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Differential aging in South Africa

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Summary

Of the four ethnical groups to be distinguished in South Africa the Whites constitute the "oldest" of the four communities. They are followed, in declining order, by the Bantu, the Coloureds and the Asians.

While the White population has been aging during the past half of century, the age composition of the Bantu has not deviated very much from the stationary. The Coloured and Asian populations, always very youthful, actually became younger over the last few decades.

Migration apart, the degrees of aging or juvenescence can be related to the stage in the cycle of demographic development of which five can be conveniently distinguished:- I. Maximum fertility and mortality which produces a more or less stationary age structure; II. Unchanged fertility and declining mortality with juvenescence as the outcome; III. Declining mortality and fertility and a fairly stable rate of growth: a period of transition; IV. Fertility declining more rapidly than mortality: the population ages; V. The birth rate too low to allow of a natural increase in the population: senescence, with aging proceeding space.

The Whites are in the fourth stage of demographic development; the Bantu have started out on the second phase; the Coloureds are further advanced in the second phase; the Asians might have reached the end of the second phase. Inordinately, urbanisation was instrumental in maintaining or increasing fertility among the Non-Whites. Migration movements had an aging effect on the White and Bantu communities and a juvenescent effect on the Asian population.

* General distribution of this document is limited to the introductory summary. Participants who have been invited to take part in the meeting referred to above will receive also the full text of the paper. Other participants in the Conference will receive the full text upon request.

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La composition par âge suivant les groupes ethniques en Afrique du Sud
par J. L. Sadie (Afrique du Sud)

Résumé : Parmi les quatre groupes ethniques dont se compose la population de l'Afrique du Sud, le groupe des blancs est le plus "âgé". Viennent ensuite, en ordre décroissant, les Bantous, la population de couleur et les Asiatiques.

Alors que la population blanche a vieilli au cours du dernier demi-siècle, la répartition par âge des Bantous est restée à peu près inchangée. Les populations de couleur et asiatiques, déjà très jeunes, ont encore rajeuni au cours des dernières décades.

Si l'on ne tient pas compte des mouvements migratoires, le degré de vieillissement ou de rajeunissement peut être rattaché au stade de l'évolution démographique où se trouve la population. L'on peut commodément distinguer cinq stades dans ce cycle :

- I. Fécondité et mortalité maxima : la répartition par âge est plus ou moins stationnaire;
- II. Fécondité constante et mortalité en baisse : rajeunissement de la population;
- III. Mortalité et fécondité en baisse et taux d'accroissement à peu près stable : période de transition;
- IV. Fécondité en baisse plus rapide que la mortalité; vieillissement de la population;
- V. Taux de natalité trop faible pour permettre l'accroissement naturel de la population : senescence avec vieillissement se poursuivant à grands pas.

Les blancs en sont au quatrième stade de l'évolution démographique; les Bantous en sont au début du deuxième stade; la population de couleur en est à une période plus avancée du deuxième stade; les Asiatiques en sont peut-être à la fin du deuxième stade.

Fait surprenant, l'urbanisation a eu pour effet de maintenir ou d'augmenter la fécondité parmi les populations non blanches. Les mouvements migratoires ont tendu à faire vieillir les populations blanche et bantoue et à faire rajeunir la population asiatique.

* Seule la présente analyse d'introduction fait l'objet d'une distribution générale. Les participants qui ont été invités à assister à la séance mentionnée ci-dessus recevront en outre le texte intégral du document. Les autres participants au Congrès recevront le texte intégral sur leur demande.

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DIFFERENTIAL AGING IN SOUTH AFRICA.

J.L. Sadie

In the Union of South Africa four population groups can be distinguished: - The Bantu, Whites, Coloureds and Asians (officially Asiatics), in this order of numerical importance. Each of these populations is at a different stage of demographic development, a situation which is reflected in their age structures and in the historical changes which had occurred in these structures. (The differences in social development are also reflected in the varying degrees of accuracy of data relating to age. By using large age-groups the effects of these inaccuracies are mostly eliminated).

For the purposes of this paper the following five phases in the cycle of demographic development will be conveniently distinguished:- I. Conditions of maximum or near maximum fertility, consistent with prevailing conditions of health, and high mortality unaffected by medical science; this produces a very youthful age structure which remains more or less stationary over time. II. Unchanged fertility and declining mortality, which raise the rate of natural increase;

this phase produces juvenescence. III. Fertility declines but not to the extent of reducing the rate of natural increase which is maintained by the uninterrupted fall in the mortality; this represents the transitional phase in the aging process. IV. Now fertility diminishes at a more rapid rate than mortality; the population is aging. V. Fertility is not high enough to maintain the numerical strength of the population; this is the period of senescence when the process of aging reaches an advanced stage.

A comparison of the age compositions of the various ethnical groups will be facilitated by using the three broad categories 0-14, 15-64, 65 and over, which have at the same time, some economic significance. The ages 15 to 64 could be regarded as roughly the productive ages, and the number of people younger than 15 and older than 65 expressed as a percentage of the number 15 to 64 years of age as the dependency ratios. The data in table 1 allow of such comparison.

From these data it clearly emerges that the Whites, although, demographically speaking, still considerably "younger" than most of the populations of Western and Northern Europe and North America, constitute the "oldest" of the four communities inhabiting the Union. In declining order, with respect to age, it is followed by the Bantu, the Coloureds and the Asians. When the age structures are graphically portrayed in the form of pyramids, the gradient of the pyramids' sides is highest in the case of the Whites and lowest in the case of the Asiatics.

Table 1.

The population groups of South Africa in three broad age categories.

Age interval	Whites 1911 : 1946	Bantu 1911 : 1946	Coloureds 1921 : 1946	Asiatics 1921 : 1946
0-14	36.5 : 30.5	40.7 : 38.8	41.5 : 42.4	41.7 : 46.7
15-64	61.1 : 63.3	56.2 : 57.5	55.3 : 54.0	56.8 : 51.2
65 & over	2.4 : 6.2	3.1 : 3.7	3.2 : 3.6	1.5 : 2.1
Total	100 : 100	100 : 100	100 : 100	100 : 100
Median age (years)	21.9 : 26.3	19.5 : 20.3	19.1 : 18.4	20.2 : 16.4
Dependency ratios	64 : 58	78 : 74	81 : 85	76 : 95
"Index of aging" $\frac{65+}{0-14} \times 100$	6.6 : 20.3	7.6 : 9.5	7.7 : 8.5	3.6 : 4.5

Source: Compiled from statistics supplied by the Bureau for Census and Statistics.

At 26.3 years the mean age of the White population is 10 years in excess of that of the most youthful ethnical group, the Asians, and 6 years higher than that of the Bantu who are the oldest of the three Non-White groups. The "index of aging" reveals even more conspicuously the difference in the age structures, and thus in the stage of demographic development. By 1946 it amounted to 20.3 for the Whites, to 9.5 for the Bantu, 8.5 amongst the Coloureds and 4.5 in the case of the Asians. These low ratios among the Non-Whites are indicative of few old people over the age of 65 in comparison with the many children under 15. The proportion of old people in the White community is double that obtaining among the Non-Whites, but its percentage of children is so much smaller that its proportional number of dependents, old and young together, is much smaller than the corresponding number of Bantu, Coloureds and Asians. In the result the

dependency ratio of the White community at 58 is very considerably lower than the Bantu ratio, which, at 74, is in turn lower than the Coloureds' dependency ratio of 85. That of the most youthful Asian community stands at very nearly 100%. These ratios have a pertinent bearing on the economic position of the Non-White people..

Comparing the age structures at a most recent date with those obtaining just after Union was declared in 1910, it becomes clear that of the four ethnical groups only the White population has been aging to a noticeable extent during the past four decades, while the age composition of the Bantu indicates a slight upward shifting of the mean age. The Coloured and the Asian populations are actually going through a period of juvenescence. Separate age statistics for these two groups became available in 1921 for the first time. A comparison, however, of the data for 1921, contained in table 1, with the consolidated age composition for the two groups in 1911 (see table 2) leaves no doubt that the juvenescent process dates back to at least the latter date:-

Table 2.

Consolidated age composition of Coloureds and Asiatics - 1911.

0 - 14	39.6%
15 - 64	57.7
65 and over	2.7
	100.0

This phenomenon of differential aging reflects the effects of diverse movements in mortality and fertility and migration.

Migration apart, the degree of aging or juvenescence can be related to the phase reached in the cycle of demographic development. In accordance with our exposition above of the sequence of phases the four groups can be classified as follows:-

The White population is in the fourth phase;
the Bantu, the least developed of the four groups, have just entered the second stage;
the Coloureds are further advanced in the second phase;
the Asians are further advanced in the second phase and may be entering the third stage.

With respect to migration: this had an aging effect in the case of the Whites and the Bantu and a juvenescent effect among the Asians, while migration had no direct share in the demographic tendencies exhibited by the Coloured population.

Table 3.

Birth and Death rates, rates of Natural Increase and Net Reproduction Rates. - Average for 1936 - 1952.

	Birth Rate	Death Rate	Rate of Natural Increase	Net Reproduction Rates
Whites	26.1	9.2	16.9	1.54
Bantu a)	43 to 47	28 to 32	15.0	1.45
Coloureds	45.5	22.3	23.2	2.03
Asians	38.6	13.6	25.0	2.12

a) Rates estimated.

As is indicated by the data in table 3 the White population has the lowest birth rate as well as the lowest death rate. The former has been falling gradually since the turn of the century.

By 1911-1915 it amounted to 31.1 per 1000, and although it revived after reaching a low level of 24.1 during the first half of the thirties, the secular downward trend is unmistakeable. So also is the trend in the crude death rate which stood at 10.1 during 1912-15 and came down to 8.8 by 1947-51. The available official life tables show an increase in the average expectation of life at birth from 57.3 in 1920-22 to 66.0 years in 1945-47. The death rate of its life table population (1945-47) compares as follows with those of the other groups:-

Whites	15.2	per 1000	
Bantu	27.5	"	"
Coloured	23.4	"	"
Asians	19.9	"	"

From these data it is clear that conditions of health among the Whites are better than among the Non-Whites, and that of the latter the Asians have registered the greatest progress. It will be seen, however, that the mortality differentials revealed by the life table death rates are much smaller than those shown by the crude death rates. This phenomenon is a function of the age structures themselves, and arises from the fact that the Non-Whites constitute much more youthful populations than the Whites.

The values for the probability of survival, contained in table 4, are indicative of the juvenescent effect - experienced in most other countries - of reductions in mortality, the incidence of which is greatly concentrated at the first few years of life. That the White population has aged despite this factor, must be ascribed to the more profound influence of the reduced fertility, enhanced by the effects of the migration movements.

Table 4.

Values of nPx for $x = 0$ to 75, expressed as indices.

nPx		Whites						Coloureds			
x	n	1920-22		1935-37		1945-47		1935-37		1945-47	
		<u>M.</u>	<u>F.</u>	<u>M.</u>	<u>F.</u>	<u>M.</u>	<u>F.</u>	<u>M.</u>	<u>F.</u>	<u>M.</u>	<u>F.</u>
0	5	100	100	103.6	103.5	108.0	107.5	100	100	107.0	106.1
5	10	100	100	100.5	100.3	101.1	101.1	100	100	99.8	101.0
15	20	100	100	102.0	102.6	104.6	104.8	100	100	98.7	101.2
35	20	100	100	102.7	101.6	106.2	110.8	100	100	94.5	100.0
55	20	100	100	100.1	103.1	103.4	111.7	100	100	84.5	97.4
75	10	100	100	94.7	105.2	103.4	124.8	100	100	97.6	96.7

These movements assumed proportions of considerable magnitude before 1904, after which the flow trickled down to an average of 2000 net per annum until 1947, when the volume increased abruptly to 63,000 gross (or 48,000 net) for the two years 1947 and 1948.

Demographically the Bantu seems to be the least affected by social and economic development in the Union. Because of the unreliability of the information tendered by Bantu, the uncertainty about the extent of the coverage of censuses in their case, and the lack of adequate vital statistics, giving statistical content to demographic tendencies among this population proves to be a well-nigh impossible task. By indirect means their birth rate has been estimated at about 45 per 1000 and, if anything, might have increased somewhat during the past 20 to 30 years. In their traditional way of life in the Bantu Areas, where polygyny is still practised, it would be frowned upon if a woman were to have a baby before the previous one has been weaned. In the result one child every third to fourth year would be customary, except

where deaths have to be compensated for. With the detribalisation, consequent upon the increasing urbanisation and acculturation, the practice of polygyny has declined and the traditional social sanctions have lost their hold over the urban communities. This development has stimulated the effective fertility.

Their rate of mortality also is still high; the crude death rate not far below 30 per 1000 and the average expectation of life at birth approximately 36 years. This reflects chiefly the very high toll of lives exacted during the first two years after birth. This is as much the result of ignorance and medically undesirable (unhygienic) habits - some of the more drastic measures of eliminating the physically weak have been abandoned, however - as of poverty and, in the cities, overcrowding. The contact with the Western culture and improved economic conditions have led to adoption of more desirable methods of rearing children, and judging by sample studies and reports of Medical Officers of Health, the increasing use of health clinics, maternity hospitals and other facilities provided by the public authorities and private concerns, is bearing fruit.

Under the circumstances depicted above one would expect an age composition which remains more or less stationary over the years. Table 1 shows the population to have aged slightly. To a great extent this has been caused by the immigration from neighbouring territories of Bantu, of whom there were about 650,000 in 1951 compared with 229,000 in 1911. 90% of them are in the productive ages. This last factor is also responsible for the relatively low dependency ratio of 74 for 1946. When the

foreign Natives, about 60% of whom are in the Union on a temporary basis, are eliminated from the age structure, the dependency ratio becomes 82 which is only slightly below the corresponding ratio of the Coloured population. At the same time these temporary and permanent foreign labourers had, as a result of the impetus given to fertility, some juvenescent effect on the population.

The Coloured population has the highest fertility of all ethnical groups. Its general fertility rate per 1000 women 15-49 amounts to 205 as against the Whites' figure of 105. Thus far there is no sign of a secular downward trend. The rate of fertility has been maintained, (or even increased after the temporary decline during wartime) as a result of the following factors:- The influx of Bantu migratory labourers into those areas which used to be the strongholds of the Coloureds, and the gradual breaking down of social barriers between the latter and the Bantu; the urbanisation coupled with the unusual phenomenon of an urban-rural differential in favour of the urban community until very recently (only during the last few years has the rural fertility rate slightly exceeded the urban rate); the fact that marriage is not a pre-requisite to procreation to the extent compelled by social sanctions amongst Asians and Whites (the percentage of extra-marital births is seldom lower than 35%).

This high fertility, in addition to the fairly high death rate of around 20 per 1000, has as a consequence a youthful age structure. The juvenescence of the Coloured population is the result of the reduction in mortality which, as is shown by table 4, has been almost exclusively concentrated at the initial years of life. In fact, the probability of survival diminished at some of the higher ages.

Of the Non-Whites the Asians have registered the most rapid progress. The death rate has fallen from 15.4 in 1936 to 10.9 in 1952, which represents a considerable decline even after it has been discounted to make allowance for the improved coverage of the 1951 census. The 1946 life-table puts the average expectation of life at birth at 50 years, while a calculation based on 1950-52 conditions increases the figure to nearly 55 years. The decline in mortality coupled with age-selective migration, which led to the out-migration of men in the middle and upper ages and the in-migration of young women and children, led to the decline in the average age of the population, and increased the child dependency ratio from 73 in 1921 to 91 in 1946 and the total dependency burden to nearly 100%.

To a much greater extent than among the Coloureds, urbanisation stimulated procreation. The fertility of urban Asians has been some 35% higher on the average than that of the rural community. Their culture of high fertility has thus far prevented a fall in the birth rate.

In the face of the conditions described above and likely developments in the future, the prospects are for continued juvenescence and increasing dependency burdens among the Non-Whites in South Africa, and for further aging of the White population. The diverse demographic movements, in concomitance with the numerical preponderance of the Non-Whites and their low income per capita, gives rise to a rather unique situation, viz. the direct financial burden, in the form of taxation, of social services a part of which is specifically a function of the high dependency ratios, has to be borne by the economically dominant White population which constitutes a small minority in the proportion of 1 in 5.