

In: Rasa, A.E., Vogel, C. and Voland, E. (eds.): *The Sociobiology of Sexual and Reproductive Strategies* Chapman and Hall, 1989, New York.

Human courtship behaviour: biological basis and cognitive processing

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9.1 INTRODUCTION

In 1975 Kendon described the literature on human courtship as almost nonexistent. Almost ten years later, Hinde (1984) found our knowledge still fragmentary, and, moreover, in need of an integrative framework. Indeed, most of what we know about courtship originates from just a handful of direct observations. What remains consists of interviews carried out at different stages of courtship. There are at least two reasons for this situation. First, it seems to be difficult to obtain sufficient and convincing data, despite information gathered by questionnaires. Second, cross-cultural comparisons seem to show that the behavioural variability is high. Moreover, courtship seems to have undergone historical change (Cook, 1981), even though, as a result of biological restraints, courtship behaviour appears to be a bastion for the strict performance of stereotyped gender role behaviour. In this chapter I consider existing data and develop empirically testable hypotheses in the light of sociobiological and cognitive theory. In this way I hope to focus on the study of this important aspect of human life.

9.2 BIOLOGICAL THESES: CONFLICT OF INTEREST AND THE BATTLE OF THE SEXES

From a biological point of view, the ultimate function of courtship is the maximization/optimization of the reproductive success of the individuals involved. Genotypic and phenotypic traits which guarantee this success are distributed unequally in a population (i.e. mates differ in quality). Thus the selection of an appropriate mate will become the main theme of courtship.

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This first requirement generates sexual attraction for partners whose characteristics, when transmitted to their offspring, will increase the reproductive success of the latter. These basic conditions should lead to intrasexual competition for mates in both sexes.

Intrasexual competition then would accentuate advertisement for those phenotypic traits signalling mate quality. Thus males, and to a certain degree females (Maynard Smith, 1974), should compete through sexual advertisement. The greater the amount of advertisement an individual performs, the greater its relative number of possible choices should be. On the other hand, advertisement means costs in time and energy and enhances the chance of detection by predators. This forces the level of advertisement to a competitive optimum. An individual has to display just slightly more than the others do, as long as this is not detrimental to his/her own survival (Parker, 1983). This process should control the intensity of advertisement.

Another assumption is that costs for mating are different for the sexes:

Females Due to internal fertilization, costs to females are higher than to males. The early survival of the offspring depends mainly on maternal care. If an infant does not thrive, a female will have to invest more than a male to bring a second infant to the same stage (Dawkins and Carlisle, 1976). Thus, for the female, male assistance reduces her costs for mating. As a result, a female should show greater interest in maintaining a stable pair-bond. Moreover, if paternal care plays an outstanding role for infant survival, males are more likely to vary in quality. Selecting a 'bad' mate could endanger the survival of the female's rare offspring. In consequence, females should be more choosy than males (Trivers, 1972).

Males In contrast to females, males have lesser costs. They could thus try to augment their reproductive success by philandering. This, however, is only possible if the effect of paternal care is negligible for offspring survival. As soon as paternal care is indispensable, the male faces a problem. In contrast to the female, he cannot be sure that the offspring he is caring for is his own. Possible philandering by the female would cause fear of cuckoldry in the male and would also threaten his investment.

Consequently we find an influence of investment on the intensity of advertisement. Direct intrasexual competition will be most intense in the sex that invests least in a given pairing (Darwin, 1871; Bateman, 1948; Trivers, 1972). Therefore it will be the males who experience most intense direct competition. Thus males should tend to more overt advertisement. Also, if inter-male competition occurs, male choice and variance in mate quality should create an effect called assortative mating. This means that pairings should show significant positive correlations for mate quality.

Note that all these considerations hold only for the social situation where paternal care plays an important role for offspring survival. How far this holds for human evolutionary history may be answered only speculatively.

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Nevertheless, we assume that paternal care (under given ecological conditions) does constitute a necessity for the rate of offspring survival.

This theoretical assumption about intrasexual competition and intersexual conflict leads to the following ultimate considerations (Hinde, 1984). Although females should compete for males, they should be choosy. The males should compete vigorously and their selective level should be lower than that of the females. The males should be attracted to females seen as receptive and whose characteristics indicate that they would rear the male's offspring successfully. In contrast, females should be attracted, in the first place, to males on the basis of their prospective investment.

Males, then, should have an aversion

to relationships with females who are sexually promiscuous. Males should invest only in relationships where they are unlikely to be cuckolded by a female. Females should have a tendency to avoid exploitation and should try to test out the males' willingness to invest in the relationship.

Sex differences in perception of optimal mate qualities should cause sex differences in the tactics and the quality of advertisement. Males should advertise in a manner congruent to female perception of optimal males, and vice versa. We should at least expect different strategies which can be used to prevent exploitation.

So far we have drawn a static picture of mate choice, which surely does not consist of a single decision but is a process of negotiation between the partners. The decision to approach could be triggered by the attractiveness of the partner. After an initial decision to approach is made, the course of courtship should be guided by the assumed investments of the prospective partners. Theoretically, we should expect a decision point (to stay or leave) to occur earlier for the females. This is an effect of their higher investment in the offspring.

These ultimate considerations allow us to state precise hypotheses on human mate selection. From these we can make predictions on the tactics that may be used in finding a mate, and in deciding if he/she is an appropriate mate. Finally we can predict that the ego will try to convince the prospective mate that he himself is appropriate for her, or vice versa.

9.3 THE COGNITIVE BASIS OF DECISION PROCESSES IN COURTSHIP

The process of finding, deciding upon and establishing a courtship relationship may be viewed as an attempt at social problem solving. The intentions or goals of one partner may not be shared by the other. If success

ful mating is to occur, the goals of the partners have to converge. The question here is, which tactics are efficient in achieving the pursued objectives? There have been numerous theories in social psychology and recently in sociobiology stating that the choice of an action depends on the costs of the action

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and its prospective benefits. Homans (1961) and, in a comparable approach, Thibaut and Kelly (1959), emphasized that the choice of an action depends on a plan which is evaluated in terms of the outcome produced. Each individual tries to maximize this outcome, and tries to establish at least equity, i.e. equalize cost and benefits with its partners. The problem with an empirical approach to such theories arises from the attempt to measure value, outcome, benefit.

Another approach, generated in linguistic theory, and derived from crosscultural research on verbal requests (Brown and Levinson, 1978) concentrates on the central terms of risk. This theory relies on the fact that people are quite capable of judging they can reach a defined objective. Risk, then, would describe the assessment of the possibility of reaching a certain goal. Thus risk describes the possibility of non-compliance by the partner.

Another individual might not even share the goals of the actor and interrupt the actor's ongoing behaviour by constructing 'behavioural blocks' (Charlesworth, 1978). These blocks have to be removed by the acting individual in such a way that he/she is able to reach the original goals. The removal of blocks is, according to Charlesworth, the adaptive function of intelligence. But 'social problem solving' is not only the art of removing existing and obvious interruptions in the behavioural stream. It appears to be less time and energy-consuming to make a plan which reduces the likelihood that a behavioural block occurs, than trying to remove existing blocks. An individual should thus weigh the existing behavioural alternative. Then the individual is able to apply a suitable strategy which lowers the probability that the goal reaching attempt will be blocked.

In order to make a plan, an individual has to assess the possible risk. This procedure has to start with an evaluation of the goal under quest. Each possible goal seems to have a defined risk. The knowledge regarding risk and goals is shared by all members of a group. Risk can certainly be modified through cultural rules or norms. It can also be changed by motivational factors, as for instance the high attractivity of a goal.

A further assessment of risk requires information that allows predictions to be made on the possible reactions of the target person. Thus information gathering is the most prominent feature in interactions. But the gathered information has to be processed and compared to stored information. This can be done when qualities of interactions form constant patterns over time. If regularities emerge in patterns, they are abstracted as concepts. These concepts form the basis for the deduction of future events. One of the most prominent features of concepts is that they tend to create dichotomies. Thus we should expect at least two axes in their organization: friendly-hostile and dominant-submissive are the most prominent ones. Conceptualized as relationships they allow a prediction of the behaviour a target person will show in a wide range of situations. This process also works among strangers.

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Humans tend to show signs of dominance and social attitudes in their appearance and behavioural style. They tend to constantly rank and classify prospective interaction partners (Zetterberg, 1966). Dominance and social distance are negotiated and clarified even more in the opening of interactions (Eibl-Eibesfeldt 1984).

We assume a constant, additive relation between the above mentioned parameters, as suggested by Brown and Levinson (1978). If high status and high social distance on the side of the actor are predictors of the possible compliance of the target person, the perception of high status and high social distance should create low or high risk for the goal pursued. Targets and goals thus have a risk feature which we can describe as the external organization of the social problem-solving attempt (Grammer, 1982). External organization provides the framework for the sequence, as well as for the quantity and quality of tactics of a goal reaching attempt. The question is, therefore, which tactics suit which risk conditions?

Before starting to act, the individual has to make a decision. This could be done by comparing the risk with the necessary costs and the possible benefits. If the costs in meeting the risk are higher than the estimated benefits, an individual will probably not initiate any behaviour at all. Thus we should expect the following situation: if an approach takes place, an initial encounter will at least last for a test-phase which allows the gathering of additional information.

Internal organization circumscribes the structure of a strategy selected out of a pathway network which includes all possible ways to a goal. A prerequisite for the development of strategies is the existence of tactics which enable the acting person to produce predictable effects (behavioural changes). Free variation in the use of tactics, however, is restricted by a number of constraints. The target person always interprets behaviour causally: he/she will interpret the actor's behaviour as directed towards a goal, i.e. as a means used by the partner to maximize the outcome of his/her behaviour. The actor is able to overcome this tendency by constructing behavioural 'detours'. If he/she chooses tactics which prepare the grounds for reaching the goal, then the target may not even realize that he/she has become compliant. Chisholm (1976) discusses this problem in terms of good and bad moves. The main feature of a good move would be that it does not restrict the actor's possibilities of further action. In contrast, a bad move would restrict the actor's possibilities or even interrupt the goal-reaching attempt. Tactics thus have to have a risk-dependent escalative potential. On the other hand, the limited amount of time available puts a certain restraint on the use of detours. The amount of time can be further reduced by competition. The time limit forces the actor to clarify his intentions within a certain time frame. Thus a dilemma arises out of the necessity to construct detours and, at the same time, to clarify intentions. This dilemma defines the qualities and the content of the

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tactics and determines their sequential use. Thus not only cost and possible benefits trigger the approach; the individual also has to include a comparison of the time limit and his/her available tactics.

If the quantity of risk is directly correlated with compliance of the target person, then low risk allows a direct approach. On the other hand, high risk demands detours, in order to increase the possibility of reaching the goal pursued. In this case the intentions are revealed step by step.

Empirical evidence suggests that the above mentioned hypotheses are useful for the description of, and for predictions on the structure of strategies in all situations where goals have to converge between interactants. Thus we might talk of a universal 'social-problems-solving algorithm'. This algorithm describes the nature of strategies and the risk-dependent quality of possible tactics. The basic ideas were supplied by Grammer (1982, 1985) for the organization of strategies of intervention in conflicts among preschool children and by Grammer and Shibusaka (1985) for access to play groups.

9.4 HUMAN COURTSHIP: GOAL DIRECTED ACTION

The approach proposed depends mainly on the possibilities of observing and classifying 'goals'. For a definition we will follow Cranach *et al.* (1980), who define goal as an imagined, aimed at stage at the end of an action. According to Cranach *et al.*, goals are structured both in time and hierarchically. Goals are describable as higher order goals with their respective subgoals. We have to take into account, however, that there is constant interaction between the different levels of goals. Another complication is the fact that goals may be adapted to situational changes during interaction.

In courtship behaviour, we find a broad spectrum of goals, but the ultimate goal of maximal/optimal reproduction is of prime importance. As a logical consequence we find sexual intercourse on the next level. At the same level, wishes for the establishment of relationships of different qualities will play a role. These are indeed the main goals found by Kirkendall (1961) in interviews with 200 American college students. It is on this level that we first find differences between the sexes. Owen (1982), analysed advertisements in a 'lonely hearts column'. In the analysed advertisements males seem to look for partners for 'fun times' (McDaniel, 1969), whereas females looked for permanent relationships and marriage. But this level may be complicated by the existence of goals not directly bound to reproduction. Self-esteem, achievement, approval or maintenance of power or status (mainly males) and even material or physical exploration are not uncommon (Skipper and Nass, 1966).

All three types of goals have the same subgoal: the choice of a target person of the other sex. This goal demands presentation as potential mate. The first second-order subgoal is identifying sex. According to Skrzipek (1981, 1982) and Horvath (1979) people seem to have a sex-specific template for the recog

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dition of the other sex. The relationship between shoulders and waist in males (broad shoulders, small waist) and the hip-waist relation in females (small waist, large hips) is used, among other clues, to judge gender. This seems to be a universal phenomenon, common to all cultures. At the same level of goals we find a necessity to identify the reproductive condition of a potential partner.

These goals are followed in time by attracting specific attention, as a first step for making contacts. Overcoming aggression maybe crucial at this point. In a study by Sack *et al.* (1982) one out of every four college students (independent of sex) reported that he/she had been either a victim of violence or had engaged in some form of violence in dating situations.

After making contacts the evaluation of the partner is necessary. Females should be interested in information on the males' potential for protecting and providing for her and her offspring whereas males should evaluate the females' tendency for cuckoldry. But there are, as far as we know, no data on the actual evaluation process. A hint may be given by Davis (1978) who found that males proceed faster to intimate topics than females in an acquaintance exercise.

At this point the female should pursue a second goal: testing out the male's willingness for investment. Again there are no data on the actual process or on the representation of this goal. The same holds for the next goals: achieving coordination (Barash, 1977) and maintaining spatial proximity. Holding attention, sexual enticement and, finally and, according to the theories probably more important for females: avoiding exploitation. Berk reports in his observations of a singles' dance that this is a goal women try to achieve by creating female-female alliances. This is underlined by the fact that atrocity stories are an important topic in conversations amongst the women (1977).

In a review of apparent goals, we find indications of a hierarchy and some evidence for biologically based goal-structures. Females should weigh goals differently than males, and we should also expect different risk assessments for the goals. The quality of the relationship pursued may play an important role. High expectations on quality of relationships, as with marriage intentions, could augment risk for the acting person.

9.5 STRATEGIES, TACTICS AND RISK PERCEPTION

In the discussion of actual behaviour, we will follow the time structure of the goals. We will also look for the influence of the higher-order goals. One caveat should be kept in mind: the fast-growing literature refers mainly to American college populations.

We also have to note that free decision and courting is not the usual case. Mates in traditional cultures are often selected by parents or relatives for socioeconomic reasons, and courtship is often carried out as a complex ritual.

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Cultural influence on decisions finds its expression in regulation through kinship, social class, and often by the age of the potential partners.

9.5.1 Advertisement and attracting specific attention

Attracting attention is the first goal. Attention is elicited through the display of signals that excite the interest of possible mates. No doubt these include a person's physical looks, clothing and behavioural style as a basis for the decision to approach him or her.

Observations and interviews indicate that non-verbal solicitation is mainly done by the female. Schefflen (1965) observed many non-verbal cues demonstrating courtship readiness. Symonds, in her observations of group-sex parties (1972), found the same signs, which she calls 'non-verbal come-ons'. The starting point is eye-contact followed by immediately looking away or lowering of the eyes. The next step is lowering or turning away of the head which is followed by mutual eye-contact again. More direct signs are: not looking away (outstaring), fixing the target person and starting to breathe synchronously. If the other person notices the contact, the eyes wander up and down his or her body. In addition Symonds describes typical patterns of sitting, standing (flexion of muscles or hand on the hip) and walking (flip of the hip). According to Givens (1978) the recognition phase is marked by head cocking, pouting, primping, eyebrow flashing and smiling. Moore (1985) who followed single females through a discotheque, indicates that it is the female who determines and controls the approaches of males by exhibiting or with 'holding displays: 'They can elicit a high number of male approaches, allowing them to choose from a number of available men, or they may direct solicitations at a particular man'. According to Moore, the number of male approaches correlates directly with the amount of female solicitation. Perper and Fox (1980) observed in bars that women often make the first but subtle move, usually little more than standing close to their target. Finally, Cary (1976) found that conversations only started when the female glanced at the man at the beginning of the encounter.

Women seem to be exquisitely familiar with what occurs during flirtation; on the contrary men are quite ignorant. Women can describe in great detail how they and other women flirt and pick up men. Even quite successful men seem to have no idea how they attract women and what happens during flirtation (Perper and Fox, 1980). 'I just knew that it would work out' was an answer often recorded by Kirkendall (1961). According to him, males' decisions are based on the reputation of the girl, her clothes, and the place where they found her (bars, etc.). Berk (1977) in his observations of singles' dances found that men enhanced presentation by typical arrival and departure patterns: coming with a friend, coming late and leaving early were widespread.

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9.5.2 Target choice

Besides female solicitation, other factors influence the decision to approach. Regardless of context, physical attractiveness has been found to be the primary basis on which dating selections are made. This is the case both in terms of what people say they want, and in choices actually made. Coombs and Kenkel (1966) pointed out that physical attraction was the most important variable for both men and women, but more influential for men. Men were attracted to women who shared their sexual attitudes. Women's choices were modified by race, religion, intelligence, campus status of men and by concern about dancing ability and dress. Walster *et al* (1966) added the factors of personality and popularity and called the whole complex 'social desirability'.

The status of the male, his economic attributes and thus his abilities to offer financial security influence the female's decision (Rubin, 1973; Harrison and Saeed, 1977). In a non-college population, females preferred higher status males over low status males (Green *et al*, 1984). Furthermore elder males and younger females had an enhanced dating potential in this and other studies (Folkes, 1982). Sigall and Landy (1973) make corresponding observations. People usually ascribe higher status to men who are accompanied by attractive women. Women however, do not only seek financial security in males. Their value as a social partner also correlates with the magnitude of emotional security a male can provide (Fowler, 1978). Finally, for the overall weighting of traits, Coombs and Kenkel (1966) found, in general, that females have higher aspirations for partners than men.

The basis of the main trait influencing decision, physical attractiveness, is not yet clear. Clarification of this point would be essential for the inference that higher attractiveness would guarantee higher fitness in the offspring. The assessment of physical attractiveness seems to be based on a number of traits rather than any single one. Eibl-Eibesfeldt (1984) summarizes attractiveness factors: regularity of features, smoothness of complexion, optimum stature and good physique. Thus initial attraction is based largely on characteristics which are not unrelated to health condition or sexual potential.

The size of breasts and buttocks correlate with sexual attractiveness, although this correlation is culture-dependent (Hess, 1975). Cant (1981) hypothesizes on the basis of Frisch's (1975) statement 'fat is the issue', that big breasts and buttocks signal a female's potential for parental investment in her offspring. Critical fat levels seem to be responsible for menarche and thus ovulation (showing receptivity) and for lactation (showing possible female investment). It is possible that breast size is an indicator of fertility and potential parental investment, but in view of this it is interesting that breast size influences sexual attractiveness and not mate selection.

Numerous authors stress that attractiveness seems to be dependent on

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cultural norms (Berscheid and Walster, 1974). But cross-cultural comparison of mate selection (from the literature) is almost impossible at present because information, where it exists, is not very reliable and seldom complete (Rosenblatt and Anderson, 1981). This is an open field for further research.

The same holds for the expected influences of social class. According to Eckland (1982) it is still an unsolved problem whether social class or spatial proximity play a role in mate selection. Clarke (1952) found that in Columbus, Ohio more than half of the married couples under study lived within walking distance of each other at the time of first dating. Humans do not live randomly dispersed, however, and in western society, neighbourhoods are normally inhabited by the same social class. We are not yet able to decide whether attempts to maintain spatial proximity, or social origin itself, are factors for mate-choice.

We would assume that a decision to approach is made when an individual is sighted whose traits are at their maximum value. Huston (1973) tested the selection of possible mates as dependent on their attractiveness. He started with the assumption that males would prefer only highly attractive females. If he gave men the information that they would always be accepted, men chose highly attractive females. If he told them it was not sure that the females would accept them, they chose partners slightly above medium attractiveness. Males thus perceived their chance of being accepted as dependent upon attractiveness of the female. Murstein (1976) suggests that individuals try to match their physical appearance, one with the other, and choose partners whose physical appearance is comparable in attractiveness. He also presented data to support this theory using independent ratings of the photographs of married and courting couples. The results suggest that couples are indeed more similar in physical attractiveness than would be predicted by chance alone.

The picture of the traits used for decisions in mate selection and the actual behaviour in the opening phase appear to reflect the biological hypotheses. Females seem to be choosy, looking for high status males older than they are themselves; males who can provide material and emotional security in a relationship. In contrast, males decide on the basis of sexual and physical attraction and prefer younger females. To date, however, there is no proof that these factors are related to fitness, i.e. that these traits guarantee more offspring.

Where individual variability for the above-mentioned traits is present, we should expect that males and females can be ranked according to those traits. If maximum reproductive success is coupled with maximum occurrence of traits, then competition arises. If all men like beautiful women, and beautiful women seek emotionally secure men of high status, then beauty and dominance will be selected for. As an outcome of competition, though, we find actual mate selection which is based on resemblance in one or more character-

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istics. Usually, in humans, assortative mating is positive (i.e. greater than chance similarity of mates). No one has yet demonstrated negative assortative mating for any human trait in any large population in a statistically significant way. Tharp (1963) reviewed the following traits: race, ethnic origin, social class, age, religion, education, intelligence, various personality traits, physical characteristics (height, weight, complexion), values, interests, residential propinquity and many other variables. Intelligence quotient, age, and formal education showed the highest degree of assortative mating in European and North American Caucasoid populations.

The concordance of traits in mate selection might be due to risk-perception. An approach could be triggered by the comparison of risk, the available tactics and a rating of one's own attractiveness. Whether an individual starts acting depends on whether he/she can handle the amount of risk assumed to be present in the situation.

Furthermore, if he/she takes his own attractiveness into account, he/she ends with a partner of the same value. If we add the time-limit which is created by male-male competition, we can hypothesize that males should be more aware of their own attractiveness to females than vice versa.

9.5.3 Making contacts

According to McCormick and Jesser (1983), the man is not the sexual aggressor eagerly pressing himself on the coy and reluctant women. We saw that the first moves on the woman's side may be subtle. Thus it seems understandable that men come to believe that they started the interaction themselves. And indeed, in most of the cases, the first overt moves are on the male side. If males are in competition with other males, they must take their chance as soon as they see risk lowered through solicitation. Kirkendall's interviews (1961) show that males usually start indirectly with suggestions and invitations. The majority of males state that it is easier for them to start with indirect or conventional speech acts, only implying interest indirectly. There is thus no relevant statement for the specific moment. The content of the verbal utterances does not endanger the arising relationship. Interestingly enough, most of the students stated that men should take the initiative for making contact. Observations on verbal invitations made by Symonds (1972) in 'swinger parties' and by Roebuck and Spray (1970) in a cocktail lounge underline this finding. Symonds summarizes: 'I am willing to generalize, that with the male propositioner the directness of the proposition is positively correlated with his perception of acceptance'. According to her, an indirect proposition would be the best for both partners, because this way the propositioner does not feel 'put clown' through rejection and the propositionee is not committed. Cook (1981) concludes, on the basis of cultural comparisons made by Ford and Beach (1952), that direct invitations seem to be an excep-

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tion. He describes most of the invitations as vague, symbolic or non-verbal. The point about direct verbal invitations is that they tend to require direct verbal answers, which either commit the speaker or offend the asker. Apart from this, we also find direct, unmistakable invitations, in contrast to the overall rule of indirectness. The reason for these could be found in risk perception. If risk plays a role, first utterances should vary in risk, depending on their directness. Indeed this is a critical point, because here rejection can occur for the first time. This is underlined by Berk (1977) who describes males' strategies for the management of rejection. Common tactics are: denial (do not look at it, it does not exist), redefinition (talk it away), enhancing presentations, 1 mating involvement, putting others down (I'm better than they are) or withdrawal.

9.5.4 Evaluation and achieving of coordination

First we will look at the behavioural repertoire which is used during the first stages of courtship.

Givens (1978) describes a high degree of female ambivalence: primping, object caressing and glancing at and then away from the male. Females and males in conversation appear highly animated and Moore (1985) found that women were highly excited while talking to men. They laughed, smiled and gesticulated frequently after making contact. This is the point where the woman reaffirms her interest: by nodding often, leaning close to the man, smiling and laughing at higher frequencies.

All of these descriptions have two points in common. They portray nonverbal behaviour which also occurs in normal interactions. In courtship, however, the frequency of performance is said to be higher. In addition, quality of the behaviour appears to be different. Descriptions such as: somewhat longer, transient, somewhat more than usual, vehement and quick are qualitative markers for this. Non-verbal behaviour in courtship holds an element of exaggeration which is now directed at a defined target person.

Achieving coordination means convincing the partner that some common base can be established. This can be reached by establishing common ground in the first utterances. Common ground is established non-verbally by the female through nodding (Morris, 1978) or by 'lean', a very common solicitation pattern. 'Lean' is performed by moving the upper part of the body in the direction of the man and thus demonstrating unison (Moore, 1985). Perper and Fox (1980) found that they could predict by the degree of non-verbal synchronization whether a couple left a bar together or would separate again. Dancing together plays a prominent role in courtship. Dancing is a test phase which makes it possible to evaluate whether a partner is able to share a common basis. Furthermore, the amount of non-verbal synchronization might signal readiness.

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The Kirkendall (1961) interviews are the best source for verbal strategies.

An 18-year old male reports: 'I had it all down to a pretty good science by that time. I could take her ideas and make them appear that we both agreed on the same thing'. Some of the students developed sophisticated systems of verbal persuasion. Other students followed the motto: if you start to talk, you'll talk yourself right out of it'. Verbal persuasion by males often refers to appeals based on females' desires. These appeals are often indirect and ambiguous. We find appeals to wishes for love and a permanent relationship, to the wish to appear intelligent or even fair. Finally there are attempts to diminish or evoke anxiety through threats of different kinds. Self-disclosure, i.e. the voluntary revelation of emotional cues or information on the self, is another strategy. Berk (1977) describes the 'sad tales tactic' which utilizes appeals to compassion.

These findings apply to the males' tactics, which seem to take the active part at this stage, whereas the female controls the situation by her non-verbal behaviour. This situation led Broverman *et al.* (1972) to the assumption that in the early stages of relationships men show more structuring activities. This was verified by Davis (1978): in a role play men were the architects of the encounter. They chose the topics independently from the females, which was not appreciated by the latter. The males' pleasure was the higher, the more self-disclosure occurred in the females. In contrast to these findings Kendon (1975) found in his analysis of a 'kissing-round' that the active behaviour of the man was controlled by the presence or absence of non-verbal signs in the female. Vivid facial expressions shown by the women regulated and modulated the approach and orientation of the man. If the woman smiled with lips closed, he started kissing her, if she smiled showing upper teeth, he looked away, this being another hint of female non-verbal control.

It is a saying that the harder women are to get, the more attractive they are to men. Walster *et al.* (1973) could not prove this hypothesis. On the contrary, men appeared repelled by such females. But what was found was that a woman could augment her desirability by attaining such a reputation and then making clear to the present partner that he was the only exception, thus demonstrating selectivity.

What about self-presentation on the male's side? Berk (1977) found that men foster positive impressions by demonstrating coolness, showing that they lead an exciting life, and by claiming prestigious occupations. In addition, it is of advantage if a third party, usually a friend, can verify these statements. Thus the friend is able to testify credibility and respectability which, in return, encourages females to trust the male. Kirkendall's males tried to impress their females by showing them how many friends they had, by the clothes they

were wearing or by demonstrating their capabilities.

A further point would be to avoid exploitation on the females' side. This could be done by forming alliances with other women. Berk (1977) observed

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that women who came to the dance alone quickly formed alliances with a female friend. The allies found thus quickly exchanged information on the exploitative potential of males.

In the further course of courtship we find that argumentative-persuasive communication diminishes. Appeals by the males to the self-esteem and self determination of the women now become more important. Further tactical moves are the establishment of mutual regard and attempts to appear or to be actually predictable in one's behaviour. The female usually presses for commitment at this point. If she does this too emphatically the male feels threatened and loses respect (Kirkendall, 1961).

The course of courtship (for the observed college populations), so far, is structured on quite different levels. Non-verbal signs emitted by the female show acceptance or refusal. These signs indicate the course of risk development for the male. On the verbal level, males try to avoid directness. In western societies, the males appear to have relative autonomy and the opening initiative is on their side. Thus self-presentation of the male on this level seems to be the important issue. Self-presentation is a strategic means by which risk is reduced for the next decision. Within self-presentation, males display those characteristics the female seeks in an optimal partner.

With the next goal, we find a distinctly marked risk threshold. The first stage is attaining physical contact. Most of this is done indirectly: touches appear accidental (Symonds, 1972). Moore (1985) observed a female tactic she calls breast touch or brush which is a short contact of the female's breast with the male's body. It was difficult to tell, except by length of time of contact, whether or not the movement was purposeful. Here again we find indirect approach. In a study by McCormick (1979) the answers given by students, when questioned on a hypothetical sexual encounter, indicated that both males and females prefer indirect strategies. They state for instance: 'I would test my limits by holding hands, sitting closer to the person.' But on the other hand, a highly direct arousal strategy is also popular with both males and females. Male: 'If she gives me the come on, then I would proceed very vigorously'. This occurs slightly differently on the female's side: 'I would try to be very sexy . . . a few sighs here and there . . . this would probably be all . . . aside from wearing something slinky and bare'. Attempts by males to persuade females to sexual intercourse often employ indirect verbal-strategies in order to avoid simple yes/no questions. Male: 'I never ask a girl if I may unbutton her blouse. I ask if it unbuttons or unsnaps, or if it unbuttons in the back or in the front. This way she has less chance to say no' (Kirkendall, 1961).

So far, it seems that sexual enticement is consistent with the gender role stereotype, although we find again a high degree of non-verbal control on the female's side. But the problem seems to lie in the analytical approach. Most of the results are generated out of interviews, thus relying on perception and

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consciously traceable information. It could be that gender roles are also generated on a perceptual level. This is outlined by the fact that men usually say they would use seduction significantly more often than women (McCormick and Jesser, 1983), a fact clearly contradicted by the non-verbal solicitation results.

However, (McCormick and Jesser, 1983) both partners prefer seduction over all other strategies of making a potential partner agree to sexual intercourse. When describing their personal use of power via various strategies, men use power related strategies significantly more often than women do in order to achieve sexual intercourse. Women use power-related strategies significantly more often than men do in avoiding sexual intercourse. Aggression, as for instance verbal threat, is widespread among males (Kirkendall, 1961). Males also report, however, that females started the aggression.

9.6 THE COURTSHIP GAME: COGNITION AND DETERMINATION

9.6.1 Risk-estimation: prerequisite for mate selection

Risk estimation seems to play a considerable role in courtship. For males, at least, high physical attractiveness in the female creates high risks of rejection. Thus, ultimate necessities of male choice, if high physical attractiveness marks a good partner for maximal rearing of offspring, are modified by risk perception on the proximate level. In addition, risk perception in the male is linked with the fact that investment might be in vain. Another male may compete and then investment may be lost. This could at least explain why males make the first overt move in the courtship game. Thus male risk perception depends on the quality of the partner and is modified by possible competition.

A female's risk perception should be governed by ultimate considerations, because of their high investment in the offspring. Females actually appear to follow the hypothetical rules for mate selection, if high status males are better protectors and providers. In contrast to the males, females show higher aspiration in mate choice: they choose actively, elicit approaches, and control the further course of courtship. In addition, female risk-perception is modified by possible behavioural tendencies of the partner, like philandering.

Females change the male's risk-perception through solicitation and eliciting attention. At the same time, females induce male-male competition. High attractiveness of a female seems to imply that she has wider possibilities for mate choice. The male thus supposes that he has to face a great amount of competition with other males and that higher investment is necessary. This makes it likely that the decision for an actual approach is determined by risk perception. The risk itself is generated on the basis of the attributes of the target person and the amount of solicitation performed.

We could also imagine that cognitive factors are responsible for assortative

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mating. What has been completely neglected in research to date is the self assessment of attractiveness. This may augment or reduce risk in a given case. If an individual searches for a partner dependent on the maximum risk he/she can deal with, his/her own qualities will influence risk in such a way that assortative mating occurs automatically. He/she only attains partners according to his/her risk reducing potential.

Human mate choice thus shows two main decision lines. Mates seem to be chosen according to ultimate necessities; an eventual approach appears to be dictated by the risk of rejection. This forces choice to an optimum level.

The actual process of decision-making is another open question. There is evidence, however, that a person is able to 'filter out' at the various stages of courtship those persons who would be unsuitable intimates, by attending to a sequence of differently-based information about a partner (Duck, 1977). This process is complicated by the possibilities of weighing or ranking traits. Males could select a ranking method, because they rely more or less on one trait. Amongst females, however, we find there are numerous traits and thus combinations which could result in the same outcome of fitness for their offspring. Here, however, data on variability in choice, weighing and ranking of factors are lacking.

It is clear that the central problem of this discussion is the weighing of risk determining factors. Weighing is the tactic an individual will probably choose if there is competition. The possibility of selecting between different traits which might produce the same outcome for fitness could reduce female competition. How far such processes play a role in mate-choice has not yet been touched upon by research. We could postulate that the single concept of attractiveness is divisible into the factors producing it. This would allow us to take into consideration and compare the different factors of attractiveness and reduction of competition amongst males and females.

Furthermore, risk can be modified by a series of factors, for instance individual goal conception. Searching for a partner for fun times or a marriage partner can change risk dramatically. Other factors are individual motivation or self-esteem. Males with high self-esteem (whatever their own physical attractiveness may be) will tend to seek out females of high physical attractiveness, as shown by Stroebe (1977). Thus we should expect flexibility in risk-perception, taking into account historical and societal changes. In other words, changes in the cultural definition of risk of mate-choice itself.

Here, it has been shown that courtship is structured by a set of general rules from which there is little deviation. Cultural and historical influences are mostly neglected in research. They must be taken into account, however, in order to demonstrate the basic components of courtship, which seem to be culturally invariant.

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9.6.2 Internal and external organization of strategies

Diminishing social distance and creating affiliation are the main objects of courtship. Risk can be met in manifold ways. We should expect that individuals act according to the risk they perceive. In what way the establishment of power does play a role; however, we do not know. We should expect that for higher status males the risk should be lower.

Symonds (1972) and Cook (1981) both describe the same principle for the negotiation process in courtship. This principle is the variation of verbal and non-verbal directness with perceived chance of success. Here we find explicit sex differences. Females who have an overall higher investment should encounter an overall higher risk. Females are more indirect and so employ non-committal non-verbal invitation, in this way exerting control. Interpretation of the message is left to the receiver and thus response is not obligatory. The overt verbal efforts of males vary according to the risk of rejection. In verbalization, males tend to become indirect under high risk conditions. It is at this point that we find the meshing of verbal and non-verbal signals. Nonverbal behaviour is highly prominent in courtship, because it does not put others in a position of being obliged. So females appear 'animated', but at the same time the situation is one of high ambivalence. For example, the sign value of a body movement can be doubled by three processes: first, a nonverbal behaviour can be framed by a typical movement configuration. Usually we find a fast start of the movement up to its peak. At the peak a detectable pause occurs. Finally the movement is accomplished by a slow move back to the starting point. Another way is by producing the movement in rhythmical bouts (e.g. nodding). Thirdly, it is possible to change the movement's background, for contrast.

Moreover, we have to admit that the data on verbal behaviour, probably the vain social tool in courtship, remain little more than fragmentary. Thus research on this neglected point is a major issue for further research.

It is not clear if consorts calculate risk out of social distance, the goal and the distribution of power in the dyad. But it is clear that risk assessment occurs. It is certainly a cognitive tool for cost-benefit calculations. Risk seems to be an anticipation of possible benefits and necessary investment, determined by a complex, and probably individually variable, summing up of factors. On the other hand, risk also seems to determine the decisions and the necessary tactics.

Thus, the point to be investigated is: who structures what? At first we find a clear but subtle initiation role on the female's side. This finding is in contrast to the general view of gender roles. The overt initiator is still the male, possibly pressed by male-male competition. Female initiation only lowers risk in the perception of the male. Owing to intersexual conflict, one would expect that the sex with the higher cost should structure the interaction

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to a higher degree. Indeed, females try to force the contact in the direction of a long-term relationship and press for commitment.

Further evidence for intersexual conflict can be seen in the high degree of ambivalence in the female's non-verbal behaviour. This could well be a means of testing the male's willingness for investment, i.e. coyness. We do not find an active or passive role: both partners structure courtship. But they do it with different means at different times.

Up to this point, we assumed the existence of at least a minimal mutual interest. But what if one of the partners recognizes that the other does not comply with his/her wishes? Here we would hypothesize that verbal behaviour would become more indirect or vague and that the favoured tactics would show either no solicitation behaviour or non-verbal signs of rejection. Another way for the partners would be to impose their wishes aggressively. Surprisingly, Kirkendall (1961) reports that it is the females who often start aggressive acts if the male does not meet with their demands. On the other hand, we find an interesting dichotomy: males use power for attaining, females for avoiding sexual intercourse. This again underlines the fact that the sexes assess the sexual act differentially, with the greater risk on the female side.

All authors studying human courtship emphasize the 'invariance' of courtship. 'Variance' on the other hand is not described. Invariance could well be a result of the interaction of two adaptive systems. We find that large parts of the decisions made and of the repertoire used seem to be influenced or acted out according to biological necessities. On the other hand, we find that actual behaviour and the course of the episodes are structured by another adaptive system. This system has its roots in cognitive restraints on interactions and goal-reaching attempts. Adding to the complexity of the system is the fact that risk has to be met by behaviour tactics with a predetermined function. We can speculate that the higher the risk becomes, the higher the degree of invariance of the courtship episodes.

What is still missing in research is observation of the tactics males and females could use for lowering risk. One of these tactics is certainly self presentation. Self-presentation with its components could play the main role in human courtship. In self-presentation we should expect sex differences according to the biological hypotheses stated above. Moreover, self-presentation should occur in relation to risk perception. Out of the existing fragmentary work we could define at least five main themes:

(a)The demonstration of qualities in the developing relationship. Status differences and social distance can be manipulated. They can be maximized or minimized with respect to the target person.

(b)The demonstration of number and quality of social relationships outside the dyed (e.g. showing the number of friends).

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(c)The demonstration of physical and psychic abilities and knowledge (e.g. accentuation of physical appearance, or showing one's driving ability).

(d)The demonstration of the available object world (the things I have or give away).

(e)The demonstration of the value of intended or executed acts (I did it this way, or we could do this that way).

These dimensions become self-presentation through qualitative changes: over-accentuation and under-accentuation. The first possibility is present in display, the second in ingratiation.

If we introduce self-presentation into the biological hypothesis we expect marked sex differences. A female's self-presentation should mark her attractiveness to males and her offspring-raising potential. Male self-presentation should be adapted to the female's wish for male investment. Resulting from intra-male competition, self-presentation should be performed with higher frequencies among males. Self-presentation tries to lower risk in the perception of the partner at any stage of courtship, and thus should form a central point in research on courtship.

Although we find many hints, it is not yet clear how ingratiation and display are produced in behaviour with respect to risk-perception. Finding out more about this is the aim of a current research project. On the basis of the above mentioned theoretical considerations, we can state the following hypotheses:

1. An approach depends on a comparison of necessary costs, risk and the possible benefits. It might also be controlled by a time limit. The decision for an approach could depend on comparisons of risk and available means. The attractiveness of the actor may play an important role in risk reduction.

2. The amount of risk controls the amount of solicitation in the female and determines the directness of the male's first move.

Tactics in courtship follow the 'good move principle': males and females act according to a perceived risk. If necessary, they create detours which find their expression in verbalization in direct terms.

4. The content of self-presentation is dictated by the ultimate necessities in courtship and is thus different for both sexes.

5. The quality of self-presentation varies with risk-perception, from direct presentation in low-risk situations to indirectness in high-risk situations.

6. The intensity of self-presentation is controlled by female solicitation.

7. Females and males pursue sex-specific information-gathering strategies.

According to the research to date, courtship thus might really be the bastion for gender role-performance. Most of the facts coincide with the hypotheses introduced above. At this point, however, care must be taken since

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the data base is not yet broad enough. The review presented here relies on a handful of results gathered mostly by interviewing American and Northern European males and females. As already mentioned, interviews might well only continue the stereotypes found that conceptualize shared cultural knowledge.

ACKNOWLEDGEMENTS

This work is part of the research project 'Male courtship: behavioural strategies of self-presentation' granted by the Deutsche Forschungsgemeinschaft (EI 24/11-1).

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