets have not been taken into account. As I pointed at the beginning of this Article, at no point do I attempt to balance off competitive advertising considerations with the results about diversity of the airwaves. This is an important consideration because this article analyzes small television markets. Small markets likely comprise the situations where allowing duopoly is most important to gain diversity. But small markets are also the situations where we might worry about concentration in advertizing markets. In smaller markets, where there are few television stations, co-ownership of television stations might produce some market power in the local advertising market. The co-owned television stations might raise advertising rates, and that might be bad.

---

[123] Daniel E. Ho and Kevin M. Quinn, *Viewpoint Diversity and Media Consolidation: An Empirical Study of National Newspapers*, Working Paper (Stanford, April 2008).

[124] They do not claim to find causation. *See id.*, at note 3.

[125] Ho and Quinn point out that even in Atlanta, where the merger of the editorial boards finally produced a unified, and more centrist editorial position, the two papers had been jointly owned for many years and had previously held extremely different editorial viewpoints during all those years of joint ownership. Thus, Atlanta counts as much in favor of this Article's claims as against.

[126] Harvey J. Levin, *Progam Duplication, Diversity, and Effective Viewer Choices: Some Empirical Findings*, 61 AM. ECON. REV. 81, 87 (1971)(finding small increases in diversity from adding incremental viewing units into a market – findings consistent with Steiner models).

Please do not quote or cite without permission.

On the other hand, a merger in any given small television market might produce a great increase in diversity, but produce no market power in advertising, at all. In such a market consumers might watch and read many different types of content, much of which contains no local news and public affairs. However, many of these content providers (e.g. the local cable television system) might sell local ads. The content providers will ensure that the local advertizing market is competitive, but will not provide any diversity of viewpoints. In this circumstance, the FCC should clearly allow a local television merger. Consumers will need duopoly to gain access to local news and public affairs. In this market the concern about concentration in local advertizing markets is misplaced.

Even in markets where the merger of two television stations produces a rise in advertising rates, it will be hard to evaluate the efficiency of higher prices. First, if the co-owned television stations raise the price of advertising, they will sell (and show) less advertising. This will have at least three effects that cut in opposite directions. If viewers dislike ads they will be made happier by watching fewer of them. But the increased ad costs will force up the cost of selling the primary goods (ice cream cones, mufflers, clothing, etc.) that are being advertized. In most circumstances, the price of the primary goods will rise, reducing consumer welfare. In addition, if ads are informative,[127] viewers (as consumers) will be made worse off, because they will be relatively less well-informed about goods and services. They will be less likely to know the distribution of prices, and less able to get the best deal. These three effects must be balanced off to know whether consumers are better or worse off from the price changes.[128]

In addition, once one balances the effects of rising ad prices, one must also balance off the effects of changes in diversity of viewpoint. If the same television merger that causes the rise in ad prices also produces an increase in diverse local and news and public affairs, then local government, local business, and other local institutions may be forced to be more honest, more responsive, and more creative. All of these effects will make many (but not all) of the residents better off, and will improve the marketplace of ideas within the community. The local polity and community will be improved.

It will be difficult to compare the viewer/consumer effects of advertising with the institutional and marketplace of ideas effects from the same merger.[129] They are not exactly the

---

[127] As most of our students know, communications can be informative *and* unpleasant.

[128] See generally Kyle Bagwell, The Economic Analysis of Advertising, Working Paper (2005), *available at* http://www.columbia.edu/%7Ekwb8/adchapterPost082605.pdf, for an extensive overview of broadcasting markets..

[129] Adler, Mathew, *Incommensurability and Cost Benefit Analysis*, 146 U. Pa. L. Rev. (1997-1998); Radin, Margaret Jane, *Contested Commodities*, Cambridge, MA: Harvard University Press (1996); Sunstein, Cass R., *Incommensurability and Valuation in Law*, 92 Mich. L. rev. 779, 795-812 (1994).

Please do not quote or cite without permission.

same sort of thing. Of course, an improved local polity and community will improve the lives of residents, and may make them happier. Lower prices for local goods and services will also make residents happier. And, with enough data and clever design of studies, we could try to measure trade offs between the two effects. But some will claim that a better polity makes people "better," and not just better off. This is the sort of effect that will be hard to compare.

B. A Presumption For Merger

I suggest that the FCC should adopt a presumption in favor of allowing jointly owned television stations in small markets.[130] It is virtually certain that such mergers will produce diversity benefits. Against these benefits are the possibility that a merger *might* cause advertising prices to rise, and that if advertising prices go up that *might* be bad for consumers. And, if the rise in advertising prices is bad for consumers, that *might* counterbalance diversity benefits.   If the FCC staff, or an intervenor, wants to challenge such a merger, they should be required to show that there is a substantial likelihood that:

- The merger will cause local advertising prices to rise significantly;
- The increase in advertising prices will, on balance, be bad for consumers; and
- The harm to consumers will overbalance increases in diversity
- Even if the harm to consumers (if any) from an increase in advertising prices will not overbalance increases in diversity, there is some other aspect of the public interest, idiosyncratic to this market, that requires rejecting the merger.

The increases in diversity are to be presumed, and the staff or intervenor must bear the burden of showing each of these elements. In particular, the staff or intervenor must show that the increases in diversity will not occur or will be small. The staff or intervenor must also bear the burden of producing a methodology that will compare the value of harms to consumers with increases in diversity.

---

[130] The FCC must approve mergers because they involve transfers of broadcast licenses. See § 310(d) of the Communications Act of 1934. ("No . . . station license, or any rights thereunder, shall be transferred, assigned, or disposed of in any manner . . . except upon application to the Commission and upon finding by the Commission that the public interest, convenience and necessity will be served thereby.") Third party intervenors ("parties in interest") may oppose a proposed merger by filing a "petition to deny" under § 309(d)(1). This section requires that the petitioner include "allegations of fact sufficient to show that . . . a grant of the application would be inconsistent" with the public interest. Consequently, petitioners will often submit studies and arguments – frequently quite voluminous – in support of their conclusions. See, e.g., documents filed with the FCC in the proposed merger of Direc TV and EchoStar (Dish Network), available at: http://www.fcc.gov/mb/echoditv/.

The alternative approach would formulate a *per se* rule approving television mergers in small markets. I believe that such an approach would be premature.[131] If we were reasonably certain that there would be no significant harms to the advertising market from mergers in small televison markets, we could formulate a *per se* rule with some confidence. However, I know of no studies showing that concentration in advertising markets is fanciful.[132] Pending future research showing that harm from concentration in advertising markets is extremely unlikely, we should allow the staff and intervenors to come forward with facts and analysis. However, because mergers tend to be time-sensitive, FCC procedures should have fairly short deadlines. Staff and intervenors should have no more than 90 days to make their case once the merger has been requested, and extensions of time should be granted extremely sparingly. Any slower process will allow the staff or intervenors to kill a proposed merger with administrative procedures.

VI. Conclusion

We have considered several different models of competition between television broadcasters in small markets. We used the models to study the effects of merger on diversity of content in the broadcast market.

The first model abstracted from the costs of presenting news and public affairs, and asked about the diversity of offerings of news and public affairs in a small market, contrasting the purely competitive case with one in which merger is allowed.

The second model explicitly considered the costs of producing news and public affairs,

---

[131] There is some work on television advertising in small markets, but it does not come close to answering the relevant questions. Ekelund, Jr., Robert B., George S. Ford and John D. Jackson, *Are Local TV Markets Separate Markets?* 7 International Journal of the Economics of Business 79 (2000), shows that, in general, local television advertising markets are subject to pressure from local radio and local newspaper advertising markets. Id, pg. 92. Their results, derived from a study of the top 100 markets, do not apply to any particular market. Nilssen, Tore and Lars Sorgard, TV Advertising, Program Quality, and Product-Market Oligopoly, Working Paper No. CPC00-12, Competition Policy Center, University of California at Berkeley (April 2000) is a sophisticated, two sided investigation of competition between broadcasters and (simultaneous) competition between advertisers in their own product market. Nilssen and Sorgard investigate levels of investment in programming, as well as quantity and pricing of advertisements. They do not investigate diversity in programming offerings, and it is not clear that their results have direct implications for diversity of the airwaves.

[132] Peter DiCola, *FCC Regulation and Increased Ownership Concentration in the Radio Industry* (2007), suggests that concentration "counts" at page 3.

Please do not quote or cite without permission.

implicitly allowing for the possibility that a station will exit the market and, as to news and public affairs, "go Dark." By concentrating on the example of investigative reporting, which has both fixed and variable costs, this model demonstrated the effects of allowing merger on both the broadcasters' decisions to produce and broadcast investigative reporting, and also the decision about what type (Liberal, Moderate, Conservative) of investigative reporting to show. This model also allowed us to assess the effect of the Internet on investigative reporting.

Additional models, modifying the assumptions in the first two models, provided results that supported the results.

The results were:

•   If one ignores the cost of broadcasting, merger tends to have a "spreading" effect. Pure competition produces multiple offerings of Moderate programming. Merger tends to lead broadcasters to provide some Liberal or Conservative programming, in addition to Moderate.

•   Where costs are considered, merger has two effects. First, it tends to have some of the same spreading effect, producing more diversity. But merger also tends to "light" stations that go Dark (i.e. no longer offer investigative reporting) in purely competitive situations where costs are too high. Thus, there is a double payoff to diversity of the airwaves.

•   The Internet reduces the audience and resource base for television by diverting viewers to their computers and away from their TV sets. This moves more stations into the situation where merger is needed to "light" stations that are in danger of going Dark. Any cost savings from the Internet are likely to be minimal when compared to the reduction in revenues. On balance, merger is needed to keep stations "lit."

•   These results become more complex when viewers are partially willing to watch second choice programming. When the market changes from pure competition to a market with two jointly-owned stations and one independent, we change from a market outcome of (Moderate, Moderate, Moderate) to (Moderate, Moderate, Liberal (or Conservative)) if viewers are only willing to watch a small or moderate amount of second choice programming, or (Moderate, Moderate, Dark) if viewers are willing to watch a large amount of second choice programming. The first possibility (Moderate, Moderate, Liberal (or Conservative)) represents a large, significant increase in diversity, while the second possibility (Moderate, Moderate, Dark) represents a small decrease in diversity. On balance, the changes are likely good for diversity of viewpoints.

•   The results hold for a wide range of distributions of viewer political preferences.

•   Cable television provides some local news and public affairs, increasing the diversity of some local television markets.

•   The results hold where television station owners are interested in more than profits. In particular, allowing merger of two television stations increases diversity even when the owners are mild to moderate ideologues. Where a television station owner is an *extreme* ideologue, and is willing to lose large amounts of money to proselytize, the owner may convert two stations to Liberal or to Conservative news and public affairs. Even here, however, this may represent an increase in diversity.

In short, in small broadcast markets, merger helps increase the diversity of broadcast material available to viewers.[133] We will wait for additional work to analyze medium and large size markets.

---

[133]   As noted in the Introduction, this does not finish the inquiry about whether to allow television duopoly in small markets. To complete the inquiry one must take more steps. At a minimum one must ask about the effect of duopoly on local advertising markets. However, that work will be left for another day. In my opinion, advertising markets may be highly market-specific, and it is likely that the analysis must be conducted on a case by case basis.

Please do not quote or cite without permission.

Appendix 1

Investigative Reporting: Competitive Case

All three broadcasters will choose to cluster at M, and they will split the 700 viewers equally. However, that is not the end, because they will choose to continue creating and broadcasting investigative reporting if and only if revenues are greater than costs. Thus, if and only if:

$$(700/3)v \geq \alpha + \beta I$$

where v is the value of a viewer. This equation indicates that each station is covering the fixed costs and the variable costs of producing investigative reporting.

What if $(700/3)v < \alpha + \beta I$? Then at least one of the three broadcasters will have to stop producing investigative reporting. If one stops producing I (in other words, I = 0 for one of the broadcasters), then the remaining two broadcasters will cluster at M, and each will get 350v, and have costs of $\alpha + \beta I$. This will be the equilibrium as long as

$$(700/3)v < \alpha + \beta I \leq 350v.$$

Note that neither broadcaster will switch to L or R, because that broadcaster will get only 150v, which is less than 350v, and there is no reduction in cost.

What if $\alpha + \beta I > 350v$? Then both broadcasters will be losing money, and at least one must shut down. If one shuts down the remaining broadcaster will get 700v in revenues, because he gets all Moderate viewers, but neither the Liberals nor the Conservatives will view. He will create and broadcast investigative reporting as long as

$$350v < \alpha + \beta I \leq 700v.$$

If, however, $\alpha + \beta I > 700v$, all broadcasters will go off the air. We can summarize these results as follows.

Value of $\alpha + \beta I$	Number and Spin of Investigative Reporting On Air	Profits of Broadcasters	
$\alpha + \beta I < (700/3)v$	3 Moderates	$(700/3)v-(\alpha + \beta I)$	
$(700/3)v < \alpha + \beta I \leq 350v$	2 Moderates	2 at 350v-$(\alpha + \beta I)$, one at 0	

Please do not quote or cite without permission.

$350v < \alpha + \beta I \leq 700v$	1 Moderate	one at $700v-(\alpha + \beta I)$, two at 0	
$\alpha + \beta I > 700v$	0	three at 0	

Appendix 2
Summary of Results

Value of $\alpha + \beta I$	Number and Spin of Investigative Reporting On Air With Three Independent Competitors	Profits of Broadcasters	Number and Spin of Investigative Reporting On Air With Two of Three Broadcasters Merging
$\alpha + \beta I < (700/3)v$	3 Moderates	$(700/3)v-(\alpha + \beta I)$	If $150v \geq \beta I$, 2 Moderates and 1 Liberal (or Conservative). If $150v < \beta I$, 2 Moderates and one Dark
$(700/3)v < \alpha + \beta I \leq 350v$	2 Moderates and one Dark	2 at $350v-(\alpha + \beta I)$, one at 0	If $150v \geq \beta I$, 2 Moderates and 1 Liberal (or Conservative)is eq, but so is 2 Moderates and 1 Dark. If $150v < \beta I$, 2 Moderates and one Dark
$350v < \alpha + \beta I \leq 700v$	1 Moderate and 2 Dark	one at $700v-(\alpha + \beta I)$, two at 0	If the Active broadcaster merges with one of the Dark broadcasters, then: If $150v \geq \beta I$, 1 Moderate and 1 Liberal (or Conservative) and one Dark. If $150v < \beta I$, 1 Moderate and two Dark. If the two Dark broadcasters merge, then either 1 Moderate and two 2 Dark (particularly likely if $150v < \beta I$), or 1 Moderate and 1 Liberal (or Conservative) and 1 Dark (if $150v > \beta I$).

α + βI > 700v	3 Dark	three at 0	One Moderate and 1 Liberal (or Conservative) and 1 Dark if 150v - βI > Δ, where Δ = α + βI - 700v. Otherwise, 3 Dark

In all the cells that are shaded in blue, allowing merger of two of the three broadcasters is weakly dominant, *in terms of diversity*, over requiring three separate broadcasting entities. This means that in no equilibrium are we worse off (in terms of diversity) with a merger than with separate broadcasting entities. Furthermore, in many (most?) cases diversity is strictly improved. Thus, in these cells, if competition among three separate broadcasting entities gives us two active broadcasters and one Dark, then merger gives us two or three active broadcasters. If competition gives us one active broadcaster, then merger gives us one or two active broadcasters. And in the last row, where high costs force all three independent broadcasters off of the air, merger will, under certain conditions, produce two active broadcasters.

In the cell that is crosshatched in green it is possible that we may get slightly less diversity with merger – we may go from three Moderate offerings to two Moderate. This happens if βI > 150v, and merger may cause one of the three stations to go Dark. However, the condition where this will happen – βI > 150v – means that it is not possible to serve minority tastes (in our model Liberal and Conservative) because the *total* revenue (150v) from serving that audience will not even cover the *marginal* costs (βI) of doing so.[134] And the type of decrease in diversity – going from three Moderate to two Moderate – is the most innocuous sort of diversity reduction. In other cases, we get an *increase* in diversity, moving from three channels of Moderate, to two channels of Moderate plus one channel of Liberal (or Conservative) under merger.

---

[134] The reduction in diversity is minimal because the market goes from three Moderate stations to two Moderate stations. There is no reduction in the number of *types* of broadcasters.

Please do not quote or cite without permission.

Appendix 3

Preemption

Analyzing the Monopolist

If the monopolist shows three Moderate offerings, he will get 700(10) = 7,000 viewer hours per month. None of the Moderate or Conservative viewers tune in.

If there is entry, and the entrant shows Moderate, then the monopolist will have to craft a best response. The monopolist has only three sensible choices: MMM, MML[135], MLC. (Given the distribution of preferences it makes no sense to duplicate Liberal or Conservative programming.)

      MMM: The monopolist will get (3/4)(700)10 = 5250 viewer hours per month. The entrant will get 700/4 (10) = 1750 viewer hours per month.
      MML: The monopolist will get (2/3)(700)9 + (2/3)(150)1 + 150(9) + 700 = 4302 + 1350 + 700 = 6352 viewer hours per month. The entrant gets (1/3)(700)(9) + (1/3)(150)1 = 2100+50 = 2,150 viewer hours per month.
      MLC: The monopolist will get (.5)(700)9 + (.5)(300)1 + 150(9) + (.5)(700)1 + 150(9) + (.5)(700)1 = 3,150 + 150 + 1350 + 350 + 1350 +350 = 6700 viewer hours per month. The entrant will get (.5)(700)9 + (.5)(300)1 = 3,150 + 150 = 3,300.

Thus, MLC is the monopolist's best response, and gets him 6,700 viewer hours per month.

On the other hand, if the entrant shows Liberal or Conservative programming, the monopolist must counter with a best response. Consider MMM, and MML (assuming the entrant shows C).

      MMM: The monopolist will get 700(9) + 150 + 150 = 6600 viewer hours per month. The entrant will get 150(9) + (.1)700 [we are assuming that the Liberals do not cruise the Conservative station if a Moderate is available] = 1350 + 700 = 2050 viewer hours per month.
      MML: The monopolist will get 700(9) + 150 +150 + 150(9) + (.5)(700) = 6,600 + 1350 + 350 = 8300 viewer hours per month. The entrant will get 150(9) + .5(700) = 1350 + 350 = 1700 viewer hours per month.
      MMC: The monopolist will get 700(9) + (½)(150)(9) + 150(1) + (½)700 = 6300 + 675 + 150 + 350 = 7475. The entrant gets (½)(150)9 + (½)700 = 675 + 350 = 1025.
      MLC. The monopolist will get 700(9) + 150(1) +(½)(150)(1) + 150(9) + (1/3)700(1) + (½)(150)(9) + (1/3)700(1) = 6300 +150 + 75 + 1350 + 233.3 + 675 + 233.3 = 9017. The entrant will get (½)150(9) + (1/3)700 = 675 +233.3 = 908.

---

[135] The MMC case is symmetric.

Please do not quote or cite without permission.

	M	C	L
MMM	(5250, 1750)	(6600, 2050)	(6600, 2050)
MML	(6352, 2150)	(8300, 1700)	(7475, 1025)
MMC	(6352, 2150)	(7475, 1025)	(8300, 1700)
MLC	**(6700, 3300)**	(9017, 908)	(9017, 908)

There is only one Nash Equilibrium: (MLC, M). Note that this equilibrium is both efficient – it captures all 10,000 viewer hours – and it is diverse.

What does this mean for incumbent behavior? It depends on what he believes about the potential entrant's beliefs.

New Equilibrium Beliefs: If the incumbent believes that the potential entrant is looking forward to the new equilibrium, in which the new entrant earns 3,300, there is nothing much the incumbent can do.

Naive Beliefs: If the incumbent believes that the incumbent will not change his behavior post-entry, then the incumbent has a complex problem. For example, if the incumbent shows MMM, then the entrant will enter, or not, based on the belief that he will show C or L (even though they are not equilibria), and make 2050. Or, if the incumbent were to show MMC, the entrant would respond with M, and anticipate making 2150. So, each of these strategies can induce the belief in the entrant that entry will be less profitable than the 3,300 that it will actually produce. However, each of these strategies produces a pre-entry cost to the incumbent. Instead of the 10,000 that he can get, pre-entry, by showing MLC, he would get only, say, 7,000 by showing MMM. Thus, the cost of MMM is 3,000 right now. Thus, even if it is successful at deterring entry, it only manages to raise profits from 6,700 – the expected post-entry earnings – to 7,000. MML is less costly to the incumbent, because profits are 8,500 pre-entry, but it is marginally less effective at deterring entry.

Without knowing how likely these strategies are at deterring entry, and how long it will take before entry will happen without any deterrence,[136] one cannot know the best strategy for the incumbent. But we can say that if entry, undeterred, will take a while to occur, and if discount rates are significant, it is unlikely that an incumbent will rush to alter his programming to deter entry.

---

[136] Assume it will take ten years before entry will occur. Then deterring entry with MMM will cost $3,000 per year times ten years. At the tenth year the deterrence will produce $300 in extra profit forever (we charitably assume). At any significant discount rate this strategy has a negative present value.

Please do not quote or cite without permission.

Analyzing the Duopolist

The duopolist's two options prior to entry by the entrant are MM and ML. We assume that the other broadcaster is showing M.

MM: The duopolist will get 2/3(700)10 = 4,667 viewer hours/month. The other broadcaster will get (1/3)(700)10 = 2333 viewer hours/month.

ML: The duopolist will get (.5)(700)9 + (.5)(150)1 + 150(9) + 700(1) = 3,150 + 75 + 1350 + 700 = 5,225 viewer hours per month. The other broadcaster will get 3,150 + 75 = 3,225 viewer hours per month.

If an entrant enters it has only two options – show M or show C. We continue to assume that the preexisting stand alone broadcaster shows M.

If the entrant shows M, the duopolist will have two reasonable options[137]:

MM: The duopolist will get (.5)(700)10 = 3,500 viewer hours per month. The single incumbent and the entrant will get 1,750 viewer hours per month.

ML: The duopolist will get (1/3)(700)9 + (1/3)(150)1 + 150(9) + 700 = 2100 + 50 + 1350 + 700 = 4,200 viewer hours per month. The single incumbent and the entrant will get (1/3)(700)9 + (1/3)(150)1 = 2100 + 50 = 2,150 viewer hours per month.

If the entrant shows C (and the single incumbent continues to show M), the duopolist will have two options:

MM: The duopolist will get 2/3(700)9 + (2/3)(150)1 = 4200 + 100 = 4,300 viewer hours per month. The single incumbent will get (1/3)(700)9 + (1/3)(150) = 2100 + 50 = 2150. The entrant will get 150(9) + 700 = 1,350 + 700 = 2,050 viewer hours/month.

ML: The duopolist will get (.5)(700)9 + (.5)(300) + 150(9) + (.5)700 = 3150 + 150 + 1350 + 350 = 5000 viewer hours per month. The single incumbent will get 3150 + 150 = 3,300 viewer hours per month. The entrant will get 150(9) + 350 = 1700 viewer hours/month.

Let's fill in some more:

MM,C (incumbent), L (entrant): The incumbent will get 700(9) + 150(1) + 150(1) = 6600. Both the single incumbent and the entrant will get (½)700 + 150(9) = 350 + 1350 = 1700 viewer hours/month.

There are many possible combinations to consider. The single incumbent and the entrant can choose M, C or L. The incumbent can choose MM, ML, or MC. We can rule out a priori, equilibria in which the incumbent chooses anything else; he can always do better with one of these. We can

---

[137] Showing LC will not maximize profits.

also rule out equilibria in which both the single incumbent and the entrant show C or both show L. They can do better.

So, what is left? We can rule out MM, M, C. The duopolist would rather switch to ML, M, C. He does better. But C will then switch to M, producing ML, M M. That appears to be the only equilibrium, and has a payoff of (4200, 2150, 2150).

Will the duopolist alter his programming in order to try to deter entry? It seems even less likely here than in the case of the monopolist. Again, it will depend on the duopolist's beliefs about the entrant's beliefs. If the entrant is presumed to be looking forward to the new equilibriium, and in a market with competitors it is even more obvious that he should, then current incumbent strategy is irrelevant. If the entrant is presumed, for some reason, to be naive, then it is possible deterrence could be a strategy. But it would require a significant cost up front, and would produce small gains in the future. Again, changing programming to deter entry seems very unlikely, both in the case of the monopolist and in the case of the duopolist.

.

Appendix 4
Competitive Case With One Ideologue

a. $\alpha + \beta I < (700/3)v$. Recall that with three competitive profit-maximizing broadcasters we got an equilibrium with three broadcasting Moderate investigative reporting, and getting $(700/3)v$ revenues. If the ideologue were to broadcast Conservative material, instead, he would get $150v$ in revenues. (Costs would not change.) So, $\pi_m - \pi_C = (700/3 - 150)v = (250/3)v$. Hence, if $M > (250/3)v$, the ideologue will broadcast Conservative material. Otherwise, he will continue to broadcast Moderate material.

b. $(700/3)v < \alpha + \beta I \leq 350v$. Recall that with three competitive profit-maximizing broadcasters we got an equilibrium with 2 Moderates and one Dark. The Moderate broadcasters each made profits of $350v - \alpha - \beta I$, while the Dark broadcaster made 0. Assume that the Dark broadcaster became an ideologue.[138] Would the ideologue broadcast Conservative material? If he were to do so he would get $150v - \alpha - \beta I$, which by hypothesis is less than zero. Hence,

$$\pi_m - \pi_C = -(150v - \alpha - \beta I).$$

If this expression is less than M, the ideologue will broadcast Conservative investigative reporting, and the market will have MMC. Otherwise, the third broadcaster will stay Dark, and the market will have two Moderates and one Dark.[139]

c. $350v < \alpha + \beta I \leq 700v$. Under competition with three profit-maximizers we get one Moderate and two Dark broadcasters. If one of the Dark broadcasters becomes an ideologue and chooses to broadcast Conservative material, his loss will be

$$\pi_m - \pi_C = -(150v - \alpha - \beta I).$$

---

[138] Perhaps the Dark broadcasting station was sold by a profit maximizer to an ideologue.

[139]   If, instead, one of the broadcasters that had been broadcasting Moderate material were to become the ideologue, the analysis changes slightly. Here

$$\pi_m - \pi_C = 350v - \alpha + \beta I - (150v - \alpha - \beta I)$$
$$= 200v.$$

By construction this must be greater in absolute value than $150v - \alpha - \beta I$. Hence, one would need a larger M (a more intense ideologue) to get him to switch to Conservative material than in the case where the Dark broadcaster became an ideologue. We ignore this case because if an ideologue were searching for a station to buy in this market, the Dark station would be the least expensive.

Please do not quote or cite without permission.

Here, by hypothesis, the loss will be at least 200v. M will have to be greater than $\alpha + \beta I - 150v$ before one of the Dark broadcasters will start broadcasting Conservative material, transforming the market from one with one Moderate and two Dark stations to one with one Moderate, one Conservative, and one Dark.

    d. $\alpha + \beta I > 700v$. Here, again, the analysis is the same. If $M > \alpha + \beta I - 150v$, then one of the three Dark stations will start broadcasting Conservative material. Otherwise, all three stations stay Dark.

    e. Summing Up. If costs are low – $(700/3)v > \alpha + \beta I$ – then a sufficiently strong ideologue ($M > (250/3)v$) will turn one of the three Moderate broadcasters into a Conservative. In all other cases, the ideologue will take one of the previously Dark stations and start broadcasting Conservative material if and only if he is sufficiently ideological. The higher are costs compared to revenues, the more intense must be his ideology for this to happen.

Merger of Two Broadcasters With Ideologue

    a. $\alpha + \beta I < (700/3)v$ Recall that with three profit-maximizers merger allowed for 2 Moderate broadcasts and one Conservative if variable costs were low enough ($150v \geq \beta I$), and otherwise (if $150v < \beta I$) 2 Moderates and one Dark. How does introducing an ideologue into the picture change things? To answer the question, assume that the ideologue owns two stations after merger[140]. If variable costs are high, the ideologue would get profits of $350v + 150v - \alpha - 2\beta I$ by broadcasting one Moderate and one Conservative offering. By offering two Moderates the ideologue would get $(2/3)(700)v - \alpha - 2\beta I$. Thus,

$$\pi_m - \pi_C = -(1400/3)v + 500v = (100/3)v.$$

So, if $M > (100/3)v$, the ideologue will shift from two Moderate offerings to one Moderate and one Conservative.

---

[140] We will also assume that in a small market the ideologue exhausts his taste for programming Conservative investigative reporting with one station. Obviously, if M is large enough for the second offering, $M > 500v - 150v = 350v$, we could get two offerings of Conservative material instead of one Moderate and one Conservative. We rule this out as unlikely. We note that even the best examples of broadcaster ideologues – Rupert Murdoch and Ted Turner – made a lot of profits.

Please do not quote or cite without permission.

If costs are low, and the ideologue is already broadcasting one M and one C, nothing will change.

b. (700/3)v < α + βI ≤ 350v.   Recall that with three competitive profit-maximizing broadcasters we got an equilibrium with 2 Moderates and one Dark. The Moderate broadcasters each made profits of 350v - α - βI, while the Dark broadcaster made 0. But once we allowed merger, things were more complex: If 150v ≥ βI, the market supported 2 Moderates and 1 Liberal (or Conservative). If 150v < βI, the market supported only 2 Moderates and one Dark station

We will examine only the case where 150v < βI, and the market supported only 2 Moderates and one Dark station. This is because if marginal costs were low, the ideologue would be able to broadcast a Conservative offering without giving up any money.[141] Assume that, after the merger, the ideologue owns two stations, one Moderate and the one that would be Dark if owned by a profit-maximizer. Will the ideologue light up the Dark station and present Conservative investigative reporting? The loss from doing so is

$$\pi_m - \pi_C = 0 - (150v - βI) = βI - 150v$$

So if and only if M > βI - 150v will the ideologue start broadcasting Conservative material.

c.   350v < α + βI ≤ 700v.   Remember that under competition with three profit-maximizers we get one Moderate broadcaster and two Dark broadcasters. Allowing merger of two stations makes the situation more complicated. If the Active broadcaster merges with one of the Dark broadcasters, then: If 150v ≥ βI, the market supports one Moderate station and one Conservative station, and one stays Dark. If 150v < βI, nothing changes; the market has one Moderate and two Dark stations. On the other hand, if the two Dark broadcasters merge, then regardless of cost we might get 1 Moderate and two 2 Dark[142], or 1 Moderate and 1 Liberal (or Conservative) and 1 Dark, but only if 150v > βI.

How does adding an ideologue, while still allowing merger, change things? We must separate the analysis according to which broadcasters are involved in the merger, and according to cost. In all that follows we will assume that the ideologue controls two stations.

If 150v < βI, and the ideologue controls the Active station and one of the Dark stations, then lighting the Dark station and producing and showing Conservative investigative reporting will cause a net loss of βI - 150v, and M must be larger than this figure before the ideologue will start showing Conservative investigative reporting.

If 150v > βI, then the ideologue will continue to show one Moderate and one Conservative

---

[141] And, as in the case above, we presume that the ideologue is not so extreme as to be willing to give up buckets of money to show two Conservative offerings.

[142] But if 150v < βI this is the only possible outcome. But we might get this outcome even if 150v > βI.

offering.[143]

     If 150v < βI, and if the ideologue controls both Dark stations,[144] the ideologue will light one and show Conservative investigative reporting exactly when M > α + βI - 150v. But this may not be an equilibrium. If the ideologue has entered the Conservative market in this way, he can now show an offering of Moderate material at a cost of only βI, and will get 350v in revenues. The cost conditions of this subsection do not guarantee that entering in this way will be profitable. But it might be. In other words, if 500v - α - 2βI > 150v - α - βI, which in turn means 350v > βI, the least costly way to show Conservative material will be to show both Moderate and Conservative material, and the Active broadcaster (who is now losing money) will go Dark. The market will transform into one that has one Moderates and one Conservative. And the ideologue will do so as long as M > 500v - α - 2βI.

     If 150v > βI, and there are two Dark stations (which the ideologue acquires), the most likely equilibrium is that the ideologue will show one Moderate offering, one Conservative offering, and the Active broadcaster goes Dark. If 150v > βI and the equilibrium is one Moderate and one Conservative and one Dark before merger, the ideologue merging the Moderate and the Conservative will not change the equilibrium.

     d. 700v < α + βI. Under the purely competitive case we get three Dark broadcasters; costs are just too high. Allowing merger will allow two of the stations to light up with one Conservative and one Moderate offering if and only if the profits that can be made from the second offering (assuming 150v > βI) will more than offset the losses from the first station. This condition is

$$150v - \beta I > 700v - \alpha - \beta I.$$

The profit conditions can be rewritten as 150v > βI and 0 > 550v - α.

     How does putting and ideologue into the picture change things? If the profit conditions above are already satisfied, the ideologue will change nothing; the market will continue to support one Moderate and one Conservative. But if they are not, then the ideologue will sustain a loss of 700v + 150v - α - 2βI by lighting two stations and providing one Moderate and one Conservative offering.[145] Thus, if M > 850v - α - 2βI, the market supports one Moderate and one Conservative

---

    [143] Again, we assume he is not so extreme as to be willing to sacrifice the amount of money needed to show two Conservative offerings.

    [144] Remember that 150v < βI guarantees two Dark stations in equilibrium with profit maximizers.

    [145] If 700v < βI, it would be cheaper to show only one Conservative offering. But, in this case, the ideologue would be suffering the astounding loss of 150v - α - βI from doing so, which we know is at least 550v. This is the sort of extremist behavior we have been ruling out in all of

and one Dark station. Otherwise, the market has three Dark stations.

  e. Summing Up. We can summarize these results in a table.

Cost and Revenue relationships	**Competitive Case with Ideologue**	**Merger of Two Broadcasters With Ideologue**	
case 1: α + βI < (700/3)v	If M > (250/3)v, 2 Moderates and 1 Conservative. Otherwise, 3 Moderates.	If 150v < βI, 2 Moderates and 1 Conservative. If 150v > βI, and if M > (100/3)v, 2 Moderates and 1 Conservative. Otherwise, 2 Moderates and 1 Dark.	
case 2: (700/3)v < α + βI < 350v	If M > 150v - α - βI, 2 Moderates and 1 Conservative. Otherwise, 2 Moderates and 1 Dark.	If 150v ≥ βI, 2 Moderates and 1 Conservative. If 150v < βI and if M > βI - 150v, 2 Moderates and 1 Conservative. If 150v < βI and if M < βI - 150v, 2 Moderates and one Dark.	

---

the other cases.

Please do not quote or cite without permission.

case 3: 350v < α + βI ≤ 700v	If M greater than α + βI -150v then one Moderate, one Conservative, and one Dark. Otherwise, one Moderate and two Dark stations.	If 150v > βI, then the ideologue will show one Moderate and one Conservative offering, regardless of what prior equilibrium was. One station is Dark. If 150v < βI, and if M < α + βI - 150v, and M < 500v - α - 2βI, then one Moderate and two Dark. But if M > 500v - α - 2βI or if M > α + βI - 150v, then one Moderate and one Conservative and one Dark.	
case 4: 700v < α + βI	M > α + βI -150v, then one of the three Dark stations will start broadcasting Conservative material. Otherwise, all three stations stay Dark.	If 150v > βI and 0 > 550v - α, then the market has 1 Moderate, 1 Conservative, 1 Dark. If conditions not satisfied, but if M > 850v - α - 2βI, same outcome. Otherwise, 3 Dark stations.	

The overwhelming tendency of merger in the presence of an ideologue is to diversify the airwaves. Merger makes it more likely that Dark stations are lit, and that duplicated Moderate stations diversify and present Conservative material. In no case does merger reduce the diversity of the airwaves.

Appendix 5

Comparing Pure Competition, Pure Monopoly, and Two Stations With One Owner
When Viewers Are Partially Willing To Watch
Second Choice Programming

a. Pure Competition: Under these new assumptions, how does competition work? Once again, three competitors will show three versions of Moderate news and public affairs. Each will garner (700/3)10 hours/month in Moderate viewer-hours. The 150 Conservative (Liberal) viewers will each watch 10t hours/month, and will be split between the three competitive Moderate stations. Thus, each will get

$$10(700/3) + 10t(50) + 10t(50)$$
$$= 2,333.3 + 500t + 500t$$
$$= 2,333.3 + 1000t$$

What we showed in part I of this article is that if any of the three competitors were to switch to Liberal (or Conservative) programming, it would get only 2,050 viewer hours. Thus, even if $t = 0$, meaning that viewers are totally unwilling to watch second choice programming, competitors will program Moderate news and public affairs.

b. Pure Monopoly: What happens if all three stations are controlled by one firm? The monopolist can get all 10,000 viewer hours by showing (Liberal, Moderate, Conservative). How many viewer hours does he get by showing (Moderate, Dark, Dark)? He gets all 10 hours of the 700 Moderate viewers, and 10t of the 150 Liberal viewers, and 10t of the 150 Conservative viewers.   This totals 7,000 + 3,000t.   This compares to 10,000 from (Liberal, Moderate, Conservative). The difference is 3,000(1-t). So if the cost of showing Liberal or Conservative investigative reporting is more than 1,500v(1-t), the Monopolist will let stations go Dark. As t goes to 1, meaning viewers are totally willing to watch second choice programming, the Monopolist will always let the stations go Dark; the Monopolist can get as much revenue from letting the second and third stations go Dark as he can by showing Liberal and Conservative programming on the stations, and the Monopolist saves the programming costs. As t goes to 0, meaning viewers are unwilling to watch second choice programming, the Monopolist will never let a station go Dark as long as the extra revenues (1,500v) can cover the costs of programming.

c. Two Stations With One Owner: What if two of the three TV stations are owned by one company? We know, from section I of this Article, that if $t = 0$, we will get 2 Moderate and one Liberal (or Conservative) station.

If $t > 0$, and if the duopolist and the single station owner are all broadcasting Moderate news and public affairs, then the single station owner gets 2,333.3 + 1000t viewer hours per month

(representing one third of the 7,000 hours per month that Moderate viewers watch, plus one third of the 3,000t hours per month that the Liberal and Conservative viewers watch), and the duopolist gets 4,666.6 + 2000t viewer hours per month. So, the critical question, for purposes of analysis, is how many total viewer hours per month the duopolist will get if he switches one of his Moderate stations to Liberal (or Conservative) news and public affairs.

The duopolist's Liberal (or Conservative) station will get all 9 hours/month from the 150 Liberal (or Conservative) viewers, plus all of the one hour/month that the 700 Moderate viewers sample other offerings, . The duopolist's Moderate station will get one half of the 700 Moderate viewers' 9 hours/month, plus one half of the one hour per month that 150 Liberal (or Conservative) viewers' surf other types of stations, plus one half of the 10t hours per month that the 150 Conservative (or Liberal) viewers watch Moderate programming.[146] When summing the viewer hours for the duopolist's two offerings we get:

$$150(9) + 700 + (.5)((700)9 + 150 + (.5)(150(10t))$$
$$= 2050 + 3150 + 150 + 750t$$
$$= 5350 + 750t$$

So, the question arises, when is 5,350 + 750t > 4,666.6 + 2000t? The expression on the left is the number of viewer hours per month the duopolist will get from broadcasting one offering of Moderate news and public affairs and one offering of Liberal (or Conservative) news and public affairs. The expression on the right is the number of viewer-hours from showing two offerings of Moderate news and public affairs. The duopolist will show one Moderate and one Liberal (or Conservative) offering if and only if

$$5,350 + 750t > 4,666.6 + 2000t$$
$$683.4 > 1250t$$
$$.54672 > t.$$

This means that if viewers who do not have their first choice programming will still watch at least 5.4672 hours per week of second choice programming, instead of the 10 hours per week they would have watched, then the duopolist will get more *revenues* from showing two Moderate offerings. Because we assume that costs do not change when a duopolist chooses between (Moderate, Moderate) and (Moderate, Liberal), profits are also higher.[147]

---

[146] This is because the Conservative (or Liberal) viewers have no first choice, and hence watch only 10t hours per month. These hours are split between the two Moderate offerings.

[147] One way of making the result come out the other way is to find t > 1. This would mean that Liberal and Conservative viewers *increase* their viewing when watching second choice fare. This seems very unlikely.

We still have to investigate whether the duopolist will allow one of the stations to go Dark. If the duopolist shows (Moderate, Dark) he will garner one half of the 10 hours per month that the 700 Moderate viewers watch, plus half of the 10t hours per month that each of the 150 Liberal and 150 Conservative viewers watch. Thus, the duopolist gets a total of

$$(.5)(10)(700) + (.5)(10t)(150) + (.5)(10t)(150)$$
$$3,500 + 750t + 750t$$
$$3,500 + 1500t$$

To see how this compares with the duopolist's showing (Moderate, Liberal), we must subtract the revenues from (Moderate, Dark) from the revenues from (Moderate, Moderate) and (Moderate, Liberal) and compare. Subtracting the revenues from (Moderate, Dark) from the revenues from (Moderate, Liberal):

$$5,350 + 750t - (3,500 + 1500t)$$
$$= 1,650 - 750t.$$

Note that as long as 0<t<1, this is positive. Thus, if it costs more than (1,650 - 750t)v (which is the revenues from 1,650 - 750t extra viewer hours) to produce and show Liberal (or Conservative) programming, the duopolist will prefer to let a station go Dark.

But we still have to compare (Moderate, Moderate) to (Moderate, Dark):

$$4,666.6 + 2000t - (3,500 + 1500t)$$
$$= 1,166.6 + 500t.$$

Thus, if production costs of a second Moderate offering exceed 1,166.6 + 500t, the duopolist will prefer to let the second channel go Dark.