Cultural Agenda Setting and the Role of Critics: An Empirical Examination in the Market for Art-House Films

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Pavlos C. Symeou¹, Philemon Bantimaroudis², and Stelios C. Zyglidopoulos³

Abstract

In this study we investigate and expand agenda setting theory in the context of the market for art-house films. First, we test first and second-level agenda setting hypotheses, according to which higher media visibility and favorable media valence of a particular film are expected to have positive effects on public salience. Second, we expand agenda setting theory by adding critical valence as an important influence of public salience within cultural contexts. Our findings suggest that while higher media visibility, favorable media valence, and critical valence have positive effects on public salience, they are also independent of one another in carrying salience over to the public.

Keywords

cultural agenda setting theory, media visibility, media valence, critical valence, movie industry

Agenda setting theory, introduced by McCombs and Shaw (1972) in their seminal Chapel Hill study, is without doubt one of the most important theories to emerge in the field of mass communication within the last 40 years (Bryant & Miron, 2004; Strömbäck & Kiousis, 2010). First-level agenda setting theory states that the media are

²University of the Aegean, Mytilene, Greece

³University of Cambridge, UK

Corresponding Author:

Philemon Bantimaroudis, Department of Cultural Technology and Communication, University of the Aegean, P.O. Box 108, Mytilene, T.K. 81100, Greece. Email: pbantima@ct.aegean.gr

¹Cyprus University of Technology, Limassol, Cyprus

successful in transferring salience regarding a particular "issue" or "object" to the public. Its focal point of reference is the issues or objects of media coverage, such as news items or political personalities. On the other hand, second-level agenda setting theory claims that the media also succeed in transferring the salience of the attributes associated with these "issues" or "objects" (Ghanem, 1997). At the second level, researchers recognize attributes or frames that comprise news selections such as personality traits, qualifications, and tone of coverage. Based on how different the public process information, researchers document recurring attributes into two broad categories: cognitive and affective traits. In the cognitive category, audiences tend to identify the meaning of each topic, whereas in the affective category, researchers examine emotional responses (Ghanem, 1997). Therefore, while first-level agenda setting asserts that the news tells us *what* to think about, second-level agenda setting adds that the news also tells us *how* to think about it (McCombs & Shaw, 1993).

In the first three decades since its inception, researchers applied agenda setting theory to political issues (Funkhouser, 1973; McCombs & Shaw, 1972), the "civic arena" according to McCombs (2004, p. 53). However, in the last decade, certain "centrifugal trends" (McCombs, 2004) have occurred as some researchers have started to apply agenda setting theory in other areas outside politics. For example, Carroll and McCombs (2003) argued that both first- and second-level agenda setting should be applicable in determining business reputation, whereas Meijer and Kleinnijenhuis (2006) found empirical evidence that both first- and second-level agenda setting theory "are valuable for understanding the effects of issues in business news" (p. 543). Furthermore, in the context of museums, two recent studies showed that both first- and second-level agenda setting theory applies in cultural settings, as the media visibility and media valence particular museums received were associated with levels of public salience (Bantimaroudis, Zyglidopoulos, & Symeou, 2010; Zyglidopoulos, Symeou, Bantimaroudis & Kampanellou, 2012).

In this study we expand this application of agenda setting theory in cultural contexts (cultural agenda setting theory) by investigating first- and second-level agenda setting within the context of the market for art-house films. Thus, we hypothesize that films receiving higher media visibility and favorable media valence will have higher levels of public salience. Second, given the importance that critics have within the various markets for cultural products (Basuroy, Chatterjee, & Ravid, 2003; Cameron, 1995; Eliashberg & Shugan, 1997), we expand cultural agenda setting theory by adding critical valence as an important factor positively affecting public salience within cultural contexts.

Cultural Agenda Setting

The main idea behind cultural agenda setting theory is that the transfer of salience from the media to the public also applies to the case of cultural products or, more broadly, cultural objects such as works of art, artists, and cultural organizations.

The cultural sector is extremely diverse, displaying higher levels of uncertainty compared with the civic arena. Individuals navigate through information in a highly unpredictable environment in terms of styles, genres, and consumer tastes. For the first level of agenda setting, this implies that cultural objects that receive high levels of media visibility or media coverage acquire public salience. For the second level, cultural agenda setting suggests that the media also influence the attributes of various cultural objects. For example, through media valence, the positive, neutral, or negative tone the media adopt regarding a particular cultural object is then transferred to the public.

Previous agenda setting research has identified the need for orientation (NFO) as the main reason behind the transfer of salience from the media to the public. NFO "refers to the tendency of an individual to seek information about an issue in the news media" (Matthes, 2006, p. 423) and according to McCombs (2004), it constitutes "the most prominent of the contingent conditions for agenda-setting effects" (p. 67). This position has been confirmed through empirical work by Matthes (2006, 2008). Therefore, the greater the NFO that a particular public has regarding an object, the greater will be the transfer of salience from the media to the public.

The NFO, however, is not the "lowest" concept that agenda setting theorists have identified as driving agenda setting phenomena. McCombs (2004) identifies two "lower-order concepts" (p. 54), uncertainty and relevance, which he sees as determining the public's NFO. Relevance refers to the perceived importance of a given object or issue (McCombs, 2004; Weaver, 1980), whereas uncertainty refers to the information that one needs about the particular issue (Weaver, 1980).

Agenda setting theory applies to cultural contexts because in dealing with cultural objects, individuals have a high level of NFO, possibly even higher than in the political domain, because of certain peculiarities that pertain to the cultural sector. These peculiarities become obvious when we examine the drivers of NFO within the cultural context, uncertainty and relevance and the experiential nature of cultural products (Duan, Gu, & Whinston, 2008; S. Moon, Bergey, & Iacobucci, 2010; Yang, Kim, Amblee, & Jeong, 2012).

First, uncertainty is inherent in the production, evaluation, and consumption of cultural products. There is no guarantee that producers of successful cultural products will continue to do so. For example, Mott and Saunders (1986) point out that even famous producers like Steven Spielberg have over the years produced "expensive flops," and Hesmondhalgh (2002) reports that eight out of nine music products fail and that just 1 out of 50 books reaches wide acceptance. Moreover, the uncertainty about the value of cultural objects is further enhanced by the multiplicity of individual tastes, the varying degrees of refinement of different individuals, and the change of these individuals' taste throughout their lifetime (DiMaggio, 1987). As Holbrook and Schindler (1994) point out, "reliance on creative intuition in the design of cultural offerings remains difficult, expensive, and prone to error" (p. 412), which makes them highly uncertain and gives their consumers an acute need for guidance.

Second, many cultural objects or goods have great relevance for people's lives. We can see this from the fact that substantial private and public resources are allocated for the production, distribution, and consumption of cultural goods. For example, in 2008 alone, Canadian consumers spent \$27 billion (Canadian dollars) on cultural goods

(Hill Strategies Research Inc., 2011), whereas in Europe, 77% of the respondents in a recent 27-country survey claimed, "culture was important to them" (Eurostat Pocketbooks, 2011, p. 143).

Third, particularly within cultural contexts, the experiential nature of cultural products further enhances the NFO by individuals. Because cultural goods are experience goods, their consumers cannot evaluate them before the actual purchase. Experience goods, according to Nelson (1970, 1974), are goods with attributes that consumers cannot easily verify before their actual purchase and cannot evaluate the experience with them before they have them. According to Siegel and Vitaliano (2007), experience goods have "a high degree of information asymmetry between sellers and buyers" (p. 780). Particularly in the case of cultural goods, their "multidimensionality" (Holbrook & Schindler, 1994) makes it even harder to reliably evaluate them before the purchase (Mott & Saunders, 1986). It is hard, for example, to know the entertainment value of a new movie or a new theatrical performance before one has actually seen the performance. As Hill, O'Sullivan, and O'Sullivan (2003) put it, "potential consumers cannot inspect an artistic performance before purchase in the same way as they might, for example, test-drive a car" (p. 155). We therefore make the following hypotheses:

Hypothesis 1: The media visibility of cultural goods will have a positive effect on their public salience.

Hypothesis 2: The favorable media valence of cultural goods will have a positive effect on their public salience.

Critical Valence

Critics play an important role within any cultural "system" (Hirsch, 1972) or field (W. R. Scott, 1995). As Debenedetti (2006) reports, "their complex links with creators and managers upstream and with the public downstream put critics at the centre of a system of material and symbolic relations that make them key actors in the cultural industries" (p. 30). Critics, according to Shrum (1991), provide the public with factual, technical, and evaluative guidance regarding cultural goods. In other words, they inform the public about the specifics of timing and content of a particular cultural good; they provide the "discursive apparatus" (Becker, 1984) needed to evaluate and appreciate it, and they evaluate its value using this apparatus (Wyatt & Badger, 1990). Critics are able to provide such services to the public for two reasons. First, they are closely connected with the producers of cultural goods, which give them privileged access to information (Debenedetti, 2006). Second, given their expertise, they are able to position and evaluate a cultural good within its particular genre (Cameron, 1995).

Given the role of critics, it is reasonable that members of the public turn to them for guidance to satisfy their NFO regarding cultural goods. Several studies have found evidence for the influence that critics have over the reception of a cultural good by the public. For example, in the film industry, the importance of critics in influencing box office performance is beyond dispute and has triggered extensive research (Basuroy et al., 2003; Eliashberg & Shugan, 1997; Zuckerman & Kim, 2003), even though the nature of this relationship is not completely confirmed (King, 2007). For example, although most studies report a positive relationship between positive critical reviews and box office performance (Litman & Ahn, 1998; Litman & Kohl, 1989; Prag & Casavant, 1994; Sochay, 1994), a few report no relationship at all (Ravid, 1999; Zufryden, 2000) or even a negative relationship (Hirschman & Pieros, 1985). In another cultural setting, the theater, Shrum (1991) found that positive reviews were associated with greater audience participation.

Thus, from a cultural agenda setting perspective, assessing the influence of critics on the public's reception of a cultural good, we can expect critical valence, the positive, neutral, or negative tone that critics adopt when they review a particular cultural good, to play an important role in determining its public salience. This leads us to the following hypothesis:

Hypothesis 3: The favorable critical valence of cultural goods will have a positive effect on their public salience.

Method

Research Setting

Our research setting is the art-house film industry. We situated our study in the arthouse film industry for several reasons. First, the uncertainty of the film industry is well documented, a characteristic that would allow us to more readily observe agenda setting phenomena, as uncertainty leads to higher levels of a NFO. For example, De Vany and Walls (1999), after conducting a large-scale empirical study of 2,000 movies, found that box office revenues follow a Levy distribution exhibiting high skewness, heavy tails, infinite variance, and often, infinite mean. These findings led them to conclude that producers' prior experience and success cannot safeguard future success or even allow a close estimate of anticipated revenues, and more colorfully that "this explains precisely why no one knows anything in the movie business" (De Vany & Walls, 1999, p. 315). Second, we chose this research setting because professional film critics have a long tradition in the industry. According to Ravid, Wald, and Basuroy (2006), approximately one third of film viewers not only read film reviews but also decide which film to watch based on film critics' professional recommendations. The impact of film reviews within the film industry is so important that "in recent years, the desire for good reviews on the part of the studios has even prompted some people to engage in deceptive practices" (Ravid et al., 2006, p. 202). Third, we particularly chose the art-house film industry because of its significantly lower advertising budgets, which would make influence from the media and the critics more visible (King, 2007). Following the relevant literature on film products, we argue that blockbuster films are very different products compared with art-house films, and therefore they merit separate attention.

Data

We derived our data from the art-house film industry of Greece. Greece has a rich cinematic history (Karalis, 2012), which makes it suitable for our research. The first Greek cine-theater opened in Athens in 1907. In 1944, Katina Paxinou was honored with the "Best Supporting Actress" Academy Award for For Whom the Bell Tolls. The 1950s and 1960s are considered as the Greek "Golden Age." Directors and actors of this era gained international acclaim, including Mihalis Cacoyiannis, Alekos Sakellarios, Melina Mercouri, Nikos Koundouros, and Irene Papas. In 1960, Melina Mercouri was nominated for an Academy Award for *Never on Sunday* while the film's music score, composed by Greek Manos Hatzidakis, received an Oscar in the "Best Music, Original Song" category. In 1964, Cacoyiannis directed Zorba the Greek with Anthony Quinn, which received three Oscars. During the 1970s and 1980s, Theo Angelopoulos directed a series of notable and well-regarded movies. His film *Eternity* and a Day won the Palme d'Or and the Prize of the Ecumenical Jury at the 1998 Cannes Film Festival. In 2009, Dogtooth by Yorgos Lanthimos won the Prix Un Certain Regard at the Cannes Film Festival and in 2011 was nominated for Best Foreign Language Film at the 83rd Academy Awards. Moreover, the Thessaloniki and Athens International Film Festivals established in 1960 and 1995, respectively, have become two of the Balkans' primary showcases for the work of new and emerging filmmakers.

Our data sample includes all 311 art-house, domestic, and international films, which appeared in Greek cinemas, between January 2006 and January 2012. We excluded from the data collection process all blockbuster movies made in the United States,¹ which in comparison with films produced outside the United States have substantially bigger production budgets and deploy extensive and prolonged advertising and promotion campaigns that are important influencers of both media visibility and revenue (Gemser, Van Oostrum, & Leenders, 2007). Moreover, substantial differences in budgets and promotion practices between blockbuster U.S. and art-house films are very likely to mask the underlying process of transfer of salience. Therefore, it was paramount that the empirical setting of the current inquiry was not flooded with heavy promotion and advertising expenditure. We collected movie data primarily from *Box Office Mojo* as well as from the Internet Movies Database (IMDB).²

Dependent Variable

Following previous studies of the effects of media salience on public salience in cultural contexts (Bantimaroudis et al., 2010; Zyglidopoulos et al., 2012), we measure public salience through a behavioral construct. Whereas the typical measures of public salience in the agenda setting literature have revolved around perceptions, early public opinion research identified behavior as a separate category of audience salience (Hovland, Lumsdaine, & Sheffield, 1949), and several later studies in the fields of politics examined behavior as a form of public salience. According to McCombs (2004), behavioral measures have been used as reliable indicators of public salience. For example, "extensive news coverage of crime and violence, including a murder and a number of rapes, on the University of Pennsylvania campus a few years ago contributed to a significant drop in applications by potential first-year students" (McCombs, 2004, p. 129), mostly women. Another study pertains to news on airplane crashes and risk avoidance behavior. Bloj and McCombs (1974) reported that news about airplane crashes were correlated with low ticket sales, whereas "conversely, flight insurance sales increased" (McCombs, 2004, p. 130). Furthermore, S. J. Moon (2008) posits that "the effects of agenda setting may be viewed as related to the behavioral as well as the cognitive levels so that: What the public thinks about something can be extended to what the public does about something" (p. 2).

We operationalize public salience as the film's weekly box office revenue. The logic behind our measure is that the amount of ticket sales and, thus, box office revenue signifies object importance because a movie, an experience cultural good (Neelamegham & Jain, 1999), is less likely to receive verbalized preference by the audience unless it has already been watched. Box office revenue was transformed in logarithms for two main reasons. First, the logarithmic form allows us to approximate normality in the regression model's error term (a classical assumption of the linear regression model). Second, the ordinary least squares (OLS) estimates are very sensitive to outliers. The logarithmic form allows us to mitigate possible problems associated with large variance in the variable's values due to extreme observations.

Overall, behavioral indicators are considered appropriate measures of salience. Researchers argue that information accessibility influences decision making. For example, Iyengar, Kinder, Peters, and Krosnick (1984) link television news watching and evaluating of political personalities. Kadres (1994) argues that any increase in "the relative accessibility of a given piece of information . . . also increases the likelihood that the information will be used as an input for memory-based judgement" (p. 439).

Independent Variables

We measure media salience both at the first and second levels of agenda setting theory. At the first level, we scrutinize "object salience" in the form of Media Visibility, as we measure the volume of coverage of each film by the media. At the second level, we scrutinize two attributes: Media Valence and Critical Valence. Both attributes belong to the affective category as they include the element of tone, routinely used in political communication literature to assess media attitudes toward political personalities (Ghanem, 1997). In this case, we assess media stand toward each film, as the tone of coverage may be indicative of a positive, negative, or neutral disposition toward each product.

Media visibility. Following existing practice (Bantimaroudis et al., 2010; Kiousis, 2004), we measure media visibility through the presence of unpaid media mentions in major newspapers. We created an aggregate measure of media visibility through adding the mentions a film received for a given week, in which the film appeared in a cinema, in three major Greek daily newspapers (*Kathimerini, Ta Nea*, and *To Vima*). We chose these newspapers because of their easy-to-access digital archive and their extensive readership (more than 26% market share combined³) and distribution throughout Greece. Overall, our search of these three newspaper databases resulted in 898 articles, where at least one of the sample movies was mentioned. Since we relied on newspaper databases for the counting every reference on each film, no human coders were involved in measuring media visibility.

Media valence. To develop our measure of media valence, we drew on prior work by Deephouse (2000) to classify the media tone of an article as "positive," "negative," or "neutral." From the population of 898 newspaper articles, 541 were coded as positive, 208 were coded as negative, and 150 were coded as neutral.⁴ An experienced research assistant, under the supervision of one of the authors, coded all articles. To assess inter-coder reliability of media content, another of the authors recoded newspaper recommendations for 34 movies (approximately 10% of the total movie population). We assessed the reliability for each movie separately, as in some cases, an article discussed more than one movie. The two coders displayed a high-level agreement in regards to media valence. The level of agreement was 0.731 based on the Scott's pi measure (W. A. Scott, 1955), which also accounts for agreement by chance. We aggregated the coded articles into a weekly measure of media valence using the Janis-Fadner coefficient of imbalance (Janis & Fadner, 1965) that measures the relative proportion of favorable to unfavorable articles while controlling for the overall volume of articles. The variable was calculated as follows:

$$Media \ valence = \begin{cases} \left(f^2 - fu\right) / \left(total\right)^2 \ if \ f > u; \\ 0 \ if \ f = u; \\ \left(fu - u^2\right) / \left(total\right)^2 \ if \ u > f; \end{cases}$$

where *f* is the number of favorable articles for a film in a given week; *u* is the number of unfavorable articles for a film in that week; and *total* is the total number of articles for the film in that week. The range of this variable is (-1, 1), where 1 indicates all positive coverage, -1 indicates all unfavorable coverage, and 0 indicates a balance between the two over the week.

Critical valence. We gathered critics' review data from *Athinorama* (www.athinorama.gr), a specialized entertainment publication and the major online movie guide in Greece. According to *Alexa.com*, an online traffic monitoring service, *Athinorama* is the most popular domestic site for movies and cinemas. Professional critics' reviews are available before the movie is released in theaters and their reviews remain unchanged afterward. Beyond an elaborate review for each movie, the critics at *Athinorama* use a scale ranging from 0 to 5 with half-point intervals to assign a recommendation score, with higher scores being more favorable. As it is the case with media visibility, we did not rely on human coders, but we used critics' quantitative evaluations provided by the publication. No other coders became involved for the measurement of critical valence.

Controls

Given the number of variables that could influence the public salience of a film, we included a number of relevant controls in our models.

Star power. Consistent with the motion picture literature (e.g., Elberse, 2007; Smith & Smith, 1986), we included the variables *Cast* and *Director*, which measure the number of major awards and nominations received by cast members or the director of the movie prior or during its appearance in cinemas, respectively. In addition to the Academy Awards, we included in this measurement the three major international film awards of Cannes, Venice, and Berlin.

Distributor size. Movie distributors play an important role in the movie industry and movie performance (Gemser et al., 2007; Zuckerman & Kim, 2003). For example, viewers can associate their level of satisfaction with a particular movie with the movie's distributor, which is likely to influence their future choices. During the period examined, there were 24 active movie distributors in Greece. To account for the effects of distributors' effects on box office revenue, we incorporate in the analysis a variable that measures the total number of movies represented by a distributor in a given year.

Budget. Movies with generous production budgets, which translate into lavish sets and costumes, expensive digital manipulations, and special effects along with heavy advertising, achieve box office success (Basuroy & Chatterjee, 2008; Ravid, 1999). We control for these effects on box office by including in our analysis the logarithm of the movie's budget.

Premiere gap. The time gap between a movie's premiere in the country of origin and its premiere in the Greek market may allow the accumulation of higher media attention and the creation of more international awareness than domestic movies or movies with shorter time gaps. Therefore, we control for the impact of this time gap on box office revenue by including in the analysis a variable that measures the number of days between the international and Greek openings.

Movie trailers. Showcase movie trailers (short previews that act as advertisements for a feature film to be exhibited in the future at a cinema) create awareness, prepare their target audience, and receive comments, which often allows movie producers to project movie revenues. Since these movie trailers impact box office performance, we account for their effect by including a dummy variable (*YouTube*) that indicates whether a movie trailer appeared on YouTube (http://www.youtube.com), the most important video-sharing website worldwide, prior to its release or during its performance in Greece.

Screens. Movies that appear in more theater screens are expected to have higher revenues. We therefore control for the number of screens each movie appeared on during the sample period.

Genre. Viewer preferences can develop into a stable and established preference for viewers, such as favorite genres (S. Moon et al., 2010). Therefore, genres are likely to attract varying volumes of viewers, and therefore influence movies' revenues differently. We control for the effect of genre on box office revenue by including in the analysis genre dummy variables.⁵

Sequels. A movie sequel is a follow-up work, which continues the story from the point where an earlier movie left off. Sequels carry lower levels of risk, as returning to a story with known popularity is less risky than developing new and untested characters and settings. They also appeal to public audiences, which view the quality of the initial movie as a signal for the quality of a sequel, thus making the production of sequels financially attractive (S. Moon et al., 2010). Sequels usually achieve box office success, even if they do not meet the levels attained by the parent movies (Basuroy et al., 2003). We control for this effect by including in the analysis a dummy variable that denotes whether a film is a sequel or not.

Competition. Other similar cultural goods offered during the same period pose significant challenges to box office revenue by influencing the audience's decision on how to allocate its finite time and money. To control for the effects of competition between alternative movies during the same period, we include in our analysis two variables that measure the number of other art-house films (*Alternative competition*) and the number of U.S. blockbuster films (*Blockbuster competition*) in a given week.

Macroeconomic environment. Since 2010, Greece has been facing a severe economic crisis that undoubtedly has had a strong impact on consumers' behavior and possibly preferences. To account for such changes attributed to the macroeconomic environment of our industry, we incorporate in our analysis a variable that controls for the average level of prices in the economy, that is, the consumer price index (*CPI*), a variable that controls for the purchasing power of consumers, that is, *GDP per capita*, and a dummy variable that indicates whether the year of the observation is 2010, 2011, or 2012 (*Crisis*), namely, the financial crisis period. Macroeconomic data were obtained from the World Bank's Indicators database.

Seasonality effects. We expect movies appearing in theaters during holiday periods to enjoy a higher attendance than others. We therefore control for seasonality effects by including in the analysis a variable that denotes the *Christmas* period (from mid-December to mid-January), a variable denoting the *Easter* period (though this is a moving holiday, during our sample period, it fell in April), and a variable accounting for the summer period (from July to August).

Analysis

For the analysis of the multitudinal data comprising 311 cross sections (movies) with an average of 3.6 weeks in theaters and a total of 790 movie-week observations, we used a multiple regression model, with the following form:

$$y_{it} = \alpha_i + \beta_k x_{it} + e_{it} + u_i,$$

where i = 1, 2, ..., 311 is the subscript for the cross-sectional dimension and t = 1, 2, ..., n is the subscript for the time-series dimension. y_{it} represents box office revenue; a_i is a constant; β is a series of coefficients corresponding to x_{it} series of independent variables; \mathbf{u}_i is a T × 1 vector of the effects of omitted time-invariant movie-specific variables; and ε_{it} is a random disturbance variable assumed to be distributed identically and independently with zero mean and finite, constant variance. To use an estimation method that was most appropriate for our data, we consulted the Hausman test (Baltagi, 2005), which suggested the use of the Random Effects transformation ($\chi^2 = 0.91$). Moreover, as the countries of origin of the sample movies can signify different levels of familiarity of viewers with various cultural products, it was possible that our estimates could be biased due to a country of origin effect. We explicitly accounted for this effect by deploying a clustered estimator in our analysis using the country of origin to cluster the data. This method allowed the derivation of results that are robust to the country of origin effect. Overall, this estimation approach is consistent with existing research on box office revenue (Basuroy et al., 2003).

Results

Tables 1 and 2 report summary statistics and pairwise correlations between our sample variables, respectively. It is noteworthy that the pairwise correlations between media visibility, media valence, and critical valence are quite low, ranging between .08 and .28, thus lending support to discriminant validity.

The examination of the role of media visibility, media valence, and critical valence in the transfer of salience implies that the three mechanisms have precedence over our behavioral operationalization of public salience. In statistical terms, this condition suggests the use of time lags. Because 157 movies in our sample were in theaters for only 1 week, the use of a 1-week lag would consume 311 observations (one observation for each movie) and also drop all single-observation movies from the estimated model. This would give rise to a selection bias that might render the model estimates biased and inefficient (Baum, 2006). To gain deeper insight from our sample and satisfy the prerequisite of precedence for the proper examination of our hypotheses, while accounting for the implications of selection bias, we estimated a first set of models without time lags that involved the complete sample and allowed an initial exploration of the relationships in question. Second, we estimated a second set of models using lags and correcting for the presence of selection bias in the estimates.

The regression outputs are presented in Table 3.⁶ The first model presents the output from the regression of box office revenue on the control variables only. The results suggest a positive relationship for movies with an online trailer on YouTube, a larger number of screens, when the movie has been in theaters in the Christmas holiday period and during the crisis period, considering all other effects constant. On the other hand, the results suggest a negative relationship for movies that encounter more

Table I. Summary Statistics.

	М	Minimum	Maximum	SD
I. Weekly revenue (logs)	10.59	5.93	14.55	1.49
2. Media visibility	1.14	0	19	1.94
3. Media valence	0.13	-1	I	0.48
4. Critical valence	2.43	0.50	5	0.93
5. CPI	111.72	103	130	4.37
6. GDP per capita (quarterly)	4,990.74	4,276.93	5,475.89	334
7. Crisis	 9.94 ª	0	I	0.40
8. Director awards	54.98 ª	0	I	0.49
9. Cast awards	39.55 ª	0	I	0.49
 10. Distributor size 	12.37	I	26	8.81
II. Alternative competition	4.41	0	11	3.13
12. Blockbuster competition	4.17	0	8	1.72
13. Sequel	4.82 ª	0	I	0.27
14. YouTube	83.60ª	0	I	0.33
15. Screens	18.51	5	124	23.4
16. Budget (logs)	16.18	10.82	18.28	1.13
17. Summer	I6.08ª	0	I	0.33
18. Christmas	19.94 ª	0	I	0.42
19. Easter	7.72 ^a	0	I	0.25
20. Premiere gap	21.23	0	816	56.75

Note. CPI = consumer price index.

^aValue represents the percentage of sample movies that take a value of 1; for example, 19.94% of the sample movies were on theaters during the Greek financial crisis (2010-2011).

stringent competition from other art-house movies, belong to the animation genre, and when the CPI is higher. Surprisingly, the movie's budget does not have any statistically significant relationship with box office revenue, suggesting that art-house movies' audiences are neither sensitive to prolific sets and costumes, expensive digital technology, and special effects nor to the heavy advertising attained by bigger production budgets.

The Baseline model incorporates in the analysis the media visibility and media valence variables. Including the two variables contributes to the model's explanatory power, reflected in an increase in the chi-square statistic and the R^2 . The relationships of the two variables with the dependent are positive and statistically significant, suggesting that films that receive greater media visibility and more favorable media recommendations are more likely to exhibit better box office performance.

The Extended model also incorporates the variable of critical valence. Incorporation of this variable further improves the explanatory power of the model and maintains the existing relationships qualitatively the same. The relationship between critical valence and box office performance is positive and statistically significant, suggesting that professional reviewers exhibit a separate relationship with public salience in the form of consumer behavior.

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I. Weekly revenue (logs)	_																			
2. Media visibility	<u>е</u> г.	_																		
3. Media valence	.07	.28	_																	
4. Critical valence	I5	.08	.24	_																
5. CPI	.21	.07	8 <u>.</u>	=.	_															
6. GDP per capita (quarterly)	<u>-</u> 18	09	09	=	27	_														
7. Crisis	.29	.05	03	- !	- 89	20	_													
8. Director awards	22	.07	<u>0</u> .	.49	<u>-</u> I 9	- 20	21	_												
9. Cast awards	13	01	-0	<u>+</u> .	<u>-</u>	- 50	07	<u>4</u> .	_											
10. Distributor size	16	17	08	90.	33	.32	38	<u>.</u> 05	<u>4</u>	_										
II. Alternative competition	34	09	<u>.</u> 03	80	- 46	- 60:-	58	Ξ.	<u>0</u>	.25	_									
12. Blockbuster competition	17	<u>.</u> 03	<u>.</u> 02	07	5. 10	- 12	- 2	- 16	-02	06	30	_								
13. Sequel	Ξ.	0	06	22	<u>8</u> .	90.	.05	<u>0</u>	<u>8</u>	- 07	16	20	_							
14. YouTube	.21	03	05	- 10	- 6	-07	=	- 10	90	05	-12	 	Ξ	_						
15. Screens	.75	8	05	33	- 12	<u>-</u>	- 51	- 35	28	- 90	- 22	 	.23	-11 -	_					
16. Budget (logs)	.I5	05	0.	22	' 8	- - -	- 0.	04	<u>.</u>	8	-0. -	02	.27	05	.24	_				
I 7. Summer	<u>н</u> .	04	<u>. 1</u>	<u>\$</u>	80.	.43	<u>0</u> .	.02	۳.	2	4	I0:-	90.	- 0	- 72 -	۳.	_			
18. Christmas	.22	<u>.</u> 07	<u>4</u>	05	- 20.	-30	80.	÷	80 -	. <u>-</u>	<u>.</u>	61.	02	60.	.21	- 80.	.22	_		
19. Easter	6	<u>ю</u> -	8 <u>.</u>	<u>0</u>	90.	60:	.07	8	<u>60</u>	8	6 .	 	-02	-02-	- -	- 80.	-	.15	_	
20. Premiere gap	<u>е</u> 1	03	80.	- 39	12	.25 -	-13	.23	<u>.</u>	.I5	01.	6	-00-	27		.22	.26 -	- 12	- 07	_
																				L

Table 2. Correlation Matrix.

Note. CPI = consumer price index.

Table 3. Regression Models.

	Controls	Baseline	Extended	Interactions	Baseline (lags)	Extended (lags)	Interactions (lags)
	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE
Media visibility Media valence		0.088*** (0.01) 0.185**	0.088*** (0.01) 0.162*	0.087*** (0.01) 0.170*	0.111*** (0.01) 0.129†	0.112*** (0.01) 0.122†	0.104*** (0.01) 0.137†
Expert valence		(0.07)	(0.07) 0.142* (0.07)	(0.07) 0.142* (0.07)	(0.07)	(0.07) 0.064** (0.02)	(0.08) 0.042** (0.01)
Media valence × Expert valence				-0.006			-0.033
Media valence × Media volume				0.008			-0.122
Media volume × Expert valence				(0.04) -0.009			(0.09) -0.023
Premiere gap	0.000	0.000	-0.000	(0.02) -0.000	0.000	-0.000	(0.14) -0.000
CPI	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
	-0.082***	-0.093***	-0.092***	-0.092***	-0.125***	-0.126***	-0.126***
	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)
GDP per capita	-0.000	-0.000	-0.000	-0.000	0.000	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Crisis	0.703* (0.28)	0.781** (0.29)	0.756** (0.29) -0.024	0.756** (0.29) -0.025	0.962*** (0.28)	0.967*** (0.29)	0.989*** (0.29)
Cast awards	(0.11)	(0.11)	(0.11)	(0.11)	(0.16)	(0.16)	(0.16)
	0.080	0.092	0.109	0.108	-0.137	-0.127	-0.123
Distributor size	(0.11)	(0.11)	(0.11)	(0.11)	(0.15)	(0.15)	(0.15)
	-0.009	-0.006	-0.007	-0.007	-0.008	-0.009	-0.008
Alternative competition	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-0.068***	-0.061**	-0.060**	-0.061**	-0.052*	-0.051*	-0.050*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Blockbuster competition	-0.028	-0.026	-0.024	-0.024	-0.060†	-0.058	-0.059
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)
Sequel	-0.259	-0.188	-0.132	-0.132	-0.396 [†]	-0.372	-0.377
	(0.17)	(0.18)	(0.19)	(0.19)	(0.23)	(0.24)	(0.26)
Screens	(0.14)	(0.14)	(0.14)	(0.14)	(0.32)	(0.32)	(0.32)
	0.046***	0.045***	0.045***	0.045***	0.044***	0.044***	0.044***
Budget (logs)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
	0.027	0.031	0.045	0.044	0.030	0.036	0.037
Genre dummies: Adventure	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
	-0.018	-0.015	-0.041	-0.043	-0.396	-0.413	-0.417
Animation	(0.24)	(0.25)	(0.26)	(0.26)	(0.52)	(0.52)	(0.52)
	-0.598*	-0.553*	-0.526†	-0.525†	-0.608*	-0.576†	-0.560†
	(0.27)	(0.27)	(0.28)	(0.28)	(0.29)	(0.31)	(0.31)
Biography	0.221 (0.27)	0.229 (0.27)	0.183 (0.27)	0.177 (0.27)	0.036	0.018 (0.14)	-0.000 (0.15)
Comedy	0.115	0.105	0.104	0.099	0.157	0.154	0.151
	(0.19)	(0.20)	(0.20)	(0.20)	(0.20)	(0.21)	(0.20)

(continued)

	Controls	Baseline	Extended	Interactions	Baseline (lags)	Extended (lags)	Interactions (lags)
	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE
Crime	-0.005	0.018	-0.027	-0.030	-0.267	-0.284	-0.290
	(0.24)	(0.25)	(0.24)	(0.24)	(0.30)	(0.29)	(0.28)
Documentary	0.123	-0.008	-0.132	-0.130	-0.362	-0.406†	-0.402†
	(0.30)	(0.33)	(0.33)	(0.33)	(0.23)	(0.21)	(0.22)
Drama	-0.079	-0.144	-0.193	-0.194	-0.216	-0.237	-0.251
	(0.19)	(0.20)	(0.20)	(0.20)	(0.20)	(0.19)	(0.18)
Fantasy	-0.186	-0.287	-0.430	-0.412			
	(0.26)	(0.27)	(0.27)	(0.28)			
Horror	-0.205	-0.190	-0.238	-0.246	-0.793*	-0.829**	-0.816**
	(0.22)	(0.24)	(0.23)	(0.23)	(0.34)	(0.30)	(0.31)
Mystery	-0.054	-0.108	-0.131	-0.132	-0.492*	-0.495*	-0.501*
	(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.21)	(0.19)
Romance	0.054	-0.043	-0.107	-0.108	. ,	. ,	. ,
	(0.30)	(0.30)	(0.31)	(0.32)			
Thriller	-0.355	-0.366	-0.550	-0.553	-0.272	-0.367	-0.385
	(0.52)	(0.62)	(0.57)	(0.57)	(0.35)	(0.34)	(0.41)
Summer	0.111	0.139	0.152	0.154	-0.026	-0.024	-0.014
	(0.13)	(0.13)	(0.13)	(0.13)	(0.22)	(0.22)	(0.21)
Christmas	0.319*	0.283*	0.279*	0.279*	0.286*	0.283*	0.288*
	(0.14)	(0.14)	(0.14)	(0.14)	(0.14)	(0.13)	(0.14)
Easter	-0.039	-0.030	-0.032	-0.032	-0.281	-0.283	-0.277
	(0.17)	(0.17)	(0.17)	(0.17)	(0.18)	(0.18)	(0.18)
Inverse Mills Ratio		· · /	. ,		0.184***	0.184***	0.222*
					(0.05)	(0.05)	(0.09)
Constant	19.157***	19.909***	19.327***	19.346***	22.905***	22.718***	22.92Í***
	(2.39)	(2.42)	(2.46)	(2.47)	(1.80)	(1.97)	(1.88)
Observations	790	788	787	787	475	475	475
Films	311	311	310	310	154	154	154
χ ²	1105.54	2536.76	3102.49	3002.77	2421.12	2431.32	2430.71
R ² (between)	.56	.60	.61	.61	.66	.68	.68

Table 3. (continued)

Note. The base movie genre is "Action." We use a cluster estimator to obtain unbiased estimates for country-correlated data. Coef. = coefficient; CPI = consumer price index.

 $^{\dagger}p < .1. *p < .05. **p < .01. ***p < .001.$

Our results suggest that the three concepts of media visibility, media valence, and critical valence manifest independent relationships with public salience. It is highly possible that the coexistence of these concepts may reinforce their relationships with public salience. To explore this possibility, we incorporated in the Interactions model the variables' pairwise interactions. Inclusion of these variables did not contribute to the model's power, as the new variables are statistically insignificant. This finding suggests that media visibility, media valence, and critical valence are three independent mechanisms that have distinct relationships with public salience.

To test our hypotheses, we re-estimated the above models with a 1-week lag for the main independent variables. The new estimation resulted in the loss of 315

observations and the drop of 157 movies from the models. To account for non-random inclusion effects, that is, whether the reasons behind the shorter appearance of the excluded movies in theaters also affect the dependent variable in our models, we followed a two-stage Heckman selection estimation process (Heckman, 1979). In the first stage, we used a probit model to estimate the probability that a movie appears both in the complete and the reduced sample. In the second stage, we included in the model the inverse Mills ratio as a correction term that was derived from the first stage's estimated probabilities and represents the selection hazard for participation in both samples for a given movie in a given week. In all three models, the inverse Mills ratio is positive and statistically significant, suggesting that there is a positive selection effect in the data that would yield biased results if the model was estimated with uncorrected OLS, namely, movies kept in the analysis exhibit higher public salience than a randomly selected sample of movies with a comparable set of characteristics.

The results for the second set of models do not differ qualitatively from the fullsample results. Therefore, based on the positive relationships we find in the first set of models and the relationships of antecedence we find in the second set of models, we can suggest that media visibility, media valence, and critical valence have positive effects on public salience, therefore supporting all our hypotheses. Moreover, these effects are independent of one another.

Discussion

In this study we expand the application of agenda setting theory in cultural contexts (cultural agenda setting) by investigating first- and second-level agenda setting within the Greek market for art-house films. Our findings indicate that first- and second-level agenda setting effects apply within this cultural market, as higher media salience (visibility and valence) induces higher public salience. Also, given the importance of art critics for the markets for cultural goods (Cameron, 1995; Debenedetti, 2006; Eliashberg & Shugan, 1997), we expand cultural agenda setting theory by including the concept of critical valence, the positive, neutral, or negative opinion of the critics regarding a particular cultural good (a movie in our case), in our models. As hypoth-esized, we found that critical valence affects public salience.

Our contribution toward the development and expansion of agenda setting theory is twofold. First, we apply agenda setting theory in a novel cultural context. Previous work has applied and tested first- and second-level cultural agenda setting theory in the context of museums (Bantimaroudis et al., 2010; Zyglidopoulos et al., 2012). Our work adds to this line of inquiry by applying and testing agenda setting phenomena within a novel cultural context, the market for art-house films (Boatwright, Basuroy, & Kamakura, 2007).

Second, we expand cultural agenda setting theory through incorporating the notion that critical valence influences public salience within cultural contexts. The importance that critics have in cultural contexts is unparalleled and within the agenda setting theory, they can play a distinct role in the process of salience transfer to the public. In the future, there should be more attention to the affective category of media attributes differentiating between different types of valence—the viewpoint and tone of coverage of any media professionals versus the viewpoint of the experts. Our empirical examination suggests that critical valence exists along media valence as an independent influence on public salience and does not interact with other types of salience, which is indicative of its distinctive nature. By including and investigating the role of critical valence, we refine agenda setting theory so that it is more applicable within what we might call the "cultural arena," to paraphrase McCombs (2004).

Moreover, within the film industry literature (Eliashberg & Shugan, 1997; Gemser et al., 2007), our findings contribute as follows. First, we confirm and add to the findings of many researchers within this literature that critics play an important and positive role in box office performance (Basuroy et al., 2003; Eliashberg & Shugan, 1997; Zuckerman & Kim, 2003). Second, our findings indicate that the impact of the critics is independent of the impact of the media. In other words, at least in our research setting, critical valence does not significantly interact with media visibility and media valence. Third, our findings indicate that the financial crisis had a marginal positive relationship with box office performance, contrary to our expectations. On the first hand, this may indicate that cultural industries might not be particularly vulnerable during severe recessions but on the other hand, this finding may indicate that other macroeconomic variables included in the model capture the negative effect on box office performance attributed to the deterioration of economic conditions in Greece. This is not reflected in the statistically insignificant effect of GDP fluctuations but is indicated in the negative effect of CPI increases, which suggest that changes in overall consumer prices may lead consumers to restructure their expenditure. This is manifested in a decrease in movie consumption. Fourth, an interesting finding pertains to the positive relationship between YouTube and box office performance, and therefore public salience. This finding indicates that the future research should investigate in more depth the role of the Internet as a communications channel in influencing box office performance and that producers of art-house films could take advantage of the Internet services to make up for their usually low promotional budgets. Fifth, our finding that a recognized cast with previous awards is correlated to public salience is not surprising. What is rather surprising, however, is that the "director award" variable did not register as significant. This finding might be interpreted in the context of the arthouse segment, as arguably audiences could be willing to give a chance to new directors.

Although our research contributes to the expansion of cultural agenda setting theory, it has a number of limitations that future research should address. First, the study was carried out in a specific national setting (Greece) and its media system. Although the Greek cultural sector is indicative of similar small/medium size markets in the European South and Latin America, it certainly does not represent the industrialized northern European countries and particularly North America, which are the dominant film producers and exporters around the world. Future research should expand this line of research by scrutinizing data from the major international film markets. Second, although we analyzed three of the most significant Greek newspapers and one specialized publication, additional research is needed utilizing larger samples from elite media and their public. Therefore, we are hesitant to generalize our findings to other cultural markets without expanding our empirical evidence. Third, our model implies that a film's weekly revenue, our behavioral measure of public salience, is the outcome of the monetary patronizing by moviegoers who have been exposed to our sample's media and critical recommendations. This is a strong empirical assumption,⁷ even though jointly, our sample's sources provide us with a heightened likelihood that moviegoers have consumed any if not all of the sample's media.⁸ Future research should further investigate this matter, possibly through the use of a different kind of methodology, which ensures that moviegoers have been actually exposed to the media's recommendations.

Fourth, we have used a behavioral measure of public salience, which is not typical in agenda setting research. Although recent empirical research in the cultural context suggests that behavioral measures can be good operationalizations of public salience (Bantimaroudis et al., 2010; Zyglidopoulos et al., 2012), it is not yet entrenched in the literature that agenda setting effects are present when either behavioral or cognitive measures of public salience are used. Future research can attempt to substantiate this by examining agenda setting effects, both on behavioral and cognitive measures. Moreover, different behavioral measures should be cautiously treated as distinct indices that present unique traits. For example, museum ticket sales and movie box office sales, though both behavioral measures of public salience, signify audience selections that are based on different audience preferences and behaviors. In the context of arthouse films, we recognize that purchasing a movie ticket does not always signify the prominence of that product, as this particular measure can be subject to various market influences and can be manipulated by segmented human preferences and group pressures. Future research could investigate possible discrepancies across various behavioral measures for different cultural products such as paintings, sculptures, and books.

Finally, there are two more issues that future research should address. First, our finding concerning the importance of YouTube and the online blog sites where professional viewers can act as critics suggests that researchers should investigate the role of the Internet and new media in the transfer of salience of cultural objects. Second, similarly to the notion of the "partisan" in the political domain, some individuals might have a close relationship with a particular cultural object. For example, there might be film viewers who are close supporters of particular scriptwriters, actors, directors, and graphic-effect specialists or even followers of genres and sequels. This phenomenon, which we hope future research will address, might substantially reduce viewers' NFO, and therefore diminish the impact of cultural agenda setting.

Authors' Note

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Notes

- 1. We define a movie as a blockbuster if it was a top 10 revenue performer in the United States during the first month of its release. Information about blockbuster movies was extracted from the Internet Movies Database (IMDB).
- 2. *Box Office Mojo* (www.boxofficemojo.com) is an online movie publication and box office reporting service and a subscription-free subsidiary of *IMDB* (www.imdb.com), the #1 movie website in the world with a combined web and mobile audience of more than 150 million unique monthly visitors.
- 3. Their combined market share remained relatively stable between 2006 and 2011 at 28% and 26%, respectively; estimates by authors. Data source: Athens Daily Newspaper Publishers Association, www.eihea.gr/default_en.htm, last visited 06/02/2013.
- Coders were instructed to use the following general guidelines in the classification of articles:
 - *Positive tone*: The article contains positive remarks in regard to the storyline, the book from which the scenario is derived, the cast, the acting, the directing, or other film attribute. There are positive catch-phrases such as "you must see this film." The article entails any form of prompt to prospective audience to watch, based on comparison with related works of known value.
 - *Negative tone*: The article contains negative remarks with regard to the storyline, the book from which the scenario is derived, the cast, the acting, the directing, or other film attribute. The film is considered mediocre, lacking quality, or repeats or copycats elements from other films. The article uses catch-phrases such as "this film is a waste of time and money" or recognizes the sacrifice of quality over commercial purposes.
 - *Neutral tone*: The newspaper article mentions the film without portraying a favorable or an unfavorable recommendation. The article simply reports the place, date, and time of the performances and makes no quality and attribute evaluations.
- 5. Our sample data include films in the following genres: action, adventure, animation, biography, comedy, crime, documentary, drama, fantasy, horror, mystery, romance, and thriller.
- 6. For purposes of paper length, we only present the unstandardized regression coefficients. The models with standardized coefficients are available from the authors.
- 7. We thank one of the reviewers for bringing this to our attention.
- 8. The nearly 900 newspaper articles we collected and coded represent 100% of all mentions in the sample newspapers that account for more than 25% of the overall newspaper market and offer a good proxy of the overall population of "offline" Greek media. Our source for our critical valence variable is the most popular domestic site for movies and cinemas.

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Author Biographies

Pavlos C. Symeou is a lecturer in Marketing at the Faculty of Management and Economics of Cyprus University of Technology. He obtained his PhD in Business Economics from Judge Business School of the University of Cambridge. His research interests include, inter alia, the role of technological convergence in corporate strategy, the marketing strategies of cultural organizations, and the interactions of firm performance with aspects of corporate social responsibility.

Philemon Bantimaroudis is an associate professor in the Department of Cultural Technology and Communication at the University of the Aegean. He received his PhD in communication from the University of Texas at Austin, USA. His research interests include media and cultural organizations, political and international communication.

Stelios C. Zyglidopoulos is a university lecturer in Strategy at the Judge Business School of the University of Cambridge, and Fellow of Homerton College. He received his PhD in Strategy and Organization from McGill University in Montreal, Canada. His research interests include, among others, the evolution of corporate social responsibility, the evolution of corporate corruption in organizations, and the role of agenda setting in the commercial success of business and cultural organizations.