

## Culture and sexual behavior

Silvia Ubillos, Darío Paez and José Luis González\*

University of the Basque Country, \* Burgos University

This study correlates the national means of self-reports of sexual relations in stable couples and the mean percentage of people with extramarital affairs with the climatic, socio-economic and cultural (religion and Hofstede's dimensions) characteristics of the 25 countries to which the samples belongs. Low uncertainty avoidance, low Catholicism and Protestantism, dominance of Buddhism and high power distance were associated with less sexual permissiveness. Sexual permissiveness was associated more with the religious aspects of culture. Higher mean sexual frequency was associated with social development, individualism, low power distance and low dominance of Animism and Buddhism, to Catholicism and uncertainty avoidance, and cultural femininity. Results confirm the important role of socio-economic development, raise questions on the negative view of Christianity and the positive view of oriental religions.

*Cultura y Conducta Sexual.* Esta investigación correlaciona las medias nacionales de auto-informes de relaciones sexuales en parejas estables y el porcentaje de personas con relaciones extramaritales con las características climáticas, socio-económicas y culturales (religión dominante y dimensiones culturales de Hofstede) de los 25 países estudiados. La baja Evitación de la Incertidumbre, la poca presencia del Catolicismo y Protestantismo, la predominancia del Budismo y la alta Distancia al Poder se asociaban a menor permisividad sexual (menor porcentaje de relaciones extramaritales). La permisividad sexual se asociaba más con los aspectos religiosos de la cultura. Una media alta de frecuencia sexual se asociaba al desarrollo social, al individualismo, a la poca predominancia del Animismo y Budismo, a la predominancia del Catolicismo, a la Evitación de la Incertidumbre y a la Femenidad Cultural. Los resultados confirman el importante rol del desarrollo socio-económico para la calidad de vida sexual, así como despiertan dudas sobre la visión negativa del Cristianismo y positiva de las religiones orientales en relación a la sexualidad.

In this article we will review cultural differences in sexual behavior concerning two specific aspects: frequency of sexual intercourse in stable partners, and percentage of people who have sexual relationships with more than one person. Frequency is an index of sexual activity, and extra-marital sex (having sexual relationships with one or more people different from one's normal or stable partner) is an index of sexual permissiveness.

Variability in number of partners, extra-marital sex and frequency of sexual intercourse have been well documented in anthropology for simple societies, and more recently, and by means of sexual surveys, for complex societies.

With regard to the number of sexual partners in the so called «simple» societies (without cities and class differences), in most of these polygamies (marriage with more than one spouse) is accepted, although most people in the world live in monogamic cultures. Out of the 849 societies studied in Murdock's ethnographic atlas, 708 are polygenic (one husband for various wives), and only 4 are polyandric (a wife may have various husbands). Moreover,

the 4 polyandric cultures are at the same time polygenic (Kenrick, 1994). 54% of the societies found in the «Human Relations Area File» archives (HRAF) allow extra-marital masculine sex, and this was practiced in 69% of these societies. In another 11% of societies feminine extra-marital sex was permitted, being put into practice in 57% of these cultures (Ember & Ember, 1997). Differences among complex societies or nations are very important with regard to extra-marital sex. A practice which is non-existent among Asian women, scarce among western regions (13% of french males and 5.7% of french women), some Latinamerican and African countries. While it is important, although by no means affecting a majority of people, in other African and American countries. For instance in French Guayana, the percentage of men who have relations with other people different from one's spouse is three times higher than in France, for women it is twice as high (Giraud et al., 1995). In the western world there is a predominance of serial monogamy over concurrent couples or multipartnership (Wellings et al., 1994). In a northamerican study (Kolata, 1994), the fidelity indexes were relatively high: 75% of married men, and 85% of married women were faithful to their companions during their lifetimes. Similar results have been found in Spain (Usieto & Sastre, 1996), France (Spira & Bajos, 1993), and England (Wellings et al., 1994). In Africa, certain forms of polygamous relationships are normative. In some of these cultures polygamy, generally polygynia, is a feature in approximately 25-50% of married couples. Mo-

---

Correspondencia: Silvia Ubillos  
Department of Social Psychology  
University of the Basque Country  
20080 San Sebastián (Spain)  
E-mail: ubillos@facilnet.es

reover, it is informally accepted that a man may have more than one partner. Stable relationships between married men and semi-autonomous women, who obtain economic rewards in exchange for having sexual relationships with men, is a frequent resource in those societies in which the relationship man/woman favours the former, and in which sexual activity and the exchange of favours is classified within the same area of behavior. Although in some parts of Asia polygenia is also approved of, only 3-4% of married couples practice it (Rushing, 1995). In summary, results confirm that most sexually active adults are faithful, especially in Asia (although on the other hand in some countries, especially Thailand, visiting prostitutes is socially acceptable), on a medium basis in the western world, and only in Africa and the Caribbean having more than one sexual partner is an important, although not widespread, reality.

Anthropological research has found a variability in frequency and acceptance of sexual activity in simple societies. We find societies in which sexual intercourse is practiced at least once per night (Crow, Lepcha in the Himalaya), at least three times per night (Australian Aranda and the Chaga from Tanzania), or cultures in which sexual intercourse only takes place once per week, with periods in which for years after a birth there is no sexual intercourse (i.e. the Keraki in New Guinea, Danis, Cheyennes) (Katchadurian & Linde, 1979; Nieto, 1989).

Before there were extensive sexual surveys, the dominant perspective was that the medium average of sexual relationships was between two and two and a half times per week. Comfort's well known sex manual states that an average of less than twice per week indicated that there was some kind of sexual problem (cited in Sandfort et al., 1998, p. 111). For instance it was stated that the lowest frequency was once a week, in for example the Keraki in Southafrica (Gerhard, 1987). Recent northamerican and european surveys stress that the western population is less sexually active than what was thought until now. The northamerican study suggests that the medium average of sexual relationships is one per week. Only 8% of men and 7% of women state that they have four or more sexual intercourses per week (Kolata, 1994). In England, the median of heterosexual relationships, during the last month, was never higher than 5. Similar results have been found in France (Spira & Bajos, 1993). When examining western sexual activity, Weatherford stated that the European and American societies are like the Dani or Cheyenne due to their major interest in violence and war in comparison to sex. Since men must dedicate an important part of their youth toward military preparation they have little time for erotic preparation. On the other hand, although they do not avoid fighting when is necessary, men in Polynesia, parts of Africa and great portions of the Amazon, devote considerably more time towards learning sexual techniques. The more time and energy a society or individual devotes to violence and fighting the less time and energy there is for sex and erotism (Weatherfor cited in Nieto, 1989). Nevertheless, this low sexual activity is not only typical of western societies. Recent surveys carried out in developing countries show sexual behavior frequencies similar to those found in the West and in societies labelled as of lower sexual activity. Probably this reality includes all complex societies and not only western societies. Frequency of sexual intercourse in married or stable couples in 14 developing countries ranged from less than once a week to two per week. (Cleland & Ferry, 1995; Hubert, Bajos & Sandfort, 1998).

### Cultural differences and sexuality

We will now analyze how differences in activity and sexual permissiveness is associated with differences in cultural values' syndromes.

A culturalist explanation of sexuality will stress the importance of norms and values, aims and principals in life, such as hedonism and personal autonomy in individualistic societies, and group loyalty and emotional dependence in collectivistic cultures (Price-Williams, 1985; Triandis, 1994). Defining culture as a cultural programming of the mind which differentiates one group from another, Hofstede described 4 cultural dimensions: Power distance, Individualism-collectivism, Masculinity-femininity and Uncertainty avoidance (see Gouveia & Ros and Basabe et al's articles).

Hofstede's (1991) dimensions and scores were obtained with an underrepresentation of african and asian cultures. For this reason, many of these countries were assigned global or regional scores. On the other hand, there are currently available statistics which allow us to have a somewhat rough, although valid, view of the type of dominant religion, which will serve to complete Hofstede's results.

It is important to note that in our research, we will study not only dominant cultural values, but also religion as a cultural determinant of sexuality. Religions are relevant for our study for 2 main reasons:

1. They are one of the most important sources of norms and values in a given society.

2. Religions are historically and sociologically associated with cultural dimensions: Protestantism with individualism, Muslim religion and Confucianism-Buddhism with collectivism, and Catholicism with uncertainty avoidance.

### Power distance, cultural masculinity, uncertainty avoidance and sexual behavior

Hofstede's research has shown that subjects from high power distance cultures value conformity and women's obedience towards their spouses, and children's obedience to parents. They also support autocratic and authoritarian attitudes. In cultures in which high power distance and respect towards authorities is valued, self-control rules against extreme exhibition of emotions will be more salient (Smith & Bond, 1993). In these cultures subjects feel and express less emotions, both positive and negative, because the social expression of excessive positive affect could mean lack of deference (Basabe et al., 1999). In this sense, erotic activation and sexual contact could be lower in these cultures. Nevertheless the fact that in these societies a man has more power than a woman could also be associated with a higher frequency of sexual intercourse due to men's imposition. For example, masculine dominance is very strong in indian, asian and african cultures, and feminine obedience is normative, in particular in relation to sexual activity and procreation. The view of women as a sexual object is explicit (Fainzang & Journet, 1991; Rushing, 1995). Masculine cultures value competition and economic success, are less permissive and reinforce gender differences (Hofstede, 1991; 1998). Since these cultures value performance and being competitive, coupled with a more classic masculine image, cultural masculinity could be associated with more masculine sexual activity due to the fact that men must show their «excellence» in sexual performance (Gilmore, 1994). Reviewing surveys on sexual behavior in Europe, results showed that the difference in favor of men in sexual in-

tercourse was higher in those countries in which gender differences were stronger (Sandfort et al., 1998). These results suggest that in masculine cultures men tend to engage in more sexual activity or that they overestimate it more than women. On the other hand feminine cultures are more permissive, value more quality of life and accept the complementarity of sexes. Men suffer less anxiety when performing their role, they may act more modest, and communicate more with women. Emotional well-being is higher in developed feminine cultures (Arrindell et al., 1997). Due to these facts sexual frequency could be higher in feminine cultures with a better emotional climate in which there is less normative pressure, less restrictions and more affective complementarity between sexes. Men from masculine cultures (mexicans in the USA) show more negative attitudes towards sexuality and state lower levels of sexual activity than those subjects belonging to cultures which emphasize less gender differences (Padilla & O'Grady, 1983, cited in Baron & Byrne, 1994). Women from these cultures which emphasize dependence, obedience and feminine virginity also show more sexual inhibition (Bergos, Díaz & Volland, 1988, cited in Baron & Byrne, 1994).

The uncertainty avoidance dimension refers to the degree in which members of a culture feel threatened by unknown situations. Cultures with strong uncertainty avoidance emphasize formal roles and social control. These cultures have a strong need for predictability. They frequently (i.e. Greece) tend to be more anxious and expressive, it is socially acceptable to raise one's voice and express emotions non verbally. Emotions are externalized. In cultures with low uncertainty avoidance anxiety is relatively low, people do not need to worry too much about avoiding ambiguities. Aggression, and emotions in general, are not supposed to be expressed. Emotions are internalized (i.e. Great Britain). Previous studies have confirmed that uncertainty avoidance is related with more anxiety, and with less well-being or with unpleasant emotional experiences (Arrindell et al., 1997; Hofstede, 1991).

In developed countries high uncertainty avoidance correlated with anxiety, low trust in institutions and the society's degree of catholicism. High uncertainty avoidance cultures see danger and pollution which they try to avoid by means of explicit rules. The quest for security prevails in these societies. Confessing one's sins, rejection of sex outside of marriage, double standards and acceptance of masculine sexuality characterize the developed catholic countries from southern Europe (Brandes, 1991). Moreover, high uncertainty avoidance societies are stressing societies, but who also accept emotional expression and intense emotional vividness, at least in some continents (Hofstede, 1991; Basabe et al., 1999). Due to its normative nature, high uncertainty avoidance cultures could be linked to a lower frequency of extramarital sexual relationships, and with less sexual variety, at least among women. On the other hand, sexuality could be lived intensively due to the emotional nature of these cultures. Moreover, in these stressing societies sex could be more frequently a mechanism by which to decrease anxiety. Some studies have shown that people who belong to cultures which emphasize effort and performance show higher levels of sexual activity, at least of an autoerotic nature (Lagrange & Lhomond, 1997).

#### Individualism-collectivism, religion and sexuality

Individualistic cultures, such as those in Western Europe or the USA value autonomy and personal goals. Collectivistic cultures

such as those found in Latin America, Asia, India and Africa, value interdependence and group objectives. Feelings and the search for individual pleasure are important elements in individualistic cultures' well-being, whilst in collectivistic cultures fulfilling one's social duties is important. In individualistic cultures love and the personal decision taken by two people seems the natural way of forming a stable couple (Triandis, 1995). Western culture which emphasizes expressive and instrumental individualism also has a Christian tradition. In the western individualistic culture we find a co-existence of norms which stress monogamous-fidelity-marriage sexuality aimed towards procreation which is linked to the Catholic and Protestant conception of love, coupled with the exploration of sexuality, obtaining the utmost pleasure and personal self-fulfilment, factors which are linked to individualism. Bellah et al. (1985) have stressed this tension which exists between a relational compromise and agreement with christian marital norms on the one hand, and on the other the value attached to seeking the most out of personal pleasure. The relational compromise values and norms would be linked to monogamous behavior and marriage for the rest of one's life, while the norms and values of happiness and self-fulfilment would be associated to sexual exploration and infidelity behaviors.

The Christian-Jew tradition has been traditionally perceived of as a repressive sexuality, with its aims directed mainly towards procreation. The Protestant reform criticized the clergy's chastity, having a more favourable attitude towards sex within marriage. Puritanism strictly regulated behavior which could threaten the family's stability and continuity (behaviors such as adultery and illegitimate children). Although puritan protestantism imposed strict anti-erotic codes with regard to clothes and behaviors, sexual activity within marriage was not regulated (Katchadourian & Linde, 1979). On an individual basis, and with european samples, it has been confirmed that more christian religious practice, be it Greek Orthodox, Catholic or Protestant, is linked to less variability in sexual activities, confirming the restrictive nature of sexuality in western religions (Sandfort et al., 1988, p. 159). Muslim, Taoist, Hindu and Buddhist attitudes towards sexuality are generally judged as more positive, although this judgement is made more on the basis of ideological texts than on culture in itself (Gerbhard, 1987).

Islamic cultures are collectivistic and with high power distance. In these cultures the theocratic organization of social relationships is associated with obedience to the will of God who defines one's destiny. An individual's responsibility is embedded in participating in a group, subordination towards a collective, and any individualizing behavior is suspicious of being a transgression (Chamoun, 1989). Islam has a more liberal attitude towards marital sex than Christianity. It rests less emphasis on guilt and holds a non-problematic view of masculine sexuality. This is due to the fact that it is a women's obligation to fulfill the wishes of the man she is married to. Nevertheless Islamic cultures also emphasize sexual segregation, and strongly punish adultery. Moreover some Muslim cultures (i.e. Sudan, Senegal, Somalia) perform rites which mutilate a women's sexual capacity, although it should be noted that these rites are pre-muslim (Gerbhard, 1987). Excision is performed to avoid a women's sexual desires, and preserve her virginity for marriage because the main marital duty of a woman is to bear children (Aranguren, 1991; Fainzang & Journet, 1991).

Another example of collectivistic and high power distance societies are the Asian societies with a confucianist-buddhist and

hindu orientation. In these societies the family, clan and caste are stressed. Respect and obedience to one's forefathers, parents and superiors in general is highly valued. Sex is viewed as part of the duties implied in having a relationship and a high masculine sexual activity is not so well valued as it is in the Western world (Gilmore, 1994). Although, at least in theory, we find in Buddhism and Hinduism a less restrictive orientation towards sex, there is also a tradition of emotional self-control, lack of communication with one's parents on issues concerning sex and strong control over women. Rushton (1999) has mentioned that Asians (both recently immigrated to Canada, or already living there for years) were significantly more restrained than non Asians in issues concerning sex. This shows that Chinese and India sexual activity is a far cry from the Kamasutra. Sexually letting oneself go too much is an example and source of masculine weakness in India (Jahoda, 1989). In China, although there is not an important development of sexual guilt, there is also a puritan sexual tradition which is against adultery, especially feminine, and taoism condemns excessive fornication. Even if traditional Chinese culture views sex as something natural and with no guilt connotations, at the same time it is seen as something to be ashamed of to show off and openly talk about desires and sexual experiences. One third of chinese women have never experienced an orgasm, nearly 90% make love with their clothes on, and the estimated duration of sexual intercourse is less than a minute. This data has been obtained from the first available chinese sexual surveys (Char et al., 1980; Dalin, cited in Smith & Young, 1998, p. 387).

In collectivistic cultures in general, starting a couple is a decision taken by the elders. It is based on arrangements which fulfill the families' desires, and it is a duty for the individuals. Emotional well-being, love and sexuality are less valued aspects in the life of a couple in collectivistic cultures. Psychological intimacy and sharing in a couple is a more important source of marital satisfaction and well-being in individualistic in comparison to collectivistic cultures (Ting-Toomey, 1991). Passionate love and sexuality which transgress the established hierarchical relations is considered as something which disrupts social functioning in a collectivistic culture such as China. Most chinese words referring to love have a negative connotation: infatuation, grief or sorrow. The most pragmatic attributes of love (income, status...) are considered as desirable characteristics of one's partner. Parents select the bride according to her good nature and the groom on the basis of his status (Dion & Dion, 1993). Confirming that there is an association between collectivism and the lesser importance assigned to passionate love, when comparing student samples from the USA, Germany and Japan, the Japanese valued much less romantic love than did the western sample, they shared more beliefs of masculine gentlemanship and the dependent role of women (Simmons, von Molke & Shimizu, 1986). In sum, hedonic pleasure is better valued and individual elections and sexuality are a more important basis for marriage in individualistic than in collectivistic cultures. We may assume that shared sexual pleasure is a more important aspect in individualistic than in collectivistic cultures, and that probably the frequency of sexual activity will also be higher.

#### Economic development, climate and sexuality

Culturalist explanantions have a series of limitations we must bear in mind. A culturalist explanation tends to attribute excessive homogeneity to the members of a culture, ignoring internal diffe-

rences. These studies rest only on the analyses of means or central tendencies. Class differences with respect to norms and sexual behaviors is an important facet in any culture. For example sexual initiation is earlier and the number of partners is higher in the black subculture in the USA, and in the urban poor subculture in Latinamerica.

Culturalist explanantions with their empahsis on values and traditional norms also tend to ignore the gap that may exist between what is normative and real life practice. For example in Chile there is no divorce law and the dominant catholic culture criticizes divorce. Nevertheless, by means of legal artifacts there is a very common practice of separation and serial multipartnership which is deeply rooted among women from urban popular classes. Culturalism also leads to confound sexual practices or behaviors with what is no more than an erotic ideology, reflecting cultural changes by means of norms which have a distant relationship with erotic practice. Among the brasilian middle class we find a «trangressing» and liberal social discourse about sexuality. Moreover, in this culture showing affect is more intense and body distance is closer when compared with anglosaxon and european cultures (Kottak, 1994). Nevertheless the frequency and variety of sexual behaviors is not much different from «colder» countries and the repertoire of sexual behaviors is quite conventional (Parker, cited in Bozon, 1995). Due to this fact, in our empirical study we will refer to declared practices and not attitudes or beliefs.

Another limitation of the culturalist explanantion is that it ignores that many behaviors are responses not dictated by tradition, but in fact are forced adaptations driven by circumstances or non desired situational constrains. The large number of people with more than one partner in Lesotho reflects not only traditional cultural values, but also the fact that many men must migrate to South Africa in order to find a job. In this case both men and women, due to economic and affective factors, have more than one partner in order to adapt to these situational constraints.

In our case, we will try to take into account the socio-structural and ecological influences by including a predictor of socio-economic development and another climatic predictor. Although we are well aware that this is only a partial solution.

We must state that some of the cultural dimensions are partly associated to ecological and economic factors. A high latitude (i.e. cold climates) predicts less power distance and strong buying power. Individualism is strongly associated both with economic development and with high geographic latitude (i.e. countries with cold and moderate climates tend to be individualistic cultures, while countries with warm climates tend to be collectivistic). Theories of geographic determinism and stereotypes suggest that warm climates make southerner's more receptive towards emotions. Pennebaker et al. (1996) have confirmed that in the «old world», and in the northern hemisphere, people who live in the south state that they are more expressive emotionally than those who live in the north, suggesting that there is a kernel of truth in the stereotype which holds southerners' as more emotional. Following a tradition dating back to Montesquieu and the Romantic era, recent mediterranean anthropology states that among southern europeans, in comparison to northern ones, there is a prevalence of a violent and passionate culture, characterized by an exacerbated masculinity in which the erotic surge and the lack of masculine sexual shyness is associated with the con-

trol of the family women's sexual behavior and the association of their virginity with family honor, as well as with a more general sensuality (Gilmore, 1990; Fernández, 1987; Llobera, 1987). Finally a more recent review of the surveys conducted on frequency of sexual intercourse in stable couples confirmed that northern european countries had lower means than in the south, both for men and women. This seems to «support the cultural stereotype that people in relatively warmer climates are more passionate and engage in sexual activity more frequently» (Sandfort et al., 1998, p.125).

The aim of this study is to correlate the scores of self-reports of sexual relations in stable couples and the mean percentage of people with extramarital affairs with the climatic, socio-economic and cultural (religion and Hofstede's dimensions) characteristics of the countries to which the samples belong.

Although there are difficulties and problems involved in differentiating culture from social structure, we will try to prove the effects of ecology (i.e. climate), social structure (i.e. socio-economic development) and culture (i.e. value syndroms) on declared sexual activity. The capacity for prediction which the national differences have on the collective sexual experience, or the mean on the basis of national cultural dimensions and factors such as climate and economy will be examined with data collected in different studies in 25 developed and developing countries in Africa, America, Europe and Asia. Nations will be treated as units of analysis and national means as scores, and the declared sexual behavior will be correlated with sociocultural variables. Following the holocultural tradition, cultures will be treated as units and collective scores of the variables will be related with the rest (Bond, 1991; Schlegel, 1994). Our first aim will be to prove the hypothesis (controlling for climatic and socio-economic variables) that national collective scores in individualism, low power distance, low uncertainty avoidance and femininity will be associated with more permissiveness and sexual activity, specifically with a higher frequency of sexual behavior. For other reasons, masculine and high uncertainty avoidance cultures could also be related with high sexuality. A second aim is to examine the relationship between predominance of religious traditions and sexual behavior in order to contrast the repressive view of catholicism in comparison to asian and islamic traditions.

## Method

### Countries and participants

This research re-analyses the results from various cross-cultural studies on sexual behavior. All surveys were conducted between 1989 and 1995 by professional financed staff. The lowest sample is composed of at least 400 subjects and the highest sample by over 15.000. The countries surveyed were: a) in Africa surveys were conducted between 1989 and 1990; Kenya, N=2967; Ivory Coast, N=3001; Togo, N= 2332; Burundi, N=2264; Lesotho, N=1582; Tanzania, N= 4171; Zambia (Lusaka), N= 1992; Senegal, N=400; b) Southamerica: Brazil (Rio de Janeiro), during the years 1989-90, N=1341; Chile (Valparaiso and Santiago) conducted in 1995, N=800; c). Northamerica: USA, in 1994, N=914. d) Asia: Philippines (Manila) in 1990, N=1617; Singapore, in 1989, N=2115; Sri Lanka, in 1991, N=3012; Thailand, in 1990, N=2081; e) Europe: France, in 1991, N=3379; Germany, in 1990, N=2405; Great Britain, in 1991, N=15027; The Netherlands, in 1989,

N=990; Norway, in 1992, N=4029; Spain, in 1990, N=859, Spain, in 1996, N=8100; Greece (Athens), in 1990, N=1777; Belgium, in 1993, N=2789; Finland, in 1992, N=1529, and Switzerland, in 1992, N=2685.

The general methodology used in these studies is described in Cleland & Ferry (1995), Pison Lagarde & Enel (1997); Hubert et al. (1998); Laumann, Gagnon, Michael, & Michaels (1994), and Wellings et al. (1994). The samples were composed of men and women with ages ranging from 15 to 49 years in developing countries, and from 18 to 49 in deveded countries (except Switzerland in which the range was from 18 to 45 years). Although age groups were different in developed and developing countries, in both cases they were a sexually active population. Moreover, the lower life expectancy and worse quality of life of older aged people in developing countries suggests that this fact does not bias the comparison. We also used a 8100 subject sample of spanish adult population between 18 and 64 years of age (Castilla et al., 1998), two USA samples described by Kolata (1994) and Wiederman (1997), and a chilean survey with a sample of people with an age range of between 18-49 years conducted in the two most important cities in the country, Santiago and Valparaiso (Conasida, 1998). The total number of surveyed people was over 150.000. The 25 nations are those included in the abovementioned studies. We have also included cultural and socio-economic information (see table 1).

Table 1  
Sexual Behavior Surveys

Continent year type survey	Country question time span	Frequency sample
Africa — —	Senegal LM	EF 400
Africa 1989-90 KABP	Kenya SA LM	EF 2.967 National
Africa 1989 PR	Ivory Coast SR LM	EF 3.001 National
Africa 1989 KABP	Togo SA LM	EF 2.332 National
Africa 1990 KABP	Burundi SA LM	EF 2.264 National
Africa 1989 KABP/PR	Lesotho SR LM	EF 1.582 National
Africa 1989-90 KABP/PR	Tanzania SR LM	EF 4.171 National
Africa 1990 KABP	Zambia SR LM	EF 1.992 Urban (Lusaka)
America 1990 PR	Brazil SR LM	EF 1.341 Urban (Rio)
America 1995 SS	Chile	800 Urban (Santiago)
America 1994 SS	USA SA	914
Asia 1990 KABP/PR	Philippines SR LM	EF 1.617 Urban (Manila)
Asia 1989 PR	Singapore SR LM	EF 2.115 Urban
Asia 1991 PR	Sri Lanka SR LM	EF 3.012 National
Asia 1990 PR	Thailand SR LM	EF 2.081 National
Europe 1991-92 SS/KABP	France SR LM	EF 3.379 National
Europe 1990 SS	Germany SA LM	EF 2.405 National
Europe 1991 SS	United Kingdom SA	15.027 National
Europe 1989 SS	Netherlands SA/SR TM	C 990 National
Europe 1992 SS	Norway SR LM	4.029 National
Europe 1990 SS	Spain SA	C 856 National
1996 KABP	Spain SA LY	EF 8.100 National
Europe 1989-90 KABP/PR	Greece SR LM	EF 1.777 Urban (Athens)
Europe 1993 SS	Belgium SA	C 2.789 National
Europe 1992 SS	Finland SR	EF 1.529 National
Europe 1992 SS	Switzerland NS LW	EF 2.685 National

Type of survey: KABP = Knowledge, Attitudes, Beliefs and Practices; PR = Partner Relationship; SS =Sexual Survey.  
 Questions on sexual activity: SA - Sexual Activity; SR = Contacts or Sexual Relations; NS = Non specified «sleeping with».  
 Time: LM = Last Month; TM = Three Months; LW = Last Week; LY = Last Year.  
 Frequency: C = Categories mixing time and frequency; EF = Exact Frequency.

## Procedure and measures

### *Dependent variables*

Sexual behavior self-reports were used. Participants indicated: 1) the frequency of sexual contacts during the last month (Cleland & Ferry, 1995), or during the last week (Hubert, Bajos & Standfort, 1998; Conasida, 1998) with one's stable partner. 2) number of sexual partners during the last year. The range of answers were the same in developed and developing countries, although there were differences. Sexual relationships in developed countries were inferred on the basis of the mean week average of people with stable relationships as shown in Hubert et al. (1998). For the USA and Senegal it is the mean of a sample of the general population (Kolata, 1994; Pison, Lagarde & Enel, 1997, respectively). There are three types of surveys: a) Sexual surveys which refer with great precision to sexual activity; b) KABP surveys concerning knowledge, attitudes, beliefs and practices regarding Aids. These include questions referring to sexual activity; c) PR surveys, or partner relationships surveys, these inquire with precision on sexual activity during the last month and a half. All surveys used people with stable partners as target group. The definition of stable partner was created using three criteria: a) the 13 African, Asian and Brazilian surveys used the criterion that «people had a sexual union which had lasted at least a year»; b) most European and the Chilean surveys used as criterion «have a stable relationship, at present to have a sexual partner»; c) the Norwegian, Spanish and French surveys used as criterion «living with a partner». As we can see criteria «a» and «b» are quite similar. The last criterion will possibly be associated with a higher frequency of sexual relationships. In all the surveys the mean of sexual frequency in sexually active couples during the last month was used (Caraël, 1995, p.104). The definition of sexual act was threesome: a) In the KABP type surveys in Asia, Africa, France and Greece, the question asked was: «have you had sex?»; b) In the PR type surveys the question was: «have you ever had sexual intercourse?»; in the European and Northamerican surveys the question was: «have you had sex or made love?». In most European surveys the concept of sexual activity was not explicitly defined. In Belgium, Finland and Great Britain it was specified that sexual activity was the same as vaginal, anal or oral penetration. Manual stimulation was defined in the Finnish survey as sexual activity. Research conducted in the USA and Europe suggest that for most people sexual activity is vaginal coital activity, or at least penetration. For example 60% of the northamerican students believed that mouth-genital contact did not constitute a sexual relationship (Sandfort, Bos, Haavio-Mannila & Sundet, 1998). From this point of view it seems quite reasonable to believe that most subjects answered in relation to the frequency of coital activity. With regard to time reference, 18 surveys asked about sexual activity during the last month, the Dutch survey during the last three months, the Swiss during the last week. The Belgium and Spanish lumped together frequency and time of reference in their questions (i.e. response alternatives: a) some times a year; b) 2-3 times per month, etc.). Most surveys use a comparable time span, although the type of questions used in the Belgium and Spanish surveys, and the longer Dutch time span could maybe produce less exact answers. On the other hand, the shorter Swiss time lapsus could produce more exact recollections, although we know that people base themselves on a typical week when estimating the monthly frequency (Cleland & Ferry, 1995).

With regard to frequency evaluation, most surveys (18) asked about the exact frequency (in 17 cases moreover the time lapsus was a month). With regard to number of partners, in the developing countries' surveys (with the exception of Chile) the question was: «do you currently have one or more spouses or stable partners?». If the answer is yes, «how many?». This question did not allow to differentiate between formal polygamic matrimonies (frequent in Ivory Coast and Tanzania) from multipartnership informal relationships. In the western surveys, multipartnership was defined as having two or more partners in a certain time span (Wiederman, 1997). In all surveys this time interval was one year.

### *Predictive variables*

#### *Climatic factors*

We registered the absolute value latitude as shown in Pc Globe. A lower absolute latitude means warm-hot climates.

#### *Socio-economic factors*

Human Development Index: the measure of national HDI combines three basic components of human development: longevity (a country's mean life expectancy), education (rate of literacy and scholarized population); and life level (Gross National Product per person). The HDI is the best development measure, better than other limited measures such as Gross Internal Product, or Rent per capita (Cordelier & Didiot, 1997). Each nation's HDI scores were obtained from the United Nations Development Program (UNDP). The Human Development Index scores were obtained from the State of the World 1994 edition.

#### *Cultural factors*

Hofstede (1991) stated results from 21 countries in the following cultural dimensions: individualism-collectivism; masculinity-femininity; power distance and uncertainty avoidance. For a series of African countries which did not have scores in Hofstede's original research, the score of the African region in which they were included was assigned. Senegal, Togo and Ivory Coast were assigned the score for western Africa (Nigeria, Ghana and Sierra Leone). Burundi was assigned the eastern African score (Kenya, Ethiopia, Tanzania and Zambia). Lesotho was assigned the South African score. These scores are based on the questionnaires answered by IBM employees on a world basis during the 1970's. Scores show concurrent validity with current value surveys and cross-cultural studies (Schwartz, 1995; Smith & Bond, 1993). For example, Hofstede and Triandis's scores on individualism correlate ( $r=.83$ ). Triandis' results were obtained in 1995 and are described in Diener et al. (1995). High scores mean more individualism, masculinity, uncertainty avoidance and power distance (see table 2 for the national climate, social and cultural scores of the countries included in this study).

#### *Religious factors*

A valuation of the presence/absence of the «large» religions are included: Christian (Catholic and Protestant), Muslim, Buddhist and Animist. There was only one country with a partial Hindu tradition (Sri Lanka). In Singapore there are a 29% of Taoists. Greece

is Christian Orthodox. The coding was as follows: religion: 1=non existent; 2=minority, less than 25%; 3=important minority, 25-50%; 4=majority, 51% or more (source World Encyclopedia Atlas).

In table 2 we present the Human Development Index, absolute geographic latitude, Hofstede's cultural scores, and the level in which Christian, Muslim, Buddhist and Animist religions are present.

### Results

#### *Climatic, geographic, cultural and emotional dimensions: collective level analysis*

First of all we will examine the relationships between predictive factors at a collective level. With the country scores, we obtained the Pearson correlation coefficients at a collective level with the aim of contrasting the relationships between climate-latitude (LAT), Human Development Index (HDI), the country's religion, and the cultural dimensions of individualism (IND), masculinity (MAS), power distance (PD), and uncertainty avoidance (UAV) (see table 2).

A factor analysis of the collective predictors of sexual behavior obtained four factors. The first one comprised cultural dimensions of individualism and low power distance with cold climates, strong socio-economic development, dominance of protestant religions, low predominance or absence of muslim or animist religions. A second factor was defined by uncertainty avoidance and catholicism. Hofstede had also found that uncertainty avoidance was associated with the predominance of catholicism in christian countries (Hofstede, 1991; p.132). Protestantism was negatively

associated to this factor, and positively with high power distance, although with a low load. Cultures with a strong intolerance towards ambiguity and normative are of a catholic type, to a lesser degree have high power distance and non protestant. The third factor was defined by Buddhism, scoring negative weights in dimensions such as power distance, and positively in predominance of protestantism, although with less strength than in the first factor. In other words, high power distance and Buddhism are associated. Cultural masculinity emerges as a fourth independent factor, replicating Hofstede's results.

#### *Climatic, geographic and cultural dimensions, and the frequency of sexual relationships: collective analysis*

In the first and second column of table 3 we show the mean monthly average of sexual relationships of men and women with stable partners.

In the fourth and fifth column we find the percentage of men and women with more than one sexual partner during the last year.

The association between the national means of sexual frequency among men and women was positive and significant,  $r(21)=0,97$ ,  $p<0.001$ . This confirms that there is a strong convergence between sexual behaviors in each country, although men declare a significantly higher mean than women in number of coitus. Men's mean= 5,79; women= 5,35,  $t(19)=3,75$ ,  $p<0.001$ .

On the basis that each sex represents 50% of the population a mean for each country was calculated. We do know that in general women comprise more than 50% of the population, but differences are not very significant among countries. In the case of Senegal

Table 2  
Social development, geographic position, cultural dimensions and religion

COUNTRIES	HDI	LAT	IND	MAS	PD	UAV	CATH	PROT	MUSL	BUDI	ANIMI
Senegal	182	14	20	46	77	54	2	2%	92%	1	6%
Kenya	369	1	27	41	64	52	21%	15%	6%	1	26%
Ivory Coast	286	7	20	46	77	54	22%	1	34%	1	37%
Togo	218	6	20	46	77	54	21%	1	17%	1	4
Burundi	167	3	27	41	64	52	63%	1	1	1	33%
Lesotho	437	29	65	63	49	49	3	79%	1%	1	20%
Tanzania	270	7	27	41	64	52	27%	1	31%	1	42%
Zambia	314	15	27	41	64	52	26%	34%	1	1	27%
Brazil	796	23	38	49	69	76	78%	22%	1	1	1
Chile	882	34	23	28	63	86	89%	11%	1	1	1
USA	940	38	91	62	40	46	28%	56%	1	1	1
Philippines	603	14	32	64	94	44	84%	2	4%	1	1
Singapore	849	1	20	48	74	8	10%	1	16%	27%	1
Sri Lanka	663	7	48	56	77	40	1	1	2	69%	1
Thailand	715	13	20	34	64	64	1	1	1	4	1
France	971	47	71	43	68	86	3	1	4.4%	1	1
Germany	957	50	67	66	35	65	41%	41%	1	1	1
United Kingdom	924	54	89	66	35	35	9%	4	1	1	1
Netherl.	970	52	80	14	38	53	36%	26%	1	1	1
Norway	979	57	61	8	31	50	1	4	1	1	1
Spain	923	37	51	42	57	86	4	1	1	1	1
Greece	902	38	35	57	60	112	2	1	1	1	1
Belgium	952	51	75	54	65	94	4	1	1	1	1
Finland.	954	60	63	26	33	59	1	4	1	1	1
Switzerl.	978	47	68	70	34	58	48%	44%	1	1	1

HDI: Human Development Index; LAT: Climate-Latitude; IND: Individualism-Collectivism; MAS: Masculinity-Femininity; PD: Power distance; UAV: Uncertainty avoidance; CATH: Catholic; PROT: Protestant; MUSL: Muslim; BUDI: Buddhist; ANIMI: Animist.

Presence of Religion (Level): 1=non existent; 2=minority, less than 25%; 3=important minority, 25-50%; 4=majority, 51% or more (source World Encyclopedia Atlas).

gal and the USA the general mean was included. In the case of the United Kingdom, the general median of the national survey was used. Due to the fact that the median, in general, differs from the mean in sexual behavior surveys, and that the generic means had different weights in men and women, we excluded these countries from the analysis. The inclusion of the means from Senegal and the USA, and the median from the United Kingdom did not alter any association. With those countries in which we did have separate data for men and women, we calculated a difference in declared frequency, as an index of overestimation of masculine sexual activity. Analyses were replicated using only those countries who shared a time span, or the type of frequency evaluation, and results in general showed a similar profile to the general one, although the significance and size of the coefficient decreased. This is the reason why this analysis aimed towards controlling methodological differences is not shown (see table 3).

*Economic development, climate, collectivism, power distance, muslim and animist religion and frequency of sexual intercourse*

The frequency of coital sexual relationships with one's partner was associated with more socioeconomic development [r(21)=0.71, p<0.001 for the national mean; r= 0.69, p<0.001 for men, and r=0.71, p<0.001 for women]. A cold climate or high latitude was also linked to a higher frequency of monthly coitus [r(21)=0.71, p<0.001 for the national mean; r=0.69, p<0.001 for men, and r=0.72, p<0.001 for women]. Individualism was linked to higher coital frequency both for men and women [r=0.46, p<0.001 in general; r=0.43, p<0.001 for men, and r=0.43, p<0.001 for women].

Cultures with more power distance are characterized by less frequency of sexual behaviors [r(21)=-0.55, p<0.001 for the national mean; r=0.52, p<0.001 for men, and r=0.57, p<0.001 for women].

The presence of Muslim [r(21)=-0.57, p<0.001 for the national mean, r=0.54, p<0.001 for men, and r=-0.60, p<0.001 for women], and Animist religion [r(21)=-0.60, p<0.001 for the national mean; r=-0.59, p<0.001 for men, and r=-0.60, p<0.001 for women] was associated with a lower frequency of sexual relationships. Muslim and Buddhist religions and high power distance was linked with more difference in the frequency of declared sexual contacts among men and women [r(18)=0.33, p<0.09; r=0.37, p<0.007, and r=0.31, p<0.10 respectively].

Moreover, cultures with more uncertainty avoidance are associated with more sexual frequency [r(21)=0.62, p<0.001 for the national mean; r=0.65, p<0.001 for men, and r=0.59, p<0.001 for women]. The predominance of Christian religions is associated with more sexual frequency, although correlations were not significant.

Finally, cultural masculinity showed a negative association, although non significant, (r=-0.23, p<0.15).

*Specific association between sociocultural factors and sexual behavior*

A multiple regression using factor scores in order to decrease the number of predictors and avoid multicollineality problems was significant [F(4,16)=23.47, p<0.001] and explained 69% of the variance.

We found that more sexual frequency was associated with the first factor of social development, individualism, low power distance, and low presence of Animism and Buddhism (Beta=0.66,

Table 3  
Sexual Behaviour by Countries and Gender

COUNTRIES	Men's sexual relations with stable partner	Women's sexual relations with stable partner	Monthly average of sexual relations	Men with more than one sexual partner during last year	Women with more than one sexual partner during last year
SENEGAL			4.00	33%	
KENYA				13%	
IVORY COAST	2.90	2.00	2.45	36%	
TOGO	2.90	1.50	2.20		
BURUNDI	5.50	5.70	5.60		
LESOTHO	3.00	1.90	2.45	55%	39%
TANZANIA	4.90	4.40	4.65	18%	9%
ZAMBIA	3.40	3.70	3.55	22%	11%
BRAZIL	8.70	7.60	8.15	7%	0.4%
CHILE				17.1%	3%
USA			4.00	5%	2.4%
PHILIPPINES	2.90	2.50	2.70	3%	3%
SINGAPORE	3.60	3.40	3.50	2%	0.2%
SRI LANKA	4.10	4.10	4.10	2%	1%
THAILAND	5.70	4.30	5.00	3%	0.4%
FRANCE	8.00	7.00	7.50	17%	7.4%
GERMANY	7.80	7.80	7.80	12%	5.20%
UNITED KINGDOM			5.00*	17%	7.70%
NETHERLANDS	7.20	7.30	7.25	19%	7.50%
NORWAY	7.50	7.30	7.40	21%	12.70%
SPAIN	7.80	7.50	7.65	10%	2.0%
GREECE	8.00	7.70	7.85	11%	1.50%
BELGIUM	6.90	6.80	6.85	16%	5.90%
FINLAND	7.30	7.10	7.20	29%	17.60%
SWITZERLAND	7.80	7.50	7.65	16%	6.30%

\* Median

$p < 0.001$ ), with the second factor of Catholicism and uncertainty avoidance (Beta=0.51,  $p < 0.001$ ), and cultural femininity (Beta=-0.29,  $p < 0.03$ ).

Due to the fact that we have a small number of cases and many predictors, it is necessary to reduce the number of these, as we have already stated before. Another form of doing so is with a step by step regression which deletes those predictors which explain less percentage of the dependent variable. A stepwise analysis with all the significantly associated social, cultural and geographic predictors confirms that high socioeconomic development (Beta=0.43,  $p < 0.001$ ), and strong uncertainty avoidance (Beta=0.48,  $p < 0.001$ ) predict more sexual activity. A cold climate and individualism which was bivariately associated with high sexual frequency, did not show a specific association due to the fact that strong socioeconomic development, linked to these factors, is a dimension which shows a specific influence.

The same could be said of high power distance which is associated with a lower frequency of sexual contact, and with warm climate, collectivism and low economic development. Finally, Catholic cultures, with great expressiveness and ansiogenic, are associated with more coital frequency, although the cultural, and not the religious, dimension was the most influential one. The analyses of the frequency of sexual relationships among men and women separately reproduce the same pattern of results.

#### *Cultural, social, geographic and religious factors on the frequency of extramarital sexual behavior*

Individualism is associated with more extramarital sexual experience in women [ $r(20)=0.40$ ,  $p < 0.05$ ]. The prevalence of Protestant religion is associated with larger percentages in people who have sexual relationships with more than one person [ $r(22)=0.34$ ,  $p < 0.06$  for men,  $r(20)=0.46$ ,  $p < 0.22$  for women]. Nevertheless, it was also associated with a higher distance between men and women [ $r(20)=0.32$ ,  $p < 0.09$ ]. Cultures with more power distance were characterized by a lower frequency of extramarital sexual relationships [ $r(22)=-0.36$ ,  $p < 0.05$  for men, and  $r(20)=-0.42$  for women]. With more power distance, lower was the difference between men and women [ $r(20)=0.48$ ,  $p < 0.02$ ]. A stronger presence of Muslim culture, also linked to power distance, was associated to a lower difference between men and women in extramarital relationships ( $r=-0.46$ ,  $p < 0.02$ ). The prevalence of Animist religions is close to significantly related to a large proportion of men ( $r=0.33$ ,  $p < 0.07$ ) and women ( $r=0.30$ ,  $p < 0.10$ ) with more than one sexual partner.

#### *Uncertainty avoidance and Catholicism*

Cultures with more uncertainty avoidance ( $r=0.43$ ,  $p < 0.03$ ) and Catholic ( $r=0.34$ ,  $p < 0.08$ ) are associated with more «double standard» or an increase in the difference in the percentage of men and women with more than one sexual partner.

#### *Buddhism and extramarital sex*

Buddhist religion cultures are characterized by a lower frequency of extramarital relationships [ $r(22)=-0.45$ ,  $p < 0.02$  for men, and  $r(20)=-0.32$ ,  $p < 0.02$  for women]. A stronger presence of Buddhism implies a lower difference between men and women [ $r(20)=-0.59$ ,  $p < 0.02$ ]. Let us remember that Buddhism and high power distance were associated in one factor.

#### *Specific association between sociocultural factors and extramarital sex*

A multiple regression on the frequency of masculine extramarital relationships using factor scores in order to decrease the number of predictors and avoid multicollineality problems was significant  $F(4,17)=3.01$ ,  $p < 0.05$ , and explained 28% of the variance. We found that the frequency of sexual relations with more than one person was associated with factor number three (Beta=0.60,  $p < 0.03$ ). Let us recall that Buddhism and power distance were negatively weighted in this factor and that Protestant religion weighted positively. In other words, the cultural syndrome of low Protestantism, dominance of Buddhism and high power distance, produced less sexual permissiveness. A stepwise regression showed that Buddhism was specifically associated with less sexual permissiveness in the case of men (Beta=-0.44,  $p < 0.01$ ) and Animism was near significantly related to more masculine sexual permissiveness (Beta=0.32,  $p < 0.10$ ). A regression on the percentage of women with extramarital relationships was near significant  $F(4,15)=2.69$ ,  $p < 0.08$ , and explained 26% of the variance. We found that the frequency of sexual relationships with more than one person was associated with factor number three, negatively defined by Buddhism and power distance, and positively by Protestantism (Beta=0.51,  $p < 0.03$ ), and factor two which was negatively defined by Catholicism and uncertainty avoidance (Beta=-0.41,  $p < 0.06$ ). In other words, a low frequency of extramarital sex in women is associated to Buddhism, high power distance, low presence of Protestantism, low uncertainty avoidance and low Catholicism. A stepwise regression showed that Protestantism was specifically associated with more sexual permissiveness in the case of women (Beta=-0.44,  $p < 0.01$ ).

A multiple regression on the differences in relationships with more than one partner between men and women was significant  $F(4,15)=6.58$ ,  $p < 0.002$ , and explained 54% of the variance. We found that the strongest difference in extramarital relationships between men and women was associated with factor number three: low power distance and Buddhism, strong Protestantism (Beta=0.66,  $p < 0.001$ ), coupled with cultural femininity or factor number four (Beta=-0.32,  $p < 0.07$ ). This suggests that with less Protestantism, more power distance, and more Buddhism, there are less differences between men and women, and that sexual permissiveness is lower for both sexes. A stepwise regression showed that Buddhism was specifically associated with a lower difference in extramarital relationships among men and women (Beta=-0.51,  $p < 0.02$ ) and the presence of Muslim religion, although only near to significance, showed the same effect (Beta=-0.35,  $p < 0.07$ ).

## Conclusions

### *Sexual frequency and gender differences*

The first conclusion is that with regard to previous expectations, including scientific ones, there is a low level of sexual activity in complex societies. Twenty years ago Katchadourian & Linde finished their review on transcultural evidence of coitus, which they accepted as very limited, stating: the frequency (of marital coitus) varies, but most married couples over the world seem to practice it two to five times per week (Katchadourian & Linde, 1979, p. 371). The data obtained from 23 developed and developing countries from different continents suggests that coital rela-

tions in married or stable couples oscillates between less than one time per week to a maximum of two times, a far cry from the abovementioned results.

Although gender differences in the western world are less each day in regard to attitudes towards extramarital relationships, men still continue to have more permissive attitudes towards pre-marital and extramarital relationships than women (Oliver & Hyde, 1993). Surveys conducted in western and non western countries conclude that men declared a higher mean in sexual activity. Research has shown that men have more sexual activity and extramarital sex. Women on the other hand arrive virgin to matrimony in a large extent than men, and this pattern is found both in cultures which value virginity and in cultures who do not value it so much, although in these last societies masculine superiority is lower. Men are more permissive and participate in more extramarital relationships than women, both in developed and developing countries (Cleland & Ferry, 1995).

#### *Climate, social development and frequency of sexual relationships*

The highest frequency of sexual relationships with one's partner is associated with more socioeconomic development, cold climate, and the cultural dimensions of uncertainty avoidance, lower power distance, and more individualism (these last two are a feature of developed countries). Contrary to the romantic view held of warm climates and poor countries as a hedonistic paradise, results confirm that the frequency of relationships is higher in cold climates and developed countries. Although more important than the climate itself is the level of economic development. Better life conditions, more rest time, more privacy and better health are factors associated to economic development which may explain why coital frequency is higher in richer countries and with better health conditions, in comparison to poorer ones.

Let us stress that stereotypic beliefs held in the western world (i.e. Englishmen are colder than the French) have been open to debate following the abovementioned surveys and studies, because it is cold climates and not warm climates which are associated with more sexual activity [ $r(22)=0,73$ ;  $p<.01$ ]. Nevertheless, using only nations from the northern hemisphere and the old world in the analyses, as Pennebaker did, it was confirmed that southern countries had more mean declared activity than northern countries [ $r(9)=-0,60$ ;  $p<.05$ ]. The fact that this takes place in one hemisphere and in countries which have passed through similar historical phases (industrial development and Protestantism in the North versus counter-reform and backwardness in the industrial revolution in the South) suggests that this association between heat and sexuality is based more on historical, social and religious factors than on the mere influence of climate. Although we should remember that countries close to the equator, or of a warm climate, are generally characterized for example as having more physical contact.

Another dominant view, which the data allows us to question, is that attitude towards sex is more positive in many African cultures, there is a higher frequency of sexual activity, and they have more sexual partners. Rushton (1999) states that the average frequency of intercourse for married couples per week was 5 for African Americans compared to 4 for White Americans and 2.5 for Japanese and Chinese in Asia. In a recent book written by a distinguished American sociologist on Aids the high diffusion of Aids was explained due to more African sexual promiscuity linked to

the following elements: A) the value of sexual relationships as a transactional resource. Sex is seen as an ordinary activity, such as for example work, and it follows an exchange ethic. Even in a marriage this exchange logic is maintained: marriage is arranged by older people on the basis of a dowry. In premarital and extramarital relationships it is expected for men to give money and gifts to women as a token of esteem. For many African women, pre and extramarital relationships are important sources of income. These exchange relationships are generally stable and imply an affective investment, sharing other activities apart from merely sexual ones, it cannot be interpreted as mere prostitution. B) A masculine ideology in which it is expected, and normatively accepted, that men may have various partners. Sexual conquest and fatherhood are basic for masculine identity and status. C) An erotophylic or pro-sexual culture: in many African cultures sex is seen as something positive, as a form of recreation. A permissive sexual attitude is predominant (Rushing, 1995). The fact that the extension of Aids is very important in Africa and that this fact may be explained by more intense forms of extramarital sex and by sexual exchange associated with money exchange is unquestionable. Nevertheless, the general stereotype of African cultures as cultures in which positive values are associated to sex in general, and linked to strong sexual promiscuity is questioned by the strong differences encountered among African countries. Some have low, other median and only some high levels of sexual activity. Moreover, in all African countries virginity was highly valued, with the exception of Kenya (Cleland & Ferry, 1995). If we take as an index of the presence of a tribal collectivistic and erotophylic African culture the presence of Animist religion, the only results which confirm the pro-sexual view of traditional African culture are those which show that Animism predicts specifically more extramarital sex in the case of men, and was slightly associated to more extramarital sex in women. Nevertheless, this higher sexual permissiveness was combined with a lower frequency of sexual intercourse with one's stable partner. We may believe that this low marital sexual activity will be compensated by extramarital activity, although it is difficult to state that they are in general more pro-sexual cultures.

#### *Collectivism, power distance, muslim, buddhist religions, and lower frequency of sexual relations*

Cultural individualism predicted a higher frequency of sexual relationships, and high power distance was associated with a lower frequency of sexual contact, linked to warm climate, low economic development, Islam and Animism. The patriarchal nature of the relationship between men and women, the importance of respect, an orientation of strict social control of sexuality, low affective intensity, and a predominantly more unpleasant emotional life, typical of cultures with high power distance and collectivistic, are elements which may explain the low frequency of sexual contacts in these cultures. We should recall that collectivistic and high power distance cultures are Muslim. The prevalence of Muslim religion was specifically associated with less sexual activity. The separation between men and women which is a feature of Muslim cultures redounds in less sexual frequency. In African Muslim cultures there are also traumatic sexual initiation ceremonies for women (excision for example), this may explain the low disponibility of women for sexual activity.

Contrary to the positive view held of Buddhism, Taoism, and Islamism on the topic of sexual activity, the degree of presence of

these religions was associated with a lower frequency of sexual activity. They were also linked to high power distance. In other words, probably with very asymmetric relations between spouses. Muslim and Buddhist religions and high power distance were associated with a stronger difference in the frequency of declared sexual relationships between men and women, suggesting that in these cultures stronger masculine power is normative.

#### *Uncertainty avoidance, Catholicism and coital frequency*

Cultures which are highly expressive and ansiogenic, such as Catholic ones with strong uncertainty avoidance, are associated to more coital frequency. Catholicism was associated to uncertainty avoidance, and both were associated with more sexual frequency, although it was the cultural dimension which showed a stronger and specific association with more declared coital activity. The stronger intensity and emotional expressiveness typical of high uncertainty avoidance cultures may explain the higher sexual activity in these cultures. Although also the ansiogenic and stressing nature of the high uncertainty avoidance cultures, with their use of sex as a control mechanism of anxiety, may be another explanation for high sexual frequency. Studies which compared people with different cultures in France found that the frequency of masturbatory self-erotic activity was higher in people who were engaged in very tough academic studies. Higher frequency of masturbation in French teenagers from Asian and European cultures could be explained because in these cultures men must render more, suffer more performance stress, on the one hand, and also have less heteroerotic activity (Lagrange & Lhomond, 1997).

#### *Cultural masculinity and less coital frequency*

Multivariate results confirm that sexual frequency is lower in masculine cultures, in which there is more normative pressure on women, and a higher demand on performance for men. There is also less affective complementariness between sexes. Cultures which emphasize gender differences and toughness of relations have lower levels of sexual activity in comparison to cultures which emphasize less gender differences. This is coherent with other results which stated that frequency of pleasant events and emotional well-being are higher in feminine cultures compared to masculine ones.

#### *Buddhism, power distance and extramarital sex*

With regard to control of extramarital sex, Buddhism and high power distance, these were associated with a low frequency of men and women with more than one partner. The cultural syndrome of low Protestantism, dominance of Buddhism and high power distance, produced more social control over sexual activity. The multivariate analysis showed that Buddhism was specifically associated with less sexual permissiveness in the case of men, and Protestantism with more extramarital sexual activity in the case of women.

The low prevalence of extramarital sex in women was also associated with Buddhism and high power distance. In the Buddhist tradition premarital and extramarital relations are rejected. Chastity is a valued attribute in choosing partner in Buddhist Asian cultures such as China and Taiwan (Buss et al., 1990). These societies are characterized by low emotional well-being, low affective intensity in general, and rejection of positive emotions. Coherently

with the idea of low positive emotional activation, we find a weak premarital sexual activity and extramarital sexual relationships rate, although some cultures such as Thailand accept men's sexual activities with prostitutes.

The strong prevalence of extra-marital sex was associated with high uncertainty avoidance and Catholicism. It must be stated that uncertainty avoidance is a cultural syndrome which is associated with the search for control by means of rules of ambiguous or conflictive situations. This will probably lead to an excess of social norms distant from social practice, in particular with relation to feminine sexual activity. Protestantism, associated with individualism was a cultural factor specifically associated with more extramarital sexual activity in the case of women.

Contrary to the idea of the repressive nature of sexuality in Christianity and Catholicism in particular, in comparison to other religions, the Jew-Cristian tradition shows more sexual frequency, notwithstanding the historical image of puritan Protestantism and inquisitorial Catholicism in aspects regarding sexuality. Nevertheless, these results are valid for cultures and not for people: individual type studies have shown that those who practice more Christian religions have less sexual activity.

#### *Socio-cultural control of sexuality: sexist asymmetry and congruence*

A contrasted cross-cultural fact is that there is a sexist asymmetry in the social control of sexuality. A strong control over feminine sexuality does not imply the same control for men (Cleland & Ferry, 1995). In other words, sexual restraints are generally stronger for women than for men. For example, in most of the 14 developing countries studied, men who reach matrimony virgin comprise between 15 and 30% of the samples, a much lower percentage than among women (Cleland & Ferry, 1995). In Thailand, 97% of women reach matrimony virgin, although only 30% of men do so (Caraël, 1995). The stronger control over female sexuality is confirmed by the fact that except Kenya in most of the 14 developing nations studied, feminine virginity appears as majority and valued. In Africa the norm is that women should reach marriage as a virgin, although this does not impede in some cases premarital experience. The value of feminine virginity is much more stressed in Asian countries, in which social control over feminine sexuality is very strong. For example in Sri Lanka marriage may be put to an end if the spouse does not prove her virginity. Also there is no relation between the rate of female virginity and men's sexual activity (including contacts with prostitutes). On the other hand, and confirming that control over feminine sexuality is coherent and stronger, a high level of virginity in matrimony is associated with a lower level of extramarital sexual activity for women (Caraël, 1995).

Apart from this sexist asymmetry, there is another congruent aspect: anthropological research has shown that cultures which are restrictive in one aspect of heterosexuality also are in others. Societies which punish premarital sex, disapprove of showing affect in public and punish extramarital sex, stress discretion of attire and do not like to talk about sex (Ember & Ember, 1997). Recent quantitative research carried out in complex societies from developing nations has confirmed this congruence effect: an association between low sexual pre and extramarital activity and a high value afforded to virginity. Our results confirm that collectivistic, high power distance, Muslim African and Asian Buddhist cultures, show

a low rate of marital and extramarital sexual activity, this is even clearer in women. Other results confirm that this low rate of sexual activity in both sexes is extended to premarital sex. In collectivistic Asian countries, with high power distance and Buddhist, where premarital sexual relationships are highly forbidden, 97% of Thai women marry virgin. In Singapore, 64% of men arrive virgin to matrimony. In Singapore or Sri Lanka, less than 3% of men and 0% of teenage women (15-19) have had premarital sexual experiences. Thailand shows a similar profile with a low level of premarital sexual activity for women (1%).

Developed individualistic western countries which show a high level of sexual activity also show a high level of premarital activity, approximately 70-90% of 18-19 year olds have had premarital sexual relationships, and chastity is not an important asset when choosing a partner. Less than 3% of northamerican adults reach matrimony as a virgin (Buss et al., 1990). These results play down the anthropologists' conclusions which stated that western culture was semi-restrictive in terms of sexuality. If this is true, Asian and African Muslim cultures are even more restrictives.

As a summary, results confirm the heuristic value of social and cultural (values and religion) variables in order to explain the variability in sexual behavior. With respect to permissiveness evaluated by means of extramarital rates, low uncertainty avoidance,

low Catholicism and Protestantism, dominance of Buddhism and high power distance were associated with less sexual permissiveness. Sexual permissiveness was associated more with the religious aspects of culture: Buddhism was specifically associated with a lower difference in extramarital relations between men and women.

With regard to the mean sexual frequency, this was associated with social development, individualism, low power distance and low dominance of Animism and Buddhism, to Catholicism and uncertainty avoidance, and cultural femininity. Results confirm the important role of socio-economic development, raise questions on the negative view of Christianity and the positive view of oriental religions. They also confirm that sexual experience is less frequent in collectivistic countries, with high power distance and culturally masculine. This is congruent with studies conducted on the relationships between cultural dimensions, affective well-being, frequency and intensity of positive emotions (Basabe et al., 1999). Nevertheless, it was the socioeconomic and high uncertainty avoidance variables which better predicted sexual activity. A good quality of life is collectively associated on the one hand with more sexual activity, and on the other expressive and anxiogenic cultures show more sexual activity, maybe as a form of regulating the same anxiety which is one of their features.

## References

- Aranguren, T. (1991). *La situación de la mujer en Oriente Próximo*. In Dip.Foral de Vizcaya. La situación de la mujer en el mundo. Bilbao: Eds.Dip.Foral de Vizcaya.
- Arrindell, W.A.; Hatzichristou, Ch.; Wensink, J.; Rosenberg, E.; van Twillert, B.Stedema, J. & Meijer, D. (1997). Dimensions of national culture as predictors of cross-national differences in subjective well-being. *Personality and Individual Differences*, 23, 37
- Baron, R. A. & Byrne, D. (1994). *Social Psychology*. Seventh Ed.. Boston : Allyn & Bacon.
- Basabe, N., Páez, D., Valencia, J., González, J.L., Rimé, B., Pennebaker, J. & Diener, E. (1999). El Anclaje Sociocultural de la Experiencia Emocional de las Naciones: un análisis colectivo. *Boletín de Psicología* 62, 7-42
- Bellah R.N., Madsen R., Sullivan W.M., Swidler, A. & Tipton, S.M. (1985). *Habits of the Heart*. New York: Harper and Row.
- Bond, M.H. (1991). Chinese values and health: a cultural level examination. *Psychology and Health*, 5, 137-152.
- Bozon, M. (1995). Observer l'inobservable. In N. Bajos et al. (eds.), *Sexualité et Sida*. Paris: Agence Nationale de Recherches sur le Sida (ANRS).
- Brandes, S. (1991). *Metáforas de la masculinidad*. Madrid: Taurus.
- Buss, D.M. (1990). International Preferences in Selecting Mates: A Study of 37 Cultures. *Journal of Cross Cultural Psychology*, 21, 5-47.
- Caraël, M. (1995). La mesure de l'activité sexuelle dans les pays en développement. In Bajos, N., Bonzon, M. & Giami, A. (Eds). *Sexualité et Sida. Recherches en sciences sociales*. Paris: ANRS.
- Castilla, J., Barrio, G., De La Fuente, L. & Belza, M.J. (1998) Sexual behaviour and condom use in the general population of Spain, 1996. *Aids Care*, 10, 6, 667-676.
- Chamoun, M. (1989). La forte résistance de la culture arabo-musulmane. *Le Monde Diplomatique*, 427, 22.
- Char, W.F., Tseng, W., Lum, K. & Hsu, J. (1980). The Chinese. In J.F. McDermott, W. Tseng & T.W. Maretzki (Eds). *People and cultures of Hawaii. A psychocultural profile*. Hawaii: University Press.
- Cleland, J. & Ferry, B. (1995). *Sexual behaviour and aids in developing world*. London: Taylor&Francis.
- CONASIDA (1998). Comportamiento sexual, *NotaSida*, 3, 4-5.
- Cordelier, S. & Didiot, B. (1997). *The World: Annual World Review of Economy and Geopolitics*. Paris, France: La Decouverte
- Diener, E.; Diener, M., & Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology*, 69, 851-864.
- Dion, K.K. & Dion, K.L. (1993). Individualistic and collectivistic perspectives on gender and the cultural context of love and intimacy. *Journal of Social Issues*, 49, 53-69.
- Ember, C.R. & Ember, M. (1997). *Antropología cultural*. Madrid: Prentice Hall.
- Fainzag, S. & Journet, O. (1991). L'institution poligamique comme lieu de construction sociale de la féminité. In M.C.Hurtig, M.Kail & H.Rouch (Eds). *Sexe et Genre*. Paris: Eds. CNRS.
- Fernández, J.W. (1987). Fieldwork in Southwestern Europe. *Critique of Anthropology*, 7, 83-99.
- Gerbhard, P.H. (1987). La sexualidad desde una óptica transcultural. Em W.H.Masters, V.E.Johnson & R.C. Kolodny. *La sexualidad humana. Vol. 3. Perspectivas clínicas y sociales*. Barcelona: Grijalbo.
- Gilmore, D. (1990). On Mediterraneanist studies. *Current Anthropology*, 31, 395-396.
- Gilmore, D.D. (1994). *Hacerse hombre. Concepciones culturales de la masculinidad*. Barcelona: Paidós.
- Giraud, M., Gilloire, A., Halfen, S. & De Colomby, P. (1995). Analyse des comportements sexuels aux Antilles et au Guyane. In N.Bajos, M.Bonzon & A.Giami (Eds). *Sexualité et Sida*. Paris: Agence Nationale de Recherche sur le Sida.
- Hofstede, G. (1991). *Cultures and Organizations. Software of the mind*. London: McGraw-Hill.
- Hofstede, G. (1998). *Masculinity and Femininity. The taboo dimension of national cultures*. Thousands Oaks, Ca.: Sage.
- Hubert, M. Bajos, N. & Sandfort, T. (1998.). *Sexual Behaviour and HIV/AIDS in Europe*. London: UCL Press.
- Jahoda, G. (1989). *Psychologie et Anthropologie*. Paris: A. Colin.
- Katchadourian, H.A. & Linde, D.T. (1979). Las bases de la sexualidad humana. Mexico: Compañía Editorial Continental.
- Kenrick, D.T. (1994). Evolutionary Social Psychology: From Sexual Selection to Social Cognition. *Advances in Experimental Social Psychology*, 26, 75-121.

- Kolata, G. (1994). *Sex in America: A definitive Survey*. New York: Little, Brown.
- Kottak, C.P. (1994). *Antropología*. Madrid: McGraw Hill.
- Lagrange, H. & Lhomond, B. (1997). *L'entrée dans la sexualité: le comportement des jeunes dans le contexte du sida*. Paris: La Découverte.
- Laumann, E.O., Gagnon, J.H., Michael, R.T. & Michaels, S. (1994). *The Social Organization of Sexuality. Sexual practices in the United States*. Chicago: The University of Chicago Press.
- Llobera, J.R. (1987). The Anthropology of Southwestern Europe: the way forward. *Critique of Anthropology*, 7, 101-108.
- Nieto, J.A. (1989). *Cultura y Sociedad en las Prácticas Sexuales*. Madrid: Fundación Universidad Empresa.
- Oliver, M.J. & Hyde, J.S. (1993). Gender Differences in Sexuality: a meta-analysis. *Psychological Bulletin*, 114, 29-51.
- Pennebaker, J.W., Rimé, B. & Blankenship, V.E. (1996). Stereotypes of Emotional Expressiveness of Northerners and Southerners: A Cross-Cultural Test of Montesquieu's Hypotheses. *Journal of Personality and Social Psychology*, 70, 372-380.
- Pison, G., Lagarde, E. & Enel, C. (1997). Comportements sexuels, migration saisonnières et risques d'infection par le VIH et les MST. Étude des changements en zone rurale au Sénégal. En K. Delaunay, J.P. Dizon, S. Fainzang, Gruénais, M.E., Pollard, H. & Y. Souteyrand (eds.), *Le SIDA en Afrique: Recherches en sciences de l'homme et de la société*. Paris: ANRS.
- Price-Williams, D.R. (1985). Cultural Psychology. En G. Lindzey & E. Aronson (eds.), *Handbook of Social Psychology*. New York: Random House.
- Rushing, W.A. (1995). *The Aids Epidemic. Social Dimensions of an Infectious Disease*. Oxford: Westview Press.
- Rushton, J.P. (1999). Ethnic differences in temperament. In: Lee, & T.; McCauley, C.R. & Draguns, J.G (Eds.) *Personality and Person Perception across Cultures*. Lawrence Erlbaum Associates: Hillsdale, NJ.
- Sandfort, T., Bos, H., Haavio-Mannila, E. & Martin Sundet, J. (1998). Sexual Practices and Their Social Profiles. In M. Hubert, N. Bajos & T. Sandfort (eds.), *Sexual Behaviour and HIV/AIDS in Europe*. London: UCL Press.
- Schlegel, A. (1994). Cross-cultural comparisons in psychological anthropology. In P.K. Bock (Ed.). *Psychological Anthropology*. Westport, Connecticut: Praeger.
- Schwartz, S.H. (1995). Beyond Individualism and Collectivism: New Cultural Dimensions of Values. In Kim, U.; Triandis, H.C.; Kagitcibasi, C.; Choi, S. & Yoon, G. *Individualism and Collectivism: Theory, Methods and Applications*. Thousand Oaks, Ca.: Sage.
- Simmons, D.D., von Molke, A. & Shimizu, H. (1986). Attitudes toward romantic love among American, German and Japanese students. *Journal of Social Psychology*, 126, 327-336.
- Smith, P.B., & Bond, M.H. (1993). *Social Psychology across cultures*. New York: Harvester.
- Smith, S. & Young, P.D. (1998). *Cultural anthropology*. Boston: Allyn & Bacon.
- Spira, A., Bajos, N. & le groupe ACSF (1993). *Les comportements sexuels en France*. Paris: Rapports officiels, La Documentation Française.
- Ting-Toomey, S. (1991). Intimacy expressions in three cultures: France, Japan and the United States. *International Journal of Intercultural Relations*, 15, 29-46.
- Triandis, H.C. (1994). Recherches recentes sur l'individualisme et le collectivisme. *Les cahiers internationaux de Psychologie Sociale*, 23, 14-27.
- Triandis, H.C. (1995). *Individualism and Collectivism*. Boulder: Westview Press.
- Usieto, R. & Sastre, J. (1996). Comportamiento sexual y transmisión del virus de inmunodeficiencia humana. In N. Basabe, D. Páez, R. Usieto, H. Paicheler & J.C. Deschamps (Eds.). *El desafío psicosocial del Sida*. Madrid: Fundamentos.
- Wellings, K., Field, J., Johnson, A.M. & Wadsworth, J. (1994). *Sexual Behaviour in Britain: the national survey of sexual attitudes and lifestyles*. London: Penguin Books.
- Wiederman, M.W. (1997). Extramarital sex: Prevalence and correlates in a national survey. *The Journal of Sex Research*, 34, 167-174.

Acceptedo el 19 de diciembre de 1999