
Review: A Measure of Civilization

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and the water is generally very cold in January, being then almost entirely derived from glaciers and melting snow. On November 9 it was 46°, but by January 4 it had fallen to 38°.

A MEASURE OF CIVILIZATION.

The Distribution of Civilization.— Ellsworth Huntington. Pp. 35. New Haven : Yale University Press. 1915.

IN the autumn of 1913 Prof. Ellsworth Huntington embarked upon an attempt to measure and map the variations in civilization throughout the world. He planned to produce maps with a threefold utility. In the first place, he states, such maps would be intrinsically interesting; secondly, they would yield opportunities to lay more stress upon human character in future geographical, historical, sociological and economic discussions; and thirdly, they would provide a measure of various human qualities whereby the effects of physical environment, race, biological variations, etc., may be tested.

The higher elements of civilization, in his view, include the power of initiative, the capacity for formulating new ideas, the power of self-control, high standards of honesty and morality, the power to lead and control other races, the capacity for disseminating ideas and for carrying new ideas into effect. During the inquiry it became obvious that this list of elements lays insufficient emphasis upon æsthetic characteristics.

An investigation of this kind necessitated the invention of a new method, for Prof. Huntington concluded that the statistics tabulated and published by the several governments were both insufficient and too unequal for the purpose of a world survey. He therefore relied upon the opinions of well-read and experienced investigators. Over two hundred people in twenty-seven countries were asked to co-operate; some of those were geographers, others were ethnologists, travellers, historians; all were held to possess an extensive knowledge of the world, usually through personal experience, but in a few cases through reading. The world was divided into 185 areas, and collaborators were asked to divide these areas into ten groups, so that group 10 should be, in their opinion, notable for the highest development of civilization, and group 1 the lowest. A smaller number of helpers were asked to treat North America by the areas of individual states and provinces in a similar fashion. By means of suggested cautions to collaborators and precautions taken in averaging the results, Prof. Huntington eliminated prejudice, racial bias and technical inaccuracies in his results. Over fifty people made classifications, and over eighty others sent replies of which use could be made. The countries represented by the 54 collaborators were those of Western Europe as well as Russia, Portugal, Spain, Italy, Japan, China, Australia, Canada

and the United States. Some of the many criticisms sent among the replies are quoted in the pamphlet.

The results of the investigation are published upon maps of the continents; and the reader may be advised to follow the brief summary which is given below upon maps of the continents which show density of population. In Europe a nucleus limited by Cape Wrath, Stockholm, Danzig, Genoa, Marseilles, and Brest is marked by numbers between 90 and 100, to represent the highest civilization; England, including Wales, is alone credited with 100. North-eastward to the tundra the values drop to 29, eastwards to the Caspian to 46, south-eastwards to Turkey in Europe to 61, with 56 near Montenegro, and southwards in the Mediterranean to 70. In Asia, Southern Japan has 83, Eastern China from 60 to 66, the Indian triangle between Lahore, Bombay and Calcutta from 50 to 53, and elsewhere the numbers decline to the lowest, 13, between the Ob and Yenisei. In Australia the values range from 39 in the north to 86 near Sydney; in Africa they run from 19 in the Sahara to 72 in the Cape Province; and in South America from 23 in the Amazon Valley to 71 near Buenos Aires. The general opinion concerning North America, based upon all the work, is that a nucleus from the East Coast between Maine and Cape Hatteras extending as far as the Mississippi should be valued higher than 90, with a value of 100 near New York. A second high area occurs near San Francisco valued at 90. The lowest value in the United States is 73, near the Southern Rockies. In Canada the Lakes Peninsula is highest with over 90, and the Arctic shores lowest with 17. Mexico is valued at 51 and 64, and Central America drops to 46. Density of population maps give very similar results provided that areas where railways are numerous or where the inhabitants enter into world-commerce are given higher values than the density of population in the scantily peopled continents warrants.

Criticism of Prof. Huntington's results as published may be confined to two matters of prime importance. In the first place, it is extremely doubtful whether the elaborateness of the method was either valuable or necessary; and secondly, the numerical values are useless for most of the purposes for which Prof. Huntington designed the investigation. The first point may be dealt with by means of material contained in the pamphlet itself. The numbers give two sets of comparative results: in the first case, they suggest for each continent a list, in order of merit, for the component areas of the continent; and, in the second case, they suggest an order of merit for the highest civilized areas in the continents. The maps of North America supply material in connection with the units of a single continent. There are six of these maps, five based upon the averaged opinions of groups of Americans, Britons, Germans, Latins and Asiatics respectively, and a sixth map which generalizes the whole. Take a section roughly along parallel 40° N. and note the values on each of these maps, and draw curves based upon the values so obtained. The

six curves are fundamentally alike. They end highest at the east, they commence almost as high on the west, they drop very suddenly on the way from the west eastwards and rise slowly to the maximum. They differ only in the range of the curve. A similar curve based upon densities of population shows precisely these changes, except that the western end is not proportionately so high. From this it follows that the reader may easily obtain a similar map to those of Prof. Huntington by an examination of a population map, making allowance for railways and world-trade as suggested. The process could be repeated continent by continent. Now turn to continental comparisons. Prof. Huntington publishes a table supplied by a single investigator, Mr. Ten Kate, who treated seven of the characteristics laid down by Prof. Huntington along with three æsthetic characteristics. He considered eleven areas and provides a list of average values based upon the ten characteristics. Prof. Huntington supplies a list of average values for the same areas based upon the work of his fifty-four collaborators, and the present writer has made a list based upon Mr. Ten Kate's values for the seven non-æsthetic characteristics previously mentioned. There are, thus, three lists in order of merit for the eleven areas. In all these lists Great Britain, Germany, and the United States make a group of best countries practically equal; Japan and Italy form a mean group; and Mexico, Argentina, and Paraguay form a worst group. The remaining three areas, Northern France, the Netherlands, and Switzerland vary from list to list in relation to the best and mean groups. This variation does not affect the point at issue, since attention is to be confined to the best areas in each continent, *i.e.* to Britain, the United States, Japan, and the Argentine. Three tests based upon the method of opinion have given the same results, and these results are practically the same as those which would be obtained by considering density of population in conjunction with world-trade and transport. The added æsthetic values cause no variation. These considerations suggest that for scientific purposes the detailed and laborious method gives no better results than would be obtained by an individual after a few hours' thought. This means that the minutiae which were considered by the fifty-four collaborators are lost in the averages upon which the maps were based. It may be noted, in this connection, that the collaborators worked on a basis which gives a possible error of 5 per cent., and that Prof. Huntington seems inclined to attach importance to differences of no more than 1 per cent. No chain is stronger than its weakest link.

Let us consider now the further point regarding the uses to which the maps may be put. Prof. Huntington suggests that they should be useful in comparisons between civilization and, on the one hand, elements of physical environment; on the other hand, human or social elements. The consideration of two analogies may serve to show that Prof. Huntington has not given sufficient attention to the results of *averaging* the opinions of his collaborators. Firstly, set ten people to the estimation,

without precise measurement, of the weight, density, volume, elasticity, symmetry, and the depth of surface tint of ten objects of different sizes and shapes, made of different substances, and superficially coloured in different shades of red. Let them express their estimates by a scale with 10 for the heaviest, densest, etc. Average the results into one list with a maximum value of 100. Block A has a value 100, block D has a value 86. What do these values mean? Block A possesses each characteristic in the highest degree, and block D belongs to a second rank. But what do we mean when we put block D in a second rank in comparison with block A, and what can we infer therefrom? Surely we can draw no valid conclusions. Does the Australian at his best, rank 86 on the map, belong to a second rank of people in comparison with the New Yorker or the Englishman, rank 100 on the map? Because the people of Sydney rank at 86 and those of New York rank at 100, are we to infer that the New Yorkers are more honourable, more moral, more pushing and go-ahead in business, more fertile in new ideas, or have a higher ethical and social outlook than the people of Sydney?

Secondly, consider the total annual average rainfall of London and Agra, which agree at 27 inches. Should we infer from this average value that the rainfall at the two places is similar in type? Or, given that the rainfall in the London district suffices for an intensive cultivation of the soil, are we to infer that the rainfall of Agra similarly suffices for intensive agriculture?

From the point of view of scientific method it would thus appear that Prof. Huntington's averages can serve very few useful purposes. Is the work then a waste of time and energy? By no means; the important material for consideration lies in the collected data which are in Prof. Huntington's hands. Valuable results should be obtained from the differences between the opinions of one collaborator and another, or between one set of these people and another group. All these differences have been eliminated from the maps, and it is only the consideration of them which will make their collection worth while. It is a matter of the greatest scientific importance that the maps as they have been published should not be used as the basis of any judgments about the non-material, *i.e.* human or social, elements in the geography of the world.

Prof. Huntington quotes adverse and laudatory opinions upon the plan which he has put into operation; these opinions are largely beside the point since they do not refer to the results which have been published. "Ambassador" Bryce is worth quoting: "Your idea is ingenious and interesting, and I should much like to see how it works out, though it seems to me, on first impressions, that the various factors involved are so many and so complex that the visual presentation you contemplate would need an amount of comment and explanation which would require something like a treatise to accompany the map."

B. C. WALLIS.