

**Diffusion and focus in sexual networking:
Identifying partners and partners' partners**

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The level and rate of spread of HIV/AIDS in a community with low levels of practice of safe sex are probably largely determined by the nature of sexual networks. Very sophisticated social science research will be required to discover the exact form taken by those networks, both for descriptive purposes and in order to provide the necessary input for realistic models.

The obvious starting point when examining heterosexual transmission of AIDS in Africa is to ascertain the numbers of different sexual partners with whom individuals had relations over specified periods of time. This type of research has begun (Orubuloye et al., 1991; Cleland et al., 1991). However, adequate models of sexual networks need a second link, the identification of the different sexual partners by various characteristics but particularly the full nature of *their* sexual activities, including the numbers and identifications of *their* different partners. This information is sufficient to construct a sexual networking model of the whole society and requires no more social scientific detective work on the ground following relationships from one partner to the next (Anderson, 1990).

There is another reason why it is important to identify the sexual activities of partners. It is probable that, initially at least, the HIV/AIDS epidemic spreads much faster when a high proportion of males' extramarital or premarital sexual activity is with women who have very large numbers of partners because they are engaged in commercial sex. Even in the early stages of an epidemic these women have a high risk of being infected because they have so many partners that, although the disease still infects very few men, they have a substantial chance of encountering some of them. Thereafter, they serve as foci of infection, and again they encounter a high proportion of all males. It is very likely that the cities of East and Southern Africa, with their greater numbers of males than females, fit this focus model of the epidemic with its explosive early start. It is also likely that in West African cities, where, because of women's near-monopoly of trading, the numbers of the sexes are usually similar, male sexual activity is more diffused¹. The East and Southern African situation is further aggravated by the fact that these regions contain a significant proportion of societies which Gluckman termed 'father-right' where married women fear extramarital sexual relations because they might be divorced with the consequent loss of possession of, and access to, their children (Gluckman, 1950; Caldwell et al., 1992). The focus theory of initial danger from the epidemic receives further support from the fact that the two cities most affected in West Africa are Abidjan and Dakar, the two large urban areas with the greatest male surpluses explained by the origin of their rural-urban migration streams largely among savanna populations where typically only the males

1 The investigators benefited in planning and analysing the research from discussions with John Bongaarts.

migrate (the rural Ghana epidemic is a product of female migration to, and return migration from, Abidjan rather than Accra).

So far, Nigeria has escaped a major HIV/AIDS epidemic. This is unlikely to be the product of a lesser demand by males for premarital and extramarital sex because the demographic factors causing this are at least as strong in Nigeria as anywhere else in the region. This demand in Nigeria is driven by late male marriage, necessary to make a high level of polygyny physically possible, and by the frequent sexual unavailability of wives because of long postpartum sexual abstinence; it is largely legitimized by the sanction that polygyny gives to the male need for multiple partners (Caldwell, 1992). However, it may well be explained by Nigeria being characterized by the diffusion pattern of this sexuality among the female population rather than the highly focused pattern.

Anderson and colleagues (1991:587) have recently modelled the epidemic as it moves through two societies, Community A (our Sexual Diffusion Pattern, which probably characterizes Nigeria) and Community B (our Sexual Focus Pattern, which probably characterizes many of the larger urban areas of Eastern and Southern Africa). As measured by the numbers of HIV-infected persons, the epidemic begins to spread rapidly in Community B only five years after the introduction of the disease, compared with a 15-year delay in Community A, and in the first quarter of a century thereafter Community A suffers from far more cases than Community B. However, Community A (the Diffusion Pattern) catches up with Community B after 30 years (perhaps, in Africa, 15 years from the present time) and ultimately experiences a far worse epidemic. The saving clause in this last postulate is, of course, that this time-lag may permit behavioural change and biomedical breakthroughs. Communities A and B are characterized by the same proportions of women working in commercial sex. In fact, this is what makes the situation in Community B so dangerous in the early years, because the same number of women must accommodate a much larger male sexual demand with the result that each has many more partners.

The aim of the research described in this paper was, then, twofold: (1) to discover whether it is true that Nigeria's pattern of male sexuality follows the diffusion rather than focus pattern, and so to confirm that this may be the mysterious factor that until now has provided the country with protection from a major HIV/AIDS epidemic; (2) to identify sexual partners, especially in terms of the sexual activities or the number of partners' partners. The aim here was at least as much methodological, that is to see if it could be done, as it was to get, at this time, substantive data for modelling.

The research described here was a further development of a field research program on the behavioural aspects of the social context of AIDS which was based on Ondo State University, Ado-Ekiti, Nigeria, and which had commenced in 1989 (Orubuloye et al. 1991; see also the Acknowledgments in this paper). The Yoruba people occupy the five southwestern states of Nigeria, and Ondo State is the most easterly of these states. The earlier research was carried out entirely in Ekiti, the northernmost district of Ondo State, about 150 miles in a direct line and 200 miles by road northeast of Lagos. The extension of the research described here was carried out in the old city of Ondo, in the southern and more coastal part of the state and only half as far from Lagos.

Research of the kind that we now envisaged is difficult, and is rendered much more so by the need to avoid major ethical problems. The Ekiti research had succeeded in obtaining an accurate picture of the sexual activities and numbers of different sexual partners of respondents by painstakingly cautious research which convinced respondents of the need for the enquiry and the absolute confidentiality of the information. The confidence that we would not take our enquiries further was partly sustained by the fact that we did not too pointedly persist in continuing our enquiries into the exact identity of each of their sexual partners, and this was one of the reasons why this identification was probably the weakest part of the research (Orubuloye et al., 1991:69). In terms of the fact of nonmarital sexual relations and the number of partners involved, the research also concluded that the male testimony was more reliable than the female reports (Orubuloye et al., 1991:66).

The practical problem of asking for so much evidence about partners that we could identify them and then approach them for interviews (and perhaps finally approach their partners) was that it either would have become obvious what our intentions were, or we would have had to state those intentions (a policy we would have certainly adopted), and we would have met respondent and community resistance, probably ultimately collecting much less information than we succeeded in doing. However, these difficulties are trivial compared with the ethical problems involved. Even if we had successfully obtained permission from our respondents to approach their partners for interview, we did not feel that we had the right to break into the lives of the latter with the information that we already possessed evidence about them which many would regard as being none of our business. The alternative, and probably permissible approach, would have been to add the partners to another randomly selected survey and to analyse their responses separately. This would have required starting again, with much more detailed identifications in the first project, and equally detailed identifications in the follow-up project, not only when interviewing the identified partners but with all respondents so as not to arouse any suspicion. Such a project remains a possibility for the future, but there was a somewhat easier initial experimental approach which also had the value that it would generate additional experience and information to guide the possible Ekiti project outlined above.

The experience already obtained in Ekiti led to the following conclusions. (1) Men were likely to tell us more details about their partners than women. (2) Men were likely to know more details about partners, especially their other sexual activities, because the culture dictates that men can demand more information from women than women can from men, and they are much more likely to demand to know of other sexual activities. (3) The society chosen for the new investigation should be as little proscriptive as possible of nonmarital sexual relations, and/or should be so disposed to discuss these relations that little remains unknown to the community; and, for this reason, but also because they are socially conditioned to talk about such things, will be willing to disclose their full knowledge. Indeed, the community inclination to discuss these relationships should mean that the knowledge available to individuals about their partners is greater than in most other societies. These conclusions were the basis for the selection of Ondo Town for the partners' partners project.

A further decision was made. An attempt would be made to validate the findings on sexual focus versus diffusion by also surveying the commercial focus. We planned a census of Ondo

Town prostitutes to ascertain whether the services they provided appeared to approximate the services the males claimed to have used.

The Ondo Town project

Ondo Town, from which Ondo State derives its name (even though it is insufficiently central to be the state capital), is an old precolonial settlement on the direct road south from the ancient Yoruba religious capital, Ile-Ife, and situated on the fringes of the forest heartland. As Lagos developed during the colonial period, Ondo Town grew as a major satellite market for the southeastern Yoruba area. It is an old town with a thriving daily market and a densely settled central section. Its prosperity depends on commerce, the surrounding cocoa farms and the forest lumber industry which supplies the sawmills of the town. Its population has a very strong sense of cultural self-identity and has preserved its own traditions. The name Ondo Town dates back to the earliest colonial times, and signifies that there was a real town there in contrast to the villages in which most Nigerians then lived. Now, in fact, with a population of a quarter of a million it would more appropriately be called a city. In terms of traditions and successive generations of town-dwellers, it is in many ways the most urban of the Ondo State towns. The level of affluence is such that many people refer to it as the Lagos of Ondo State.

The first report to the British Government on Yoruba culture (Hopkins, 1969:81), largely compiled in 1906-10 by a Yoruba committee, identified Ondo as being 'backward' and 'promiscuous', with 'instances ... scarcely distinguishable from polyandry', though what was meant was probably a somewhat greater degree of permissiveness together with less secrecy about these relations. This situation has continued with the great social offence consisting, with regard to sexual relationships between married persons who are not each other's spouses, in not revealing the situation, rather than in allowing it to continue. Indeed, if a clandestine relationship is discovered, then traditionally, and even today, a fine is imposed to punish the partners not for their relationship but for their hypocrisy in having hidden it. Normally the man should pay the fine, although, in default of his doing so, the woman will make the payment. Such payment marks the end not of the affair but of the reprehensible secrecy surrounding it, and legitimizes the continuing relationships which neither of the other spouses can now protest, although the man and woman involved are expected not to flaunt their relationship (in the sense that the man will quietly leave the woman's house if the husband comes home) and to continue to act out their spousal sexual and other roles.

In research of such unusual difficulty, the greater openness of Ondo Town society had much to offer, especially for the initial, exploratory research, for, if the planned type of research failed there, it would almost certainly fail anywhere. The possible disadvantage was that such additional openness would also be linked to sexual patterns which differed from those of other areas. In terms of the likelihood of the final male in a linked chain of sexual activity patronizing brothels or other commercial sex, we had to check that such men, too, would be represented in the sample, while the sample of males as a whole could be compared with the 1990 data from Ado-Ekiti.

The final decision, then, was to adopt the interviewing methods developed in Ekiti (Orubuloye et al., 1991): careful preparation and a great deal of reassurance of the respondent,

the demonstration that it was needed university research and that details on individuals would not get to local government authorities, other officials or the churches; a small sampling fraction so that no two respondents lived close together; and a limited number of good tested interviewers led by a mature, trusted person. The team leader was a much respected local school teacher who had studied sociology at university and was descended from generations of Ondo Town residents. Interestingly, he reported that all these characteristics counted for less than the fact that it was university research, that universities could be trusted with confidential information, that the findings were urgently required, and that individuals would disappear into statistical aggregates where their identity could not be distinguished. Almost inevitably it was also decided to concentrate solely on males.

We decided to interview 500 males, 15-50 years of age. Ondo Town was divided into four quadrants, and in each an interviewing path was determined that passed every house. Houses along the route were chosen on alternative sides with a fixed sampling fraction calculated to allow interviews along the full length of the route. In each house all males in the chosen age range were interviewed.

This sampling strategy actually yielded 488 interviews. The data conformed well with the 1986 Ondo State Demographic and Health Survey urban population. The mean age of the interviewees was 31 years. The town is ethnically fairly homogeneous and 93 per cent were Yoruba. The religious breakdown was 79 per cent Christian and 20 per cent Muslim. Given an average age among males at first marriage of 27 years, 36 per cent had never married. Because widowed or separated men usually remarry, or are polygynously married when these events occur, nearly all the rest were currently married. Among the married men, 77 per cent were in monogamous marriages and 23 per cent in polygynous ones, with 40 per cent of all their wives being in polygynous marriages. One-quarter of the married men had also had previous wives from whom they were now separated or divorced. Among their fathers, 60 per cent had been polygynists but the contrast presented here may be less one of social change than a reflection of the fact that old men frequently acquire another wife, and that, while we have recorded the full life cycle of most of the fathers, that of their sons is still incomplete. The respondents had on average 3.9 children, with the married ones recording almost six. Most of these families were not yet complete, but, in over one-third of the cases, this level of fatherhood had been achieved through more than one wife.

Various measures of marital arrangements can be made although most of these are in keeping with past practice and cannot be taken to be measures of closeness. Nearly all husbands and wives have separate budgets, as is typical among the Yoruba and widespread in West Africa, and most wives also have their own incomes. Just over half the spouses normally eat together, and one-third sometimes go out together. Just under two-thirds of men claim that they spend most nights at home with the family. One series of measures which may be relevant to the balance of this paper is that only a little over one-third of all husbands sleep in the same room as any of their wives and under one-fifth sleep in the same bed. Those who do are found disproportionately among the youngest couples.

The research strategy in this study was essentially a multi-pronged approach to each event or type of event. The respondents were asked many questions to fill out the history of any event

or relationship and what is not at first completely disclosed is eventually described in sufficient detail to allow fairly sound conclusions to be drawn. It is the lawyer's method of investigation by exhaustion.

Sexual experience

Some of the youngest males, constituting 5 per cent of the sample, had as yet had no sexual experience. Of the remainder the mean age at first sexual activity was just 16 years (comparable with the Ondo State DHS). The important question is with whom this initial relation took place, for this begins to determine the pattern of focus or diffusion.

In some societies adolescent males' first sexual experience is reported to be largely with prostitutes, partly because of strong chaperonage of girls of their own age, often with the aim of keeping them virgins until marriage. This is not the Yoruba pattern, for only 2 per cent of first relations involved commercial sex, although another 1 per cent involved older women which may in some cases have been commercial. At the other end of the scale, 5 per cent of initiations into sex were within marriage, and a further 10 per cent were between couples where marriage was planned or discussed, although in many of these cases it did not eventuate. In less than 0.5 per cent was the ancient pattern of sexual relations within the family, often with older brothers' younger wives, followed (cf. Caldwell et al., 1991). But in 82 per cent of all first sex the partner was a girl of comparable age. There was no transaction and the act was described as being for fun. That description is apt enough from the male viewpoint, but research among adolescent girls has shown that the boys more often take the initiative while the girls remain passive or even apprehensive. Sometimes the boy taunts the girl that a refusal shows she does not love him, and, in a situation where girls often feel the need for affection and a strong relationship, she is likely to succumb (P. Caldwell and J. Caldwell, 1987). Almost 3 per cent of the respondents said that they were really guilty of rape and another 1 per cent admitted that there was physical duress. But mostly it is a story of fortuitous circumstances with school-mates, village girls, the neighbours' daughter and sometimes the maid.

Numbers of different sexual partners

The respondents could hardly record long full lives in retrospect. Their average age was only 31 years and that of the married was only 36 years with a mean duration since first marriage of nine years. The married men recorded on average over a lifetime 1.4 wives as sexual partners, taking into account both present and past wives. All respondents averaged over seven different partners in their sexual lifetimes, levels almost identical with those recorded in the urban segment of the earlier Ekiti survey.

The great majority of married men had sexual access to a wife for at least part of the previous year, the result of a fairly rapid decline in the duration of postpartum sexual abstinence with societal change and with the greater availability of contraception to offer an alternative method of birth-spacing. Nevertheless, most married men had at least one other sexual partner during that year and most single men did not confine themselves to a single partner. At the time of the study, all respondents currently averaged 2.3 sexual partners.

The survey repeatedly stressed that 'partner' meant partner even if that partnership was for a single sexual act and no relationship persisted. Nevertheless, interviewers had the impression

that some single acts may have been omitted either because they were forgotten or because respondents found it difficult to view this as having had a partner. Necessarily, these occasions were more likely to have involved commercial sex. However, this is probably not a serious problem as, although a small but significant number of 'partners' may have been omitted, they accounted for an insignificant proportion of all sexual acts as the relations with other partners were usually of a more continuing type.

The purpose of the investigation was, however, less to count than to identify these other partners.

The identification of current extramarital and nonmarital sexual partners

Nearly all those men with extramarital or nonmarital sexual partners during the year agreed to identify them. Nearly all were described as 'girl friends' or 'women friends'. At this first attempt at identification, less than 1 per cent were described as prostitutes (Yoruba: *asewo*, literally 'somebody who exchanges sex for money').

The next attempt at obtaining a profile of these partners was to ask the men to try to assess their ages. The mean age of the female partners was 23.7 years or 7.1 years less than the men. This is not surprising as the age gap is no greater than that found between spouses at first marriage. What is more disturbing is that over 10 per cent of the girl friends were under 16 years of age and almost 20 per cent under 18 years, with a significant proportion of these girls' male partners being very much older. In fact, of the sexually active male respondents, only 1 per cent were under 16 years and 8 per cent under 18 years. Female sexual partners are essentially young women and hence the term 'girl friends' (Yoruba *ore'birin*). While only 45 per cent of the men were under 30 years of age, 90 per cent of their female partners were, and this is about the terminal age for being a girl friend. This age contrast has certain advantages for both partners. The men see extramarital sex in terms of young women, while the young women are at just the age when they need support to stay at school, to get extra training, or to establish themselves in an occupation, and it is also the age when they feel the greatest need for new dresses or ornaments.

This can be seen, and the profile of the female partners can be more firmly established, from the responses to questions on occupation. Fully one-third of the female partners were identified as students or apprentices, the great majority being schoolgirls. This was three times the proportion of the sexually active male respondents in this category. Another 3 per cent of the female partners were nurses, often trainees.

Unexpectedly, and in spite of probing, only 1 per cent were described as being in prostitution or as working in entertainment, bars or hotels. Indeed, these proportions are lower than are recorded in censuses and surveys as constituting the female occupational structure. However, 38 per cent are identified as traders, mostly fairly young. This is not below the proportion of traders among employed females, but one segment of the itinerant young traders (those who sell along the streets and in the lorry parks) are an important source of commercial sex (Orubuloye et al., 1992).

Almost two-thirds of the female partners were reported as being single, while, of the remainder, currently married women outweighed separated or divorced women by four to one.

This is a different pattern from the urban segment of the earlier Ekiti study (Orubuloye et al., 1991). That survey had shown over four-fifths of the female partners being single, and separated and divorced women being predominant among the remainder. The explanation may be that there are cultural differences between Ondo Town and Ado-Ekiti, and that residents of the former have easier and safer access to other men's wives. Most residents of both cities believe that this is the case and that these differences are exactly those that have appeared in the data. Alternatively, the elapse of a further year of economic structural adjustment may have made more married women desperate for some additional economic support. It may also reflect some movement of partners from the 'single' to the 'married' category with repeated probing, but the experienced interviewers did not believe that there was any significant movement of this type.

It might appear that these probing attempts to establish the partner's profile are unnecessarily oblique and that the distinction in such relationships is between those involving monetary transactions and those not doing so. In reality, the situation is far more complex than this. There is some kind of material transaction in the great majority of these sexual relations, and the ultimate disgrace over a great cultural region is more likely to lie in giving nothing in return for the gift of sexual pleasure than in making some form of payment (Caldwell et al., 1989: 203-205). The actual divide lies between longer-term relations involving affection and momentary anonymous relations on a strict, immediate commercial basis, perhaps in premises solely existing for this purpose, but this pure type is surprisingly rare. Nevertheless, the research program devoted much of its attention to this area in order to determine the level of commerce-driven sexual relations and whether this level was such as would focus a substantial proportion of extramarital and nonmarital sexual relations on relatively few women with consequent implications for the transmission of HIV/AIDS.

The economic component in extramarital and nonmarital sex

A battery of economic questions was spread throughout the interview on the current relationships of those 357 respondents who reported that they were currently having sexual relationships apart from those with wives. The findings of selected questions are reported in Table 1. The extramarital relationships of married men and the nonmarital relationships of single men are treated together because the responses were not significantly different. Indeed, the married men continued to act much as they did before their marriages. The most striking aspect of the various questions, both reported and unreported, was the extent to which their testimony agrees.

Table 1 shows that the great majority of these relationships involve both sexual relations and a degree of support. Most have a degree of permanence and most of the women involved in these relationships are described by the men in affectionate terms. Indeed, the distinction between partners within marriage and outside it is often thin, and this situation has a certain logic in a highly polygynous society. The distinction is less in degree of affection or even of support than in formal ceremonies performed, relationships between families, usual residence and the fact that a significant number of these women are married to someone else. It might be noted that there is a certain logic in a society where most adult women are married, and where

many are sexually unavailable at any given time because of obligatory sexual abstinence during pregnancy and long postpartum periods, in sharing the wives who are in a sexually active state.

However, not every man can find such partners. A series of questions came to very similar conclusions. Around one-seventh of these relations are with commercial sex workers, and, at any given time, about one-tenth of postpubertal males and about the same fraction of husbands are patronizing such women.

Table 1

Per centage distribution of responses from 357 respondents about the transactional component in 575 current extramarital and nonmarital sexual relations

Question	Responses				
	Money	General material assistance, food etc.	Help with studies	Advice, moral support	None
(1) What kind of help/assistance reward do you give her (them)? (N=575)	66%	4%	2%	22%	6%
(2) Do you give her (them) payment? [If YES] what is this for? (N=357)	For assistance 75%		YES	For the sexual service 14%	NO 11%
(3) Do your partners know that they are practising commercial sex? [If YES] What do they feel about it? (N=357)	Enjoy the life 4%	Fairly positive, no problem 8%	YES	Necessity 1%	Ashamed 1% NO 86%

Perhaps the most revealing fact was that very few sex workers felt any great moral problem about their activities. In contrast, most of the society draws a line between prostitutes, who regard a sexual act as a commercial transaction, and married women or single girls who have multiple sexual partners from whom they usually receive money or other support. However, prostitution does not usually jeopardize future marriages or remarriages or often existing marriages because most commercial sex workers practise their trade away from their place of birth, where they almost invariably choose their future husbands. Although, unlike the situation in other relationships, the commercial sex workers generally received payment for each sexual act, they knew most of their clientele and there was usually a degree of camaraderie and even affection. Most did not work from any institutional base, although a minority were employed in bars and hotels. Pure 'brothels' which offer no drink, entertainment or company are almost unknown although some of the bars offer little more than drink and sex. The non-institutional sex workers were more likely to be young, single traders (cf. Orubuloye et al., 1992) but trading is the occupation of most females insufficiently educated to get professional and white collar jobs,

although it is true that the additional income of those who also sell sex may allow them to put off marriage for longer than other traders.

Most of the men are somewhat discreet about these outside relationships at least as far as their wives are concerned, although there is much ritual in what the wives are not supposed to know. Nevertheless, most men were at pains to emphasize the existence of affection and emotional relations, not infrequently extending back to before their own marriage and that of the women. Those who give nothing or primarily give advice and moral support are no less at pains to emphasize the strength of their relationships. The distinction between these and other relationships is that the woman involved is usually in less need of support. She is often in a polygynous or unsatisfactory marriage and wants a relationship with a man who can advise or support her decisions. She may at some stage also need some monetary support, and a comparison of Questions (1) and (2) of Table 1 brings out the fact that perhaps half of the men primarily giving advice and support also provide at least some money. Some men help schoolgirls and students with their studies, sometimes because they are their teachers.

The investigation of where extramarital or nonmarital sexual activity took place also largely supported the view that commercial sex is only a small part of the total picture. Only 11 per cent of that activity took place in a bar, hotel or other place of entertainment. Otherwise, the partners had to find, in a large town, some other accommodation. Friends were helpful, on 11 per cent of occasions, and relatives and the workplace on other occasions. But almost three-quarters of all sexual relations took place in the houses of one or the other of the partners, the man's twice as frequently as the woman's, evidence of how often Yoruba wives are out of the house trading or doing other work. This is also facilitated by their relative rarity, two-thirds involving sexual relations no more often than weekly and one-quarter no more often than monthly.

The expenditure on all relationships is difficult to estimate even for those involved, but the typical figure for expenditure on each partner seems to be around 70 Naira (US\$7) per month. This amounts to about one-third of the per capita national income, so the role of sexual networking, at least as a redistributive mechanism, in the national income should not be underestimated.

The partners' partners

In terms of the risk of disease transmission, much depends not only on how many partners a man has, but also on the number and type of the partner's partners. The previous research program had not attempted to go so far.

The practicability of establishing this further link depends on the openness of the whole sexual networking system and the extent to which it is carried on surreptitiously. In earlier research in Ibadan, we had found that nearly all women practising postpartum sexual abstinence believed their husbands to have other sexual outlets at this time but the great majority also said that it was none of their business, that they would never ask their husbands or try to find out who the women were, and that they could not identify them for the researchers (P. Caldwell and J. Caldwell, 1981:86-88). For his part, the husband, even if he is out night after night, does not suggest that there are other women – even in the extreme cases when they come to the house. This is almost a ritual performance which makes the whole system possible. Wives who

break this social pact by questions, complaints and protests tend to destroy their marriages and to incur the wrath not only of their husbands but also of both the husbands' and their own relatives. Even though the wife's ignorance of these extramarital relations is largely ritual and pretence, the fact is that she does not enquire much, and certainly does not discuss these matters with her husband. Consequently, as we argued above, she is not a good source of information for the researcher on the next link in the sexual networks, and it was for this reason that the Ondo Town study focused on males.

The ritual was maintained in this study also. Of all the married men in the study, over 90 per cent reported having current sexual activity outside their marriages. But nine out of ten of these men maintained that their wives did not know of these extramarital relations. They said this while admitting that they had not been particularly discreet. Three-fifths reported their own relatives knowing the situation. Half reported brothers as knowing the relationships, one-quarter sisters – indeed sisters' contacts are sometimes the new partners – and, more surprisingly, one-fifth reported parents. Discretion, ritual or real, is even greater when it is the wife who has partners even though many husbands welcome the resources that come into the household, or the wife's greater ability to support herself and her children, when she does have a reasonably well-off extramarital partner. Anger can be reserved for misalliances with poor or unsatisfactory boyfriends. In the present study only 1 per cent of the married men with outside partners claimed that those partners' partners knew of the situation, although 33 times as many claimed to know all about the partners' partners.

Thus, even in a male study, only one-third of the married respondents, and fewer still of the unmarried ones, can accurately describe their extramarital partners' partners. The proportion is high when the partners' partners are husbands, lower when they are other boyfriends, and very low indeed when commercial sexual relations are involved. It is precisely this important last relationship which is so hard to document even though it is, in terms of infection, the most dangerous, a fact well known to the men involved (Orubuloye et al., 1991).

Among the one-third of married men currently having extramarital relations who believed they knew nearly everything about their extramarital partners, all but 3 per cent claimed to know how many additional partners there were: out of every ten, seven said one, mostly husbands or long-term boyfriends; two said two, and only one said three or more. Indeed, most implied that they would not be in a sexual network more complex than this. But the very fact that they may break with partners they suspect of promiscuity may make those partners very discreet about revealing the existence of other men.

The most definite point that can be made about the partners' partners who were described is how strikingly similar they were to the male respondents themselves. The ethnic profile was very similar, largely because most partners were of the same ethnicity. The age profile was much the same. There were fewer very old polygynous husbands with much younger wives than anticipated, doubtless because the research was confined to an urban area. Even more striking was the similarity in the occupational profile. This suggests that, if wives are seeking richer extramarital consorts, they usually have to make do with someone in much the same income bracket as their husbands. Many of the relationships provide an additional income for the household but it is usually similar in magnitude to the outflows arising from the husbands'

extramarital relations. This, however, is not as paradoxical as it sounds, when it is recalled that the family budgets are separate with each spouse largely earning and controlling his or her own budget. The networking sexual system does much to reduce the disparity in living levels between men and women, and may do something to reduce disparities between families in the whole community. Those who gain most economically are the young single girls, seeking support – but not marriage – to stay at school or in tertiary education, or to become established in careers.

Validating the male responses: the survey of commercial sex

In order to validate the Ondo Town study, an attempt was made to establish whether the volume of sexual services sold was in any sense commensurate with that claimed to have been bought.

During the study a census was taken of all women providing commercial sex from brothels, hotels and bars identified by a range of informants as being the known institutions providing commercial sex. Within them, those selling sex were interviewed with appropriate assurances that the information was confidential and would reach neither the police nor other municipal officials. The completed interviews covered 98 women, averaging 33 years of age. They claimed on average 40 customers per week and most of them usually charged 5 Naira (US 50 cents) per customer.

Inevitably, the census missed some of the smaller, more obscure institutions and even some of the women working in the censused ones. It would be incautious to assume less than 150 commercial sex workers or 0.4 per cent of women 18-39 years of age. In total they probably provide 4,500 sexual services per week (taking into account their menses and some absences). In addition, there is a good deal of less-institutionalized commercial sex with young women, some of them itinerant hawkers (Orubuloye et al., 1992), each of whom has, however, many fewer clients. Our survey of males suggested that these relations were at almost double those associated with hotels and bars. It is possible that this will increase the total services to perhaps 12,000 per week. From in-depth interviews it was estimated that around 30 per cent of services were for drivers passing through or other people from out of town, leaving around 8,500 for Ondo Town males.

What is clear from both the Ekiti and Ondo Town studies is that men seek nonmarital sexual relations on average only about once a week. The male population of Ondo Town, 15-59 years of age was estimated at about 55,000, of whom around 47,500 would be likely to seek nonmarital sex each week. The estimated 8,500 commercial services would form almost 18 per cent of this demand. This is, in fact, a figure only a little higher than that the main direct male survey estimated, and some confirmation that that estimate of one-tenth of males patronizing commercial sex workers and this patronage making up one-seventh of all sexual relations is not wildly far from the truth. The Ondo Town pattern is, in fact, one of diffused sexuality. Those males who use mostly commercialized sex may spend around 20 Naira (\$2) per month in this way compared with treble that amount spent by others on longer-term extramarital relations.

The census of commercial sex was difficult and its precise results did not carry any great conviction. All that can be said is that it did not seem to describe a situation completely at odds

with that obtained from the individual male survey, and, in an uncertain situation, that does provide some reassurance.

The answers to the questions

An important point to note is that Ondo Town is remarkable for its relative lack of discretion about extramarital sexual relations rather than for any very much greater volume in those relations. It is essentially a Yoruba society, but with its own unique tradition of openness. The total situation is, in terms of validating the research procedures, reassuringly close to that reported for the urban population in the earlier Ekiti study (Orubuloye et al., 1991). There it was discovered that, of the sexually active population, 62 per cent of the men and 47 per cent of the women currently had more than one sexual partner. The Ondo Town figure for men was somewhat higher, at 71 per cent, and that for women is probably also a little higher, at a level perhaps a little above 50 per cent. The difference in Ondo Town, which supported the qualitative evidence assembled before the study, is that the male demand for additional partners was not so strongly focused on single women but that more wives were available for extramarital or nonmarital sex.

We are now in a position to attempt to answer the questions postulated at the beginning of the paper.

(1) Is this a pattern of diffused or focused nonmarital sexuality?

The situation identified is essentially one of the diffusion of sexual relations rather than a substantial focusing of male extramarital and premarital sexual activity on a small number of commercial sex workers with large numbers of customers. It is also one of fairly stable sexual relationships. Only about 14 per cent of the extramarital and nonmarital male sexual relationships were with women who charged for sex and only about 10 per cent with women who operated in any sense from institutions: bars, hotels and the like. The balance also had other jobs. Most were young itinerant hawkers who supplemented their earnings by selling sex and who appear to have very few sexual customers, many of whom are regulars and known to them (Orubuloye et al., 1992). It appears that many of the women working in bars and hotels have limited numbers of clients, many known to them, often feeling affection and sometimes sticking to the same women even while paying for sexual relations.

In fact, because the demand for commercial sex is not very great, and because many other women provide sexual services outside marriage, even if more covertly, commercial sex provision is neither very professionalized nor a very high-powered industry. It is often what deserted wives do to support themselves before finding another husband (Orubuloye et al., 1991:8) or what rural-urban migrants do before marriage, getting a town job or returning home (Peil, 1981: 90-92).

The great majority of the other relationships are fairly stable. Most men protest that they are long-standing, deeply emotional relationships, often comparable with their marriages, and sometimes of longer duration. Many a man alternates between a wife and another sexual partner as each becomes pregnant or sexually abstains after the birth of a child. Thus the society is even more polygynous than it appears in censuses and far more polyandrous, the latter point being made by the 1910 Report to the British Government (Hopkins, 1969: 81). It has

also found a way of discreetly sharing sexually available women, even sexually available wives, in a society where female sexual abstinence during pregnancy and for long postpartum periods, as well as early terminal abstinence, means that only a minority of women are sexually available at any one time.

Thus, the Yoruba system has preserved birth-spacing without enforcing any substantial degree of male continence. The mechanics of the system depend on a whole series of social practices which at first seem to have no connection with it. Men and women have separate budgets, their own unsupervised earnings and expenditure, which make flows of incoming or outgoing support undetectable and their own business. It is common to take all or many meals apart and to go out for entertainment separately. Women are out of the house for much of the day trading or doing other work. Two-thirds of spouses do not sleep in the same room.

There is even greater sexual diffusion here than in Anderson et al.'s (1991:587) Community A model. It has probably served well to delay the onset of epidemic HIV/AIDS in Nigeria. If it delays a massive epidemic for a few more years there may be time, if not for a decisive biomedical breakthrough, at least for substantial behavioural changes, unless the very protection so far offered by the diffusion of sexuality renders the population complacent and largely impervious to government campaigns.

(2) Is it possible to identify partners' partners?

The answer to this is also fairly clear, and it is that, by employing the methods used in the research described here, insufficient partners' partners can be identified with the necessary accuracy to provide usable data for modelling chains of linkages, or to evaluate the danger to individuals from the sexual activities of their partners.

We do not believe that this method warrants further exploration. It is unlikely that sub-Saharan African communities will be identified which are characterized by even greater openness about their premarital and extramarital sexuality than Ondo Town while approximating larger societies in their sexual networking behaviour. Nor do we feel that more skilled or persistent interviewing, or more time devoted to in-depth investigations of an anthropological type could have raised disclosure levels significantly above the one-third of male respondents who believed that they knew all about their partners' other sexual activities. The other two-thirds simply did not know. Furthermore, it is only too likely that some of the one-third who did claim full knowledge had been misled. It is also clear that a partners' partners investigation beginning with female respondents would result in even more dismal figures than these. Worse still, the one-third of male respondents who were fairly sure of being able to identify partners' partners are certainly not representative of all males - or, perhaps more accurately, their partners are even more assuredly not representative of all partners. Although some of the partners may merely be more discreet, it is probably a fair generalization to say that most are probably not very stable or loyal partners and are likely to average a higher number of other partners.

What, then, can be done to provide the necessary information? In terms of achieving identification, the obvious method is to obtain identifications of partners' partners so that they too can be interviewed. This may be possible in Ondo Town and more widely in West Africa. There are clearly ethical problems involved. It is possible that a few very skilled and discreet

interviewers could carry through such research successfully over a long time without causing offence and without placing any greater strain on the human relationships of the people being investigated, but this is doubtful. Our research program has halted in this research area, and has not even planned a pilot study.

One remaining possibility is an extension of the kind of research undertaken in Ghana in the 1970s by Bleek (1976; 1978), where long residence with a single lineage and a close informant allowed an estimate of the levels of sexual activity in the lineage. Even in this research no attempt was made to investigate partners' partners, and some question must remain about how typical this particular lineage was.

Another - and most hopeful - possibility is the identification of individuals' partners and then their addition to a randomly drawn sample in a study of partners. The work would have to involve only the most trustworthy researchers who would not reveal that some information was already known about the supplementary group. A further possibility is to improve the census of commercial sex workers. On its own this would seem to be the most desperate of all stratagems, but improved versions of our work may serve as a back-up and check on other approaches.

Doubtless model-makers will attempt to employ the models themselves to attempt to assess the answers sought here. There may well be no other way. But there is a circularity in thinking when building computer models on a series of assumptions based on unknown or only partly known data, and this difficult matter of the number of sexual partners of partners' partners may be so basic that it will weaken any model.

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