In actual examples, l_+ is never completely negligible; the following are illustrative examples:

a = Wales	B = Britain	g = 0.52
a = Brittany	B = France	g = 0.44
a = Crimea	B = Ukraine	$g \cong 0.$

Fig. 3b shows a case where: l_0 =0, $l_+ \cong 0$; as a result:

$$g = (l_+ w_+ - 1\_w\_)/(l_+ w_+ + l\_w\_) \cong -l\_w\_ / l\_w\_ = -1$$

In actual examples l_+ is never completely negligible; as a result the value taken by g very much depends on the respective magnitudes of w_+ and $w\_$. An illustrative example is:

a = Jammu and Kashmir B = India A = Pakistan g = –0.30

Fig. 3c shows a case where: l_0 = 0, $l\_$ = 0, as a result: g = 1. Illustrative examples are:

a = Amish region	B = United States	g = 1
a = Navajo Reservation	B = United States	g = 1

Fig. 3d depicts a more complex situation in the special case where: l_0 = 0, l_+ = $l\_$; then g only depends on the phenomenological parameters w_+ and $w\_$:
$$g = (w_+ - w\_)/(w_+ + w\_)$$

So far we did not examine to what extent w is affected by the presence of a national borderline. Let us discuss the matter on the example of Alsace (France); in spite of the close links between Alsace and Baden in Germany, it is clear that w_+ (contacts with France) is markedly greater than $w\_$ (contacts with Germany), if only for the obvious reason that French is used as the principal language both in school and in the administration; while w_+ is clearly equal to 3, the value that should be attributed to $w\_$ is less obvious; indeed $w\_$ is much more time-dependent than is w_+: the number of Alsatians working in Germany, the attractiveness of German TV programs, and many other similar conditions are likely to change fairly rapidly in the course of time. Given all these uncertainties we selected $w\_$ = 1 as being a simple and not quite unreasonable figure.

Figures 3a, b, c, d

Different configurations for the area of a minority language A

Panel a: Language A (stippled region), surrounded by Language B. $g \simeq 0$

Panel b: Language B, Language A. $g \simeq -1$

Panel c: Language B, Language A. $g \simeq 1$

Panel d: $l_+, \ w_+$; Language B; Language A; $l_- = l_+, \ w_-$

$$g = \frac{w_+ - w_-}{w_+ + w_-}$$

$w_+ = 3, \ w_- = 1 \implies g = 0.50$

$w_+ = w_- \implies g = 0.$
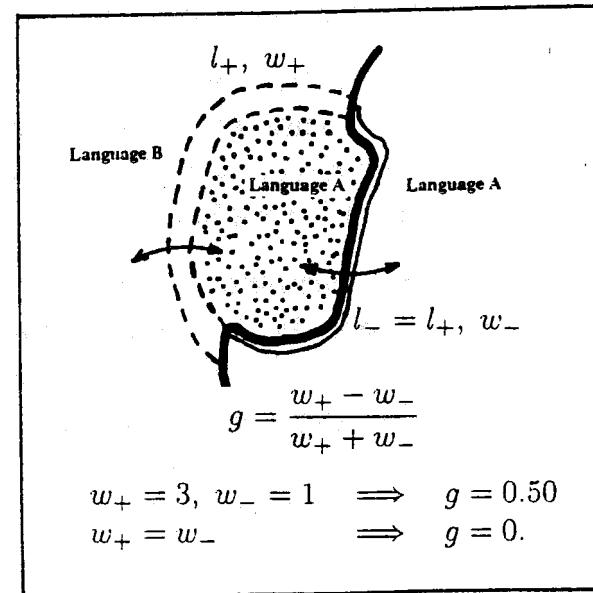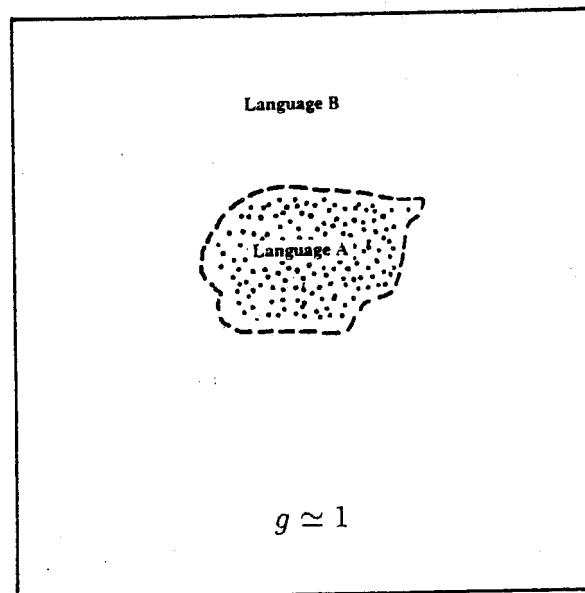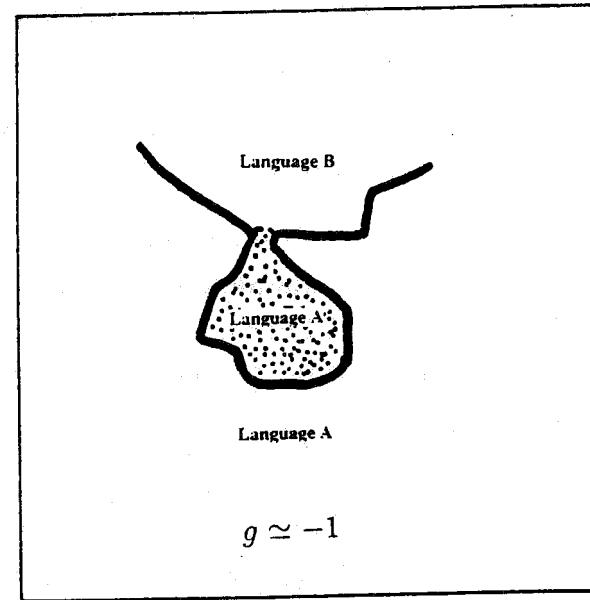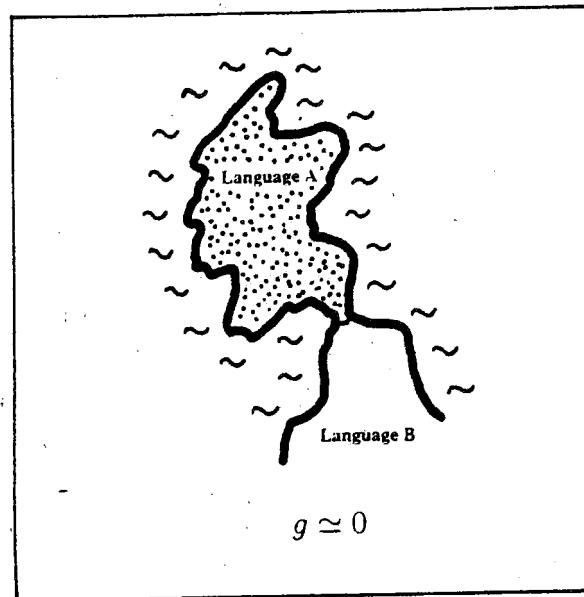
B denotes the language of the rest of the country; g denotes the spatial index defined in the text. State borders are represented by thick lines.

3.1.1 The case of islands

So far, we did not consider the case of islands. Our former definition would lead to: $g = 0/l_0 = 0$. While it is clear that islands are more loosely connected to the mainland than are peninsulas, $g = 0$ is clearly too crude a value. The following definition provides a more sensible estimate.

Definition 2. We consider an island (a) where a minority language is spoken. Let us introduce the following notations:

d_+: average distance between the ports of a and those of the mainland (B)

d_-: average distance between the ports of a and those of an a–speaking region A belonging to a foreign country.

w_+ and w_- have the same meaning as in Definition 1.

The geographical index of integration for the island a is defined as:

$$ g = (1/ D) (w_+ /d_+ - w_-/d_-)/(w_+ /d_+ + w_-/d_-) $$

italique

where D is an "effective distance" (expressed in hundreds of kilometers) defined as: $D = Max[Inf(d_+,d_-),3]$.

g is normalized in the sense that it is comprised between -0.33 and 0.33.

As a matter of illustration, we apply the above definition to the example of the French Caribbean island of Guadeloupe; in this case $d_+ = 7'000$ km; the nearest territory having Creole as its official language is Haiti: $d_- = 500$ km; with $w_+ = 3$, $w_- = 1$, we obtain: $D = d_- = 5$ and $g = 0.05$.

One of the purposes fulfilled by definition 2 is to guarantee a smooth transition between the case of a peninsula (which is ruled by definition 1) and the case of an island. This can only be achieved in an approximate way however; indeed it is clear that coastal navigation plays a substantial role in the case of a peninsula, a factor which has been ignored in definition 1. Such inaccuracies should not be taken too seriously however for the main uncertainty stems in fact from the difficulty of obtaining reliable estimates for the mobilization parameter w.

3.2   A quantitative statement of the paronymy hypothesis

In section 2 the paronymy assumption has been introduced, and to some extent confronted with empirical evidence. Trying to encapsulate the complexity of those historical mechanisms into a single parameter may appear as a preposterous and naive attempt. Yet, such a simplifying step can hardly be avoided if we

insist on quantitative tests. We introduce an index aimed at assessing the intensity of separatist struggles in the following way.

Definition 3. We consider a region *a* which is the homeland of a minority; its resistance to assimilation is characterized by an historical index *h* defined in the following way:

> *h* = 0, if the region has not been annexed
>
> *h* = 1, if there has been a peaceful annexation and no subsequent separatist claims.

If there have been separatist disturbances, we take for *h* the logarithm of the total number of deaths.

There is a notable gap between definitions 1 and 2 which are about minority languages, and definition 3 which refers to separatist struggles. The reason for this shift lies in the fact that in analyzing historical records it is almost impossible to distinguish between the disturbances that may be attributed to language claims, to religious feelings or to ethnic and cultural specificities. In sum at the level of historical observation, we have to be content with an aggregated measure of separatism.

4. Estimating relaxation times for minority languages

4.1   The evolution in the number of minority-language speakers

In the life of a language[6], two phases should be distinguished: the equilibrium phase and the assimilation phase; Fig. 4 schematically represents the evolution in a typical case. Notice that both phases may last for a very long time. In principle one should also consider the possibility that the decline may be checked as well as the possible occurrence of a revival phase. Such cases are very rare however. The so-called linguistic revival that occurred in the late nineteenth century in a number of countries (Albania, Bielorussia, Flanders, Hungary, Iceland, Norway, Poland, Ukraine, Uzbekistan, etc) were of a very different nature for in such cases the language was still spoken by the people as a dialect or more precisely as a variety of dialects; the revival rather concerned the recognition of that dialect as a proper language with its own literary

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6   In principle one should make a distinction between various ability levels. Four stages may be considered depending on whether a language is understood, spoken, read or written. For instance in the Basque Provinces (Spain) the respective percentages are: 50, 46, 25 and 11; in Catalonia (Spain) they are: 90, 77, 62 and 38 (Minority Rights Group, 1977). Unfortunately, only the number of speakers is in general recorded and usually with a fairly high margin of error (see in this respect the discussion in Kirk, 1946, 224).

Figure 4

Two phases in the life of a language

Time
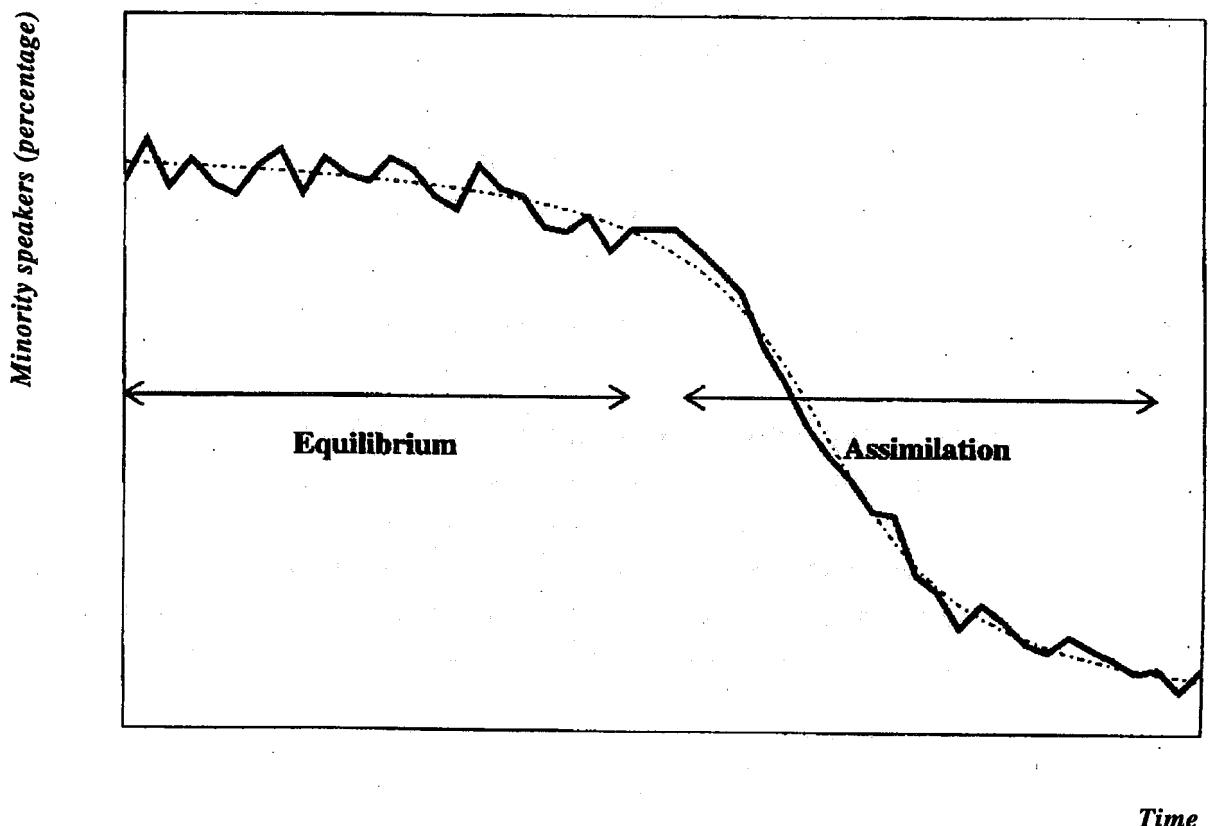
The equilibrium phase corresponds to average stability in the number of speakers. During the transition to the fall-off phase, the assimilation rate gradually increases to a higher value characteristic of the assimilation phase.

traditions. In contrast, the revivals we consider here refer to the total number of speakers; to our knowledge the only revival of that kind currently under way might be that of the Welsh language; that revival still has to be confirmed by further statistics in coming decades.

As a first approximation, the decline phase for a language a may be described by the following equation:

$$p = p_0 \exp(-at) = p_0 \exp(-t/\tau) \qquad (2)$$

where p denotes the percentage of a-speaking people. The coefficient a may be referred to as the *assimilation rate*; its inverse $\tau = 1/a$ has a simple interpretation: in the time interval t the percentage p is divided by a factor 2.7; τ is called the relaxation time of the assimilation phase. The quasi-equilibrium situation which is schematized by the left-hand part of the curve in Fig. 4 corresponds to a very small assimilation rate, i. e. to a very large relaxation time.

4.2 Relationship between the assimilation rate and the geographical index g

The relation that we expect to hold between the assimilation rate a and the geographical index g is depicted graphically in Fig. 5. The following special cases are of particular significance:

1) $g = 1$: Rapid assimilation; example: the "melting-pot" period in the United States.
2) $g = 0$: Equilibrium; examples: French-speaking Swiss or Catalan-speakers in Spain.
3) $g = -1$: Strong language revival; a rather hypothetical situation as already noticed.

The tables 1 and 2 summarize a number of empirical results; the correlation between a and g turns out to be equal to 0.84. For the test of the theoretical curve in Fig. 5 to be completely satisfactory, additional data would be required

Table 1

Evolution in the number of minority-language speakers

Region and language	Percentages of speakers		Relax. time	Assim. rate	Sources
	First estim. %	Second estim. %	century	1/century	
Alsace, German dialect	1950: 40	1980: 25	1975: 0.64	1.56	Hérand
French Basque Provinces	1876: 88	1936: 66	1906: 2.08	0.48	La Croix (June 6, 1970)
	1936: 66	1970: 38	1953: 0.62	1.61	
Spanish Basque Provinces		1980: 28			Davant, Letamendia
Brittany, Celtic dialect	1974: 25	1991: 17	1982: 0.44	2.27	La Croix (Nov. 29, 1975)
					Le Monde (Mr. 31, 1991)
Catalonia, Catalan		1994: 68			Finan. Times (Mr. 3, 1994)
Romantsch speakers (Sw.)	1860: 42	1880: 32	1870: 0.74	1.35	Ann. Stat. de la Suisse
	1880: 32	1990: 6	1935: 0.42	2.38	Terra
French speakers (Sw.)	1880: 89	1941: 86	1915: 15.2	0.07	Ann. Stat. de la Suisse,
	1941: 86	1950: 85	1945: 7.69	0.13	Gazet. de Laus. (Aug. 28, 1994)
Wales, Welsh	1891: 50	1961: 26	1926: 1.0	1.0	Times (Nov. 23, 1970)
	1961: 26	1971: 20	1965: 0.38	2.63	The Guardian (Nov. 29, 1978)
	1971: 20	1981: 18	1975: 0.95	1.05	

The relaxation time τ and the assimilation rate a are defined through the relation: $p_1/p_2 = \exp((t_1-t_2)/\tau) = \exp(a(t_1-t_2))$, where p_1 and p_2 denote the populations of speakers at times t_1 and t_2. A very long relaxation time is typical of an equilibrium situation. Most relaxation times appear to be decreasing in the course of time which shows a transition from a situation of equilibrium to an assimilation phase.

Table 2

Relation between the geographical index g
and the assimilation rate a

Region and language	Geographical index	Assimilation rate (period after 1945) 1/century
Alsace, German dialect	0.50	1.56
French Basque Provinces	0.45	1.61 (copés 1945)
Brittany, Celtic dialect	0.44	2.27
Romantsch speakers (Sw.)	0.83	2.38
French speakers (Sw.)	0.14	0.13
Wales, Welsh	0.52	1.52

The correlation is equal to 0.84 (95% bounds are 0.08 and 0.98).

Figure 5

Expected relationship between the geographical index g
and the assimilation rate a
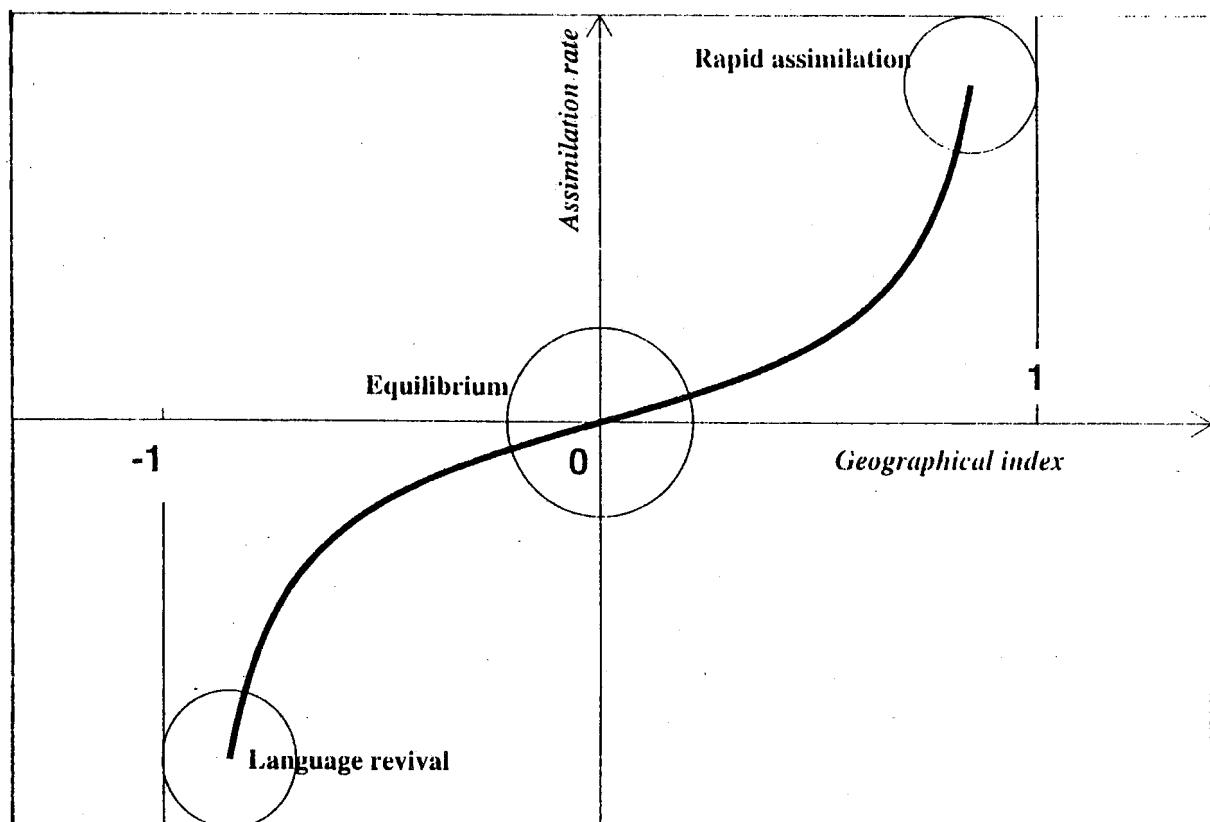
especially in the remote parts of the curve, i. e. $g < 0$ and g close to one. It can be noted that the assimilation rate is largely independent of the policy of the state. Thus, despite of the fact that Romantsch has become a national language (though not an official language) in Switzerland in 1938, its decline, not only continued, but even accelerated. The assimilation rate for Romantsch is of the same order of magnitude as the assimilation rates in more centralized countries such as Britain or France. While Romantsch was retreating, French and Italian preserved their positions in Switzerland; in other words, the potential usefulness of the language and the geographical environment seem to be more important than linguistic policies.

4.3 Temporal shifts in language boundaries

Figure 6 gives three examples of changes in language boundaries in the course of time. These maps emphasize one important characteristic of the phenomenon, namely its extraordinary slowness. By and large, the "language front" has been moving at a speed of about 8 to 15 kilometer/century. These figures are all the more striking when one realizes that these cases correspond to the expansion periods of major world languages (German, French and Spanish respectively). The present observations are consistent with the results obtained (in a somewhat different context) by Lieberson et al. (1975, 53).

5. The analysis of separatism

5.1 The data

Separatism usually reflects many causes, whether linguistic, religious, cultural, ethnic or economic. One could even argue that in joining a separatist struggle each individual has his own motivations. As a result, it is almost impossible for an outside observer to distinguish between various sources of separatism. Our methodological choice therefore was to estimate the *overall* intensity of separatist struggles. To this end we converted all major events into a number of fatal casualties. In developing countries where separatist struggles often take the form of open warfare, this number is almost identical with the estimated number of deaths. On the contrary, in industrialized societies it provides an equivalent figure for the demonstrations, arson attempts, bomb attacks and other forms of protest. Specific details about equivalence factors are given in the appendix.

Figures 6a, b, c
## Temporal shifts in language boundaries
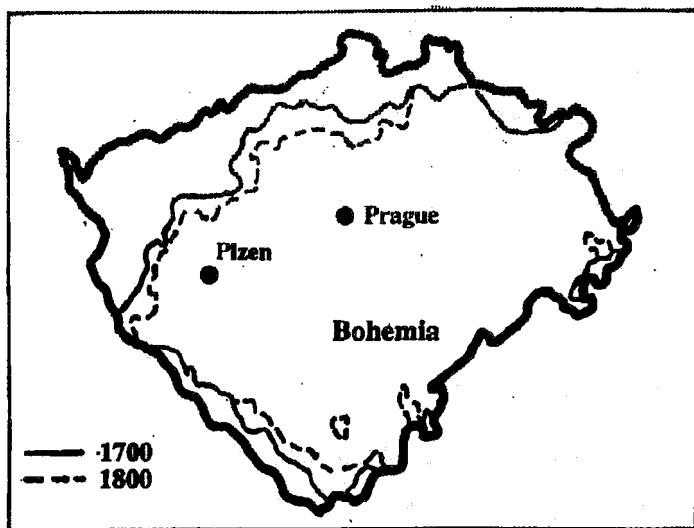
Figure 6a shows the development of German settlements in Bohemia, 1700–1800. North and West to Bohemia are the German provinces of Saxony and Bavaria. *Source: Wiskemann (1938).*
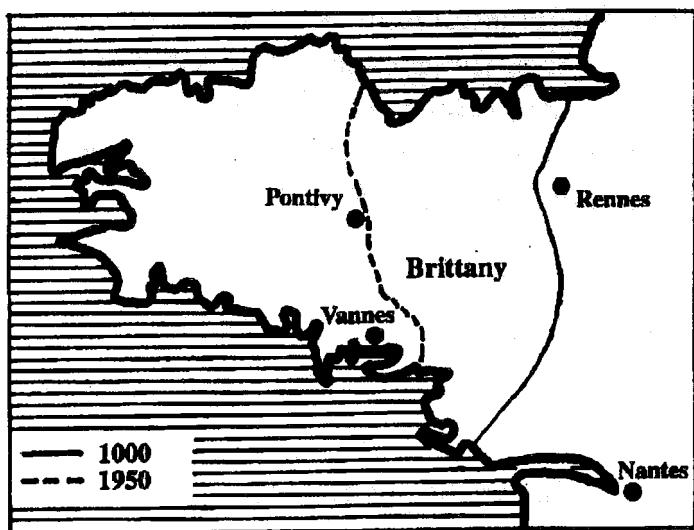

Figure 6b shows the slow displacement of the linguistic boundary in Brittany (France). *Source: Sérant (1971).*
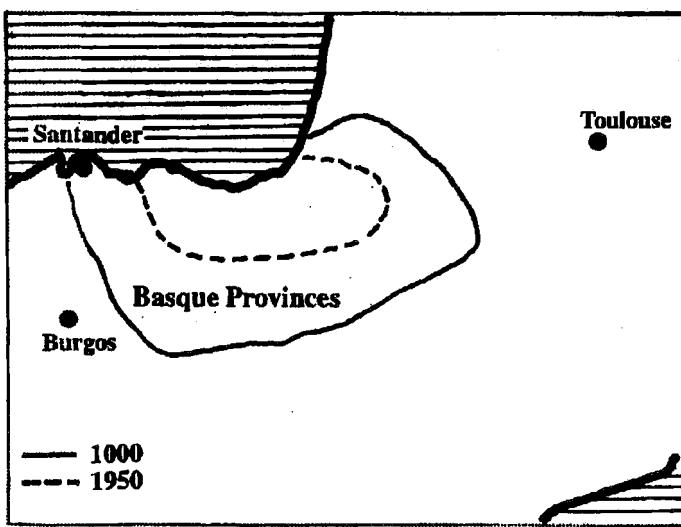

Figure 6c displays the gradual shrinking of the area in which the Basque language is spoken. *Source: Davant (1975).*

5.2 The ceteris paribus condition

In trying to assess the impact of the geographical factor *g* we are confronted with the ceteris paribus requirement. In order to make the test reliable one has to eliminate possible variations in factors not considered in the model. The following precautions are of crucial importance. (i) One should compare separatist movements which are more or less at the same stage. It would be pointless to compare a situation where national awakening is just under way (as in Peru or Mexico for instance) with another where national consciousness is fully developed (as in Punjab for instance). (ii) The type of the polity has an obvious influence on the level and forms of separatist disturbances. The latter do not take the same form in a nation that has a long democratic tradition or in one that has not.

The above qualifications are far less crucial in analyzing the impact of the historical factor for, in a sense, the magnitude of the historical index reflects (though for an earlier period) both the nature (more or less violent) of the nationalistic movement and the response (more or less tolerant) of the state.

5.3 Findings

Owing to the above arguments, we shall carry out the following tests:

1) The impact of the geographical factor *g* (taken alone) is analyzed for separatist struggles in France (9 cases): Fig. 7.
2) The impact of the historical factor *h* is considered separately first for "old" (i. e. European) countries, and then for "new" countries (6 and 9 cases respectively): Fig. 8a and 8b.
3) As a complementary test we examine whether the introduction of the geographical factor improves the fit already provided by the historical index: Fig. 8c.

5.3.1 Geographical index versus separatist disturbances

Fig. 7 shows the relationship between the spatial index *g* and the intensity of separatist disturbances as measured by the index *d*. The estimated equation is:[7]

$$d = \text{tg}(-1.89g + 1.1) \qquad r = -0.77 \; (-0.22, -0.95)$$

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7   The fact that the estimated equation is a tangent rather than a straight line comes from the fact that *g* is bounded between −1 and 1; notice however that a linear fit is only slightly less effective: $r = -0.71$.

where r denotes the coefficient of correlation; the figures in parenthesis give the confidence interval to probability 0.95.

Figure 7

Relationship between the geographical g and the level
of separatist disturbances for French provinces
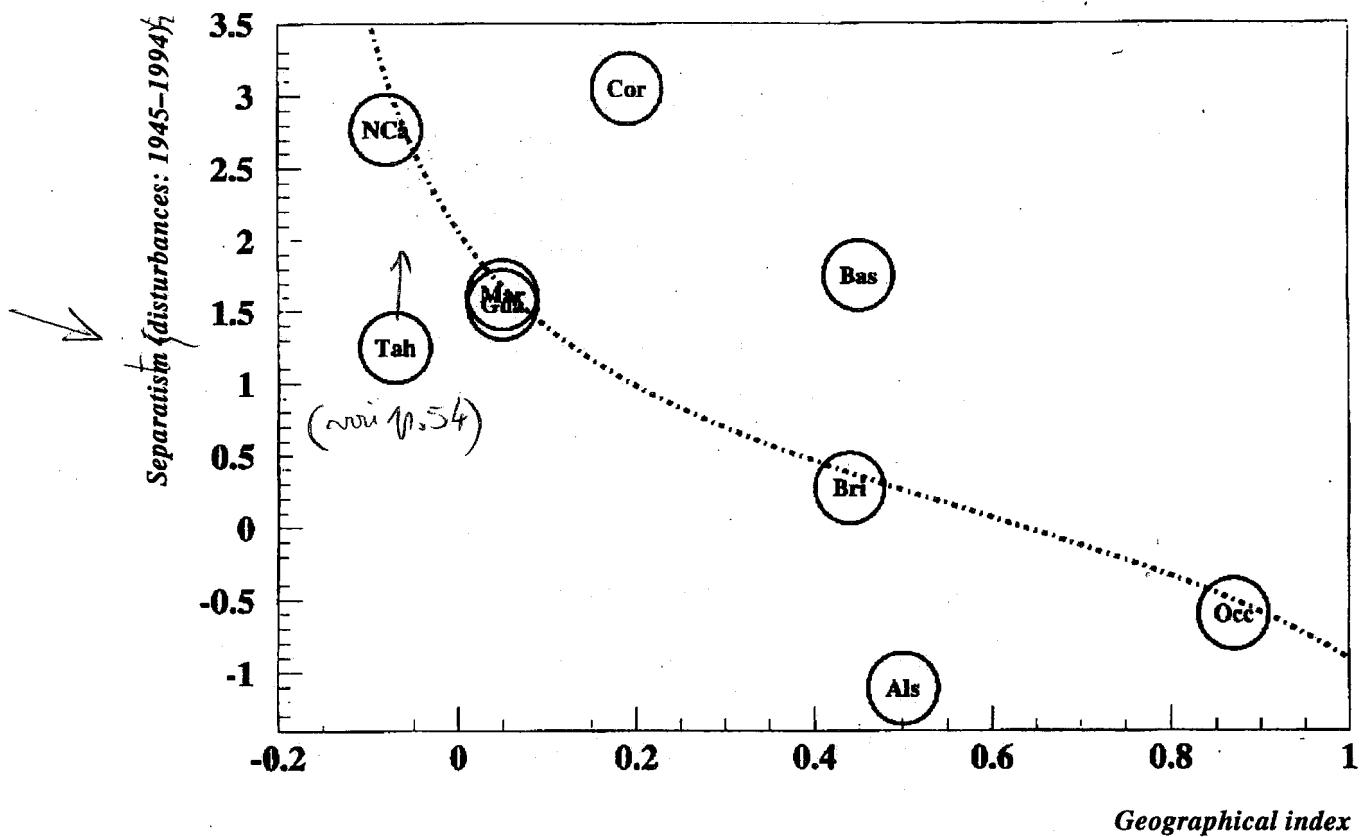
Als: Alsace; Brit: Brittany; Bas: Basque provinces; Cor: Corsica; Gua: Guadeloupe; Mar: Martinique; NCa: New Caledonia; Occ: Occitania; Tah: Tahiti. The correlation is equal to: −0.77.

5.3.2 Historical index versus separatist disturbances

a) Fig. 8a shows the relationship between the historical index h and the intensity of separatist disturbances for "old" countries. The estimated equation is:

$$d = 0.80h - 1.30 \qquad\qquad r = 0.83 \quad (0.05, 0.93)$$

b) Fig. 8b parallels Fig. 8a for "new" countries. The estimated equation is:

$$d = 0.73h - 0.34 \qquad\qquad r = 0.68 \quad (0.04, 0.93)$$

Figure 8a

Relationship between the historical index *h* and
the level of separatist disturbances for "old" countries
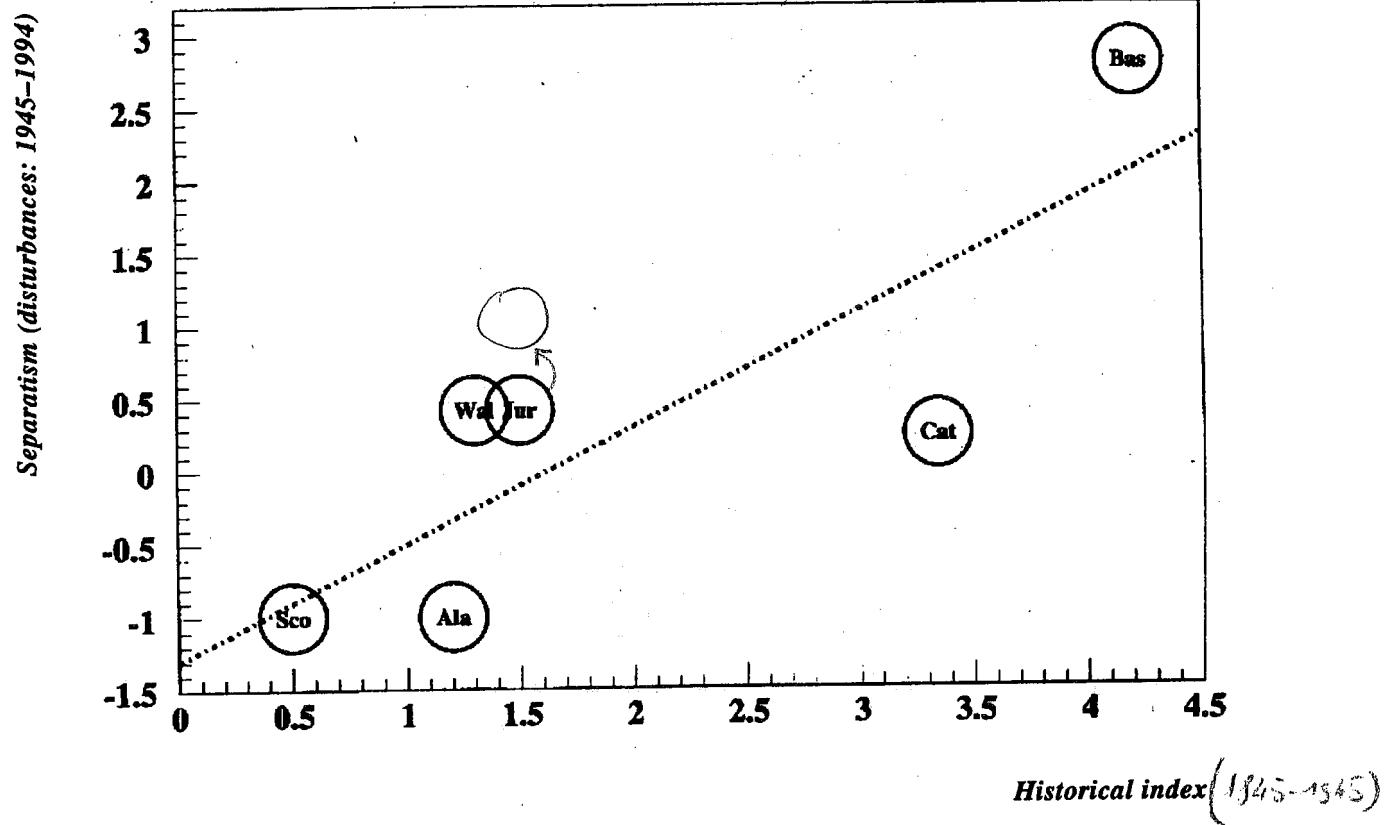
Ala: Aland Island; Bas: Basque provinces (Spain); Cat: Catalonia; Jur: Bernese Jura;
Sco: Scotland; Wal: Wales. The correlation is 0.83.

Majouta Kosovo, Xinjiang, Bretagne, Alsa,

Figure 8b
Relationship between the historical index *h* and
the level of separatist disturbances for "new" countries
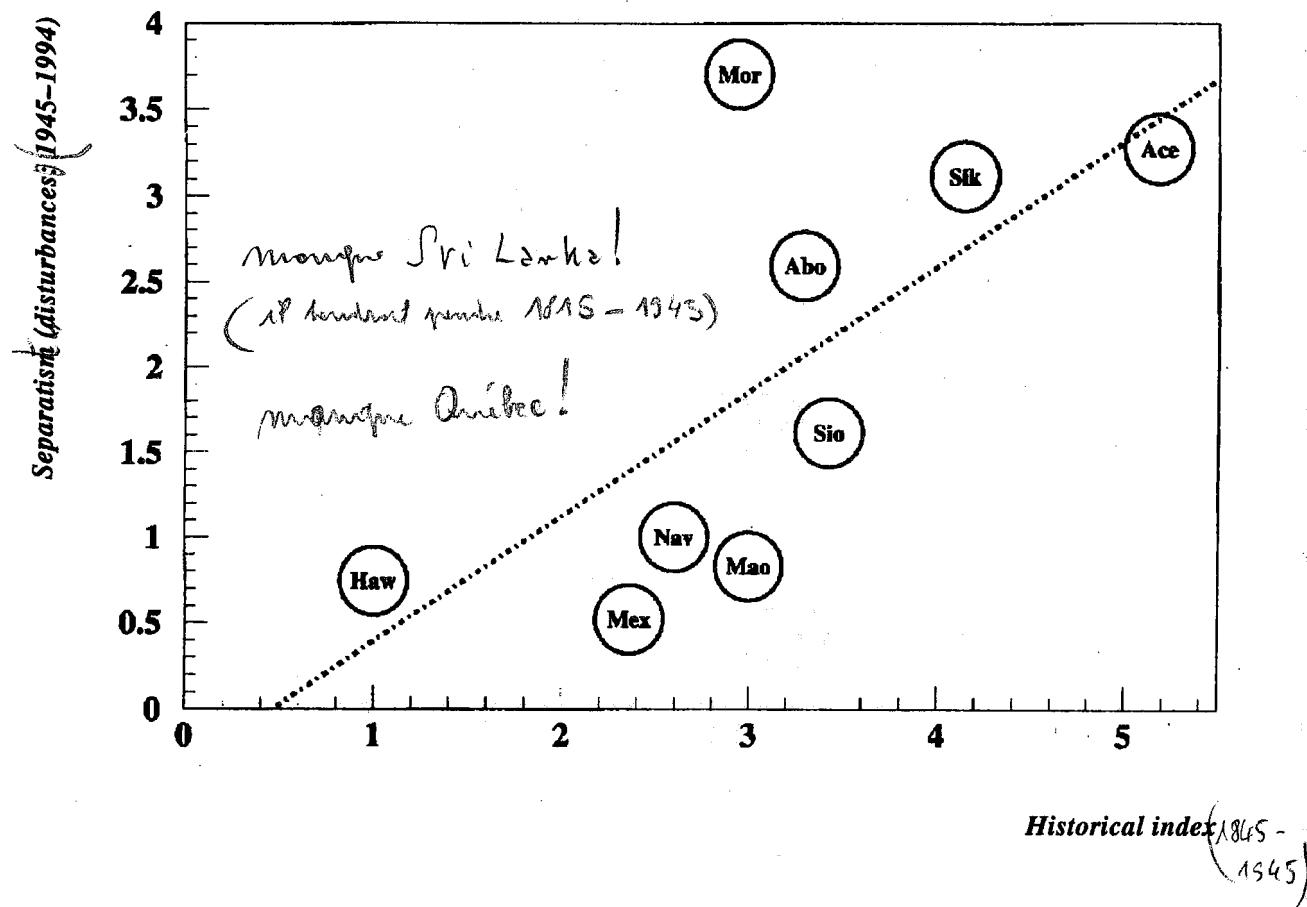
Abo: Australian aborigenes; Ace: Aceh province (Indonesia); Haw: Hawaiians; Mao: Maori (New Zealand); Mex: Mexicans (Arizona and New Mexico); Moros (Philippines); Nav: Navajos (USA); Sio: Sioux (USA); Sik: Sikhs (India). The correlation is 0.68.

Figure 8c

Relationship between the geo-historical index *h/g* and
the level of separatist disturbances for "new" countries
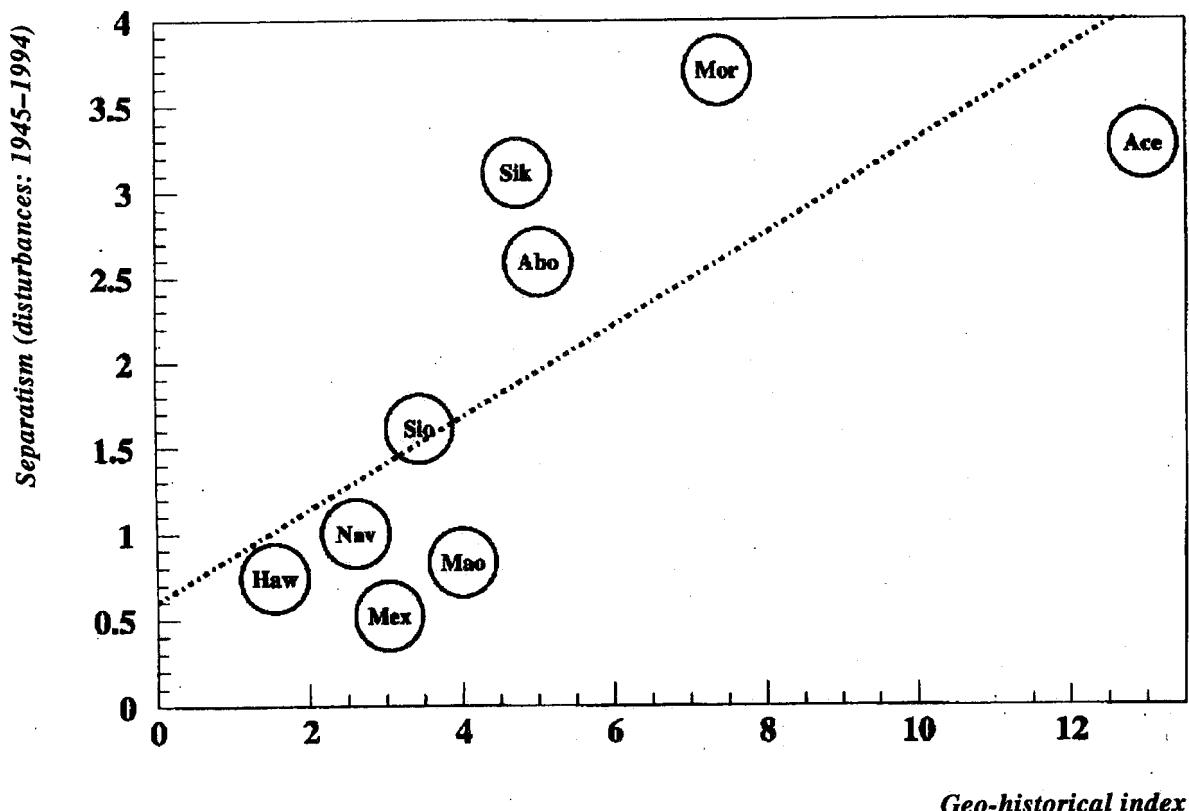
The symbols have the same meaning as previously. The correlation is 0.74.

5.3.3 *Geo-historical index versus separatist disturbances*

Let us examine if the previous statistical adjustments can be improved by
combining the historical *and* the geographical index. Taking *h/g* as the new
variable leads to the following estimates:

"Old" countries: $d = 0.63 \ (h/g) - 1.96$ $r = 0.73$ $(-0.19, 0.97)$
"New" countries: $d = 0.27 \ (h/g) + 0.60$ $r = 0.74$ $(0.11, 0.94)$

In other words, the introduction of *g* improved the fit in the "new" country case
but failed to do so for the "old" countries. In a sense the contrary would have
been more natural; indeed, for new countries time was somewhat too short for
the geographical factor to deeply affect national loyalties. The reason for this
counter-intuitive result is probably a mere statistical one: for old countries the
correlation between *d* and *h* is already fairly high and further improvement is
difficult.

5.4   Remark

Needless to say, the form h/g is not the only possible functional form for the function $F(h, g)$; it is just one of the simplest nonlinear forms; looking for a more effective form would require more data points than we have got here.

6.   Conclusion

In this paper we focused on ethnic revivals based on homeland loyalties, in which linguistic factors usually play a prominent role. We presented a model aimed at describing the long-range trend of such phenomena. In a long-term perspective, spatial and geographical factors turn out to be of cardinal importance. Throughout this paper we have tried to look at diverse and seemingly unrelated episodes as manifestations of the same recurrent process in order to bring some kind of provisional order into a vast and chaotic field. Of the two determinants that we examined, namely the spatial and historical factors, the latter appears to be predominant in the sense that the strength of nationalist struggles is mainly set by former episodes and local traditions. But once the impact of this factor has been discounted, spatial separateness turns out to play a major role in determining the level of separatist struggles. Furthermore, spatial separeteness turned out to be significantly correlated with the degree of language maintenance.

The present model has a number of straightforward implications. As an example let us consider the integration process in the United States. There are only two contiguous countries, namely Canada and Mexico. Canada being an English-speaking country (with the obvious exception of Quebec) there can be no major minority problem on the northern frontier. Our model would make us expect a different situation on the Mexican border; such an impression is indeed confirmed by the observation (Lieberson et al., 1975, 56) that, in New Mexico for instance, since 1846 only a small proportion of the Spanish-speaking people have shifted from Spanish to English.

6.1   An agenda for future research

We are convinced that the fundamental mechanisms responsible for separatist tendencies have remained basically unchanged since the beginning of the 19th century. This claim was given some plausibility by examining a few examples for which data were available. Yet, for lack of quantitative historical evidence a systematic investigation was not possible. In this respect one should mention

the remarkable work performed by C. Tilly and his collaborators (Horn and Tilly 1986, Tilly 1992) for England (1758–1834) and also for France. Once a similar task has been carried out for other countries a systematic investigation of separatist struggles in the 18th and 19th centuries will become possible. Needless to say, in the case of South-East or South-West Asian countries this requires a working collaboration with local scholars and librarians. Another interesting issue would be to analyze the differences of separatist struggles in developing countries (see in this respect Strang, 1990; 1991) as compared to those in industrialized countries.

6.2   The future

Should one in coming decades expect a cardinal change in the way people of different strands are able to communicate with each other? In the wake of the computer revolution a substantial change may be brought about by the possible introduction of automatic speech translation. This would involve the following steps:

> Language A → Speech recognition → Automatic translation A/B →
> Vocal synthesis of language B

It is of course difficult to guess how long it will take for such devices to become widely used: 30, 50 or 100 years? Yet, even 100 years is a short span of time in comparison to the stretches of several centuries required by the process of linguistic assimilation. Such a technological innovation would give multinational states a chance to realize their linguistic unity much more rapidly than could be expected otherwise.

7.   Appendix: The data base

7.1   Selection of the minority groups

The forty minority groups documented in this paper should be seen as a sample of a larger set. In his comprehensive survey of minorities, T. Gurr (1993) listed 227 communal groups. But Gurr used a broader minority concept. Our definition corresponds approximately to two of Gurr's five subclasses, namely "ethnonationalist groups" and "indigenous people"; for these subclasses Gurr's survey lists a total of 121 groups. Our own selection of about 40 cases was based on the following criterions. (i) Data availability (ii) Within the previous constraint we tried to make the sample as representative as possible by selecting minority groups from the five continents.

The first criterion lead us to leave aside countries from the ex-USSR. For the same reason, minorities in Africa and Asia are under-represented. We also left aside those separatist struggles which, besides their domestic significance, have become major issues in international relations. This is for instance the case for Ulster, for former Yugoslavia, for the Kurd minorities, for Cyprus or for Palestine.

7.2   Equivalence factors

In order to build an intensity-index suitable for a great variety of separatist movements, we converted standard separatist events into equivalent numbers of deaths. The following factors have been used as equivalents for one death: (i) Demonstration of one million people (ii) 30 bombs or 60 arson attempts (iii) 30 non fatal casualties (iv) Petition of 100'000 people.

Except for the last factor, which has in fact been used rather rarely, the other equivalence factors are based on fairly realistic orders of magnitude. Once the equivalent number of deaths n has been obtained the intensity index is defined by the logarithm of n referred to the total minority population p: $d = \log (n/p)$. In taking the logarithm we follow a standard practice (see for instance Richardson) which has two distinctive advantages. (i) it keeps the magnitude of d of the order of a few units which is appropriate for an index (ii) it minimizes the incidence of estimation errors.

7.3   Sources

Our data set is mainly based on event analysis using major newspapers. Most valuable in that perspective has been the newspaper data base of the "Fondation Nationale des Sciences Politiques" (27 rue Saint Guillaume, Paris). It includes articles from a variety of papers (in English, French, German, Italian and Spanish) arranged by countries and topics of interest; the base covers the whole period from 1945 to present.[8] The coverage is not uniform of course, neither in time nor in space; that kind of bias is discussed in Olzak (1992); by and large, however, one may subscribe to S. Olzak's conclusion that "few alternative sources contain so much information". Anyone who has attempted a comparative study based upon published reports not originally prepared for this purpose has experienced the frustration that arises when the accounts become mute just at the point where some crucial proposition is to be

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8   To my best knowledge such a data base is unique in Europe. I express my sincere thanks to the staff for its amiability, competence and dedication.

tested. Needless to say, we also used monographs and journal articles whenever they permitted to fill a major gap.

The following books and articles have been used especially for the period prior to World War II (for the sake of clarity and concision, except when strictly required, we omit the year of publication). *Belgium*: Clough; *Scotland*: Birch, Coupland, Hechter, Leruez, Sorokin, Tilly (1993); *Wales*: Coupland, Gilbert, Sorokin; *Aland Island*: Barros, Denier, Mémoire, Singleton; *Alsace*: Histoire, La Collaboration, Reuss, Zeller; *Basque Province* (France): Letamendia; *Brittany*: Sérant, Dupuy; *Corsica*: Antonetti, Index du Temps, Pomponi; *Guadeloupe, Martinique*: Bangou, Burton; *New Caledonia*: La Mélanésie, Dousset-Leenhardt; *Occitania*: Histoire, Index du Temps, Zeller; *South Tyrol*: The Guardian (Dec. 14 1948, Oct. 5 1984); *Basque Provinces* (Spain): Barrès du Molard, Davant, Richardson; *Catalonia*: Dwelshauvers, Rossinyol, Tilly (1993), Richardson; *Bernese Jura*: Jenkins, Rennwald; *Quebec*: Oliver, Rebellion; *Chiapas*: Benjamin, Times (Ja. 17 1959); *Peru (South)*: Richardson; *Navajos*: Cook, Dennis, Kroeber; *New Mexico*: Meier et al.; *Sioux*: Dennis, Index du Temps, Richardson; *Australia* (aborigines): Hughes, Richardson; *Punjab*: Richardson; *Aceh Province*: Cribb, Richardson, Zainu'ddin; *South Moluccan*: Cribb; *Karen* (Myanna, i. e. ex-Burma): Fistié; *Maori*: Richardson; *Mindanao* (Philippines): Wolff; *Ibos* (Nigeria): Aquarone; *South Sudan*: Aquarone.

Table A1: Minority group data

	Minority pop. [million]	Percent. of total pop. [%]	Percent. of minority language speakers [%]	Spatial index of integr. g	Historical index 1845–1945 h	Death index 1945–1994 d
I) Europe						
Belgium, Flanders	5.7	64.0	90	0.34		−0.33
Belgium, French-speaking area	3.2	36.0	90	0.26		−0.33
Britain, Scotland	5.5	9.4	2	0.17	0.50	−1.00
Britain, Wales	2.7	4.9	25	0.52	1.30	0.42
Finland, Aland Island	0.02	0.4	95	0.60	1.2	−1.00
France, Alsace	1.30	2.8	30	0.50		−1.10
France, Basque Provinces	0.25	0.50	36	0.45	1.75	0.27
France, Brittany	2.4	5.2	12	0.44		
France, Corsica	0.27	0.6	10	0.19		3.05
France, Guadeloupe-Mart.	0.70	1.4		0.05		1.55
France, New Caledonia	0.05	0.1		−0.08		2.77
France, Occitania	3.4	7.3	1	0.87		−0.60
France, Tahiti	0.17	0.34		−0.07		1.25
Italy, South Tyrol	0.43	0.8	65	0.56		1.43
Spain, Andalusia	6.0	18		0.77		−0.78
Spain, Basque Provinces	2.0	3	35	0.72	4.19	2.80
Spain, Catalonia	5.7	13	70	0.62	3.34	0.24
Switzerland, Bernese Jura	0.8	1.3	80	0.52	1.5	0.42
II) North and South America						
Canada, Quebec	6	25	80	0.47		0.02
Mexico, Chiapas	2.5	4.3		0.50		2.55
Peru, South	6.0	25.		0.71		2.56
U.S., Hawaiians	0.18	0.1			1.0	0.74
U.S., Alaska Inuit	0.03	0.01	82	0.32		
U.S., Navajos	0.17	0.10	74	1.0	2.6	1.0
U.S., Mexicans (AZ, NM)	1.2	0.55	40	0.78	2.4	0.52
U.S., Sioux	0.07	0.03	50	1.0	3.4	1.6
III) Asia and Oceania						
Australia, Aborigenes	0.14	1.0	15%	0.66	3.3	2.59
India, Jammu&Kashmir	7.8	1.1		−0.30		3.42
India, Sikhs	14	1.9	80	0.88	5.1	3.11
Indonesia, East Timor	0.6	0.5		0.22		5.2
Indonesia, Aceh Province	3.0	1.8		0.40	5.2	3.27
Indonesia, South Moluccan	1.2	0.8		−0.63		>0.22
Myanna, Karens	3.0	10		0.23		3.1
New Zealand, Maori	0.4	12	15	0.75	3.0	0.83
Philippines, Mindanao&Jolo	0.70	3.0		0.46	2.9	1.8
Thailand, Moslem Malays	0.7	3.0		0.46		1.8
IV) Africa						
Cameroun, Bamilékés	0.5	17		0.46		2.5
Nigeria, Ibos	10	11		0.63		4.3
Sudan, South	6	25		0.39		4.9

The definition of the spatial and historical indexes are given in the text. The index d is defined as: $d = \log$ (number of deaths,1945–1994 / average minority population, in million).

Sources: minority populations: table 1; historical index: see appendix; death index: newspaper data base of the National Foundation for Political Sciences, Paris.

REFERENCES

Allardt, E. (1979), *Implications of the ethnic revival in modern industrial society. A comparative study of the linguistic minorities in Western Europe*, Helsinki: Societas Scientiarum Fennica.

Antonetti, P. (1973), *Histoire de la Corse*, Paris: Robert Laffont.

Aquarone, M.-C. (1987), *Les frontières du refus. Six séparatismes africains*, Paris: Editions du Centre National de la Recherche Scientifique.

Baloff, N. (1971), Extension of the learning curve. Some empirical results, *Operational Research Quarterly*, 22, 4, 329–340.

Bangou, H. (1989), *La Révolution et l'esclavage à la Guadeloupe*, Paris: Messidor-Editions Sociales.

Banks, A. S., Ed. (1995), *Political handbook of the world 1994–1995*, Binghamton, New York: C.S.A. Publications.

Barrès du Molard, A. (1842), *Mémoires sur la guerre de la Navarre et des Provinces basques depuis son origine en 1833 jusqu'au traité de Bergara en 1839*, Paris: Dentu.

Barros, J. (1968), *The Aland Islands question: its settlement by the League of Nations*, New Haven: Yale University Press.

Bassand, M. et al. (1985), *Les Suisses entre la mobilité et la sédentarité*, Lausanne: Presses Polytechniques Romandes.

Bell, W. (1954), A probability model for the measurement of ecological segregation, *Social Forces*, 32, (May), 357–364.

Benjamin, T. (1989), *A rich land, a poor people. Politics and society in modern Chiapas*, Albuquerque: University of New Mexico Press.

Birch, A. H. (1977), *Political integration and disintegration in the British Isles*, London: George Allen and Unwin.

Brun, A. (1946), *Parlers régionaux. France dialectale et unité française*, Paris: Didier.

Burton, R. D. (1994), *La famille coloniale. La Martinique et la mère patrie 1789–1992*, Paris: L'Harmattan.

Camilleri, G. et C. Lazerges (1992), *Atlas de la criminalité en France*, Paris: Reclus-Documentation Française.

Clarke, H. B. (1906), *Modern Spain 1815–1898*, Cambridge: Cambridge University Press.

Clough, S. B. (1930), *A history of the Flemish movement in Belgium. A study in nationalism*, New York: Richard R. Smith.

Connor, W. (1972), Nation-building or nation destroying, *World Politics*, 24, 3, 319–355.

Connor, W. (1994), *Ethnonationalism. The quest for understanding*, Princeton: Princeton University Press.

Cook, S. F. (1976), *The population of the California Indians 1769–1970*, Berkeley: University of California Press.

Coupland, R. (1954), *Welsh and Scottish nationalism*, London: Collins.

Crawford, J., Ed. (1992), *Language loyalties. A source book on the Official English controversy*, Chicago: University of Chicago Press.

Cribb, R. (1992), *Historical dictionary of Indonesia*, Metuchen (N. J.).: The Scarecrow Press.

Daniel-Rops, H. (1958), *Histoire de l'Eglise. Le grand siècle des âmes*, Paris: Fayard.

Davant, J. L. (1975), *Histoire du Pays Basque*, Bayonne: Editions Elkar.

Davies, D. G. (1970), The concentration process and the growing importance of non central governments in federal states, *Public Policy*, 18, 5, 649–657.

Denier, J. (1919), *L'attribution des Iles d'Aland,* Paris: Chantenay.

Dennis, H. C., Ed. (1977), *The American Indians 1492–1976. A chronology and fact book,* Dobbs Ferry: Oceana Publications.

Deutsch, K. W. (1979), *Tides among nations,* New York: The Free Press.

Deutsch, K. W. (1984), Space and freedom. Conditions for the temporary separation of incompatible groups, *International Political Science Review*, 5, 2, 125–138.

Doubnov, S. (1933), *Histoire du peuple juif,* Paris: Payot.

Dousset-Leenhardt, R. (1976), *Terre natale, terre d'exil,* Paris: Maisonneuve et Larose.

Dupuy, R. (1995), La participation anglaise au débarquement de Carnac (26 juin 1795), *Histoire,* June, 66–71.

Dwelshauvers, G. (1926), *La Catalogne et le problème catalan,* Paris: Félix Alcan.

Europe World Yearbook (1995), Europa Publications Limited.

Fishman, J. A. (1986), Bilingualism and separatism, *Annals of the American Academy of Political and Social Science,* 487, 169–180.

Fistié, P. (1985), *La Birmanie ou la quête de l'unité. Le problème de la cohésion nationale dans la Birmanie contemporaine et sa perspective historique,* Vol. 79, Paris: Publications de l'Ecole Française d'Extrême Orient.

Fleras →

Flora, P. (1983), *State, economy and society in Western Europe 1815–1975,* A data handbook, Vol. I., Frankfurt: Campus Verlag, Macmillan Press, St James Press.

Friedmann, D. (1977), A theory of the size and shape of nations, *Journal of Political Economy,* 85, 59–78.

Gilbert, M. (1968), *British history atlas,* London: Weidenfeld and Nicholson.

Gottlieb, G. (1993), *Nation against the state: a new approach to ethnic conflicts and the decline of sovereignty,* New York: Council of Foreign Relations Press.

Grimmet, G. R. and D. R. Stirzaker (1982), *Probability and random processes,* Oxford: Clarendon Press.

Gurr, T. R. (1993), Why minorities rebel: a global analysis of communal mobilization and conflict since 1945, *International Political Science Review*, 14, 2, 161–201.

Hamblin, R. L.; R. B. Jacobsen and J. L. L. Miller (1973), *A mathematical theory of social change,* New York: John Wiley.

Hechter, M. (1975), *Internal colonialism. The Celtic fringe in the British national development 1536–1966,* London: Routledge and Kegan Paul.

Henderson, J. L. and M. Caldwell (1968), *The chainless mind. A study of resistance and liberation,* London: Hamilton.

Hérand, F. (1993), L'unification linguistique de la France, *Population et Sociétés,* 285, Dec, 1–4.

Histoire des provinces de France (1984), Paris: Fernand Nathan.

Horn, N. and C. Tilly (1986), Catalogs of contention in Britain, 1758–1834, *New School for Social Research,* Working Paper No. 32, 1–22.

Horowitz, D. L. (1985), *Ethnic groups in conflicts,* Berkeley: University of California Press.

Hughes, R. (1987), *The fatal shore,* London: Collins Harvill.

Index du temps (1966), *Tables du journal "Le Temps": 1861–1900,* Paris: Institut Français de Presse.

Jansson, J.-M. (1961), Bi-lingualism in Finland, *Fifth World Congress of the International Political Science Association*, September, 26–30.

Jenkins, J. R. G. (1986), *Jura separatism in Switzerland*, Oxford: Clarendon Press.

Khong, Y. F. (1992), *Analogies at war. Korea, Munich, Dien Bien Phu and the Vietnam decisions of 1965*, Princeton: Princeton University Press.

Kirk, D. (1946), *Europe's population in the interwar period*, New York: Gorgon and Breach.

Kroeber, T. (1968), *Ishi, testament du dernier indien sauvage de l'Amérique du Nord*, Paris: Plon.

Kurian, G. (1979), *The book of international lists*, London: Macmillan.

La Collaboration des autonomistes (1946), Secrétariat d'Etat à la Présidence du Conseil (26 mai).

Laitin, D. D.; S. Carlota and N. K. Stathis (1994), Language and the construction of states: the case of Catalonia in Spain, *Politics and Society*, 22, 1, 5–29.

Laitin, D. D. (1995), National revivals and violence, *Archives Européennes de Sociologie*, 26, 3–43.

La Mélanésie (1946), Documentation française.

Leach, E. R. (1954), *Political systems of highland Burma*, Cambridge: Harvard University Press.

Leruez, J. (1983), *L'Ecosse, une nation sans Etat*, Lille: Presses Universitares de Lille.

Letamendia, P. (1987), *Nationalismes au Pays basque*, Bordeaux: Presses Universitaires de Bordeaux.

Lieberson, S. (1970), *Language and ethnic relations in Canada*, New York: Wiley.

Lieberson, S. and L. K. Hansen (1974), National development, mother tongue diversity and the comparative study of nations, *American Sociological Review*, 39, 523–541.

Lieberson, S.; G. Dalto and M. E. Johnston (1975), The course of mother-tongue diversity in nations, *American Journal of Sociology*, 81, 1, 34–61.

Lieberson, S. (1985), *Making it count. The improvement of social research and theory*, Berkeley: University of California Press.

Lieberson, S. and M. C. Waters (1988), *From many strands. Ethnic and racial groups in contemporary America*, New York: Russel Sage.

Lustick, I. S. (1993), *Unsettled states, disputed lands: Britain and Ireland, France and Algeria, Israel and the West Bank-Gaza*, Ithaca: Cornell University Press.

McGarry, J. and B. O'Leary, Ed. (1993), *The politics of ethnic conflicts*, London: Routledge.

Mackie, T. T. and R. Rose (1982), *The international almanac of electoral history*, New York: Facts on File.

May, E. R. (1973), *"Lessons" of the past. The use and misuse of history in American foreign policy*, New York: Oxford University Press.

Meier, M. S. and F. Rivera (1972), *The Chicanos, a history of Mexican Americans*, New York: Hill and Wang.

Mémoire (1920), *La question des Iles d'Aland et le droit de la Finlande*, Mémoire présenté par un groupe de juristes et d'historiens finlandais, Helsinki.

Milne, R. S. (1988), Bicommunal systems: Guyana, Malaysia, Fiji, *The Journal of Federalism*, 18, 101–113.

Mourre, M. (1978), *Dictionnaire encyclopédique d'histoire*, Paris: Bordas.

Oliver, M. (1961), *Political problems of poly-ethnic countries: Canada*, 5th Word Congress of the International Political Science Association.

Olzak, S. and J. Nagel, Ed. (1986), *Competitive ethnic relation*, Orlando: Academic Press.

Olzak, S. (1992), *The dynamics of ethnic competition and conflict*, Stanford: Stanford University Press.

Passant, E. J. (1960), *A short history of Germany 1815–1945*, London: Cambridge University Press.

Pomponi, F. (1979), *Histoire de la Corse*, Paris: Hachette.

Premdas, R. R.; S. W. R. de A. Samarasinghe and A. B. Anderson, Eds. (1990), *Secessionist movements in comparative perspective*, London: Pinter.

Racine, J. B. (1994), Langues et identités territoriales en Suisse, *Annales de Géographie*, 576, 152–169.

Rebellion in the Canadas ([1837–1838] 1987), Ottawa.

Rennwald, J. C. (1984), *La question jurassienne*, Paris: Editions Entente.

Reuss, R. (1912,1916), *Histoire d'Alsace*, Paris: Boivin et Cie.

Richardson, L. F. (1960), *Statistics of deadly quarrels*, Pittsburgh: Boxwood Press.

Robie, D. (1989), *Blood on their banner. Nationalist struggles in the South Pacific*, London: Zed Books.

Roehner, B. M. (1993a), *Les logiques de l'histoire*, LPTHE: Preprint, (June).

Roehner, B. M. (1993b), *A probabilistic reappraisal of Marc Bloch's comparative approach*, LPTHE: Preprint, (December).

Roehner, B. M. (1995), *Spatial and historical determinants of coalescence and disintegration*, Part 1: Qualitative analysis (p. 29); Part 2: Quantitative analysis (p. 27), LPTHE-University Paris 7: Preprint.

Rokkan, S. and D. Urwin (1983), *Economy, territory, identity*, London: Sage.

Rokkan, S. (1997), *State formation, nation-building, and mass politics in Europe*, The theory of Stein Rokkan. Based on Rokkan's collected works rearranged by P. Flora, S. Kuhnle, D. Urwin (to appear).

Rossinyol, J. (1974), *Le problème national catalan*, Paris: Mouton.

Schindler, D. (1959), Entwicklungstendenzen des Schweizerischen Föderalismus, *Schweizer Monatshefte*, 8, 697–709.

Sérant, P. (1971), *La Bretagne et la France*, Paris: Fayard.

Shibutani, T. and K. M. Kwan (1965), *Ethnic stratification. A comparative approach*, New York: Macmillan.

Singleton, F. (1989), *A short history of Finland*, Cambridge: Cambridge University Press.

Snyder, L. L. (1976), *Varieties of nationalism: a comparative study*, New York: Rinehart and Winston.

Snyder, D. and C. Tilly (1972), Harship and collective violence in France 1830–1960, *American Sociological Review*, 37, 771–793.

Sorokin, P. A. (1937), *Social and cultural dynamics. Vol. III: Fluctuations and social relationship. War and revolution*, New York: American Book Company.

Strang, D. (1990), From dependency to sovereignty: an event history analysis of decolonization 1870–1987, *American Sociological Review*, 55, 846–860.

Strang, D. (1991), Global pattern of decolonization 1500–1987, *International Studies Quarterly*, 35, 429–454.

Svalastoga, K. (1982), Integration, a seven nation comparison, *International Journal of Comparative Sociology*, 23, 3–4, 190–202.

Terra, R. (1993), Le romanche, quatrième langue des Suisses, *Annales de Géographie*, 574, 596–610.

Thernstrom, S., Ed. (1980), *Harvard encyclopedia of American ethnic groups*, Cambridge (Ma): Belknap Press of Harvard Unversity Press.

Tilly, C. (1986), *The contentious French*, Cambridge (Ma): The Belknap Press of Havard University Press.

Tilly, C. (1992), How to detect, describe and explain repertories of contention, *New School for Social Research*, Working Paper No. 150, 1–42.

Tilly, C. (1993), *European revolutions 1492–1992*, Oxford: Oxford University Press.

Verneix, J.-C. (1979), *Les Acadiens*, Paris: Editions Entente.

Watkins, S. C. (1990), *From provinces to nations*, Princeton: Princeton University Press.

Weber, E. (1976), *Peasants into Frenchmen. The modernization of rural France 1870–1914*, Stanford: Stanford University Press.

Wiskemann, E. (1938), *Czechs and Germans. A study of the struggle in the historic provinces of Bohemia and Moravia*, Oxford: Oxford University Press.

Wittman, D. (1991), Nations and states; mergers and acquisitions; dissolution and divorce, *American Economic Review*, 81, 126–129.

Wolff, L. (1991), *Little Brown Brother. How the United States purchased and pacified the Philippines*, Singapore: Oxford University Press.

Wright, Q. (1942), *A study of war*, Chicago: University of Chicago Press.

Zainu'ddhin, A. G. T. ([1968]1980), *A short history of Indonesia*, Metuchen (N. J.): The Scarecrow Press.

Zeller, G. (1945), *L'Alsace française de Louis XIV à nos jours*, Paris: Armand Colin.

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