and induced frequencies of mice with abnormal numbers of sex chromosomes lead to the conclusion that XO individuals are most often the result of events occurring after fertilization. Specifically, it is suggested that there exists a relatively high probability of loss of the paternally contributed sex chromosome some time between fertilization and the first cleavage (32).

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- **Population and Politics** in Europe

Demographic factors help shape the relative power of the communist and noncommunist blocs.

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World population problems have attracted wide attention in recent years, but discussions of demography all too often skip over Europe with only a bare mention. True, Europe is not a demographic trouble spot today. Although the "population explosion" of which we hear so much originated in Europe, its force is spent and the continent has escaped unscathed, indeed enhanced, by the experience. Europe's population today is large and dense, more dense in fact than that of Asia, if population per square kilometer is considered (see Table 1), but population pressure in Europe offers no obstacle to economic development or political tranquillity. Nor is Europe's population growing as rapidly as that of the underdeveloped areas that fill us with concern. The annual rate of

0.7 percent in Europe as against 1.8 percent in Asia, 1.9 percent in Africa, 2.1 percent in the Americas, and 2.3 percent in Oceania (1, Table 2). Already highly developed, Western Europe can easily absorb any increases that are likely to occur in the future. Those portions of Southern and Eastern Europe that are not yet developed are rapidly increasing the efficiency of their economies, and they, too, should be able to handle future increments in their population.

increase from 1950 to 1958 was only

This does not mean, however, that demographic facts no longer affect the politics of Europe. Population trends, both past and present, have a direct effect upon the power position of European nations in relation to the rest of the world and in relation to each other, and this effect is the greater precisely because the economic and social organization of European na-

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tions is such that population growth no longer presents a problem. Because most of the European nations are industrial or are industrializing rapidly, they can use their people for purposes of power, unlike the struggling underdeveloped nations, who may find their population growth a liability.

The relationship between population and politics in Europe is of long standing. In the laissez-faire century before World War I, demographic trends influenced European power, but political developments had little effect on demographic trends. Immense population growth, unplanned and uncontrolled, was crucial in making Europeans first in power in the world. Europe's population explosion provided the working hands to run the new industrial economies at home, the migrants to create European allies outside of Europe, and the administrators and soldiers to run far-flung empires that encompassed half the world's area and one-third of its population.

The population growth that had enabled Europe to reap such handsome political yields from its economic development slacked off in the 20th century. Birth rates dropped first in Western Europe, where the Industrial Revolution had started and where, in consequence, urban values, favoring small families, had had the longest time to become widespread and deeply entrenched, but as the century progressed, birth rates began to fall in Eastern Europe, too (2, pp. 12-13). Low birth rates, low death rates, and low or moderate rates of increase are facts of life today in most of Europe,

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Table 1. Population densities in Europe and Asia, 1958. [From *I*, Tables 1 and 2]

Area	Population (per km ²)
Asia	59
Indonesia	59
China	69
Philippines	80
Pakistan	91
India	121
Korea	138
Japan	248
Europe	85
France	81
Poland	92
Italy	162
West Germany	210
United Kingdom	213
Belgium	297
Netherlands	345

but one government after another has fought against these facts. In the 20th century, the relationship between population and politics had changed. Politics was trying to influence demographic trends.

Faced with a fall in birth rates and a potential decline in numbers, governments adopted policies designed to raise fertility. At the same time, however, political events of quite a different sort intervened to affect Europe's population, as wars and revolutions wiped out whatever gains pronatalist policies might have made and set loose a flood of new migration.

Pronatalist Policies

In view of the general concern over Europe's sagging birth rates, which fell during the depression years to a point where they endangered population growth and even promised population decline, it is perhaps surprising how few of the European nations adopted population policies and how inconsistent some of these policies were. England, for example, though greatly concerned, did nothing until after World War II, when it instituted a program of family allowances for children, more as a welfare measure than as an attempt to influence family size, for the allowances are far too small to encourage production of larger families (3). Hungary adopted a strong pronatalist policy in the early 1950's but abandoned it by 1960 (4, p. 193). Sweden and Bulgaria (4, p. 196) are examples of nations carrying out pronatalist and antinatalist measures at the same time. Russia has one of the most consistent pronatalist policies but for many years denied that its extensive program was designed to

affect population size. Nazi Germany, Fascist Italy, and contemporary France perhaps deserve the prizes for consistency, but the effectiveness of their policies is open to question.

However, before we pass too severe a judgment, it should be noted that framing a coherent policy in the field of population is extremely difficult, for the most effective means of achieving higher fertility may conflict with other values important to the society. In such cases, contradictory policies result. The Swedish government, for example, has refused to do anything that would infringe upon the individual's right to plan the size of his family. It has therefore eschewed any appeals to patriotism as a motive for increasing fertility and has refused to restrict the individual's right to practice birth control, sterilization, or even abortion, if health or economic necessity makes such steps desirable (5, p. 222). Following the lead of the Soviet Union, most of the eastern European nations have also legalized abortion, even though this runs contrary to the pronatalist intentions of some of these governments. The aim is apparently to safeguard the health of women who would otherwise turn to illegal abortionists, but the effect must surely be to increase the number of abortions and to reduce the number of births.

Pronatalist policies may be divided into four categories. These are (i) general social welfare policies to improve economic conditions for those wishing to have more children; (ii) specific measures, such as cash allowances and tax benefits, offering financial relief to large families; (iii) repressive measures to prevent the use of contraception, abortion, and sterilization; and (iv) measures to strengthen the position of mothers and housewives in society and to make a large family a matter of prestige. The three major population policies in Europe todaythose of France, Sweden, and Russiadiffer widely in the emphasis they place upon these various areas of action.

In France, population policy relies heavily upon repressive legislation and extensive judicial and police activity to prevent abortions and the use of contraceptives, and upon a system of cash allowances high enough to provide a real increment to the income of large families. The French program also includes marriage loans, prenatal allowances, birth grants, housing allowances and grants, reduced school fees, and subsidized vacations for children of large families (6).

Sweden's program includes some specific measures, such as cash allowances, but the emphasis is on general social welfare policies to provide adequate income, housing, and medical care for all families, on the assumption that this will remove some of the obstacles that prevented Swedes of an earlier generation from having larger families. At the same time, however, Sweden has enacted a series of measures that are antinatalist in effect if not in intention. Abortion is permitted for physical, psychological, or economic reasons, contraceptives are on sale in every chemist's shop, and information on contraception is given as a part of secondary-school sex education. It is obvious that Sweden seeks larger families, but only if the children are wanted (7).

Russia's program is perhaps the most extensive. It includes a broad range of welfare measures, financial assistance, and honors for the mothers of large families. However, legislation preventing abortion and contraception has been eased in recent years. Free medical care is available to all, but particular care is reserved for mothers and children; "mother and child specialty" is one of the three basic specialties in which all Soviet physicians are trained. Free education through the university level further decreases the cost of raising children. Working mothers are guaranteed light work while they are pregnant, maternity leave with pay, time off to nurse their infants, and day-nursery service for small children. Tax benefits and cash payments favor large families, and the Soviet government honors mothers of large families with special medals and titles, running from Motherhood medals for mothers of five grown children up to the title of Mother Heroine, which goes to mothers of ten grown children, together with a special certificate from the Presidium of the Supreme Soviet of the U.S.S.R. (4, p. 179; 8).

A larger population is not, of course, a goal in itself, and all of the European nations concerned with population size have other, ultimate goals in mind: economic welfare, national power, and cultural survival. British and Swedish writers have expressed concern lest a declining population reduce investment opportunities and lead to economic stagnation and, eventually, to a lower standard of living (5, p. 124; 9, chap. 10, 11). Considerations of power are more crucial, however, and have played a part in all of the pronatalist policies. These considerations were stated most clearly by the Germans and Italians. Joseph Goebbels declared: "If Germany wishes to fulfil her great national and international tasks . . . she needs hands. That is why the new regime encourages large families" (10).

Mussolini was even more frank: "To count for something in the world, Italy must have a population of at least 60 millions when she reaches the threshold of the second half of this century... Let us be frank with ourselves: what are 40 million Italians compared with 90 million Germans and 200 million Slavs?" (11).

French population policy was motivated in large part by the fear of Germany's rapidly expanding numbers, and the French Code de la famille of 1939 may be viewed in part as an answer to Nazi Germany's earlier pronatalist policy in a sort of demographic armaments race. British officials were also well aware of the political implications of the nation's slowing rate of growth; royal commissions on migration and on population expressed the fear that Britain's ties with the Commonwealth nations would suffer if Britain's population did not grow rapidly enough to provide a steady stream of migrants to keep the populations of such nations as Canada, Australia, and New Zealand predominantly British in origin (9, pp. 125, 225, 133).

It is probable, though hard to prove, that considerations of power are at the root of Russia's population policy as well, for the Soviet Union needs manpower not only to make up her war losses and to staff her growing industries but also to fill her open spaces and to avoid being completely dwarfed by her giant ally and neighbor to the south.

Sweden, on the other hand, seems less interested in power than in cultural survival, and her population policy is designed to perpetuate Swedish culture as well as to maintain the nation's international standing. Alva Myrdal expressed the feeling in these words: "Our society is too good not to be preserved. . . . It is not going to be so stimulating to work for a national culture that is under liquidation. It is not going to be so satisfying to build up a social structure which our children are not going to inherit" (12). In a way, of course, a desire for cultural 9 JUNE 1961

survival underlies the pronatalist policies of all nations.

The effectiveness of European pronatalist policies is hard to judge. In theory, two measurements are required —an accurate measure of fertility after the policies have been put into effect and accurate knowledge of what fertility would have been if the policies had *not* been put into effect—but in the absence of an experimental situation, the second measurement is always lacking.

The case of Nazi Germany has been perhaps most thoroughly examined. In Germany, a sharp rise in the birth rate followed directly upon the introduction of pronatalist measures. Nazi officials, quite naturally, took full credit for the change, but it seems more likely that the rise in births was due to the return of economic prosperity and full employment, since an exceptionally high correlation (+.79) has been found between the monthly employment rate and the monthly birth rate 9 months later for the years 1931 to 1939 (13).

Sweden also experienced an increase in fertility accompanying the implementation of her population policy, the birth rate rising from 13.7 in 1934 to 20.6 in 1944. Since then, however, the Swedish birth rate has dropped steadily (it was back at 14.2 in 1958), although the pronatalist policies have been continued.

The experience in France is particularly interesting. There prewar policies were accompanied by a continued drop in the birth rate. However, the implementation of the Code de la famille coincided with an increase in fertility during the latter years of the war, and with the end of the war the French birth rate soared. France maintained a relatively high birth rate after the postwar baby boom had run its course in other western European nations. French expert Alfred Sauvy gives the credit to French policy (14), but it must be noted that the birth rate in the United States has also risen high and stayed high since World War II, without any deliberate population policy whatever.

Wars, Revolutions, and Migrations

Any gains in European population won through governmental policies have been more than offset by losses due to political strife, for this bloodiest of all centuries has seen Europe wracked by two world wars, a civil

war, a revolution, and a number of smaller conflicts. The total losses in population are difficult to count, for they include not only war dead but also deaths from disease and malnutrition following in the wake of the wars, and "losses" attributable to the fact that a large number of births which would have occurred in peacetime did not occur in time of war. Estimates place the total cost in lives of Europeans (15) of the two world wars alone at well over 100 million. Russia alone suffered a staggering loss of some 71 million lives. Germany was the second largest loser, but her losses are estimated at only one-seventh of Russian losses. French and British losses combined were less than those of Germany.

Significantly, losses in Eastern Europe were greater in both wars than those in Western Europe, but the difference was especially great in World War II. Among the major powers, France suffered military losses in World War II of about 200,000. If one adds the deaths of civilians, deportees, and prisoners of war, the total reaches about 600,000, or less than half the comparable losses in World War I. In Britain, losses in all categoriesmilitary casualties, excess civilian deaths, and the deficit of births-were less than they had been in World War I. Russian losses, in contrast, were almost double what they had been in World War I, for the Soviet Union suffered an estimated 25 million war deaths and a deficit in births of 20 million as a result of World War II. The Soviet satellite nations in Eastern Europe had a loss from excess deaths alone of more than 6 million (2, p. 14; 16).

The difference in the magnitude of the losses of eastern and western European countries can be attributed in part to the shorter period of fighting in Western Europe. In addition, the slaughter by the Germans of their eastern European captives was much worse than anything that occurred in Western Europe.

Population deficits, however, are not the only demographic changes brought about by political conflict in Europe. War, revolution, revolt, and political persecution dislocated millions of Europeans, forcing them to migrate from one nation to another and resulting in a serious loss of population for Eastern Europe.

Again, exact figures are hard to come by, since many of these forced migrations were illegal and therefore not counted, or since they took place in the midst of wars. However, the estimated total for refugee migration in Europe since World War I is in the neighborhood of 30 million people. This includes $1\frac{1}{2}$ million refugees from the Russian Revolution, about $\frac{1}{2}$ million Republican refugees from Spain (more than half of whom later returned home), and some 800,000 prewar refugees from Nazism in Germany, Austria, and Czechoslovakia.

However, nothing that went on before the war can compare with the displacement of at least 21 million people by World War II. As Hitler's armies advanced, millions of Europeans fled before them, while at least 8 million others who did not flee fast enough? were shipped back to Germany as prisoners of war and slave laborers. In addition, Germany expelled over 2 million Poles, Slovenes, and inhabitants of Alsace-Lorraine from their territories to make way for German settlers. Then, as Germany began to lose the war and her armies began to retreat, the Nazis conducted a mass abduction of non-German civilians. German settlers, non-German collaborationists, and anticommunists from Eastern Europe went along with them voluntarily. By the end of the war, there were probably more than 12 million non-German displaced persons in Europe and about 91/2 million German refugees from other territories crowded into Germany.

Territorial changes at the end of World War II further scrambled Europe's population, changing the allegiance of many Europeans even though they did not migrate, and altering the size of nations. Most seriously affected, of course, was Germany, which was split in half and which lost both territory and population. Not until 1953 did the total German population again reach the size it had been in 1939. West Germany today is again the largest nation in population size in Europe (unless one counts the Soviet Union), but Germany no longer towers over Britain in population, as it did before the war. Rumania lost more than 4 million people (a fifth of its population) through loss of territory; Poland suffered a net loss of 3 million. Today, Poland, Rumania, and Czechoslovakia all have smaller populations than they had in 1939.

As a net result of territorial changes and war losses, Eastern Europe as a whole (not including the U.S.S.R.) lost 25 million people between 1938 and 1947 (2, p. 16), and the exodus from Eastern Europe continues. Since World War II, roughly 3.1 million East Germans have escaped to West Germany, and 190,000 Hungarians left Hungary at the time of the unsuccessful revolt.

Of particular interest and significance is the constant flow of Germans seeking refuge in West Germany and in West Berlin. The migration has been large enough to erase the natural gain in East Germany due to an excess of births over deaths, thus causing a steady decline in the total population of East Germany. In addition, the migration has affected the age structure, since a high proportion of the refugees are young, 40 percent of them being between the ages of 14 and 24 (2, p. 21). Politically, the exodus has been both frightening and dangerous to the East German regime, and the desire of the communists to see the Allies move from West Berlin surely reflects in part a desire to close the escape hatch from Eastern Germany (17). However, to the degree that the mi-

Table 2. Populations of communist and noncommunist nations of Europe, 1958. [From *I*, Table 1]

Nation	Population (millions)
Noncommunist natio	ons
Western bloc	
West Germany*	54
United Kingdom	52
Italy	49
France	45
Spain	30
Netherlands	11
Belgium	9
Portugal	9
Greece	8
Denmark	5
Norway	4
Luxembourg	0.3
Iceland	0.2
Neutral	
Sweden	7
Austria	7
Switzerland	5 4 3
Finland	4
Ireland	3
Total noncommunist†	302
Communist nation	ıs
Russian bloc	
U.S.S.R.	209
Poland	29
Rumania	18
East Germany [‡]	17
Czechoslovakia	13
Hungary	10
Bulgaria	8
Albania	2
Neutral	
Yugoslavia	18
Total communist	324

* Includes West Berlin. † Totals do not add up because of rounding. ‡ Includes East Berlin. grants are motivated by a desire for higher living standards rather than a wish to escape totalitarianism, the migration should diminish somewhat if the presently low standard of living in East Germany rises.

Size and Distribution

of European Population

The flight from East Germany illustrates vividly the most important political legacy of World War II to Europe: the division of the continent into two opposing camps. This division is probably permanent, for it rests not only upon the obvious irreconcilability of the U.S.S.R. and the Western Powers; it is beginning to be grounded on something deeper than ideology—that is, upon the growing economic and military integration of the countries within each bloc.

Demographic factors play an important part in shaping the relative power of these two blocs, for population size is one of the important determinants of national power in the mid-20th century, although of course there are other important determinants as well (18). In population size, the halves are roughly equal. West of the Iron Curtain live some 302 million people, while east of the line live 97 million people, if Yugoslavia and the U.S.S.R. are excluded. However, if one adds to the Eastern bloc the 209 million people of the Soviet Union, the two regions are almost exactly equal in size (see Table 2).

This is not to say that the two areas are equal in power, for the West possesses an advantage in being far more developed economically, while the East possesses an advantage in consisting of fewer units, more closely tied together.

The economic superiority of Western Europe is clear. Western Europe, which was the first of all the regions in the world to industrialize, is today one of the richest areas on earth, with an aggregate wealth greater than Russia's and second only to that of the United States. Though rapid development in Eastern Europe may change this picture in the future, Western Europe today enjoys a clear superiority in capital goods, in annual production, and in living standards. These are great assets as far as international power is concerned.

The distribution of population

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among the nations of Europe, however, confers an even more important advantage upon the communist nations, for there are only nine nations in communist Europe, while there are 18 noncommunist European nations (not counting such tiny entities as Andorra, Liechtenstein, Monaco, San Marino, and Vatican City). Furthermore, the population of the European communist nations is heavily concentrated; two-thirds of the entire population is in the Soviet Union. Add the fact that, with the possible exception of Czechoslovakia, the U.S.S.R. is also the most economically advanced nation in communist Europe, and it is clear that Russia has an immense power advantage over her European neighbors.

This power advantage is most important in shaping the course of events in Eastern Europe, for it is almost completely because of Russian power that the satellite nations are in the communist camp at all. Russia has used her great preponderance of power, based in large part upon her preponderance of population, to force the economic integration of Eastern Europe. The military establishments of the various satellite nations are also undergoing integration.

The situation is quite different in Western Europe. Five of the noncommunist nations are not, politically speaking, in the Western camp at all (they are Austria, Finland, Ireland, Sweden, and Switzerland), and the remaining 13 are far from united. This lack of unity is due in part to the fact that no one nation of overwhelming size controls the area. Domination of Western Europe is shared by four middle-sized nations of roughly the same size. Britain, France, West Germany, and Italy, ranging in size from France's 45 millions to Germany's 52 millions (54 millions including West Berlin),

rule between them almost two-thirds of the population of Western Europe. No one of these nations has been willing to submerge its identity or even to sacrifice its national interests for the sake of western unity, and each of the four possesses the power to resist the wishes of the other three.

Future years will bring changes in the factors determining the relative power of Eastern and Western Europe. At present, the eastern European nations are growing in population at a higher rate than the western European nations, and in the short run, at least, they should increase their superiority in numbers over the western nations, in spite of a continuing drain of migrants fleeing from East to West.

The greatest change, however, will be in industrial strength, for here the East still has great gains to make. At present the western nations possess the advantage of highly industrialized economies, while many of the eastern satellites are still quite backward economically. However, modernization is being pushed very rapidly both in the satellites and in the Soviet Union. Economic progress will continue in the West, but for the more advanced nations the dramatic increase in power that comes with the first shift from an agricultural to an industrial economy lies far in the past. No future economic change is likely to bring with it another such sudden boost in power. Eastern Europe, on the other hand, has still to experience some of this sudden growth in power; we are currently witnessing such a growth in the Soviet Union, and it will soon occur in the satellites as well. Finally, it appears that regional unification is also proceeding more rapidly within the Eastern than within the Western bloc, and this trend, too, will probably continue.

There is, however, one way in which

Western Europe can use its population to increase its power. By reorganizing its people into fewer and larger political units, preferably into one United Europe, Western Europe would gain the power that comes from being a giant nation-power such as that possessed today by the United States and Russia, each of which, incidentally, has a smaller population than a United Europe would have. The gain in power of such a political reorganization might well be comparable to the advantage Europe gained long ago by being the first continent to go through the Industrial Revolution and the population explosion.

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