Origins of Language in relation to Sexual Selection: the effect of mutual mate choice on sex differences in speech content

Examination Number: 4459747

Master of Science in Evolution of Language and Cognition

The University of Edinburgh

Year of Presentation: 2010

I have read and understood The University of Edinburgh guidelines on Plagiarism and declare that this written dissertation is all my own work except where I indicate otherwise by proper use of quotes and references.

ABSTRACT

Language can be viewed as sexual displays from an evolutionary perspective. As both sexes in humans contribute significantly to parental care, we can expect that both males and females use language to display their favourable qualities in order to attract potential mates. In this study, 50 participants (22 male, 28 female) rated 30 vignettes, in which a male or female protagonist attempted to impress an opposite sex friend in a conversation. In both male-female and female-male flirtations, conversations revealing the speaker's positive character traits were the most highly rated while those explicitly showing the speaker's sexual interest in the potential partner were the most poorly rated. Despite the similarities, there were significant sex differences in the ratings of some individual vignettes and item-groups. Such differences would be chiefly discussed from an evolutionary perspective.

1. Introduction

The origins of language surely deserve and require a great deal of discussion among researchers from a wide range of disciplines. Based on my previous essay about the sexually attractive features of language (Szeto 2009), I will look into the relationship between sexual selection and language origins in greater depth, with a special focus on the effect of mutual mate choice on sex differences in speech content.

Despite the prevalence of elaborate animal communication systems, it is essentially unequivocal that humans are the only species which possess language (Barrett, Dunbar and Lycett 2002; Hurford 2006; Workman and Reader 2004). The long-running debate between the adaptationist side and the nonadaptationist side notwithstanding, most researchers now take the view that natural selection must have played a key role in the biological evolution of language (Hurford 2006; Pinker 1994). Putting it in a Darwinian way, language is a heritable biological adaptation which can improve the fitness of its possessors, i.e. help them survive and produce more offspring. In their seminal paper, Pinker and Bloom (1990) argued that the evolution of the language faculty is similar to the evolution of the mammalian eye in various aspects. They concluded that human language evolved by natural selection based on the fact that language shows signs of complex design for the communication of propositional structures, and the only possible origin of organs with complex design is the process of natural selection. Furthermore, the nonadaptationist theories (Chomsky 1972, 1988; Lightfoot, 1991) fail to explain 'the costs associated with the specialist hardware that language requires' (Workman and Reader 2004: 252), such as the costly neural material in Broca's area and Wernicke's area, and the complex design of the vocal tract which may lead to choking.

Although it sounds convincing that natural selection has contributed substantially to language evolution, language, just like many other forms of uniquely human behaviour, can hardly be explained by natural selection alone. As it is very obvious that information exchange can enhance survival in many circumstances, many conventional theories for the origins of language, not surprisingly, focus on this communicative function of language (Crystal 1997; Pinker and Bloom 1990; Pinker 1994). As Barrett et al. (2002) pointed out, such a tendency is predicated upon the view that the most important information-exchange problems faced by our ancestors were related to

hunting and gathering. This view, however, is not without its problems. First, it has been found that the conversation topics in both modern industrial societies (Landis and Burtt 1924; Kipers 1987; Bischoping 1993; Dunbar et al. 1997) and traditional societies (Haviland 1991) are dominated by the exchange of social information ('gossip' in a broad sense), instead of ecological information or instructional information. Furthermore, hunters usually hunt in very small groups, and, more importantly, often do so in silence (Barrett et al. 2002; Smith 1991). Contrary to popular belief, language does not seem to have evolved for hunting and gathering. In the next section, therefore, our focus will be shifted away from this traditional yet problematic view.

2. Literature Review

There are alternative explanations for the origins of language which focus on the social functions of language. As suggested by Dunbar (1993, 1996), the exchange of social information is the main function of language, and language evolved to support the bonding between individuals within large social groups. This function can be linked to that of social grooming in Old World monkeys and apes, which groom each other to bond their groups. As grooming stimulates the release of beta-endorphin (Keverne et al. 1989), it is associated with the feeling of relaxation and pleasure, thus creating a sense of trust and contentment, which can help to build and maintain different kinds of relationships (Aureli et al. 1989; de Waal 1989). Given that modern humans have evolved to be able to manage a stable group size of around 150, Dunbar (1993) illustrated that humans would need to spend around 43 per cent of their waking time grooming each other if they bonded their social groups in the same way as other Old World monkeys and apes do. However, as the mean amount of time spent in social interaction in a range of modern human societies is the same as the upper limit on social time observed in other primates (Barrett et al. 2002), humans must have devel-

oped some capacity to bond larger groups in the same amount of time. Our language capacity seems to be the answer.

Language can obviously be viewed as a form of grooming-at-a-distance which can facilitate the bonding of large social groups because it allows us to interact with much more individuals at the same time (Barrett et al. 2002). In addition, Dunbar (1993, 1996) hypothesized that the exchange of information about the current states of the social network (e.g. 'gossip' such as who are friends with whom, who have just broken up a relationship) is crucial to the cohesion of large social groups (i.e. the Gossip Hypothesis). If humans did not possess language, it would be impossible for them to acquire or exchange social information which they did not witness in person. Admittedly, language cannot perform each and every function which grooming can serve - a problem with language as grooming-at-a-distance is that grooming is a costly signal; whereas the language signal is cheap, and therefore not reliably honest. Nevertheless, although second-hand knowledge is never as reliable and accurate as direct personal knowledge, being able to monitor changes within a social network while one is not present can still give one a significant advantage (Barrett et al. 2002). Another suggested social function of language is its policing function (Enquist and Leimar 1993). According to them, gossip makes it possible for humans to denounce and exchange warnings about free-riders, which is important to the success of large social groups because free-riding may lead to Pareto inefficiency (Ng 1983), thus limiting the success or even disrupting the equilibrium of a given social group.

Courtship displays are probably the most intriguing yet controversial function of language. As Miller (2001) stated, language is undoubtedly useful in coordinating various kinds of survival and social activities, but it is also useful in courtship.

Charles Darwin noticed this peculiar property of language in the 19th century and proposed a plausible explanation, namely sexual selection (Darwin 1871). Sexual se-

lection refers to the selective force which makes individuals evolve sexually attractive characteristics which can give them advantages in gaining access to mates. Such characteristics may sometimes impair survival chances. In most species, including humans, sexual selection chiefly entails male-male competition and female choice (Andersson 1994; Darwin 1871; Hurford 2007; Miller 1999; Workman and Reader 2004). Miller (2001) pointed out that although Darwin had some good ideas about the relationship between language evolution and sexual selection, not until recently did scientists give serious attention to this intriguing issue. Miller described the dual function of language as follows:

Language evolved as much to display our fitness as to communicate useful information...to biologists, fitness advertisement is the norm, and language is an exceptional form of it. We are the only species in the evolutionary history of our planet to have discovered system of fitness indicators and sexual ornaments that also happens to transmit ideas from one head to another. (Miller 2001: 390-391)

From the above quote, we can identify two separate functions of language, namely displaying fitness to potential mates, and transmitting ideas from one head to another. The latter is about the exchange of different kinds of information, which has already been discussed earlier in this section; while the former accounts for the ornamental features of human language shaped by sexual selection. Before narrowing down our focus on the sex differences in speech content, it is essential to identify various sexually attractive features of language and discuss why they are 'sexy' first.

It is important to acknowledge the fact that the sexual selection argument is anything but flawless. One problem with the sexual selection argument is that kids learn their whole language well before puberty, during a time when they cannot possibly have sex. On the contrary, other well-recognized secondary sex characteristics in humans, such as the enlargement of breasts of females and the growth of facial hairs on males, do not appear until we reach puberty. It is therefore doubtful whether language is primarily for attracting mates. Another problem is that there are hardly any differences between male language and female language (apart from the pitch of voice). If sexual selection is all about male-male competition, why are females equally good at language (and maybe even a bit better)? Miller (2001) has presented some arguments to maintain his stance. To study the role of sexual selection in language evolution, the validity of such arguments has to be evaluated first. As sexual selection can involve male-male competition for access to females, we can deduce that males should endeavour to make more people hear their voice much more often than females do. In other words, males should have a higher tendency to display their favourable qualities in public. As Miller (2001: 376) stated, 'Men write more books. Men give more lectures. Men ask more questions after lectures. Men dominate mixed-sex committee discussions. Men post more email to Internet discussion groups'. Indeed, Miller's study in 1999 reveals that the production of cultural works (including language-related works) shows a huge sexual dimorphism - males produce significantly more cultural works than females do, especially during the period of sexual fertility. Miller (1999: 86) concluded that 'human cultural production functions largely as a courtship display, and the persistent sex difference in public cultural production rates reflects an evolved sex difference in courtship strategies'. Whereas Miller's findings show an interesting phenomenon, we had better take his conclusion with a pinch of salt. It is virtually a universal norm that males are socially dominant (Myers 2002). Females may speak in public or publish cultural works less frequently because of cultural norm, social expectation, religious belief, or even legal prohibition. To put it another way, present-day humans often have to behave with accordance to their gender role (Myers 2002), and females are usually expected or allowed to speak less in public. The origin of such a male-dominant social structure is another complicated issue. In brief, the sex difference in the frequency of public language use cannot be explained by sexual selection per se, as many other factors may also have contributed to this sexual dimorphism.

It is suggested that some of the sexually attractive features of language may lie in its musical properties (Darwin 1871; Hurford 2007; Miller 2001). There is indeed an intricate interrelationship between music and language.

Both faculties combine discrete elements (notes/phonemes) into complex structures according to rules...Neuroimaging shows frequent overlap between the brain regions that language and music activate. Recent studies suggest that Broca's areathought to be responsible for linguistic syntax - is also activated by chords that are inappropriate to their musical context, indicating that the areas may have a role in musical 'grammar'. Behavioural research also suggests that music and language comprehension can interfere with each other. (McDermott 2008: 288)

Music is an integral part of all known human cultures despite its lack of obvious adaptive functions (McDermott 2008). Although McDermott (2008) states that animal 'music' is not homologous to human music, as it is widely accepted that animals such as insects, frogs, birds, and gibbons use songs or other acoustic signals to attract mates (Andersson 1994), it is likely that music evolved in humans for a similar function. Darwin (1871) believed that music is a product of sexual selection used by our ancestors to charm each other before the emergence of language – 'primeval man, or rather some early progenitor of man, probably first used his voice in producing true musical cadences, that is in singing, as do some of the gibbon-apes at the present day;

and we may conclude from a widely-spread analogy, that this power would have been especially exerted during the courtship of the sexes'. As Hurford (2007: 281) suggested, 'the capacity to control such "musical" outputs may have given rise to the human capacity to combine prosodic structure with articulated, semantically compositional language which arose later'. The musical features of speech such as rhythm, stress, amplitude, and intonation can give us clues about some elements of language which are not always conveyable through grammar or choice of words - examples include the emotional state, attitude, and intention of the speaker. For instance, by uttering 'Thank you' in prosodically different ways, one can express gratitude in a sincere, perfunctory, or even sarcastic way. Similar examples abound. The bottom line is that differences in prosodic (or musical) features can make utterances composed of exactly the same words function quite differently.

It is noteworthy that such functions of the musical features of language do not seem like a quintessential product of sexual selection because communicating one's emotion, attitude, and intention has considerable survival value (Mithen 2005). It is therefore important to clarify the relationship between music and the musical features of language. As discussed before, music probably evolved through sexual selection. Mithen (2005) argued that music and language shared a common origin, but it does not really matter whether this argument is valid or not because after all they must have evolved along different paths, albeit with some sorts of complex interaction (see Mithen 2005 for an in-depth investigation into such interaction). The crux of the matter is that such interaction might have resulted in the adaptive musical features of language, possibly evolved through natural selection. Moreover, except for the difference between male and female voices, the most well-established sexually dimorphic feature of human language (Hurford 2007), there is no strong evidence suggesting that males and females make use of the musical features of language differently.

In short, it does not sound convincing that the musical features of language are sexually attractive (except for the sex difference in voice, which also exists in some other animals) in spite of the fact that music is likely a product of sexual selection.

Miller (2001) highlighted the extraordinarily large vocabulary size of an average adult human and attributed it to sexual selection. He argued that most of the words in natural languages are 'useless' ornaments for sexual display. He cited two examples, namely Basic English and pidgin languages, to support his argument that a much smaller vocabulary size is sufficient for everyday use. However, both of his examples are not quite convincing. Basic English is an artificial language comprising a stripped-down English vocabulary of just 850 words, around 1 per cent of the vocabulary size of an average English-speaking adult (Miller 2001). Although such a small vocabulary size can fulfil everyday communicative purposes, it still takes around 20 percent more words to state a given idea (Miller 2001). This may be the result of the non-existence of true synonyms. In the introduction of *The Synonym Finder*, lexicographer Laurence Urdang (1978) famously stated that 'there is no such thing as a true synonym'. He further argued that 'Even though the meanings of two words may be the same - or nearly so - there are three characteristics of words that almost never coincide: frequency, distribution and connotation.' Urdang's argument can help to explain why it is necessary to have so many words with similar meanings to express our elaborate thoughts and describe the complex world accurately and concisely. The small vocabulary size of pidgin languages is also not an appropriate example since children brought up learning a pidgin will transform it into a creole with a larger vocabulary size (Miller 2001), implying that it is a natural tendency for humans to use a wide range of words to communicate effectively. As synonyms do have some practical functions, Miller's assertion that they are the products of sexual selection does not sound persuasive. Surely, the expansion of vocabulary and the fact that there are no

true synonyms result from humans' constant search for (new) meaning. To demonstrate that sexual selection has an impact on our semantic capacity, a possible way is to compare the active/passive vocabulary sizes of the two sexes. As males tend to display more while females tend to perceive more, one can predict that males generally have larger active vocabularies than females, and vice versa, provided that sexual selection contributes to the shaping of human vocabulary size. No such findings have been reported thus far and current evidence cannot conclusively prove that our large vocabulary size evolved for sexual display.

Whereas several arguments for the involvement of sexual selection in language evolution have been shown to be inconclusive, a common counterargument may apparently turn out to support this notion. Miller (2001: 375) raised the question 'Why do women have higher verbal ability than men, if language was sexually selected?' and gives a plausible answer. He pointed out that the 'standard predictions of sexual selection are hard to apply because language is used for both speaking and listening – both verbal display and the judgment of verbal displays by others...[However,] most tests of human verbal abilities are tests of language comprehension, not tests of language production. Given a strict male-display, female-choice mating system, we should expect female superiority in language comprehension and male superiority in language production' (2001: 375-376). Therefore, the fact that women are better at language comprehension actually supports the argument for the involvement of sexual selection in language evolution. As Miller (2001) suggested, information about sex differences in language production ability, which may be obtained through creative writing tests, will be helpful in further evaluating the validity of the argument. In fact, such information can currently be easily accessed. It is evident that female candidates generally perform better than male candidates in both language comprehension (reading and listening) and language production (writing and speaking) tasks in IELTS

(IELTS 2009), one of the most popular English language tests for higher education and immigration in the world. These statistics may effectively render Miller's argument unconvincing.

As so far none of the attempts above have managed to conclusively demonstrate language has been shaped by sexual selection, perhaps it is time to shift our focus to the basic question about mate choice and selection, and discuss how it may be related to language evolution. Successful reproduction is premised on choosing an appropriate mate (Andersson 1994; Darwin 1871). Barrett et al. (2002) stated two general issues to consider when it comes to human mate choice.

First, there are the general principles that underpin and guide mate choice: these are often considered to be human universals in that, given the nature of the Darwinian process, they apply to everyone. However, individuals' decisions in this, as in every other aspect of real life, are contingent. In other words, no matter how attractive we may find certain individuals, there is no guarantee that they will be attracted to us. This is because mate choice is almost always a frequency-dependent problem. It is a genuine market place in which individuals make bids and accept negotiated bargains, even though these may often be less than ideal. The second issue is thus the fact that mate choice decisions are necessarily contingent on circumstances.

Barrett et al. (2002: 93-94)

Bateman's Principle (Bateman 1948) is a good starting point for any further discussion of mate choice and sexual selection. The principle has a profound impact on mate choice and sexual selection. According to Bateman's Principle, females almost always invest more energy into producing offspring than males, and therefore in most species males compete with each other to gain access to females, while females are choosy in

selecting their mating partner. Barrett et al. (2002) took humans as an example to demonstrate the use of Bateman's Principle.

[No] matter how many males a female mates with during the course of her reproductive cycle only one baby will be produced at the end of it. By contrast, in the time it takes a woman to produce a single baby, a man can potentially father hundreds of children since his only input need be an ejaculation of sperm at an opportune moment. Consequently, the amount of variation observed in male reproductive success can be very much greater than that observed in women.

Women are limited by their physiology in the number of offspring they can produce during their lifetime, and so the amount of variance among women will always be relatively small. Men aren't limited in this way, and, as a result, some can achieve extraordinarily high reproductive success; equally, however, the resulting competition inevitably means that other males will have extraordinarily low (perhaps even zero) reproductive success.

Among the Mukogodo of Kenya, for example, there are men who never marry and father children because they cannot afford to pay a 'brideprice' and secure themselves a wife (Cronk 1989). Their reproductive success is zero. By contrast, wealthy men can afford to marry polygynously and may father up to 30 or 40 children in their lifetime...This difference in the variance between the sexes is known as Bateman's Principle (Bateman 1948), after the biologist who discovered this difference through experiments with fruit flies. (Barrett et al. 2002: 37-38)

According to the principle, although the lifetime reproductive success (LRS) of the two sexes are constrained to having the same mean (the total number of offspring produced by one sex must be equal to that produced by the other sex), the variance in

LRS may differ considerably in the two sexes – females have a lower variance because their reproductive rate is limited by the natural reproductive cycle; males do not have this limitation, and the resulting intrasexual competition means that the reproductive success achieved by individuals of varying competitiveness can differ greatly. In this case, the sex with the smaller variance (i.e. female) will benefit by being choosier in its willingness to mate because each reproductive event involves a more costly commitment. The extreme costs of the lengthy gestation and long period of lactation needed to grow our large brains make the effect outlined in Bateman's Principle even more potent in humans.

Because of such a difference in choosiness, researchers tend to focus on female mate choice and male-male displays/contests when studying human mate choice. Female mate choice, rather than male-male contests, is more often considered in the context of language evolution because the latter can hardly explain the complexity of human language (Hurford 2007). Before studying the sexually attractive features of language in relation to mate choice, it is important to know about human mate choice preference, especially female preference for male traits. In a large-scale cross-cultural study conducted by Buss et al. (1990), it is found that there is a moderate to high degree of sex difference in the mate choice preference for characteristics such as intelligence, social status, ambition and industriousness, and wealth; women around the globe generally regard these characteristics as important criteria for choosing male partners while men generally do not favour these characteristics as highly as women do. Such a difference can be explained by natural selection.

Since ancestral females invested so highly in their offspring, they would have benefited greatly from choosing mates that were able to provide for them and their offspring. Clearly, resources may be assessed directly (in today's society this generally means indications of financial well being) or they may be inferred from social status and level of industriousness. (Workman and Reader 2004: 94)

Intelligence is arguably one of the most important male traits although its significance is not mentioned explicitly in the above quote - few will disagree that an intelligent person is more likely to solve difficult problems, earn more money, and get a higher social status. Moreover, the 'signals used to identify a high-quality mate must be difficult for low-quality individuals to fake, and intelligence has this characteristic' (Bale, Morrison and Caryl 2005: 656). Another trait which women look for is commitment (Kenrick and Keefe 1992; Waynforth and Dunbar 1995). As parental care is of utmost importance to the healthy growth and development of human offspring, there will be a huge burden on the mother if the father does not commit to the relationship after mating.

If human language is shaped by sexual selection, we can predict that males will be inclined to display such sexually attractive characteristics during conversations, especially when females are present. Dunbar (1997)'s paper supports this prediction. He observed that males tend to be more interested in talking about intellectual topics when females are present. This sort of verbal self-advertisement (Miller 2001) may be regarded as a sexual function of language, through which males can attract females by showing off their favourable qualities. Male verbal self-advertisement may have evolved to become an honest signal for females to judge the speaker's intelligence, creativity, knowledge, status, and personality (Miller 2001). Are females really impressed by male verbal self-advertisement? The answer is probably yes. As in some cultures a man often has to initiate a relationship with a woman by chatting her up, the chat-up lines can be viewed as male sexual displays (Bale et al. 2006; Cooper et al. 2007). In their experiment, Bale et al. (2006) found that the participants, regardless of

their sex, generally believed that a woman approached by a man would likely continue the conversation if the man's chat-up lines revealed signs of intelligence, wealth, and culturally-valued talents or characters. As this experiment was only carried out at a Scottish university, it is worth conducting cross-cultural studies to find out if such preferences are also present in other parts of the world. Furthermore, given that explicit self-advertising is by no means considered a virtue in some cultures, future research should also make an attempt to study the female preferences for different levels of explicitness of male self-advertisement of favourable qualities. Despite the need for further research to look into the fine details, the study conducted by Bale et al. (2006) and other studies on opening lines (Cooper et al. 2007; Kleinke et al. 1986; Wade et al. 2009) support the notion that sexual selection has influenced the content of human language.

So far the discussion has mainly focused on the male-display, female-choice system, which may give the wrong impression that mate choice is entirely one-sided. Although in most mammals, it is exclusively males who display sexually selected traits during courtship (Cronin 1993), humans are different from most mammals in the sense that both males and females contribute significantly to their offspring (Geary 2000). It is therefore reasonable to predict that courtship may stimulate displays in both sexes. In fact, mutual mate choice is not uncommon (Bergstrom and Real 2000). As human conversation is highly interactive (Miller 2001), it is an unreasonably biased approach to solely focus on male language display. Wade et al. (2009) noticed this bias and provided some evidence showing that women are acting similarly to men in the dating world. They studied female opening lines and found that a direct approach is likely to be most effective, which further indicate that a woman can directly or overtly initiate a relationship with a man in whom she is interested (from an evolutionary perspective, a man whom she feels will provide her with the best resources

and genes). Barrett et al. (2002: 94) discussed it in more detail, '[an] implication of the enormous costs of human reproduction is that females will tend to select males in terms of their effect on the success with which offspring can be reared. Success in this respect can come in either or both of two respects: the quality of the genes males have to offer (better quality genes presumably mean more successful offspring) and their ability to contribute to childcare (for example, by provisioning). Fundamental evolutionary principles thus suggest that women will select men either on the basis of cues of genetic quality or on the basis of their willingness or ability to contribute to childcare. The latter may involve direct (for example, taking actual physical responsibility for the child) or indirect (for example, providing food for the mother and child) forms of childcare. In hunter-gatherer societies, the most important of the indirect form of investment might be hunting skills; in agricultural societies, it will usually be ownership of land, while in industrial societies it will typically be wealth and/or status (both being means of purchasing the required provision).'

Although the studies on opening lines have managed to demonstrate the sex differences in speech content, some problems still remain. First, the studies were only conducted in either the United States (Kleinke et al. 1986; Wade et al. 2009) or the United Kingdom (Bale et al. 2006; Cooper et al. 2007), both of which are English-speaking countries in the western world. Despite the presence of some traits which are deemed favourable universally (Buss et al. 1990), the dating world in different cultures can surely be very different. Therefore, it is worth conducting similar studies in different cultures in order to investigate the sex differences in speech content in courtship displays in a cross-cultural manner. Another problem is that, apart from Bale et al. (2006) and Cooper et al. (2007), two closely related studies which focus on male chat-up lines, the other studies on chat-up lines do not approach the issue from an evolutionary perspective. As a result, there is a relative lack of data about

female verbal courtship display. In brief, if we aim to find out more about the effect of mutual mate choice on the sexual differences in speech content, more researches on verbal courtship display in both sexes need to be done from an evolutionary perspective.

3. Study

3.1. Introduction

As discussed above, existing studies on opening lines may not be sufficient for us to look into the effect of mate choice on speech content in a thorough and comprehensive manner. The aim of this study is to address this problem and to contribute to our understanding of this complicated issue. Contrary to other related studies, this study focuses on an eastern culture (the participants are all from Hong Kong). Because of this reason, several points have to be taken into consideration when designing the experiment. In Hong Kong culture, chatting up a random person is considered very odd in most situations, regardless of gender. It is a social norm for people to become fairly familiar with each other first before expressing further interest. As chat-up lines normally cannot work in this culture, it is better to study the conversations between acquaintances or friends, instead of chat-up lines between strangers.

Unlike the previous studies on chat-up lines (Bale et al. 2006; Cooper et al. 2007; Kleinke et al. 1986; Wade et al. 2009), this study focuses on conversations between friends who know each other reasonably well. In addition to making the vignettes look more realistic to the Hong Kong participants, this design could in fact control the variables better. As physical attractiveness is important for brief relationships (Buss and Schmitt 1993), it is reasonable to deduce that even in a culture which accepts chatting up a stranger, the success of a particular chat-up line may largely depend on the speaker's physical attractiveness apart from the speech content itself. Another re-

lated problem is that those studies did not specify whether the protagonists in the vignettes or conversations were looking for a short-term or long-term relationship. This could affect the reliability of the results because there is abundant evidence showing that both men and women behave differently when pursuing a short-term or long-term relationship (Buss and Schmitt 1993; Gangestad and Simpson 2000; Kenrick et al. 1990). Generally speaking, characteristics associated with good genes (including physical attractiveness) are more important if one is looking for a short-term relationship. Therefore, it is questionable whether studies which neglected this potentially significant factor could yield reliable results.

Incorporating physical attractiveness into the study as one of the independent variables may be a difficult and time-consuming task. Nonetheless, focusing on conversations between friends can arguably minimize the impact of the problem mentioned above. The rationale behind this claim is that, in Hong Kong culture, friends who know each other reasonably well are very unlikely to be aiming to develop a short-term relationship (e.g. a one-night stand) with one another. We can therefore safely assume that the protagonists in the vignettes were looking for a relatively long-term partner, and physical attractiveness was a relatively insignificant factor when compared to other related studies.

The participants were asked to fill in a questionnaire consisting of 30 vignettes. In each vignette, a male tried to impress a female in a conversation (or vice versa). It was expected that conversations revealing the speaker's positive attributes would likely succeed in impressing the opposite sex. As all of the participants come from Hong Kong, the questionnaire was written in Chinese, their first language. To achieve naturalness, the author (a native-born Hong Konger) wrote the dialogue in colloquial Cantonese. (See Appendix A for the English translation of the questionnaire, Appendix B for the original Chinese version). Apart from the vignette about Vincent van

Gogh's Starry Night (Question 2 in Part 1 and Question 3 in Part 2, respectively), which is adapted from Bale et al. (2006), all other vignettes are originally written.

The results of the questionnaire would be compared to the large-scale cross-cultural study on human mate choice preference conducted by Buss et al. (1990). It was expected that the survey findings would generally accord with those of Buss et al. (1990) if sexual selection has an impact on the sex differences in speech content.

3.2. Method

3.2.1. Participants

The participants (N = 50, 22 male, 28 female) were all Hong Kong people of reproductive age (mean age = 23.53, SD = 2.45, Missing value = 1). The participants voluntarily took part in the study upon invitation.

3.2.2. Procedures

The participants were asked to fill in an online questionnaire (service provided by http://www.my3q.com) consisting of 30 vignettes. The vignettes were presented in two sections. In each section, the order of the vignettes was randomized. The instructions were as follows:

On the following pages, there is a selection of different vignettes. Each one consists of a short description of the situation, followed by a section of dialogue between M and F, where M stands for the male protagonist and F stands for the female one.

They are both single and intend to find a partner. They are reasonably familiar with each other, but not yet close friends.

The questionnaire is divided into 2 parts, each comprising 15 vignettes. Please read each vignette, and then decide how good or bad the conversation content would be. In Part 1, a good conversation would be one that would make F have a good impression of M, and a bad one would make F have a bad impression of M.

While in Part 2, you will decide whether a conversation would make M have a good impression of F. Some vignettes in Part 1 and Part 2 are very similar, but please make sure to read them once more when you come across such vignettes.

Please rate each conversation using a 5-point scale ranging from 1 (Very Poor) to 5 (Very Good). Simply select the number that you feel best represents how good or bad the conversation content is likely to be.

3.2.3. Analysis

Taking the experimental approach of Bale et al. (2006) into account, the vignettes were categorized into 5 groups characterized broadly by a single-word descriptor, namely 'Culture' (those showing the speaker's culturally-valued talents), 'Character' (those showing the speaker's favourable character), 'Wealth' (those showing the speaker's wealthiness), 'Compliment' (those showing the speaker's admiration for the listener), and 'Sex' (those showing the speaker's sexual interest in the listener). The mean score of each group would be compared. The statistical analyses were carried out with SPSS version 17.

3.4. Results

Different conversations were perceived to have varying effectiveness on impressing the opposite sex. In both male-female and female-male 'flirtations', the 5 item-groups were ranked in the following order – Character, Compliment, Culture, Wealth, and Sex. Despite the identical ranking, there are remarkable differences which are worthy of mention.

3.4.1. Part 1: Male-Female Flirtation

The statistics of each item and item-group in Part 1 is presented in Table 1 and Table 2, respectively. As shown in Table 1, the most highly-rated items reveal the male's favourable character traits such as helpfulness and kindness (Q4, Q6), or involve compliments to the female's skills and talents (Q10, Q12). Meanwhile, the three

most poorly-rated items are all those in which the male showed sexual interest in the female (Q13, Q14, Q15). Independent t-tests showed that Q8, Q9, and Q13 had a significant sex difference in ratings. In all of the above items, the female participants gave a significantly higher rating (Q8 and Q9: P < 0.05; Q13: P < 0.01).

Table 1
Item statistics, group, and content of Part 1

Item	Rating	Rating- Male	Rating- Female	Item-group	Content
	M (SD)	iviale	remaie		
Q1	3.30 (0.84)	3.32 (0.78)	3.29 (0.90)	Culture	Typhoon
Q2	3.40 (0.81)	3.36 (0.73)	3.43 (0.88)	Culture	Starry Night
Q3	3.04 (0.81)	2.86 (0.83)	3.18 (0.77)	Culture	Wuxia fiction
Q4	3.84 (0.82)	3.64 (0.95)	4.00 (0.67)	Character	Job hunting
Q5	3.46 (1.09)	3.45 (1.14)	3.46 (1.07)	Character	Take care
Q6	4.30 (0.76)	4.09 (0.92)	4.46 (0.58)	Character	Experiment
Q7	2.68 (0.74)	2.45 (0.60)	2.86 (0.80)	Wealth	Travel
Q8*	3.12 (1.27)	2.68 (1.25)	3.46 (1.20)	Wealth	Posh Restaurant
Q9*	3.44 (1.23)	3.00 (1.07)	3.79 (1.26)	Wealth	Driver
Q10	3.74 (0.92)	3.68 (0.89)	3.79 (0.96)	Compliment	Singing contest
Q11	3.26 (0.99)	3.41 (1.01)	3.14 (0.97)	Compliment	Look gorgeous
Q12	3.86 (0.67)	3.82 (0.66)	3.89 (0.69)	Compliment	Irn-Bru chicken
Q13*	2.44 (1.16)	1.95 (0.95)	2.82 (1.19)	Sex	Ball games
Q14	1.64 (0.96)	1.91 (1.15)	1.43 (0.74)	Sex	Caress me
Q15	1.84 (0.82)	1.91 (0.81)	1.79 (0.83)	Sex	Illegal sex

Items marked with * are those of which the male and female ratings differ significantly.

Paired-samples t-tests show that all inter-group differences are significant at below P = 0.01 (see Table 2). In other words, the rating of each and every one of the item-groups is significantly different from one another. Further independent t-tests show a significant sex difference in the overall rating of the item-group Wealth (M <

F, P < 0.05), but other item-groups do not have a significant sex difference in their ratings.

Table 2
Item-group mean ratings and significance of differences of Part 1

Item-group	Rating M (SE)	Significant difference from other groups*
1. Culture	3.25 (0.07)	2, 3, 4, 5
2. Character	3.87 (0.08)	1, 3, 4, 5
3. Wealth	3.08 (0.09)	1, 2, 4, 5
4. Compliment	3.62 (0.07)	1, 2, 3, 5
5. Sex	1.97 (0.09)	1, 2, 3, 4

^{*}Groups from which the row-group differs at P < 0.05 or below.

3.4.2. Part 2: Female-Male Flirtation

The statistics of each item and item-group in Part 2 is presented in Table 3 and Table 4, respectively. As shown in Table 3, akin to their male-female counterpart, the most highly-rated items reveal the female's positive character qualities such as help-fulness and kindness (Q4, Q6), or involve compliments to the male's skills and talents (Q10, Q12). On the other hand, the three most poorly-rated items are also those involving the expression of sexual interest (Q13, Q14, Q15).

Table 3

Item statistics, group, and content of Part 2

Item	Rating	Rating-	Rating-	Item-group	Content
	M (SD)	Male	Female		
Q1	3.32 (0.62)	3.23 (0.61)	3.39 (0.63)	Culture	Wuxia fiction
Q2	3.62 (0.75)	3.73 (0.83)	3.54 (0.69)	Culture	Field trip
Q3	3.52 (0.71)	3.68 (0.57)	3.39 (0.79)	Culture	Starry Night
Q4	4.10 (0.89)	3.86 (0.99)	4.29 (0.76)	Character	Heavy rain
Q5	3.42 (1.09)	3.64 (1.09)	3.25 (1.08)	Character	Take care
Q6	4.16 (0.79)	4.09 (0.87)	4.21 (0.74)	Character	Experiment
Q7	3.04 (1.11)	2.91 (0.97)	3.14 (1.21)	Wealth	Driver
Q8	2.74 (0.72)	2.86 (0.77)	2.64 (0.68)	Wealth	Travel
Q9	2.56 (0.97)	2.41 (0.91)	2.68 (1.02)	Wealth	Posh Restaurant
Q10	3.80 (0.81)	3.82 (0.50)	3.79 (0.99)	Compliment	Singing contest
Q11*	3.18 (0.96)	3.64 (0.79)	2.82 (0.94)	Compliment	Look gorgeous
Q12	3.80 (0.64)	3.82 (0.59)	3.79 (0.69)	Compliment	Irn-Bru chicken
Q13	2.36 (1.22)	2.68 (1.22)	2.11 (1.97)	Sex	Get peeped
Q14	2.36 (1.22)	2.50 (1.22)	2.25 (1.24)	Sex	Poster
Q15	2.14 (1.20)	2.36 (1.22)	1.96 (1.17)	Sex	Illegal sex

The Item marked with * is the one which the male and female ratings differ significantly.

Independent t-test showed that Q11 had a significant sex difference in ratings (M > F, P < 0.005). Paired-samples t-tests show that all inter-group differences are significant at below P = 0.05 (see Table 4), which means that each and every one of the item-groups received a rating significantly different from one another. Except for the Culture-Compliment pair, whose P = 0.049, all other pairs have P well below 0.05 (P < 0.001). Further independent t-tests show a significant sex difference in the overall rating of the item-groups Compliment and Sex (M > F, P < 0.05), but other item-groups do not have a significant sex difference in their ratings.

Table 4
Item-group mean ratings and significance of differences of Part 2

Rating M (SE)	Significant difference from other groups*
3.49 (0.06)	2, 3, 4, 5
3.89 (0.08)	1, 3, 4, 5
2.78 (0.08)	1, 2, 4, 5
3.59 (0.07)	1, 2, 3, 5
2.29 (0.10)	1, 2, 3, 4
	3.49 (0.06) 3.89 (0.08) 2.78 (0.08) 3.59 (0.07)

^{*}Groups from which the row-group differs at P < 0.05 or below.

3.4.3. Summary

In the questionnaire, 11 out of 15 vignettes in each part have an equivalent counterpart in the other part, only with the M and F roles reversed. Paired-samples t-tests were carried out on these pairs. It was found that 5 out of such 11 pairs of vignettes received significantly different ratings (P < 0.01) when the sex roles were reversed. The 5 pairs of vignettes are about Wuxia fiction, experiment, posh restaurant, driver, and illegal sex, respectively. The mean ratings of the same item-group in the two parts were also compared by means of paired-samples t-tests. It was found that although the rankings of the five item-groups were the same in the two parts, the ratings of the item-groups Culture, Wealth, and Sex differ significantly in the two parts (see Table 5). The reasons of such differences are discussed in the following section. Please refer to Appendix C for the complete set of raw data and SPSS output.

Table 5
Paired comparisons of the ratings of different item-groups in Part 1 and Part 2

Item-Group	Part 1 Rating	Part 2 Rating	Sig.
	M (SD)	M (SD)	(2-tailed)
Culture*	3.25 (0.83)	3.49 (0.70)	0.000
Character	3.87 (0.96)	3.89 (0.98)	0.416
Wealth*	3.08 (1.14)	2.78 (0.96)	0.000
Compliment	3.62 (0.90)	3.59 (0.86)	0.652
Sex*	1.97 (1.04)	2.29 (1.21)	0.000

Items marked with * are those of which the ratings in Part 1 and Part 2 differ significantly.

4. Discussion

The production of this questionnaire was inspired by Bale et al. (2006). In spite of the apparent similarities between the two questionnaires, crucial changes were made to ensure that the questionnaire suited Hong Kong participants. To my knowledge, this is one of the first, if not the first, studies which investigates the sex differences in speech content during verbal courtship from an evolutionary perspective.

One of the major differences between this study and other related ones is that the participants of this study were all Hong Kong Chinese instead of British or American people. Even though Hong Kong is partially westernized due to more than a century of British colonization, most ethnic Chinese people still lean towards the traditional Chinese culture. As courtship practice varies greatly among different cultures, it would be interesting to see if the previous findings mostly obtained from western cultures could be repeatable in an eastern culture.

The results and implications of each item-group would be discussed and compared in this section.

4.1. Culture

In Bale et al. (2006) and Cooper et al. (2007), opening lines showing culturally appreciated talents were the second most highly rated item-group. In this study, it still received a fairly high rating. Generally speaking, conversations under this category can show how knowledgeable, educated, or even sophisticated the speakers were. These qualities may have implications on the intelligence and social status of the speakers, which could explain why people were likely impressed by such conversations.

As women were found to value intelligence and social status of their partner higher than men did (Buss et al. 1990), it was somehow surprising that the rating of Culture in Part 2 (a female trying to impress a male) was significantly higher (P < 0.001) than that in Part 1 (a male trying to impress a female). Some other factors may have come into play. According to Miller (2001), some university professors stated that high-quality intellectual talks did not seem to bring them good sex. Showing off one's knowledge may not always appeal to women. It is possible that boredom is one of the factors. If one is not interested in a topic, one may hardly be impressed by the speaker no matter how well he or she speaks. In Part 1 Q1, M talked about an academic topic in considerable depth in which F did not seem to have much prior knowledge. The participants might feel that F might only be responding to M out of politeness instead of genuine interest. This is probably one of the major reasons why this vignette received the second lowest rating in this item-group.

Part 1 Q3 is identical to Part 2 Q1 apart from the reversed M and F roles, but there are significant differences in ratings between them (Part 1 Q3 < Part 2 Q1, P < 0.001). In this pair of vignettes, the topic was not as dull as the one about a typhoon because many Chinese people know about and enjoy reading Jin Yong's works. Whereas it looks difficult to account for such differences in the light of sex differences in prefe-

rence for cultural talents, the question in the vignettes 'Do you mind waiting for me for a couple of minutes?' may actually be the key. Probably affected by western culture, some Hong Kong people may find it ungentlemanly for a male to keep a female waiting. Therefore, the vignette in Part 1 received a significantly lower rating.

Overall, Culture is still a fairly highly rated item-group despite the potential interfering factors. In other words, showing off our culturally-appreciated talents properly in conversations can likely impress the opposite sex. The lack of significant difference between Part 1 Q2 and Part 2 Q3 may imply that males and females may not differ greatly in their preference for a culturally talented mate when there is little interference caused by other factors.

4.2. Character

Character was the most highly rated item-group in both Part 1 and Part 2, indicating that both males and females would be favourably impressed by potential mates who showed good character traits in their speech. These findings are in accord with those of Bale et al. (2006) and Cooper et al. (2007). There is no significant sex difference in the preference for this trait. As discussed above, when choosing a long-term mate, the mate's willingness to contribute to the relationship is of crucial importance. The favourable character qualities shown in the vignettes can arguably be associated with such willingness. The items in this item-group can reveal the speaker's helpfulness, kindness, patience, consideration, and caring attitude. With such qualities, it is likely that one can get on well with one's partner and children, thus benefiting the family as a whole.

Here, one's apparent selfless or altruistic behaviour can be explained from an evolutionary point of view in the light of the selfish gene theory, a gene-centred view of evolution first coined by Richard Dawkins in 1976. Before the popularization of

such a view, natural selection and evolution were usually considered from an organism-focused perspective, which could hardly explain puzzling phenomena in the natural world such as altruism. First and foremost, as Barrett et al. stated, it is important to understand the concept that, contrary to popular belief, 'selfish' genes can breed 'non-selfish' people.

The 'selfishness' of genes has sometimes been taken to imply that individuals will behave selfishly too. But such an inference makes two serious mistakes. First, it assumes that the selfishness of genes has some moral force, when in fact it is just a reminder that the gene (as opposed to the individual, group, population or species) is the proper level at which to evaluate the evolutionary consequences of an action. Second, it ignores the whole point of social strategies of animals: much of what primates, in particular, do is designed to achieve cooperative solutions to problems of mutual interest. Selfish genes therefore commonly produce cooperative individuals.

(Barrett et al. 2002: 90)

Cronin (1991, p. 60) summarized the selfish gene theory of natural selection as follows, 'Genes do not present themselves naked to the scrutiny of natural selection, instead they present their phenotypic effects...Differences in genes give rise to difference in these phenotypic differences. Natural selection acts on the phenotypic differences and thereby on genes. Thus genes come to be represented in successive generations in proportion to the selective value of their phenotypic effects.' As Dawkins (2006) put it, genes are assembled into genomes in order to promote their mutual interests of multiplication; in other words, an organism is merely the temporary 'vehicle' or 'survival machine' of the genes. This peculiar gene-organism relationship implies that the 'selfish' genes may promote their own survival and replication with-

out necessarily promoting the survival of their vehicle (i.e. the organism). To put it simply, natural selection tends to drive an organism to evolve to maximize its inclusive fitness (i.e. it will strive to maximize the number of copies of its genes passed on globally instead of merely focusing on a particular individual) (Raven 2005).

The last paragraph may seem to be a digression, but it can actually help to explain the high rating of the item-group Character. People demonstrating altruistic character traits may not appear to benefit themselves, but being apparently selfless to their family (especially their offspring) can arguably increase the chance of survival of their own genes. Obviously, many widely-appreciated character qualities are related to such apparent selflessness. Apart from cultural factors, there is every reason to believe that evolution has played a significant role in our strong preference for such character traits, for having a mate with such traits can likely increase the chance of survival of our offspring and thus our genes.

Another noteworthy feature observed in this item-group is that, although the vignette about 'Experiment' is the most highly rated item in both Part 1 and Part 2, there is still a significant difference in the ratings of them (Part 1 Q6 > Part 2 Q6, P < 0.01). A possible explanation is that it is more customary for a male to help a female solve her problems (as in Part 1 Q6) instead of the other way round (as in Part 2 Q6). While a male will normally feel grateful when a female offers help to him, some may feel a male will lose face if he needs help from a female. This is a likely reason because the Chinese value of 'saving face' carries significant weight in Hong Kong culture.

4.3. Wealth

As wealth is almost synonymous to the possession of resources in the modern world, it may seem a bit surprising that this item-group ranked second lowest in both Part 1 and Part 2, a result which does not seem consistent with Buss et al. (1990), Bale

et al. (2006), and Cooper et al. (2007). Although wealth can undeniably bring a host of advantages, showing off one's wealth verbally does not seem appreciated. Chinese people traditionally consider keeping a low profile as a virtue. There is a Chinese proverb which literally means 'Money cannot be left exposed to others' eyes'. Showing off one's wealth may elicit antipathy.

Remarkable sex differences are evident within this item-group. Since males are universally expected to be responsible for providing resources (Buss et al. 1990; Lewin 2005), it is hardly surprising that a male showing off his wealth to a female is more appealing than a female showing off her wealth to a male. In Part 1, the mean rating given by male participants was significantly lower than that by female participants (P < 0.001). In other words, males can be said to have underestimated the lure of Wealth for females. A closer look to the statistical figures reveals that what widened the sex differences considerably were the vignettes about 'Posh restaurant' (Part 1 Q8, Part 2 Q9) and 'Driver' (Part 1 Q9, Part 2 Q7). All of these vignettes involved a protagonist offering help or favour to the opposite-sex protagonist in addition to showing off his or her wealth. In some sense, therefore, such vignettes were not only about Wealth; they also carried a little weight of Character. Akin to the case of the vignettes about 'Experiment', one of the reasons why the vignettes mentioned above were more highly rated in a male-female flirtation context might be because it is more customary for males to show gentleness or lend a helping hand to females. This concept is particularly deep-rooted in females' minds; as shown in Table 1, female participants rated Part 1 Q8 and Q9 significantly higher (P < 0.05) than male participants did. Such results suggest that when we cannot accurately predict how favourably a factor appeals to the opposite sex, we tend to underestimate the appeal. Whereas most findings of this study can be explained by either an evolutionary or a cultural account, there are still a small number of exceptions like these two items

which may seem a bit puzzling.

As it is well-agreed that the majority of Hong Kong people are pretty materialized, it seemed unlikely for the male participants to fail to acknowledge this fact. Instead, even if they knew that such approaches appealed to females, they might not be able to realize such vignettes as very few people in Hong Kong hire a driver or have a posh restaurant owned by their father. Consequently, they might subconsciously deny the effectiveness of such approaches in impressing a female. This is a defense mechanism known as 'denial' postulated by Sigmund Freud, in which a person is faced with a fact that is too unpleasant to accept, and therefore rejects the fact altogether (simple denial), accepts the fact but denies the seriousness (minimization, the most applicable one in this case), or admits both the fact and its seriousness, but denies responsibility for it (does not seem applicable in this case) (Myers 2009). Such psychology issues would not be covered in detail here; to put it simply, the male participants may have found it uncomfortable to admit that females are pleased by those vignettes which could hardly be realized, so they denied the effectiveness of such conversations and rated them significantly lower than the female participants did.

4.4. Compliment

Quite unlike the studies conducted by Bale et al. (2006) and Cooper et al. (2007), Compliment turned out to be a highly rated item-group in this study. The ratings in Part 1 and Part 2 were similar. Although all vignettes under this item-group in all the studies were about the speaker's admiration for the listener, there were some fundamental differences which led to the huge differences in ratings. First, this study is about compliments in conversations between friends while the other studies are about compliments in chat-up lines. There should be little doubt that compliments between

friends usually sound natural, while those between strangers can sound odd – we may feel skeptical when suddenly praised by a total stranger and wonder what his or her intention is. Another difference is that all of the vignettes under the item-group Compliment in Bate et al. (2006) and Cooper et al. (2007) were about compliments on others' physical attractiveness, while some of those in this study were about compliments on others' skills. Complimenting on others' physical attractiveness too explicitly may sound impolite (especially if we are talking to a stranger) because some may interpret the compliment as an implication of sexual interest.

In addition to the above reasons, the high rating of Compliment of this study may also be due to cultural factors. 'Saving face' is an integral part of traditional Chinese culture (Ho 1975; Lin 1935), and the popularity of compliments seems to have something to do with it. The concept of face is Chinese in origin (Ho 1975) and it was claimed to be untranslatable and indefinable (Lin 1935), but we can still try to grasp the concept but comparing how some scholars defined the term:

Face is the respectability and/or deference which a person can claim for himself from others, by virtue of the relative position he occupies in his social network and the degree to which he is judged to have functioned adequately in that position as well as acceptably in his general conduct. (Ho 1975:883)

[Face] is something that is emotionally invested, and that can be lost, maintained, or enhanced, and must be constantly attended to in interaction. In general, people cooperate (and assume each other's cooperation) in maintaining face in interaction, such cooperation being based on the mutual vulnerability of face. (Brown and Levinson 1978:66)

Face is a sense of worth that comes from knowing one's status and reflects concern with the congruency between one's performance or appearance and one's real worth.

(Huang 1987:71)

As praising each other is arguably one of the best ways to maintain or enhance one another's face, it is reasonable to deduce that compliments are highly valued in Chinese culture, even if such compliments may not be sincere. In fact, praising others can be said to be considered as part of good manners in places where Chinese culture predominates, such as Hong Kong. If this study is to be repeated in places where the concept of saving face is not that deep-rooted, Compliment may not be as highly rated as in this study.

Another interesting point to note in this item-group is the significant sex difference in the rating of Part 2 Q11 (M > F, P < 0.005). Female participants underestimated the effectiveness of this conversation to impress a male. In this vignette, a female attempted to impress a male by praising his appearance. In reality, it is not customary in Hong Kong for a female to praise a male's physical attractiveness so explicitly as girls are generally expected to be more reserved. However, males may tend to be more impressed by praise than normally thought. In a study on the production and appreciation of humour as sexually selected traits, Bressler et al. (2006) demonstrated that males preferred females who appreciated their humour, especially for sexual relationships, while females preferred males who produced humour. It is possible that males also have a strong preference for females who appreciate other aspects of them, including physical attractiveness. In this case, one may argue that cultural expectation is acting against sexual selection as females are hindered to act in a manner which can actually help them impress the opposite sex more effectively.

4.5. Sex

Not surprisingly, Sex is the least popular item-group in the both Part 1 and Part 2.

It is understandable that expressing one's sexual interest directly is usually deemed very inappropriate in most cultures. Bale et al. (2006) and Cooper et al. (2007) revealed that opening lines involving sexually loaded remarks were the least preferable while Kleinke et al. (1986) also demonstrated that 'cute-flippant' opening lines (which were sometimes sexually loaded) were the most unpopular. As sexually loaded remarks are deemed unpopular even in the western world, it is quite natural that they would not be welcome in a comparatively conservative place like Hong Kong.

In spite of the low rating of this item-group in both parts, it is still noteworthy that it had a significantly higher rating in Part 2 than in Part 1 (P < 0.001). In other words, it was believed that a male would be more likely impressed by a female friend who expressed sexual interest in him, rather than the other way round. According to Griskevicius et al. (2006), a female is bound to pay a much higher cost in a short-term relationship because she bears the risk of having to bring up a child with no support from the father. Expressing one's sexual interest directly with no indication of commitment may insinuate one's interest in merely having a short-term sexual relationship. Conversations containing such remarks may therefore be especially unwelcomed by females. However, it is interesting to note that such unpopular remarks are typical of the material presented in compilations of chat-up lines. Bale et al. (2006: 661) gave a plausible explanation, 'Some may be used by men to identify sociosexually unrestricted women (Simpson and Gangestad 1991) who may be sexually available. Some may just signal to the woman that the man is interested, at which point his looks or voice may actually determine the outcome – participants commented that the woman's response might well depend on his appearance. Physical attractiveness is important for brief relationships (Buss and Schmitt 1993) and participants expected that any liaisons arising from these encounters would be brief'. Similarly, in conversations between friends, it is possible that both males and females will use a similar strategy

both to attract their targets and select their potential mates who respond.

There was a significant sex difference in the rating of this item-group in Part 2 (M > F, P < 0.05) – the female participants underestimated the effectiveness of this approach in impressing a male. Similar to the case discussed in Section 4.4, females are expected to behave in a more reserved manner, and it may even be considered immoral in Chinese culture for a woman to show sexual interest in a man explicitly. Thus, this is probably also a case in which females are hindered to act in way which can help them impress the opposite sex more effectively. As the rating given by males was still a relatively low one, the above statement by no means implies that males will surely be impressed by females who express explicit sexual interest in them. Instead, the crux of the argument is just that females may tend to underestimate the effectiveness of showing sexual interest in males, and they may benefit (i.e. successfully attract a desirable mate) by behaving in a slightly less reserved way.

It was somehow out of expectation that there was a significant sex difference in the rating of Part 1 Q13 (M < F, P < 0.01). This result is quite likely caused by the misunderstanding of some wording. In the last line of that vignette about ballgames, M said to F, 'I want you to play with my balls!' In the original Chinese version of the questionnaire, the Cantonese slang word '友誼波', which literally means 'friendship ball', was used (the differences between the original version and the translated version are caused by the application of a translation approach known as dynamic equivalence, see Munday 2001 for details). Roughly speaking, this word refers to a kind of 'friendship' which is maintained by a regular or long-term sexual relationship. In other words, in the original conversation, M expressed his desire to have a sexual relationship with F, which was quite a rude thing to say. Conversations with such sexually loaded remarks should receive a very low rating by the female participants (as evident in Q14 and Q15 of the same part), but the rating of Q13 by female participants seems

abnormally high. A likely reason is that the slang word used is not very well-known among females. As a result, some of the female participants did not manage to get what M meant, and could only rate the item in a rather random manner. As seen in Table 1, the standard deviation of this rating is the largest in that part, indicating that the participants had a poor agreement on the effectiveness of that conversation. In future studies, slang terms which may cause misunderstanding should be clearly defined.

4.6. Summary

The results of this questionnaire are generally in good agreement with Buss et al. (1990). In their study, Buss et al. found that nearly all samples across different cultures placed tremendous weight on character qualities such as dependability, emotional stability, and kindness-understanding. The significance of such qualities in mate choice has been discussed above. Similarly, the current study reveals that the item-group Character was most highly rated among both males and females. Furthermore, the importance of male capacity for resource provisioning, as predicted by several evolutionary accounts (Trivers 1972; Williams 1975) and shown by the results of Buss et al. (1990), is further supported by the higher rating of Wealth in male-female flirtation than the other direction. As Buss et al. (1990: 45) noted, 'Despite these cultural and sexual variations, there were strong similarities among cultures and between sexes on the preference ordering of mate characteristics. This implies a degree of psychological unity or species-typicality of humans that transcends geographical, racial, political, ethnic, and sexual diversity.' This observation is also in accord with the fact that the ranking of different item-groups was the same in this study in spite of the differences in ratings. In short, apart from minor exceptions which have been discussed above, the results of this study are generally within expectation.

5. Conclusion

Language evolution is intricately interwoven with a host of disciplines. It is difficult, if not impossible, to persuade researchers across all academic fields that a certain language feature evolved through sexual selection, given that many researchers may think it scandalous to link language evolution to sex (Miller 2001). The role of sexual selection in language evolution is worth more attention and Miller is perhaps the most enthusiastic proponent of such a research direction (Hurford 2007). Nevertheless, as discussed above, many of his arguments do not seem convincing enough. Sex difference in speech content appears to be the only likely product of sexual selection apart from the well-known sex difference in voice and language comprehension. However adamant Miller is about the role of sexual selection in language evolution, he admits that sexual selection has a larger influence on language content instead of language form.

What we say is generally more important than how we say it. The formal structure of language evolved principally as a medium for conveying ideas and feelings, which tend to attract sexual partners by revealing our personalities and minds.

Sexual selection shapes language's content more than its form. Or rather, the form evolved in the service of the sexually selected content, rather than as a sexual display in its own right, as birdsong did. (Miller 2001: 357-358)

The results of this questionnaire suggested that although Miller's postulation of the sexual dimorphism of language use was most probably an exaggeration, the significant differences in the ratings of various items and item-groups supported the notion

that some aspects of speech content have been under the influence of sexual selection. For instance, it was agreed that a male showing off his wealth to a female was more effective in impressing a potential partner than the other way round. This result is in accord with studies on mate choice preference that a male's ability to provide resources is considered an important quality (Buss et al. 1990; Lewin 2005).

Admittedly, this study still has some room for improvement. Although the questionnaire results have been compared with those of related studies, none of those studies focused on conversations between friends, and therefore no direct comparison could be made. Further, limited by time and resources, this study only focused on Hong Kong people. Although this can somehow help to counteract the bias towards western culture introduced by existing studies, the study will probably yield interesting results if it is to be conducted in different cultures as we may be able to see the interaction between culture and mate choice preference, and how such interaction may affect speech content in different cultures. In this case, large-scale international collaboration is required as it takes a lot of time and effort to translate the questionnaire into different languages (given that in this questionnaire the naturalness of the vignettes is of utmost significance) and conduct the study in different parts of the world. Despite the tremendous effort involved, such a study could contribute to many academic disciplines and, most importantly, cast new light on the origins of language in relation to sexual selection from a culturally comprehensive perspective.

Further, as discussed above, in the vignettes about 'driver' and 'posh restaurant', the boundary between character and wealth was a bit blurred. Such ambiguity should be avoided in future studies. The total number of vignettes should be increased so that each item-group can comprise a more comprehensive range of items. For instance, Culture can comprise a wider range of culturally appreciated talents such as artistic abilities, musical talents, analytical abilities, and language proficiency; while Charac-

ter may comprise loyalty, resilience, generousity, composure, honesty, and diligence, in addition to those included in this study. After all, since this study is highly disciplinary in nature, any further extension of it is set to involve ideas from many fields. It may have to take quite a long time for scholars from different fields to generally agree on how language content has been shaped by sexual selection.

Although language content is anything but a negligible feature of language, most linguists are apt to be much more interested in the general structure of language (i.e. language form). There is currently no evidence illustrating that linguistic structural features correlate with variation in sexual attractiveness (Hurford 2007). Or, as Hurford (2007: 286) suggests, 'The absence of relevant studies may indicate a general anticipation that there is nothing to be found by way of sexual selection for interesting structural features of human language'. Consequently, the study of sexually attractive features of language may mainly be done by evolutionary anthropologists and psychologists instead of linguists. Anyway, it is still interesting to further study how humans seduce the opposite sex by saying something sexually attractive and how they may change their pitch when talking to potential mates. After all, language evolution is highly interdisciplinary in nature and we can still learn a lot about it without following the research approach of orthodox linguists.

Appendix A: English Translation of the Questionnaire

Opposite-Sex Conversation Content Questionnaire

The aim of this study is to investigate the effect of mutual mate choice on sex differences in speech content. On the following pages, there is a selection of different vignettes. Each one consists of a short description of the situation, followed by a section of dialogue between M and F, where M stands for the male protagonist and F stands for the female one. They are both single and intend to find a partner. They are reasonably familiar with each other, but not yet close friends.

The questionnaire is divided into 2 parts, each comprising 15 vignettes. Please read each vignette, and then decide how good or bad the conversation content would be. In Part 1, a good conversation would be one that would make F have a good impression of M, and a bad one would make F have a bad impression of M. While in Part 2, you will decide whether a conversation would make M have a good impression of F. Some vignettes in Part 1 and Part 2 are very similar, but please make sure to read them once more when you come across such vignettes.

Please rate each conversation using a 5-point scale ranging from 1 (Very Poor) to 5 (Very Good). Simply select the number that you feel best represents how good or bad the conversation content is likely to be.

Part 1

1. Severe Tropical Storm Chanthu is heading towards the south China coastal area, bringing unsettled weather to that region. M and F work for the same company in Hong Kong. During the lunch hour, M and F talk about the tropical cyclone.

F: See! It's getting windier and windier outside. I've just heard that the Strong Wind Signal No. 3 is now in force. It looks like that the storm is posing a real threat to us. M: Yes, indeed. I reckon Chanthu will intensify into a typhoon soon. Based on its forecast track, it'll bring considerably strong winds to Hong Kong even if it doesn't come very close to us.

F: Oh really? Can you tell me more about it?

M: Well, it may be a bit too technical to explain it in detail now. To put it simply, the

current atmospheric condition favours Chanthu's further intensification. Also, Hong Kong is within an area known as the dangerous semi-circle of Chanthu, so we'll have even stronger winds.

F: Oh I see. You seem to be an expert in this subject. How do you know all these things?

M: I have a keen interest in atmospheric science, and I took a few courses on this subject when I was at university.

F: It sounds cool. By the way, let's come back to the most important question - do you think Chanthu can give us an extra holiday?

M: Let's keep our fingers crossed...haha.

Assume M wants to impress F in the conversation. Please rate his conversation content.

2. M and F are attending an exhibit of paintings displaying at the Hong Kong Museum of Art. It is late in the evening, nearing closing time, so the normal crowds have subsided. They are both admiring one of the museum's most famous paintings, Starry Night by Vincent van Gogh, in silence.

M: A beautiful work isn't it?

F: Incredible, do you know much about Van Gogh?

M: A little, I find his work somehow... captivating. Does that sound stupid? He was in an asylum in Saint-Rémy while he painted this. It amazes me how a work of such beauty can stem from tragedy.

F: Perhaps... all truly great artists need to have seen both sides of the coin.

M: Maybe, or it could be that he didn't find the beauty he needed in his life from his friends or loved ones. Say, this place is closing soon. Fancy going for a coffee to continue this talk?

Assume M wants to impress F in the conversation. Please rate his conversation content.

3. Having finished working on their group project, M and F are about to leave the university library. When they walk past a bookshelf displaying Chinese fiction, M's attention is caught by some of the books.

M: Excuse me, I may want to borrow a few books. Do you mind waiting for me for a couple of minutes?

F: No problem. This bookshelf holds a lot of Jin Yong's works. Do you like reading his books?

M: Sure! I really enjoy reading *Wuxia* fiction. Among Jin Yong's works, I've read *The Book and the Sword* and the *Condor Trilogy*. I'm going to read more of his works as it is such a joy to read them.

F: Why do you like reading his works so much?

M: Because the plots are truly fascinating. I can also learn a lot about Chinese culture and history through his works. I'm inspired to read more books about our culture and history.

Assume M wants to impress F in the conversation. Please rate his conversation content.

4. M and F are going to graduate from university soon. They are talking about their plan after graduation.

M: Time flies. This semester is already halfway through. Have you started job hunting?

F: Sigh, I feel totally lost. I'm not sure what I really wanna do...how about you?

M: I've applied for several jobs and I'll be having an interview next week. Why do you feel lost? Do you have any target jobs?

F: Sigh...I don't have any particular target. I wanna start job hunting asap but I don't know where to start...I'm really worried now.

M: Oh, there's no need to worry. You may go to the Career Centre to seek advice. You can get some useful information there. I can also send you some websites which can help you look for jobs. These should help.

Assume M wants to impress F in the conversation. Please rate his conversation content.

5. M has returned to Hong Kong after working abroad for a year. He meets F in a restaurant for dinner.

F: Hey, long time no see! How are you? Had a nice experience abroad?

M: Yes, I'm fine. But are you alright? You look a bit under the weather.

F: Oh, how do you know that?

M: Your voice sounds a bit unnatural.

F: Right, I think it's because I'm too tired these days. My work is exhausting me. I've

already taken some medicine.

M: Take care. Take a sick leave to rest more if necessary. Don't exhaust yourself. Okay, let's come back to my story abroad...

Assume M wants to impress F in the conversation. Please rate his conversation content.

6. F is a PhD candidate. She is conducting a psychology experiment which requires the participation of males. Each experiment session lasts for an hour, but, because of a lack of funding, each participant can only receive 20 Hong Kong Dollars. Because of this reason, F is struggling to find sufficient participants. One day, M chats with F on MSN.

M: Hey, how have you been lately? Still busy with school work?

F: Yes, I'm conducting an experiment but struggling to find enough participants.

M: Oh, what kind of experiment is that? What kind of participants do you need?

F: It's an experiment about gender role. I need more male participants.

M: I can help you with that!

F: But the problem is that the experiment may take up to 1 hour, and each participant can only receive \$20. So it's very difficult to find people willing to participate.

M: It doesn't matter to me. I don't know much about psychology but I'm willing to contribute to academic studies, especially those conducted by friends. Don't worry anyway. I'll try to persuade my friends to be your participants as well.

Assume M wants to impress F in the conversation. Please rate his conversation content.

7. M is back from a trip. He meets up with F to give her some souvenirs.

F: Thanks for the souvenirs! You travelled to Japan, right? Had a nice trip?

M: Yes, the food was fantastic! I've tried *kaiseki*, Kobe beef, and of course many kinds of ramen and sushi. Basically each and every meal was spectacular!

F: Wow, it sounds delicious! But wasn't it very expensive?

M: Well, I think it's worth the money. All meals I had are indeed memorable and we can hardly find anything comparable here in Hong Kong. After all enjoying nice food is the most important thing to me.

F: It makes me hungry. I'll also go to Japan when I have the chance.

M: It's worth going there again. But my next travel target is Dubai. There are many

beautiful hotels. I've also heard that it's the shopping capital of the Middle East. Of course I'd also love to try Arab cuisine. It should be a great place for my next holiday.

Assume M wants to impress F in the conversation. Please rate his conversation content.

8. M meets up with F to treat her a meal to celebrate her birthday. He takes her to a posh restaurant.

F: Are we really going to dine here? It looks like an expensive restaurant.

M: Yes, it serves excellent food.

F: But it may be very expensive. Even if we dine here, you don't have to pay the bill for me. It's really too expensive.

M: Don't worry. Neither of us has to pay for the bill. This restaurant is owned by my father.

Assume M wants to impress F in the conversation. Please rate his conversation content.

9. F is going to M's home for his birthday party. It is difficult to reach M's home by public transport, especially given that F is not familiar with that district. F has got lost on the way. She calls M to ask for the directions to his home.

F: Hi there, I've reached North Point now, but I can't find the bus station. Where is it?

M: Where exactly are you now? Are you near the Sunbeam Theatre?

F: Yes, somewhere near it.

M: Wait for me in front of the main entrance. I'll be there soon.

F: Oh, you don't have to pick me up. It'll take you around 15 minutes to come here by bus, right?

M: No worries. It takes me not more than 5 minutes to reach the Sunbeam Theatre. My driver can drive me there.

Assume M wants to impress F in the conversation. Please rate his conversation content.

10. F competes in a singing contest and is chosen as the first runner-up. M bumps into F after the contest.

M: Hey, you did a great job just now! I really enjoyed your performance!

F: Oh really? I reckon I could have done better.

M: You've already done very well! If I were the judge, you'd certainly be the winner. No question. Your singing technique is brilliant and your voice is so touching. Your performance was much more impressive than anyone else.

Assume M wants to impress F in the conversation. Please rate his conversation content.

11. M meets F in a birthday party of a common friend.

M: F, you look gorgeous today!

F: Do you mean I'm less than gorgeous usually?

M: No. I mean your charm makes it impossible for you to keep a low profile today.

Assume M wants to impress F in the conversation. Please rate his conversation content.

12. A friend gathering is being held at F's home. F prepares the dinner for her friends, and one of the dishes catches a lot of attention. Some of his friends start talking about it.

'What is this chicken dish? It smells sweet.'

'I don't know what it is. The smell is quite special.'

F comes back to the table and her friends start eating.

M: F, how did you make this chicken dish? Its taste is so special and I really like it! F: This is Irn-Bru chicken. Irn-Bru is a soft drink produced in Scotland. I used it to cook chicken just like how people make coca-cola chicken (a popular dish in Hong Kong cuisine).

M: No wonder why it tastes sweet. It is really appetizing and delicious. What a successful and innovative example of Chinese-Scottish fusion cuisine!

Assume M wants to impress F in the conversation. Please rate his conversation content.

13. F invites M to play ball games this weekend.

F: I'll play ball games with David and Amy this weekend. Are you free to join? M: Yes. What ball games will we play?

Origins of Language in relation to Sexual Selection

F: Not decided yet. We may play badminton, squash, table tennis, or even bowling. Which is your favourite ball game?

M: I'd like you to play with my balls!

Assume M wants to impress F in the conversation. Please rate his conversation content.

14. M shares his unpleasant experience on a crowded MTR train with F.

M: Damn! I had a terrible experience on the MTR train this morning. I'm fucking annoyed.

F: Oh, what happened? The train must have been very crowded, right?

M: Yes, indeed. And I was indecently assaulted by a faggot!

F: What?! What did he do?

M: Screw him! He caressed my thigh again and again. I could hardly do anything as it was so damn crowded.

F: You still had to do something, right?

M: I tried to imagine a pretty girl like you were the caressing me instead. It made me feel much better.

Assume M wants to impress F in the conversation. Please rate his conversation content.

15. Illegal intercourse is becoming a more and more serious problem in Hong Kong. More and more teenagers have sex before the legally allowed age. M and F just come across a latest incident of illegal intercourse on the newspaper.

F: Sigh, another case of illegal intercourse. What's going on with the kids nowadays? M: No surprise. We already had desire at that age and wouldn't think about the consequences too much. If I had known you ten years ago, I might not have been able to resist the temptation.

Assume M wants to impress F in the conversation. Please rate his conversation content.

Part 2

1. Having finished working on their group project, M and F are about to leave the university library. When they walk past a bookshelf displaying Chinese fiction, F's attention is caught by some of the books.

F: Excuse me, I may want to borrow a few books. Do you mind waiting for me for a couple of minutes?

M: No problem. This bookshelf holds a lot of Jin Yong's works. Do you like reading his books?

F: Sure! I really enjoy reading *Wuxia* fiction. Among Jin Yong's works, I've read *The Book and the Sword* and the *Condor Trilogy*. I'm going to read more of his works as it is such a joy to read them.

M: Why do you like reading his works so much?

F: Because the plots are truly fascinating. I can also learn a lot about Chinese culture and history through his works. I'm inspired to read more books about our culture and history.

Assume F wants to impress M in the conversation. Please rate her conversation content.

2. M and F are university classmates. They are just back from a biology field trip.

F: Hey, did you enjoy the trip? I think it was really a good one.

M: Definitely. The weather was nice and the theme of the trip was one of my favourites. You know, I'm pretty interested in learning about the cephalopod and it was a pleasant surprise to see some of them this afternoon.

F: Oh really! I'm a big fan of Class Cephalopoda! They are intelligent creatures with a highly complex nervous system. Their sophisticated camera-type eye is an excellent example of convergent evolution too. I do aspire to carry out in-depth studies on these animals.

M: You seem to be really into this class of animals. I like the octopus most in Class Cephalopoda.

F: Cool! I'm sure we can work well together in the coming project on cephalopods.

Assume F wants to impress M in the conversation. Please rate her conversation content.

3. M and F are attending an exhibit of paintings displaying at the Hong Kong Museum of Art. It is late in the evening, nearing closing time, so the normal crowds have subsided. They are both admiring one of the museum's most famous paintings, Starry Night by Vincent van Gogh, in silence.

M: A beautiful work isn't it?

W: Incredible, do you know much about Van Gogh?

M: A little, I find his work somehow... captivating. Does that sound stupid? He was in an asylum in Saint-Rémy while he painted this. It amazes me how a work of such beauty can stem from tragedy.

W: Perhaps... all truly great artists need to have seen both sides of the coin.

M: Maybe, or it could be that he didn't find the beauty he needed in his life from his friends or loved ones. Say, this place is closing soon. Fancy going for a coffee to continue this talk?

Assume F wants to impress M in the conversation. Please rate her conversation content.

4. After getting off work, M goes to a restaurant to meet up with F for a dinner. However, it is raining heavily outside, and M arrives 10 minutes late, in a fluster.

M: Very sorry for being so late.

F: It isn't your fault. It's raining so heavily outside. It's a miracle if you can arrive on time. I wasn't affected just because I work in this complex. You may go to the toilet to tidy up yourself first. I've got some paper handkerchiefs, do you need them?

Assume F wants to impress M in the conversation. Please rate her conversation content.

5. F has returned to Hong Kong after working abroad for a year. She meets M in a restaurant for dinner.

M: Hey, long time no see! How are you? Had a nice experience abroad?

F: Yes, I'm fine. But are you alright? You look a bit under the weather.

M: Oh, how do you know that?

F: Your voice sounds a bit unnatural.

M: Right, I think it's because I'm too tired these days. My work is exhausting me. I've already taken some medicine.

F: Take care. Take a sick leave to rest more if necessary. Don't exhaust yourself. Okay, let's come back to my story abroad...

Assume F wants to impress M in the conversation. Please rate her conversation content.

6. M is a PhD candidate. He is conducting a psychology experiment which requires the participation of females. Each experiment session lasts for an hour, but, because of a lack of funding, each participant can only receive 20 Hong Kong Dollars. Because of this reason, M is struggling to find sufficient participants. One day, F chats with M on MSN.

F: Hey, how have you been lately? Still busy with school work?

M: Yes, I'm conducting an experiment but struggling to find enough participants.

F: Oh, what kind of experiment is that? What kind of participants do you need?

M: It's an experiment about gender role. I need more female participants.

F: I can help you with that!

M: But the problem is that the experiment may take up to 1 hour, and each participant can only receive \$20. So it's very difficult to find people willing to participate. F: It doesn't matter to me. I don't know much about psychology but I'm willing to contribute to academic studies, especially those conducted by friends. Don't worry anyway. I'll try to persuade my friends to be your participants as well.

Assume F wants to impress M in the conversation. Please rate her conversation content.

7. M is going to F's home for her birthday party. It is difficult to reach F's home by public transport, especially given that M is not familiar with that district. M has got lost on the way. He calls F to ask for the directions to her home.

M: Hi there, I've reached North Point now, but I can't find the bus station. Where is it?

F: Where exactly are you now? Are you near the Sunbeam Theatre?

M: Yes, somewhere near it.

F: Wait for me in front of the main entrance. I'll be there soon.

M: Oh, you don't have to pick me up. It'll take you around 15 minutes to come here by bus, right?

F: No worries. It takes me not more than 5 minutes to reach the Sunbeam Theatre.

My driver can drive me there.

Assume F wants to impress M in the conversation. Please rate her conversation content.

8. F is back from a trip. She meets up with M to give her some souvenirs.

M: Thanks for the souvenirs! You travelled to Japan, right? Had a nice trip?

F: Yes, the food was fantastic! I've tried *kaiseki*, Kobe beef, and of course many kinds of ramen and sushi. Basically each and every meal was spectacular!

M: Wow, it sounds delicious! But wasn't it very expensive?

F: Well, I think it's worth the money. All meals I had are indeed memorable and we can hardly find anything comparable here in Hong Kong. After all enjoying nice food is the most important thing to me.

M: It makes me hungry. I'll also go to Japan when I have the chance.

F: It's worth going there again. But my next travel target is Dubai. There are many beautiful hotels. I've also heard that it's the shopping capital of the Middle East. Of course I'd also love to try Arab cuisine. It should be a great place for my next holiday.

Assume F wants to impress M in the conversation. Please rate her conversation content.

9. F meets up with M to treat him a meal to celebrate his birthday. She takes him to a posh restaurant.

M: Are we really going to dine here? It looks like an expensive restaurant.

F: Yes, it serves excellent food.

M: But it may be very expensive. Even if we dine here, you don't have to pay the bill for me. It's really too expensive.

F: Don't worry. Neither of us has to pay for the bill. This restaurant is owned by my father.

Assume F wants to impress M in the conversation. Please rate her conversation content.

10. M competes in a singing contest and is chosen as the first runner-up. F bumps into M after the contest.

Origins of Language in relation to Sexual Selection

F: Hey, you did a great job just now! I really enjoyed your performance!

M: Oh really? I reckon I could have done better.

F: You've already done very well! If I were the judge, you'd certainly be the winner. No question. Your singing technique is brilliant and your voice is so touching. Your performance was much more impressive than anyone else.

Assume F wants to impress M in the conversation. Please rate her conversation content.

11. F meets M in a birthday party of a common friend.

F: M, you look gorgeous today!

M: Do you mean I'm less than gorgeous usually?

F: No. I mean your charm makes it impossible for you to keep a low profile today.

Assume F wants to impress M in the conversation. Please rate her conversation content.

12. A friend gathering is being held at M's home. M prepares the dinner for his friends, and one of the dishes catches a lot of attention. Some of his friends start talking about it.

'What is this chicken dish? It smells sweet.'

'I don't know what it is. The smell is quite special.'

M comes back to the table and his friends start eating.

F: M, how did you make this chicken dish? Its taste is so special and I really like it! M: This is Irn-Bru chicken. Irn-Bru is a soft drink produced in Scotland. I used it to cook chicken just like how people make coca-cola chicken (a popular dish in Hong Kong cuisine).

F: No wonder why it tastes sweet. It is really appetizing and delicious. What a successful and innovative example of Chinese-Scottish fusion cuisine!

Assume F wants to impress M in the conversation. Please rate her conversation content.

13. M is going to move into the student residence hall which F lives in.

F: Are you moving in next week? Which floor will you live on?

Origins of Language in relation to Sexual Selection

M: Yes, I'll live on the 8th floor.

F: Cool! I live there also. It's good to live on the top floor as it'll be more difficult for people to peep into my room. You know, it's extremely annoying to get peeped, unless the peeper is you.

Assume F wants to impress M in the conversation. Please rate her conversation content.

14. After watching the live broadcast of a world cup match, M and F talk about their favourite football stars.

F: Which football players do you like most?

M: I like Wayne Rooney, Xavi, and Cristiano Ronaldo.

F: Oh, Cristiano Ronaldo is my favourite. I've put a large poster of his next to my bed, so that I can imagine sleeping with him!

M: Haha, you are so funny.

F: Hey my cute boy, can you give me a poster of yours? I may wanna have you next to my bed when I'm tired of Ronaldo.

Assume F wants to impress M in the conversation. Please rate her conversation content.

15. Illegal intercourse is becoming a more and more serious problem in Hong Kong. More and more teenagers have sex before the legally allowed age. M and F just come across a latest incident of illegal intercourse on the newspaper.

M: Sigh, another case of illegal intercourse. What's going on with the kids nowadays? F: No surprise. We already had desire at that age and wouldn't think about the consequences too much. If I had known you ten years ago, I might not have been able to resist the temptation.

Assume F wants to impress M in the conversation. Please rate her conversation content.

Appendix B: Original Chinese Version of the Questionnaire

異性對話內容問卷調查

本問卷調查旨在探究相互配偶選擇(mutual mate choice)對兩性的說話內容有何影響。本問卷收錄了多篇短故事,每篇均會先簡單交代故事背景,然後帶出男主角 M 和女主角 F 之間的一段對話。M 和 F 都是單身且有意尋覓伴侶。他們對彼此有一定認識,但尚算不上是十分相熟的好友。

本問卷分為兩部分,每部分收錄了十五篇短故事。請細閱每篇故事,然後對談話內容的優劣作評分。在第一部分中,好的談話內容能使 F 對 M 產生好感,而壞的談話內容則會使 F 對 M 反感;相反,在第二部分中,好的談話內容能使 M 對 F 產生好感,而壞的談話內容則會使 M 對 F 反感。雖然在第一部分與第二部分中的某些故事,內容非常接近,但遇到此類故事時,仍請務必重頭再細讀一遍。

請以 5 等量表(5-point scale)給每段對話打分—1 代表「非常差」, 5 代表「非常好」。 只需憑主觀感覺評分就足夠。

本網上問卷未能顯示部分粵語用字,故有時需以同音或近音字取代之。不便之處,請見諒。

第一部分

- 1. 強烈熱帶風暴燦都正趨向華南沿岸,並為該區帶來不穩定天氣。M 和 F 在香港同一間公司工作,他們在午飯時間談起該熱帶氣旋。
- F: 睇下!出面愈黎愈大風喇。岩岩聽到話而家已經掛左三號風球喇,睇黎個風對 我地都幾大威脅喎。
- M: 係呀, 我睇燦都就快會增強成颱風架喇。依照預測路徑, 就算個風離我地唔 算太近,香港應該都會幾大風。
- F: 係?可唔可以講多d呀?
- M: 嗯,而家要詳細咁解釋,可能會有 d 複雜架。簡單黎講,而家既大氣環境有助燦都進一步增強,而且香港位於燦都一個叫做危險半圓既區域,所以風勢會更加強。
- F: 哦,你好似對呢 d 野好有研究咁喎。你點樣學返黎架?
- M: 我對氣象好有興趣,讀大學個陣 take 左幾科相關既科目。
- F: 幾好喎。講返最重要既問題啦,你覺得燦都畀唔畀到一日額外假期我地呢?
- M: 哈哈,望就咁望啦。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

2. M 和 F 到香港藝術館參觀畫展。夜漸深,人漸散,藝術館快到關門時。此刻, 他們屏息凝視著館中最著名的畫作之一一梵高的代表作《星夜》。

M: 真係好靚呀......

F: 係呀,都唔知應該點樣形容好。你熟唔熟梵高 d 畫架?

M:一般啦,我覺得佢 d 畫有 d 令人......神魂顛倒。好似有 d 誇張咁......佢係係聖雷米一間精神病院畫呢幅畫既,真係好難想像可以係一個咁憂愁既環境下,創作出咁動人既作品。

F: 或者......所有真正偉大既藝術家都要親身體驗過人生百態。

M: 嗯,或者啦......佢都可能係佢愛既人身上搵唔到佢生命中唔可以缺少既美麗。話時話,呢度就快閂門喇喎,去唔去飲杯野呀?

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

3. M 和 F 在做完小組作業後,準備離開學校圖書館。途經擺放中文小說的書架時, M 的注意力被吸引了過去......

M: 唔好意思,我可能有幾本書想借,你介唔介意等我兩分鐘呀?

F: 有問題呀。呢個書架有好多金庸 d 小說喎, 你鍾唔鍾意睇佢 d 書架?

M: 鍾意呀!我好鍾意睇武俠小說架。係金庸 d 書裡面,我睇過書劍恩仇錄、射鵰、神鵰、同埋倚天。 (E d 書真係好好睇,我會繼續睇多 d。

F: 點解你咁鍾意睇佢 d 書既?

M: d 劇情真係好精彩。而且我可以係但 d 書學到好多關於中國文化同歷史既野, 令我有興趣去搵 d 相關既書睇下。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

4. M和F快將大學畢業,他們正談論畢業後的計劃。

M: 唔經唔覺呢個 sem 已經過左一半喇,你開始搵工未呀?

F: 唉,我覺得好迷茫呀,都唔知自己究竟想做 d 乜......你呢?

M: 我申請左幾份工,下星期會有一個 interview。你點解覺得迷茫呀?有有 d 咩目標工作呀?

F: 唉,我就係有咩目標囉。我好想盡快搵工呀,不過唔知應該點樣開始好......真 係愈講愈徬徨。 M: 噢,唔駛徬徨呀,你可以去 Career Centre 度問下意見,你會拎到 d 有用既資料。我都可以 send d 求職網站畀你,應該可以幫到你既。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

5. M 在海外工作一年後回港,跟 F 在餐廳共晉晚餐。

F: 喂,好耐有見喇喎!你點呀?係外國開唔開心呀?

M: 幾好啦。不過你有事丫嘛?你好似有 d 唔舒服咁。

F: 噢,你點知架?

M: 你有 d 感冒聲。

F: 係呀,我諗係因為我呢排太忙啦,畀份工搞到就黎虛脫喇。我已經食左藥架喇。

M: 保重啦。有需要既話就請病假休息下啦,唔好咁操勞喇。好啦,講返我係外 國做工既野......

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

6. F是一名博士生,她正進行一項心理學實驗,需尋找男性參與。每節實驗需時約一小時,但由於資金不足,每名參與者只能獲得港幣 20 元作報酬,今 F遲遲未能找到足夠的參與者。一天,M 跟 F在 MSN 聊天。

M: 喂,最折點呀?仲係忙緊學校 d 野呀?

F: 係呀,我做緊個 experiment,不過仲未搵夠 participant...

M: Oh, 咩 experiment 黎架?你需要 d 點樣既 participant?

F: 係一個關於 gender role 既 experiment.我需要多 d 男性 participant.

M: 我可以幫你喎!

F: 不過問題係個實驗可能要搞成個鐘,而每位 participant 只會得到\$20,所以真係好難搵到人願意參與......

M: 我有所謂呀。我雖然對 psycho 有乜認識,但係我都好樂於參與學術研究,尤其今次仲可以幫到朋友添。總之唔駛擔心啦,我會試下去說服埋其他 friend 幫你。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

7. M 外遊返港後,相約 F 見面,送她手信。

F: 多謝你 d 手信呀!你係咪去左日本呀?好唔好玩呀?

M: 係呀, d 野食簡直有得頂呀!我試過懷石料理、神戶牛肉、當然仲有好多種拉

麵同壽司啦。基本上每一餐都好正!

F: 嘩,聽落去好好食咁喎!不過唔會好貴咩?

M: 嗯......我覺得值得咁既價錢喎。我食過既每一餐都令我印象難忘,真係好難係香港搵到 d 差唔多質素既食物。講到尾,我最重視既野始終都係美食。

F: 搞到我有 d 肚餓添。有機會既話,我都會去日本。

M: 日本值得去多幾次。不過我下一個目標係杜拜,個度有好多好靚既酒店,聽講仲係中東既購物天堂添。當然我都好想試下食阿拉伯菜啦。總之杜拜應該會係一個畀我渡假既好地方。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

- 8. M 帶 F 到一間高檔餐廳用膳,為她慶祝生日。
- F: 我地真係黎呢度食飯呀?睇黎係間貴價餐廳黎架喎。
- M: 係呀, 呢度 d 野好好食架。
- F: 不過可能會好貴架喎。就算我地係呢度食,你都唔好請我喇,真係太貴喇。
- M: 唔駛擔心,我地大家都唔駛畀錢。呢間餐廳係我阿爸開既。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

- 9. F 正前往 M 家參加他的生日派對。M 住的地方交通不太方便,而且 F 不太熟悉該區;走著走著,她迷路了。於是她致電予 M 求助。
- F: 喂,我到左北角喇,不過搵唔到個巴士站。究竟係邊架?
- M: 你而家 exactly 係邊呀?近唔近新光戲院?
- F: 折呀,就係附近。
- M: 係大門口度等我丫,我好快就會到。
- F: 噢,你唔駛黎接我啦。你黎呢度唔係要撘成 15 分鐘巴士咩?
- M: 唔緊要,我黎新光戲院 5 分鐘都唔駛。我司機可以車我過黎。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

- 10. F 參加了一項歌唱比賽,並取得亞軍。M 在比賽完畢後碰見 F。
 - M: 喂,你頭先唱得好好呀!我真係好 enjoy 聽你唱個首歌。
 - F: 真係既?我覺得自己仲可以唱得好 d。
 - M: 你已經唱得好好喇!如果我係評判既話,你就一定會係冠軍呀,毫無疑問。你歌唱技巧咁出色,把聲又咁感人,表現真係比其他對手 impressive 好多。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

11. M 跟 F 在一位同共朋友的生日派對中相遇。

M: F, 你今日好靚女喎!

F: 哦, 即係話我平時唔靚女啦。

M: 唔係,只不過係你平時仲勉強可以扮下滄海遺珠,但今日就真係魅力四射, 想擋都擋唔住。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

12. F 在家舉辦朋友聚會,並為友人預備晚餐。其中一道小菜備受矚目,令人議論紛紛。

「呢碟咩雞黎架?聞落去好似幾甜喎。」

「唔知呀,陣味都幾特別。」

F 回座後,大家便起筷了。

M: F, 碟雞點樣整架? 陣味好特別呀,好岩我口味。

F: 呢碟係 Irn-Bru 雞。Irn-Bru 係一種蘇格蘭造既汽水,我好似整可樂雞咁用 Irn-Bru 黎整雞。

M: 哦,唔怪之得咁甜啦。真係一味開胃好味又創新既中蘇 fusion 菜!

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

- 13. F 相約 M 在本週末打球。
- F: 我今個 weekend 會同 David 同 Amy 打波呀,你得唔得閒黎 join 呀? M: OK 呀,我地會打咩波呀?
- F: 未決定架。可能會打羽毛球、壁球、乒乓波、甚至係保齡球都得。你最想打 咩波呀?

M: 我最想同你打友誼波!

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

14. M 跟 F 訴說他在地鐵列車上遇到的不愉快經歷。

M: 頂!今朝係地鐵發生左 d 事, 真係激撚死我呀。

F: 噢, 發牛咩事呀?架車當時一定好迫啦?

M: 係呀,跟住有個死基佬乘機非禮我囉!

F: 下?!佢做左 d 咩呀?

M: 頂佢個肺!佢係咁摸我大脾呀。個度咁鬼死迫,我真係乜Q都做唔到囉。

F: 咁你都要做 d 野架喎......

M: 我嘗試去幻想我係畀個好似你咁既靚女摸大脾,咁樣我既感覺會好好多。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

15. 非法性交的問題在香港日趨嚴重,愈來愈多青少年在合法年齡前偷嚐禁果。 M 和 F 剛在報紙上讀到一篇關於非法性交的新聞。

F: 唉,又係衰十一,都唔知家陣 d 小朋友諗咩既。

M: 唔出奇既,我地係個個年紀既時候已經會有慾望啦,而且又唔會點樣諗後果。如果畀我十年前識到你呀,我可能都會情不自禁啦。

假設 M 有意在這次交談中搏取 F 的好感,請為其說話內容評分。

第二部分

1. M 和 F 在做完小組作業後,準備離開學校圖書館。途經擺放中文小說的書架時, F 的注意力被吸引了過去......

F: 唔好意思,我可能有幾本書想借,你介唔介意等我兩分鐘呀?

M: 有問題呀。呢個書架有好多金庸 d 小說喎,你鍾唔鍾意睇佢 d 書架?

F: 鍾意呀!我好鍾意睇武俠小說架。係金庸 d 書裡面,我睇過書劍恩仇錄、射鵰、神鵰、同埋倚天。 fc d 書真係好好睇,我會繼續睇多 d。

M: 點解你咁鍾意睇佢 d 書既?

F: d 劇情真係好精彩。而且我可以係佢 d 書學到好多關於中國文化同歷史既野, 令我有興趣去搵 d 相關既書睇下。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

2. M和F是大學同學,他們剛從生物科實地考察旅行回來。

F: 喂, en 唔 enjoy 個 trip 呀?我覺得好好玩呀!

M: 梗係好啦,今日天氣又好,我又對個 trip 既主題有興趣。你知啦,我對 cephalopod 都幾有興趣,今日可以見到幾隻 cephalopod 都可以話係一個驚喜。

F: 真係架?!我超鍾意 Class Cephalopoda 架!佢地複雜既 nervous system 令佢地智慧好高,佢地對 camera-type 既眼更加體現到 convergent evolution......我真係好希望第日可以深入研究呢種動物呀。

M: 睇黎你好鍾意呢個 class 既動物喎。係 Class Cephalapoda 裡面,我最鍾意八爪魚。

F: 好呀!我地做關於 cephalopod 個 project 個時一定會好夾。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

3. M和F到香港藝術館參觀畫展。夜漸深,人漸散,藝術館快到關門時。此刻, 他們屏息凝視著館中最著名的畫作之一一梵高的代表作《星夜》。

F: 真係好靚呀......

M: 係呀,都唔知應該點樣形容好。你熟唔熟梵高 d 畫架?

F: 一般啦,我覺得佢 d 畫有 d 令人......神魂顛倒。好似有 d 誇張咁......佢係係聖雷米一間精神病院畫呢幅畫既,真係好難想像可以係一個咁憂愁既環境下,創作出咁動人既作品。

M: 或者......所有真正偉大既藝術家都要親身體驗過人生百態。

F: 嗯,或者啦......佢都可能係佢愛既人身上搵唔到佢生命中唔可以缺少既美麗。話時話,呢度就快門門喇喎,去唔去飲杯野呀?

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

4. 下班後, M 前往一間餐廳跟 F 吃晚飯。然而, 外面忽然下起傾盆大雨, 令 M 遲到了十分鐘, 狼狽不堪。

M: 唔好意思呀,我黎遲左。

F: 唔關你事既,出面咁大雨,你可以準時黎到先至奇啦。我因為係呢棟 complex 返工,所以先有受影響咋。你去廁所整理下先啦,我有紙巾呀,可以畀 d 你用。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

5. F在海外工作一年後回港,跟M在餐廳共晉晚餐。

M: 喂,好耐有見喇喎!你點呀?係外國開唔開心呀?

F: 幾好啦。不過你有事丫嘛?你好似有 d 唔舒服咁。

M: 噢,你點知架?

F: 你有 d 感冒聲。

M: 係呀,我諗係因為我呢排太忙啦,畀份工搞到就黎虛脫喇。我已經食左藥架喇。

F: 保重啦。有需要既話就請病假休息下啦,唔好咁操勞喇。好啦,講返我係外 國做工既野......

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

6. M 是一名博士生,他正進行一項心理學實驗,需尋找女性參與。每節實驗需時約一小時,但由於資金不足,每名參與者只能獲得港幣 20 元作報酬,令 M 遲遲未能找到足夠的參與者。一天,F 跟 M 在 MSN 聊天。

F: 喂,最近點呀?仲係忙緊學校 d 野呀?

M: 係呀,我做緊個 experiment,不過仲未搵夠 participant...

F: Oh, 咩 experiment 黎架?你需要 d 點樣既 participant?

M: 係一個關於 gender role 既 experiment.我需要多 d 女性 participant.

F: 我可以幫你喎!

M:不過問題係個實驗可能要搞成個鐘,而每位 participant 只會得到\$20,所以真係好難搵到人願意參與......

F: 我有所謂呀。我雖然對 psycho 有乜認識,但係我都好樂於參與學術研究,尤其今次仲可以幫到朋友添。總之唔駛擔心啦,我會試下去說服埋其他 friend 幫你。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

7. M 正前往 F 家參加他的生日派對。F 住的地方交通不太方便,而且 M 不太熟悉該區;走著走著,他迷路了。於是他致電予 M 求助。

M: 喂,我到左北角喇,不過搵唔到個巴十站。究竟係邊架?

F: 你而家 exactly 係邊呀? 近唔近新光戲院?

M: 近呀,就係附近。

F: 係大門口度等我丫,我好快就會到。

M: 噢,你唔駛黎接我啦。你黎呢度唔係要撘成 15 分鐘巴十咩?

F: 唔緊要,我黎新光戲院 5 分鐘都唔駛。我司機可以車我過黎。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

8. F外遊返港後,相約 M 見面,送他手信。

M: 多謝你 d 手信呀!你係咪去左日本呀?好唔好玩呀?

F: 係呀, d 野食簡直有得頂呀!我試過懷石料理、神戶牛肉、當然仲有好多種拉麵同壽司啦。基本上每一餐都好正!

M: 嘩,聽落去好好食咁喎!不過唔會好貴咩?

F: 嗯......我覺得值得咁既價錢喎。我食過既每一餐都令我印象難忘,真係好難係香港搵到 d 差唔多質素既食物。講到尾,我最重視既野始終都係美食。

M: 搞到我有 d 肚餓添。有機會既話,我都會去日本。

F: 日本值得去多幾次。不過我下一個目標係杜拜,個度有好多好靚既酒店,聽 講仲係中東既購物天堂添。當然我都好想試下食阿拉伯菜啦。總之杜拜應該會係 一個畀我渡假既好地方。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

9. F帶M到一間高檔餐廳用膳,為他慶祝生日。

M: 我地真係黎呢度食飯呀?睇黎係間貴價餐廳黎架喎。

F: 係呀, 呢度 d 野好好食架。

M: 不過可能會好貴架喎。就算我地係呢度食,你都唔好請我喇,真係太貴喇。

F: 唔駛擔心,我地大家都唔駛畀錢。呢間餐廳係我阿爸開既。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

10. M 参加了一項歌唱比賽,並取得亞軍。F 在比賽完畢後碰見 M。

F: 喂,你頭先唱得好好呀!我真係好 enjoy 聽你唱個首歌。

M: 真係既?我覺得自己仲可以唱得好 d。

F: 你已經唱得好好喇!如果我係評判既話,你就一定會係冠軍呀,毫無疑問。你歌唱技巧咁出色,把聲又咁咸人,表現真係比其他對手 impressive 好多。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

11. M 跟 F 在一位同共朋友的生日派對中相遇。

F: M, 你今日好靚仔喎!

M: 哦, 即係話我平時唔靚仔啦。

F: 唔係,只不過係你平時仲勉強可以扮下滄海潰珠,但今日就真係魅力四射,

想擋都擋唔住。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

12. M 在家舉辦朋友聚會,並為友人預備晚餐。其中一道小菜備受矚目,令人議論紛紛。

「呢碟咩雞黎架?聞落去好似幾甜喎。」

「唔知呀,陣味都幾特別。」

M 回座後,大家便起筷了。

F: M, 碟雞點樣整架? 陣味好特別呀, 好岩我口味。

M: 呢碟係 Irn-Bru 雞。Irn-Bru 係一種蘇格蘭造既汽水,我好似整可樂雞咁用 Irn-Bru 黎整雞。

F: 哦,唔怪之得咁甜啦。真係一味開胃好味又創新既中蘇 fusion 菜!

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

- 13. M 即將搬到 F 所住的學生宿舍。
- F: 你係咪下星期搬入黎呀?住係邊一層?
- M: 係呀,我會住係八樓。
- F: 好呀!我都係住個層。住係頂樓幾好架,有咁易畀人偷窺。你知啦,我好憎畀 人偷窺架嘛,除非偷窺我個個係你啦。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

- 14. 看完一場世界盃直播賽事後, M 跟 F 談到他們最喜愛的球星。
- F: 你最鍾意邊幾個球員呀?

M: 我鍾意朗尼、沙維、同埋 C 朗。

F: 噢,我都好鍾意 C 朗架,我貼左張佢既大 poster 係我張床隔離,等我可以幻想佢陪我訓!

M: 哈哈,咁搞笑既你。

F: 喂, 靚仔, 可唔可以畀張你既 poster 我呀?當我對厭左 C 朗既時候, 我可能會想有你係我床邊。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

15. 非法性交的問題在香港日趨嚴重,愈來愈多青少年在合法年齡前偷嚐禁果。 M 和 F 剛在報紙上讀到一篇關於非法性交的新聞。

M: 唉,又係衰十一,都唔知家陣 d 小朋友諗咩既。 F: 唔出奇既,我地係個個年紀既時候已經會有慾望啦,而且又唔會點樣諗後果。

如果畀我十年前識到你呀,我可能都會情不自禁啦。

假設 F 有意在這次交談中搏取 M 的好感,請為其說話內容評分。

<u>References</u>

Andersson, M. B. (1994). Sexual Selection. Chichester: Princeton University Press.

- Aureli, F., van Schaik, C. and van Hooff, J. (1989). 'Functional aspects of reconciliation among captive long-tailed macaques (*Macaca fascicularis*)'.American Journal of Primatology, 19, 39-51.
- Bale, C., Morrison, R. and Caryl, P. G. (2006). 'Chat-up lines as male sexual displays'.

 Personality and Individual Differences, 40, 655-664.
- Barrett, L., Dunbar, R. and Lycett, J. (2002). *Human Evolutionary Psychology*. Basingstoke: Palgrave.
- Bateman, A. J. (1948). 'Intra-sexual selection in Drosophila'. Heredity, 2, 349-368.
- Bergstrom, C. T. and L. A. Real (2000). 'Towards a theory of mutual mate choice: lessons from two-sided matching'. *Evolutionary Ecology Research*, 2, 493-508.
- Bischoping, K. (1993). 'Gender differences in conversation topics 1922-1990'. *Sex Roles*, 28, 1-17.
- Bressler, E. R., Martin, R. A. and Balshine, S. (2006). 'Production and appreciation of humor as sexually selected traits'. *Evolution and Human Behavior*, 27, 121-130.
- Brown, P. and Levinson, S. C. (1987). *Politeness: Some universals in language usage*.

 Cambridge: Cambridge University Press.
- Buss, D. M. et al. (1990). 'International preferences in selecting mates: a study of 37

- cultures'. Journal of Cross-Cultural Psychology, 21, 5-47.
- Buss, D. M. and Schmitt, D. P. (1993). 'Sexual strategies theory: An evolutionary perspective on human mating'. *Psychological Review*, *100*, 204-232.
- Byrne, R. (1995). *The thinking ape: Evolutionary origins of intelligence*. Oxford: Oxford University Press.
- Chomsky, N. (1972). *Language and Mind* (Enl. ed.). New York: Harcourt Brace Jovanovich.
- Chomsky, N. (1988). Language and Problems of Knowledge: the Managua lectures.

 London: MIT Press.
- Cooper, M., O'Donnell, D., Caryl, P. G., Morrison, R. and Bale, C. (2007). 'Chat-up lines as male displays: Effects of content, sex, and personality'. *Personality and Individual Differences*, 43, 1075-1085.
- Cronin, H. (1993). The ant and the peacock: Altruism and sexual selection from Darwin to today. New York: Cambridge University Press.
- Cronk, L. (1989). 'Low socioeconomic status and female-biased parental investment: the Mukogodo example'. *American Anthropologist*, *91*, 414-429.
- Crystal, D. (1997). The Cambridge Encyclopedia of Language (2nd edition). Cambridge: Cambridge University Press.
- Dawkins, R. (2006). *The Selfish Gene (30th Anniversary edition)*. New York City: Oxford University Press.
- Darwin, C. (1871). *The Descent of Man, and Selection in Relation to Sex*. London: J. Murray.
- Dunbar, R. I. M. (1993). 'The co-evolution of neocortical size, group size and language in humans'. *Behavioral and Brain Sciences*, *16*, 681-735.
- Dunbar, R. I. M. (1996). *Grooming, Gossip, and the Evolution of Language*. London: Faber and Faber.

- Dunbar, R. I. M. (1997). 'Groups, gossip and the evolution of language'. In G. Runciman, J. Maynard Smith and R. I. M. Dunbar (eds), New Aspects of Human Ethology, pp. 77-90. New York: Plenum Press.
- Enquist, M. and Leimar, O. (1993). 'The evolution of cooperation in mobile organisms'. *Animal Behaviour*, 45, 747-757.
- Gangestad, S. W. and Simpson, J. A. (2000). 'On the evolutionary psychology of human mating: Trade-offs and strategic pluralism'. *Behavioral and Brain Sciences*, 23, 573–587.
- Geary, D. C. (2000). Evolution and proximate expression of human paternal investment. *Psychological Review, 126, 55–77*.
- Griskevicius, V., Cialdini, R. B. and Kenrick, D. T. (2006). 'Peacocks, Picasso, and Parental Investment: The Effects of Romantic Motives on Creativity'. *Journal of Personality and Social Psychology*, *91*, 63-76.
- Haviland, J. B. (1991). *Gossip, Reputation and Knowledge in Zinacantan*. Chicago: University of Chicago Press.
- Ho, D. Yao-fai. (1974). 'Face, Social Expectations, and Conflict Avoidance' in Readings in Cross-cultural Psychology; Proceedings of the Inaugural Meeting of the International Association for Cross-Cultural Psychology Held in Hong Kong, August 1972, ed. by John Dawson and Walter Lonner, 240-251. Hong Kong University Press.
- Huang, Shuanfan. (1987). "Two Studies of Prototype Semantics: *Xiao* 'Filial Piety' and *Mei Mianzi* 'Loss of Face'", *Journal of Chinese Linguistics*, *15*, 55-89.
- Hurford, J. R. (2006). 'Evolutionary Theories of Language: Current Theories'. In K. Brown (Ed.), *Encyclopedia of Language and Linguistics* (2nd edn.), pp. 361-365. Boston: Elsevier.
- Hurford, J. R. (2007). The Origins of Meaning. Oxford: Oxford University Press.

- Kenrick, D. T. and Keefe, R. C. (1992). 'Age preferences in mates reflect sex differences in human reproductive strategies'. *Behavioral and Brain Sciences*, *15*, 75-133.
- Kenrick, D. T., Sadalla, E. K., Groth, G. and Trost, M. R. (1990). 'Evolution, traits, and the stages of human courtship: Qualifying the parental investment model'. *Journal of Personality*, 58, 97–117.
- Kipers, P. (1987). 'Gender and topic'. Language and Society, 16, 543-557.
- Kleinke, C. L., Meeker, F. B. and Staneski, R. A. (1986). 'Preference for Opening Lines: Comparing Ratings by Men and Women'. *Sex Roles*, *15*, 585-600.
- Landis, M. H. and Burtt, H. E. (1924). 'A study of conversations'. *Journal of Comparative Psychology*, 4, 81-89.
- Lewin, R. (2005). Human Evolution (5th edition). Oxford: Blackwell Publishing Ltd.
- Lightfoot, D. (1991). 'Subjacency and sex.' Language and Communication, 11, 67-69.
- Lin, Yutang. (1935). My Country and My People. Reynal & Hitchcock.
- McDermott, J. (2008). 'The evolution of music'. Nature, 453, 287-288.
- Miller, G. F. (1999). 'Sexual selection of cultural displays'. In R. Dunbar, C. Knight and C. Power (Ed.), *The Evolution of Culture*, pp. 71-91. Edinburgh: Edinburgh University Press.
- Miller, G. F. (2001). *The Mating Mind: how sexual choice shaped the evolution of human nature*. London: Vintage.
- Mithen, S. J. (2005). *The Singing Neanderthals: the origins of music, language, mind and body*. London: Weidenfeld & Nicolson.
- Myers, D. G. (2002). Social Psychology (7th edition). London: McGraw-Hill.
- Myers, D. G. (2009). *Psychology* (9th edition). New York: Worth Publishers.
- Ng, Yew-Kwang. (1983). Welfare Economics. London: Macmillan.
- Pinker, S. (1995). The Language Instinct: the new science of language and mind.

- London: Penguin.
- Pinker, S. and Bloom, P. (1990). 'Natural language and natural selection'. *Behavioral and Brain Sciences*, 13, 707-784.
- Raven, P. H. *et al.* (2005). *Biology* (7th edition). New York: McGraw-Hill Higher Education.
- Rodale, J. L., Urdang, L. and LaRoche, N. (1978). *The Synonym Finder*. Aylesbury: Rodale Press.
- Simpson, J. A. and Gangestad, S. W. (1991). 'Individual differences in sociosexuality: Evidence for convergent and discriminant validity'. *Journal of Personality and Social Psychology, 60*, 870-883.
- Smith, E. A. (1991). *Inujjuamiut Foraging Strategies: Evolutionary Ecology of an Arctic Hunting Economy*. New York: Aldine de Gruyter.
- Szeto, P. Y. (2009). 'What features of human language are sexually attractive?' Essay submitted for the course Origins and Evolution of Language.
- Trivers, R. L. (1972). 'Parental investment and sexual selection'. In B. Campbell (Ed.), *Sexual selection and the descent of man: 1871-1971*. Chicago: Aldine.
- Wade, T. J., Butrie, L. K. and Hoffman, K. M. (2009). 'Women's direct opening lines are perceived as most effective'. *Personality and Individual Differences*, 47, 145-149.
- de Waal, F. (1989). *Peacemaking among primates*. Cambridge, MA: Harvard University Press.
- Waynforth, D. and Dunbar, R. (1995). 'Conditional mate choice strategies in humans: evidence from lonely hearts advertisements'. *Behaviour*, *132*, 735-779.
- Williams, G. C. (1975). Sex and evolution. Princeton, NJ: Princeton University Press.
- Workman, L. and Reader, W. (2004). *Evolutionary Psychology: an introduction*. Cambridge: Cambridge University Press.