

Evaluation
of the Report by Dr. Thorsten Hennig-Thurau *et al.*,
“The Last Picture Show? Timing and Order of Movie Distribution
Channels” (Jan. 2007 *)

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ABSTRACT

The basic data underlying the research by Hennig-Thurau *et al.* consists of the outcomes of (bipartite) surveys, which form the core of the report. For that reason, my critical comments are directed primarily at the surveys. I have raised a number of objections to their structure as well as to the way the questions were formulated.

Concerning the questions about respondents' past media consumption, three kinds of criticism are brought forward here: (1) the questions were too detailed and much too quantitative in nature to yield reliable answers, (2) no investigation was undertaken to ascertain that the non-respondents did not significantly deviate from the respondents, and – most importantly – (3) the questions about past media consumption were asked without setting a time limit.

Still more dubious were the questions about potential preferences concerning combinations of windows and prices. The answers to these questions are not reliable because: (1) they concerned hypothetical future situations, (2) they concerned too many combinations diverging in more than two aspects; and (3) the answers were without engagement.

Even a few of these objections would be sufficient to justify a conclusion that the surveys cannot have produced reliable answers. It is impossible that under these circumstances the answers could yield correct and even precise conclusions. It is therefore astounding that the results of the research are presented without reservation. Even less understandable is the authors' opinion that presenting the outcomes of their calculations with a precision of one decimal place, rather than as interval estimates, is justified.

These critical remarks are especially relevant concerning the validity of the respondents' expectations of their future preferences: as is commonly known, such polls seldom turn out to be confirmed by reality.

A danger inherent in this research is that some of the conclusions have the character of a self-fulfilling prophecy. If, for instance, the distribution structures in the US considered by the authors as optimal for the studios were to be put into practice, the cinema channel could "be irreparably damaged" (*op. cit.*, page 79). This means that even if the net advantage for the studios turned out to be considerably smaller than predicted, it would hardly be possible to restructure the cinema industry to reverse the damage.

The most important argument in favor of launching a feature film exclusively in the cinemas, a point made also by outstanding studio executives as well as by the European Commission, is that the cinemas are the showcases for all the channels through which films are brought to the public, and that they generate success-breeds-success effects (SBS). The authors of the report acknowledge this role played by the cinemas, but suppose that it could also be fulfilled by other channels if they were the first outlet. They admit that this point of view is not confirmed by data or by research, and suggest that the role of these factors be tested in future research. That is the only one of their recommendations that I would like to follow without hesitation. My advice to the cinema exhibitors' associations and their umbrella organizations is, therefore, to commission specialized institutes to investigate not only the effects of the cinemas as a marketing tool, but also the ways in which these effects are working and may be improved.

Because there were reasons for doubting the methodological correctness of the research, I asked two professors of methodology to give their opinion. After they had assured me that the research is methodologically unsound, one of them, Dr. G.J. Mellenbergh

(University of Amsterdam), was prepared to write a short essay about methodological errors made in the study, to be incorporated as a separate section in this text. The main conclusion of that essay is that **"the results of the study are not appropriate for making decisions about movie distribution channels"**.

Considering this conclusion by an outstanding methodologist, one might wonder whether critical remarks on other aspects of the study, as elaborated in this paper, are still needed. However, despite a certain degree of overlap, such doubts would be unfounded, because even if the study were statistically correct in a narrow sense, its conclusions would still be questionable since the respondents' answers are not reliable.

CONTENTS

	page
Abstract	2
I. Introduction and definition of the problem	5
II. The information-gathering method	8
II.1 Numbers of respondents	8
II.2 The questionnaires	9
II.2.1 Questions about actual behavior	9
II.2.2 Questions about preferences	11
III. Methodological Comments on the report "The Last Picture Show?" by Dr. G.J. Mellenbergh	15
IV. Missing data, assumptions, and conclusions from the report	17
IV.1 Information lacking in the report	17
IV.2 Underlying assumptions of the research	17
IV.3 The results of the research	18
V. Summary conclusions	22
V.1 Validity of the results of the survey and of the conclusions based on them; inconsistencies	22
V.2 The role of exhibiting films in cinemas as a marketing tool for all channels of film distribution	23
V.3 Final conclusions and recommendation	24
Epilogue	25
Appendix A Success-Breeds-Success Questions	26
Appendix B Example of Conjoint Task	27
Bibliography	28

I INTRODUCTION AND DEFINITION OF THE PROBLEM

In recent decades, the subject of the “windows” system has caught the attention of various stakeholders as well as of the organizations which represent them. However, it is only in the last few years that this has led to fierce discussion and in some countries even to clashes between cinema operators and distributors. It comes as no surprise, therefore, that publications on the subject have recently appeared beyond the confines of the trade journals of the movie industry.

This was particularly the case with the article by Joshua Chaffin in the *Financial Times* of 11 August 2005, "Screen test: Hollywood studios are facing a journey into the unknown", followed by the article "10 Questions for Ron Meyer" in the 5 September 2005 issue of *TIME*. Considering that these articles gave the opinions of prominent representatives of mainly major companies, some diametrically opposed to each other whilst others more nuanced, it seemed opportune to me to write a critical overview for the Dutch trade journal.¹

To the English version of the above-mentioned article, which had been translated at the request of Ad Weststrate (President of UNIC and at the time also of the Netherlands Exhibitors' Association [NVB]) for the member associations of the International Union of Cinemas (UNIC), the European umbrella organization of national cinema associations, I have added an epilogue. The gist of that epilogue is that although the arguments in favor of the window system, and especially the theatrical window, come from the European Commission, from commissioned reports by scientific bodies and from the *Fédération Int. des Associations de Distributeurs de Films* (FIAD),² as well as from a number of prominent officials within the American film industry, these are based on practical insights and evidence rather than on the results of quantitative research. The epilogue therefore closes with the wish that such a research project be commissioned soon. At the time, I took it for granted that such a research would be accompanied by an advisory committee consisting of experts from all relevant sectors of the film industry. That industry has now been presented with the results of the recent research, involving neither the NATO (National [US] Association of Theatre Owners) and the European UNIC, nor the FIAD.

The attention of the film industry, in this case UNIC, was drawn to this report by an article by Andrew Edgecliffe-Johnson in the *Financial Times* on 12 March³. Shortly thereafter, the report was sent round by UNIC themselves to the people on their distribution list.

This report appears to contain results regarding the effects certain changes in the length of separate windows, and even in their order, would have on the revenues of the production companies, especially the studios of major companies. The conclusions which the report draws from these results are essentially that certain changes in the distribution structure would increase studio revenues by percentages the accuracy of which are presented down to

¹ "Windows en de toekomst van de bioscopen. Geen minimalisering, maar optimalisering!" [Windows and the future of the cinemas. Not minimization, but optimization!], in *Holland Film Nieuws* of October 2005. Not long thereafter my contribution about windows to the textbook "Basisboek Entertainment-marketing" (ed. Henk Penseel, Bussum, 2006) was also published.

² Discussed in my book "Production is key in the film industry. Evaluatie van het speelfilmbeleid in het kader van het mediabeleid van de Europese Unie" [Evaluation of the feature film policy in the framework of the media policy of the European Union] (Lelystad, 1998). These arguments have been briefly mentioned also in the speech by UNIC President Ad Weststrate, "UNIC's struggle for a workable window system. NATO's and UNIC's converging policies" at Cinema EXPO Amsterdam, 26 June 2006.

³ "Hollywood could gain from film release changes"

the first decimal point. An attention-grabbing statement in the report's abstract claims that what the authors consider to be the most lucrative window system can produce increased revenues for the studios of up to 16.2%. According to the authors, this effect would be accompanied by "devastating effects on other players such as theater chains".

The key argument invoked by those who favor an initial window exclusively reserved for movie theaters, is that theaters form an important marketing tool, a "showcase" (=window) for the whole raft of ways movies are shown⁴. It is true that this is just an opinion, and cannot be fully tested without research based at least partly on experiments, but the recent window study too is based merely on survey results. That the report nevertheless unreservedly claims to deliver reliable and exact results immediately raised doubts in my mind as to the correctness of the method used.

If the report had stated that a certain change in the distribution structure would increase the revenues of the studios by, for example, approximately 15%, that would have been considered a sensational statement which would in turn be subject to evaluation and stimulate further research. But since it stated that the revenue increase would be 16.2%, whilst cinemas in the US would be facing a 40.1% reduction in revenues*, the statement struck me as somewhat absurd considering the nature of the research (p. 73). Of course the issue here is not a question of 1.2% more or 1.2% less, but rather that the researchers have failed to appreciate - or have ignored - that a study based on surveys alone cannot deliver predictions of such accuracy. It is, therefore, understandable that one have misgivings about the reliability of the rest of the research. Moreover, it is not clear what led the report's authors to present their results with a degree of accuracy which is not only unnecessary but also diminishes the credibility of the report.

What also prompted me to write these critical comments is that the authors of the report implicitly assumed and took for granted that their findings/recommendations would be implemented.** These comments should not be considered a discussion of windows (let alone a comprehensive one), but an argument showing that the research method used by the authors has not yielded reliable results. Naturally, my argument addresses some important aspects of the problems concerning windows.

It is understandable that the authors of the report strove to provide a compact presentation of a complex matter. However, they went too far in this regard, and thus the clarity and comprehensibility of the text have to some extent suffered.

The critique in this evaluation of the report focuses mainly on two aspects. On the one hand, it refers to the questionnaires and the significance of the conclusions drawn from the responses obtained, which form the basis of the authors' analysis. This is discussed in the next section. On the other hand it addresses the statistical aspects of the surveys, which are dealt with in the Section III. In Section IV attention is devoted to the data which are absent from the report and to the underlying assumptions, followed by an overview of the main findings of the research. In the last section the conclusions of this evaluation are presented.

⁴ Also mentioned in the publications under footnote 2, and perfectly formulated in: William Kidd and Jung Hwang, CPA, "Movie and Entertainment. Technology May Revolutionize Media Consumption, but Don't Expect Consumers to Shun the Cinema" (Wedbush Morgan Securities, April 2007), p. 29.

* GBO was probably meant. The reduction should, however, concern the expected decrease of cinema attendance at the existing prices, because the cinema operators' price reactions to such a decrease are not known.

** The authors of the Wedbush Morgan Securities report, cited in n. 4, on the contrary, are "very sceptical" about the possibility that such an event will take place, because only experiments with important movies could lead to reliable conclusions, and it does not appear likely that the majors will "some day" take that step (*loc. cit.*).

Because I had serious doubts about the correctness of the methods applied in the research of Hennig-Thureau *et al.*, I consulted two professors of methodology, Dr. H.H. van den Bergh (Utrecht University) and Dr. G.J. Mellenbergh (University of Amsterdam). After both had assured me that the methods applied were inadequate, Dr. Mellenbergh agreed, upon my request, to write a short essay on this matter, to be incorporated into the text of this evaluation. (The third section below). In addition, I have made use of (Chapter 9 – Surveys of) the textbook "Advising on research methods" by H.J. Adèr and G.J. Mellenbergh, which was in preparation at the time I wrote this evaluation.*

* The quotations from this book refer to pages of the meanwhile published version.

II THE INFORMATION-GATHERING METHOD

In keeping with what has been suggested regarding the evaluation of the national 2-for-1 discount actions⁵, it may be argued that an ideal analysis would be one based on large-scale experiments with one or a few distribution channels in a part of each country surveyed, in this case the US, Germany and Japan, with the existing window systems in the rest of these countries left unchanged in order to serve as control groups. However, because this analysis was specifically meant to yield information concerning an optimal distribution system, the alternative distribution channel(s) to be used within the experimental group ought to have been determined in advance. These could have been one or more possible alternative modes, determined partly on the basis of the results of test surveys. For various reasons, however, such a large-scale, so-called quasi-experimental project would have been difficult if not impossible to realize. Another type of experiment could be to launch a number of commercially important movies using an alternative distribution channel, a method that would, however, require a very intensive system of informing the public.

Another possibility was to conduct surveys in which the respondents are asked how they would use certain distribution channels, were these to be applied instead of the current windows regulation. The researchers were right not to have opted exclusively for this method of research, because, as is well-known in social psychology, respondents' answers to the "What would you do if....?" type of question generally do not reflect actual behavior.

What the researchers have done is ask questions which they considered relevant in the above-mentioned form, but they included other questions as well, inquiring about choices made in the past.

Before proceeding to discuss this method of inquiry in further detail, we will first examine and discuss the information on the numbers of respondents.

II.1 Numbers of respondents

The numbers of persons approached (n) were: 1,701 in the US, 1,802 in Japan, and 1,591 in Germany (p. 69). They were approached by e-mail with the request to fill in an Internet questionnaire, offering them a \$1.00 award. After eliminating respondents who filled in the questionnaire in less than five minutes, 1,770 respondents remained, of which 588 were in the US, 593 in Japan, and 589 in Germany.

On behalf of the German cinema monitor, the GfK Consumer Panel, 20,000 respondents a month are asked questions, which they answer based on diaries they are asked to keep of their media consumption. The composition of the group changes over time, due, among other things, to people moving house.⁶ It is clear that the 1,591 German residents who were approached on a single occasion for the window research, and certainly the above-

⁵ "2-for-1 2006. Evaluatie van de 2-voor-1-acties in de Nederlandse bioscopen, arthouses en filmtheaters" [Evaluation of the 2-for-1-(discount)actions in the Dutch cinemas, arthouses and municipal cinemas] (Neth. Film Research Foundation/PSAU, Utrecht, January 2007), p. 7

⁶ Information provided by the Filmförderungsanstalt [German Federal Film Board FFA], Statistics Department.

mentioned figure of 589 respondents, cannot compete with the 20,000 respondents surveyed monthly for the German cinema monitor. Furthermore, the percentage of respondents in the latter group is of course much higher than in the case of the window research, given the structure of the monitor. Moreover, by using a panel, fewer respondents are needed for a satisfactory outcome than when approaching people on an ad-hoc basis, as was done in the case of the window research.* The ratios between the numbers of respondents in the window research and those used by the German and the Dutch cinema monitors respectively, are thus the opposite of what might have been expected based on the above-mentioned information.

The following overview may bring more clarity:

Table 1

country	inhabitants in 2005 (million)	n window research	n cinema monitor
USA	298.2	1,701 (588 ¹)	
Germany	82.4	1,591 (589 ¹)	20,000
Japan	128.1	1,802 (593 ¹)	
Netherlands	16.1		3,053 ²

1. Number of respondents, after elimination of respondents who filled in the questionnaire too fast

2. Source: MarketResponse Nederland B.V., "NFC Bioscoopmonitor [Cinema monitor] 2006" (Leusden, April 2007)

II.2 The questionnaires

Copies of (parts of) the two questionnaires (Appendix B on p. 82 and Figure 3 on p. 75 of the report respectively) have been incorporated here as Appendices I and II.

II.2.1 Questions about actual behavior

As becomes clear in Appendix I, the survey consisted of ten very detailed questions about the actual media use of the respondents; they were even asked to express their actions related to DVD use as a percentage of the total number of similar actions they performed. An example of these questions can be found below:

DVD rental	Of all DVDs you have rented from a video store so far, what proportion of those did you rent because you missed the movie in theaters, but heard from friends or acquaintances it was good?%
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* In the report "De Bioscoopmonitor bekeken. Een technische en inhoudelijke evaluatie van de Bioscoopmonitor 2004" [A closer look at the Cinema monitor. A technical and in-depth evaluation of the Cinema monitor 2004] (Netherlands Film Research Foundation)/PSAU, November 2005) an example of this is given: in the "Continu Kijkonderzoek" [Continuous Audience Survey] 1,100 households were surveyed, whilst in the ad-hoc approach for the "Printbereiks Onderzoek" [Print Monitor] c. 24,000 respondents were involved (p. 6).

The following objections can be made to this way of conducting a survey:

1. *With regard to the nature of the questions:*

The questions concerning actual actions and accompanying motives (Appendix I) are much too specific⁷, i.e. so detailed and of such a quantitative nature that respondents cannot reasonably be expected, even with the best intentions, to respond with at least a reasonable degree of truthfulness. (Based on this consideration I would, as an addressee, refuse to answer such questions.) Apart from this, as became clear with the Dutch cinema monitor, the longer the period prior to answering such questions, the less accurately respondents answered.⁸ For this reason the questions in the Dutch as well as in the German cinema monitors are asked every month, and respondents in Germany are also requested to keep a diary. Precisely because this aspect is particularly taken into account in the German cinema monitor, it is remarkable that this has not had any consequence for the window research, of which the lead researcher is connected with a German University (Bauhaus-University in Weimar). This deserves serious criticism.

A lot of research has been performed regarding estimation of the frequency with which certain events occur. When asked, people tend to rely on the ease with which they are able to remember such events. This phenomenon is known as the *availability principle* of Twersky and Kahneman.⁹

The reliability of memory also plays an important role in the psychology of law. Conclusions drawn in this area are also relevant to the issue at hand, regarding respondents' ability to remember aspects of their own media consumption.¹⁰ It has become clear that the frequency of events which are often discussed and commonly written about is strongly overestimated, whilst that of equally frequent but less well-known events is strongly underestimated. This should therefore be true of cinema visits as well as of the purchase and rental of DVDs about which a great deal is likewise commonly written. The availability principle is also important in the case of events which are more or less systematically repetitive. If these have not been registered correctly (for instance in diaries such as those used in the German cinema monitor), respondents have, when asked, had to make an estimate based on memory. In this case it has become clear that the frequency of often recurring events is underestimated, and that of occasional events is overestimated. One can understand that the accuracy of memory also plays a part in the frequency of cinema visits: respondents who have been to the cinema only once or twice in a recent period can indicate their frequency more accurately than those who have been seven or eight times, for example.

It is not indicated in the report that the results of this type of research have been taken into account. (The renowned researchers Twersky and Kahneman do not appear in the list of works cited.)

⁷ Adèr and Mellenbergh, *op. cit.*, p. 186

⁸ Netherlands Film Research Foundation/PSAU, "De Bioscoopmonitor bekeken. Een technische en inhoudelijke evaluatie van de Bioscoopmonitor 2004" [A closer look at the Cinema monitor. A technical and in-depth evaluation of the Cinema monitor 2004], Utrecht, November 2005]. The questions regarding the previous year, the respondents appeared to have answered with an average margin of error of 50.7%, whilst this was only 20.0% with the questions concerning last month (*op. cit.*, p. 12-13).

⁹ A. Twersky and D. Kahneman, "Availability: A heuristic for judging frequency and probability", in *Cognitive Psychology*, 1973 no. 5, p. 207-232

¹⁰ "Het Hart van de Zaak. Psychologie van het Recht" [The heart of the matter. Psychology of law], edited by P.J. van Koppen, D.J. Hessing and H.F.M. Crombag (Deventer, 1997), p. 284-285

2. *With regard to the response:*

From the total of 5,094 people approached, 1,859 (that is, 36.4%) responded; after eliminating, as mentioned above, those respondents who filled in the questionnaire too fast, this left 588 in the USA, 593 in Japan and 589 in Germany. The net response rate was therefore 34.6 in the USA, 32.9 in Japan and 37.0 in Germany (p. 69). In such a study, this rate of response is meager. It is considered good practice with sample surveys in such cases to carry out a limited survey among non-respondents in order to find out whether, as a group, they differ significantly from the respondents.¹¹ In this report there is, however, no mention of such a control group study having been done.

3. *With regard to time limitation:*

The report does not indicate that a time limitation was applied to the questions about actual media consumption. However unlikely it may be that no limit was applied to the time elapsed, this leaves no other option than to assume that none was applied. This means that, for example, the question cited earlier: "Of all the DVDs you have rented from a video store *so far*, what proportion of those did you rent because you missed the movie in theaters, but heard from friends or acquaintances it was good?", strictly speaking leaves no other possible interpretation than "Of all DVDs you *ever* have rented from a video store,?" [my italics].

Of course, many of those surveyed would have assumed that this could not have been what was really meant. Even with a very good memory, actions taken some years ago cannot be remembered precisely without an accurate registration*. However, this does not alter the fact that omitting the information about how far the respondents had to go back in time when answering the questions (a month, a quarter, a year, or even longer?) makes the individual answers in this part of the survey mutually incommensurable, which strongly decreases their significance. This runs counter to the recommendation that for questions on behavior, an adequate time referent be given.¹²

II.2.2 *Questions about preferences*

From the part of the survey which referred to the preferences of the respondents for one of five circumstances under which a certain film might be watched, the report includes a page with an example, which constitutes Appendix II to this text. The respondents were asked first to choose one film out of nine, about which rather extensive information was given. Those films, none of which had been released yet, were divided into five genres (with one movie belonging to two genres). The circumstances in question concerned combinations of three aspects in the example, namely (1) the time elapsed since the cinema release (six, three, or zero months respectively), (2) the prices (under which a price of nil represented the choice of waiting until the movie is shown on public television), and (3) no, little or extensive "bonus

¹¹ Adèr and Mellenbergh, p. 101

* Such as the one of the Venetian marquis in Franz Werfel's "Verdi, Roman der Oper" (1923), who saved a thousand programs of the performances he attended.

¹² Adèr and Mellenbergh, *ibid.*

material”, i.e. making-of features, deleted scenes, multiple audio commentaries (Table 1 on p. 45)*. Here it must be noted that the films involved were (more or less) exclusively ones that can be considered American, which meant that in the surveys in Germany and Japan no domestic films could be chosen. (Domestic films often have a special attraction.)

At the beginning of this section, it was pointed out that answers to questions such as “What would you do if...?” are generally unreliable. This is not because such questions are not taken seriously, but because a respondent often does not know what he would do in a certain hypothetical situation, and often also because he, sometimes unconsciously, tends to answer in a certain direction. This last reason seems not to have played a large role in the case of the questions referred to, but the complexity of the questions has given the respondents a “conjoint task”, which further reduces the reliability of the separate answers.

Whilst answers to questions regarding decisions to be taken in a hypothetical situation is already of a relatively arbitrary nature, this is *a fortiori* the case when they concern a future choice from among as large a number of possibilities as was included in the survey. From the report it appears that test interviews were conducted, in which, as it is pointed out only experts from the film industry were approached (p. 69). (In an earlier quantitative window study in the Netherlands, in-depth interviews were also held with cinema and video store visitors, whilst the number of suggested situations was also considerably smaller.¹³)

Concerning pre-tests, it is to be recommended that the preliminary version of the survey questionnaires be studied by a panel of experts, who must have substantial knowledge of the topics to be surveyed as well as methodological knowledge of survey questionnaire construction and use. A pre-test of respondents’ understanding of survey questions is also indispensable.¹⁴

The part of the survey discussed here contained several times five combinations of conditions concerning the film chosen by the respondents; of these, they had to select one combination as the most desirable. It is not indicated in the report how many times respondents were asked to make this choice in the survey, in other words how many times each aspect was varied, or for which combinations of other variables this was done. This should have been made known in order to give a sense of the task performed by the respondents. However, as is evident from the example given, there were five prices, three periods, and three quantities of “bonus material”, which makes $(5 \times 3 \times 3 =) 45$ elements that affect choice. One may well ask, therefore, whether this did not demand too much of the respondents. (It cannot be ruled out that less complex questions might have led to a higher response.)

These considerations have led me to undertake a comparison here with the indifference analysis in the theory of value, which is part of microeconomic theory concerning consumer behavior. *Indifference* (or *iso-utility*) *curves* depict combinations of i.c. two commodities yielding the same level of satisfaction to a consumer. As formulated by Alchian: “The greatest virtue of indifference theory is that the indifference curve by using

* In the above-mentioned study of Wedbush Morgan Securities: “feature added commentaries and special versions of the movie” (p. 30) were mentioned as bonus material.

¹³ M. van Gisbergen, “Naar de bioscoop of naar de videotheek? Publieksonderzoek t.b.v. het windowbeleid” [To the cinema or to the video store? Public survey regarding the window policy] (Master’s thesis, Cath. University Nijmegen/Film Research Foundation NFC, 1999)

¹⁴ Adèr and Mellenbergh, *op. cit.*, p. 195-196

an extra dimension facilitates intercommodity analysis”^{15*} With rationally acting decision-makers^{**}, a third factor (the price ratio in combinations of quantities of two commodities) is decisive. Considering that it is hard for decision-makers to make a choice between alternatives which differ in more than one aspect^{***}, it is an added advantage of the indifference curves that the alternatives in this case do in fact differ in just one aspect (e.g. combinations of quantities of two commodities, where the quality of the commodities is constant). For example, an approach based on the principle of indifference curves has been applied to making decisions about the location of a large airport.¹⁶

If in order to obtain reliable answers, the study had limited itself to two aspects, namely the channel (through which the film was viewed) on the one hand and the length of the period since the first release (i.e. the cinema premiere) on the other hand, these questions would have been much simpler, and therefore the answers would have been more reliable. This would have meant abandoning the idea of varying the prices per channel, thus making it obvious that the average of the existing prices (benchmark) should be used. That this limitation was not applied in this research can be explained by the desire of the researchers to discover the quantitative impact of a large number of combinations. By simultaneously varying the prices, the study was also a kind of research into price elasticity, in particular of the demand for DVDs. Yet one wonders whether the answers have not been unduly influenced by the breadth and complexity of the survey.

Given that the goal of the survey was to solve the windows problem step-by-step, the researchers chose a gradual approach in their questionnaires, with three so-called scenarios, in which consecutively more factors were made variable. These scenario groups were (p. 73):

1. the existing situation, with only DVD prices being variable;
2. variable windows from the time of the cinema premiere, and variable DVD prices;
3. also with varying order among the channels.

This method certainly made things easier for the respondents. But that does not alter the fact that ultimately there were an excessive number of possible combinations of variable factors: in Scenario 3 there are 875 possibilities! (p. 73) In my opinion, it would have been better if a less complicated survey had initially been conducted. Its results could then have been used for an experiment, on the basis of which a second round of surveys with again not more than two variable factors could have been carried out. (In these surveys, the prices of the respective channels could have been varied within a particular window structure.)

¹⁵ A.A. Alchian, “The meaning of utility measurement”, *American Economic Review*, 1953, reprinted in *Readings in Microeconomics*, London, New York, Sydney and Toronto, 1968, p. 86

* That theory enabled a deduction of individual demand curves (price demand functions), without utility being measurable (G.J. Stigler, “The Development of Utility Theory”, *The Jl. of Political Economy*, Aug. and Oct. 1950; reprinted in *Essays on the History of Economics*, The University of Chicago Press, 1965, p. 129. The adding up of theoretically constructed individual demand curves leads to a collective demand curve. However, that is not how, in practice, knowledge about (parts of) demand curves is obtained. That knowledge is gained through market research and by trial and error, with the latter really meaning experimentation.

** The supposition of rationality in decision making is a much discussed subject in microeconomic theory.
 *** Regarding elections, this was eloquently stated by Sebastian Haffner: “....., denn keine Wahl ist eine so klare Wahl wie die zwischen zwei und nur zwei Möglichkeiten,” [..., because no choice is as clear as the one between two and only two alternatives, ...] (“Überlegungen eines Wechselwählers”, Kindler, Berlin, 1980/2002, p. 90).

¹⁶ R.L. Keeney, “A decision analysis with multiple attributes: the Mexico City Airport”, *Bell Jl. of Econ. Management Science*, 1973

The results of the above-mentioned window study by Van Gisbergen in 1999 (n=1,000) do not have to be compared here with those of the recent window research project, because the market position of DVDs which has arisen in the meantime, has led to a completely different situation. There is, however, a relevant methodological aspect in which the two studies differ.

As already pointed out, the questions in this part of the survey were asked in the form of “Which of the following ways would you prefer to watch a certain movie?” This question concerned a hypothetical future situation regarding a film that had not yet been shown (but about which extensive information had been released). The answers Van Gisbergen’s questions were aimed at took the form of “If this film had not been shown, then I would have ...”, and concerned a film which had been watched by the respondents no more than three months earlier. Although these questions also concerned a presumed choice, they were referring to an actual rather than to a purely hypothetical situation, which is a positive sign when assessing the reliability of the answers given.

The last critical remark to be made regarding the reliability of the answers given to questions regarding choices to be made in hypothetical future situations is based on decision theory.

In the process of making decisions which (partly) depend on expectations of future events or developments, participants make a real effort to imagine these. Despite existing mathematical methods, whereby in experimental situations uncertain future events are transformed into a kind of certainty, they will be tempted to surround their statements with certain qualifications. They do this because they will be confronted with the consequences of their expectations, and may even be held (partly) responsible for them.¹⁷ On the other hand, if the participants are asked to give statements regarding unimportant future actions, i.e. regarding their future choices such as those asked in the survey, their statements have no consequences for them. The expectations asked about in the survey are non-binding, and thus their responses will be more rash and lazy in manner.

¹⁷ Cf. H.M. Shefrin and M. Statman, “Explaining Investor Preference for Cash Dividends”, *Jl. of Financial Economics* 130, 1984, p. 253 ff

III METHODOLOGICAL COMMENTS ON THE REPORT “THE LAST PICTURE SHOW?”

by Dr. G.J. Mellenbergh,
Professor of Methodology, University of Amsterdam

The report presents the findings of a study of different channels for the distribution of movies. The topic of the study is highly relevant for motion-picture employers, employees and viewers. In what follows, I provide some comments on the research methodology of the study. In particular, the following aspects are addressed: (1) the sampling procedure, (2) the measurement instrument, and (3) the presentation of the results of the statistical analysis of the data.

Two comments are made on the sampling of respondents. First, in the US, Japan and Germany, the respondents were randomly selected “from the research company’s database which mirrors each country’s overall population” (bottom p. 69 of the article). The respondents in the sample were invited by e-mail to participate in the study. The authors state that each of the research company’s databases mirrors each of the country’s overall population. However, the relevant question is not whether a database mirrors the overall population, but whether the database mirrors the target population. The target population of this study is the population of movie viewers, which will deviate in many aspects from the overall population of a country. Therefore it is doubtful whether the sampling frame (the research company’s database) is adequate for the target population (movie viewers). Second, the nonresponse rate is very high: about 64% of the invited participants did not respond to the survey questions. Moreover, the authors do not report that they used methods to reduce nonresponse, such as those described in the survey literature (Dillman, 2000). The consequence of the high nonresponse rate may be that the sample of respondents is severely biased with respect to variables which are relevant for the study.

Appendix B of the report contains the “success-breeds-success” (SBS) questions used in the study. The questions are very broad and nonspecific, and the respondents are asked to give an exact answer (a percentage). For example, the first question reads “In general: What proportion of all movies you have seen in a movie theatre...”. Belson (1981) convincingly showed that respondents give unreliable answers to far less broad and more specific questions than the success-breeds-success questions. The survey literature gives a large number of recommendations for writing good survey questions (e.g., Czaja & Blair, 1996). Moreover, methods are described to refresh respondents’ memory when they are asked to report on past behaviors (De Leeuw *et al.*, 2003). However, these methods were not applied in the study. Although there is no reason to doubt that the respondents conscientiously answered the questions, the accuracy of their answers cannot be taken for granted.

The final comment is on the presentation of the results of the statistical analysis of the data. The authors report point estimates of population parameters, such as an increase in revenues of 16.2%. To study the robustness of the results, the authors did a sensitivity analysis. They systematically varied the respondents’ answers by $\pm 20\%$ (p. 77 of the article). However, it is not known whether the variation of the sensitivity analysis matches the sampling variation. Therefore, for an adequate interpretation of the point estimates the standard errors are needed, which can be used to compute confidence intervals. For example, the interpretation of the above-mentioned 16.2% depends on the standard error. If the standard error is 1, the 95% confidence interval is between about 14.2 and 18.2%. The classical interpretation of this interval is: If samples of the same size are repeatedly selected randomly from the population and if, for each of these samples, the 95% confidence interval is

computed, 95% of these intervals will contain the population percentage. However, if the standard error is 8, the 95% confidence interval is from about 0.2 to 32.2%. In the case of a standard error of 1, it is likely that substantial profit will be made, whereas for a standard error of 8 the profit can vary between large and negligible. The statistical model for the analysis of the data is complex, and it might be hard or impossible to derive standard errors using the assumption of this model. However, it is possible to apply bootstrap methods to compute confidence intervals (Efron & Tibshirani, 1993).

To conclude, the sampling procedure and measurement instrument may have resulted in parameter estimates that are systematically biased. Moreover, the sampling variation of the parameter estimates cannot be judged because standard errors are not reported. Therefore, the results of the study are not appropriate for making decisions about movie distribution channels.

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IV MISSING DATA, ASSUMPTIONS, AND CONCLUSIONS DRAWN FROM THE RESEARCH

IV.1 Information lacking in the report

As remarked in sub-section *II.2.1* the report mentions nothing about a limitation of the period covered by the questions asked about actual DVD use (Appendix I). The absence of such limitation on the time prior to answering means that the answers given have hardly any value.

As has been ascertained in sub-section *II.2.2*, the report does not in fact provide any information on the degree to which the variable factors in the survey about preferences (example in Appendix II) were varied. As regards prices, the survey refers to the price range and the number of prices in between. It must be stated that it is hardly possible for a respondent to make a well considered choice when the price differences are small. It is remarkable that the report recommends setting the retail prices of DVDs in Japan “*slightly lower*” [my italics] (p. 73), which indicates small prices differences.

IV.2 Underlying assumptions of the research

The ‘Model Assumptions’ are listed on pages 68 and 69 of the report. Aside from the assumptions one might expect (such as sufficient numbers of cinema screens and no shortage of DVDs in the video stores), there are several which deserve closer attention here:

- *In line with the “the studio perspective” of the researchers, they focus on studio-produced motion pictures and the conditions under which these movies are distributed, where it is assumed that most movies produced by studios are distributed by their “sister companies”:*
This starting point is too limited, since an important share of studio films are rented out by independent national distributors in Europe.
- *Effective studio advertising, where consumers are aware of the new studio releases and where publicity is equally effective for all channels:*
This assumption is probably correct for blockbusters, which are almost the only type of film for which advertising starts long before their release. However, this assumption is not right for the other types of films, for which local advertising is done by cinema operators, something that also affects revenues via other channels.
- *Homogeneous expectations (i.e. knowledge) about the timing of a movie’s release in the different types of channels, and of the actual release dates:*
This assumption is most probably not realistic. The aforementioned research by Van Gisbergen has shown that of the (Dutch) consumers only 30% had a correct picture of the windows being used. (Furthermore, a distinction must be made between being conscious of being uninformed, and having wrong impressions.)
- *Cinema visitors watch a movie in the cinema only once:*
Today this assumption reflects reality more than it did in the past, but especially in the US, substantial revenues still come from repeated attendance at popular movies.*

* Information from John Wilkinson (see acknowledgements on the title page)

- Of key significance is the assumption that the phenomenon of “*Success Breeds Success*” (SBS) is not exclusive valid for first release in cinemas, but also exists in every channel in which a movie is shown for the first time:
This assumption refers to the function often attributed to cinemas, namely that of “(shop) window” for all channels through which films can be shown. This aspect will be discussed in further detail in the final section of this evaluation.
- “*The allocation of revenues between studios and other players is constant over the course of a movie release*”:
Considering the fact that film rental percentages drop the longer a movie is shown in a cinema, this assumption is not realistic with regard to cinemas. In the case of DVDs it is true that the studios’ share remains constant at first, but declines when demand for a certain title falls.

IV.3 The results of the research

The step-by-step survey mentioned and discussed in sub-section II.2.2, whereby three scenarios are distinguished, is presented next to the overview of the results obtained. This has a negative effect on the clarity of the presentation. The results obtained for each scenario are as follows (p. 22 ff):

Scenario group 1:

US: With the traditional way of distribution, the “cinema-to-DVD window” remains superior if the price of DVDs is raised from \$17.25 to \$22.00. Studio revenues [as a result of the raised prices of DVDs] would then increase by 2.1%.

Japan: Studio revenues would increase by 1.4% at slightly reduced DVD prices.

Germany: Studio revenues would increase by 4.0% with a DVD price raised to \$ 22.00.

Scenario group 2:

US: Studio revenues would be maximized in the case of a simultaneous release in the cinemas, on DVD rental and on VOD, with a window of three months for DVD sales at a retail price of \$ 22.00. Here the questionable prognosis of a rise of studio revenues by 16.2% would thus be achieved, with the ominous prediction of a reduction in box office grosses (in the USA) of 40.1%

Japan: For the studios, a cinema-to-DVD sales window of three months, followed by a window for DVD rental of nine months thereafter, would be ideal, i.e. would increase the studio revenues by 11.6%. Unlike in the US, a reduction of the DVD price here would be better for the studios.

Germany: Almost identical results as for Japan. A shortening of the window from four to three months for DVD sales, and a prolonged window of twelve months for DVD rental and VOD, would raise studio revenues by 14.2%, while revenues of DVD retailers and cinema

operators would rise by 28.3% and 14.6% respectively; those of DVD rental stores, however, would decline by 30.9%.

Scenario group 3:

Release in the cinemas after an earlier release via other channels appears to be disadvantageous for the studios, due to the fact that the [additional] decline in box office receipts would no longer be compensated for by rises in studio revenues from other channels.

At the end of the main text of the report (p. 80), an attempt has been made to find win-win situations, or at least distribution structures where the advantages calculated for the studios would not be at the expense of one or more of the other parties involved. A comparison between the structures in the US and Germany that are thought to be most lucrative for the studios, and the win-win situations considered for these countries show rather remarkable differences.

In the following table, the optimal windows according to Hennig-Thurau *et al.* are given for each channel, together with percentage changes in the revenues caused by these, as well as the relevant data corresponding to the win-win situations. The percentage changes in the revenues have, of course, been calculated using the values for the existing situations as points of comparison. Unfortunately and remarkably, these benchmarks are not mentioned in the report, nor is the year to which they refer (2005 or 2006?). As far as the cinemas are concerned, this does not matter because in none of the scenarios are the films released later in the cinemas than through any other channel. The DVD windows in the US are indicated in a publication of NATO, being on average four months and 18 days in 2005, and four months and eleven days in 2006.¹⁸

As has been noted in the last paragraph of Section I, the clarity of the text at times leaves something to be desired. This is also the case for the specifications of the calculated results, of which Table 2 below provides an overview.

Table 2 Windows and changes of revenues

	(1)	(2)	(3)	(4)	(5)
	benchmark window *	max. studio revenues		win-win-situation	
		length of window *	change in revenues	length of window *	change in revenues
<i>US:</i>					
theatres	0	0	-40.1%	0	0 %
DVD sales	4.6 ¹	3	+49.6%	3	+11.1%
DVD rental	.	0	.	6	+4.5 %
VOD	.	0	.	6	+7.5 %
studios	(not appl.)	(not appl.)	+16.2%	(not appl.)	+7.3 %

¹⁸ "Comments by John Fithian" (Las Vegas, 3 March 2007), p. 2, resp. John Fithian and Patrick Corcoran, "NATO Windows Report Distribution - 2008 YTD" (8 Sept. 2008)

<i>Germany:</i>					
theatres	0	0	+14.5%	0	0 %
DVD sales	±4 ²	3	+28.3%	3	+19.1 %
DVD rental	±4 ²	12	-30.9%	6	±0 % ³
VOD	.	12	.	12	0 %
Studios	(not appl.)	(not appl.)	+14.2%	(not appl.)	+7.6%

* Number of months from the theatrical release

1 2005 (in 2006: 4.4, according to NATO Windows Report Distribution - 2008)

2 information from Dr. Andreas Kramer (Vice President and CEO of the HDF)

3 marginal benefits

The data in the table serve as grounds for the following remarks based on common sense:

US:

1. *Maximum revenues at the studios compared to the existing situation:*

It is not plausible that the revenues of the DVD retailers would rise by ca. 50% because of a shortening of the window from 4.6 (or 4.4) months to three months.

Germany:

2. *Maximum revenues of the studios compared to the existing situation:*

It is not plausible that box office grosses would rise by 14.5% if the window for DVD rental were lengthened from four months to twelve months, while on the other hand a shortening of the window for DVD sales from ca. four months to three months, would apparently be very advantageous for DVD sales. It must be noted here that the turnover from DVD sales in Germany in 2005 was 4.2 times higher than that from DVD rentals¹⁹. This means that the 28.3% rise in DVD sales would involve a much higher absolute amount than a drop of 30.9% in DVD rentals.

3. *Win-win situation compared with the existing situation:*

It is not plausible at all that a lengthening of the window for DVD rental from ca. four months to six months, with a simultaneous shortening of the window for DVD sales from ca. four months to three months (which would benefit from this by a 19.1% increase in revenues), would have no effect on revenues from DVD rental.

The different scenarios show a number of recommended changes in DVD prices. The admission prices of (premiere) cinemas have been kept the same. This is understandable, because the research was focused on changes in the distribution structure relating to the other channels, and (rightly) not on the price sensitivity of the cinema audience. With Scenario 2 (and 3) it is assumed that the studios will make decisions about the prices of DVDs (p. 73). However, in the accompanying footnote 7 it is pointed out that the distributors and not the studios are the decision-makers with regard to these prices. Considering that a sizeable share of DVDs is delivered to DVD retailers by subsidiaries of the studios, this does not really matter.

Where such decisions cover more than giving advice regarding sales or rental prices to companies not affiliated with a studio, this could be considered a case of retail price fixing.

¹⁹ European Audiovisual Observatory, Yearbook 2006, Vol. 3, p. 89

A moderating remark in the report refers to the consequences for piracy. The mentioned changes in the window arrangement would lead to earlier circulation in the distribution chain of digital high-quality versions, as a result of which pirates could lay their hands on these (even) earlier than they can now. The report therefore recommends conducting research into the effects the changes to the window arrangement would have on piracy (p. 80).

As far as piracy is concerned, it is to be noted that it limits the freedom of holders of rental rights* to determine the sales prices that they consider optimal for their (by definition legal) products. This can have an impact on the increases in DVD prices recommended in the report as well as on the consequences thereof.

* The EU-definition of “rental”: making available for use, for a limited period of time and for direct or indirect economic or commercial advantage; (art. 2.1.(a) of Directive 2006/115/EC of the European Parliament and of the Council of 12 December 2006 on rental right and lending right and on certain rights related to copyright in the field of intellectual property, Official Journal of the European Union, 27.12.2006 – L 376/28).

V SUMMARY CONCLUSIONS

V.1 Validity of the results of the survey and of the assumptions based on them; inconsistencies

The large number of criticisms regarding both parts of the survey given in the second section of this evaluation, and *a fortiori* the statistical criticism in the third, offer sufficient reason to consider the results of the survey to be invalid. The argument of the researchers that the respondents' answers to questions about their preferences in a situation corresponding to the existing (benchmark) situation closely reflect what happened in practice (p. 20), may indicate that the answers were serious, but does not prove that this seriousness has led to reliable predictions of preferences in hypothetical future situations. I therefore cannot understand why the researchers thought they could specify the percentages in the report with an accuracy of one decimal place.

The criticism of the methodological and statistical aspects of the report given in the section written by Dr. Mellenbergh would, in and of themselves, be sufficient grounds for rejecting its conclusions. One might wonder, therefore, whether the critical remarks on other aspects as elaborated in this evaluation are still necessary. However, despite a certain degree of overlap, such doubts would be unfounded, because even if the study were statistically correct in a narrow sense, its conclusions would still be questionable since the respondents' answers are not reliable. Therefore the objections concerning the questionnaires in particular, but also the critical remarks concerning the interpretation of what the authors of the report considered to be the results thereof, are indispensable parts of this evaluation.

Precisely because the researchers have described with even a certain degree of compassion the social and cultural consequences of the predicted effects on the cinemas (p. 79), it is incomprehensible that they have presented their findings so unreservedly. This is remarkable also because they expect that a disintegration of the entire cinema branch would cause a "financial setback" for the studios as well (p. 79). This formulation actually means that when calculating the respective increases in studio revenues, the negative effect on the studios of reduced box office grosses was not taken into account. Although this is stated in so many words, it is difficult to suppose that this was intended. In my opinion the authors' aforementioned statement that the harmful consequences predicted for cinemas "*might* be financially attractive to movie studios and DVD retailers, although externalities must be considered if the theater channel was to be irreparably damaged" (p. 79, my italics), is even worse. For this formulation indicates that the researchers are not sure of the correctness of their findings, although this does not fit with the unqualified way in which the results are presented elsewhere in the report, or with the conclusion concerning Scenario group 3. Considering that the researchers should have taken into account that the significant increases and decreases of revenues they predict will attract particularly great attention, it is questionable, as far as I am concerned, whether their method of presentation can be considered responsible.

The result given for Germany, namely a window of three months for DVD sales followed by a window of nine months for DVD rental and VOD (p. 24), is surprising. This system would increase studio revenues (by 14.2%), which would fit in with the general line of findings in the report. The accompanying revenue increase of 28.3% for DVD retailers would also still fit, but it is incomprehensible how cinema operators would also benefit (by 14.5%)

from this arrangement. If this calculation were accurate, all concerned parties in Germany would choose this option (with the exception of the disgruntled but outvoted DVD rental chains, which stand to lose 30.9% in revenue)!

As stated on page 69 of the report, box office grosses abroad in 2005 exceeded those in the US by 60%. For the studios it is, therefore, important to learn more about the effects those changes in distribution structures will have in countries other than Japan and Germany.

In light of the percentage changes which have been presented with an accuracy of one decimal place, the report's recommendation of "fine tuning" the distribution strategies (p. 79) is certainly to be seen as an understatement.

A general conclusion that may be drawn is that the distribution methods recommended as optimal for the USA, Japan and Germany respectively, and the methods judged here as second best, differ so greatly from each other and therefore present such a capricious overall picture of the recommendations that these, in my opinion, come across as implausible.

The ultimate contradiction here is the difference between the distribution structure considered as optimal for Japan, namely a window of three months for DVD sales followed by a starting window of nine months for DVD rental, on the one hand, and on the other hand a second-best situation with an exclusive first release on VOD, followed by a window of three months for cinemas and DVD sales, and after that a window of nine months for DVD rental (p. 73). Apart from the researchers' finding that release will always start in the cinemas as well, the differences between the two options are so great that one can hardly take this seriously. It is also hard to defend internationally that in some of the distribution structures presented as optimal, DVD rental comes before DVD sales, whilst in other cases it is precisely the other way around.

V.2 The role of exhibiting films in cinemas as a marketing tool for all channels of film distribution

This role has already been referred to in the first section, as well as in the overview of the assumptions made by the researchers (sub-section IV.2).

The report maintained that, although "success breeds success" (SBS) effects have until now been generated only by cinemas, these could likewise be generated by other channels such as DVD rental and VOD, if the films were shown first via these channels (p. 66 and 69). The researchers pointed out that until now this could not be investigated by surveys because the public has experience only with cinemas being the first to show films. They consider it just as likely, however, that the effect would work in the opposite direction (p. 70ⁿ). It is acknowledged in the report that no objective data exist on the question of how SBS could be reached via different channels, which is considered a challenge for future research (p. 34). That is the only recommendation in the report which I would want to follow without hesitation. There are specialist firms which can perform such research. It is recommended that national and international interest groups of cinema operators start this research as soon as possible. As long as there is no knowledge about this area, recommendations such as those presented in the report on window research should be considered premature. An important consideration is that an analysis of the SBS effect generated by the cinemas, may provide insights into the extent to which these are effects specifically caused by cinemas.

V.3 Final conclusions and recommendation

A very dangerous aspect of the research performed by Hennig-Thurau *et al.* is that some of their findings are of the nature of a self-fulfilling prophecy. If, for example, the distribution structure considered to be optimal for the US were actually to be implemented, the (American) cinema industry would indeed “be irreparably damaged” (p. 79). This would mean that, even if the additional net revenues of studios should appear to be (much) less than calculated, the original situation could no longer be restored*. That should be an important additional reason for the studios not to implement the changes indicated in the report, before it can be assumed that the accuracy of the results of the research has been properly verified.** This is certainly not the case with the results of the research carried out so far.

Of overriding importance, moreover, is the final conclusion of the methodologist Mellenbergh (in the third section), that “**the results of the study are not appropriate for making decisions about movie distribution channels**”.

The argument that cinemas are an important marketing tool for all the channels for film exhibition is put forward not only by the cinema operators and theatrical distributors, but also by many important studio representatives. The authors of the report argue that this role of the cinema, which they acknowledge, could also be played by a first release via another channel. However, they acknowledge that no evidence has yet been presented to support this claim. In light of this consideration, there is sufficient reason for the (umbrella) organizations of cinema operators to commission research investigating the manner in which the (shop) window function and the success-breeds-success (SBS) effect result from the first release in the cinema, as well as attempting to estimate what these effects would be if first release occurred (also) via another channel.

* That would, for example, be different if the order of DVD sales and DVD rental were reversed.
** Likewise: Wedbush Morgan Securities, *loc. cit.*

EPILOGUE

The previously cited textbook of Adèr and Mellenbergh contains the following statement:

“Usually, they [the clients] visit a methodological consultant for advice on the analysis of instruments, but not for advice on instrument construction. However, instrument construction is a hard job, which needs expert knowledge and special research efforts.” (p. 183)

It does not turn out that the authors of “The Last Picture Show?” sought advice in a sufficient way on either of the two methodological aspects mentioned above. This is incomprehensible, for the following reasons:

- Professional scientists are, or ought to be acquainted with the importance of methodological aspects of complicated research projects.
- As stated in the report, its authors were convinced that following their recommendations would cause "a disintegration of the entire cinema branch, which would be irreparably damaged" (p. 79). Therefore, they must have been aware of the potential consequences of their report. That even this awareness did not induce them to seek sufficient methodological advice, seems reprehensible to me.

=====

Annex I

**APPENDIX B
Success-Breeds-Success Questions**

<i>Multiple consumption success-breeds-success:</i>	In general: What proportion of all movies you have seen in a movie theatre...
DVD purchase	..did you later also purchase on DVD? ___%
DVD rental	..did you later also rent on DVD in a video store? ___%
Download-to-rent VOD	..did you later also download from a legal internet service (e.g. MovieLink, CinemaNow) for a fee? ___%
<i>Word-of-mouth-based success-breeds-success:</i>	
DVD purchase	Of all DVDs you have purchased so far, what proportion of those did you purchase because you missed the movie in theaters, but heard from friends or acquaintances it was good? ___%
DVD rental	Of all DVDs you have rented from a video store so far, what proportion of those did you rent because you missed the movie in theaters, but heard from friends or acquaintances it was good? ___%
Download-to-rent VOD	Of all movies you have downloaded from legal online services so far, what proportion of those did you download because you missed the movie in theaters, but heard from friends or acquaintances it was good? ___%
<i>Charts-based success-breeds-success:</i>	
DVD purchase	Of all DVDs you have purchased so far, what proportion of those did you purchase because you missed the movie in theaters, but it was a huge box office success? ___%
DVD rental	Of all DVDs you have rented from a store so far, what proportion of those did you rent because you missed the movie in theaters, but it was a huge box office success? ___%
Download-to-rent VOD	Of all movies you have downloaded from legal online services so far, what proportion of those did you download because you missed the movie in theaters, but it was a huge box office success? ___%

FIGURE 3
Example of Conjoint Task

0% 100%

In which of the options below would you prefer to view the selected movie? If you are 100% sure that you would not choose any of these options (and only in that case!), please choose the box on the right.



The Da Vinci Code

Den Brown's best selling novel, lavishly brought to the screen by Oscar-winning director Ron Howard (A Beautiful Mind)! Following a murder at the Parisian Louvre, Tom Hanks and Audrey Tautou (The Fabulous Destiny of Amélie Poulain) have to solve a mystery once left behind by Leonardo Da Vinci - and which could shake the foundations of christianity....

Movie theater	DVD purchase	DVD rental	Legal online download (available for 24 hours)	
3 months after the movie's release date	6 months after the movie's release date	at the movie's release date	at the movie's release date	
\$3	\$7.75	\$17.25	\$12.50	
Movie without bonus material	Movie with a limited amount of bonus material (making-of featurette)	Movie with extensive bonus material (e.g. making-of, audio commentaries, deleted scenes)	Movie with a limited amount of bonus material (making-of featurette)	If these are the only options available, I would prefer to wait until the movie is shown on TV
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[proceed](#)

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