

Research Agenda

THE STRUCTURE OF SEXUAL BEHAVIOUR

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In a national study of gay men's sexual behaviour in the context of HIV transmission, a schema was evolved for encoding and reporting the structure of sexual activity: the Sexual Behaviour Code (SBC). It has linguistic properties, is easily learned and employed, and generalizes easily to heterosexual behaviour. Each sexual session (sentence) comprises a sequence of sexual acts (words), which in turn consists of a sexual behaviour (root), the modality (prefix), and the outcome/ejaculation (suffix). Other aspects (partner/s, drugs, condoms) are encoded as precedents and accompaniments of the acts. The SBC is also used to define a comparable and flexible research instrument for eliciting systematic information on sexual behaviour: the Inventory of Sexual Behaviour (ISB), now used in all WHO/GPA studies of homosexual response. Issues of validity and reliability are addressed, and forms of analysis of the resulting data are discussed for sexual diaries and inventories.

KEY WORDS: Sexual behaviour, sexual diaries, sexual inventories, homosexual, HIV transmission

The need to develop a schema for describing sexual behaviour arose initially in the attempt to elicit systematically the full details and variants of sexual activity which might conceivably be implicated in the transmission of the Human Immuno-deficiency Virus (HIV) among gay and bisexual men, since this was the research remit of Project SIGMA.¹ A review of literature describing such behaviour revealed a wide range of schemes, some of which were incomplete (e.g., not enquiring about common behaviours such as oral-anal contact ("rimming"))²; others were inconsistent, and yet others used categories which were

¹The acronym stands for Socio-sexual Investigations of Gay Men and Aids. The research in this article was funded by the Department of Health (UK). The views expressed in this article are those of the author and not necessarily those of the Department.

²In this paper, commonly used terminology will be used whenever a subject's own words are cited, or when the neutral medical terminology would be cumbersome.

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not sufficiently specified to differentiate between two similar varieties of behaviour which had differing consequences for the probability of HIV transmissions.³

Undoubtedly, the hitherto most extensive schema for describing sexual behaviour was that developed by the Kinsey Institute, both in the original study (Kinsey et al., 1948) and in the study of homosexuality (Bell & Weinberg, 1978). Their method of coding and shorthand referencing provided a basis for our own.

The second motivation was the need to develop adequate and compatible "reporting structures" for relating different national studies, and later to produce a common protocol for research studies under the aegis of the World Health Organization.⁴ Once again, a survey of the literature revealed very great differences in question wordings and reports, a bewildering range of types of response permitted or provided, and grossly incompatible differences in the time-span of reporting (or, indeed, the failure to specify any time span at all).⁵ For national studies covering very different cultural manifestations of homosexual behavior, it was critical to ensure as a minimum requirement common reference to the physical aspects of sexual behavior.

The initial research context in which the schema was developed was experimentation with the method of sexual diaries (Coxon, 1988a, 1990b; Davies, 1989; Davies & Coxon, 1990). Presently, the schema is used as a primary data eliciting tool by Project SIGMA and has formed the basis for developing an "Inventory of Sexual Behaviour" for use in interviews and questionnaires. The schema also yields exactly compatible data at any chosen level of aggregation.

Structure of the Sexual Act

As a first step, we restricted attention to the *behavioural* aspects of sexual activity. We also made a simplifying assumption: that sexual behaviour is (or, more accurately, can be described as) a discrete rather than as a continuous phenomenon. This discreteness is an over-simplification, since physical sexual interaction manifestly involves continuous (if not smooth) movement. On the other hand, it is virtually impossible to describe such behaviour in a genuinely continuous manner, and in practice people experience the continuity as "chunked" into more or less discrete actions which can be described verbally.⁶

³Such as the use of the single generic term "anal intercourse" to cover both receptive and insertive modes.

⁴The initial national studies consisted of the Netherlands Study (Department of Homostudies, University of Utrecht, Dr. R. A. P. Tielman), the San Francisco Study (Center for Aids Prevention Studies, Dr. Tom J. Coates and Dr. Susan Kegeles) and Project SIGMA (Drs. P. M. Davies and T. J. McManus, London, and Dr. A. P. M. Coxon, Cardiff, Wales). The WHO research projects were organized as the Homosexual Response Studies under the direction of Dr. Manuel Carballo (WHO Global Program on Aids, Social and Behavioural Research) and the conensorship of the author.

⁵Some of these problems are discussed in Coxon (1990b) and an attempt is made there to render some schemes consistent in order to produce enough compatibility for relative comparison.

⁶This is by no means a trivial issue. In training researchers to code, we used a sexually explicit video as a common reference stimulus and compared researchers' "scripts" after a given sequence. Although there was agreement over gross characteristics (such as the fact that solo masturbation occurred), there were considerable differences over the level of fine-ness of description. Some tended to lump actions together, whilst others made finer distinctions, splitting actions into separate units. Nonetheless, there seemed to be an

Content of Researchable Aspects of the Sexual Act

If such a schema is to be generally useful, it must be capable of being used in a variety of data-eliciting situations. In particular, it must be applicable: when the subject makes his own descriptions (self-reports); when the sexual activity is observed (and/or participated in); and in the interview or self-completed questionnaire. It must also be easily comprehensible (if subjects are going to be able to use it), and it should be encryptable, so that secrecy and confidentiality can be assured. Finally, a more important requirement is that the schema must be detailed enough and also "open" to modification; it must be complex enough to encompass all common (and most rare) sexual behaviour and situations, and allow the addition of new behaviour as it occurs.⁷

Restrictions on Manageability

The schema we have developed is dubbed the "Sexual Behaviour Code" (SBC). Certain initial restrictions on coverage are made, not out of principle but for practical reasons. First, in terms of the structure of the sexual act, we are concerned only with *binary* (or *unary*) behavior, in the sense that the description is defined from ego's (the participant's) perspective: what is done to him or by him. If there are more than two participants, then any activity involving ego is relevant, but not (for example in a three-some) all activity between the other participants.⁸

Although the schema presented here was developed to describe and encode male homosexual behaviour, there is no reason why it cannot be extended to describe any sexual activity, and it is a trivial matter to extend it to heterosexual behaviour.⁹ Furthermore, the schema has also been implemented in two quite different methodological forms: the Sexual Diary¹⁰ and the Inventory of Sexual Behaviour.¹¹

acceptable common level of description, corresponding in many ways to the "natural level" or "generic taxa" found to characterize many folk taxonomies in cognitive anthropology (Berlin, 1978), and these differences in behaviour "virtually 'cry out to be named,'" as Berlin graphically puts it (op cit, p. 24). We are grateful to HM Customs and Excise who have allowed us to access such video material for research purposes before returning them to confiscated status.

⁷With the advent of "safer sex" and the proscription of some activities such as anal intercourse, gay men have become more inventive and developed various alternatives, such as inter-femoral penile insertion ("thigh-fucking").

⁸Another version of the SBC is the *n*-ary description. This is defined from the *observer's* perspective, and each participant needs separate identification in the code. In this context, different rules are needed for combination and concatenation of sexual relationships. Davies (1989) has devised such an *n*-ary system, using video sequences as sources.

⁹The modifications involve specifying the sex of the participant and the extension of sexual behaviours to include exclusively heterosexual variants such as vaginal intercourse.

¹⁰The method of sexual diaries used in these studies is documented in Coxon (1988a, 1990b) and further material (including detailed instructions to respondents) is contained in *Notes* and *Revised Notes for the Sexual Diary* (Coxon, 1986 and Coxon, 1988c, respectively).

¹¹The Inventory exists in various forms, containing differing degrees of detail. The Basic Form (as used in the WHO/GPA Homosexual Response Studies, Core Questionnaire) restricts attention to the most common sexual acts and asks only whether each variant has "ever [in the last 6 months]" been performed. The Extended Form (HRS Non-Core) contains additional acts and asks for specification by each partner.

Common Structure of Sexual Behaviour

A diagram of the basic structure of sexual behaviour (in our account) is given in Figure 1.

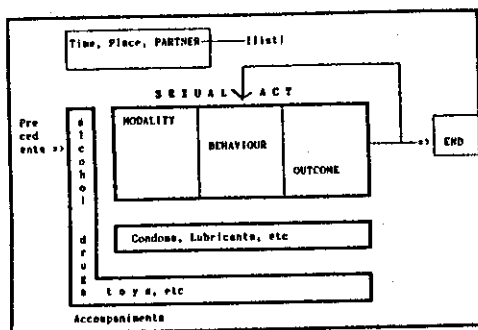


Figure 1

Components of the Sexual Session

THE SEXUAL SESSION: FRAMEWORK OF SEXUAL ACTIVITY

The main unit of sexual behaviour is *The Sexual Session*, denoted by the outer box in Figure 1. Using a linguistic analogy, which we shall later exploit more literally, the sexual session may be considered as the "sentence" of sexual activity—self-sufficient and intrinsically well-formed.

The sexual session occurs at a given (specified) time and place, consists of one or more sexual acts; and involves at least one, usually two (and sometimes more) people. It is typically terminated by sleep, a nonsexual intermission or change of partner. The characteristics of a Sexual Session thus include four components: the *Setting*, the *Precedents*, the *Accompaniments*, and the *Partner Specification*. The *Setting* refers primarily to where and when the sexual activity took place. "When" is usually the time of day, so that sexual sessions can be kept in time order, and the "Where" usually refers to the location (such as "boyfriend's flat" or "my home," or outside locations such as "Public toilet at X," or "Park Y"). The *Precedents* refer to any relevant events which preceded or led up to the sex, such as prefatory drinks or drugs, use of poppers (nitrites) or stimuli such as videos or magazines. The *Accompaniments* refer to precedents which continued during the sexual activity, together with the use of additional objects during the sexual activity, such as lubricants and "toys" (e.g., dildoes, leather or other costume). And finally, *Partner Specification* would ideally consist of the name and characteristics of the partner, such as age, sex, occupation, and relationship status.¹² However, it is often necessary to remove the actual name of a partner

¹² The characteristics requested depend on the purpose of the analysis. In some cases it is feasible to ask the identity of the partner. Where this is not feasible (or because an undertaking of anonymity has been given as in Project SIGMA), each partner is assigned a unique (arbitrary, but sequential) number and that s/he be described in terms of Partner Status (Regular, Occasional, Casual, One-off), Age, How long the subject has been having sex with the partner, Where the partner was met on this occasion, HIV antibody status (if known), and "Other" information, if known, such as occupation and characteristics found especially noteworthy, attractive or repulsive and whether payment was involved.

from the record when anonymity or confidentiality has been given, but in so doing all record linkage (for network or contact analysis) is then forgone.

The core component in describing sexual activity is what actually happens—in our terminology, the "sexual act."

The Sexual Act: Behaviour, Modality and Outcome

On the linguistic analogy, the sexual act is the *word* in the sentence, and sexual acts make up the sexual session. It is the sexual act which specifies "WHO does WHAT and with what EFFECT." These three components are called: (1) the *Behaviour* (or behaviours) which refers to the actual sexual activity itself ("what" is done); (2) the *Modality* which refers to "who [does the activity], and to whom"; and (3) the *Outcome* which refers to the "effect" of this sexual activity, which in the context of HIV transmission becomes the question of whether ejaculation of sperm occurs, and if so, to whom and in what manner. Let us specify each of these in turn.

The Sexual Act: Behaviours

We assume that a succession of (continuous) bodily movements are, or can be, "chunked" into identifiable and (well-nigh) universally recognizable sexual activity and given a common name. For instance, whilst the act of masturbation will usually have at least some unique components (for no-one does it exactly the same way, and no-one repeats the act identically), the manual stimulation of the penis by the hand is usually taken to be a necessary part of the definition.¹³ Thus, random, unintended rubbing of the penis would be excluded from the category of "masturbation."

Despite its virtual universality, and the early age at its first appearance, the nomenclature for masturbation is far from universal. Because the act of masturbation is often taboo especially among children, and frequently discouraged or prevented, it comes to be referred to by all sorts of euphemisms and code-names (often unique to the family concerned). There thus arises a hierarchy of terms of differing acceptability, from the medical terminology used professionally (and often when talking to professionals) through a widely-used set of vernacular terms to largely idiosyncratic ones. In Project SIGMA, the WHO studies, and in related studies, we have always elicited such terminology *before* proceeding to questioning on detail of sexual behaviour.¹⁴ The purpose of this is not only to gather information on "street" terminology but also to make the respondent more at ease in asking detailed information about what may be an embarrassing topic. For this reason, all our research forms including the Inventory of Sexual Behaviour are constructed with the neutral (medical) term

¹³ See Kinsey et al., 1948, pp. 497-498: "the word 'masturbation' refers to any selfstimulation which is deliberate and designed [sic] to effect erotic arousal. By such a definition, the accidental touching of oneself is not masturbation because it is not deliberate," *ibid*, *loc cit*.

¹⁴ As well as being a device for establishing preferred terminology for the interviews, it also serves as a means of collecting systematic data on the distribution of such terms and on the contexts of their use. For instance, it happened not infrequently that a respondent would give "wank" as his usual word among friends, but prefer to use "masturbation" in the interview.

in curly brackets, and the subject's chosen alternative is substituted in the spoken form. Thus:

"Have you ever (masturbated) another man to his (ejaculation)?" may be rendered in the interview as:

"Have you ever 'wanked' a guy until he 'came'?"

The set of sexual acts must be open-ended. Although the number of distinct and distinguishable sexual activities is immense, the distribution of types of sexual acts is very skewed, and a surprisingly small handful of acts (typically three) normally suffices to encompass over 95% of sexual expression. This is well illustrated from our 1986 study of British gay men's sexual behaviour using sexual diaries, where 95% of the total number of acts (*not* persons performing the acts) were either masturbation, fellatio or anal intercourse (Coxon, 1990b).

But it is the less common behaviours which often occasion the most research interest, for even their approximate prevalence is not known and yet their risk-status for transmission may be very large. This is especially true of ano-brachial (or Brachio-proctic) insertion ("fist-fucking"), which can be especially traumatic and—especially in conjunction with receptive anal intercourse—implicated as a high-risk behaviour for the transmission of HIV. Project SIGMA records 16% of British gay men as having *ever* engaged in it (Coxon, 1990b, p. 126), with an incidence of between 3% and 5% for sexual diary monthly data (Coxon, 1989).

It is not usually difficult to specify the list of the more common or well-established sex acts such as masturbation and fellatio; it is the more recently developed and ill-defined ones which cause difficulty. Thus, "Massage" can mean anything from rubbing hands over the body to systematic manipulation of muscles, and a practice like inter-femoral penile insertion ("thigh-fucking"), which tends to substitute for anal intercourse in a post-Aids era, can cover a wide range of actual practices.

In the case of Project SIGMA and the WHO Homosexual Response Studies, the following list is used.¹⁵ (The most common activities are encoded by a single letter (W,S,F) and the rest by a two-letter code. Obviously, these letter allocations are to some extent arbitrary, but in this scheme the Code letters refer to the most common "street term" for the practice, thus making it easier for subjects to make use of the code.)

¹⁵Other sexual behaviour has been included in past lists of homosexual acts, but has either been dropped with modification of the syntax and conventions of use or is now only used for studying specialized activities such as sado-masochism. Thus Anal Insertion with a Dildo (FD) and Douching (Do) are now coded separately under "accompaniments"; "scat" (Sc) is largely reserved for S-M activities; and the uncommon but regularly occurring "felching" (sucking previously inserted semen out of the anus) is coded as a *composite* act (see 2.1.3 below). "Deep Kissing" (insertion of the tongue in the partner's mouth during kissing) has a mixed history, being originally included in the list, then excluded as irrelevant, and then included again when interest focussed on transmission of CMV (cytomegalovirus). Other codes that have been used include:

Body Rubbing [Br]; Body Licking [Bl]; Nipple Sucking [Ns]; Nipple Biting [Nb]; Penis Biting [Pb]; Testicle Sucking [Bs]; and, of course, Vaginal Intercourse [V] for heterosexual behaviour.

Behaviour	Code	Percent Of Act ¹⁶
(0. Osculation ("deep kissing"))	Dk	—)
1. Masturbation ("wanking")	W	62%
2. Fellatio ("sucking")	S	22
3. Anal intercourse ("fucking")	F	9
4. Analingus ("rimming")	Ri	3
5. Body Massage	Ma	1
6. Digital-anal insertion ("fingering")	Fg	1
7. Anobrachial insertion ("fisting")	Fi	*
8. Corporal punishment	Cp	*
9. Interfemoral penile insertion ("thigh-fucking")	Tf	*
10. Lindinism ("water-sports")	Ws	*
11. Nipple tweaking/nibbling	Tt	*
		(* denotes < 1%)
12. Vaginal intercourse	V	
13. Cunnilingus	Cn	

It is a moot point whether (apart from vaginal intercourse) there is any sexual act which does not apply in both homosexual and heterosexual behaviour, since knowledge of the sex of the participants provides the necessary contexts for disambiguation (but are fellatio and cunnilingus to be distinguished as separate acts?). However, additions which can (and in the case of Project SIGMA Heterosexual Panel have been) added for male-female sexual behaviour include:

12. Vaginal intercourse V
13. Cunnilingus Cn

Modality of the Sexual Act

The *modality* of the sexual act—the prefix to the sexual act "word"—specifies *which* actor (from ego's standpoint) did what sexual act *to which* actor. A variety of contrast names exists to distinguish these two roles: inserter/insertee, active/passive, as well as "street" language such as the "doer" (usually, inserter), butch/bitch etc. Although particularly relevant to anal and vaginal intercourse, the inserter/ee contrast cannot be used generally since it carries with it a view of sexual activity as primarily insertive (and by implication, male). More importantly, the role-difference in many acts—such as masturbation—is not, and cannot reasonably be described as, that of inserter/ee. Therefore, we adopt the "active/passive" distinction as basic, and use it in accord with conventional grammatical usage to denote verbal mood (hence "modality"), noting that this also conforms to common usage among gay men:

ACTIVE means that EGO DOES the given sexual act TO ALTER

PASSIVE means that the sexual act IS DONE TO EGO BY ALTER.

Thus, "active masturbation" means that I masturbate the other person and "passive masturbation" means that the other person masturbates me. That the active/passive distinction is *not* identical to the inserter/ee distinction can be seen by the following example:

Most gay men describe fellatio as "sucking," in which case "Active sucking" means I insert my penis in the other person's mouth (i.e., I am inserter) and "Passive sucking" means the other person inserts his penis in my mouth (i.e., I am insertee). But another term for fellatio, used especially in the U.S.A. to stress the "butch" aspect, is "mouth-fuck." In this case, "Active mouth-fuck" means I am inserter, and the passive variant means I am insertee—thus reversing the modality compared to "suck." Hence, the active/passive distinction is reliant on

¹⁶The percentages refer to the number of times the behaviour occurred in a month, reproduced from the May 1986 SIGMA Sexual Diaries (N=171) data (Coxon, 1990b).

the meaning of the sexual act concerned, but (where relevant) it can simply be converted into the inserter/ee distinction.

But "active" and "passive" do not exhaust the alternatives of modality. A useful (but strictly speaking redundant) modality is mutuality, which means that both persons *simultaneously* do the same sexual act to each other. (This is not to be confused with the sequential performance of the same act, which is quite distinct).

MUTUAL means that EGO DOES the sexual act TO ALTER at the same time as ALTER DOES the same act to EGO.

So far, all the modalities have been binary—relating two distinct persons. But for many sexual activities, there is only one person involved, usually ego. So we have to make allowance for "Self"—self-masturbation being the most common and obvious one. Logically, one can make allowance for the Self modality for any sexual act, but some are more likely (or indeed physically feasible) than others. Suffice it to say that we have encountered many subjects who digitally enter their own anus, some who are able to fellate themselves and even a very occasional instance of penile insertion in one's own anus.

There is a further unary modality: when the sexual act is done by alter to him/herself. It might be thought that it would be excluded as irrelevant from an ego-centric account such as this. We were forced to reconsider this when we encountered instances of the other person doing something that could (at least in principle) lead to transmission of HIV to the subject—such as when alter masturbates and ejaculates onto the subject's chest, or uses his ejaculate as a lubricant for masturbating the subject—two relatively common activities which could lead to transmission of HIV if there were lesions on the recipient's chest or penis.

The various modalities are summarized in the following Table.

Modality	Logical Character	In Words	Code
Self	Unary, reflexive	I do it to myself	S
Him/her	Unary, reflexive	S/he does it to him/herself	H
Active	Binary, asymmetric	I do it to him/her	A
Passive	Binary, asymmetric	S/he does it to me	P
Mutual	Binary, symmetric (equivalence)	We both do it to each other at the same time	M

The Outcome of the Sexual Act: Ejaculation

The dominance of HIV transmission in our account naturally means that we concentrate primarily on ejaculation of sperm as the primary "outcome" of the sexual act. Sometimes, this was euphemistically called "orgasm" and, indeed, there were those who said they had had orgasm without ejaculation, and at least one who claimed ejaculation without orgasm.

Initially, we concentrated simply on whether a subject ejaculated or did not as the result of a given sexual act. As time went on, the inventiveness of some members of the gay community meant that we had to pay more careful attention to *exactly where* the ejaculate went (perhaps under the Safer Sex guidelines

which promulgated "On and not In your partner"), and by the increasing need to know whether that destination was a condom. Indeed, condoms began as "accompaniments" in our account and finished as an integral part of the outcome. In explaining this issue, I shall at this point ignore outcomes other than ejaculation vs non-ejaculation (ejaculation will be referred to hereafter as "orgasm") and return in the subsequent section to condoms and other destinations.

For any (binary) sexual act, there are basically only four simple outcomes we wish to distinguish:

EJACULATION:

	Ego	Alter	In Words	Code
1.	No	No	Neither ejaculates	X
2.	No	Yes	Only he ejaculates	X O
3.	Yes	No	Only I ejaculate	O X
4.	Yes	Yes	Both ejaculate	O

It might be thought (as indeed we originally did) that only a single outcome need be specified either because the act is unary (and only one person is involved) or because the combination of a given act with a particular modality leaves no doubt. Thus, if ejaculation occurs during Passive Anal intercourse, it must surely be my partner who ejaculates in me (at least as a direct result of the act) and in Active Masturbation it must surely be my partner who ejaculates. But what of Mutual Masturbation where if ejaculation occurs it could be alternatives 2, 3 or 4? Or consider a situation where my partner is the active partner in anal intercourse with me, ejaculates in me *and produces ejaculation in me* without any manual stimulation on my part? These considerations made it essential to construe the ejaculation as a two-place event.

Condoms and Other Destinations

Similar sorts of problems arose in trying to conceptualize the use of condoms, (especially in anal intercourse) and destinations of the sperm other than in the partner's mouth or anus. In the usual descriptive context, this may not be important, but thinking through the different consequences for HIV transmission made us realize that there must be no ambiguity about what happened to the sperm after ejaculation. After various trials, it was decided to modify the ejaculation to allow five, instead of two, possible outcomes: *into* a person, *onto* a person, *into a condom*, some other destination and no ejaculation.

Fuller Form¹⁷ of Ejaculation Codes:

As in the above short form, there is a two-place code, for EGO and ALTER, but instead of just coding whether or not ejaculation occurs, the detail of the "destination" of the ejaculate is also described for both partners, using the codes:

¹⁷This fuller form (referred to elsewhere [Coxon, 1988a] as "Chriscode" after its originator Chris Mitchell) is the form currently used to encode Diaries in project SIGMA.

Code	Ejaculation Destination
1. M	IN me (ego), either anally or orally
2. H	IN him (alter), either anally or orally
3. C	into a condom
4. O	ON him (alter), i.e., skin or body surface
5. I	ON me (ego)
6. X	elsewhere (e.g., on floor, or unspecified)
7. N	No ejaculation

The code is used to represent (in the first position) the destination of Ego's ejaculation and (in the second position) to Alter's ejaculation, and follows the behaviour and modality specification, separated by a comma, i.e.:

Modality	Behaviour	Ego's Ejaculate	Alter's Ejaculate
for instance:			
Active	"Wank"	H	N

i.e., I masturbated him with my ejaculate on Him and he did Not ejaculate. Other examples of its use might include:

Code	Meaning
PF,NMA	Passive ("fucking"): Ego No ejaculation, Alter ejaculation in Me, with lubricant used.
(PF&SW),XC	Simultaneous passive ("fucking") and solo ("wanking"), with Ego ejaculating "elsewhere" (not in or on the partner) and Alter ejaculating in condom in Ego
SW,N	Solo ("wanking"), no orgasm

This extended code is normally too complex for use by subjects, and only the most resolute attempt it. In the current *Notes*, the simpler form is used, but all computer coding is done with it.

Before putting all these components together to lay out the structure of sexual behaviour, three further issues must be briefly discussed: the representation of complex sexual acts; the representation of their sequencing; and the description of the accompaniments of sexual activity.

Complex Sexual Acts and Sequencing

On occasion, two (or sometimes more) sexual acts occur simultaneously in a way that may have implications for HIV transmission. For instance, masturbation is often combined with anal intercourse, but in very different forms. In this case, we introduce *concatenation* as an operator to combine two acts done simultaneously and symbolize it by the ampersand "&." Examples commonly include:

- AF & HW (Ego enters Alter anally and at the same time Alter is masturbating himself)
- PS & ATt (Ego is being fellated and at the same time tweaking Alter's nipples).

Complex (concatenated, simultaneous) sexual acts are treated as a single act.

If a sexual session contains more than one sexual act, some conventions are necessary to denote the sequence in which they occur. Normally, this is done simply by linear sequencing, using a space (or sometimes a "+") as a separator between acts:

AW PW AS PS MW

reading in longhand as:

Active "wank," then Passive "wank," then Active "suck," then Passive "suck," then Mutual (simultaneous) "wank."

Precedents and Accompaniments

The Precedents and Accompaniments give information about the context or setting of the sexual behaviour which might have relevance for HIV transmission. Although it is useful to distinguish Precedents and Accompaniments in this way, it has a degree of artificiality since there will be some things which continue before and throughout, others which are used intermittently (e.g., nitrites or "poppers"), and yet others which will refer only to a specific act (e.g., the use of a lubricant or dildo or a condom). It is usually the more general aspects which enter into the specification of the sexual session and accompaniments can, when relevant, be encoded in the range of behaviour to which they apply. Those which are of special relevance include:

Class	Examples	Sexual Act
1. Drugs	Amyl/butyl nitrites [P] Cannabis, heroin, etc. Alcohol	
2. Prophylactics	Finger stools Dental dams Veterinary gloves	Digital-anal (Fg) Anilingus (Ri) Ano-brachial (Fi)
3. Lubricants[L]	Water based Oil-based Vegetable-oil based Saliva	
4. "Toys" [T]	Restrictors ("cock-rings") "Pain-Pleasure" (belts, nipple-clamps, pendant weights) Stimulators (dildoes)	

(Note: letters in square brackets (e.g., [L]) indicate Coding symbols)

Some comments about these accompaniments are in order:

DRUGS: The most common and extensively used drugs used in homosexual intercourse are amyl and butyl nitrites ("poppers"), used to produce a rush of blood which can enhance orgasm, and which in the U.K. can be obtained without prescription in most night-clubs. Whether they are involved as cofactors in HIV transmission is a long-protracted debate of no certain outcome. Alcohol is included since this may be used to lower inhibitions (and risk-tolerance).

PROPHYLACTICS: These include condoms for anal intercourse, or finger stools for digital-anal insertion or veterinary gloves for brachio-anal insertion. They are used to prevent transmission of bodily-fluids or to protect lesions. Apart from condoms, their use is relatively uncommon.

LUBRICANTS: Much health education has centered round distinguishing the "safe" water-based lubricants which do not weaken or destroy latex rubber (such as the proprietary KY lubricant jelly, and those which also contain spermicidal and HIV-destroying Nonoxynol 9). In the past, (oil-based) Vaseline and Crisco vegetable oil have been extensively used, but since they do destroy latex, their use with condoms is counted as "unsafe." It is usually easier to ask the subject to name the brand used. It is also important to include saliva among lubricants,

not only because it is used as an emergency lubricant, but also because its role as a "bodily fluid" implicates it, however weakly, as a possible agent of HIV transmission.

"TOYS": It is unlikely that most "toys" are involved in HIV transmission, but some may produce small lesions, either externally (nipple-clamps) or internally. (Since many objects can be and are used for anal and vaginal insertion, it is worth asking what particular object/s have been used.)

Putting the Structure Together

Having now described the components of the Sexual Session and Sexual Act, we need to specify the inter-relationships and structure of the components before explaining its applications in the form of the Sexual Diary and the Inventory of Sexual Behaviour.

The formal specification (syntax) of the structure has been described in Backus notation in Appendix 2, and this also serves to define economically the coding conventions explained below.

In brief, the basic elements are (open, extendible) lists of sexual behaviours, types of modality ("modes") and outcomes ("orgasm/ejaculation"), together with accompaniments ("object" as modifiers). From these are then built the main building blocks of sexual activity: the sexual acts, which in turn are part of a sexual (sub)session.

The utility of this formalism can best be explained in the context of the Coding scheme and is therefore deferred to the following section.

Encoding Sexual Activity¹⁸

The sexual Coding Scheme evolved by Project SIGMA can be used in several ways: as a useful shorthand to describe actual sequences of sexual activity (observed directly or on a video, etc); as a recondite or cryptic reference to sexual activity¹⁹; as a simple and unambiguous encoding for data entry; as a way of specifying sexual Inventories and interview questions; and for comparing different versions and accounts. The Coding scheme is designed not only for sexologists but also for subjects and respondents themselves, who (perhaps surprisingly) find it relatively simple to use. Some subjects will prefer to adopt part of the code and use longhand description for more complicated parts, and this is a perfectly acceptable use. Indeed, we found that codes for more common activities passed into the everyday argot in some communities where we were researching.²⁰

In explaining the code, it is best to concentrate first on defining sexual acts. These consist basically of M x B x O (Modality types by Behaviours by Outcome

¹⁸The use of a shorthand code for sexual activity is probably best known in the context of the Kinsey studies (Pomeroy et al., 1982), but others exist (e.g., Marks et al., 1988). The history of erotic cryptography is fascinating in its own right (McCormick, 1980).

¹⁹This is far from a trivial use. When respondents keep sexual diaries in full form, they may refer to illegal activity or be viewed as unacceptable or pornographic by others, and the consequences may be dire, as in the case of a subject who was summarily ejected from his apartment when his landlady discovered the (longhand, explicit) sexual diary he was keeping for the project.

²⁰A good example is SWO (Self-Wank to Orgasm), which was so widely known in South Wales in the gay community that we used the slogan "Why SWO when you can be interviewed by Project SIGMA?" as a recruiting slogan and as a T-shirt design.

(ejaculation) types). In principle, this means that there are 5 x 4 acts recognized as distinct, depending on the number of behaviours chosen for inclusion. In practice, there are less, since not all modalities apply to each act (either as logically impossible²¹ [e.g., SWXO = SW,NX²² physically impossible [e.g., MFi, mutual "fisting"], unlikely [e.g., SF, anal intercourse with oneself] or irrelevant). (But it is important not to decide a priori that something is impossible; ingenuity and physical flexibility and endowment can produce surprising variants; self-fellatio with ejaculation into oneself [SSO = SS,M] and ejaculation into one's own mouth as a result of masturbation [SW,M] have occurred in our sexual diaries.)

The sexual act is normally made up of one modality, one behaviour and one outcome (in that order). If there is no outcome, it may be omitted. Examples of simple sexual acts are:

SEXUAL ACT:

Code	Translation	In Words
Short	Extended	Direct
A: SIMPLE ACTS:		
1. SW (= SW,N)	Self-"wank"	I masturbated myself (no ejaculation)
2. SWO (= SW,X)	Self-"wank"-me/orgasm	I masturbated myself to ejaculation
3. PF (= PF,NN)	Passive-"fuck"	I was anally entered (neither ejaculated)
4. PFO (= PF,NM)	Passive-"fuck"-him/orgasm in me	I was anally entered and my partner ejaculated in me
5. PF,XN	Passive-"fuck"-me/orgasm (him not)	I was anally entered and I ejaculated as a result of this stimulation
6. ARi	Active-"rim"	I orally stimulated the anus of my partner
7. MSOO MS,HM	Mutual-"suck"-me in him & he in me (both orgasm)	We simultaneously fellated each other ("69") and both came to orgasm
B: COMPLEX ACTS:		
8. AF&HW	Active-"fuck"-AND-He-"wank"	At the same time: I anally entered him and he masturbated himself (neither to orgasm)
9. PS&AW,HN	Passive-"suck"-AND-Active-"wank," me to orgasm in him, him not	At the same time: I was fellated (and came to orgasm) and masturbated him (not to orgasm)
10. ARi&AW	Active-"rim"-AND-Active-"wank"	At the same time: I orally stimulated his anus and masturbated him (without orgasm)

²¹Because SWXO would assert that I masturbated myself [SW] and, as a direct result of this, my partner ejaculated [XO]. On the other hand, SW & IIXO would correctly encode a "parallel" masturbation where only my partner came to orgasm.

²²The code is given in the simpler form first and the extended form second, so in this case SWXO means "solo-wank-I didn't come-He did come to orgasm" and SW,NX means "solo-wank, no my ejaculation his ejaculation destination other" which are identical.

Comments on these examples will help in explaining some of the more subtle points of the coding scheme:

Examples 1 & 2 illustrate the fact that it is not necessary to specify the "outcome" code when ejaculation did not occur. If necessary, it can be specified as a "null outcome," as in SW,N (or, indeed, SW,NN) as equivalent to SW.

Examples 3, 4, 5 deal with different variants of receptive anal intercourse. #3 is unproblematic. In #4, the shorter form is not ambiguous, unless it was an attempt to encode the fact that it was I that came to orgasm, not my partner. The fuller form makes the original intention clear and #5 encodes a different variant: that whilst my partner did not ejaculate as a result of anally entering me, I did. Another alternative—that I ejaculated as a result of masturbating myself whilst being anally entered—can be coded by: PF&SWOX (= PF & SW,XN).

Example 6 is unproblematic. Note that it would be possible (but unusual) for oral-anal contact to result in the recipient's orgasm: ARi,NX.

Example 7 illustrates an instance where shorter form (i.e., MSO) would be ambiguous, since it would not be clear which partner came to orgasm as a result of the mutual fellatio. The fuller form makes it clear that both do in this instance.

Example 8 is a not uncommon happening (like its complement PF&SW). No ejaculation occurs in this case, but if it does, the details can be exactly coded using the extended code, and if necessary the details of the coital position adopted can be encoded by using a supplementary code.²³

Example 9 illustrates an instance of ejaculation occurring within a complex act.

Example 10 provides a case of a person doing two sexual acts at the same time—in this case both orally stimulating the partner's anus and masturbating him at the same time.

The Sexual Diary

As will by now be apparent, the structure and coding scheme was originally developed in the context of collecting sexual diaries from sample members of Project SIGMA,²⁴ where it was important to ensure that the content (highly sexually explicit and sometimes referring to possibly illegal activity) was incomprehensible to outsiders; since the contents could also be construed as "pornography" returned through the U.K. postal system—also possibly illegal—it was important to make the contents as opaque as possible, whilst still being comprehensible to the subject.

During the course of each SIGMA interview, the subject was taken retrospectively through the previous seven days (starting at that day) and asked about his sexual activity. These data were elicited in the framework of the structure

²³Project SIGMA Coital Position Coding scheme uses iconic symbols to encode sexual positions, especially for anal (and vaginal) intercourse. For example, a symbol like "fr" is used to encode partner #1 as insertor and standing up, with #2 the receptive partner, bent at the waist.

²⁴Fuller details are contained in [Davies and Coxon, 1990], q.v. Additional document.

presented in this paper.²⁵ In this way, the subject was taught what aspects of his sexual behaviour were relevant for the diary, and a week's data were obtained. He was then asked to keep a Sexual Diary on a daily basis for the coming month and if he agreed was given a set of *Notes on Keeping a Sexual Diary*, a set of diary forms and Freepost return envelope. In the instructions, it was stressed that even partially filled diaries were useful, and respondents were encouraged to write the diary either in longhand or in code, or in a mixture of both, so long as the essential elements were included.

Sexual diaries were also solicited from the readers of *Gay Times* and other publications.

An example of how a longhand session account can be encoded now follows:

LONGHAND REPORT

We'd been drinking in a gay bar in Amsterdam, where we met. He was 30s, from Utrecht, into leather. We went back to my hotel room just after 1 a.m. and after sharing a joint, went to bed ...

First we kissed, then I sucked him and he sucked me and after that we moved into a '69' position and he came. Then I moved to fuck him and he put a condom on me with KY over it. I entered him (him sitting on me) and he was wanking himself, and we started using poppers and then I came in him and then he came over my chest. After pulling out, we kissed for a while and then went to sleep.

ENCODING

(PARTNER LIST) C3, 30s, male, Utrecht, into leather (ANTECEDENTS) Met in gay bar, Amsterdam, drinking; shared marijuana. My hotel room, 13.00 26/8/88

(DIARY ENTRY)**

MDK AS PS MSXO (AFOX/c,1 HWXO)/p MDK

** (Alternative extended coding would be: MDK AS PS MS,NM (AF,CNI HW,NI)/p)

Obviously, the subject would not have encoded his own diary in this manner, and only a *cognoscento* could do so. There is usually, therefore, an editing phase to check a subject's coding or encode a longhand version. Details on editing and software representation are contained in a later section together with discussions of reliability and validity of this method.

²⁵The interviewer's instruction, repeated on the actual diary form, states:

Remember: each entry should include:

Time: Place: Number Code of other person/s (if any) from the Partner List; What happened: (who did what to whom), viewed from YOUR position, including Who (if anyone) came to orgasm and whether the orgasm was ON or IN the person; and finally: Accompaniments (Condoms, Lubricants, Dildoes, Poppers, Toys, Drugs, Alcohol).

The "Partner List" is a "dramatis personae" listing characteristics (relationship status, age, how long the sexual relationship has been, where they met (for casual partners) and HIV status, if known) and a sequential code number for reference in the diary. Our Undertaking of Confidentiality guaranteed we would not use actual names in the records.

The Inventory of Sexual Behaviour

The Inventory of Sexual Behaviour (ISB) is a method of collecting systematic information about sexual behaviour which implements the structure of sexual behaviour presented in this paper. It is not so much a single Research Instrument as a method for constructing any number of such inventories which have the important quality of being mutually compatible and comparable. The chief advantages of the Inventory are that it is flexible, adaptable to different methods of data collection and settings; it can easily be adapted to differing lengths and complexity and to new behaviours; it is gender and orientation-free, usable for hetero-, bi-, and homosexual populations; and finally, it is adaptable to different time periods.

FLEXIBILITY

The ISB was designed primarily for use in an interview situation but was quickly adapted to use both as a self-administered instrument and as a Clinic-based checklist for use in taking a sexual history. It is now used routinely not only in Project SIGMA and associated projects and Clinics, but is also used by all national studies as part of the Core (Mandatory) section of the Question Schedule of the WHO/GPA Homosexual Response Studies. Because it is based on the simple structure of the SBC (Sexual Behaviour Code), it is easily memorizable and can be (and is) used to report sexual behaviour in covert contexts such as locations of casual sexual encounters.

Forms of the ISB vary from the simplest (designed to elicit information on anal intercourse only, which is 4 items long), through the basic heterosexual/homosexual behaviour (covering the four most common behaviours; 16 items long) and the fullest (which explores the 3 principle modalities for 6 main behaviours, looking at different genders of partners, condom use and differential behaviour between partners; this amounts to 720 items, but averages a completion time of only 18 minutes).

GENDER AND ORIENTATION FREE

As far as possible, the items are kept as free of gender or orientation-marking as possible. This is mostly done by including the sex in the structure of the item ("... with a man?", "with a woman?"). Obviously, a sexual behaviour such as vaginal intercourse is intrinsically heterosexually marked, but variants such as fellatio and cunnilingus can be dealt with as "oral-genital" sex. Some problems also arise in terms of outcomes, since only males ejaculate, but again, this can be generalized to "orgasm" if desired.

ADAPTABLE

Two of the most frustrating aspects in comparing sexual behaviour studies concern the differing time periods over which subjects are asked to make an estimate (e.g., "in the last week," "in the last month," "in the last year," etc.) and whether the response options provided are categorical ("Ever/Never")²⁶ or

²⁶An interesting variant which we have used in SIGMA is the trichotomy: (Ever/Once only/Never) since for some sexual behaviours there is the significant category of "I tried once, only once, and I didn't like it, so never again."

numerical ("How many times ..."). In the ISB, both these factors can be varied according to wish.

Question Format in the ISB

The simplest question format involves Behaviour and Modality only, e.g.,

Have you ever (masturbated)²⁷ yourself?

but (probably) the most complex structure would be illustrated by:

*How often /in the last month/have you (masturbated)/your (male) partner number
I/to his (ejaculation)/with him using a condom?*

which involves seven factors: Frequency, Behaviour, Modality, Outcome, Gender, Partner Number and Condom (though not in that order). We have seen that Behaviour, Modality and Outcome make up a Sexual Act, so the only additional elements are Frequency, Gender and Partner number.

Any variant of the ISB can be defined by the combination of which of these factors are used, and what elements are chosen for each factor:

Factor	Name	Comment
1. F	Frequency	Essential. Alternatives: (Categorical (Ever) or Numerical (How often) + Time period)
2. B	Behaviour	Essential. Number of behaviours at choice
3. M	Modality	Active and Passive essential. Usually including Mutual, and sometimes Self
4. O	Outcome	Optional. Ejaculation or orgasm
5. G	Gender	Optional (though to omit this factor presupposes a given sexual orientation)
6. C	Condom	Optional.
7. P	Partner number	Optional. Allows the distribution of sexual acts over different partners to be investigated, and can include "casual" as a generic alternative.

Using these factors, it is possible to describe concisely any variant of the ISB by specifying what factors and constituent components go to make up the particular version. In order to make the specification exact, it is sometimes useful to add an INCLUSION or EXCLUSION list detailing any peculiarities of a given version. Given the specification, it is simple to generate the Inventory itself. Thus, the simplest (male) ISB (detailed in Appendix 4) can be defined as:

F x B x M x G x O, with
 F = ((i)Ever; (ii) Last month (f))
 B = (Masturbation, Fellatio, Anal Intercourse)
 M = (Active, Passive)
 G = (Male, Female)
 O = (With, without orgasm)
 and the inclusion list:
 INCLUDE (SW, SWO; AVF, AVFO).

²⁷A reminder: terms in curly brackets {} are substituted by the subject's preferred term when administered verbally.

Given that specification, the question format can be generated as:

HAVE YOU (Factor)
 EVER /IN THE LAST MONTH F
 (MASTURBATED) B
 YOURSELF M
 TO YOUR (ORGASM)? O

which with "street" substitution might read as:
 "Have you ever wanked yourself? ... and come?." A more complex version also exists (and is available upon request). This is the shorter version of the World Health Organization Homosexual Response Studies Core Schedule, defined as:

F x B x M x O x G x C, with
 F = (Ever, last six months)
 B = (Masturbation, Fellatio, Anal Intercourse, Vaginal Intercourse)
 M = (Active, Passive)
 O = (With, without Ejaculation)
 C = (With, without Condom).
 INCLUSION (SW, SWO; ARi(F,M), PRi (F,M).

(Note that the WHO ISB also includes in O the variant ("where he pulled out before ejaculation," i.e., the "On" of the longer Outcome list).

Issues in the Reliability and Validity of Sexual Diaries and the Inventory

At this stage, the test/retest reliability of the Inventory is still under investigation, and the overall correlation averages 0.84 for the Shorter version (and 0.93 for rank-order correlation). Full reliability tests will be made for the various components/behaviours (because reliability is higher, for instance, with the most salient act of anal intercourse than for masturbation) and for different length variants. (For example, for those with more than one regular partner, reliability is higher within each partner-relation.)

Reliability of the Sexual Diaries is rather more difficult to test, since no subject can be expected to keep two diaries in parallel and without comparison. However, the one-week retrospective Interview Diaries provide a more reasonable proposition, and in the current wave of 1991 SIGMA interviews, a random subset of subjects is being asked to repeat the information later in the interview. Nonetheless, cross-method validation is not so difficult since subjects are also asked to estimate the frequency with which they have performed the various acts over month-periods, and in some instances this month and the Diary month are identical. Earlier pretests (reported in Coxon, 1988c) indicated that Diary/Inventory estimates are generally in quite good *monotonic* agreement, but subjects differed markedly but consistently in under- or over-estimation,²⁸ and this carries over into the estimation for other factors such as the number of sexual partners.

A more interesting variant of checking the validity of the Sexual Diary data occurs when both members of an exclusive relationship are project subjects and are interviewed either at the same time or sequentially, so that no collaboration

²⁸This was measured by the simple expedient of regressing the Inventory estimated frequency on the counts derived from the Sexual Diary. The sign of the beta coefficient gives the under/over estimation and the slope the extent of the correction. The correlation gives the goodness of fit of the two estimates. (See Coxon, 1986, Table 2).

or collusion is possible (see Abramson, 1988, p. 338). At present, our investigations of this are not systematic, but preliminary results are interesting, suggestive and encouraging.

An example is the following case. The subjects are a sexually exclusive couple in their late twenties who co-habit and had been in the relationship six months at the time of the data collection. They were interviewed in their house at the same time by separate interviewers, and the interview included the retrospective week-long Sexual Diary, taken by the interviewer. The couple's sexual week is reproduced (in the interviewers' simpler version of Code) in parallel below:

Day	Subject #1	Subject #2
WED	pm, P1: MDk AFOX	pm, P1: MDk PFXO
THURS	pm, P1: MDk AFO	(Cannot remember)
FRI	pm (S in L*) P1: MDk AFOX	(Cannot remember)
SAT	am P1: AF (then shopping) pm P1: AFOX	am: P1: PF pm P1: PFXO
SUN	am P1: MDk MWOO pm (S in L*) P1: MDk ABo PBo MWs PW ATi (ARi AFOO)/p	am P1: MDk MWOO pm (S in L*) P1: MDk PBo ABo MWs AW PRi PFOO
MON	am P1: MDk MWOO pm P1: MDk MWOO MDk PW AW AF MWOO	am P1: MDk MWOO pm P1: MDk AW pW PF MWOO
TUES	pm SWO/P	

(S in L*) means that the subject was dressed in leather.

Codes which are compatible between the two accounts are underlined

Several points here are worth comment. All Subject #2's reported acts are compatible with those of his partner, as are those in Subject #1's slightly fuller account, which includes an additional three (non-solitary) acts, and two days which Subject #2 could not recall. In this example, anal intercourse is entirely single-role: if Subject #1 engages in anal intercourse he is always insertor, if Subject #2 does, he is always insertee. Masturbation, on the other hand, is varied—either mutual, active or passive—and fellation does not occur in this week. Their repertoire also includes some "light S&M" activities: "Water-sports" (Urination on), "Bondage" (Tying up), and the use of leather. In terms of patterns (Davies 1989), the sex is therefore mostly role-ist (dominant/active vs dominated/passive) rather than reciprocal, and the sexual sessions are all end-marked by ejaculation (more often on Subject #1's part).

It should be repeated that agreement is not usually as good as this, and one often encounters sessions with misplaced days and different detail. But there does appear to be considerable structural similarity in accounts (role/reciprocal and ejaculation end-marking).

Representation and Analysis

The representation and analysis of the ISB are straightforward matters. They produce rectangular data (N subjects by p variables), are simply represented in that format by any conventional data analysis package such as SPSS or SAS, and may be analyzed by any relevant statistical or test-analysis procedures. The only caution is that since such data are often only ordinally reliable, caution should be exercised in their analysis by parametric and linear

models, with a preference being for non-metric procedures (Tukey data exploratory analysis and ordinally invariant methods such as multidimensional scaling [see Coxon, 1982]).

Sexual Diaries

Diary information, on the other hand, yields challenging and novel data. Although special-purpose software packages are now available, and preliminary analysis has usually to be done on the diary data before they become susceptible to further analysis. The strategy followed in Project SIGMA is to employ a simple, easy to use, "flat" database (CARDBOX-PLUS) as a data input medium and use it for simple logical checks and analyses and counts, and then output the results in a machine-readable form for later analysis by purpose-written program packages.

In the data base context, the sexual session becomes the RECORD, and the sexual act/s the main field (ACT) with additional fields for identifiers, partner references, general-purpose retrieval variables (age, site, relationship-type) and important tags (e.g., whether or not condoms were used). As an illustratory example, the sexual session from the previously described "Longhand Report" is encoded in cardbox as follows:

NO CF887	I TYPE II	I STATUS: N	I DAY: Fri	I DATE: 26/08/86
TIME: 13.00	I PLACE: My hotel room, Amsterdam			
PERSON: C3 [30s, male, Utrecht, into leather]				
ACT: MDK AS PS MS, NM (AF,CN/ HW,NI)/p MDK				
POPPERS: Y	I CONDOMS: Y	I LUBS: Y (ky)		
OTHER: Met in gay bar; smoking marijuana				
DRUGS: Y				
OTHER CODES:				

The main shortcoming of a "flat" data base is that it is non-relational, and therefore there cannot be direct linkage to a Partner file. However, such a record can later be exported to a dBase file and given partner relation. However, much simple exploratory analysis of such data consists of finding examples of particular behaviours and patterns of behaviour, and then counting them (since the record is normally the session rather than the individual, the unit of counting is the session; sessions have to be aggregated up to the individual to get individual incidence data). An example of the logical instructions in CARDBOX to obtain the records that contain an instance of "receptive anal intercourse where a condom was not used" is given below:²⁹

²⁹In CARDBOX instructions, fields (such as Acts and Condoms) are selected and matched by a frame. The symbol "+" means "any sequence of letters."

CARDBOX-PLUS
File contains 844 records

file = A:CFWAVE1.FIL

Level 1: SELECT AC/+F+ 86 records selected

86 ACTs contain a behaviour with F (i.e. including anal intercourse)

Level 2: SELECT CO/N 40 records selected

of these, 40 did Not use a Condom

Level 3: EXCLUDE AC/+AF+ 20 records selected

removing 20 instances of active "fucking," leaves only passive

i.e., of the 844 sexual sessions, 20 [2.4%] were instances of receptive (passive) anal intercourse where a condom was not used.

The linguistic analogy for the structure of sexual behaviour is more than that. Because Sexual Sessions are "sentences" and Sexual Acts are "words," and these words are prefixed and inflected, these data can be analyzed by programs designed for linguistic and content analysis. In particular, facilities such as KWIC ("Key Word in Context") are excellent for examining the context and immediate neighbourhood of chosen activities. Taking receptive anal intercourse again, the following (part) of a KWIC analysis of some of our 1986 Diary data make this clear:

ID	HIV	Date	SEXUAL SESSION	Partner #
0267	NT	11/10/86	AS PS MW PFg AFg PFO AF AWO PWO	P2
		12/10/86	AW PW PS PFg PFO PWO	P2
X008	NT	14/06/86	AFO/p,c PFO /p,c	P1
X009	NEG	01/06/86	MS PFO &SWO	X3
		06/06/86	PFO /c	X4
		22/06/86	AS PFO	P1
		14/08/86	AFO PFO	X5
		20/08/86	PFO MS	P1
		24/08/86	PFO	X1
0008	NEG	01/06/86	AFO PFO	P1
		07/06/86	AFO/c PFO/c	P2
0006	NEG	18/05/86	PFO AWO	P1
X025	POS	29/05/86	PFOO/p,l	P1
		30/05/86	PFOO/	X1
		07/06/86	MW MS PFOO/	P2
		13/06/86	PFOO/p,l	P1
		18/06/86	PFO/p	P1
M277	NT	08/12/86	PS PF/c MWO	P5

By the use of KWIC, a person's (or a group's) behaviour can be examined in terms of background factors such as the distribution by HIV status and within person in terms of his different relationships ("P" here means regular partner and "X" a casual partner).

Patterns are also easier to discern in this format; without over-interpreting these sample (but genuine) data, it looks as if:

— 0267 tends to longer or more varied sessions when receptive anal intercourse is involved and that being fellated to his ejaculation (PWO) is an end-marker for him, whereas

— for X025 (who is HIV positive) PFO (or PFOO where both come to ejaculation), is the end-marker, whoever the partner is, and sometimes it is the only activity.

(In both cases, of course, the subject comes to ejaculation; itself a common more general end-marker)

— following Davies (1989) analysis of such data, 0267 displays a consistent "reciprocal" pattern, whilst X025 shows a role-centred (submissive) pattern.

It is worth commenting that (in this group, and of 1986) X008 is the only subject who consistently uses condoms.

The detection and comparison of *sequences and patterns* is a crucial development in this area and only really possible with such data. The beginnings of such analysis seem to us to focus on precedents and successors of particular acts using the technology of Levenshtein distance (Sankoff and Kruskal, 1983) to compare sequences systematically. It is also now clear that generally available special-purpose software is highly desirable and has now been designed and tested.³⁰

CONCLUSION

In this paper, we have provided a specification of the structure of sexual activity sufficient to represent detailed sexual behaviour sequences which are relevant to the transmission of HIV. The structure is both close enough to subjects' accounts to enable simple use and it is precise enough to allow it to be represented formally as a language-like simple algebra. Finally, the structure thus defined provides the means for defining research instruments of very different forms (inter alia systematic Inventories, Life Histories and Diaries) which are both flexible and comparable. We therefore commend them to the research community.

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³⁰Details of the version 2.0 of the Project Sigma SEXDIARY program are available from the author.

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APPENDIX ONE

In Question Schedule 1 of Project SIGMA, subjects were asked to give their "preferred name" for a range of common sexual terms. These were then substituted in questions using the terms. Although there was some differences in usage by areas (e.g. South Wales had unique terms like "bonking" for (anal) intercourse), distributions were markedly similar.

PREFERRED TERM FOR SEXUAL TERMS

PREFERRED TERM FOR "PENIS"

53% XXXXXXXXXXXXXXXXXXXXXXXXXXXX COCK
18% XXXXXXXX PRICK
15% XXXXXXXX PENIS
8% XXXX DICK
5% XXX WILLY
1% X OTHER

PREFERRED TERM FOR "SEMEN"

44% XXXXXXXXXXXXXXXXXXXXXXXXXXXX COME/CUM
36% XXXXXXXXXXXXXXXXXXXXXXXXXXXX SPUNK
8% XXXX SPERM
5% XX SEMEN
6% XXX OTHER

B. PREFERRED TERMS FOR SEXUAL BEHAVIOURS

PREFERRED TERMS FOR "MASTURBATION"

77% XXXXXXXXXXXXXXXXXXXXXXXXXXXX WANK
18% XXXXXXXX MASTURBATION
4% XX PULL/TOSS OFF
1% X OTHER

PREFERRED TERMS FOR "FELLATIO" (ORAL SEX)

61% XXXXXXXXXXXXXXXXXXXXXXXXXXXX SUCK
21% XXXXXXXX BLOW-JOB
8% XXXX FELLATIO
8% XXXX ORAL SEX
2% X OTHER

PREFERRED TERM FOR "(ANAL) INTERCOURSE"

62% XXXXXXXXXXXXXXXXXXXXXXXXXXXX FUCK
20% XXXXXXXX SCREW
14% XXXXXXXX INTERCOURSE
4% XX OTHER

APPENDIX TWO: SYNTAX OF SEXUAL STRUCTURE CODES

<SESSION> ::= (<ACT> | <SUBSESSION> <CONJUGATOR> <SESSION>)
<SUBSESSION> ::= (<ACT> | (<SESSION>) <MODIFIER>)
<ACT> ::= (<MODE> <BEHAVIOUR> <EGO'S ORGASM> <ALTER'S ORGASM> <MODIFIER>)
<MODE> ::= (S|H|A|P|M)
<BEHAVIOUR> ::= (W|S|F|R|I|Fg|Dk|Fl ...)
<EGO'S = ALTER'S ORGASM> ::= (O|I|E|C|X)
<MODIFIER> ::= (null | / <associated object list> <modifier>)
<OBJECT> ::= (P.L.D.T. ...)
<CONJUGATOR> ::= (space | + | &)

NOTES

1. The symbol " ::= " may be read as "can be replaced by" or "consists of": it links the basic term (definiendum) on its left hand side and its specification on the right. The symbol " | " may be read as "or" or "such that". The most fundamental units (behaviours, modes, orgasm/ejaculation, conjugators and objects or "accompaniments") are specified as a list of letters denoting the contents in the code.

2. The more complex units (session, act, modifier) are built out of these units, so that the hierarchy is:

{behaviours,modes,outcome/s} => {ACTS} <= {modifiers, objects}
(conjugators)
(sub){SESSIONS}.

3. I am grateful to Chris Mitchell with whom we developed the first version of this specification.

SEXUAL BEHAVIOUR STUDY- CORE QUESTIONS SCHEDULE

No.	Questions and filters	Coding categories
C.6.2	<p>Sexual Behaviour in the past six months have you ever done the following sexual acts?</p> <p>INVENTORY OF SEXUAL ACTS (SHORT FORM)</p> <p>Have you:</p>	<p>In last six months? (Y, N)</p> <p>(A) [MASTURBATED] yourself without (your) [ejaculation]? to (your) [ejaculation]? <input type="checkbox"/> <input type="checkbox"/></p> <p>a female? <input type="checkbox"/></p> <p>a male without (his) [ejaculation]? to (his) [ejaculation]? <input type="checkbox"/> <input type="checkbox"/></p> <p>BEEN [MASTURBATED] BY</p> <p>a female without (your) [ejaculation]? to (your) [ejaculation]? <input type="checkbox"/> <input type="checkbox"/></p> <p>a male without (your) [ejaculation]? to (your) [ejaculation]? <input type="checkbox"/> <input type="checkbox"/></p>
	<p>Have you:</p>	<p>(B) [FELLATED] a female? (cunnilingus) <input type="checkbox"/></p> <p>a male without (his) [ejaculation]? to (his) [ejaculation]? where he pulled out before [ejaculating]? where (he) wore a condom? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>BEEN [FELLATED] BY</p> <p>a female without (your) [ejaculation]? to (your) [ejaculation]? <input type="checkbox"/> <input type="checkbox"/></p> <p>a male without (your) [ejaculation]? to (your) [ejaculation]? where you pulled out before [ejaculating]? where (you) wore a condom? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>

SEXUAL BEHAVIOUR STUDY- CORE QUESTIONS SCHEDULE

No.	Questions and filters	Coding categories
	<p>Have you:</p>	<p>(C) [ANALLY ENTERED] a female without (your) [ejaculation]? to (your) [ejaculation] (you) with a condom? (you) without a condom? where (you) pulled out before [ejaculating]? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>a male without (your) [ejaculation]? to (your) [ejaculation] (you) with a condom? (you) without a condom? where (you) pulled out before [ejaculating]? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>BEEN [ANALLY ENTERED] BY</p> <p>a male without (his) [ejaculation]? to (his) [ejaculation] (him) with a condom? (him) without a condom? where (he) pulled out before [ejaculating]? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
	<p>Have you:</p>	<p>(D) [VAGINALLY ENTERED] a female without (your) [ejaculation]? to (your) [ejaculation] (you) with a condom? (you) without a condom? where (you) pulled out before [ejaculating]? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p>
	<p>Have you:</p>	<p>(E) [ORAL-ANALLY STIMULATED] a female? <input type="checkbox"/> <input type="checkbox"/></p> <p>a male? <input type="checkbox"/> <input type="checkbox"/></p> <p>BEEN [ORAL-ANALLY STIMULATED] BY</p> <p>a female? <input type="checkbox"/> <input type="checkbox"/></p> <p>a male? <input type="checkbox"/> <input type="checkbox"/></p>

APPENDIX FOUR:

INVENTORY OF SEXUAL BEHAVIOUR (male)

<u>HAVE YOU:</u>	<u>EVER?</u> (Y,N)	<u>IN LAST MONTH?</u> (f)
<u>(MASTURBATED)</u>		
yourself?		
to your orgasm?	[]	---
a <u>female</u> ?	[]	---
a <u>male</u> ?	[]	---
to his orgasm?	[]	---
<u>(BEEN MASTURBATED) BY</u>		
a <u>female</u> ?	[]	---
to (your) orgasm?	[]	---
a <u>male</u> ?	[]	---
to (your) orgasm?	[]	---
<u>(FELLATED)</u>		
a <u>female</u> ?	[]	---
a <u>male</u> ?	[]	---
to his orgasm?	[]	---
<u>(BEEN FELLATED) BY</u>		
a <u>female</u> ?	[]	---
to (your) orgasm?	[]	---
a <u>male</u> ?	[]	---
to (your) orgasm?	[]	---
<u>(ANALLY ENTERED)</u>		
a <u>female</u> ?	[]	---
to (your) orgasm?	[]	---
a <u>male</u> ?	[]	---
to (your) orgasm?	[]	---
<u>(BEEN ANALLY ENTERED) BY</u>		
a <u>male</u> ?	[]	---
to his orgasm?	[]	---
<u>(VAGINALLY ENTERED)</u>		
a <u>female</u> ?	[]	---
to (your) orgasm?	[]	---