

## REPRINTS AND REFLECTIONS

# The social pathology of syphilis in Africans

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The problem of syphilis in South Africa is so closely related to the development of the country that a study of the social factors responsible for its spread is likely to assist in its control. Few countries can have a higher incidence of the disease than has South Africa. Table 1 indicates the extent of the problem.

The data include sample studies of men, women, children and babies. They indicate the extent which syphilis has spread to urban and rural areas. In the school children examined by Kark and le Riche<sup>5</sup> in 1938–1939, the incidence of definitely positive Wassermann tests in the total urban group was 23.6%, and in all rural areas it was 23.28%. Cluver's figures,<sup>2</sup> as well as those of the Polela group,<sup>6</sup> also indicate that syphilis is probably as widespread in rural areas as it is in urban areas.

Gale<sup>10</sup> estimated that the rate of infection per year in Pietermaritzburg Africans was 2620 per 100 000 as judged by the occurrence of early cases under treatment. A sample study, carried out by the author at Polela<sup>6</sup> in 1942, indicated the annual rate of infection in adult women to be 3.27%, estimated by the incidence of known cases exhibiting primary and secondary manifestations, with a recent history of infection. At Springs<sup>11</sup> the rate of new cases coming to the notice of the Medical Officer of Health (1940) was 2061 per 100 000, of which 577 per 100 000 were early cases.

Purcell,<sup>11</sup> after briefly reviewing the incidence of syphilis in various groups of Europeans and non-Europeans in South Africa, indicated that 'the incidence of syphilis in the Union is enormous'. Our present review indicates that not only are we dealing with a large mass of latent syphilis in the African populations, but also with a very high incidence of new infections each year. This process is taking place in highly urbanized areas, as well as in the more remote rural districts.

A study of the social pathology of the disease must, therefore, include an historical analysis, as well as an assessment of present trends which are maintaining the spread of syphilis.

## Historical

Before Europeans came to South Africa,\* syphilis was unknown among the Africans.<sup>12</sup> The Zulu have no specific name for the disease other than *isifo sabelungu* (disease of white men) or *isifo sedolopi* (disease of the town).

Training Scheme for Health Personnel, Ministry of Health, South Africa. Reprinted with permission of the *South African Medical Journal*. Kark SL. The social pathology of syphilis in Africans. *S Afr Med J* 1949;23:77–84.

\* Much of the historical material presented here has been obtained from CW de Kiewiet's *History of South Africa*<sup>13</sup> and ST van der Horst's *Native Labour in South Africa*.<sup>14</sup>

The first permanent European settlement in South Africa had very little close contact with Bantu-speaking Africans, and the contact for many years thereafter was casual and temporary.<sup>13,14</sup> In spite of wars and repeated minor conflicts between frontier groups of Europeans and Africans, very close relations between masses of these two races did not develop until the discovery, in the last half of the last century, of diamonds at Kimberley and gold on the Witwatersrand. Large numbers of European and African immigrants were then attracted to these areas. From then on, syphilis became an ever-increasing problem, not only in these newly proclaimed mineral fields, but throughout the country. The two races worked together under conditions which were far from ideal.

## Results of the discovery of diamonds at Kimberley in 1867

The diamond fields which developed, ushered in the Industrial Revolution of South Africa—a revolution which continues to the present day. By 1877, the population of Kimberley was 18 000 (8000 Europeans and 10 000 non-Europeans). Within the short space of 10 years, Kimberley, a relatively unpopulated and barren area, had become the second largest town in South Africa.

Some 10 000 Africans were employed on the mines each year, and between 1871 and 1895, about 100 000 came to the mines and returned to their homes. The men came as temporary unskilled labourers, leaving their families behind them. Migrant labour on a large scale had begun. This mass movement of population was far greater than anything South Africa had experienced before, as far as European–African contact was concerned. In terms of numbers of people involved, the Great Trek and the Voortrekker villages that resulted, were far smaller: e.g. in 1852 Bloemfontein, then the largest village north of the Orange River, had about 70 houses with some 300 Europeans; and Smithfield, the second biggest of these villages, had 42 homes and about 200 Europeans.

The living conditions of the Africans in the Kimberley area were conducive to the spread of syphilis. Drunkenness was common; compounds were often filthy and there was a rapid movement of men to and from the diggings. In the beginning they would remain for from three to five months and by 1889, up to nine or occasionally even 18 months. The striking feature was that a large group of men were living under abnormal social conditions, because very few, if any, had their wives and families with them. This resulted in promiscuity, prostitution and the sure spread of syphilis.

Some idea of how far the disease, contracted at Kimberley, could be spread, is obtained when one realises the extensive area from which this labour came. Van der Horst<sup>14</sup> quoting the

**Table 1** The incidence of syphilis in various African groups studied in South Africa

Place	Nature of population examined	Number examined	Percentage positive Wassermann tests	Reporter	Date
Flagstaff	Men at Chief's meeting	235	12.1	FS Drew <sup>1</sup>	1930
WNLA Examination of African Recruits for the Mines	Transvaal Basuto men	200	29.5	EH Cluver <sup>2</sup>	1930
	British Basuto men	200	25.5	"	
	Bechuana men	100	22.0	"	
	Pondo men	200	8.5	"	
	Portuguese East African men	300	7.0	"	
	Xhosa men	200	2.0	"	
Germiston	Ante-natal cases	227	40.5	Rauch and Saayman <sup>3</sup>	1938
	Out-patient cases	712	44.4		
Pretoria	Sample of waiting out-patients and their friends	500	47.8	A Pijper <sup>4</sup>	1921
Pretoria	Random sample of school children	65	13.85	Kark and Le Riche <sup>5</sup>	1938-39
Witzieshoek	"	75	10.67	"	
Bloemfontein	"	80	42.50	"	
Qumbu	"	97	11.34	"	
Kentani	"	78	35.90	"	
Pietermaritzburg	"	105	15.24	"	
Nqutu	"	115	30.44	"	
Bochem	"	97	46.38	"	
Tzaneen	"	105	4.76	"	
Polela	Expectant mothers	930	35.27	Kark <sup>6</sup>	July 1941 to June 1946
	Congenital syphilis in babies of a sample community	146	20.55	"	January 1941 to December 1944
Alexandra Township	School children	496	12.9	le Riche <sup>7</sup>	1943
Edendale	Sample population (163 families)	437 (i.e. 53.5% of sample)	27.46	Landau <sup>8</sup>	1946
	Ante-natal cases	715	20.1	"	1946
Springs	Ante-natal	2828	23.97	MOH Reports, Springs <sup>9</sup>	1938-44
	African male adults (municipal employees)	4011	26.50	"	

Cape Blue Book on Native Affairs (1885), presents the following figures for 'new hands' registered at the Kimberley mines in 1884:

Shangaans	681
British Basutos	195
Sekukuni Basutos	2215
Zulus	815
Portuguese Zulus	446
Bakhatlas	56
Matabele	120
Colonials	375
Bakwenas	33
Batlapings	277
Swazis	11
Bamangwatos	56
Barolongs	115
Korannas	6
Griquas	3
Batlaros	21
Transvaal Basutos	47
West Coast	2
Dramara	1
Mosambiques	1
Total	5476

These men from various tribes came from all parts of South Africa—the Cape Province, Natal, the Orange Free State, the Transvaal, Basutoland, Swaziland, Rhodesia and Portuguese East Africa.

### The results of the discovery of gold

A far more important factor in the spread of syphilis emerged soon after with the discovery of gold on the Witwatersrand in about 1884. Urbanization under abnormal social conditions which started at the diamond fields, continued on a far greater scale on the Witwatersrand. These social changes resulted not only from the direct recruitment of labour for the mines themselves, but the gold industry also became the main stimulus for the development of other industries, e.g. coal. It led to the development of ports such as Durban, Port Elizabeth, East London and Cape Town, for export and import, to satisfy the growing needs of the ever-increasing numbers of consumers in the mining areas. It gave rise to secondary industries for clothing, feeding and housing the population, and finally to the commercial and distributive enterprises needed for all these activities.

All these developments required labour, and the bulk of the unskilled labour was provided by African men.

From the beginning the main sources of labour were from the Native rural areas. The men who came to work left their homes in the rural areas. Their period of work was limited and they, as well as their employers, regarded their stay in the towns as temporary. After a variable time they would return to their homes.

### Housing

Housing and other facilities necessary for the development of a family life and a stable community were not provided. The

**Table 2** The number and distribution (according to area of origin) of men employed in the mining industry of the Transvaal\*

Year	Number of Africans employed	Areas from which the men came (expressed as a percentage of the total)								
		Cape Province	Natal	OFS	Transvaal	Basutoland	Bechuanaland	Swaziland	East Coast	Tropical
1904	77 425	12.7	3.49	0.30	6.96	2.91	0.69	0.64	66.23	5.91
1914	179 837	24.97	5.96	0.48	7.76	7.44	1.87	2.89	47.71	0.90
1924	191 355	33.05	2.43	0.43	7.59	9.15	1.18	2.19	43.88	0.18
1934	269 547	41.96	4.62	1.23	8.60	13.03	2.48	2.60	24.67	0.80
1939	348 048	33.92	4.88	1.49	7.82	14.98	2.72	2.07	26.11	6.01

\* Table adapted from van der Horst's *Native Labour in South Africa*, pp. 216, 217.

compound system prevailed. The development of family life, which leads to more stable sex relations between men and women, thus never became a feature of the gold mining industry. It is only in recent years that urban African family life has become an accepted fact in our towns; but such family life is dependent for its income on other fields of employment than the mining industry.

Table 2 indicates the number of African and other Coloured men concerned in the gold mining industry from the years 1904 to 1939.

All the areas of South Africa are involved to a varying extent, as well as the neighbouring territories of Basutoland, Swaziland, Bechuanaland, Portuguese East Africa and tropical areas such as the Rhodesias and Nyasaland. The migration of so many young adult men must necessarily disturb social conditions in the area to which they go, unless there is a very large stable population with facilities for social life. It becomes necessary, therefore, to analyse the distribution of population in the towns of this country to see whether there is any opportunity for this group of men to live a fairly normal social and sexual life.

**Distribution of the African population according to the 1936 Census<sup>17</sup>**

This Census was the last full Union-wide census of which details are available. Table 3 indicates the urban and rural distribution of African and European populations as extracted from the 1936 Census.<sup>15</sup>

The proportion of total males to total females for Africans in Urban areas is greater than 2:1; whereas this proportion for Europeans is a fraction under 1:1. The proportions in rural areas are relatively normal for both groups. These figures, although they indicate an abnormal Bantu population distribution in towns, do not indicate the true state of affairs. Firstly, by taking the total of all age groups, the figures do not show the proportion of adult male to adult female. Secondly, they do not indicate the shifting nature of the African population. Thus there is no indication of the numbers who are permanent urban dwellers, as distinct from those who are temporarily in town, with their homes and families in the rural areas. A further analysis of these factors is indicated in Tables 4 and 5.

**Table 3** Urban and rural distribution of Africans and Europeans of the Union of South Africa

	Africans		Europeans	
	Male	Female	Male	Female
Total urban	784 769	356 874	647 324	660 062
Total rural	2 527 882	2 927 164	370 550	325 921

The greatest preponderance of males over females is during the most virile period of life, viz. the age group of 20–49 years. If the figures for some of the leading industrial areas are analysed, we find an even greater preponderance of males over females, as indicated in Table 4b.

In none of these towns was the proportion less than 3:1. The range for various age groups in Johannesburg was from about 3½ to over 4 men per adult woman; in Springs from 5–12 men: 1 adult woman; in Krugersdorp from about 4–9:1 and in Durban from 3 to 7:1. It is likely that this state of affairs in urban areas influences the position in rural areas.

**Rural areas**

It has been noted above (Table 3) that the total rural distribution of African males to females was a little less than 1:1. Such a distribution would allow for a normal social life were it to obtain in all areas. These figures are, however, for the total rural areas of South Africa and do not necessarily express the state of affairs in various parts of the country.

Furthermore, the analysis is based on the figures for all age groups and does not, therefore, present a picture of the proportion of adult males to adult females in various areas. The distribution of Transkeian Territories indicates a different state of affairs from that which obtains in the general rural population (Table 5).

The position in the Transkeian Territories (which is more like that of other 'Native Reserve Areas' than is the total rural areas inclusive of the vast European-owned farming area) is the reverse of that which exists in the urban areas. There is a relatively high proportion of women to men, ranging from about 1.3 women to 1 man in the age group 45–49, to 2.5 women to 1 man in the 21 to 24-year age group.

**Table 4** Proportion of adult males to adult females (Africans)

(a) All urban areas: the proportion of African male and female persons, according to age, in the urban areas of South Africa

Age in years	Male	Female	Proportion of males to females
0–9	73 545	78 973	0.9313:1
10–14	38 463	35 943	1.070:1
15–19	77 878	39 902	1.952:1
20–29	263 138	82 458	3.192:1
30–39	193 259	56 635	3.414:1
40–49	91 311	31 568	2.892:1
50–59	29 808	16 315	1.827:1
60 and over	14 166	12 283	1.153:1

**Table 4** Continued

(b) Leading industrial areas: the distribution of African males and females, according to age, in some leading industrial areas

Age in years	Johannesburg		Springs		Krugersdorp		Durban	
	Male	Female	Male	Female	Male	Female	Male	Female
21–24	21 490	7561	10 459	1133	7410	1252	5429	1654
25–29	37 999	9582	17 023	1447	13 074	1423	8647	2368
30–34	26 596	7035	10 449	1078	8466	1138	7770	1948
35–39	22 348	5189	8318	873	8029	894	7022	1357
40–44	13 053	3254	4392	621	4640	722	4771	746
45–49	8562	2361	2314	449	2021	491	3042	480

**Table 5** The proportion of African men and women between the ages of 21 and 49 years in the Transkeian Territories (according to the 1936 Census)

Age group (in years)	Male	Female	Proportion of males to females
21–24	17 915	45 649	1:2.548
25–29	24 554	58 957	1:2.401
30–34	22 429	51 658	1:2.303
35–39	21 926	39 012	1:1.780
40–44	18 446	32 933	1:1.779
45–49	15 385	20 886	1:1.358

### Conclusions

(a) In the urban areas there is a preponderance of adult males over females most marked in the age group 20–40, where it is over 3:1. In the more industrialized urban areas this preponderance is even greater.

(b) The effect on the rural African reserves is to upset the balance in the other direction, resulting in a preponderance of women over men.

### The shifting nature of the population

The development of the diamond and the gold mines led to a considerable number of persons, more especially adult men, going to work in the towns and returning to their homes periodically. The census only shows the position at a particular moment in time and does not indicate the total turnover of

population in various places. It thus excludes an important demographic problem in the study of syphilis, viz. movement of people. Table 6 summarizes certain sample studies of the extent of migratory labour.

### Conclusions

Very few adult men have not been away from their rural homes to work in some town or other. In a number of areas the majority of men are away during the course of each year. A number of them remain away for lengthy periods of two or even more years. While these figures do not adequately convey the exact picture in all rural and urban areas of the Union, they do indicate that at any one particular moment of time, some 40% to 50% of men are away from their homes and that during the course of a year, between 40% and 80% of the men might be away.

### The marital status of adult African men and women in rural and urban areas

In terms of social relationships the data of Table 7 indicate the following:

#### Urban

The total number of unmarried men over 21 in urban areas is 218 400 (i.e. those never married, plus the widowed and divorced). It will also be noted that 346 281 men are stated to be married as compared with 119 682 married women. If we assume that all married women are with their husbands, then 226 599 men are married but are not with their wives. By combining this figure (226 599) with that of the total number of unmarried men (218 400) we reach a figure of 444 999

**Table 6** Summary of sample studies of the extent of migratory labour in various areas of South Africa

Author	Place	Result of study
Schapera <sup>16</sup>	Bakhatla Reserve (Bechuanaland)	40% of the adult men are away at work every year for six months or more. It is not uncommon for a man to stay away for two or even more years.
MacMillan <sup>17</sup>	Herschel, Ciskei (Cape Province)	75% of the adult men are away at work for at least six months every year.
Krige and Krige <sup>18</sup>	Bolobedu Tribe (Transvaal), District Letaba	50% of males, 20 to 49-years of age, migrate to work.
Monica Hunter <sup>19</sup>	Pondoland (1939)	46.4% of adult men paid their taxes outside their home area.
Monica Hunter <sup>19</sup>	Mine workers from various Native Reserve areas	Referring to mine workers, the author states that the average man spends 10.88 months at the mines, followed by 8.1 months at home.
Basutoland Census (1936) <sup>20</sup>	Basutoland	Nearly 50% of the adult men were away at work at the time of the census.
van der Horst <sup>14</sup>	South African Reserves	One-third of the time of a Reserve Native is spent away from home.
SL Kark <sup>6</sup>	Polela, Natal	In a study of 132 families carried out over a 12-month period, it was found that 80% of the adult men in the age group 20 to 40-years were away for an average period of eight months during the year.

**Table 7** Marital status of Africans over 21 years of age (according to 1936 Census)

	Never married		Married		Widowed		Divorced	
	Male	Female	Male	Female	Male	Female	Male	Female
Urban	208 064	40 474	346 281	119 682	8913	27 692	1423	2902
Rural	228 405	121 252	713 181	909 629	37 710	291 505	3393	9533

unattached men in the towns. This gives a proportion of approximately 4 unattached men to each one attached.

The total number of unmarried women over 21 was 71 068, a proportion of 1 unattached to 1.7 attached, assuming again that all the married women are living with their husbands in town. If the 119 682 married couples are accepted as being faithful to one another, there are 444 999 unattached men with only 71 068 unattached women, i.e. a proportion of over 6:1.

#### Rural

The number of unmarried men over 21 is 299 508, a proportion of 1 unattached to 2.4 attached. The number of unmarried women over 21 is 422 290, of whom no fewer than 291 505 are widowed. There are also 909 629 married women and only 713 181 married men. There are, therefore, 196 448 women whose husbands are not with them. This figure excludes the incidence of polygamy. For purposes of this analysis it may be assumed that some 10% of adult women are in a state of polygamous marriage. That leaves a figure of approximately 175 000 temporarily unattached, married women. The total number of unattached women over 21 in the rural areas would therefore be 597 290, a proportion of 1 unattached to 1.2 attached. Assuming again that men and women, when together, are faithful to each other, there are 299 508 unattached men with 597 290 unattached women, i.e. a proportion of 1:2 for all rural areas in South Africa. In the Transkei, this proportion is roughly 1:7.

One further important comparative set of data is the proportion of never-married to married women over 21 years of age:

*In towns:* 40 474 to 119 682, i.e. about 1:3

*In rural areas:* 121 252 to 909 629, i.e. about 1:7½.

The relatively high proportion of unmarried adult women in the towns should be noted.

#### Conclusions from these data

In the towns the number of unattached men is four times greater than that of attached men, and six times greater than that of attached women. Over and above this a large number of these unattached men are not permanent residents in the

towns. Where there is such a high proportion of virile adult men as compared with women, the results are likely to be undesirable. The men will seek their social and sexual life in shebeens and brothels. Prostitution and alcoholism are well-established immediate causes of syphilis and require no further discussion. Furthermore, the temporary nature of the sojourn of these men in urban areas is not conducive to the development of a moral social code, which might influence behaviour, as it would be in the case of a stable community.

The additional factor to be dealt with in South Africa is the movement of men so infected in the towns, to their homes in the rural areas. In this way venereal disease has been brought to the most remote corners of the country. A limited study carried out in the Polela district indicates that this is the main source of infection of the rural population (Table 8).

The Polela study indicates that the majority of married women (29 out of 32) patients were infected at home by their husbands, who had recently returned from work in a town. No fewer than 23 of the contacts who had infected these 32 women had been infected in town.

The position of married men is somewhat different. Few (2 of 20 patients) were infected by their wives. The majority were infected during an extra-marital union. A number (10) were infected in their home area. Like the married men, single men are frequently infected while away from their homes (six out of ten cases).

The majority of girls and single women (13 of 14 patients) were infected in their home district by contacts who had contracted the disease in the area, as well as while away from the area. Not infrequently these contacts were married men.

## General discussion and conclusions

Social pathology may result from two broad types of disorder.<sup>21</sup> In the one, the individual person may be so maladjusted that he is unable to order his life according to the folk ways and mores of his particular group. Such maladjustment may be due to an abnormal domestic life or to a disordered personality resulting from a multiplicity of causes. Whatever the cause may be,

**Table 8** Epidemiological study of 76 cases of primary and secondary syphilis and acute-gonorrhoea (carried out at the Polela Health Unit in a rural area)

Marital status of the patients	Number of patients	Contact from whom the patient contracted the infection				Place where the patient contracted the infection				Place where contact contracted the infection			
		Married partner	Engaged to be married	Temporary 'love affair'	?	Local	Town	Other	?	Local	Town	Other	?
Married women	32	29	–	2	1	27	4	–	1	6	23	1	2
Married men	20	2	–	17 (plus 1 by his mistress)	–	10	8	2	–	4	10	4	2
Single women and girls	14	–	4	10	–	13	1	–	–	4	4	2	4
Single men	10	–	–	10	–	3	6	1	–	–	7	2	1

the maladjustment is essentially one of individual personality pathology and the therapy required is that for the individual. Should such a maladjusted person develop syphilis as a result of a licentious way of life, it becomes necessary to regard the syphilis as an expression of a personality disorder, and the diagnosis established, as well as the therapeutic programme developed, must include consideration of this social maladjustment.

The other type of disorder is that in which the pattern of society does not allow for the healthy development of the individual. Here we are dealing with a process in which the society itself is pathological. The disturbance in social relationship may not affect all groups or communities to the same degree, but the individuals belonging to the affected groups are likely to show evidence of this pathology.

The industrial revolution in South Africa, commencing with the discovery of diamonds and continued with the large-scale mining of gold, led to the development of an urban life which has profoundly disturbed the family stability and sexual mores of several million African people. Urbanization as a process is bound to disturb patterns of living which have been developed in a rural society, but urbanization in South Africa has taken a particularly disturbing direction as far as the African is concerned, as it has developed mainly on the basis of migratory labour. This system of migratory labour of adult men has led to instability and pathology in family relationships.

The code of morals of the men who have been to town appears to have arisen through the realization of a new, free, sexual life, one that does not regard sexual intercourse in a serious light, but as a cheap commodity for temporary pleasure. This results in adultery and intercourse with single girls at rural homes—a state of affairs which the work at Polela indicated to be not uncommon, despite the fact that the tribe as a group frowned upon such activities.

In addition, the very large number of widows (over a quarter of a million) and the many women whose husbands are away at work from the rural areas, comprise a group already used to sexual intercourse. In the old days a widow would become the 'wife' of her late husband's brother and have children with him. This still happens today (but not as often as before) and it is probable that this group of women will present an ever-increasing problem in the spread of syphilis. The other group, whose husbands leave them, will often also indulge in extra-marital intercourse, more especially if their husbands remain away for long periods. Examples of such cases grow more and more frequent in the African reserves. Details of a particular case study of this type have been reported.<sup>22</sup>

Thus we have on the one hand a set of conditions in urban areas ideal for the spread of syphilis, and on the other hand, a migrant labour force which successfully spreads this urban disease to the rural areas where social conditions are also suitable for its reception.

All this has been going on at an ever-increasing rate since the diamond digging days, producing great changes in Bantu social customs, breaking down a system of rigid moral standards, destroying the old concepts of right and wrong, cheapening relations between men and women and bringing with it syphilis.

Without an understanding of the economic factors involved and the historical development of the vast social pathological changes brought about during the last 70 years, no treatment will save the spread of syphilis in South Africa. Treatment of

individual personality disorder or attempts to inculcate a re-orientation towards a healthy sexual and family life cannot succeed in any but a few cases. The first line of treatment must be to remedy the unhealthy social relationships which have emerged as the inevitable result of masses of men leaving their homes every year. This pathological process is at the root of the disturbed social relationships and successful therapy requires the establishment of African urban and rural communities based on a stable family life. With the development of such family life in our urban areas will emerge a set of mores which, among other benefits, will gradually control the spread of syphilis. In such ordered urbanization lies the answer to the problem of the social pathology of syphilis.

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# Commentary: The legacy of Sidney Kark

Costa Gazi

In a time of epidemiological crisis, political leaders do not always listen to the scientific analysis and recommended action from the experts. Such experts are then turned into whistle-blowers and agitators who have a profound political agenda that challenges the prevalent ideology.

In Sidney Kark's day it was apartheid that would not heed such voices of reason based on analysis. He was a pioneer in the field of primary health care, but had to leave the country when his ideas were ignored and his achievements dismantled by the apartheid regime.

The present South African government has unfortunately taken on the mantle of its predecessor in this regard. It is faced with an epidemic of a sexually transmitted disease that is even deadlier than syphilis, but has chosen to pursue other concerns. Human immunodeficiency virus (HIV)/AIDS is not regarded as a priority, despite the high death rate and the massive morbidity that it causes.

Kark and his colleagues were pioneers in the study of a disease that was decimating Africans and clarified the connection between syphilis and the socio-political climate of the day. The migrant labour system was established to provide workers for the diamond and gold mines. It tore families apart and allowed syphilis to spread. This barbaric system has not yet

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been replaced and has become a major contributory factor in the spread of HIV.

What a pity that history is repeating itself and that the best science is being ignored in order to pursue another narrow political and economic agenda. Instead of the colour of a man's skin being the determinant of deprivation, it has become the thickness of his wallet. A wealth of scientific evidence is challenged and top scientists are criticized or silenced if they challenge the prevailing Presidential view that HIV/AIDS is not important and may even be a mirage.

The lesson is clear. The pursuit of truth is in the best interests of public health epidemiologists, but it is demanding of high standards and a thick skin. Wanting to expose the truth is in the best interests of the patients—the community—but once again pandering to wayward politicians and bureaucrats has become entrenched on the question of curbing the HIV/AIDS epidemic in South Africa.

Reprinting this work will be a salutary lesson to those public health doctors who do not take up their social obligations and prefer to hide behind the parapet of self-interest. Kark was a pioneer in the delicate balance of being allowed to survive and exposing iniquity at the same time. His research was meticulous but still managed to tread on many toes. It is 50 years later but the use of science must still be protected from being abused by any political agenda and turned on its head.

# Commentary: Sexually transmitted infection in South Africa: 50 years after Sidney Kark

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'The problem of syphilis in South Africa is so closely related to the development of the country that a study of the social factors responsible for its spread is likely to assist in its control' wrote

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Sidney Kark in 1949 in the *South African Medical Journal*.<sup>1</sup> We would paraphrase: the biomedical paradigm of sexually transmitted infection (STI) relies on the germ causation theory; whereas health promotion theory looks at the multiple determinants (psychological, social, economic, historical and political) which underlie behaviours that result in the spread of STI, and hamper their control.

Venereal syphilis was introduced into the Cape region of South Africa by sailors, army troops and white settlers from the

17th century onwards; but was initially confined to coastal areas.<sup>2</sup> Lichtenstein, in 1802 found no evidence of syphilis among the amaXhosa of the Eastern Cape.<sup>3</sup> Livingstone, in 1857 could detect little syphilis among the Batswana people;<sup>2</sup> but by 1885 Warren noted the 'natives' of 'Bechuanaland to be badly infected'.<sup>4</sup>

This was as a result of the first major epidemics of syphilis that arose in Kimberley in the 1870s as migrant workers were recruited to the diamond mines; and to the gold mines of the Witwatersrand in the 1880s; and then returned to their home communities in Lesotho and Botswana.<sup>5</sup>

Today, STI continue in epidemic proportions in South Africa judging by the South African Demographic Health Survey of 1997—in which 12% of male adults reported symptoms suggestive of an STI.<sup>6</sup>

Kark was one of the first to attempt to define the 'social pathology' of syphilis in South Africa; whose determinants are shared with diseases such as tuberculosis, gonorrhoea, chlamydia and human immunodeficiency virus (HIV).

Kark identified social dislocation as a powerful determinant of the spread of 'ihashe elimhlophe' (the white horse)—syphilis. Young men in huge numbers were removed from stable systems in the rural areas to the squalor of single sex hostels. Consort with sex workers replaced stable sexual relationships—fuelled by a profusion of alcohol; and men having sex with men was probably not uncommon. Kark's analysis was limited however, by a poor understanding of the nature of relationships between men and women in Nguni societies. The hard forced labour, dirty living conditions, lack of recreational activities or psychosocial support were also conducive to the spread of STI.

Migrant labour results in blurring of the urban/rural divide. The mass movements of the diamond rush and gold rush were the greatest dislocations hitherto experienced in South Africa—presaging the forced removals of the apartheid years; which may themselves have played a part in the rapid spread of that other modern day STI: HIV.

These were surplus people—used in the hard labour of the mines and then ejected when they got sick; thus actively exporting disease; and making it impossible to complete treatment, or trace partners. As a result parts of Botswana had higher syphilis seroprevalence (67%) than South Africa (12–25%)—a situation mirrored today in HIV where seroprevalence in Botswana at 30% is higher than that in South Africa at 12%.<sup>7</sup>

Kark's paper lacks the moralistic, chauvinist and racist language of much of the medical literature of that time; but some of his conclusions about the psychosocial determinants of syphilis seem suspect; postulating the 'maladjusted' nature of the STI sufferer; whose 'licentious way of life' is an 'expression of a personality disorder'. He does correctly identify however, that in a 'society that is pathological' such as colonial South Africa—'individuals belonging to the affected group' were adversely affected.

His paper shares the 'them and us' tone typical of medical literature of the time; and which still persists to this day. The 'Bantu' are objects to be studied; a viewpoint inevitable when virtually all the scientists were white (and usually male) and their 'subjects' black.

His paper glosses over the economic determinants of STI in Southern Africa. The impact on health of such 'shock

capitalism' could be likened to that affecting the former socialist economies of Europe in which Russia alone suffered half a million excess deaths during the 1980s and early 1990s as capitalism was aggressively introduced.

He also ignores the microeconomic determinant—poverty. The poor have substandard housing in which it is difficult to practise 'safe sex' or sexual hygiene. Their compliance to therapy is likely to be inadequate when they lack the funds to buy medicine, or pay for consultations.

Education was probably also a powerful determinant in the spread and control of STI; particularly as the workers recruited were unskilled. General educational attainment affects the ability to make informed decisions about, for example, attending antenatal clinics. Lack of specific education impinges upon health seeking behaviour; and abstention from sex while infected.

Gender relations are also critical. The discovery that a partner is unfaithful may result in domestic violence, thus inhibiting early presentation with symptoms and partner notification.<sup>8–10</sup>

Finally, Kark said little about political determinants of STI. The alienation these workers were likely to feel within this colonial society, and their brutal exploitation by a capitalist system were designed to destroy their self esteem and ensure their compliance. Attendant effects upon the immune system—again a stress determinant that may be important in the spread of STI and HIV—might be expected in southern Africa today.

Kark's message about the social pathology of STI still goes unheeded. The modern emphasis on 'syndromic management' for STI and on antiretroviral therapy for AIDS demonstrate that the biomedical paradigm still holds sway. 'Colonial research' persists, in which scientists from a totally different culture and language attempt to understand the complex determinants of STI in a 'tropical setting'.

Similarly, the stigma of STI persists, making contact tracing difficult—as also pertains to tuberculosis and HIV. Kark would have welcomed the current expansion of access to primary health care—including free, accessible, concurrent health literacy programmes. As a result syphilis seroprevalence among South African antenatal clinic attendees over the past 6 years has declined from 11% to 2.4%.<sup>11</sup>

Finally Kark's paper again stresses the importance of trans-disciplinarity in researching a subject such as STI. In this way the results of such research can better inform control programmes for socioculturally complex diseases, such as the intersectoral programmes adopted by the South African government for the control of HIV and STI.<sup>12</sup>

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## Commentary: The social pathology of the HIV/AIDS pandemic

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Working in a remote region of South Africa more than 50 years ago, Sidney Kark practised what many today would think of as social epidemiology. His approach was refined and disseminated across the globe by his students in subsequent decades, thereby influencing the evolution of the modern discipline. Equally important, his commitment to the health of indigenous African populations makes him one of the earliest role models in global public health.

The paper reprinted here, *The Social Pathology of Syphilis in Africans*,<sup>1</sup> is most obviously relevant to the current human immunodeficiency virus (HIV)/AIDS pandemic. There are striking parallels between the epidemic of syphilis Kark described in South Africa, and the current, devastating spread of HIV/AIDS across the continent. He was eerily prescient in his analysis of the social conditions of the region, and population mobility in particular, as providing fertile ground for the spread of sexually transmitted infections. Today, *The Social Pathology of Syphilis in Africans* resonates strongly with epidemiologists who carry on the challenge, foreshadowed by Kark in 1949, of understanding and intervening against the structural conditions which fuel the spread of HIV/AIDS.

### Sidney Kark and the community-oriented primary care movement

Sidney Kark is perhaps best known in public health circles as a pioneer of the community-oriented primary health care model.<sup>2,3</sup> This approach was originally developed by Sidney and his wife Emily Kark during the early 1940s, when they directed the Pholela Health Centre in rural KwaZulu-Natal, South Africa. Their work at Pholela emphasized the integration of preventative and curative services. Multidisciplinary teams of health care workers sought to identify and address the causes of illness in the socioeconomic conditions of the community, in the family, and in the individual.<sup>4,5</sup>

Epidemiology was a critical component of the community-oriented primary health care model.<sup>6</sup> The Pholela Health Centre used traditional epidemiological data collection tools, such as community surveys and reviews of clinical records, to help identify the most pressing health concerns of the population, to orient preventive and curative services towards these needs, and to assess the impact of various health service interventions.<sup>7,8</sup> Kark developed new approaches for primary care surveillance, most notably the intensive, longitudinal monitoring of the health and socioeconomic conditions of a subset of local households. In this regard, Pholela was an important precursor of modern demographic monitoring systems for community-based health and population studies.<sup>9,10</sup>

The successes of the Pholela Health Centre were recognized in the 1945 report of the South African National Health Service Commission,<sup>11</sup> which called for the establishment of a network of health centres, based on the Pholela model, as part of the foundation of a new national health system for the country. To support this network and assist in the training of staff across disciplines, Kark established the Institute of Family and

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Community Health in Durban, which included sections devoted to epidemiology and data management, and eventually supported some 40 health centres across the region. However, the initiative was short-lived. With the election of the right-wing National Party government in 1948, political and economic support for the Health Centre model, which primarily served African populations, evaporated quickly, and the Institute gradually disintegrated.<sup>12</sup> The Karks and many of their colleagues continued to refine the community-oriented primary health care approach in Israel (where their son, Jeremy Kark, continues to be a leader in applying epidemiology to public health practice), and the US.<sup>13,14</sup>

Remarkably, this brief experiment in a remote region of rural South Africa became the training ground for a number of South Africans who went on to have a profound influence on epidemiology and public health worldwide. These included John Cassel and Guy Steuart, both of whom worked with the Karks at Pholela,<sup>15,16</sup> as well as Mervyn Susser, Zena Stein and Samuel Shapiro, who studied with Kark at the Institute of Family and Community Health.<sup>17</sup> An American student, Jack Geiger, spent an extended period working with Kark, and would later become important in developing community health centres in the US.<sup>14</sup> Part of the reason for the Karks' considerable impact on epidemiology and public health was that the Pholela Health Centre represented one of the earliest systematic efforts to understand and meet the health needs of African populations. Although schools of tropical medicine had been born at the turn of the century, they originated from a concern with the health needs of colonial settlers and armies rather than of indigenous peoples, and carried residues of this heritage well into the 20th century.<sup>18</sup> This perspective is important to place the paper reprinted here in its appropriate context: as part of a larger body of work to describe, understand, and intervene against the determinants of disease in a majority population that was otherwise systematically discriminated against.

## The spread of syphilis in South Africa

Syphilis had emerged as a major public health concern in South Africa with the rapid industrial expansion and socioeconomic changes of the late 19th century. In addition to its high prevalence in the urban centres of Kimberley, Johannesburg and Durban, syphilis had become increasingly common in rural African 'homelands', including the Pholela region where Kark worked. By the mid-20th century, a host of racially-driven behavioural and genetic explanations were commonly cited to explain the distribution and rapid spread of syphilis across South Africa.<sup>19</sup> In *The Social Pathology of Syphilis in Africans*, Kark argues instead that it was the enforced migrant labour system—a 'social pathology'—that was fundamentally responsible for the epidemic spread of syphilis through South Africa.

Kark draws on a range of sources in his analysis of the factors driving the syphilis epidemic. Tracing the historical origins of the socioeconomic conditions facing black South Africans, he describes how the migrant labour system was actively created to meet economic demands, and institutionalized by legislation during the 20th century. Under this system, African men moved from rural homes to urban industrial centres for employment,

returning to visit their families only periodically. The resulting gender imbalances are demonstrated in both urban and rural communities using census data, supplemented by evidence of male absenteeism from anthropologists working in rural areas. Finally, Kark incorporates behavioural and epidemiological perspectives to link these demographic imbalances to the spread of syphilis. He proposes that the circumstances of male migrants living in industrial centres led them to engage in alcohol consumption and sexual relations while away from their homes and families. Using data from rural Pholela, he suggests that most women with syphilis were infected through contact with their husbands, while most men were infected through contacts away from home.

## Population mobility and the HIV epidemic

Kark's analysis of the South African syphilis epidemic was probably accurate, and anticipates the spread of the HIV/AIDS epidemic throughout sub-Saharan Africa some 40 years later. Today, it is widely accepted that population mobility, and labour migration in particular, has played an important role in the spread of HIV/AIDS, particularly in South Africa.<sup>20,21</sup> Within many countries, both the highest rates and the first occurrences of HIV infection are typically observed in trading centres and along transport routes.<sup>22</sup> Social research has documented a variety of different types of population movement, including short-term and seasonal mobility as well as long-term migration, and their general associations with high-risk sexual behaviours.<sup>23,24</sup> Epidemiological studies of highly mobile groups, such as truck drivers,<sup>25</sup> itinerant traders,<sup>26</sup> and seasonal labourers,<sup>27</sup> have associated individual mobility with increased risk of HIV infection. In addition, there is ecological evidence to suggest that both within and between countries, higher levels of population mobility are associated with increased prevalence of HIV.<sup>23,28</sup>

But despite the considerable body of descriptive literature from the past decade documenting the general relationship between population movement and HIV/AIDS, there are still relatively few epidemiological data on *how* different types of population mobility act to increase both individual and community vulnerability to HIV. Over half a century after Kark's work, the social and behavioural mechanisms that create this association are only gradually becoming better understood.

One important recent contribution to our understanding of how migration and other forms of mobility facilitate the spread of sexually transmitted infections comes from advances in thinking about the structure of sexual networks and disease transmission. From this perspective, the association between mobility and HIV, in individuals as well as in populations, is the result of the particular characteristics of the sexual networks in which mobile individuals participate.<sup>29,30</sup> Other, related approaches describe the population dissemination of disease by its spread from 'core' high-risk groups through various 'bridge' populations, which may include mobile groups.<sup>31,32</sup> These perspectives have driven important advances in conceptualizing how HIV and other infectious diseases move through populations, and continuing to link these approaches to empirical data on the social and sexual networks of highly mobile groups represents an important direction for future research.

## Levels of social organization in spread of HIV/AIDS

In thinking about how an enforced social change had generated the conditions for an epidemic, and the implication that social change could also be used to improve health, Kark went well beyond many contemporary descriptive writings on HIV/AIDS. His distinction between the different levels of social organization at which the syphilis epidemic could be understood and intervened against, remains a lesson of fundamental importance. He juxtaposes individual and societal-level factors as separate types of determinants, with his analysis pointing to the latter as the driving force behind the epidemic.

This part of Kark's message for the case of syphilis has been acknowledged in contemporary approaches to the HIV/AIDS epidemic. The notion that the spread and impact of HIV/AIDS is exacerbated by particular macro-level conditions is widely recognized. For example, few would disagree that systematic social and economic discrimination hampers women's ability to avoid exposure to high-risk situations;<sup>33</sup> that poverty places access to important interventions, both preventative and therapeutic, beyond the reach of those in need;<sup>34</sup> that social upheaval within countries reduces the ability of governments or civil society to respond effectively to local epidemics;<sup>35</sup> or that stigmatization and the denial of human rights of the HIV-infected, and even denial of the existence of HIV itself, scuttles ongoing prevention efforts.<sup>36</sup> However, the question of how to best respond to these macro-level barriers remains at issue.

## Intervening beyond the individual

Kark highlights the different forms of intervention which could be deployed to address the spread of syphilis, noting that if it is the structural conditions of society, rather than individual deviant behaviours, that are primarily responsible for the spread of disease, then interventions which focus exclusively on individuals—such as 'attempts to inculcate a re-orientation towards a healthy sexual and family life' (ref. 1, p. 83)—are unlikely to have a substantial population-level impact. Instead, he prescribes changes to dominant structural conditions: in this case, the establishment of urban residences for the families of male workers, which could have been accomplished through removal of the various legislative barriers to the free movement of Africans under apartheid.

Today, the importance of distinguishing between varying levels of social organization in intervening against the spread of HIV/AIDS is only gradually gaining recognition. Already there are several examples of effective multi-level interventions, including the most successful national responses to the spread of HIV/AIDS. For instance, the cases of Uganda and Thailand, where epidemic levels of HIV infection have decreased in recent years, are frequently used as 'success stories' documenting the programmatic impact of individual-level behaviour change interventions.<sup>37,38</sup> While the discrete causes of these successes are often difficult to identify, both of these national examples are likely to be as attributable to societal-level changes in social norms and conditions (particularly through political leadership in addressing HIV/AIDS, and/or legislative interventions to address the critical structural determinants of local HIV dynamics) as to the widespread implementation of individual-level interventions.<sup>39</sup>

Similarly, Brazil's national response to the epidemic demonstrated the fundamental importance of social change in preventing the spread of HIV, as much of the widely discussed 'Brazilian experience' has been attributed to structural changes and social movements which extend well beyond the scope of individual behaviour change programmes.<sup>40,41</sup>

Even when the importance of societal causes are recognized, epidemiologists rarely consider the structural determinants of disease as mutable properties, like individual-level risk factors, suitable for intervention. In the current era of HIV/AIDS, perhaps the closest parallel to Kark's societal thinking in this regard is seen in the writings of Jonathan Mann. Like Kark, Mann recognized the shortcomings of traditional approaches to viewing individual behaviours as being solely, or even primarily, responsible for the dissemination of sexually transmitted infections, and opted instead for a view of disease which emphasized social and economic contexts in shaping individual, community and societal vulnerabilities.<sup>42</sup> Importantly, Mann saw 'societal risk factors' (like Kark's 'social pathologies'), and discrimination against the HIV-infected in particular, as fundamentally changeable elements of society.<sup>43</sup> For both Kark and Mann, recognizing that the apparently immutable structural conditions of populations were in fact actively created through time was a vital part of demonstrating that certain aspects of society—whether migrant labour systems or processes of stigma and discrimination—can and must be altered to stem the spread of disease.<sup>44</sup>

Surprisingly, the potential of structural interventions for HIV prevention has received only limited attention to date. Much of the response to the HIV epidemic has focused exclusively on altering individual-level determinants of disease transmission (by increasing condom use, decreasing numbers of sexual partners, etc.). But in practice, many such individual-level interventions have only had limited impact at the population level; in some settings, the epidemic appears to have run its 'natural' course in spite of individual-level interventions.<sup>45</sup> In the framework discussed by Kark (and refined by many others since<sup>e.g. ref. 46</sup>), the shortcomings of individual-level interventions in stemming the spread of HIV through populations may be explained in part, by the possibility that they fail to address the most important societal determinants of the HIV epidemic.

This neglect of structural interventions may result from confusion among scientists and policy makers about the levels of social organization involved in the dissemination of HIV, as well as from difficulties in viewing social and economic conditions as inherently dynamic and amenable to intervention.<sup>47,48</sup> In addition to the types of discrete structural interventions discussed previously,<sup>49,50</sup> innovative possibilities for population-level prevention interventions are being recognized with the emergence of HIV treatment initiatives for the developing world.<sup>51</sup> While such possibilities are largely hypothetical, identifying and evaluating these and other interventions to address the macro-level social and economic conditions which facilitate the spread of HIV/AIDS is among the most critical challenges facing epidemiologists fighting the HIV pandemic.

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