

Do public television channels provide more diversity than private ones?

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ABSTRACT

Since early 2009 there has been no advertising on French public television channels after 8 p.m. One of the arguments in favour of this reform was that it would promote diversity and that public channels would be less tempted to broadcast homogeneous programming to generate greater advertising revenue.

Based on a comparison between British, French and Turkish channels the aim of this paper is to determine whether public channels perform better in terms of diversity than private ones. The paper recalls the reasons why public television channels should differentiate themselves from their private counterparts as far as diversity is concerned. A methodology for assessing diversity, which includes a set of indexes for measuring diversity of programming as well as tools for assessing disparity, is then proposed. Earlier literature finds that public television channels are more diverse than and significantly distinct from their private counterparts.

In this exploratory study we will show that, contrary to the literature, public channels have no clear advantage in terms of diversity. Competitive pressure aimed at maximizing viewership plays a role for all channels regardless of their mode of funding, thus leading to greater homogeneity of programming.

Keywords:

Advertising

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Distinctiveness

1. Introduction

Over the past two decades cultural diversity has gained recognition at the global level and is generally considered a positive aim for societies. The issue of how to promote cultural diversity has been hugely debated. Two means can be distinguished: on the one hand the cultural exception policy (most notably used during GATT negotiations in 1993) and the establishment of the World Trade Organization in 1994 (Marrakech Agreement) on the other hand the international legal instrument established by the 2005 UNESCO Convention on the Protection and the Promotion of the Diversity of Cultural Expressions. In all cases it is assumed that national public policies are needed to promote cultural diversity. In fact, it is assumed that the market alone does not promote enough diversity (Farchy, 2008). In the specific case of the audiovisual industry there have of late been important debates in many countries about diversity, the audiovisual industry's regulations and the role of public broadcasters. These debates were recently revived in France, when the government decided to eliminate advertising on the French public channels, as doing so would theoretically make public broadcasters less focused on commercial aims.

In this paper we will focus on the diversity argument and investigate whether private channels have less diverse programming than public television ones. This point has been discussed in the literature in the fields of economics and communication sciences. We first recall the main findings of literature on the influence of funding means on diversity of programming (2). An important assumption in our work is that the quality of a TV programme cannot be assessed by economists per se. Rather we propose a framework based on Stirling (2007) that allows for the measurement of a TV channel's diversity of programming over a given period (3). Cultural diversity is a very consensual concept and proves complicated, particularly when it comes to defining and assessing it (Farchy and Ranaivoson, 2008). That is why we have detailed our methodology and made our application of the Stirling framework (2007) explicit. Our empirical results — a comparison of the diversity of programming of the 6 TV channels in the three countries in our sample (4) — are then presented. The conclusion sums up these findings and suggests their implications in terms of cultural policy (5.).

2. Why public channels should provide more diversity than their private counterparts: theoretical arguments and empirical findings

A standard theoretical analysis of the links between competition and diversity concludes that

competition does not necessarily lead to diversity; on the contrary, competition tends to reduce diversity. Consequently, public channels should favour diversity since they do not directly endure competitive pressure.

Steiner (1952) first explained why competing private broadcasters tend to have a low level of differentiation when seeking advertising funding. In his theoretical model broadcast radio channels are completely funded by advertising. As a result each tries to get the greatest share of listenership. Another assumption is that each listener likes only one type of programme but likes every programme that belongs to this preferred type equally. Steiner then shows that the competing broadcasters will not necessarily broadcast the most diverse programmes, even though this means they will not on the whole achieve maximum listenership. Actually, according to Steiner, a broadcaster may be inclined to propose a programme that falls into a programme category that is already broadcast — what he calls duplication. Let us assume for example that among the 355,000 listeners 300,000 want to listen to humorous programmes and 55,000 would rather hear a news story. Two competing radio stations would then both programme a humorous programme, as this would get them 150,000 listeners each—far more than the 55,000 listeners they would get by programming a news story. A competing 3rd station would also programme a humorous programme, as each broadcaster would then get 100,000 listeners. Ultimately, only the 6th entrant would propose a news story, as programming a humorous programme would only get it 50,000 listeners:

$$\frac{300\ 000}{6} = 50\ 000 < 55\ 000$$

Moreover this 6th entrant would only get 55,000 listeners compared to the 60,000 each of its competitors would get. Radio stations are instead inclined to duplicate existing programmes because it enables them to get a higher market share. This is done at the expense of listeners with marginal tastes. In the same way Spence and Owen (1977) show, using a theoretical model, that in a landscape composed of private channels (either free-to-air or pay television), some programmes are likely not to be produced even though they “ought” to be produced, as their marginal benefits would exceed their marginal costs” (p.122). Steiner derives from his analysis that a state monopoly (e.g. the former ORTF in French television and radio networks) provides better results than private, competing companies in terms of diversity. Does such a theoretical result hold true in markets where public and private channels coexist?

Findings from empirical analyses applied to the television sector generally result in the same conclusions as the Steiner model: public channels play a positive role in the promotion of diversity. Levin (1971) recommends reinforcing public television to

¹ Steiner does not consider differences in terms of relative costs of program production.

increase diversity in the U.S. Aslama (2006) looks at diversity in programming for all Finnish TV channels from 1993 to 2004 and finds that over this period public channels' programming was more diverse than private ones' but increasingly open to local production (as opposed to private channels). Public channels, however, differentiated themselves subsequent to the entrance of a new private channel in 1997. Public and private channels' programming did not converge over the period, which can be used as an argument in favour of keeping public channels.

Van der Wurff (2005) finds that diversity is lower on private channels than public ones. Public channels in fact face obligations as a consequence of their status as a public service (i.e. they should propose more thought-provoking programmes). His analysis is interesting in that he uses a large set of data on European markets from the end of the 80s to the 90s. However, he relies on second-hand data, especially for categorization.

Finally Ward (2006) provides an international comparison of media (TV and newspapers) in Croatia, Italy, Norway, and the United Kingdom based on a very detailed analysis of the programming in those countries. The report finds that private and public channels do provide different kinds of programmes. More specifically, "[t]he single most notable trend in the diversity of genres is the marked difference in overall output between public and commercial broadcasters since in all countries the public service broadcasters supply a greater percentage of high social value programming." (p. 8-10).

All of these empirical studies conclude that public channels are more diverse than private ones and/or that public channels are significantly distinct from their private counterparts, the main theoretical argument being that private channels sell advertising space whose value depends on the size of the audience. As a result private channels seek the largest audience possible and thus provide homogeneous, repetitive programming. At the opposite extreme, as public channels do not sell advertising space (or rely less on advertising), they do not need to worry about attracting large audiences and thus may provide more diverse programming. Our study addresses this issue, most notably by focusing on prime time periods (i.e. programming periods when competition for advertising is the most intense). According to the literature, this should have an impact on private channels but not public ones.

3. Empirical analysis: methodology

Our study entails an analysis of the programming of six television channels in three countries, which we will briefly describe below. We will then move on to a description of programme typology. After considering the question of measuring diversity, we will finally explain in brief what we mean by distinctiveness and

how it is measured based on the concept of disparity.

3.1 Sources

The study concerns three countries: France, Turkey and United Kingdom. These three countries, while very different, all belong to the Council of Europe and are therefore the subject of publications and access to standardized data in the audiovisual field. In addition, each of these countries has a strong national system, with both strong privately and publicly-funded TV channels. For each country we chose the most popular private and public TV channels based on viewership: TF1 (pr) and France 2 (pu) in France; BBC One (pu) and ITV1 (pr) in the UK; TRT1 (pu) and Kanal D (pr) in Turkey. Pay channels such as Canal Plus in France were not included in our analysis.

To test the influence of advertising revenue on the level of diversity of programming we compared channels funded predominantly by advertising and those funded predominantly by licensing fees. Ultimately all of these channels targeted a wide audience in their respective domains. In order to attract the widest audience possible they pretend to be non-specialized (i.e. not limited to one particular type of programme, unlike channels specialized in music, such as MTV, or in news, like CNN) and not geared towards a particular population (unlike community television). Each of the channels studied broadcast 24 hours a day (or almost).

France

TF1 is the oldest private channel in France (with the exception of the pay channel Canal Plus). Created on July 8, 1974 and privatized in 1986, it is the number-one channel in France, as demonstrated by its high audience ratings—the highest in Europe. Its audience share however has been waning for some years and currently stands at around 30%. Nevertheless, its advertising market share is still greater than 50%. TF1's situation, as far as the French AV industry goes, is particular, especially when one considers its large audience (the largest in Europe).

France 2 (with an 18% audience rating) is the main channel in the France Télévision public group—a group which includes most French public channels (France 2, France 3, France 4, France 5 and France O). In this group France 2 has the highest average audience ratings. Its specific aim is to propose "diversified programming to a large audience" (source: France Télévision's website). France 2 and TF1 are its direct competitors in terms of programming. Moreover, since the beginning of 2009, France 2 no longer broadcasts commercials after 8 p.m., which has made the TV channel even less dependent on advertisement funds.

United Kingdom

Since its creation in 1922 the British Broadcasting

	ITV London ²	BBC one	TF1	France 2	Kanal D	TRT 1 ³
Public/Private	Private	Public	Private	Public	Private	Public
Turnover (M€)	2326.5	1581 (2008)	2764	1733 (2007)	n/a	339
Share of advertising in turnover	100%	0 %	63 %	30 %	100 %	8.1 %
Other funding	-	Licence fees (3/4), international	Thematic channels, teleshopping, broadcasting rights, international	Licence fees (2/3)	-	Public funds (90.3%), other funds (1.7%)
Cost of content (M€)	n/a	1255	1024	788	n/a	n/a
Audience (entire day)	19.2%	22 %	30.7 %	18.1 %	14.2%	3.9%
Audience (prime time)	24.5%	23.9 %	32.6 %	18.1 %	17.3%	3.5%

TABLE 1. COMPARISON OF FINANCIAL SITUATION OF THE CHANNELS IN OUR SAMPLE (2006)

Source: EAO (2008), BBC (2009), ITV1 (2008).

Corporation has been charged with a public service mission and become a worldwide model for public television. The vast majority of its revenue comes from licensing fees; it broadcasts no advertisements. BBC One is the BBC group's main television channel and as it targets a wide audience (22% audience rating) is the most relevant for the purposes of our study.

ITV1, created in 1955 to compete with the BBC, was the United Kingdom's first private television channel. We felt that as BBC One's main competitor, ITV1 was the most logical channel to compare it with. It is Britain's top commercial television channel in terms of audience share (18%) and advertising revenue, attracting 30% of television advertising spending.

Turkey

The Turkish Radio and Television Institute (TRT) was, until the beginning of the 90s, the only institution in the country to broadcast radio and television programmes. After this, TRT created other channels to compete with private channels. TRT 1 was intended to be the "popular" TV channel in the TRT group. TRT 1 is the sixth most popular TV channel in Turkey (with between 3 and 4% audience ratings) and the most popular public channel (funded by the state via a tax that appears on electricity bills and another that appears on the revenue stamp used for TVs, radios and other such devices) with a rating of 78%.

Advertising is the second largest funding source.

Kanal D, with its popular TV series and news programmes, is the most popular TV channel in Turkey with an approximately 14% audience rating. The channel uses news sources from its parent company (Dogan Holding Corporation) which owns seven newspapers and 11 television channels. Kanal D, considered a "family channel," broadcasts programmes for every member of the typical Turkish family.

3.2 Typology: programme categories

The second step in our study consisted in defining programme categories in order to draw comparisons in the most comprehensive, objective way possible. Typologies for classifying cultural products (e.g. for recordings Peterson and Berger, 1975) and television programmes (Van der Wurff, 2005) have been proposed in the past. Though our typology is not necessarily better per se than those typically used by scholars and audiovisual professionals, it nonetheless has two advantages. Firstly, it provides more transparency relative to each category's characteristics. Secondly, it allowed us to measure diversity in all its multidimensionality and complexity based on the three criteria established by Stirling (2007): variety, balance and disparity (see Box 1). We have also included a more traditional approach in

² Data for the entire ITV1 audience.

³ Data for TRT as a whole (except audiences).

terms of origin in order to analyze the diversity of fiction programmes.

The categorization process was critical in assessing diversity as the choice of categories directly influences variety. For example, if an analyst decides that two categories should be grouped into one, it immediately reduces variety. It also influences balance and disparity. One major advantage to Stirling's definition of diversity (more to follow) is that it unequivocally takes the importance of this categorization into account, while our model considers the distance between programmes, which would otherwise be implicit.

In the end, 21 different categories were determined (see table 12). For every programme broadcast in November 2009 (5410 programmes from our 6 channels), we began by noting the day and timeslot and to which category it belonged. Our analysis was based on the programme's duration and not on the number of times it ran. As a result we wound up primarily comparing the amount of time devoted to each category. Prime time was considered separately from the rest of the day as competition between channels is more intense at this time. The prime time periods - 7:15 p.m.–10 p.m. (France), 6 p.m.–10:30 p.m. (Great Britain), and 8 p.m.–11 p.m. (Turkey)⁴ - were established based on the standards used by the European Audiovisual Observatory (2009), which is the most consensual data source for the European audiovisual sector.

3.3 Defining diversity

The third step in our analysis (after having chosen the sources and defined the categories) was defining diversity—a prerequisite for our assessment of it. We chose to use Stirling's (2007) definition, though he himself applied it to quite another subject (namely the analysis of national energy portfolios). According to Stirling, diversity has three components: variety, balance and disparity. All other things being equal, diversity increases when variety, balance or disparity increases (see next box).

With the categorization (i.e. typology) complete, it was easy to assess variety and balance using what are now standard indexes. Assessing disparity however was quite another matter, which is why we now turn to this question (See Box 1).

3.4 The difficulty in measuring disparity

Disparity is the extent to which two programmes differ. Because of methodological difficulties disparity is rarely systematically taken into account when

analyzing media and cultural industries (Moreau and Peltier, 2004). In the absence of methodologies suitable for assessing the disparity between TV programmes (Farchy and Ranaivoson, 2010) we decided to propose our own methodology by selecting attributes that were useful in term of distinguishing between different programme categories⁵ and assigning values to each attribute for each programme category. The choice of attribute and value assigned to each programme category for each attribute depended both on an analysis of the typologies used previously (in some instances created by academics) and discussions with professionals from the audiovisual industry.

This approach allowed us to offer a more 'objective' attribute; however, it should still be considered exploratory. Our findings produced a matrix of distances between each pair of categories, which will hereafter be referred to as the disparity structure. Each programme category was assumed to be largely homogenous as far as this attribute was concerned. It was then compared with the other categories for each attribute. The disparity structure was based on a set of seven attributes (see table 2).

Attribute 1. Age. Programme categories were classified by their debut on television, a choice based on the intuitive postulate that more recent programme categories were intrinsically different from those that appeared decades earlier. Based on the French case, the oldest programme (1947) was assigned a value of 0 and the most recent (1999) a value of 1.

Attribute 2. Exclusivity. Categories whose content existed regardless of television were given a value of 0 (i.e. content that exists otherwise and for which television is only one outlet). Contrarily, programme categories produced exclusively for television were given a value of 1. In between one finds content that exist independently of television but on which broadcasting has had a considerable influence and having has even, in some instances, changed its form.

Attribute 3. Information. We have also classified programme categories based on their informative aim – from purely entertaining (value of 0) to purely informative (value of 1). The choice of attribute 3 was based on the works of Jost (2004), which propose three programme categories: entertainment-based programmes, reality-based programmes and fiction. We will compare the first two, information and entertainment.

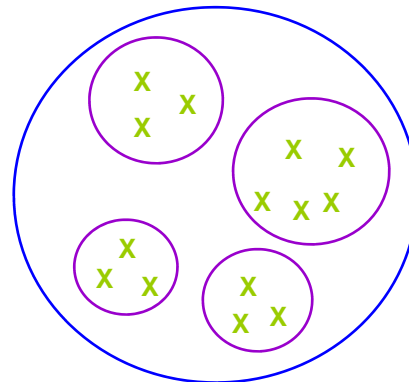
Attribute 4. Heritage. We also chose an attribute based on the standard distinction between stock and flux (Flichy, 1980). Flux programmes are not rebroadcast or reused (via DVD release, for example), or are at least not designed to be. These were given a value of 0. Stock programmes, which can be rebroadcast and whose value remains constant or

⁴ The prime time period is significantly longer in Great Britain (4h30) than in Turkey (3h) or France (2h45). Studies were also conducted with a reduced primetime (7 p.m.–10 p.m.) for Great Britain, but did not lead to significantly different results.

⁵ The term of "attribute" is used by Stirling (2007) (more precisely "disparity attribute"). Synonyms are "indicator" and, to some extent, "characteristic" (as used by Lancaster, 1979). Lancaster defines goods as bundles of characteristics, with some characteristics being quantifiable, which might correspond to our assignment of a value for each attribute of each category of program.

BOX 1: THE RELATIONSHIP BETWEEN DIVERSITY AND ITS THREE COMPONENTS: VARIETY, BALANCE AND DISPARITY

The diversity of a system (a channel's programming) can be assessed only when its elements (here, programmes) have been grouped into categories.



Programming by one channel over a period

X : element, i.e. program (e.g. Ghostbusters, Stade 2)

○ : category of program (e.g. Cinema)

Variety corresponds to the number of categories:



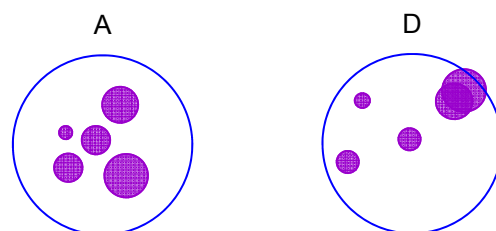
In terms of **Variety** B is more diverse than A

Balance, to the way the elements are spread among the categories (i.e. the time allotted to each category of programme)



In terms of **Balance** C is more diverse than A

Disparity, to the degree of difference between the categories (i.e. between each pair or between the two that are the farthest).



In terms of **Disparity** D is more diverse than A

Category of program	Age		Exclusivity		Informative		Heritage		Cost		Risk		Story	
	Date	Value	Exclusive?	Value	Informative?	Value	Heritage?	Value	Costly?	Value	Unpredictable?	Value	Scripted?	Value
Children's programmes	1950	0,06	Always	1,00	Sometimes	0,50	Rather flux	0,33	Hardly	0,25	Hardly	0,25	Often	0,75
Children's series	1962	0,29	Often	0,75	Hardly	0,25	Stock	1,00	Sometimes	0,50	Sometimes	0,50	Always	1,00
Cinema movie	1950	0,06	Never	0,00	Hardly	0,25	Stock	1,00	Always	1,00	Always	1,00	Always	1,00
Coaching	1999	1,00	Always	1,00	Hardly	0,25	Rather flux	0,33	Sometimes	0,50	Hardly	0,25	Sometimes	0,50
Cultural magazine	1953	0,12	Always	1,00	Often	0,75	Rather flux	0,33	Sometimes	0,50	Often	0,75	Often	0,75
Documentary	1952	0,10	Always	1,00	Always	1,00	Stock	1,00	Sometimes	0,50	Often	0,75	Often	0,75
Game and lottery	1954	0,13	Always	1,00	Hardly	0,25	Flux	0,00	Hardly	0,25	Never	0,00	Hardly	0,25
Live football	1952	0,10	Sometimes	0,50	Never	0,00	Flux	0,00	Often	0,75	Sometimes	0,50	Never	0,00
News magazine	1959	0,23	Always	1,00	Often	0,75	Rather flux	0,33	Sometimes	0,50	Often	0,75	Sometimes	0,50
News programme	1947	0,00	Always	1,00	Always	1,00	Flux	0,00	Often	0,75	Hardly	0,25	Hardly	0,25
On-set tv show	1952	0,10	Always	1,00	Never	0,00	Flux	0,00	Sometimes	0,50	Hardly	0,25	Hardly	0,25
Other live sporting events	1948	0,02	Hardly	0,25	Never	0,00	Flux	0,00	Sometimes	0,50	Sometimes	0,50	Never	0,00
Performance	1950	0,06	Never	0,00	Sometimes	0,50	Rather stock	0,67	Sometimes	0,50	Always	1,00	Hardly	0,25
Practical	1953	0,12	Always	1,00	Often	0,75	Rather flux	0,33	Sometimes	0,50	Never	0,00	Often	0,75
Real tv	1999	1,00	Always	1,00	Never	0,00	Rather flux	0,33	Always	1,00	Hardly	0,25	Sometimes	0,50
Religion	1949	0,04	Sometimes	0,50	Sometimes	0,50	Flux	0,00	Never	0,00	Never	0,00	Often	0,75
Serial	1949	0,04	Always	1,00	Hardly	0,25	Stock	1,00	Sometimes	0,50	Hardly	0,25	Always	1,00
Sport magazine	1969	0,42	Always	1,00	Never	0,00	Flux	0,00	Sometimes	0,50	Sometimes	0,50	Sometimes	0,50
Teleshopping	1987	0,77	Always	1,00	Never	0,00	Flux	0,00	Never	0,00	Never	0,00	Always	1,00
Tv movie	1957	0,19	Always	1,00	Hardly	0,25	Stock	1,00	Sometimes	0,50	Always	1,00	Always	1,00
Others	1958	0,22	Often	0,82	Sometimes	0,46	Rather flux	0,46	Sometimes	0,50	Sometimes	0,54	Often	0,72

TABLE 2. DISPARITY ATTRIBUTES BY PROGRAMME CATEGORY⁶

may even increase over time, were given a value of 1.

Attribute 5. Cost. We classified the programmes according to their cost per minute of production, which was a way of proxying for the programme's level of sophistication. Unfortunately it was not possible to obtain the costs of all 5410 programmes in our sample. We therefore used trade publications as our basis (CNC, 2010). The costliest categories were given a value of 1 and the least costly a value of 0.

Attribute 6. Risk. We differentiated between programmes whose utility could be predicted by viewers before watching it (i.e. categories of programmes that viewers were not sure in advance would prove a satisfying or exciting viewing experience) - the so-called 'experience goods' (Nelson, 1970). Such categories were given a value of 1. For some programme categories however it was possible to predict viewers' satisfaction, often because they were based on a redundant scheme. Such categories were given a value of 0.

Attribute 7. Story. Finally, programmes can differ according to the importance of the story (the script itself) and editing (post-production). Scripted and edited programmes were given a value of 1; unscripted and minimally-edited ones were given a

value of 0. This attribute in some ways relates to creativity but is not really the same thing, as creativity is too complex a notion to assess with a single attribute.

The goal was to get the most complete set of independent attributes. While each attribute's relevancy can be debated, it is worth noting that none influenced the disparity structure in a significant way (i.e. were one attribute to decrease it would not change the distance between the pairs of categories in an important way) (Farchy and Ranaivoson, 2010).

Building distances

Distances were then calculated for each pair of programme categories. To do this we used the Euclidian distance d:

$$d_{jk} = \sqrt{\sum_{i=1}^7 (x_{ji} - x_{ki})^2}$$

where *j* and *k* are programme categories;
i is a disparity attribute;

x_{ji} represents the value of category *j* for the attribute *i*.

⁶ In each case one value and a related comment were given. The category 'Others' included those programs that did not fit in the other categories (values are an average of the values for the other categories). Comments correspond to various ranges of value. 'Never' corresponds to 0-0.125; 'Hardly' to 0.125-0.375; 'Sometimes' to 0.375-0.625; 'Often' to 0.625-0.875; and 'Always' to 0.875-1. In the same way 'Flux' corresponds to [0-0.167]; 'Rather flux' to 0.167-0.5; 'Rather stock' to 0.5-0.833; 'Stock' to 0.833-1.

As a common way of modelling distance, d respects the properties of distance: symmetry, separation and triangular inequality.

3.6 Indexes of diversity

There is a great deal of literature on measuring diversity, especially as applied to biodiversity (e.g. see Patil and Taillie, 1982). All our indexes are positive functions of diversity: the higher the diversity, the higher the value of the indexes, and conversely. It is important however to specify that most indexes have no meaning in and of themselves and should only be considered in a comparative perspective (i.e. to compare different channels).

The Proportion of Categories assesses variety. To obtain the Proportion of Categories one divides the number of categories broadcast at least once by the total number of existing categories. Thus an index whose value is 0.4 means that 40% of all existing categories have been broadcast over the period in question. Such indexes that assess only variety are frequently used in studies on diversity in the culture and media industries (e.g. Moreau and Peltier, 2004).

The Shannon Evenness Index assesses balance (Pielou, 1969). It is applied to the way broadcast times are distributed over programme categories; the more balanced the distribution, the higher the index. To our knowledge this index has seldom been used to assess diversity in the culture and media industries (e.g. in Ranaivoson, 2008). While based on the far more common Shannon index (Shannon, 1948), it is designed in a way that aims to eliminate the influence of differing degrees of variety.

The Sum of Distances to Variety (SDV) Index is a ratio of the Sum of Distances Index to the Proportion of Categories. While the Sum of Distances Index corresponds to the sum of the distances between all pairs of programme categories⁷ broadcast at least once, we have introduced the ratio 'to Variety' to neutralize the effect of increasing variety. Unlike the original Sum of Distances Index, our index allows a mere increase in the number of programme categories broadcast not to result in an increase in disparity when the category is very similar to an already-existing one. Disparity, however, can decrease (i.e. there is duplication). Generally speaking, contrary to most of the empirical and theoretical analyses previously discussed, our study systematically takes disparity into account, which as we mentioned before is rare because of the methodological issues it raises.

A major breakthrough in this research has been the use of the Stirling Index (Stirling, 2007), which allows us to address diversity in the most comprehensive way possible by considering variety, balance and disparity at the same time. While Stirling's definition has now gained recognition relative to the analysis of cultural diversity (see its use by Moreau and Peltier, 2004; Benhamou and Peltier, 2007; Flores, 2009), the index has only recently been used in research on media and cultural industries (Benhamou and Peltier, 2009). We chose to use the more comprehensive version of the Stirling Index, which to our knowledge was introduced in Stirling 2007:

$$\sum_{j,k \in [1,n]^2, j \neq k} (d_{jk})^\alpha (p_j p_k)^\beta$$

BOX 2: CATEGORY, ATTRIBUTE AND ELEMENT

The three terms are used to define and measure diversity in our methodology. This is a brief description of how they related to one another when assessing the diversity of a system. A system is made up of elements. In theory it is possible to assess the diversity of a system by considering the diversity of its elements (see e.g. Dowd, 2001), but this implies limiting the number of elements considered.

Therefore elements are typically grouped in categories. While elements belonging to the same category may differ greatly from one another, it is assumed that they will differ even more greatly from those elements belonging to other categories. To our knowledge all papers on diversity in the media work directly with categories, which are generally pre-existing.

In our study we introduce attributes in order to see how different the categories are one from another. Categories can be characterized through a set of attributes, but the value taken by the attribute will change depending on the category. Thus attributes should not be confused with elements. Categories are made of elements but can be described based on the value of their attributes. Finally, the attributes we use here alone cannot describe every category but are useful in comparing them.

For example, the element 'BBC News' (broadcast by BBC One) belongs to the category 'News programme'. The value of its attributes is the same as that of the element 'Le Journal' (broadcast by France 2) because both elements belong to the same category. Attributes for 'Esra Ceyhan'la Hayat' (broadcast by TRT 1), which belongs to the category 'On-set TV show', have different values.

⁷ See Stirling (1998).

Components of diversity	Index	Formula
Variety	Proportion of Categories	$\frac{h}{n}$
Balance	Shannon Evenness	$\frac{\sum_{i=1}^h p_i \ln p_i}{\ln h}$
Disparity	Sum of Distances to Variety	$\frac{\sum_{j,k \in [1,n]^2} d_{jk}}{h/n}$
All	Stirling	$\sum_{j,k \in [1,n]^2} (d_{jk})^\alpha (p_j p_k)^\beta$

Where:

h is the number of programme categories broadcast at least once over the period;
 n is the total number of programme categories;
 p_i is the share of air time that was devoted to the programme category i ($0 \leq p_i \leq 1$);
 d_{jk} is the Euclidian distance between

TABLE 3. INDEXES OF ASSESSMENT OF DIVERSITY

The introduction of α allows us to play with the weight of disparity relative to variety and balance. Likewise, the introduction of β allows us to play with the weight of balance⁸ relative to variety and disparity⁹. The aforementioned studies only consider when $\alpha = \beta = 1$ (e.g. Benhamou and Peltier, 2009). However there is no reason to give preference to such values over others in the 0 to 1 interval.

In other words, this is the first time one index has been used to assess diversity, offered a complete approach for measuring and allowed for playing with the three components' different weights. To provide an overview of the indexes most commonly used to assess diversity, we have included the Simpson and Shannon indexes in our analysis. As both provided results that were consistent with our approach, we did not provide the details of their results here (Farchy and Ranaivoson, 2010).

3.6 From disparity to distinctiveness

We did not only consider diversity at the individual channel level; we also wanted to get an idea of diversity at the market level (i.e. does the viewer have a choice at a given moment in the day or does he face duplication, to use Steiner's concept). In other words we assessed the frequency with which each channel broadcast a programme similar to one broadcast by its competitor at the same moment. This corresponds to the concept of distinctiveness (McQuail and Van Cuilenburg, 1983).

More specifically we compared the programming of each pair of national channels to see whether public and private ones tended to provide distinct programmes or similar ones. Analyses were done over

the period of one week (from November 16th-November 23rd)¹⁰. For each time slot (i.e. hour), the distance (d) between the two programmes broadcast is given with the assumption that two similar programmes had a distance equal to zero. Distance here represents distinctiveness; the greater the distance, the greater the distinction between the two channels' programmes for the period in question. In other words disparity was used here to assess the channels' distinctiveness. The minimum distance was zero when the two programmes were similar; the maximum distance was the distance between the two most distinct programmes (here teleshopping and cinema movies); and the average distance was the average of all distances for all pairs of programmes.

4. Empirical analysis: results

We now turn to a description and analysis of our findings. We analysed the diversity of programming for the six channels, in each case applying the aforementioned indexes.

4.1 Fiction

We first analyzed the main programme categories broadcast by the channels in our sample, (i.e. fiction) which includes cinema films, TV movies, series and children's series. Fiction in fact (especially series) was a major component of the programming for those channels studied (at least 19% of their programming for the entire day and 26% for prime time). For all the countries however the share was higher for private channels than public ones. The difference was also

⁸ The lower α (with $0 < \alpha \leq 1$) is, the higher the emphasis on disparity.

⁹ The lower β (with $0 < \beta \leq 1$) is, the higher the emphasis on balance.

¹⁰ Consistent with the rest of the analysis, the programming day is assumed to begin at 6 a.m. and finish at 6 a.m. the next day.

Channels	Share (%) of fiction...		Share (%) of fiction over total broadcast time by origin			
	whole day	prime time	National	European	US	Others
France 2 (pu)	25	31	28	42	31	0
TF1 (pr)	54	32	17	5	73	4
BBC One (pu)	19	26	65	2	34	0
ITV London (pr)	26	31	55	0	43	2
TRT 1 (pu)	35	61	63	8	15	15
Kanal D (pr)	51	84	85	0	14	2

TABLE 4. VOLUME OF BROADCAST FICTION

observed for prime time but less so.

There is little distinction between private and public channels as far as the origin of the fiction is concerned¹¹. While French and British public channels at present broadcast more national fiction (and less U.S./Other fiction) than their respective private counterparts, the Turkish channel Kanal D (pr) broadcasts more national fiction than TRT 1 (pu). The only constant here is that relatively speaking public channels broadcast more European fiction.

Finally, a look at the fiction genre shows a homogenous preference for drama for all channels. Neither was there any significant difference in terms of date of production; in all cases fiction programmes were for the most part recent.

4.2 A comparison of overall programming diversity

The influence of funding on diversity of programming is ambiguous for the entire day. In the UK, ITV London's (pr) programming is less diverse than BBC One's (pu); the same was true for the Turkish channels. In fact the gap between Kanal D's (pr) and TRT 1's (pu) programming in terms of diversity was even larger. The opposite however was true for French channels. Private channels did not necessarily have less diverse programming than public ones, which stands in contradiction to the literature. There are at least two reasons for this. To begin, we used a more sophisticated index for our analysis; thus would it be worth applying this index to earlier studies. We found in particular that public channels' programming was always more balanced than private ones' (see the Shannon Evenness index),

which was also true for prime time. Most papers on diversity in the media focus on balance (e.g. Ward, 2006). Secondly, largely due to the sophistication of our approach, our sample of channels was relatively small, especially when compared with Van der Wurff's (2005).

Overall diversity of programming was lower during prime time than for the entire day for all channels, public or private. This can be shown by comparing the values provided by the Stirling Index for each channel for the whole day and for prime time¹². This result holds true for all the countries in our sample.

4.3 Analysis of each channel's distinctiveness at the national level

Another expectation of public channels is that they provide programmes that are distinct from those shown on private channels. In this respect, we expect no change in public channels' distinctiveness (compared to its private competitors) during prime time.

Quite to the contrary, distinctiveness tended to decrease during prime time as compared to the whole day. Thus in the UK, distinctiveness fell from 0.49 (whole week, entire day) to 0.45 (prime time during the week). The drop was even sharper between France and Turkey respectively (from 0.39 to 0.21 and 0.45 to 0.15). British channels remained the most distinct. For both channels news programmes and series represented nearly half of all broadcast time: ITV London (pr) however broadcasts a lot of reality TV; BBC One (pu) documentaries and news magazines. Turkish channels are the closest to one another in terms of programming during prime time. This is

¹¹ While origin may not be discriminatory enough (e.g. a French- and U.S.-made movie might have more in common than two of the latter), it is often used to assess the diversity of audiovisual content (see e.g. Ward, 2006; Benhamou and Peltier, 2009).

¹² Such a decrease is completely intuitive in the case of variety. Since variety corresponds here to the number of categories of programs broadcast at least once, the shorter the time period being considered, the smaller the number of program categories. However, for balance and disparity, it is not necessarily true that a shorter time period corresponds to a lesser degree of balance and disparity.

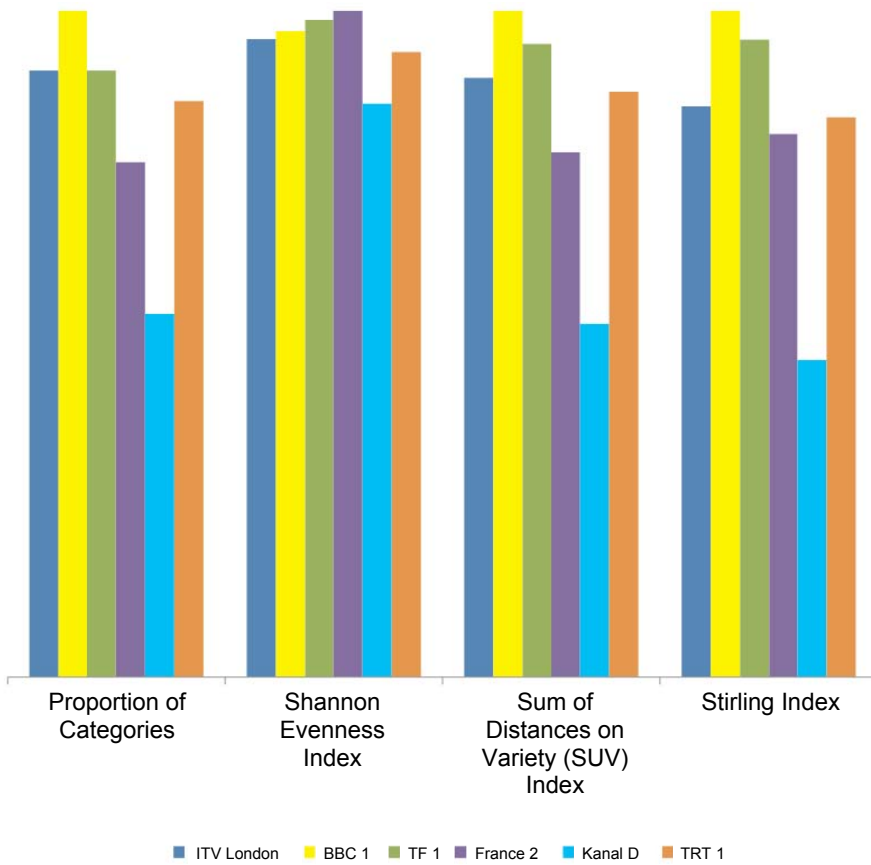


FIGURE 1. COMPARISON OF DIVERSITY OF PROGRAMMING FOR THE WHOLE DAY (BY CHANNEL)¹³

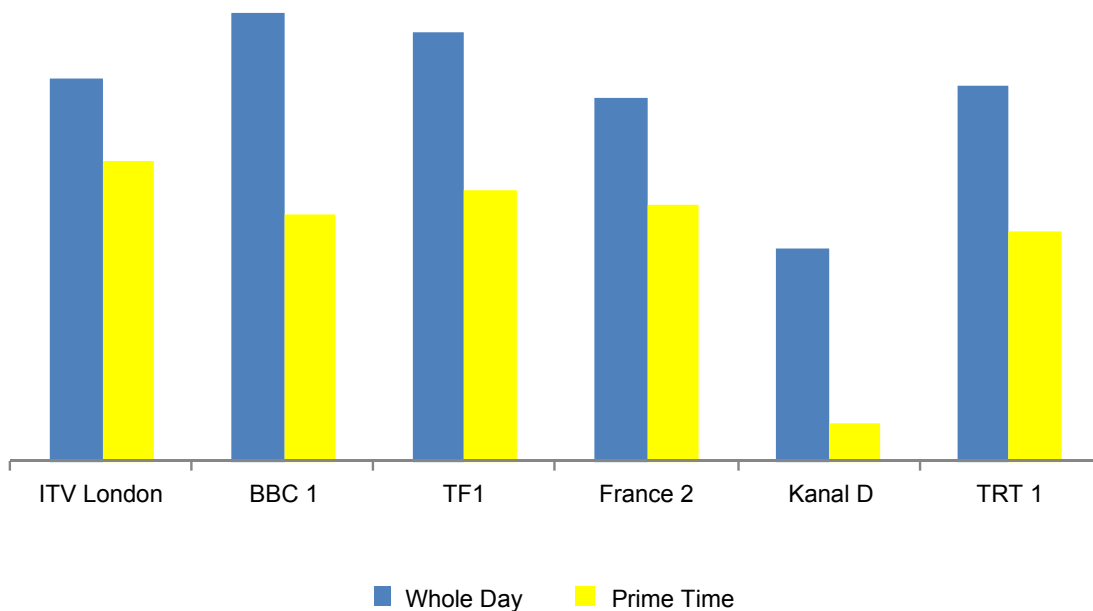


FIGURE 2. COMPARISON OF DIVERSITY OF PROGRAMMING FOR THE ENTIRE DAY VS. PRIME TIME (BY CHANNEL)

¹³ Indexes were scaled to get a more readable chart. Actual values available upon request.

Criterion	United Kingdom	France	Turkey
Average distinctiveness	0.49	0.39	0.45
Average distinctiveness during Prime Time	0.45	0.21	0.15

TABLE 5. DISTINCTIVENESS BY COUNTRY AND TIME PERIOD

Note: Calculations over one week, i.e. 168 hours. Prime times are not directly comparable because their duration differs according to country.

consistent with our previous findings and more notably the importance of series in Turkish channels' overall programming.

Such findings contradict literature that concludes that public channels do distinguish themselves from private ones (e.g. Aslama, 2006). This is principally because we were less interested in defining a level of distinctiveness and more interested in analyzing how distinctiveness evolves over time. Most notably and to our knowledge, no other research compares prime time with the rest of the day.

5. Conclusion

5.1 The way channels are funded (advertising vs. licence fees) does not seem to have a decisive impact on the diversity they offer.

The literature in general supports the claim that public channels have more diverse or/and distinct programming because they are less bound by the goal of maximizing their audiences as they do not rely on advertising (see e.g. Steiner, 1952; Aslama, 2006). Our empirical study should be considered exploratory. An analysis involving more channels and more countries is necessary in order to draw more definitive conclusions and to understand the implications in terms of policy in greater depth. The data for the six channels in the three countries in our survey nonetheless allowed us to compile an interesting set of results.

The main result of our analysis is that the way channels are funded (advertising vs. licence fees) does not seem to have a decisive impact on diversity. On one hand public channels do not necessarily have more diverse programming than private ones; on the other hand public and private channels often tend to provide similar programmes for the same time period.

The French private channel has more diverse programming than the public one regardless of the time period. It was not possible to directly assess the

impact of eliminating advertising on programming diversity (since 2009 there has not been any advertising after 8 p.m. on the French public channels). Whatever the case, this reform is somewhat contradicted by both the authorization of programme sponsorship (which leads to ubiquitous sponsorship) and the Audiovisual Media Services Directive that allows product placement (yet another form of advertisement). Ultimately, due to budgetary reasons, the elimination of advertising on public television in France in 2011 will only be partial, contrary to what the French government first announced. Unquestionably, further banning of advertising would deprive public channels of financial resources even more. The Turkish public channel has more diverse programming than the private one regardless of the time period. The British public channel's programming is more diverse for the whole day than the private one's but these results reverse at prime time. Diversity decreased dramatically during prime time for all channels. One may then conclude that banning or maintaining advertising alone does not change a whole lot as far as diversity of programming is concerned.

5.2 Regardless of the type of funding, regulation should lead public channels to distinguish themselves from private ones.

Public regulation is another factor that influences the quality and diversity of programmes. Most analyses find that the State's intervention favours diversity, e.g. Steiner (1952) argues that the FCC (the U.S.'s Federal Communications Commission) limits duplication by conditioning the right to broadcast as a "public service responsibility". Because of this responsibility, it chooses its programmes without necessarily trying to maximize its audience. Only Baxter (1974) appears critical of public intervention, namely that of the FCC. According to him, lack of regulation of the press industry does not hinder its diversity, while regulation of radio and television have had negative consequences.

In each country the public powers impose specific obligations on channels. For example TF1 is

supposed to broadcast 1,000 hours of youth programmes as well as a certain amount of national and European fiction¹⁴. Public channels have additional obligations in order to distinguish them from private ones. France 2 for instance is supposed to broadcast 15 lyrical, dramatic or choreographed spectacles per year. Our findings on the absence of a systematic link between public funding and diversity (5.1) could therefore be seen as a management failure by the directors of public channels with regard to expected goals.

5.3 Any non-specialized channel, private or public, that aims to maximize its audience will provide less diversity

We formulate here the hypothesis that our findings are not the result of a management failure but rather have to do with two key elements:

A channel as part of a group

BBC One's, France 2's and TRT 1's programming might be similar to that of non-specialized channels. However each one also belongs to a public audiovisual group (the BBC, France Télévision and the Turkish Radio and Television Corporation respectively), each of which has several other channels and which could result in some specialization among these channels. This in particular might explain BBC One's (pu) relatively low level of diversity during prime time. The channel actually seems to be specialized in information, which constitutes nearly 40% of its prime time broadcast. Such a high concentration means its programming is less balanced; however, this is justified by the channel's position with regard to the group as a whole. To consider the diversity of available content in greater depth, one must look at the content programmed by the group as a whole.

The inherent contradictions of goals set by public authorities

On one hand, as we have noted, public

authorities and citizens alike expect public channels to offer programmes that are different from those offered by private channels, but without always providing them with the budget they need. And yet, one of the key determinants of programming is a channel's budget (i.e. the amount of money available for buying content). Based on this criteria there is greater proximity between BBC One (pu) and TF1 (pr) than between BBC One and France 2 (pu). Concretely speaking BBC One may devote almost one-fourth of its air time to journals and TF1 one-tenth to reality TV, two of the costliest programme categories, but only because they can afford to do so. The cost of content

is far higher for these channels than, say, for France 2.

On the other hand, in order to survive, every non-specialized channel must focus on audience-based objectives. We challenge the contention that only channels that depend on advertising for their funding seek to maximize their audiences; free-to-air, non-specialized channels also try to increase their ratings. Any channel, private or public, that aims maximize viewership offers less diversity, especially when competition is at its highest (i.e. during prime time). During prime time competition becomes more intense for both public and private channels at the expense of diversity. This is likewise true from the viewer's perspective, as programmes on both types of channels tend to become increasingly similar.

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¹⁴ For details see http://www.obs.coe.int/oea_publ/iris/iris_plus/iplus8_2006.pdf

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