ON SOME PATTERNS IN INTERNATIONAL TOURIST FLOWS

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International tourist flows have become one of the most important components within the total assemblage of social and economic transactions among countries of the contemporary world. Simply in terms of absolute volume of movement and monetary exchange, the growth of tourism is most impressive. For example, among the 14 countries selected for analysis in this paper, the number of recorded arrivals rose from 46.2 million during 1958 to 87.2 million in 1966, an increase of some 89.2 percent. For the 39 to 74 countries which reported on the number of tourist arrivals in all or some of the years from 1948 through 1966, the rate of growth appears to be even more rapid, see Table 1.[1]

In view of its great and increasing economic import, the probable signficance of tourism in diffusing information and attitudes, and its even greater future potential for modifying patterns of migration, balance of payments, land use, and general socioeconomic structure with the introduction of third-generation jet transport and other innovations in travel, it is startling to discover how little attention the circulation of tourists among nations has been accorded by geographers, demographers, and other social scientists.[2] Virtually all the scholarship in the domain of tourism has been confined to *intra*-national description and analysis.[3] Although domestic tourism is obviously important, it is our contention that the economic, political, psychological, cultural, and other dimensions of international flows are of a distinctly different qualitative order, that they are of major and growing magnitude, and that they merit special attentive study.

This paper is an initial attempt at uncovering a few major patterns of flow among a selected group of countries which dominate the international tourist market and for which consistent data are available. In addition to the two major purposes of (1) pointing out some of the difficulties, technical and conceptual, in the spatial analysis of tourist flows and, (2) presenting the highlights of an initial investigation of gross flow patterns for five recent years, we hope this paper will arouse some interest in investigating and modeling the dynamics of tourist flows as an interesting problem in its own right and also as a possible means for gaining insights into other population movements and into the general questions of diffusion of knowledge and attitudes. Because of the introductory nature of this paper, we deliberately restrict our attention to the points mentioned above. Most particularly, we have foregone the explicit development and elaboration of any predictive models.

[1] The absolute values presented in the table must be accepted with considerable skepticism for a variety of reasons. The main value of the table is in indicating a rough order of magnitude for increments in the number of tourists and their expenditures.

[2] Among the few examples of work in English are papers by Mayfield [9], Winsberg [*10*], and Wolfe [*11*]. Somewhat different in focus, but still germane is the paper by Christaller [3].

[3] As indicated in the bibliographies published irregularly by the Tourist Documentation Centre of the International Union of Official Tourist Organizations at Geneva since 1959. Other bibliographies such as the annual issued by the Centre d'Etudes du Tourisme at Aix-en-Provence since 1965 and the recent volume by C. R. Goeldner and G. L. Allen [*4*] confirm this paucity of international and comparative studies.

TABLE 1

NUMBER OF INTERNATIONAL TOURIST VISITORS AND TOURIST RECEIPTS REPORTED, 1948–1966

Year	International Tourists		Tourist Receipts	
	Number of Countries Reporting	Number of Visitors	Number of Countries Reporting	Receipts ($1,000,000 U.S.)
1948	39	14,076,800	—	—
1949	43	18 509,300	—	—
1950	47	23,635,600	—	—
1951	47	25,507,500	—	—
1952	49	32,962,200	—	—
1953	50	37,627,200	—	—
1954	50	42,916,000	—	—
1955	51	45,623,400	—	—
1956	59	49,336,100	—	—
1957	59	51,721,000	—	—
1958	59	51,156,000	—	—
1959	61	60,506,000	—	—
1960	57	66,735,600	—	—
1961	55	69,197,600	—	—
1962	65	76,874,500	57	7,691.7
1963	69	97,268,500	60	8,668.8
1964	72	136,220,600	69	9,922.3
1965	74	144,068,200	69	11,386.7
1966	69	157,972,500	59	12,107.5

Source: United Nations Statistical Yearbook

THE DATA

The unrivaled data source for information on international tourist patterns is the International Union of Official Tourist Organizations in Geneva,[4] and the United Nations figures used in this paper are derived from this source. The many shortcomings of these data have greatly restricted the scope of our analysis. In the first place, information is available only for some 80 countries out of over 225 nations, territories, and other quasi-national entities. Furthermore, the countries do not form a stable set but vary in membership from year to year. But the great preponderance of world tourist volume is accounted for by those countries for which data are tabulated. More serious problems intrinsic to the data include: quite different definitions of tourist entry among the countries;[5]

[4] The IUOTOs major publications consist of a serial, *International Travel Statistics*, issued annually since 1953 and the mimeographed bibliography series mentioned above.

[5] The officially accepted definition of a tourist is a person travelling for a period of twenty-four hours or more in a country other than that in which he normally resides. In addition to "obvious" tourists, this definition includes students staying abroad and businessmen, but excludes excursionists and foreign troops stationed in a country. While this definition is reasonably well accepted, there is no such unanimity on the way to measure tourist flows. Either frontier checks or hotel and boarding house records can be used. The resulting measures are not comparable although each is useful in giving a complete picture of a country's tourist industry. But official figures are based on one or the other of these, depending on the country, making cross-national comparison difficult except for gross analysis.

double counting arising when tourists visiting border areas can be counted each time they cross the border; the matter of aggregating for two or more countries (as, for instance, when tourist flows from Luxembourg are classified with Belgian flows or Portuguese flows with Spanish), and the fact that generally little or no information is collected or published concerning age, sex, length of stay, motivation, etc. of individual travelers. There is also difficulty in obtaining information about the importance of certain tourist flows vis-à-vis others. We would, for instance, suspect that tourists travelling longer distances to reach a destination might be expected to stay for longer periods, make more use of commercial facilities, and in general be economically more important than tourists from neighboring countries who might be "day-trippers" or campers. Most serious of all perhaps is the problem of missing data where certain flows which are almost certainly major in volume and impact, for example those between Mexico and the United States, are not available in the official records published by the IUOTO or the UN.

Efforts to rationalize the data base are, of course, made from time to time. The earliest major effort was made by the League of Nations in 1937, resulting in an agreement on the definition of a tourist [8, p. 7]. Later international conferences have been held under the aegis of the IUOTO. But is appears that most of the data problems mentioned above will continue to bedevil scholars of international tourism if they rely on the official statistics. Further, growth of customs unions and other types of international cooperation may have the effect of cutting the data base as groups of countries aggregate statistics on external interactions. Since the late 1950s, for instance, flows *among* the Scandinavian countries have not been reported and it is necessary to treat them as a single unit for tourist purposes. Still, in the absence of a truly massive sampling program extending over several years, the student of international tourist flows must use the official data, correcting as best he can for their more obvious inadequacies.

We decided to restrict our initial efforts to a study of flows among those 14 countries for which data were reasonably consistent over several years. In effect, we have set up a quite artificial, closed system of circulating tourists, but in so doing we are keenly aware that the assumption of closure is both highly fictitious and also likely to distort the subsequent analysis. The countries in question do, of course, exchange substantial numbers of tourists with places outside our particular universe. The fact, for example, that the American traveler considers such alternative markets for his tourist time and dollars as Mexico, Hong Kong, Yugoslavia, or Tunisia as well as Greece or Japan is quite relevant to the actual behavior of the flows from the United States to the latter two places. Just as obviously, however, we lack the statistics to tell us the full story and must fall back upon a limited array of sources and destinations. Our decision to proceed with this sample—and to view it as a closed universe—is based largely on three practical considerations: 1) the flows among our 14 countries account for the bulk of the total traffic as noted by all nations reporting to the UN--some 55 percent in 1966; 2) each of the 14 countries would appear to have most of its tourist arrivals and departures accounted for by the other 13;[6] and 3) there are severe operational difficulties in coping with many more than 14 places in an introductory analysis of this sort.

We have also elected to limit our attention to five recent years—1958, 1959, 1964, 1965, and 1966. With the interesting exceptions of the World's Fair in Brussels in 1958 and the 1964 Olympic Games in Tokyo, these years were relatively "normal" tourist years for our

[6] With the notable exception of the United States. Thus, in 1966, for example, no less than 7,678,705, or 85 percent, of the 8,951,449 foreign visitors reported entering the country arrived from Canada and Mexico.

countries; that is, major wars, revolutions, and other disturbances or major temporary traffic generators which might be expected to have strikingly distorting effects were absent. Table 2 lists the countries examined; they include eleven European countries (or combinations of countries) and three "Neo-European" countries: South Africa, the United States, and Japan. It would have been instructive to include Canada, Australia, and some other advanced countries in our list, but they were reluctantly discarded upon our finding suspect or absent data for such major "partner" countries as the United Kingdom and the United States.

After comparing the United Nations and IUOTO figures for consistency, our initial manipulation of the data simply consisted of construction of absolute inter-nation flow matrices for each of the five years, aggregating national figures where necessary (Belgium and Luxembourg, Spain and Portugal, and the Scandinavian countries).[7] To summarize the development of tourist traffic in this system, we list (Table 2) for each of the years covered the number of tourists received by or sent from each of the countries or country groups examined. To enhance comparisons, the data have been converted to percentages. Apart from the impressive increase in movement within the system over these years, the most notable feature in the table is the shift of tourists to the more peripheral members such as Greece, Japan, and Iberia, which appears to validate at the national level Christaller's general thesis of the attractiveness to tourists of the remote and different [3].

In order to gain some appreciation of the spatial patterns inherent in the data, we have presented Figure 1, depicting

[7] The resulting tables are too bulky to reproduce here. Interested readers can obtain copies by writing to the authors.

TABLE 2

NATIONAL CONTRIBUTIONS TO TOURIST FLOWS
(in percent)

	Received					*Sent*				
	1958	1959	1964	1965	1966	1958	1959	1964	1965	1966
Austria	7.8	8.3	7.7	7.5	7.5	6.5	5.5	3.8	3.8	3.8
Belgium-Luxembourg	12.9	7.0	7.3	6.9	6.8	4.8	5.7	4.7	4.7	4.9
France	8.4	10.6	12.1	12.1	11.9	11.4	11.4	18.7	18.1	18.9
W. Germany	9.5	9.5	6.7	7.2	6.8	31.4	31.6	30.5	29.7	29.2
Greece	0.3	0.4	0.7	0.8	0.9	0.5	0.5	0.5	0.5	0.5
Italy	29.6	33.0	26.9	27.0	27.4	3.5	3.4	3.8	3.6	3.7
Japan	0.2	0.2	0.3	0.3	0.3	0.1	0.1	0.2	0.2	0.3
Netherlands	2.4	2.0	2.0	1.9	1.8	6.6	6.4	6.5	6.4	6.8
Scandinavia	12.0	11.5	12.8	12.0	11.9	4.8	4.9	4.5	4.8	4.3
South Africa	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1
Iberia	6.3	7.3	13.2	14.6	15.0	2.0	1.8	1.8	1.7	1.7
Switzerland	8.3	7.6	7.3	6.6	6.3	7.3	7.8	7.2	6.6	6.3
United Kingdom	2.0	2.1	2.3	2.5	2.5	10.8	11.5	8.6	11.0	10.9
U.S.A.	0.4	0.4	0.7	0.7	0.7	9.9	9.1	8.9	8.8	8.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Absolute flows are as follows: 1958=46,164,672; 1959=47,912,912; 1964=75,568,592; 1965=80,941,616; 1966=87,189,952.

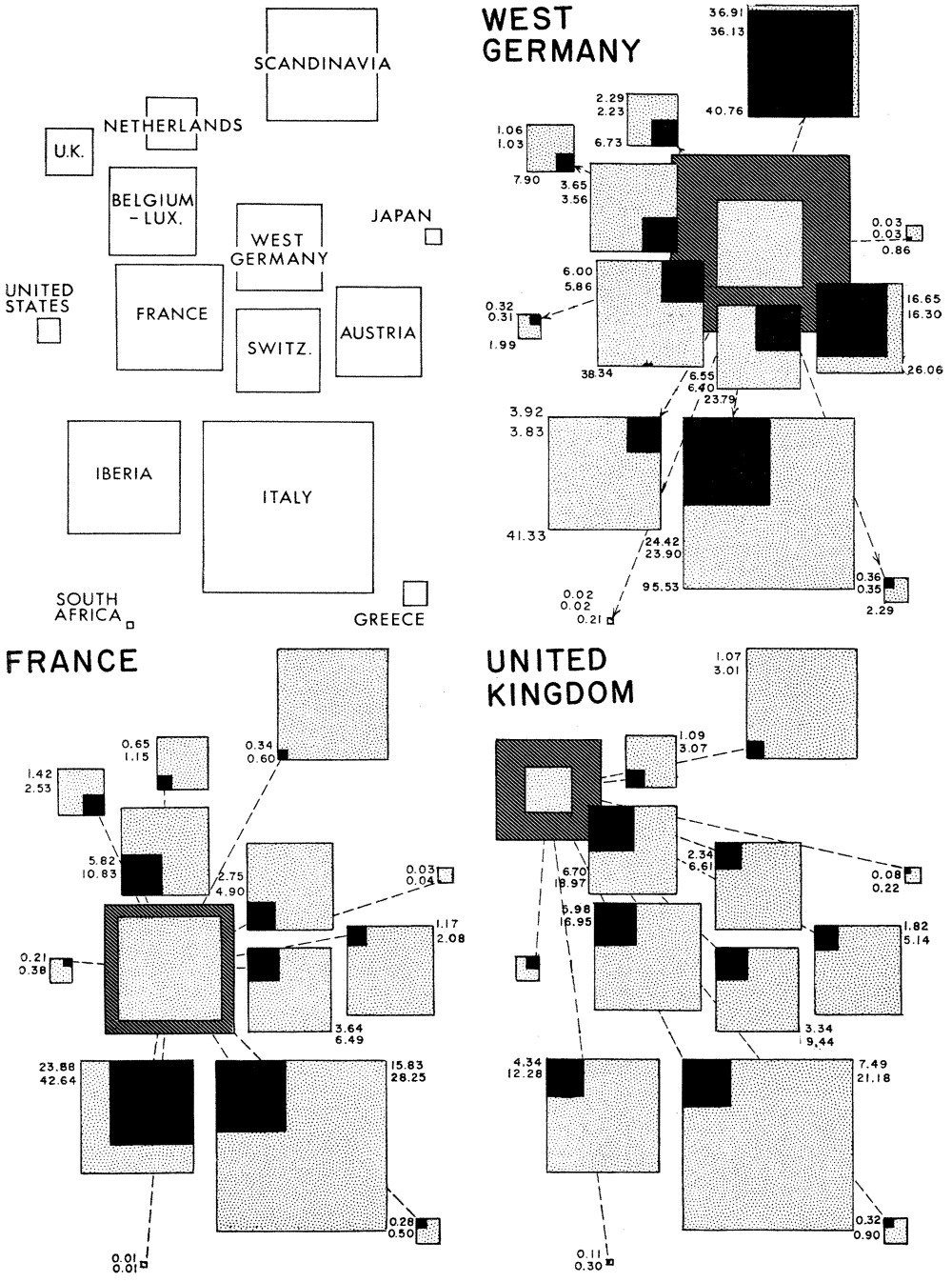

Fig. 1. Aggregate tourist flows from selected countries to thirteen foreign lands for 1958, 1959, 1964, 1965, and 1966.

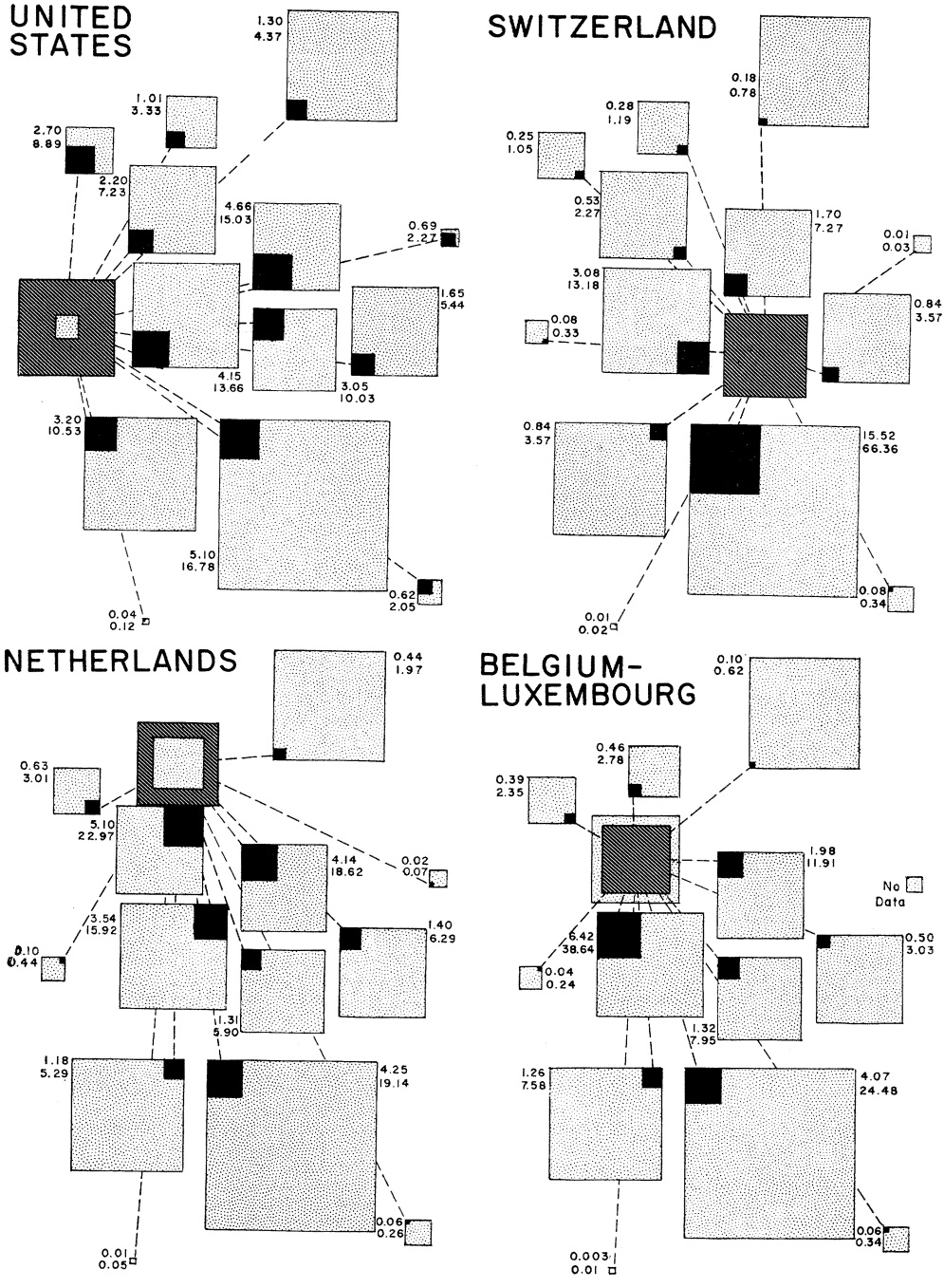

Fig. 1. (continued)

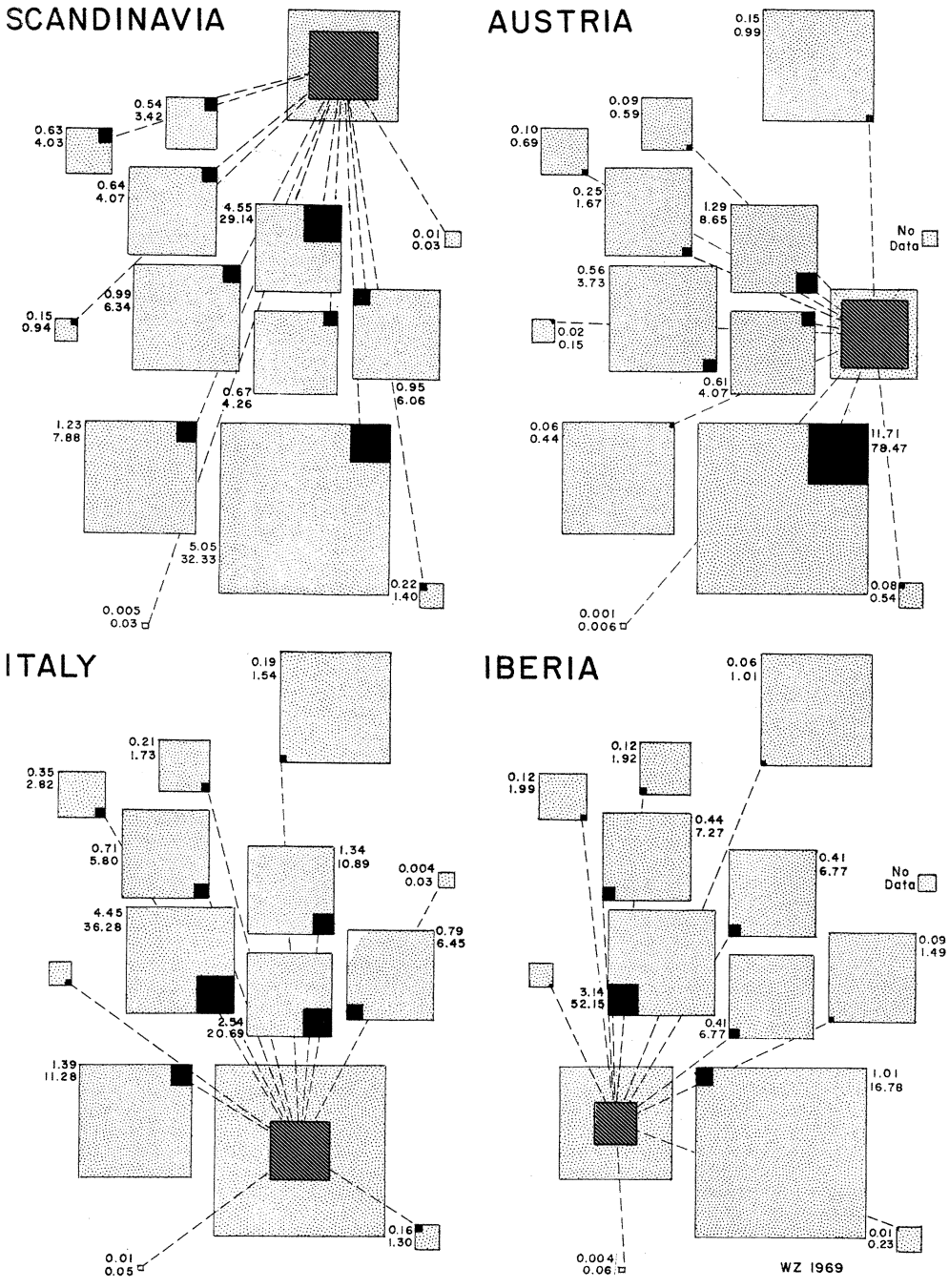

Fig. 1. (continued)

the flow of tourists among our fourteen regions aggregated over the five study years. Figure 1 consists of a set of eleven highly schematic drawings, one for each country that contributes significantly to the total traffic pattern, and is designed to afford an impression of the absolute volume and directions of flows of tourists among these nations. The area of the stippled square, appearing in the same relative location in each cartogram, represents the total number of tourists *received* by the indicated country from each of the other thirteen. The large cross-hatched square in each cartogram is equivalent to the total number of tourists *sent* by the named country to the other thirteen. The distribution of these travelers among the other countries is shown by the proportionally scaled black squares connected to the source area by dashed lines. For each of these lesser squares, two numbers appear: the upper one gives the absolute number of tourists (in millions) accounted for by that particular flow, and the lower item is the preceding number expressed as a percentage of total tourists sent by the country in question to the other thirteen. In the single instance of West Germany, a third value is given at the base of each subsidiary square—the total number of tourists received in millions. For example, we see that West Germany sent a total of 3.92 million tourists to Iberia, a figure representing 3.83 percent of all tourists reported from West Germany during the study period. Also note that the relative size of the hatched versus the stippled square for West Germany indicates that country exported many more tourists than it received.

It is obvious that the data even for these five years are merely "snapshots" of a quite dynamic process and that data for a longer time span would almost certainly disclose shifts in the structure of tourist flows. Even within this eight-year span, we find, for example, the absolute numbers of British tourists going to Iberia and Scandinavians to Greece rising several fold in accordance with what we suspect to be a long-term trend. Nevertheless, the five sets of data—for 1958 through 1966—display an encouraging degree of similarity and stability.

As an illustration of this, we present, Table 3, product-moment correlations of flows into and from three countries: Austria, the Netherlands, and the United States, for 1958, 1959, 1964, 1965, and 1966. In the table, the distribution of vists for each country (as a source of and as a destination for tourists in this 14-nation system) for each year is compared with all other years. The correlation coefficients, therefore, measure similarity of flow patterns over time. The results of this crude technique are, of course, only indicative, but since Austria and the United States represent typical profiles, the high inertia of flow patterns and the resultant possibilities for prediction of flows over the short and medium term are clear. There is not enough space here to develop this topic,[8] but Wolpert, in a recent paper, provides an extended discussion of some of the problems of and potential uses for stability analysis to which the interested reader is directed [*12*].

THE FLOW ASSIGNMENT MODEL

Our analysis of tourist sources and destinations makes use of a flow assignment model suggested by Goodman [*5*, *6*] and programmed by S. Brams [*1*, *2*]. In the model tourists are assigned to destinations according to a hypothesis of indifference; that is, expected flow to a given destination from source countries is a function of the percentage of the overall tourist traffic received by that destination. If country A receives 20 percent of all tourists in the system, the model in general predicts it should receive 20 percent of the tourists from each source. In actuality, because the model does not assign an "expected" flow to sources for which no data are available

[8] A paper examining the question of the predictability of tourist flows is currently being prepared.

(or which send no tourists to the particular destination) nor to the country itself, the expected flows that are estimated are somewhat higher than would be indicated by the preceding sentence. In effect, flows from these no-data countries are distributed among the rest.

We computed two indices using this model. One indicates the difference between actual and expected flows between each pair of countries for each of the five years.[9] For instance, Austria sent 294,700 fewer tourists to Belgium-Luxembourg in 1958 than were predicted by the hypothesis of indifference. In 1966, it sent 195,100 fewer tourists to Belgium-Luxembourg than predicted by this hypothesis.

[9] A copy of a table containing the values of this index can be obtained by writing to the authors.

The other, and we think a more useful, index given in Table 4 is intended to represent the relative success or acceptance of a country as an attractive stopover point to tourists from the sending country. It is computed by dividing the difference between actual and expected flows by the expected flow. This RA (Relative Acceptance) Index thus has a range from –1 to plus infinity. The lower value would occur if actual flows were zero; it is not reached in our model, but only approached because such flows are specifically excluded from consideration. The upper limit similarly is not reached because it would indicate an expected flow of zero. For the intermediate case, positive values indicate a greater than expected actual flow of tourists, negative values indicate the reverse. The effects of absolute size of

TABLE 3

CORRELATION OF YEARLY TOURIST FLOWS

AUSTRIA

	SOURCE					DESTINATION			
	1958	1959	1964	1965		1958	1959	1964	1965
1959	.99				1959	1.00			
1964	.99	1.00			1964	.99	.99		
1965	.99	1.00	1.00		1965	.99	1.00	1.00	
1966	.99	1.00	1.00	1.00	1966	.99	1.00	1.00	1.00

NETHERLANDS

	SOURCE					DESTINATION			
	1958	1959	1964	1965		1958	1959	1964	1965
1959	.52				1959	.91			
1964	.68	.91			1964	.99	.88		
1965	.65	.91	.99		1965	.98	.86	.99	
1966	.60	.91	.99	.99	1966	.97	.82	.98	.99

U.S.A.

	SOURCE					DESTINATION			
	1958	1959	1964	1965		1958	1959	1964	1965
1959	.93				1959	.99			
1964	.89	.96			1964	.98	.99		
1965	.90	.96	.99		1965	.98	.99	.99	
1966	.91	.98	.97	98	1966	.98	.99	.99	.99

TABLE 4

RELATIVE DEVIATIONS FROM EXPECTED FLOWS FOR FIVE SELECTED YEARS (1958–1966)**

Sending Country	*Receiving Country*							
	Austria	*Belgium & Luxembourg*	*France*	*W. Germany*	*Greece*	*Italy*	*Japan*	*Netherlands*
Austria	*	–0.76	–0.75	–0.42	–0.51	1.49	*	–0.79
	*	–0.82	–0.73	0.34	–0.37	1.32	*	–0.76
	*	–0.84	–0.70	–0.03	–0.12	1.77	*	–0.68
	*	–0.81	–0.70	–0.08	–0.02	1.77	*	–0.69
	*	–0.83	–0.71	–0.13	–0.01	1.78	*	–0.71
Belgium & Luxembourg	–0.61	*	2.59	0.17	–0.47	–0.23	*	0.43
	–0.64	*	2.14	0.10	–0.49	–0.23	*	0.55
	–0.62	*	1.76	0.17	–0.45	–0.22	*	0.25
	–0.59	*	1.75	0.07	–0.47	–0.15	*	0.20
	–0.63	*	1.58	0.02	–0.51	–0.08	*	0.15
France	–0.66	0.46	*	–0.51	0.09	–0.15	–0.82	–0.32
	–0.58	0.80	*	–0.44	0.07	0.03	–0.28	–0.28
	–0.77	0.18	*	–0.54	–0.34	–0.13	–0.83	–0.52
	–0.78	0.19	*	–0.58	–0.35	–0.08	–0.88	–0.51
	–0.79	0.07	*	–0.61	–0.41	–0.06	–0.90	
W. Germany	0.81	–0.59	–0.66	*	–0.47	–0.18	–0.93	–0.01
	0.78	–0.65	–0.69	*	–0.51	–0.16	–0.93	0.11
	1.10	–0.59	–0.56	*	–0.44	–0.26	–0.88	–0.05
	1.12	–0.56	–0.55	*	–0.48	–0.20	–0.91	0.01
	1.14	–0.51	–0.54	*	–0.50	–0.25	–0.92	–0.05
Greece	0.04	–0.13	–0.20	0.30	*	0.47	0.12	*
	–0.07	0.02	–0.24	0.31	*	0.45	–0.67	*
	–0.36	–0.28	*	0.31	*	0.45	–0.67	*
	–0.32	–0.35	*	0.45	*	0.50	*	*
	–0.27	–0.33	*	0.44	*	0.44	*	*

Sending Country	*Receiving Country*							
	Austria	*Belgium & Luxembourg*	*France*	*W. Germany*	*Greece*	*Italy*	*Japan*	*Netherlands*
Italy	–0.04	–0.31	–0.98	–0.25	0.33	*	*	–0.33
	–0.20	–0.36	0.67	–0.26	0.32	*	*	–0.44
	–0.45	–0.40	0.96	–0.14	0.56	*	–0.65	–0.39
	–0.48	*	1.12	–0.25	0.40	*	*	–0.38
	–0.48	–0.11	1.21	–0.20	0.63	*	*	–0.36
Japan	–0.64	*	*	*	*	*	*	*
	–0.67	*	*	*	*	*	*	*
	–0.70	*	*	0.55	*	*	*	*
	–0.96	*	*	0.26	*	*	*	*
	–0.66	*	*	0.62	0.10	*	*	*
Netherlands	–0.41	1.59	–0.25	0.35	–0.80	*	0.21	*
	–0.20	1.21	0.09	0.91	–0.72	–0.17	–0.70	*
	–0.16	1.96	0.27	0.95	–0.60	–0.23	–0.78	*
	–0.11	1.85	0.32	0.75	–0.53	–0.20	–0.81	*
	–0.15	1.90	0.23	0.72	–0.80	–0.15	0.0	*
Scandinavia	–0.25	–0.53	–0.50	1.62	–0.02	0.11	–0.72	0.85
	–0.30	–0.43	–0.54	1.42	–0.15	–0.13	–0.81	0.76
	–0.26	–0.51	–0.61	1.84	0.76	0.11	–0.73	0.40
	–0.28	–0.53	–0.56	1.49	1.24	0.10	*	0.33
	–0.23	–0.57	–0.52	1.59	1.58	0.17	*	0.47
South Africa	–0.22	*	*	*	3.76	0.23	*	*
	–0.30	*	*	*	3.17	0.22	*	*
	–0.55	*	*	0.03	2.61	–0.00	*	*
	–0.48	*	*	0.00	2.25	–0.25	*	*
	–0.42	*	*	0.00	2.92	*	*	*
Iberia	–0.83	0.37	4.12	–0.37	–0.70	–0.54	*	–0.16
	–0.83	–0.16	3.63	–0.48	–0.68	–0.44	*	–0.40
	–0.83	0.02	2.31	–0.27	–0.65	–0.42	*	–0.10
	–0.81	0.09	2.43	–0.33	–0.65	–0.46	*	–0.06
	–0.79	0.15	2.27	–0.33	–0.66	–0.43	*	–0.06

Sending Country	*Receiving Country*							
	Austria	*Belgium & Luxembourg*	*France*	*W. Germany*	*Greece*	*Italy*	*Japan*	*Netherlands*
Switzerland	–0.50	–0.48	0.14	–0.27	–0.37	0.94	–0.85	–0.41
	–0.54	–0.74	0.55	–0.42	–0.48	0.85	–0.87	–0.53
	–0.58	–0.83	–0.20	–0.33	–0.52	1.51	–0.84	–0.49
	–0.53	–0.79	–0.13	–0.30	–0.47	1.46	–0.85	–0.37
	–0.54	–0.79	–0.11	–0.31	–0.45	1.38	*	–0.40
U.K.	–0.26	1.05	0.17	–0.28	0.45	–0.25	–0.38	0.23
	–0.35	1.78	0.02	–0.32	0.61	–0.17	–0.42	0.36
	–0.23	2.15	0.67	–0.90	0.67	–0.16	0.15	0.78
	–0.36	1.36	0.28	–0.23	0.29	–0.31	–0.27	0.50
	–0.31	1.29	0.27	–0.19	0.37	–0.28	–0.41	0.65
U.S.A.	–0.30	0.12	0.39	0.32	2.68	–0.41	5.65	0.56
	–0.27	–0.00	0.39	0.31	2.58	–0.41	7.05	*
	–0.32	–0.15	–0.02	0.69	2.36	–0.38	7.23	0.93
	–0.25	–0.14	–0.01	0.57	2.80	–0.29	7.01	1.00
	–0.17	–0.09	–0.00	0.70	2.26	–0.37	6.21	1.27
Austria	*Scandinavia*	*S. Africa*	*Iberia*	*Switzerland*	*U.K.*	*U.S.A.*		
	–0.95	–0.92	–0.89	–0.61	–0.77	–0.84		
	–0.94	–0.35	–0.88	–0.45	–0.76	–0.81		
	–0.91	–0.87	–0.99	–0.39	–0.69	–0.67		
	–0.89	–0.82	–0.99	–0.38	–0.70	–0.69		
	–0.91	–0.84	–0.98	–0.42	–0.71	–0.73		
Belgium & Luxembourg	–0.95	–0.69	–0.46	0.07	–0.16	–0.61		
	–0.96	–0.62	–0.44	0.12	–0.18	–0.62		
	–0.96	–0.71	–0.35	0.07	0.02	–0.55		
	–0.95	–0.68	–0.45	0.13	–0.04	–0.59		
	–0.94	–0.68	–0.28	0.01	–0.06	–0.65		
France	–0.92	–0.74	3.25	0.27	0.35	–0.18		
	–0.93	–0.80	3.21	–0.97	0.23	–0.26		
	–0.97	–0.83	2.22	–0.09	–0.14	–0.51		
	–0.96	–0.82	1.89	–0.08	–0.13	–0.47		
	–0.96	–0.81	1.90	–0.14	–0.15	–0.48		

Sending Country	*Receiving Country*					
	Scandinavia	*S. Africa*	*Iberia*	*Switzerland*	*U.K.*	*U.S.A.*
W. Germany	1.74	−0.77	−0.75	−0.15	−0.59	−0.59
	1.65	−0.78	−0.80	−0.04	−0.60	−0.59
	1.83	−0.69	−0.68	−0.21	−0.61	−0.51
	1.86	−0.65	−0.69	−0.18	−0.60	−0.48
	1.93	−0.68	−0.65	−0.17	−0.60	−0.48
Greece	−0.93	*	−0.48	−0.12	0.27	1.49
	−0.92	−0.02	−0.97	0.04	0.37	1.61
	*	2.17	−0.94	−0.23	0.13	0.72
	*	2.16	−0.90	−0.18	0.17	0.59
	*	2.56	−0.86	−0.10	0.31	0.78
Italy	−0.91	−0.55	0.39	1.08	−0.12	0.16
	−0.92	−0.59	0.20	1.31	−0.11	0.27
	−0.91	−0.43	−0.26	1.27	−0.15	0.30
	−0.90	−0.23	−0.38	1.03	−0.21	0.39
	−0.90	−0.31	−0.52	1.13	−0.11	0.23
Japan	−0.66	*	−0.94	0.67	1.09	28.46
	−0.72	*	−0.95	0.79	1.11	27.59
	*	*	−0.97	0.22	1.03	12.72
	*	*	−0.97	0.30	1.03	14.95
	*	*	−0.97	0.26	0.99	12.87
Netherlands	−0.90	−0.35	−0.81	−0.38	−0.11	−0.41
	−0.86	−0.02	−0.64	−0.01	0.29	−0.11
	−0.85	−0.05	−0.53	−0.22	0.26	−0.30
	−0.82	−0.02	−0.57	−0.17	0.29	−0.24
	−0.80	−0.04	−0.47	−0.18	0.22	−0.28
Scandinavia	*	−0.47	−0.50	−0.61	0.52	0.87
	*	−0.49	−0.47	−0.32	0.48	0.71
	*	−0.57	−0.33	−0.46	0.55	0.37
	*	−0.51	−0.21	−0.43	0.48	0.24
	*	−0.54	−0.52	−0.41	0.60	0.49

Sending Country	*Receiving Country*					
	Scandinavia	*S. Africa*	*Iberia*	*Switzerland*	*U.K.*	*U.S.A.*
South Africa	–0.81	*	*	0.35	*	*
	–0.79	*	*	0.39	*	*
	–0.86	*	*	–0.03	5.02	1.96
	*	*	*	–0.09	3.56	*
	*	*	*	0.11	*	*
Iberia	–0.96	–0.02	*	–0.07	–0.13	0.31
	–0.96	–0.62	*	–0.01	–0.13	0.30
	–0.92	–0.04	*	–0.19	–0.07	0.50
	–0.90	0.10	*	–0.15	–0.52	0.22
	–0.90	0.21	*	–0.14	–0.25	0.02
Switzerland	–0.95	–0.74	–0.68	*	–0.58	–0.42
	–0.95	–0.73	–0.67	*	–0.55	–0.50
	–0.94	–0.68	–0.69	*	–0.01	–0.52
	–0.93	–0.61	–0.75	*	–0.58	–0.42
	–0.93	–0.58	–0.68	*	–0.56	–0.43
U.K.	–0.95	4.50	0.45	0.36	*	2.52
	–0.76	4.06	0.41	0.49	*	2.16
	–0.71	5.38	–0.79	0.50	*	2.01
	–0.76	3.67	0.30	0.24	*	2.14
	–0.75	3.81	0.21	0.27	*	2.14
U.S.A.	–0.70	1.22	0.48	0.35	2.65	*
	–0.68	1.36	0.30	0.34	2.69	*
	–0.62	1.14	0.06	0.38	2.75	*
	–0.60	1.21	–0.10	0.46	2.80	*
	–0.61	1.20	–0.37	0.56	2.90	*

*No flow reported.
**Relative Deviations, in order, for 1958, 1959, 1964, 1965, and 1966.

population or tourist flows are largely eliminated by the use of our model. In effect, then, we are dealing, in highly abstract fashion, with dimensionless populations and spaces in order to extract some truly basic patterns that otherwise might be undetectable.

To gain a clearer idea of where exceptional flows of tourists occur, we have extracted (Figure 2) from Table 4 those interactions that markedly exceed in strength those predicted by the model. It is noteworthy that the graphic pattern for each year strongly resembles that for every other date, thus reinforcing the data in Table 3.

The expected values derived from the model provide a base-point against which we can contrast actual flows. A number of intrinsically plausible hypotheses could be offered—and may eventually be tested—to account for the observed deviations from our indifference model. But we have the opportunity here to consider only some of the more striking possibilities suggested by our procedure.

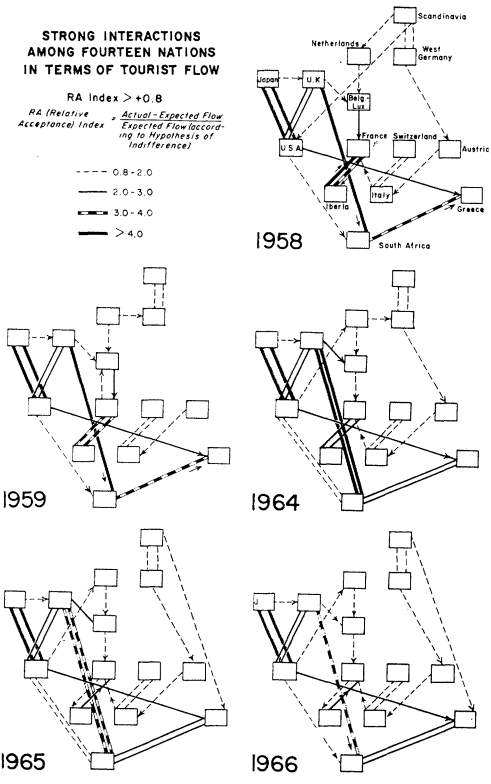

Fig. 2.

INTERPRETATION

It is immediately apparent that the great majority of recorded tourist flows fail to satisfy the indifference hypothesis at all closely. Flows are *not* random, but are patterned, as exemplified by Figure 2 and the correlation analysis underlying Table 3. We have already established the fact that there is great year-to-year stability in patterns. In fact, we find that the correlation between the flows in the earliest and most recent years discussed (1958 and 1966) generally exceeds 0.90. Evidently, once established, a stream of tourists has its own inertia; and one can predict future flows with considerable confidence without being able to explain the causes of present or past patterns. Although we lack the data to support the speculation, we strongly suspect that information fed back by previous tourists may go a long way towards explaining the short-term stability of tourist flow patterns.

The most generally applicable and obvious explanatory factor behind the discrepancies between actual and expected flows in Table 4 is the simple matter of spatial distance—and the resulting inequalities in travel time and costs. Supporting examples can be cited for any of the countries studied; but the most persuasive negative instances are those of Japan and South Africa. However, distance hardly accounts for all, or even most, of the deviations noted. Even some pairs of contiguous nations display surprisingly weak touristic interaction as, for example, the poor showing of Italians in Austria, the French in Germany (and vice versa) or the Swiss in Austria (and, again, vice versa).

The reason we have failed to test our data for distance effects are the absence of data on *points* of origin for tourists from large countries (e.g., the United States and Scandinavia) and a similar

lack of data for destination points. Interacting with this lack of data are the undoubtedly significant effects of size and shape of both sending and receiving countries, which remain unexplored. Furthermore, it would be difficult to measure the impact of lengths of routes and changes in route patterns, costs, time, and modes of transportation.

A second major hypothesis is that the presence or absence of other types of international connectivity, past or present, will tend to stimulate or inhibit international tourist movements. More specifically, we have in mind the existence or non-existence of significant commercial and other business dealings,[10] extensive labor commutation, membership in a common cultural realm, a history of recent permanent migration between pairs of countries, present or past political linkages, and the presence of country A's military forces on the territory of country B. Numerous examples of each of these subhypotheses appear to emerge from Table 4. Thus, the much greater than predicted flow of Japanese tourists to the U.S.A., United Kingdom, and even to West Germany and Switzerland seems logical in the light of the thriving trade being conducted with those distance places. Similarly, the heavy Dutch movements to the United Kingdom might be partially explained by the intimate commercial ties between these two nations. The large circulation of temporary workers from Greece to Italy, or between France and Belgium, to cite two of many possible examples, may well have prompted tourism in various forms. Shared cultural characteristics and earlier allegiance to a common flag may help account for substantial surpluses detected in the Belgian-Dutch, USA-UK, UK-South African, and German-Austrian flows. And, conversely, the weak showing of Japanese tourists in Iberia may reflect the absence of common cultural traits or of significant historical dealings, in addition to other obvious explanations. Recent migrations from Greece to South Africa and the U.S.A. and from the U.K. to South Africa may have inflated tourist flows beyond expectations. The continuing American military presence in Japan and Germany is probably conducive to an abundance of American tourists in those lands.

It also appears to be the case that political-cultural barriers or antipathies can staunch the flow of tourists. Few American Negroes would think of spending a fun-filled vacation in South Africa; American feelings about Gaullism may help account for the relative fallback in American travel to France since 1958. And it is reported that since 1967 the Scandinavians, who find the current regime repugnant, are staying away from Greece in droves.

A third obvious way of explaining the deviations noted in Table 4, the hypothesis of reciprocity—that is, a flow in one direction should generate a reflexive, or counterflow—proves to be a dubious doctrine even upon superficial examination, except for a few conspicuous cases, such as Italy vis-à-vis Switzerland, Italy and Greece, or France and Belgium, where other potent factors may be at work. It fails dismally in the case of Austria and Italy, where the flow from the former to the latter exceeds the reverse movement on the order of 20:1. To satisfy ourselves that the reciprocity hypothesis was feebler than we had initially imagined it might be, we performed a simple regression analysis, matching flow against counterflow. The largest coefficient of determination (which occurred with both variables transformed to logs) was 0.35. The resultant tables, while revealing some interesting residuals, are too bulky to be reproduced here. The important point is that flows in one direction are a poor predictor of flows in the other.

Another obvious explanation, that of the total, general touristic "appeal," or

[10] For instance, see Brams [2, pp. 156–60] for groupings of the North Atlantic countries based on trade flows. They are remarkably similar to tourist flow groupings.

attractiveness of one country for another, fares much better upon analysis of our data and the results of the interaction model. Specifically, in those cases where Country B offers singly or in combination contrasting or desirable climatic characteristics, scenic attractions, cultural and historical features, sports, shopping facilities, night life, and so on, either missing or in short supply in Country A, one might expect a signficantly high flow from A to B. Confirming examples are easy to identify: the increasingly significant exodus of Scandinavians to Greece through 1966, a country as distinct from, and presumably desirably so, the source area as one could find within Europe is a dramatic case in point. And, looking at Table 4 or Figure 1 and 2, the strikingly high number of tourists from northern and western Europe—and the U.S.A.—visiting Italy, Switzerland, and Greece illustrates the powerful operation of this factor. We might even suggest a certain "heliotropic" (and also boreaphobic?) factor emerging from the evidence, namely a strong southward surge of sun-seeking, cold-shunning tourists among our Northern Hemisphere specimens. The validity of this general hypothesis of the general touristic lure of desirable complementary factors is further established by the quite feeble movement of Austrians to Scandinavia or of Greeks to Spain.

A fifth explanatory item is that of the known or presumed cost of a visit within the destination country, the effect being to shunt tourists to equally accessible and attractive points with lower prices. This may be occurring in instances of heavy French traffic to low-budget Spain and Portugal, and the accelerating British rush to Iberia. The investigator intertested in testing this hypothesis will encounter all of the problems familiar to any economist making comparative international studies or diachronic cost-of-living studies even within a single country.

Next we mention, but only tentatively at present for lack of sufficient evidence, the influence of intervening opportunities, namely the doctrine that a tourist proceeding from his home to a distant country will pause along the route at attractive intermediate stops—or, in the extreme case, might even forego the more distant point for the closer opportunity. Two *possible* illustrations of the adventitious tourists bound for far horizons may be the Japanese traveler bound for Europe loitering in America, or the Scandinavian en route to Great Britain breaking his journey in the Netherlands. Two cases where proximate opportunities appear to have frustrated other options may be those of Germans who might have gone on to Iberia but elect instead to dally in competitive Italy or those Iberians venturing north into Europe who tend to limit their itinerary to next-door France.

Certain temporary surges of tourists or accelerated trends in long-term growth patterns are quite directly associated with specific events, such as Olympic Games and other notable athletic events, World Fairs, and other major exhibitions. In the case of the Olympics, for instance, flows of American visitors to Italy accelerated markedly between 1959 and 1961, later to resume their regular upward march, while much the same trend appears in the Japanese case as a result of the 1964 games.

In the Japanese and Italian cases, a permanent expansion of tourist business may have been generated by these special events, but this is not inevitable. The Brussels Fair of 1958 provides the exception, since subsequent volume of visits receded to pre-Fair levels and has even now not re-achieved the peak reached in 1958, see Table 5. We might, of course, also mention the failure of the New York World Fair of 1964–1965 to generate any perceptible increase in the number of tourists arriving in the United States.

With considerably more trepidation, we offer our final two hypotheses—the possible effect of the national character of the source country, and the strength

TABLE 5

U.S. TOURIST FLOWS TO BELGIUM, ITALY AND JAPAN

	Belgium	Italy	Japan
1958	577,000	813,000	51,937
1959	262,000	825,942	68,652
1961	254,000	940,401	97,294
1962	281,000	–	108,393
1964	358,000	1,073,700	161,876
1965	376,000	1,138,400	184,729
1966	447,741	1,245,000	222,848

and nature of the mental image of potential target areas as harbored by potential visitors.[11] Obviously, such factors are difficult either to detect or to test with the crude data at hand. In general, the best techniques depend on analyzing questionnaires administered to a carefully selected sample of respondents. This would be especially true with tourists' perceptions since the obvious alternate approach of using official statistics as surrogates of touristic appeal is likely to be defeated, as in our case, by absence or weakness of data.

But let us gingerly offer two or three instances where these factors seem to operate. The reputedly phlegmatic, business-like Dutch appear to display little spatial bravado in their greater than expected preference for Belgium, Luxembourg, the U.K., and Germany for vacation and tourist trips, as opposed to the more exotic choices of their European brethren. The special favor enjoyed by Greece in the travel plans of the British and Americans may reflect not only the significant climatic, scenic, and other standard tourist attractions but also something of a special aura—the afterglow of the classical past—that seems to create a particularly attractive image of Greece in the minds of these two national groups.

[11] Several geographers have explored the general problem of measuring such spatial perceptions with encouraging results, although many problems remain. For an example of the literature, see Gould [7].

American's image of France as a long-term ally of the United States, coupled with that country's well-known attractions and the special place Paris holds in many Americans' hearts and minds may have prevented a decline in the flow of U.S. tourists to France over the past decade of tense relations and frequent recriminations. For despite the fact that Americans make up a smaller proportion of France's tourists now than in the past (10 percent in 1966 as opposed to 13.8 percent in 1958), the absolute increase in U.S. tourists is still impressive, rising from 535,000 in 1958 to 1,060,000 in 1966.

SUGGESTIONS FOR FUTURE RESEARCH

The flow patterns and the tentative hypotheses offered and briefly developed in the body of this paper, while interesting and suggestive, are obviously only the barest beginning of serious research, and a vast amount of thinking and hard work remain for the student of international tourism. For instance, we have reluctantly foregone any attempt to develop some of the intriguing potential isomorphisms between tourism and migration. After all, tourism can be considered as single or many-destinationed impermanent migration. Particularly interesting as a topic for future research is the question of the applicability of migration models to tourist flow patterns. We would expect that some of the newer information-feedback models might be particularly useful, especially in view of the high level of stability in our system. Our present data do not permit such exploration, unfortunately. What is required is a carefully designed long-term study of tourist's attitudes and information sources.

However, most immediately, we should like to see our universe of discourse enlarged in terms of both time period and the number of countries considered, and the elimination of some disquieting gaps in our information. This would permit more precise tests of the hypotheses of-

fered above—and might suggest others as well.

In particular, there are two areas of investigation we believe to be peculiarly rewarding and critical. First is the question of how potential tourists perceive and evaluate various destinations, and how such mental images can actually impinge upon travel decisions. We plan to carry out a concurrent program of tests on this topic in this country and others, using college students as our population of present and prospective travelers. Second, we are intrigued with the possible feedback effects of tourism upon a great number of variables of intense interest to demographers and geographers, particularly in future years, as that predictable explosion in leisure-time travel materializes. Among these are effects upon national image, migrations, international trade and monetary flows, diffusion of cultural traits and attitudes, effects upon political relationships, and impact—culturally, economically, and socially—upon those subnational tracts absorbing the largest volume of visitors.

But whatever the exact form such studies may take, we can confidently predict that the analysis of the causes and effects of international tourist flows will soon emerge as a major focus of scholarly attention.

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