2003-1

FEDERAL COMMUNICATIONS COMMISSION

MEDIA BUREAU STAFF RESEARCH PAPER

Empirical Aspects of Advertiser Preferences and Program Content of Network Television

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December 2003

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Empirical Aspects of Advertiser Preferences and Program Content of Network Television

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Abstract

Economists have long debated how advertising should be treated in a rational-choice framework. Using unique data from the broadcast networks' 1995 Fall Season, we find that sitcoms attract premia from advertisers, while news and police programs get discounted. We interpret our findings according to two important theoretical treatments of advertising. Possibly because the broadcast networks forgo advertising-unfriendly program content, the cable channel HBO responds with a deliberate counter-programming niche strategy, explicitly airing programming with "darker" and "more difficult" advertising-unfriendly content.

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The authors thank Peter Alexander, Jerry Duvall, Kenneth Ferree, Daniel Shiman, and Tracy Waldon for valuable and helpful comments, and Vanessa Lemme for valuable assistance. All errors are our own.

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"The networks have essentially given up on viewers with functional IQ's."

Dean Valentine, President of UPN

I. Introduction

Broadcast television represents a unique market where a public good is provided by privately-owned, profit-driven firms[1]. Broadcast networks supply the public good, receiving no revenues directly from viewers. The networks obtain revenues by combining this good with advertising, which viewers may watch in order to receive the good[2]. The networks then sell commercial time to advertisers. This unique disconnect between consumers and purchasers of broadcast television services creates many thoroughly explored market imperfections. In this paper, we explore an as-yet empirically unexplored market imperfection in media markets, namely, one that arises out of advertisers' preferences for programming. If advertisers prefer certain types of programming, then many viewers may not receive their preferred programming from advertiser-supported media[3]. Depending on the advertisers' welfare gain and the viewers' welfare loss, this may lead to a suboptimal pattern of programming (Anderson and Coate, 2000). This unique market distortion has important public policy implications for two reasons:

1. The advertiser-supported broadcast television market is a dominant source of mass entertainment and advertising in the U.S. In 2002, there was over $41 billion in broadcast television advertising revenue in the US alone.
2. The broadcast television market represents the largest private provision of a public good in the modern United States.

Using a unique data set with advertising prices and the number of viewers during the 1995 Fall Television Season, we examine the effect of program content on advertising prices. We find that, even when adjusting for audience size and demographic composition, advertisers pay a premium for spot advertising on sitcoms, and pay a discount for advertising on "darker" programming like news magazines and police

[1] Here, we define a public good as a good that is non-excludable and non-rival in consumption.

[2] From a public economics perspective, this may be seen as one solution to the cost recovery problem that arises in a natural monopoly setting, i.e., where socially efficient marginal cost pricing fails to cover the costs of providing the good. Anderson and Coate (2000) develop a theory of broadcasting partly from this perspective.

[3] This likely occurs if one type of programming has a greater influence on a viewer's likelihood of purchasing advertised products than another type of programming. An advertiser may be more willing to pay for commercial spots on less popular programming if the viewers watching less popular programming respond more to advertising than the viewers of more popular programming. In other words, viewers may prefer programming that maximizes utility net of the nuisance cost of advertising, while advertisers prefer programming that maximizes viewer propensity to buy the advertised product.

dramas. As a result, the television broadcast networks air a disproportionately high amount of sitcoms. This finding can be interpreted using two different theoretical models of advertising, namely, Becker and Murphy (1993) and Anderson and Coate (2000).

Looking further, we find that HBO's business strategy may indicate that many viewers may not prefer broadcasters' programming bias towards sitcoms. We then tie this finding into recent business strategy literature.

II. Literature Review and Our Contribution

The treatment of advertising in rational-choice theory has been a puzzle for economists. Two important treatments of advertising include Becker and Murphy (1993) and Anderson and Coate (2000). Becker and Murphy treat advertising as an argument in a consumer's meta-utility function, where advertising is simply a complement to goods being advertised. Anderson and Coate treat advertising as simple information. A viewer does not know about a product until they see an advertisement for the product. Upon seeing an advertisement, a viewer has a willingness to pay a certain price for the advertised good with a certain positive probability. Anderson and Coate also examine the advertiser-broadcaster side of the market, explicitly solving for the price that advertisers pay for commercial time. Therefore, we can explicitly solve for the effect of program content on a viewer's response to advertising in Anderson and Coate's model. We can relate our findings, however, to both theoretical frameworks.

Anderson and Coate (2000), quoting Sunstein (1999), note the possibility that advertisers may directly distort network-programming choices because "[a]dvertisers want programming that will put viewers in a receptive mood, and hence not be too `depressing'".

Researchers have explored many empirical aspects of media markets. Seldon and Jung (1993) and Silk, Klein, and Berndt (2002) study the substitutability of different media among advertisers, and Shachar and Emerson (2000) estimate audience preferences over program characteristics. Researchers have explored many market imperfections arising in advertiser-supported media markets. Networks may over-duplicate programs (Steiner, 1952; Anderson and Coate, 2000); ignore smaller groups of viewers with intense preferences (Spence and Owen, 1977); air too little or too much advertising (Anderson and Coate ; Gabszewicz, Laussel, and Sonnac, 1999); or under-serve viewers that aren't as desirable to advertisers (Brown and Cavazos, 2002). Under some conditions, competition may even produce lower surplus than monopoly provision (Steiner; Anderson and Coate). In this paper, we address a heretofore empirically unexplored distortion in programming. Advertisers and viewers may prefer different programming, and the market-provided programming may not maximize social surplus. We empirically model the price of advertising on network television to reveal the programs that advertisers favor.

Models of network revenue are not new. Fisher, McGowan, and Evans (1980) first explored the audience-revenue relationships for local television affiliates. More recently,

Goettler (1999) uses the audience-revenue relationship to evaluate network program placement strategies. Goettler and Schahar (2000) contend that networks do not place programs optimally. Specifically, networks air the same type of programming at similar points in time, and every network could increase their ratings if they would counter-program (i.e., place opposing types of programming at similar points in time). Networks fail to engage in the optimum strategy because they fail to classify programs finely enough and employ boundedly-rational rules of thumb in program placement (such as never placing sitcoms during the final hour of prime-time). Goettler (1999) finds that Goettler and Schahar's (2000) ratings-maximizing strategy also maximizes revenues.

Following Fisher, et al. (1980) and Goettler (1999), we also estimate the relationship between network revenues and audience demographics. However, we add two major contributions to this line of research. First, as in Brown and Cavazos (2002), we include audience income in our specification. Past researchers used data sources that do not provide data on audience income. Our use of the Simmons Marketing Database allows us to include audience income in our model specification. In addition, we also include program content characteristics in our revenue specification, which allows us to isolate the value of different program content to advertisers.

We can then estimate the effect of different program characteristics on the advertising price. The direct advertising premia attracted by different types of programming tells us which programming may be over-produced and which programming may be under-produced relative to the social optimum. We interpret these findings in light of two different theories of advertising (Becker and Murphy, and Anderson and Coate) and explicitly derive the effect of program content on a consumer's desire for the product in the Anderson and Coate model.

Once we estimate program characteristics' effect on advertising revenues, we then provide casual but convincing empirical evidence that the resulting programming patterns are not those favored by viewers. This evidence comes from a *New Yorker* article about HBO and their then-newest series, *Six Feet Under*. The article discusses the creative process at HBO, and demonstrates that HBO engages in a very deliberate counter-programming strategy against over-the-air networks. HBO deliberately employs darker themes, more conflict, and more complex story lines to differentiate themselves from network television. Since HBO is a pay channel, this suggests that broadcast networks systemically under-serve large groups of viewers, who are willing to pay directly for different programming.

III. Two Models of Advertising

Becker and Murphy (1993) specify a model where advertising is a complement to the advertised good. By including advertising in the consumer's utility function as a complement to the advertised product, Becker and Murphy model the consumer as choosing how much advertising to consume based on the prices charged for advertising. An advertiser may even compensate the consumer (i.e., charge negative prices) for

consuming advertising, as in the case of broadcasting, where advertisers compensate viewers for advertising with free programming.

In the context of Becker and Murphy, our findings indicate that the complementary relationship between advertising and the advertised good varies across program content types. A viewer may have a greater demand for the advertised product when they see the product's advertising on a certain type of program. In this case, advertising on one type of program (such as a sitcom) may have a stronger cross-elasticity[4] with the advertised product than advertising on another type of program (such as a news program). In this case, the advertiser has different demands for advertising space on different types of programming. Viewer preferences for programming do not necessarily correlate, and certainly do not perfectly correlate, with cross-elasticities between advertising and the goods being advertised. Therefore, the equilibrium pattern of programming in this advertiser-supported market will not maximize viewer welfare. Essentially, advertisers' willingness to compensate viewers with programming depends partly on the cross-elasticities between the advertising and the advertised products, which distorts programming content away from content types with low cross-elasticities between advertising and advertised products, even if viewers have an intense preference for this type of programming.

Using Becker and Murphy's conceptual framework, differences in advertising prices across program content are driven by differences in cross-elasticities between advertising and advertised products across program content. However, we cannot directly infer the relative cross-elasticities between advertising and advertised goods across program content types from changes in the price of advertising. This is because the advertiser's demand for advertising space is determined by the marginal profits in the product market generated by advertising, which is jointly determined by the cross-elasticity between advertising and advertised goods along with the demand and cost conditions in the final product market. Therefore, without knowing these final demand and cost conditions, we cannot estimate these cross-elasticities for the marginal viewer. However, if we assume the initial similarity of goods advertised on different types of programs, then we can infer that program content types that receive advertising premia have a higher cross-elasticity between advertising and the advertised goods, at least for the marginal viewer.

Anderson and Coate (2000) provide another important treatment of advertiser-supported media. In their treatment, there exist two possible channels, each of which may carry one of two types of programming. Firms develop products at zero cost, and use advertising to inform the consumers about the existence of a product. A given consumer either values the product at 0 or at $\omega > 0$. The desirability of the product is given by $\sigma \in [0, \bar{\sigma}]$ where $\bar{\sigma} < 1$, which represents the proportion of consumers who desire the product at price ω. Therefore, advertisers are willing to pay their expected profit gained from an advertisement, $\sigma\omega$, to reach a viewer. There are a total of m firms seeking to advertise, and broadcasters choose to air a advertisements. Therefore, the (approximate) inverse demand curve for advertising, given a per-viewer advertising price of p as a function of the number of advertisements a, is

[4] The word "cross-elasticity" in this case refers to the cross-*quantity* relationship between a viewer's consumption of advertising and the viewer's demand for the advertised good.

$$p(a) = \omega\bar{\sigma} \cdot [1 - a/m] \tag{1}$$

To simplify our estimation, we assume that $a/m = 0$ (which closely approximates reality, when we consider the extremely large number of firms that advertise on network television). This generates a per-viewer advertising price of $p = \omega\bar{\sigma}$. Adjusting for the number of viewers, viewer demographic and program content characteristics raise (lower) the price of advertising by raising (lowering) the probability that viewers are willing to buy the advertised good at the advertised price of ω. If we represent these content and demographic characteristics as a vector $(\delta_1, ..., \delta_n)$, then the per-viewer price of advertising is

$$p = \omega\bar{\sigma} \cdot (\delta_1, ..., \delta_n), \tag{2}$$

and we estimate each value for $(\delta_1, ..., \delta_n)$.

IV. Data and Descriptive Statistics

We employ data from several sources, including *Broadcasting and Cable*, *Advertising Age*, the Simmons Marketing Database, and *The Complete Directory of Prime-Time Network and Cable TV Shows*. We could not obtain data for the actual advertising prices. However, the July 31st, 1995 issue of *Broadcasting and Cable* provided forecasts of program shares for the 1995-96 season, while the August 14th, 1995 issue of *Advertising Age* provided forecasts of the expected price for a 30 second commercial spot for the 1995-96 season. The Simmons Marketing Database provided survey information on the actual ex-post number of viewers for each program, as well as their demographic composition, including age, race, gender, and income. *The Complete Directory of Prime-Time Network and Cable TV Shows* provided program descriptions, which allowed us to classify programs based on their characteristics, including cast demographics and program content. The sample consists of 71 programs from the "Big Three" networks, namely, ABC, CBS, and NBC.

V. The Variables and the Model

We explain the expected price of a 30-second commercial spot on network television as a function of the expected viewer share, viewer demographics, and program characteristics. We also include the ex-post total number of viewers from the Simmons Marketing Database for a few important reasons. First, the FOX network airs no programming in the final hour of prime time, which could lead to higher shares during that last hour for the networks in our sample, even with fewer viewers. Including the ex-post number of viewers from the Simmons survey adjusts for that. In addition, Goettler and Schahar argue that networks follow imperfect placement strategies, airing similar programs at the same time even when they could gain viewers by airing different types of programs. This failure is at its worst during the final hour of prime

time, when no networks air any type of sitcom. Once again, if networks fail to maximize the number of viewers, then this leads to fewer overall viewers. If this problem is systemically worse at certain time periods, then shares during these time periods could be inflated. Each network may be drawing a large share of a smaller number of viewers. In addition, because no sitcoms air during this hour of excessive duplication, the coefficient on sitcoms could be biased upward. Including the ex-post total number of viewers adjusts for this.

We follow Goettler in examining the question of gender concentration. However, we create a new variable, *GenConc*, which is equal to the square of (the percentage of female viewers minus the percentage of male viewers).

Following Fisher, et al (1980) and Goettler (1999), we wish to see if there's a convex relationship between the share of viewers and the price of network advertising. Both Fisher and Goettler argue that the price of advertising is a convex function of the number of viewers, because programs may duplicate viewers. For example, two programs reaching 20 million viewers each will not reach a total of 40 million viewers, because some viewers watch both programs. Because viewers may watch more than one program, an advertisement on two programs with x viewers reaches fewer viewers than an advertisement on one program with 2x viewers. Therefore, advertising time on a single program reaching 2x viewers commands a higher price than the combined prices of advertising time on two programs each reaching x viewers. Going back to equation (2), which we derived from Anderson and Coate, and modeling a world in which viewers could each watch only one program, the total advertising price P for the number of viewers n would be $P = n\omega\bar{\sigma}\cdot(\delta_1 + ... + \delta_n)$. In a world in which viewers may watch more than one program and advertisers may advertise on more than one program, then the total advertising price P for a number of viewers n would be $P = n^b\omega\bar{\sigma}\cdot(\delta_1 + ... + \delta_n)$, where b reflects the likelihood of viewer duplication across programs[5]. A specification with a log relationship between price and viewer share provides a simple functional form that allows us to assess whether price and share follow a linear, concave, or convex relationship by allowing us to estimate the value of b. However, such a specification should have a linear relationship between the program and demographic variables and the advertising price, because the model assumes that the program and demographic characteristics act as multiplicative constants, raising the advertising price by a given percentage regardless of the number of viewers. Therefore, we assume the following functional form:

$$Ln(Adprice) = B_1 + B_2(\ln share) + B_3(\ln total) + B_4(PerUp) + B_5(PerYoung) + B_6(GenConc)$$
$$+ B_7(Sitcom) + B_8(news) + B_9(Police) + B_{10}(genx) + B_{11}(ethnic) + B_{12}(torc) + B_{13}(sports) + B_{14}(late)$$

Table 1 defines the explanatory and summary variables specified in the model, while Table 2 lists the means and conditional means for expected ad price, expected share, and selected demographic and content characteristic variables.

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[5] $b = \ln z/(\ln(y/x))$, where z represents the total number of different programs, each reaching x viewers, that are required to reach $y > x$ viewers.

Table 1

Definition of Explanatory Variables

Percentage Upper Income	Continuous variable which is the percentage of a program's viewers that have household incomes greater than $50,000. (Advertisers may prefer higher-income viewers. A viewer is considered upper-income if they have a household income above $50,000 a year).
Percentage 18-34	Continuous variable which measures the percentage of a program's viewers that are aged 18-34. (Advertisers may prefer younger viewers).
Gender Concentration	A variable that equals (percentage female-percentage male)^2. (Advertisers may prefer a group of similar viewers so they can target their advertising. We expect a premium for viewers concentrated within one gender (Goettler)).
Sitcom	Do advertisers prefer sitcoms? Sitcom = 1 when a program is a sitcom and 0 otherwise.
News	Do advertisers prefer news magazines? News = 1 when a program is a news magazine and a 0 otherwise.
Police	Do advertisers prefer police dramas? Police = 1 when a program is a police drama and a 0 otherwise.
Genx	Do advertisers prefer programs with cast members aged 18-34? Genx = 1 when a program has a cast whose members are 18-34 and 0 otherwise.
Sports	Do advertisers prefer sporting events? Sports = 1 when a program is a sporting event and 0 otherwise.
Ethnic	Do advertisers prefer programs with minority casts? Ethnic = 1 when a program has a minority cast and 0 otherwise.
Teens or children	Do advertisers prefer programs with teens or children in them? Teens or children = 1 when a program has teens or children in the cast and 0 otherwise.
Late	Do advertisers prefer programs that begin during the last hour of primetime? Late = 1 when a program begins during the final hour of primetime.

Table 2

Descriptive Statistics – Means and Conditional Means

Selected Characteristic Variables	Expected Ad Price
Percentage Upper > .35	245,571.4
Percentage Upper < .35	140,972.2
Percentage 18-34 > .4	214,166.7
Percentage 18-34 < .3	148,333.3
Gender Concentration > .12	233,333.3
Gender Concentration < .12	188.769.2
Sitcom	225,000.0
Police	153,000.0
News	151,428.6
Genx	245,500.0
Sports	385,000.0
Ethnic	165,000.0
Teens or Children	178,863.6
Overall	192,353.2

A two-sided Box-Cox test, with price as the dependent variable and with share and total as the sole transformed independent variables, gives a test statistic of $\lambda = -.03$ with a z-score of 0.16 and a 95% confidence interval of - 0.45 to 0.38. When we use a likelihood ratio test to try to reject the null hypothesis of $\lambda = 0$ (which would be our specification), we get a Chi-square value of 0.03 and only a 13% probability that $\lambda = 0$ would be the incorrect specification. Therefore, we can safely employ our specification with advertising price as the dependent variable and share and total as the sole transformed independent variables. The results of this specification can be found on Table 3. We estimate all regressions with White-corrected standard errors[6].

The demographic results bear important similarities to Goettler's results. The coefficient on log (share) is significantly greater than one, implying a convex relationship between price and share. Our own contribution to the demographic data reveals that advertisers strongly prefer upper-income viewers. The coefficient on *GenConc*, equal to

[6] Brown and Cavazos (2002) employ a Hausman test showing that a specification with expected price as the dependent variable and expected share as an independent variable does not suffer from endogeneity.

.008, is positive and significant, indicating that advertisers strongly prefer concentrated gender groups[7].

Examining our vector of content characteristics, we find that sitcoms and programs with characters aged 18-34 receive premia from advertisers, while news programs,

Table 3

Determinants of Expected Advertising Price: The Full Model Regression Coefficients and Goodness of Fit Statistics

(t-statistics in parentheses)

Variable	Estimated Coefficient	t Statistic
Log (Expected Share)	1.39***	(9.38)
Log (Total Viewers)	0.05	(1.47)
Percentage Upper-Income	0.01**	(2.55)
Percentage 18-34	-0.00	(0.02)
Gender Concentration	0.01*	(1.88)
Sitcom	0.20**	(2.52)
News	-0.26***	(3.81)
Police	-0.26***	(3.10)
Genx	0.16**	(2.06)
Ethnic	0.08	(0.46)
Teens or Children	-0.12*	(1.76)
Sports	0.09	(1.01)
Late	0.13*	(1.97)
Constant	7.01***	(22.27)
Observations	71	
Adjusted R-Squared	.83	
F-Statistic	27.74***	

**** - significant at 99% confidence level, ** - significant at 95% confidence level, * - significant at 90% confidence level*

[7] When we examined specifications using both percentage male and percentage female, we obtained very similar and symmetric results. Therefore, another gender concentration variable which equals (percentage male − percentage female)^2 would add no explanatory power to the model.

police dramas, and programs with teens or children as part of the cast get discounted. Programs with minority casts receive no significantly significant premia or discounts, which confirms the finding of Brown and Cavazos (2002) that minority programs do not appear to suffer from any advertiser bias.

We can interpret our results using Becker and Murphy's framework. More affluent viewers and more concentrated gender groups may have higher demands for the advertised good, creating a higher cross-elasticity between advertising and the advertised good. Sitcoms, programs with casts aged 18-34, and programs airing during the final hour of prime-time raise the cross-elasticity between advertising and the advertised goods, while news magazines, police dramas, and programs featuring teens or children tend to lower the cross-elasticity. Again, we cannot estimate the extent to which these content characteristics change the cross-elasticity between advertising and the advertised product because we do not know the advertised product's cost and demand functions.

We also interpret our results using Anderson and Coate. Recall the model of advertising price that we derived using Equation (2), namely,

$$p = \omega\bar{\sigma} \cdot (\delta_1, ..., \delta_n),$$

Each δ corresponds to a demographic and program characteristic variable and is equal to e raised to that variable coefficient's value. Table 4 lists the values of δ for the dummy characteristics with statistically significant coefficients[8]. At the mean value of upper-income viewers (35%), a 1% increase in the percentage of upper income viewers increases the advertising price by 2%. At the mean value of gender composition (3.9), a 1% increase in the larger gender group and a 1% fall in the smaller gender group increase the advertising price by 0.9%.

Table 4

Derived Values of δ's

(For Statistically Significant Program Characteristics Only)

$$\delta_{Sitcom} = e^{B_7} = 1.219$$
$$\delta_{news} = e^{B_8} = 0.775$$
$$\delta_{Police} = e^{B_9} = 0.774$$
$$\delta_{genx} = e^{B_{10}} = 1.172$$
$$\delta_{torc} = e^{B_{12}} = 0.889$$
$$\delta_{late} = e^{B_{14}} = 1.137$$

[8] In the case of our continuous demographic variables, we have to interpret the derivatives with respect to a change in the variable's value. Given our specification, this derivative is $B_i e^{B_i x_i}$.

A sitcom commands 22% more advertising dollars per spot, while news magazines and police dramas get discounted at 22% and 23% per spot. Therefore, even after adjusting for the number and demographics of viewers, sitcoms receive over 40% more advertising dollars per 30-second commercial spot than news programs and police dramas. Casts aged 18-34 raises a program's advertising price by 17%; programs airing during the last hour of prime-time command 14% more advertising dollars per spot; and programs with teens or children get discounted at 11%.

VI. Estimating the Advertising Premia

We can now compare the marginal effect that each characteristic has on advertising price at the mean. We set all other characteristic values to their unconditional means[9], and then compare the effect of changing the characteristic dummy from zero to one. Table 5 lists the premia (discounts) of seven different content dummy variables. We find that broadcast television programs receive large and statistically significant content premia (discounts), holding constant the number, income, age, and gender of the viewers these programs attract. Sitcoms receive large premia, while news shows and police dramas receive large discounts. In fact, sitcoms earn over $75,000 more per 30-second commercial spot than Police Dramas and News Magazines, even after adjusting for the size and demographics of the audience. This certainly comports with our intuition of advertisers' preferences and in accordance with Sunstein's conjecture that "advertisers want programming that will put viewers in a receptive mood, and hence not be too 'depressing'".

[9] Unless these unconditional means conflict with the characteristic value. For instance, the Police Drama and News Magazine dummies must be zero when the Sitcom dummy is one, so we compare the effect of changing the Sitcom dummy from zero to one with the Police Drama dummy and News Magazine dummy set to zero in both cases.

Table 5

Premia for Different Characteristics

Content Dummy Variables	Premium (Discount)
Sitcom	37,533.72
News	(38,634.64)
Police	(38,677.33)
Genx	30,633.44
Ethnic	15,384.11
Teens or Children	(20,937.09)
Sports	16,242.81

Advertisers prefer programs that have "light" content to programs with heavier or more difficult content, even adjusting for the number and types of viewers these programs attract. This leads to a bias towards more sitcoms and generally "light" fare and against news programming and other "dark" fare. In their model, Anderson and Coate find that advertiser preferences can lead to non-optimal programming patterns if certain programming raises consumers' willingness to pay for products. In our sample, there were 38 sitcoms, 7 news magazines, and 5 police dramas out of a total of 71 programs. Even adjusting for the fact that sitcoms are only half as long as most news shows and police dramas, sitcoms aired over one-and-a-half-times as often as news programming and police dramas combined. Anderson and Coate demonstrate that advertiser preferences can distort programming in a model with one channel and two available types of programming.

Does their insight hold in a universe of multiple channels and multiple program types? Certainly the proliferation of multiple all-news cable channels demonstrates that a significant portion of the viewing population does not receive their preferred amount

of news programming from broadcast sources. Do advertiser biases lead to programming patterns that many viewers find less desirable? Do we find a very large block of viewers under-served by existing network programming? A close examination of the cable network HBO (Home Box Office) helps provide some answers to these questions.

VII. HBO's Programming Strategy

Advertisers apparently prefer certain programming content because such content raises the viewers' probability of purchase. We have shown that, even adjusting for the number and demographics of viewers, advertisers prefer sitcoms to news programming and police dramas, which leads networks to air more sitcoms. We now wish to examine whether significant blocks of viewers therefore go un-served by network programming offerings. Certainly, finding that a pay television provider attracts extremely large blocks of paying viewers by deliberately counter-programming against the broadcast networks would support our theory.

Journalist Tad Friend discusses HBO's programming strategy in *The Next Big Bet*, an article from the May 14, 2001 issue of *The New Yorker*. The article discusses HBO's programming strategy as it relates to the writers of *Six Feet Under*, whose story line revolves around a family that owns and operates a funeral home.

Many advertisers apparently avoid programs containing conflict and subtlety because these programs do not raise viewers' probability of purchasing advertised products as effectively as more upbeat programming. As Alan Ball, the head writer of *Six Feet Under*, who wrote for the network sitcom *Cybill* before penning the movie *American Beauty* observes:

> " . . . the reason why <sic> network executives always tell you to make the story softer, to iron out the edge, is that network TV exists as a vehicle for marketing, so they want . . . an audience that's cheerful, chuckling, primed by the fantasy in the shows for the fantasy of the products. . . . I've tried to be that kind of writer, but I resented having to modify my stories so they'd be a more efficient delivery vehicle for Burger King."[10]

Ball goes on to describe broadcast networks' programming philosophy: "After a while, you realize that all network notes can be reduced to: one, make everybody nicer, remove all the conflict; and, two, articulate the subtext, have somebody state what's going on.

If a large group of viewers prefer darker, subtler material, and advertiser-supported programming does not deliver such material, then pay programming networks can successfully follow a counter-programming strategy, by airing darker, more difficult content in order to capture this large niche of viewers. HBO seeks to capture viewers who do not care for network options, following a counter-programming strategy against

[10] Tad Friend, "The Next Big Bet," The New Yorker, May 14, 2001, p. 84.

network programming. Scott Sassa, president of NBC West Coast, comments on HBO's business model: "A pay-cable network like HBO is trying to fill a need for people who feel under-served by network television."

HBO, according to the article, deliberately seeks to " . . . repudiate the formulas . . . on . . . sitcoms;" making its original programs like *The Sopranos* and *Six Feet Under* darker and more complex in order " . . . to be the strongest possible counterpoint to network television." HBO even mocks advertising itself: "The pilot (of *Six Feet Under*) is punctuated by fake commercials for mortuary products such as 'wound filler' and a deluxe hearse. . . . "

As these quotations demonstrate, HBO deliberately counter-programs against network biases toward "lighter" programming preferred by advertisers, going to great lengths to differentiate its own programming from the broadcast networks. Spence and Owen (1977) find that even pay television under-serves small groups of viewers with intense preferences. Therefore, HBO must serve a large number of viewers. HBO now reaches 26 million homes, receiving $5 per month of the $10-$13 per month paid by subscribers. HBO is a "premium" cable channel, meaning that viewers choose whether or not to buy HBO on an a-la-carte basis, and do not purchase HBO as part of a package. The large number of viewers paying directly for HBO's programming suggests that network programming under-serves a very large portion of the viewing public.

VIII. Strategic Approaches

The strategic management literature often divides media business strategies into two categories: richness and reach. Richness refers to quality of media content as defined by the consumer or end user. This quality can refer to accuracy, sophistication, depth, relevance and customization. A focus on richness produces strong product differentiation, which gives the firm market power over a smaller group of viewers that values such content. Reach in the context of media strategy refers to maximizing the number of viewers who watch the program. Thus, emphasizing reach produces a media product that appeals to a larger number of viewers (Evans and Wurster, 1997), while an emphasis on richness creates a media product that is valued intensely by a smaller number of viewers.

In their work, Evans and Wurster (1997) contend that there is a fundamental conflict between richness and reach. A media firm can either produce content that appeals to many viewers, selling this large viewer group to advertisers, or they can choose to produce content that appeals strongly to fewer viewers, and charge these viewers directly for the content. Therefore, Evans and Wurster argue that there is a trade off between richness and reach. As shown in this paper, advertiser preferences introduce new subtleties into the relationship between richness and reach. The limitations that advertisers place on richness also limit the broadcasters' reach, leaving significantly large groups of viewers that prefer richer content going un-served by the broadcasters' program offerings, allowing pay providers like HBO to attract 26 million viewers by airing richer content.

IX. Conclusion

Broadcasters supply a public good for profit. Broadcasters deliver a non-excludable good (programming) to viewers, combine the good with advertising, and sell commercial time to advertisers who desire access to viewers. As theory predicts, market failures may occur when markets supply a public good. One such market failure is the distortion in program choice stemming from advertisers' preferences. Advertisers prefer programming content that best "frames" their advertising. Such content tends to be light and "unchallenging". Viewers preferring darker and more challenging content go under-served. Using a unique data set, we found that advertisers pay a premium for sitcoms and programs with younger casts, while news programming and police dramas receive a discount. Of the programs in our sample, there were seven news magazines, five police dramas, and 38 sitcoms, so that advertisers' preferences appear to drive programming content. HBO's anti-network counter-programming strategy provides further evidence that advertiser-supported networks under-serve a large group of viewers. Twenty-six million people pay at least $10 per month for HBO.

Indeed, the growth of cable itself points to an interesting phenomenon. Some economists have argued that market failures create profit opportunities for innovations which privatize a public good. As an example supporting this view, Anderson and Hill (1975) cite the invention of barbed wire, an innovation that enabled the inexpensive delineation of property rights in the Western United States. To the extent that broadcasters cannot deliver the optimal type and amount of programming to viewers, other firms may develop innovations allowing viewers to purchase more preferred programming directly from providers. Indeed, the development and rapid spread of cable and satellite television can be attributed at least in part to the market failures inherent in over-the-air, advertiser-supported television.

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