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Cultural Diversity in the Movie Industry: A Cross-National Study

François Moreau, Conservatoire National des Arts et Métiers, France
Stéphanie Peltier, University of Paris 1 and University of La Rochelle, France

For many years, the promotion and preservation of cultural diversity has remained a core issue in international debates about free trade. In this paper we propose a framework to assess cultural diversity that is used to compare this diversity in the movie industry between 1990 and 2000 in European Union, United States, France, Hungary, Mexico and South Korea. Our main results are: (i) the ranking of the countries is highly dependent on the dimensions of cultural diversity considered (ii) cultural diversity turns out to be higher in countries where the movie industry receives strong public support (France, European Union, South Korea); (iii) supplied diversity and consumed diversity are positively correlated and the former is always higher than the latter. This evidence suggests that a policy that supports cultural diversity on the supply side seems to match consumers' preferences.

INTRODUCTION

Globalisation is claimed to pose a grave threat to cultural diversity. This is the position adopted during debates within the WTO by those who argue that the exchange of cultural goods and services should be treated as an "exception" to the application of free trade. Considered as restrictive and protectionist, the term "exception", which first appeared during the Uruguay Round, was subsequently replaced by the term "diversity". A group of countries, led by France, thus proposed that cultural diversity should be established as a principle of international law, calling for the adoption by the international community, under the aegis of UNESCO, of an international agreement on cultural diversity. The underlying rationale of such an agreement is that public welfare is better served by more potential and effective choices as reflected in higher diversity. But what is cultural diversity? How can we measure it? Although it has become a widely adopted credo, the concept of "cultural diversity" is particularly polysemic. States, international organisations and multinational media groups all use this term, without really meaning the same thing. Does diversity refer to the number of works released, the number of works consumed, the geographical origin of cultural products...? The possible meanings are numerous. Yet, within a context of ever-increasing concentration of the international market of cultural industries, the ability to measure cultural diversity is indispensable, to evaluate both the consequences of this concentration and the effectiveness of cultural policies. Hence, the need for an instrument of evaluation of the multiple facets of cultural diversity, enabling international comparisons to be made, has become crucial. However, to our knowledge, no study has yet attempted to carry out an international comparison of cultural diversity in any given industry. Our aim in this paper is thus to propose and test a practical tool for the diagnosis of the condition and evolution of cultural diversity on a national and on an industry level. Of course, we don't intend to raise here the issue of the scope of "culture". Should this scope be restricted to cultural industries such as movie, television, publishing or music? Or should it be broadened, as does UNESCO, to all the activities that are more or less connected with the cultural

traditions of a country (food, health, clothing, sport...)? Though this debate is much beyond the scope of the paper, do notice that the methodology we proposed remains workable whatever the scope of “culture” is. In the first analysis, however, the application of our proposed tool is limited to the film industry, the field in which the debate on free trade is the most heated. Moreover, the study has been carried out for only six countries or geographical zones (France, Hungary, Mexico, South Korea, United States of America and European Union) over the period 1990 – 2000.

Economists have already thoroughly explored the question of diversity in two different fields: that of biodiversity (Metrick and Weitzman, 1998; Weitzman, 1992, 1993, 2000; Solow et al., 1993) and that of technological diversity (Cohendet et al., 1992; Saviotti, 1996; Frenken et al., 1999). In both cases, the central issue is one of arbitration between the costs and advantages of maintaining diversity compared with a situation of standardisation. In the field of bioculture, for example, there is a long-standing trade-off between concentrating on high-yield varieties and maintaining sufficient diversity to lower the risks of catastrophic infection (Weitzman, 2000). Clearly, the construction of a tool for measuring diversity is an indispensable preliminary step for tackling this question. The most successful of these tools was developed by Weitzman (1992): we will look at it in more detail later. It has been used, for example, by Frenken et al. (1999), to evaluate the evolution in technological diversity in four industries: planes, helicopters, motorcycles and microcomputers. In the field of media, the question of diversity is essentially one of guaranteeing the plurality of opinions expressed by different organs of the press. The economic debate is thus focussed on the danger that the concentration of the media will reduce the diversity of opinions expressed¹ (see for example Iosifidis [1999]). If we restrict ourselves to cultural industries, the economic analysis of diversity has, as far as we know, given rise to relatively few contributions. Anderson (1992) analysed the impact of Canadian television broadcasting quotas on the diversity of programming by type of programme. Using an approach similar to our own, Van der Wurff (2002), Van der Wurff and Van Cuilenburg (2001) and Sarrina Li and Chiang (2001) have explored the link between intensity of competition and diversity of television programming. However, their definition of cultural diversity is quite restrictive. Moreover, they do not propose any measuring tool that could be used to draw international comparisons.

The following section is devoted to the methodology of the study, and more precisely to the choice of indicators of cultural diversity. We then present the data and results obtained. The discussion includes a commentary on the results and introduces the debate about the determining factors of cultural diversity, especially industry concentration, the promotional strategies of large groups and public policy.

METHODOLOGY

The three dimensions of diversity: variety, balance, disparity

The literature devoted to biodiversity, technological diversity or to the optimal diversity of a financial portfolio highlights three key properties of diversity (see Stirling [1999] for a survey). These three properties, which establish necessary but individually insufficient conditions to the existence of diversity, are: variety, balance and disparity. Variety refers to the number of categories into which a quantity can be partitioned (for instance the number of species from a biodiversity perspective). Balance refers to the pattern in the distribution of that quantity across the relevant categories. As for disparity, it refers to the nature and the degree to which the categories themselves are different from each other. The greater the variety, the balance and the disparity of a system are, the larger its diversity. In the case of the film industry, these three dimensions of diversity can be presented in terms of three species (or units of analysis): the film, the genre and the geographical origin. According to the first unit of analysis, each film is considered unique. Diversity then increases in direct proportion to the number of films, the level to which occupation of screens and shares in receipts are uniformly distributed between the films and

¹ See the debate on the role played during the spring of 2003 by the different media controlled by News Corp (notably various newspapers in the United States and Great Britain and the television company FoxNews) in the construction of public opinion in Anglo-Saxon countries on the subject of war in Iraq.

the extent to which the films are as “different” as possible. According to the second unit of analysis, the genre, diversity increases in direct proportion to the number of genres available (comedies, drama, cartoons, etc.), the extent to which they are equally well represented and the extent to which the genres are clearly differentiated from each other. Finally, according to the third unit of analysis, geographical origin, film diversity in a given country increases in direct proportion to the number of different geographical origins available, the extent to which these origins are equally well represented and the extent to which they display marked specificities that distinguish them clearly from each other.

The quantitative assessment of variety and balance is straightforward: variety is a simple positive integer and balance is something close to variance. Disparity turns out to be much more difficult to assess. Whatever the subject of analysis is - biodiversity, technological diversity or cultural diversity - the measurement of disparity first requires the establishment of a taxonomy, that is to say a partition of a set of elements in exhaustive and separate categories. It is true that widely accepted taxonomies of cultural goods that could serve as the basis for analysis already exist, (by genre or by geographical origin, for example). However, a crucial problem arises: how can we analyse the mutual disparity between the different categories in the taxonomy? A tool is required for evaluating the *distance* between the different films in terms of their genres or geographical origins. But the most successful economic studies, carried out by Weitzman (1992, 1993) in the field of the preservation of biodiversity, cannot be applied to the question of cultural diversity. The hypotheses put forward by Weitzman are unworkable here. The measurement of disparity he proposes is only effective for perfect taxonomies, in other words taxonomies whose distance is ultra-metric (the disparity changes at an equal rate between the different branches of the taxonomy). We are faced with a double problem. In addition to the vast scale of the calculations required, highlighted by Solow et al. (1993), the hypothesis of ultra-metric distance dramatically restricts the practical scope of such a tool. In the context of cultural diversity, this would mean, for example, that we would consider the disparity between a Korean film and a French film to be of the same scale as that between a Belgian film and a French film, or that the disparity between a comedy and a drama is identical to that between a cartoon and a thriller! As such assertions are hardly acceptable, the question of the measurement of disparity remains unanswered. In terms of geographical origin, we could of course attempt to evaluate the distances between different countries on the basis of a multi-criteria perspective: geographical position (bordering, same continent, different continent), level of development, official language, type of society (Western, Eastern, etc.)². However, our position is that any attempt quantitatively to assess disparity between cultural products would be far too controversial, and would only weaken the proposed tool.

These different considerations have led us to base our evaluation of cultural diversity solely on the criteria of variety and balance. It should, however, be noted that as far as we know no economic analysis of diversity has made use of all three criteria. In the field of technological diversity, priority is often given to variety (Cohendet et al., 1992; Saviotti, 1996), whereas in the field of biodiversity only disparity is considered (Weitzman, 1992, 1993).

The distinction between supplied diversity and consumed diversity

In terms of cultural diversity, the supply and demand sides of the market each display their own specificities. It is therefore important to distinguish between the diversity supplied and the diversity consumed and to analyse the extent to which diversity supplied corresponds to the diversity consumed by the economic agents. This distinction raises a crucial question: does an increase in the diversity supplied have a positive impact on the diversity consumed? In other words, to what extent do supplied and consumed diversities interact with each other?

² For example, certain studies have attempted to measure the cultural distance between different countries by means of several criteria used to characterise a society of individuals: masculinity, individualism, aversion to uncertainty or again the importance attached to the holding of power. For an application of such criteria, see for example Kogut and Singh (1988).

This approach in terms of supplied and consumed diversity is similar to the distinction between open diversity and reflective diversity proposed by Van der Wurff and Van Cuilenburg (2001). Open diversity is calculated on the basis of the gap between production equilibrium and perfect theoretical equilibrium (equipartition of statistical individuals between the different categories). The smaller the gap, the greater the diversity. As for reflective diversity, it is calculated on the basis of the gap between production equilibrium and consumption equilibrium. Here again, a small gap means a high degree of diversity. Reflexive diversity thus measures the degree of response of supply to demand. While open diversity corresponds perfectly to the concept of supplied diversity, we believe reflective diversity to be a slightly more restrictive notion than consumed diversity. The postulate underlying reflective diversity is that the diversity supplied should reflect the diversity demanded. However, in the cultural industries it is not irrational to supply a greater level of diversity than will ultimately be consumed. As Caves (2000) underlines, faced with uncertainty about the future success of any given product (the “nobody knows” property of cultural products), it is rational to “overproduce” with the aim of maximising the chances that one of the products will coincide with the desires of the consumers. Furthermore, relying on the concept of reflective diversity would validate the strategy of the large film companies, aiming to reduce the number of films produced each year while locking the demand for each film through massive advertising campaigns. Such a strategy clearly runs counter to the objective of increasing cultural diversity. We have therefore preferred to use a distinction between supplied and consumed diversity.

What is the definition of cultural diversity that emerges from this discussion? We have just shown that cultural diversity should not be equated solely with the preservation or development of nationally produced works in the supply and demand of cultural products within a country – although it often is. For us, the cultural diversity proposed in a country should be taken to mean the quantitative and qualitative diversity of the production and consumption of cultural goods and services. In other words, cultural diversity represents the possibility that consumers have to enjoy access to a large supply of cultural products (in terms of quantity), comprised of diversified segments (in terms of genres and geographical origins) of relatively well-balanced sizes. It also represents the effective consumption of these numerous and diversified cultural products.

The variables used

Hence, ideally, the assessment of cultural diversity in the movie industry should rely on both supplied and consumed diversity and on three dimensions (variety, balance and disparity) and on three units of analysis (individual film, genre, geographical origin), giving a $2 \times 3 \times 3$ matrix. We have explained why we believe it preferable to omit the dimension of disparity. Given the lack of statistical data on the genres of films supplied and consumed in most countries, we have also had to abandon the “genre” unit of analysis. The assessment of cultural diversity proposed in this paper will thus focus on both supplied and consumed diversity, on two dimensions (variety and balance) and on two units of analysis (film and geographical origin). However, even this $2 \times 2 \times 2$ matrix of indicators of cultural diversity in the film industry cannot be perfectly completed.

In terms of variety, only the “film” unit of analysis has been used. The variety supplied is measured by the number of films released³ in a given country in one year. This variable indicates the size of the supply of different films. However, it is essential to cross this “theoretical” supply with an indicator of the accessibility of the supply. Is it offered to the greatest possible number of consumers or reserved for an elite? Measurement of the variety supplied is thus completed by the number of screens available for every 100,000 inhabitants. The higher this number is, the greater the chances, a priori, that each film will be widely available in space (geographical coverage) and time (number of days the films are shown). On the consumption side, an intense level of demand is a necessary condition for the existence of diversity. Intense demand maximises the chances that each variety supplied will be consumed. The variety consumed is thus evaluated on the basis of average admissions per capita. In the matter of

³ We consider the number of films released during the year in the country in question and not the number of films produced which, by definition, only reflects the supply of national and co-produced films and not the overall supply of films, from all origins.

variety, both supplied and consumed, the “geographical origin” unit of analysis has been left out, because the data available obliged us to use taxonomy of “domestic films / American films / other films”⁴. In other words, the dimension of variety has been neutralised because the result is three for every country in the sample.

Balance is studied using the two units of analysis “film” and “geographical origin”. From the perspective of the geographical origin of films (both supplied and consumed), balance is measured using the Herfindhal-Hirschmann index, traditionally used to measure industrial concentration in a market. This reflects the degree of concentration of the films released and cinema admissions for the three listed geographical origins. It should be noted that the Herfindhal-Hirschmann index (HHI) is, in reality, an indicator that simultaneously measures variety and balance. $HHI = \sum s_i^2$ where s_i is the market share of each statistical individual. Thus, the HHI depends not only on the balance, of course, but also on the number of individuals. When two firms have equal shares in a market, the HHI is higher than when three firms all have equal shares in the same market. However, in our case, as the number of individuals is always three - the three geographical zones - the HHI is simply an indicator of balance. The higher the value of the index, the weaker the balance⁵. Balance is also analysed at the film level. We thus look at the distribution of admissions over the total number of released movies. This is an indicator of consumed diversity that makes it possible to study whether consumers tend all to go and see the same films or, on the contrary, each film obtains a similar audience. We thus calculate the CR₁₀⁶, in other words the market share of the top 10 films in the total number of admissions. An equivalent indicator for supplied diversity should take into account the concentration of copies per film. Here we would look at the distribution of the total number of copies over the movies released. This would enable us to measure the degree of inequality in the competition between the different films. Unfortunately, this datum is not available at the present time for all the countries in the sample⁷.

The table 1 below summarises the different variables used and gives a good idea of the progress that remains to be made to achieve an exhaustive measurement of cultural diversity in the film industry.

Table 1 – The variables measuring cultural diversity in the film industry

Dimensions	Variety		Balance		Disparity	
	Supplied Newly released films Screens/100,000 inhabitants	Consumed Admissions per capita	Supplied -	Consumed Market share of top 10 films in total admissions	Supplied --	Consumed --
Genre	-	-	-	-	--	--
Geographical origin	-	-	Distribution of newly released films according to three- dimensional taxonomy	Distribution of admissions according to three- dimensional taxonomy	--	--

- data unavailable

– methodology unavailable

⁴ This represents the lowest common denominator of the different countries in the sample. Of course, much more precise classification is possible for some countries, notably France.

⁵ The three-dimensional typology used results in a minimal value of the HHI of 3,267 (maximum balance) and a maximum value of 10,000 (minimum balance).

⁶ It is impossible to calculate the HHI in this case because the complete set of data on the distribution of admissions by film is unavailable for most countries.

⁷ The CNC supplies these data for France, but they are unavailable for other countries.

DATA

The study analyses six countries or geographical zones over the period 1990 - 2000. The United States, France and the European Union have been chosen because they are at the heart of the heated debates over cultural diversity that have arisen during international negotiations on free trade. The three other countries chosen have specific characteristics that make them interesting from a research perspective. Mexico is geographically close to the United States, but with a different dominant language. Above all, the two countries are linked by a free exchange agreement (the NAFTA). Hungary has only been economically “open” since the beginning of the 1990s. South Korea is interesting because it is, a priori, as culturally distant from the United States as it is from Europe. Moreover, it has introduced a protectionist policy in the film sector. The data have been gathered from various organizations (see table 2). However, we have chosen to use in priority, when available, the data of the European Audiovisual Observatory because, having been reprocessed, they provide a greater guarantee of homogeneity between the data from the different countries in the sample. We should specify that we have treated the European Union as a fictive country whose characteristics are the average of the fifteen member countries⁸, for it is often impossible to group together the data from these countries⁹.

Table 2 – Collected data

	EU	France	Hungary	Mexico	South Korea	USA
Number of new released films each year	1990 – 00 OEA	1990 – 00 CNC	1990 – 00 OEA	1991 – 00 ^a Canacine, Tiempo libre	1990 – 00 KFO	1990 – 00 OEA
Number of screens / 100,000 inhabitants	1991 – 00 OEA	1990 – 00 CNC	1990 – 00 OEA	1993 – 00 Canacine	1990 – 00 KFO	1990 – 00 OEA
Admissions per capita	1990 – 00 OEA	1990 – 2000 CNC	1990 – 00 OEA	1991 – 00 ^b Canacine, Tiempo libre	1990 – 00 KFO	1990 – 00 OEA
Distribution of newly released films according to geographical origin	1990 – 99 OEA	1990 – 00 CNC	1990 – 00 OEA	1991 – 00 ^{a,b} Canacine, Tiempo libre	1998 – 00 KFO	1995 – 00 OEA
Distribution of admissions according to geographical origin	1991 – 00 OEA	1990 – 00 CNC	1990 – 00 NKOM/OEA	1991 – 00 ^{a,b} Canacine, Tiempo libre	1998 – 00 KFO	1996 – 00 OEA
Market share of the top 10 films in total admissions	1996 – 00 OEA	1992 – 00 CNC	1996 – 00 OEA	1999 – 00 ^b Canacine	1998 – 00 ^c KFO	1996 – 00 OEA/Variety

^a except 1999

^b calculated on the basis of data for Mexico City only (the only data available)

^c calculated on the basis of data for Seoul only (the only data available)

CNC: French National Film Centre; KFO: Korean Film Office; OEA: European Audiovisual Observatory; NKOM: Hungarian Ministry of Culture

⁸ Nevertheless, the analysis of the situation in the European Union remains incomplete because the data are incomplete or inexistent for Greece, Ireland, Luxembourg and Portugal. The average is therefore calculated for 13, 14 or 15 countries depending on the year. We must also specify that the data for the EU are considered for fifteen countries for the whole decade (although Austria, Sweden and Finland joined later).

⁹ For example, the number of new films released in the whole of the European Union is not the sum total of the new films released in each of the 15 member countries (many films are released in every country).

RESULTS

A greater variety supplied and consumed in the United States, in France and in the European Union

The variety supplied, at the film level, is estimated on the basis of the number of new full-length films released each year (table 3) and the number of screens available (table 4). At the end of the period in question, we can distinguish four groups of countries: (i) in France and the United States both the number of new films released and the number of screens are high and increased over the period 1990-2000; (ii) in the European Union, the average number of new films released is lower, as is the number of screens but the trend over the period is also upwards; (iii) in South Korea, although the number of films released is high, it has decreased since the mid 1990s, and accessibility to these films is low; (iv) lastly, in Hungary and Mexico, few new films are released each year and the number of screens is low in Mexico and mediocre in Hungary. In addition, overall the two indicators have either decreased or risen very weakly in these two countries. In terms of variety supplied, therefore, we see a tendency towards divergence in the performances of the different countries in the sample. The high performers, the United States, France and to a lesser extent the European Union, record a growth in the variety supplied whereas the variety supplied in the low performing countries, Mexico and Hungary, have dropped even further.

Table 3 – Number of films released in each country

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	255	264	247	238	246	261	290	298	298	299	321
France	370	438	392	394	408	405	410	417	470	504	544
Hungary	253	218	190	178	176	143	159	173	165	174	197
Mexico	-	323	311	260	271	290	290	320	296	-	197
South Korea	387	377	415	410	447	423	470	418	333	346	418
USA	385	423	425	440	410	370	420	461	490	442	461

Table 4 – Number of screens (for 100 000 inhabitants)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	-	4.86	4.79	4.76	4.86	4.99	5.22	5.48	5.82	6.17	6.37
France	7.96	7.78	7.49	7.41	7.43	7.54	7.76	7.95	8.11	8.51	8.61
Hungary	18.19	9.91	6.56	6.16	4.83	5.85	5.47	5.85	6.21	5.67	5.62
Mexico	-	-	-	1.31	1.56	1.64	1.76	1.97	2.20	2.40	2.08
South Korea	1.57	1.76	1.63	1.52	1.41	1.29	1.12	1.08	1.09	1.25	1.54
USA	9.52	9.73	9.83	10.34	10.69	10.57	11.19	11.82	12.65	13.49	13.29

Analysis of the variety consumed, based on the level and evolution of average cinema-going, (average number of admissions per inhabitant), leads to relatively contrasting conclusions (table 5). In 2000, the United States was the clear leader in our sample in terms of average cinema-going, ahead of France and the European Union, with the three other countries recording particularly weak performances. Analysis of the evolution over the decade 1990-2000 gives quite contrasting observations. The top three countries (USA, France, EU) are in a phase of light growth (although average admissions in the United States have fallen since 1998), whereas the three other countries are in recession (Hungary) or stagnation

(Mexico, South Korea)¹⁰. However, the situation in the last two countries has been improving since 1996.

Table 5 – Admissions per capita

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	-	1.65	1.60	1.80	1.83	1.78	1.90	2.05	2.19	2.16	2.25
France	2.15	2.06	2.02	2.30	2.15	2.24	2.34	2.54	2.90	2.62	2.79
Hungary	3.49	2.10	1.47	1.44	1.55	1.38	1.35	1.63	1.44	1.33	1.24
Mexico	-	1.94	1.50	1.13	0.89	0.68	0.86	1.01	1.09	1.24	1.30
South Korea	1.23	1.21	1.08	1.10	1.09	1.01	0.93	1.03	1.08	1.17	1.38
USA	4.78	4.51	4.59	4.82	4.96	4.80	5.05	5.19	5.48	5.32	5.05

To sum up, analysis of variety supplied provides the following observation. The United States, France and the European Union display a supplied and consumed variety that is fairly high and tending to rise. South Korea is characterised by an average level of supplied variety (high number of new full-length films but a low number of screens) but a low level of consumed variety. These two indicators have been stagnating over the period as a whole, but with a slight rise since the mid 1990s. Lastly, in Hungary and Mexico, supplied and consumed variety is pretty low and tending to drop over the period as a whole.

A greater balance in terms of geographical origin in France, South Korea and the European Union

The United States appears without any doubt as the country in our sample with the weakest balance in terms of the geographical origin of newly-released films. Throughout the decade, they systematically record the highest Herfindhal-Hirschmann index (table 6)¹¹. Only about 25% of new releases are non-domestic films¹². France and the EU, on the contrary, display the lowest concentrations of films released by geographical origin, and therefore the best balanced supply. The supply here is both diversified (about one third of films in each category of origin in France) and stable, or even rising in the case of the EU (with a fall in the share of American films released and a rise in domestic films). In Hungary and Mexico, on the other hand, the diversity in geographical origin of films released has collapsed, due to a rise in the share of American films and a fall in the share of domestic films. In South Korea, which we could only study over the last three years of the period, the supply in terms of geographical origin is relatively diversified.

Table 6 – Herfindhal Hirschmann Index from a geographical origin perspective (supply side)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	4,170	4,147	3,967	3,979	4,044	3,918	3,931	3,910	3,907	3,755	-
France	3,382	3,345	3,472	3,423	3,369	3,366	3,419	3,465	3,420	3,377	3,415
Hungary	4,045	4,371	4,045	4,855	4,848	5,370	4,668	5,246	5,154	5,112	4,703
Mexico	-	3,917	4,123	4,696	4,270	4,346	5,296	5,684	5,457	-	5,499
South Korea	-	-	-	-	-	-	-	-	4,473	4,468	4,005
USA ^a	-	-	-	-	-	5,933	6,553	7,416	7,001	5,642	5,601

¹⁰ Of course, the consumption of cultural goods is correlated with per capita GDP. It would be interesting to measure the different countries' proclivity for cultural goods by weighting the volume consumed not only by per capita GDP but also by the price of the goods.

¹¹ Yet in the case of the United States the calculation leads to a minimum estimation, because the typology used cannot, by definition, be applied to them. In the case of the USA, the minimum estimation of the HHI is calculated as the square of the national market share.

¹² See the tables in the appendix indicating, for all the countries in the sample, the market shares of national and American films in terms of releases and admissions.

^a minimal value since calculated considering only domestic films market share

Table 7 shows that France had the highest level of consumed diversity, in terms of the balance by geographical origin, throughout the period under investigation. Moreover, its situation is relatively stable, with a market share for domestic films amongst the highest in the study (excepting the United States) at around 30% - although this falls slightly over the decade - and a constant market share for American films of around 60%. However, in 2000 France was overtaken by South Korea, where domestic films as well as “other films” enjoyed greater success in the cinemas. The EU displays weaker consumed balance by origin but equally stable over the period as a whole: a market share of 20% for domestic films (showing slight growth over the decade¹³) and a market share for American films just above 70%. In Hungary, the balance of admissions in terms of origin deteriorated sharply from its particularly high level at the start of the decade, thanks to a market share of “other films” oscillating around the 40% mark. The HHI at the end of the period was thus very high, notably due to the growth in market share of US films. The same is true for Mexico, which only managed 13.7% of admissions for Mexican films in 2000, although even this compares favourably with the 1.5% recorded in 1998! Lastly, consumed diversity by geographical origin is weakest in the United States: more than 90% of admissions were for domestic films. Overall, there is an important trend towards dualism in admissions between domestic and American films (since 1995, no country has recorded a market share for “other films” exceeding 15%). Over the whole period, Mexico and the United States recorded weak levels of consumed diversity by origin, although there was a slight improvement towards the end of the decade. In Hungary, the situation deteriorated from the start of the decade to reach a very weak balance at the end. In France and the EU, the situation remained globally stable over the whole period while in South Korea it improved dramatically.

Table 7 – Herfindhal Hirschmann Index from a geographical origin perspective (demand side)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	-	5,718	5,718	5,950	5,822	5,584	5,502	4,878	6,234	5,246	5,874
France	4,575	4,431	4,651	4,557	4,631	4,267	4,424	4,091	4,844	4,144	4,772
Hungary	4,088	4,583	4,394	5,150	8,935	8,329	7,933	6,305	8,384	6,636	7,418
Mexico	-	-	-	-	-	6,792	8,072	8,246	8,577	7,459 ^a	7,635 ^a
South Korea	-	-	-	-	-	-	-	-	5,735	4,514	4,259
USA ^b	-	-	-	-	-	-	9,160	8,529	8,959	8,305	8,560

^a over-estimated data based on the hypothesis that US films market share is equal to 100% minus domestic films market share.

^b minimal value since calculated considering only domestic films’ market share

Degree of concentration of admissions on a small number of films

Comparison of balance between the different countries in the sample in terms of individual films has been rendered difficult by a lack of precision in the data. The share in total admissions of the top 10 films can only be calculated from 1996 onwards (1992 for France), and even 1999 for Mexico and 1998 for South Korea¹⁴ (table 8).

¹³ However, attention should be paid to the procedure used for recording the nationality of EU films. Certain countries record any production in which they have participated as national, even if they have only been a minority co-producer.

¹⁴ In these last two countries, the calculation has only been made for the cities of Mexico and Seoul.

Table 8 – CR₁₀ (demand side)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	-	-	-	-	-	-	25.0	23.9	27.3	27.4	21.9
France	-	-	27.1	34.0	29.8	24.2	27.4	28.8	39.5	30.5	29.5
Hungary	-	-	-	-	-	-	27.1	27.8	29.3	32.3	29.3
Mexico	-	-	-	-	-	-	-	-	-	29.8	27.4
South Korea	-	-	-	-	-	-	-	-	33.3	42.4	35.3
USA	-	-	-	-	-	-	28.0	23.6	27.3	27.9	22.2

The CR₁₀ criterion makes little distinction between the different countries. Over the period 1998-2000, the top ten films obtained on average more than 25% of admissions in all the countries in the sample. However, the concentration of admissions on a small number of films appears to be higher in France and in South Korea and, on the contrary, lower in the EU as a whole and in the United States. Hungary and Mexico occupy intermediate positions. Evolution of this criterion over the decade appears to be quite erratic for all the countries. France, the only country for which a long series of data is available, records an upwards trend^{15,16}. Thus, if cinema-going in France during the period 1990-2000 has increased, this rise has essentially been to the benefit of a small number of big successes. The network effect which characterises film consumption¹⁷, accentuated by the supply strategies of the producers (investments in notoriety) and the distributors (the number of copies put into circulation) thus seems to result in a concentration of admissions on a limited number of films, to the detriment of cultural diversity.

Links between supplied diversity and consumed diversity

Analysis of the links between supplied diversity and consumed diversity lead to two observations. On one hand, in every country, supplied diversity by geographical origin is always greater than consumed diversity¹⁸. This seems to be due to the production strategy of the culture industries (see above). A large number of works are produced in order to minimise the risks by compensating for the (numerous) failures by the (rare) successes. We should, however, note that the market share in admissions obtained by American films is always greater than their market share in distribution. Is this because the consumers in every country in the sample have an intrinsic preference for US films or because of the strategies used by the producers and distributors of these films? Further analyses would have to be carried out in order to answer this question.

On the other hand, there is a strong positive correlation between consumed diversity by origin and supplied diversity by origin¹⁹. In other words, consumed diversity can only reach a high level in countries where supplied diversity is also high. To be more precise, there is a strong positive correlation

¹⁵ Except for the two peaks due to the release of the films *Les Visiteurs* in 1993 and *Titanic* in 1998.

¹⁶ Of course, it would be interesting to counterbalance this analysis with an analysis of the balance of individual films on the supply side, for example by analysing the top ten films' share (in number of prints) of the total number of prints released. Unfortunately, such analysis is impossible at the present time.

¹⁷ Cultural consumption is characterised by network externalities arising from phenomena of mimicry and social infectiousness. To reduce their uncertainty about the quality of cultural products, most consumers tend to consume the products they have heard about (from friends, press or publicity) or which achieve the most commercial success. On this question, see Kretschmer et al. (1999).

¹⁸ Over the 11 years and for the 6 countries, we have 39 observations of the comparative level of the HHI by origin for the supply and the HHI by origin for the consumption. The average index of the supply is 4,222 and that of the consumption is 5,782.

¹⁹ Over the 39 observations of the comparative level of the HHI by origin for supply and the HHI by origin for consumption, the coefficient of correlation is 0.82.

between the share of domestic films in distribution and their share in receipts²⁰, as there is between the share of American films in distribution and their share in receipts²¹. This observation seems to confirm the nature of the market for the supply of cultural goods and services. Because of the uncertainty of success, it is the demand that adapts to the supply and not the other way round. Thus, demand for diversity could end up being stifled by a standardised supply. An active policy of growth in supplied diversity is liable to result in growth in the demand for diversity. Thus, if France records the best performances over the decade in terms of the market share in admissions of domestic films (33% on average over the period 1990-2000), this is clearly due to the share they obtain in distribution (37.6% on average over the period). We must, however, underline the fact that South Korea represents an exception to the rule. This country saw the market share in admissions of domestic productions grow considerably (from 20.2% in 1990 to 32.6% in 2000) while their share in distribution fell (28.7% in 1990 compared with 14.1% in 2000).

DISCUSSION

Some comments on the results

Table 9, which summarises all the data collected in the form of averages over the period 1990-2000 taken as a whole (or a shorter period when data were unavailable), enables us to sketch out a multi-criteria classification of the six countries in terms of cultural diversity in the film industry. This multi-criteria analysis notably highlights the differences in ranking that appear as a function of the different meanings given to cultural diversity.

Table 9 – Average values of variables over the period 1990-2000

	Variety			Balance		
	Supplied		Consumed	Supplied by origin	Consumed by origin	Consumed by film
	Released films	Screens	Admissions per capita	Supplied HHI	Consumed HHI	CR ₁₀
European Union	304.0	6.0	2.2	3,857.3	5,558.0	25.1
France	483.8	8.3	2.7	3,419.3	4,462.8	32.1
Hungary	177.3	5.8	1.4	5,053.8	7,185.8	29.7
Mexico	271.0	2.2	1.2	5,546.7	8,411.5	28.6
South Korea	378.8	1.2	1.2	4,315.3	4,836.0	37.0
USA	463.5	12.8	5.3	6,415.0	8,588.3	25.3

Mexico, and to a lesser extent Hungary, display weak performances for all the criteria used and can thus be ranked in the last two places. The classification of the other four countries, on the other hand, depends on whether more importance is attached to the variables representing variety (released films, screens, admissions) or to the variables representing balance (supplied HHI, consumed HHI, CR₁₀). If variety is considered to be more important, the United States and France perform best, ahead of the European Union and South Korea. If, on the contrary, more importance is attached to balance, then it is France and the European Union that lead the field, followed by South Korea and, far behind, the United States. If we take all the criteria equally into consideration, the ranking for cultural diversity in the film industry could be as follows. In first place, France, which achieves good performances for both types of variable (variety and balance), followed by the European Union, the performances of which are similar

²⁰ Over the 52 possible observations of the market share of domestic films in distribution and receipts respectively, the coefficient of correlation between these two variables is 0.95 (but only 0.82 if the United States are left out of the sample).

²¹ Over the 38 possible observations of the market share of American films in distribution and receipts respectively, the coefficient of correlation between these two variables is 0.78.

but systematically lower (except for the CR₁₀). The third place is shared by the United States and South Korea. The totally opposite profiles of these two countries make it impossible to decide between them. In the United States cultural diversity seems to be expressed by variety, whereas in South Korea it has more to do with balance in terms of geographical origin. More films are released in the United States than in South Korea, the US has ten times more screens per capita than South Korea and Americans go to the cinema four times more often than South Koreans, almost certainly revealing a strong inequality in access to cultural consumption in South Korea. On the other hand, supplied and consumed diversity in terms of geographical origin in South Korea is among the highest in the sample, while the United States is ranked in sixth place for this criterion. Lastly, in fifth and sixth places, come Hungary and Mexico. Furthermore, calculations (not shown here) demonstrate that the average performances over the last three years are almost always higher than the average performances over the whole decade for the EU, the US and, to a lesser extent, France, whereas they are lower for Hungary and Mexico²². Thus, the current gaps between the different countries in the sample in terms of cultural diversity seem to be widening rather than closing.

As we have just highlighted, the diagnosis of supplied and consumed cultural diversity in a country depends heavily on the dimensions chosen (only variety, only balance or the two together). According to us, of course, and according to the theoretic works dedicated to economic analysis of diversity (see above), the multi-dimensional approach should be chosen. Furthermore, this opposition between single-dimensional and multi-dimensional approaches seems to explain the antagonisms between the position of certain states (notably France and Canada) and the position adopted by the large cultural industry groups as regards cultural diversity. Thus Jean-Marie Messier, the ex-CEO of Vivendi Universal, pointed to the rise in the volume of cultural production (film, music and publishing), the growth in consumption and the (relative) success of domestic productions in the cultural consumption of each country as proof that cultural diversity is thriving²³. If we restrict ourselves to these criteria, cultural diversity does indeed seem to be in a healthy state, but in reality it is threatened by the concentration of consumption on a small number of films and by the low diversity on the screens and in admissions in terms of geographical origin.

Towards an analysis of the determining factors of cultural diversity

The tool for measuring cultural diversity presented in this paper could be used to test different hypotheses concerning the possible determining factors of cultural diversity. Without making any claim for completeness, for this raises quite another subject of research, it is nevertheless possible to envisage the testing of the following relations.

(i) *Diversity and concentration.* The link between industrial concentration and diversity is ambiguous, to say the least. If too much concentration is undoubtedly harmful to diversity, it also appears that too much competition leads firms to adopt strategies of mimicry that are hardly propitious to cultural diversity. According to Van der Wurff and Van Cuilenburg (2001), three scenarios are possible: fierce competition tending to reduce prices and diversity, moderate competition that maintains prices at a higher level but with more diversity, or collusion resulting in high prices and low diversity. It would therefore be useful to be able to evaluate, in terms of industries (extending to other areas and not just the film industry) and countries, the nature of the competition that predominates and its consequences for cultural diversity.

(ii) *Diversity and promotional strategies.* At the present time we can observe a tendency towards the standardisation of production (a fall in disparity) together with a tendency towards concentration of promotion (in the widest sense of the term, namely production budget, marketing, number of copies in circulation, etc.) on a small number of products, even if the actual number of new products remains high. In other words, more and more products have an extremely short life, which does not give them

²² The data on South Korea at the beginning of the decade are too fragmented to give any significance to this comparison.

²³ *Le Monde*, April 9, 2001.

the time to “meet” their demand. It would then be a question of testing the impact on consumed diversity of strategies tending to increase the appearance of variety by the growth in new products while reducing the accessibility of most of them. Some results of the present paper clearly illustrate this topic. Hence, although the share of French films in distribution tended to increase over the decade, their share in admissions tended to fall to the benefit of “other” films and above all American films, despite the fact that the share of American films in distribution fell over the same period. This fall was probably compensated for by a strategy of increasing the number of copies in circulation, making it possible to obtain a better rate of screen occupation with a smaller number of films. Another cause for concern is the trend towards concentration of admissions on the top ten films of the year (see table 8). Here again, a detailed analysis of distribution and promotion strategies, for both French and American films, could help to explain these developments.

(iii) *Diversity and vertical integration.* The case of Hungarian cinema suggests that the adoption of strategies of vertical integration by the large communication groups towards the sectors of distribution and broadcasting has considerable consequences in terms of diversity. Several phenomena may explain the strong growth in the distribution and admissions of American films in Hungary. Firstly, distribution in Hungary is currently dominated by a duopoly formed by Intercom and UIP Danube²⁴. Now, UIP Danube is a joint venture between Paramount and Universal. And Intercom, which also possesses the biggest network of cinemas in the country, has signed long term distribution agreements with several Hollywood studios (Warner, Columbia-Tristar, Fox, and Disney). Secondly, there has been a real craze for multiplex cinemas in Hungary over the last few years (there are now 12, which between them account for half of admission receipts) and most of them are owned by Intercom. So it appears that everything is ready to provide American films, distributed in ever greater numbers in Hungary, with privileged distribution.

(iv) *Diversity and public policy.* The tools for measuring cultural diversity proposed in this paper could be used as the basis for analysing the respective influences of different instruments of public policy (quotas, support for production, etc.) on diversity, and not just on the protection of the national cultural industries. At a first glance, protectionism indeed seems to favour diversity in an industry where American movies are often hegemonic. Hence, it seems unlikely that the ranking of France, the EU and South Korea, countries in which systems of support for the domestic film industry exist, is pure coincidence. However, it is not at all certain that a protectionist policy based on quotas for the production or distribution of domestic films always achieves greater cultural diversity. If such policies result simply in the substitution of American films, which are predominant in every country in the sample, by domestic films, to the detriment of “other films”, the objective of increasing cultural diversity will not be achieved. Moreover, even if today, despite the fall in domestic production, South Korean films seem to be winning ever more favour with the public (see table A.4 in the appendix), there is another side to the coin. This new growth is essentially to the benefit of films inspired by Hollywood formulas and video game scenarios. From this point of view, the good health of the South Korean film industry should be kept in proportion (here we enter however the domain of the analysis of disparity)

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²⁴ *Actualités internationales*, CNC, n° 201, April 2002.

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APPENDIX

Table A.1 – Market share of domestic films on the supply side (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	12.7	13.6	15.0	15.7	14.7	15.1	15.8	15.4	15.4	17.4	-
France	34.9	32.0	42.6	39.3	35.8	36.8	39.3	40.8	37.4	36.3	38.2
Hungary	12.3	8.7	13.2	10.7	11.4	6.3	12.6	9.2	7.9	9.2	9.6
Mexico	-	27.2	22.2	18.8	19.9	13.8	6.9	6.3	2.7	-	8.1
South Korea	28.7	32.1	23.1	15.4	14.5	15.1	13.8	14.1	12.9	14.2	14.1
USA	-	-	-	-	-	77.0	81.0	86.1	83.7	75.1	74.8

Table A.2 – Market share of US firms on the supply side (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	53.6	54.0	50.5	51.6	52.4	49.0	50.3	49.2	49.0	45.9	-
France	37.3	36.1	30.9	34.5	35.8	34.3	34.4	34.5	36.8	35.7	35.7
Hungary	48.6	53.7	50.5	64.0	64.2	68.5	62.3	68.2	66.7	66.7	61.4
Mexico	-	52.6	56.3	63.5	58.3	57.9	67.9	71.9	67.6	-	70.6
South Korea	-	-	-	-	-	-	-	-	59.6	60.0	50.6

Table A.3 – Domestic films market share in admissions

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	-	17.0	17.0	15.0	15.0	16.0	19.0	22.0	16.0	17.0	23.0
France	37.5	30.6	34.9	35.1	28.3	35.2	37.5	34.5	27.3	32.4	28.5
Hungary	12.0	5.2	7.0	8.1	0.8	1.0	5.3	9.2	3.0	5.7	4.5
Mexico	-	-	-	-	-	6.1	3.5	2.4	1.5	14.3	13.7
South Korea	20.2	21.2	18.5	15.9	20.5	20.9	23.1	25.5	21.3	35.8	32.6
USA	-	-	-	-	-	-	95.7	92.4	94.7	91.1	92.5

Table A.4 – US films market share in admissions

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
European Union	-	73.0	73.0	75.0	74.0	72.0	71.0	65.0	77.0	69.0	73.0
France	55.9	58.0	58.2	57.1	60.9	53.9	54.3	52.2	63.3	53.9	62.2
Hungary	50.0	53.0	49.7	66.7	94.4	90.9	88.7	77.8	91.3	80.0	85.4
Mexico	-	-	-	-	-	81.2	89.5	90.5	92.4	-	-
South Korea	-	-	-	-	-	-	-	-	72.4	56.3	55.2