Parental investment and physical aggression among males

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ABSTRACT

Past research indicates that men are physically more aggressive than women. Socio-cultural explanations for this sex difference involve variants of learning theory and a *tabula rasa* psychology. Sexual selection theory provides a more coherent ultimate explanation for sex differences in this and other domains of behaviour. The key processes in sexual selection (preferential mate choice and intra-sexual competition) can be understood in terms parental investment theory. This suggests that the higher-investing sex (usually female) will tend to become a more limiting resource for the lower investing sex. In bi-parentally investing species (e.g. humans), male parental investment tends to be less than the whole but more than a half of the female investment (Trivers, 1972). This is because unlike males the *variable* portion of the female's investment potentially begins from a higher (non-zero) threshold. This suggests that there may be greater male than female variability in parental investment in bi-parentally investing species, and consequentially greater male variability in sexually selected attributes. In the first study the prediction of greater male variability was tested through meta-analyses of variance ratios for data sets involving sexually selected characteristics (including physical aggression) and those unlikely to have resulted from sexual selection (including anger and self-esteem). Variation was significantly greater for men than women for most of the former data sets (including physical aggression), and was similar for men and women for the latter data sets, broadly supporting the predictions. This is consistent with the view that the magnitude of the sex difference in physical aggression may be a function of the proportion of low parentally investing males in the sample. A scale (the pilot Paternal Investment Questionnaire; PIQ) to measure male parental investment was designed and standardised in the second study: the PIQ showed moderately high internal

reliability, but results for concurrent and construct validity testing were inconclusive, with some evidence for the latter (as predicted PIQ scores were negatively correlated with a measure of mating effort [infidelity intentions] and positively correlated with jealousy). The main contribution of this thesis is in highlighting the need to view sex differences in terms of the variability in parental investment both between and within the sexes.

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INTRODUCTION

Past research has suggested that men may be more physically aggressive or violent than women. Before exploring the reasons of this difference between men and women the first step is to make clear what is meant by the term *aggression*, and what is meant by *violence*. First, these two concepts though clearly related, do not necessarily always refer to the same thing. A violent act might also be aggressive, but aggressive acts are not always violent. It is equally evident that the theoretical perspective from which one views the above concepts can have a great deal to do with how they are defined. For example according to Brain (1986, p.3) where 'sociologists and medical scientists see aggression [as something] to be cured', Daly and Wilson (1994) have argued that there is no objective basis by which either aggression or violence can be viewed simply in terms of 'pathology'. Gunn (1991) contends that while aggression can best be described as an 'attacking *process* ... by which advantage and dominance are gained, ... violence is ... the most obviously destructive *component* of that process'. This accords well with the common view that violence often involves the 'giving of physical hurt' (Riches, 1986, p.22). Nevertheless for the purposes of the present analysis it ought to be obvious that operational definitions for both aggression and violence will be required and it may be useful to view violence 'under the rubric of [the] broader notion' of aggression (Riches, 1986, p.21).

Sex differences in physical aggression

However much the different theoretical perspectives (Eagly & Steffen, 1986, Hyde, 1984, Daly & Wilson, 1988, Maccoby & Jacklin, 1974) on human sex differences in intrasexual physical aggression might diverge in terms of an explanation for the ultimate and proximate origins of such differences, there is almost universal agreement that men are more aggressive than women in a large range of situations and conditions

Nevertheless it should be noted that explanations that rely solely or primarily on 'culture' and/or 'learning' (and their many variants) are often metaphors for arbitrary. The social sciences literature on aggression whilst identifying a number of salient factors, for example maleness, youth, low socio-economic status, the consumption of alcohol and single status, have nevertheless traditionally confused *descriptions* of underlying mechanisms (i.e. socialisation) for a proper causal explanations for this behaviour (Daly & Wilson, 1994). The figurative bottom line implied by this type of analysis is that we are the way we are because culture (by means of the process of learning) has made us that way, but culture itself is the way it is for vague, 'historical' and ultimately arbitrary reasons (Archer, 2002a). Evolutionary psychological models, however, can help provide explanations in the ultimate causal sense, in terms of psychological mechanisms that may have evolved to solve adaptive problems faced by our Stone Age ancestors. To put it another way, just like all the other living things on the planet, we are the way we are because 'natural selection has made us this way' (Archer, 2002a, p.414), and selection is empathically not an arbitrary or accidental process. Our environments may have changed radically since the Stone Age, but our behaviour-facilitating mechanisms (i.e. our brains) have changed very little. This is because evolutionary processes are proverbially slow, and usually operate in the course of a geological as opposed to a historical timeframe.

In particular humanist models have made little headway in explaining the link between men's single status and physical aggression. Except perhaps in terms of subjective accounts of psychological causation (i.e. often little more than people's *beliefs* about the causes of aggression in themselves and others).

Evolutionary explanations for sex differences in physical aggression

Among both humans and animals aggression may be used to obtain the resources of others, to defend against attack, to downgrade the reproductive chances of sexual competitors, to obtain rank within a status hierarchy, and to deter both future aggression from rivals and partner infidelity (Buss, 1999). Given the fact that in many cases ancestral males and females had to solve radically different adaptive problems (e.g. unlike women, whose confidence in their own relatedness to putative offspring is nigh certain, men have had to find ways to solve or deal with the problem of paternity uncertainty), evolutionary models predict that the contexts in which males aggress against other males (or against females) will be very different from the contexts in which females aggress against other females (or against males).

One already well-documented area is that of the two principal demographic features of violent or aggressive behaviour among humans; both *youth* and *maleness* (particularly in combination) are thought to be key predictors of violent behaviour (Archer, 1994, Daly & Wilson, 1994). This is interesting because in much of the literature on risk perception (which overlaps strongly on the study of aggression and violence) 'differences in ...age and sex have hitherto been treated as 'noise'' (Daly and Wilson, 1994, p.280). According to Daly and Wilson,

> 'Men have ... the morphological, physiological and psychological means to be effective users of violence' (Daly and Wilson, 1993, p.274)

Daly and Wilson (1994) argue that the fact that the statistically most violent and aggressive demographic (young males) also just happen to be the most physiologically and morphologically capable of engaging in violent behaviour, can in no sense be regarded as mere coincidence. In fact perhaps the most consistent conclusion that emerges time and again from the literature is the yawning span that separates males from females when it comes to physically aggressive behaviour (Archer, 1994, Campbell, 1995, 1999). In fact there is such a wide sex difference in aggressive and violent behaviour that some argue that the problem of *human* violence should essentially be re-defined as a predominantly *male* problem (Archer, 1994, Wrangham & Petersen, 1997). In this type of aggression both the assailants and victims are often strangers, who nevertheless share a number of other key characteristics (e.g. are unemployed, have low status, are unmarried or single) (Wilson & Daly, 1985). For men, in particular, physical aggression of this sort may typically be used to obtain what, in the ancestral environment, would have been a precious and highly sought-after resource: *status* (Buss, 1999).

Furthermore other than differences in incidence and frequency, there are a number of sex-specific effects associated with aggression and violence. For example it has been noted that while female aggression is less prevalent than males aggression and is usually far less likely to express itself in the form of destructive physical violence, and it is primarily directed at other females, often in the context of sexual jealousy or competitive contests over males (Campbell, 1995, 1999, Buss & Dedden, 1990). Past research on aggression suggests that while both alcohol and socio-cultural factors may have a ameliorating effect on the above pattern of sex differences (Archer, 1994), they rarely act to radically alter a pattern that has been shaped by hundreds of thousands years of differential adaptive problem-solving. In the literature on aggression empirical support for the idea that men are more verbally aggressive than women tends to be rare (Archer, 2002b). Conversely, the notion that there exists any culture or society wherein biker gangs of aged grandmothers (*a la* Monty Python) who routinely engage in seemingly senseless drunken brawls, belongs strictly to the realms of fantasy (Archer, 2002a).

Another common theme in male violence is the marital status of the assailants and victims. Often both happen to be single and unmarried. The current evolutionary explanations for the above are rooted in the 'reproductive oblivion' model, which suggests that 'the failure to attract long term partners' may act as spur to physically aggressive behaviour (Daly & Wilson, 1994, Buss, 1999, p.293). This is nonetheless inconsistent both with patterns of female aggressiveness (Campbell, 1999) and with the idea that 'reproductive [or *genetic replicative*] oblivion' may be averted by channelling resources to close genetic relatives. In addition, the above model will predict that, with all else being equal, both single females and single fathers will be just as physically aggressive as single men in general.

An alternative evolutionary perspective on sex differences

It is probably not an exaggeration to say that no two living things are ever *exactly* alike, not even identical twins and clones (Dennett, 1996). Differences on the basis of biological sex (in terms of physical traits, cognition and social behaviours) are among the myriad ways in which any two individuals may differ from one another. When it comes to viewing sex differences from an evolutionary perspective a good starting point may be to think of biological evolution itself, not as an explanation of why life exists (Dawkins, 1989, Dennett, 1996), but as a way of explaining why it is that living things have come to be different from each other. There is a sense in which the two main arms of Darwinian evolutionary theory – Natural Selection and Sexual Selection – each try to explain two very different kinds of difference. In this light natural selection (Darwin, 1858) may be regarded as an attempt at explaining why species are different from each other, for example why cats are different from dogs or why humans are different from chimpanzees. Sexual selection (Darwin, 1871), on the other hand, could be said to be Darwin's way of explaining all manner of within species variations: racial differences, individual differences, within-sex differences and between-sex differences. This makes sexual selection arguably the oldest evolutionary explanation for sex differences.

In one sense anything that can put a constraint on an organism's ability to obtain a copulation partner can potentially lead to sexual selection (Cunningham & Birkhead, 1998). This can include behaviour such as sexual coercion, wherein female resistance behaviour, from being an attempt at copulation avoidance, may be regarded as an attempt at exercising indirect female choice (Westneat et al, 1990). Darwin identified two overarching principles in sexual selection, these being intrasexual competition and preferential mate choice. The fact that the concepts of competition and choice, originally derived from simple market principles, were initially linked with one or the other sex (male competition and female choice) came partly from Darwin's observations of animals in the wild. Darwin and many of those who followed him noticed two important facts about animal behaviour and anatomy. First, in many species the males tended to be more colourful, larger or generally more ostentatious than the females. Second, most within species conflict tended to be inter-male conflict (Dawkins, 1989).

Since these early observations, however, biologists have noted a number of exceptions to the above rule. Over time more and more species have been discovered wherein the females are the showy sex, and where within species conflict often takes the shape of inter-female conflict (e.g. phalaropes, sandpipers, jacanas, moorhens; Reynolds, 1987, Jenni & Collier, 1972, Lank et al, 1985, Petrie, 1983). Nevertheless a little over hundred years after Darwin, one possible answer to why such exceptions occur came with the introduction of the theory of *parental investment* (PI) (Trivers, 1972).

Parental investment is often regarded as 'the effort [e.g. time and energy] put into rearing an individual offspring from the parent's limited pool of resources' (Kreb & Davies, 1993, p.177). Triver's argues that the concept of parental expenditure or energy investment might be a good approximation for parental investment in some cases and a poor approximation in others. For example, defending an offspring may be low in energy expenditure, but high in mortality risk. Trivers defines parental investment as:

'Any contribution by the parent in an individual offspring that increases the offspring's chance of surviving … at the cost of the parent's ability to invest in other offspring'. (Trivers, 1972, p.139)

There is however an important distinction between *parental effort* and *typical parental investment.* Parental effort refers to the lifetime (or any given reproductive season) sum of parental investment in all offspring. Whereas typical parental investment is obtained by dividing parental effort by the total number of offspring produced. The above means that parental investment does not increase with the number of offspring. With all else being equal, an individual with 100 offspring is not a higher parental investor than an individual with 10 or even 1 offspring.

Nevertheless the concept of 'higher' versus 'lower' parental investment will need to be clarified. It is important to note that what makes an individual a high parental investor is based not on the absolute quantity of resources invested in an offspring (or a partner) but in fact on a relative criterion (i.e. the *proportion* of total available resources that is invested in offspring). It is clear from Trivers' definition that with all else being equal the concept of the size of parental investment refers to a relative not absolute criterion.

According to Trivers (1972) *male* parental investment may include the provision of food to a mate, territory capture and defense (especially if used by females to lay eggs, raise young or feed) and nest building. A male may defend his mate and/or offspring, and brood eggs. He may also help raise and teach the young, and help increase their status, either by transferring power directly or by helping them form alliances. The above also suggests that in general, particularly in species with internal fertilization, any contribution a male might makes to the female can be regarded as parental investment. However, thanks to the difference in initial parental investment (see below), the same might not always be true of any contributions made by females to males. For example, this may help explain why, in species whose mating system includes 'sexual cannibalism', it is almost always the female who makes a meal of the male. In a sense this 'meal' represents (an albeit extreme form of) male parental investment in future offspring (Dawkins, 1989).

The above also suggests that a man who has a wife or partner (as long as he contributes to the welfare of the partner at a cost to himself) is in a sense a parental investor (even if he and his partner have no offspring). A single man, on the other hand is – by definition – not a parental investor (he invests nothing in either mate or in actual or future offspring). A single man who is actually raising an offspring (i.e. a single father), on the other hand, is a parental investor. It is suggested that a woman's partner status, however, is not in itself indicative of her parental investment.

Parental investment and sex differences

Trivers' Law (Ingram, submitted manuscript) suggests that competition and choice are not in themselves straightforwardly concomitant with biological sex. Instead it is reasoned that the high parentally investing sex (more often than not female) will tend to become a more limiting resource for the low parentally investing sex (usually male). It could be said that, in the language of the marketplace, it is constraints imposed on any resource that will ultimately determine 'competitive' or 'choosy' behaviour.

In so far as sexual selection explains sex differences, and differences in parental investment patterns explain the key processes in sexual selection, Trivers'

Law hints that the term 'sex' in 'sex difference' may in reality be little more than a shorthand for 'parental investment'. This may even be seen at the most basic level where the concept of biological sex is defined (i.e. in terms of the difference in gamete size). In general the larger female gametes or sex cells (eggs) in themselves represent a higher investment (e.g. in terms of nutrition) than the usually smaller male gametes (sperm) (Trivers, 1972, Dawkins, 1989).

The real problem starts, however, when we consider a species in which there has been relatively slight selection in relation to sex (Trivers, 1972). According to Trivers in most species with bi-parental care of offspring, in general, the males' parental investment contribution tends to be less than the whole but still more than one half of the female's contribution. This is because parental investment is not a unitary concept. It is the combination of initial parental investment (ipi) and what may be termed discrete sequential parental investment (dspi) ('parental investment in the young can be viewed as a sequence of discrete investments by each sex': Trivers, 1972, p.145). For the present discussion dspi can refer to any contribution to the care and survivorship of actual or potential offspring by either parent. This may vary considerably both between and within the sexes. The concept of ipi refers to an individual's minimum obligate parental investment, which in each sex tends to be relatively fixed (virtually zero in males, but a non-zero constant in females). For a man this minimum is no more than his investment – his sex cells – at the moment of fertilization. For women, on the other hand, this is a considerable investment of ovum – her sex cell - and a 9-months long pregnancy (Trivers, 1972). For women, pregnancy (perhaps the largest part of their ipi) certainly does not come cheap:

> 'Whatever she might donate to the current fetus is a resource that she will not be able to use for other purposes. Glucose delivered to the fetus cannot be used to provide energy useful in milling grain to feed to her four-year-old. It cannot be used to replenish her glycogen reserve for tomorrow's emergency or next year's lactation or to help her survive for the next decade's pregnancies. In short, donating nutrients to her fetus exacts a cost to her fitness'. (G C Williams, 1995, p.137-38)

Nevertheless it should be noted that there may be a number constraints on PI based on the species mode of reproduction; external versus internal fertilization, sperm shelf life, the female's ability to store sperm, the conversion speed of energy from courtship 'gifts' of food to eggs, etc (Kreb & Davies, 1993). For example male investment in the female may have a positive benefit on either the female's immediate (as in the case of some insects) or long-term (in the case of humans) ipi. The latter may be associated with monogamy. Female investment in the male partner may, in theory (indirectly) help to replenish depleted sperm or sex cells, but this will have little or no effect on his ipi, and may in fact have a large effect on his ability to wage sperm warfare (Baker, 1996). This is hardly an ideal situation for a woman who is either looking for a monogamous man, or else is already in the process of cuckolding her mate.

From an evolutionary perspective, it is possible that any male resource (including time or courtship 'gifts') invested in a female can also be regarded as paternal investment, if such a resource tends towards increasing, even by the slightest increment, the survivorship of that female and, consequentially, any potential future offspring (Sakaluk, 1986), and if the male can be reasonably certain of monopolising the reproductive capacity of the female. Paternal investment is often seen in conditions of high paternity certainty, in cases where it improves offspring survivorship and where it does little to constrain mating with other females. In species with internal fertilisation males may adjust their paternal investment to the likelihood of paternity (Geary, 2000). In humans paternal investment is expressed facultatively varying with 'proximate social and ecological conditions' (Geary, 2000, p.56).

The 'man does/woman is' principle

In humans the differential ipi in males and females (Trivers, 1972) may lead to what may be termed the 'man does/woman is' principle (or MADWIS, for short) (Mehdikhani & Archer, 2001). This term not only helps label and distinguish the present model from pre-existing theories of greater male variability (see study one), it is also intended as a useful metaphor (much like 'Life/Dinner' principle; Dawkins & Krebs, 1979) for understanding the differences between male and female variability. So despite the seemingly sexist sounding language all this means is that, in general, a man's overall parental investment is primarily determined by his *behaviour*, whereas a considerable part of a woman's overall parental investment is determined by her *being* female, due largely to our mammalian mode of reproduction. Simply working from the fact that the variable portion of women's PI, or their dspi, starts from a higher (non-zero) threshold than the male dspi, it may be argued that a) when comparing a probability sample of males and females from a species with both bi-parental care of offspring and internal fertilization (as in the human case), males will in general still show a smaller mean PI than females, and b) variance or variability in

PI in males is likely to be higher than the variance in PI in females. As sex differences may in actuality denote parental investment differences, greater male variability in parental investment may also suggest greater male variability in any domain (physical, cognitive, social behaviour, etc) where the sexes differ from each other (i.e. in domains where the sexes have had solve different adaptive problems in the ancestral environment), irrespective of the direction of the difference. The converse of this is that, statistically, male variance in PI will be equal to female variance where there is no sex difference (i.e. in domains where the sexes have had solve similar adaptive problems).

Hypothesis one: Greater male variability (GMV)

As pointed out above, differences between the sexes may in reality reflect differences in parental investment. In humans the combination of bi-parental care of offspring (equal or near equal upper limit on relative typical PI) and the fundamental asymmetry between male and female ipi, means that greater variability in PI is expected in the generally low parentally investing sex (i.e. men). For this reason greater male variability is also expected in any domain where there is a sex difference (where a domain has resulted, directly or indirectly, from sexual selection). On the other hand no difference in variability between the sexes is expected where there is no sex difference (where the domain has resulted from natural selection). This prediction holds regardless of the direction of the sex difference; there will be greater variability in males whether the sex difference is in the female direction (female-favouring) or in the male direction (male-favouring), as long as it is the *males* of the (bi-parentally) species who are, in general the lower parentally investing sex.

Hypothesis two: Magnitude of the effect size (the size of the sex difference) is a correlate of the reproductive effort (RE) (mating versus parenting)

According to Bjorklund and Shackleford (1999, p.87) 'one class of sex differences that can understood in terms of parental investment theory is sexual strategies'. In one sense the concept of sexual strategies refers to a trade-off between mating effort (promiscuous or 'short-term' sexual behaviour) and parenting (monogamous or 'long term' sexual behaviour) effort. Nevertheless the focus on *duration* implied by such jargon as 'short term' or 'long term' sexual behaviour can often be misleading, since the time span of even a potentially sexual relationship is relevant only when that duration is viewed as a resource that may be invested in a partner or potential partner (Archer & Mehdikhani, 2000). A short-term sexual strategy involving the pursuit of many partners, short courtship and relationship duration, may ultimately represent a low level of male parental investment, at minimum requiring no more than the contribution of some relatively cheap sperm. Whereas a long-term strategy can correspond to a high level of male parental investment.

According to Bateman (1948) and Trivers (1972) the source of the reproductive variance between the sexes is that female genetic success is related to number of female sex cell produced whereas male genetic success is constrained by the number of female sex cells fertilised. This principle is thought to be universally applicable in species whose sex ratio is at unity and where male gametes are tinier than female gametes by a wide margin. In the case of humans this means that whilst bi-parental care of offspring, requiring commitment to a single partner (once an obligate and still an advantage; Geary, 2000), some males can potentially increase their reproductive success rate by attempting to fertilise more than one female. Similarly some females can potentially enhance their reproductive success by seeking 'good quality genes' for their offspring from matings with more than one male (Gangested & Simpson, 2000). Variations in reproductive strategies within the male sex are referred to by behavioural ecologists as 'alternative reproductive strategies' (Gross, 1996), and the particular distinction just described has been referred to as the "dad" v "cad" strategies. For the present discussion the notion of the reproductive variance between the sexes is a fundamental assumption, albeit one that is difficult to test in humans (Bateman based his model on the study of drosophilae, the common fruit fly).

Kling et al (1999, p.487) have pointed out that 'the interpretation of any effect size can be altered if the variances of the two populations in question differ substantially'. Since the first hypothesis derived form MADWIS indicates that male variance will differ from female variance in a predictable direction (it will larger), it is therefore suggested that the size of any sex difference (the magnitude of the effect size) will be associated with male mating/parenting effort (Trivers, 1972, Geary, 2000). The higher the male mating effort/ the lower the parenting effort the larger the predicted sex difference and vice versa. The above principle can be thought of as a model predicting the magnitude of an effect size wherever an actual sex difference exists.

Four Caveats

Just as Trivers' Law may be regarded as an elaboration and extension of Darwin's sexual selection theory, MADWIS may be regarded as an extension of the concept of parental investment. However, it is important to note that the above predictions derived from MADWIS are intended to apply to species-level analysis of sex differences and similarities. When it comes to study-level analyses there may be a number of circumstances or conditions in which the predictive power of MADWIS might be greatly limited or diminished:

1. *Symmetrical vs. asymmetrical sex differences.* Almost all sex differences can be said to have their ultimate origins in sexual selection (whether directly or indirectly), but it is also important to make a distinction between sex differences that are symmetrical (comparable) and those that are asymmetrical (possessed by one sex but not the other). For example, men and women differ from each other in that the former possess penises and the latter do not, but it is not only not possible to compare men and women on penis size, it also makes little sense to say that men have greater variability in penis size than women. Clearly the possession of the penis by men is an asymmetrical sex difference. However, not all such differences are as clear or obvious as in this example. For instance it has long been suggested that differences between men and women on the prevalence and incidence of masturbation are among the largest and most consistently reported sex differences in human sexuality (Oliver & Hyde, 1993). Nevertheless in the context of sperm competition theory (Baker & Bellis, 1995), male and female masturbation cannot be regarded as equivalent forms of behaviours: whilst male masturbation may lead to the shedding of (possibly sub-optimal) male sex cells, female masturbation does not lead to the shedding of female sex cells. Male masturbation is said to help shed the oldest part of a male's sperm column,

supposedly leading to the production of fewer but more fertile, motile and competitive sperm (Baker and Bellis, 1993a), female masturbation does not involve an equivalent process to sperm production (i.e. 'egg production'). Instead the adaptive advantage of female masturbation is thought to lie in its link to either sperm transport or spermicide (depending on situational factors) by means of 'intercopulatory' orgasms (Baker and Bellis, 1993b). This also means that the suggestion that male and female masturbation are the same (and therefore comparable) forms of behaviour is actually in violation of Leibniz's Law (Ingram, submitted manuscript). According to Leibniz's Law if A is the same as B, then A should not have a property that is different from B (and vice versa). Sperm (sex cell) shedding is one property possessed by male masturbation that is not possessed by female masturbation. In this instance greater male variability is not predicted. In fact the opposite may be true, since there is evidence to suggest that the most frequent male masturbators are those who either have no or few partners and, at the other extreme, those who have a great many partners (Nicholson & Thompson 1992). This is in contrast to women for whom masturbation may be related to partner status (more frequent among single than partnered women; Janus & Janus, 1990). Bearing in mind the cross-cultural and cross-species prevalence of masturbation, and notwithstanding the more outlandish elements of their theory and the absence of replication studies, Baker and Bellis have provided virtually the only explanation for masturbation that credibly accounts for its apparent costliness and wastefulness, and is also consistent with Leibniz's Law. The prediction of greater male variability derived from the MADWIS principle can only apply to the case of symmetrical sex differences.

2. *Mix of reproductive or sexual strategies.* Parental investment theory has profound implications for how we may define sexual strategy. The latter is often described in durational terms: short term versus long term mating (e.g. Gangested & Simpson, 2000). Nevertheless although both men and women can engage in both short term and long term mating, sexual strategy cannot be regarded as equivalent in the sexes when viewed through the lenses of parental investment. This is because 'parental investment is not linked to short or long-term mating strategies in the same way for women as for men' (Archer & Mehdikhani, 2003, p.223). This has implication for study or sample level predictions of the variability difference between the sexes, as well as for the magnitude of the effect size (see hypothesis 2): the within-sex variance difference will be greatest in samples that contain an equal mix of high and low parentally investing men. On the other hand the predicted male favouring within-sex variance difference will be negligible or absent where one reproductive strategy (either low or high parentally investing) predominates in the male sample. The composition of any probability sample of males on the basis of proportions of paternal investors is likely to determine the size of male variability. For example the effect size for variability will highest where there equal numbers of high and low parental investors.

3. *Parental investment in the life history*: According to Buss (1999, p.388) 'human beings face predictably different adaptive problems at various points in their lives'. Problems of survival in infancy are faced before problems of mating, which in turn are faced before the problems of parenting, which are in

turn faced before the problems of grand parenting. This suggests that the greater male variability hypothesis can only apply to populations engaged with the problems of mating and parenting (i.e. it does not apply to primarily pre-pubertal samples). It also suggests a diminishing variance effect size with advancing age (i.e. in any population primarily composed of individuals who are past the age of reproduction we would not expect greater male variability). Greater male than female variability may be predicted to occur within a wide age band, and within this age band we would expect that age will generally be positively correlated with PI. This suggests that where there is a sex difference, variance in age will be correlated with within-sex variability or variance in that particular domain, and since male reproductive capacity is less age-graded in males than in females it is expected that the variance in age in males will show a higher correlation than the variance in age in females.

4. *Unitary versus composite measure sex differences.* It is important to make a distinction between sex differences that exist along a single or unitary measure and those that are actually a combination or composite of two or more sex differences measures. An example of the latter is body mass index (BMI), which is a composite of height and weight measurements. The MADWIS principle does not necessarily always predict greater male variability (where there is a sex difference) in the case of composite measures. This is because the direction and magnitude of the individual sex difference measures in the composite, as well the way these interact with each other (additive, multiplicative, ratio etc), can affect the overall magnitude of the sex difference and the between-sex difference in variability, in ways that may not always be

predictable. This can be illustrated by using a hypothetical example: suppose we combine a measure showing a female-favouring sex difference with measure showing a male-favouring sex difference of equal magnitude (a simple additive procedure). This will likely tend to cancel out the overall sex difference. However, since, according to MADWIS, for both male-favouring and female-favouring measures we can expect greater *male* variability, we can also predict greater male variability for the composite measure. Something very similar to this may actually have occurred in the case of many tests of intellectual ability (Archer & Lloyd, 1995). This may help explain why some prior GMV models (e.g. the "mediocrity of women" hypothesis) have failed to link greater male variability with sex differences.

The aim of the first study was to test the initial prediction of greater male variability in sexually selected domains (including in the domain of physical aggression). This required the meta-analyses of both mean level and variance level data from existing data sets. The rationale for the second study will follow from the principle that the greater male variability will be due to the assumed greater variability in male parental investment. If true this has important implications for the study of sex differences, including in the area of physical aggression, because it suggests that high parentally investing men will be expected to exhibit similar behaviours and traits to women, whereas low parentally investing men will form a category separate from both high investing men and women. For this reason the second study will focus on an attempt at operationalising a measure of paternal investment. This will involve the design and standardisation of a pilot Paternal Investment Questionnaire.

STUDY ONE

Variability among males in sexually selected attributes

INTRODCUTION

In the preceding sections we saw how the parental investment model of sex differences predicts greater male variability in sexually selected (sex differences) domains. However, it should be noted that the question of greater male variability (GMV) has had long history in psychological science. Before testing this model it may be worthwhile to briefly review a number of these other earlier models.

Alternative explanations for within-sex variability

1. The 'mediocrity of women' hypothesis

The notion of greater within male variability, principally in intellectual abilities, dates backs to the nineteenth century (Feingold, 1992; Heim, 1970; Noddings, 1992). At that time some scientists (at first mostly male ones) became interested in the question of why there seemed to be so few women of achievement on the one hand, and so few female idiots on the other. In 1894 Havelock Ellis raised the question of why there appeared to be so few accomplished female composers and suggested that this may be due to an innately greater variation in males than in females (Ries, 2002); later thinkers renamed Ellis' greater male variability hypothesis as 'the mediocrity of women hypothesis' (Gates, 1994, p.27). Ellis was one of a number early sexologists who was influenced by the work of Charles Darwin. According to Darwin (1871, p27),

> 'The variability or diversity of the mental faculties in men of the same race ... is so notorious that not a word need here be said. So it is with the lower animals' (Darwin, 1871, p27).

He also suggested that this variability is 'partly innate' and 'partly the result of the manner in which they have been treated or educated'. However 'with respect to the cause of variability we are, in all cases, very ignorant' (Darwin, 1871, p28). Although not specifically referring to male variability in relation to female variability, Darwin did speculate that the reasons for the variability in man may be partly environmental and possibly due to humans' status as a 'wide ranging species'.

Needless to say the notion of greater male variability was at the time (and continues to be) heavily criticized as justification for claims of female inferiority (Bergman, 2002). One early critique of this model was Leta Hollingsworth. According to Hollingsworth (1914) the relative absence of women in institutional settings was due to the fact that 'feebleminded' women, in their capacity (or limitations) as homemakers, have a better chance of functioning adaptively outside such settings and in the wider community. In a study comparing male and female infants, Hollingsworth found no difference in variability in mental ability in the two groups. However she did found greater male variability in an older age group. From this she concluded that greater male variability may be largely due to environmental disadvantages experienced by women after the age of puberty. However, there may be an alternative explanation (consistent with the present model) for Hollingsworth's findings. As discussed in the preceding section humans can be expected solve different adaptive problems (including in relation to parental investment) at different stages in their life history (Buss, 1999). According to the present parental investment based model, since pre-pubertal infants are generally not concerned with solving problems associated with either mating or parenting we should not expect a difference in variances between the two sexes in sexually selected attributes in such samples.

Nevertheless despite numerous attempts to refute the idea, later analyses have concluded that there is indeed greater male than female variability, but these have mainly looked at tests involving quantitative and spatial abilities (Feingold, 1992; Maccoby & Jacklin, 1974).

2. Reproductive variance model

According to E.M. Miller (1997) reproductively successful males are often at the extreme tail end of the distribution for sexually attractive ornamentation or displays, or for competitive ability with other males. However, such extreme characteristics, such as the antlers of stags or the tails of peacocks, can potentially hamper the survivorship of their owners in extreme environmental conditions. In these types of circumstances, phenotypes that benefit survival, rather than those specialised for attracting mates and competing with other males, would be adaptive (Archer & Mehdikhani, 2003). E M Miller has suggested that in unstable or fluctuating environments, a more diverse range or more variability in phenotypes may be adaptive for males. E.M. Miller (2001) extended this argument to psychological attributes, suggesting that such selection pressures would result in sons with 'a wide range of personality attributes', and he illustrated this with the masculinity-femininity dimension, speculating that the proximate source for male variability might be the influence of prenatal testosterone (Archer & Mehdikhani, 2003).

Like the present model, E.M. Miller's (2001) theory may be applied to many types of variability in sexually selected traits. From this theory, we would expect greater male variability in the morphological traits investigated by Pomiankowski and Moller (1995), and also in behavioural ones, such as physical aggression and a preference for variety in sexual partners, which are often assumed to have arisen from sexual selection (Archer & Mehdikhani, 2003).

3. 'Y Chromosome' model

Greater male variability has been linked to the generally greater male vulnerability to a wide array of ailments and disorders in an individual life history (Archer & Mehdikhani, 2003). E M Miller has suggested that models emphasizing only the greater male susceptibility to developmental and other defects, such as that of Gualtieri & Hicks (1985), cannot explain why there are more males at the higher as well as at the lower ends of the distribution. Ounsted and Taylor (1972) have speculated on the possibility that Y chromosome whilst enabling the transfer of more genetic information may lead to slower development in males than females which could in turn lead to both more advantageous and more detrimental traits to occur in males.

Gualtieri & Hicks (1985) have suggested a different explanation, in terms of the male foetus evoking maternal immunoreactivity (Archer & Mehdikhani, 2003). However, both these explanations are based on the human case, and involve mechanisms that would only apply in mammals, whilst it is clear that greater male affliction occurs more widely in animals (Ferguson, 1985).

The above explanations are anchored on proximate mechanisms that might produce greater male susceptibility to developmental disorders in humans. They miss the wider picture that an evolutionary approach can provide (Archer & Mehdikhani, 2003).

4. Attachment Fertility Theory

Miller and Fishkin's (1997) Attachment Fertility Theory (AFT), an alternative to the Sexual Strategies Theory (Buss & Schmitt, 1993), begins with the assumption that the human species (both males and females) may have been adapted for long-term pair-bonded relationships during the Pleistocene. For example, evidence is cited supporting the idea that in most cases both men and women show a preference for a single stable relationship rather than many partners, when asked to estimate their preferences for future relationships (see also Pedersen, et al, 2002). Men who preferred many sexual partners were different from these men and from women, and were characterized by insecure attachment styles and had in many cases experienced distant care giving from their fathers. Moreover, attachment style and parental warmth did not influence women's partner preferences (Archer & Mehdikhani, 2003). This may suggest an alternative explanation for greater male variability based on differences in attachment style among men.

For the present study the main prediction to be tested is that where an actual sex difference exists (and assuming a mix of reproductive strategies) the variance within the male sample will be greater than the variance within the female sample.

This was tested by using existing data on within-sex variability, including in the domain of physical aggression. Although meta-analyses of sex differences usually focus on mean scores, the same samples can potentially be employed to investigate variability (i.e. the *variance ratio test*; Kling et al, 1999). An ancillary hypothesis, that where there is no sex difference we should expect equal male and female variances, was also tested.

Meta-analyses of variability

The meta-analytic studies presented in this paper test were chosen to test the prediction that that there will be greater variability among men than women for characteristics associated with sexual selection, that is those associated with mate choice and aggression, and whose central tendencies differ between the sexes. First, questionnaire data on proneness to physical aggression for men and women, which have consistently shown a medium to large sex difference in central tendency were examined (Archer, 1996). In order to provide a comparison with physical aggression, two related attributes that do not generally show appreciable sex differences, and are not regarded as resulting from sexual selection, were also analysed. These were trait anger and self-esteem.

Physical Aggression

A sample of studies involving intrasexual physical aggression was taken from a larger data set assembled in connection with a series of meta-analyses of sex differences in human aggression (Archer, 2002b), which, like other meta-analyses of sex differences, concentrated on differences in the central tendency. Selected studies were examined and the standard deviations for men and women used to derive study-level comparisons of the male and female variances. The cases selected purely on the basis of the availability of mean and standard deviation data in the results section. This information was needed in order to calculate effect sizes and variances.

Trait Anger

For self-reports of trait anger, standard deviations for men and women were obtained from a sample of studies used in the same series of meta-analyses as physical aggression (Archer, 2002b). It was predicted that whilst physical aggression would show a larger male than female variance, there would be no significant sex difference in variance for anger.

Self-esteem

As a further example of an attribute not generally connected with sexual selection, we examined data on the variance in self-esteem from a sample of four longitudinal panel studies, whose individual variance ratios and effect sizes were listed in Kling et al. (1999), but whose mean weighted variance ratios were not analyzed (in contrast to a main sample, which was, and therefore provides a comparison for the present analysis). Although the individual effect sizes show a sex difference in central tendency, these are low in magnitude, in contrast to the much higher values found for physical aggression, and for the measures of mate choice, described below.

Mate choice

Five variables associated with mate choice, which show clear sex differences, were examined. The data sets for these variables were taken in their entirety from data obtained in a multi-nation study by Buss (1989), in which men and women from 37 different cultures were compared on a number of attributes associated with mate choice, in order to test a number of evolutionary hypotheses cross-culturally. Data were provided in the form of means and standard deviations for the following five measures in the 37 samples.

1) Valuation of good financial prospects in a potential partner Buss (1989) argued that 'females should seek to mate with males who have the ability and willingness to provide resources related to parental investment' (*ibid*, p. 2). He therefore predicted that women would be more likely than men to value good financial prospects in a potential partner. In this study (buss, 1989), in all 37 samples, the sex difference was in the predicted direction, and in every sample except one (Spain) the difference was statistically significant.

2) Valuation of ambition and industriousness in a potential partner Since these two characteristics are also related to the ability to acquire resources, Buss predicted that women would be more likely than men to value them in a potential partner. In 34 out of 37 samples the results were as predicted, and in 29 they were statistically significant. Of the three samples which went against Buss' prediction – Spain, South Africa (Zulu), and Colombia – only one (Zulu) yielded a significant difference.

2) The preferred age difference between self and potential partner Buss (1989: 2) argued that since male reproductive capacity is not as steeply age-graded as female reproductive capacity, males would tend to prefer younger partners than females would. Although there was some variation between samples, this hypothesis was overwhelmingly supported by Buss' data. In every culture examined, the results were both in the predicted direction and statistically significant. A validity test (involving data on age difference at marriage obtained from the *Demographic Yearbook* for 27 cultures) further confirmed that men's self-reported preference for a younger partner is matched by their actual selection of a younger spouse for marriage.

4) The valuation of good looks in a potential partner As female reproductive capacity is closely linked to bodily features that denote youth, health and fertility (such as facial characteristics and waist-to-hip ratio), Buss predicted that males will be more likely than females to place greater value on good looks in a potential partner. His results provided strong cross-cultural support for this hypothesis, with all 37 cultures showing sex differences in the predicted direction (34 results were statistically significant).

5) The valuation of 'chastity' in a potential partner Buss (1989, p.3) has suggested that parentally investing males would have been selected to maximise paternity certainty. Chastity (lack of prior sexual experience) in a female partner would obviously help enhance a male's confidence in the paternity of his putative offspring. Male chastity, however, has no effect on maternity confidence, although its reverse may act as a possible indicator of a male's willingness to divert resources towards another female. Buss therefore predicted that men will be more likely than woman to place greater value on chastity in a potential partner. The results were quite varied across the 37 cultures, with males in many so-called developing cultures placing greater value on chastity than females, in contrast to participants from many so-called developed cultures, who felt that chastity was almost irrelevant as a consideration. It should be noted, however, that in only five of the cultures were the results in the female direction, and none were statistically significant. There was greater cross-cultural variability for this measure than for any of other in Buss' study.

Analysis of mate choice data From these five data sets it was not only possible to derive mean effect sizes for each attribute across the 37 cultures (and hence to confirm Buss's conclusions using a more exact statistic), but also the variances for men and women in each culture. The standard deviations for men and women from each culture were used to calculate study-level comparisons of the variance among men and men, for each of the five variables measured in Buss' study.

In Buss' study of mate choice, some characteristics showed an effect size in the male direction and some in the female direction. We should emphasize that the present theory predicts a larger variance for males than females for any sexually selected characteristic for which there is a sex difference, irrespective of direction. The reasoning for attributes in the male direction is that high parentally investing males will in many respects tend to behave more like females (who may all be regarded as high parental investors due to their high minimum obligatory investment of a nine-months long pregnancy). Low parentally investing males will show higher values than both these males and females. The reasoning for attributes in the female direction is again that high parentally investing males will behave more like females since it is their parental investment that is associated with the attribute, not their sex. In combination with low parentally investing males, who show lower values on such characteristics, this will again lead to a wider distribution of such characteristics in males.

METHODS

Data Sets

Physical aggression The first data set consisted of 33 samples involving self-report questionnaires, all referring to perpetration of intrasexual physical aggression by the respondent. These samples were derived from 25 sources (n = 7477) that formed part of a larger set used for meta-analyses of sex differences in a variety of measures of aggression (Archer, 2002b). For the present analysis, we needed studies that reported means and standard deviations for males and females. Studies were chosen that involved the two most commonly used scales, the Buss-Durkee Hostility Index assault scale (Buss & Durkee, 1957), and the Aggression Questionnaire physical aggression scale (Buss & Perry, 1992), since these typically show a clear sex difference (Archer, 2002b). This list was supplemented with two other studies that presented standard deviations and showed clear sex differences in central tendency. Table 1 lists the studies, together with effect sizes (g or uncorrected d) for the sex difference in physical aggression (calculated using DSTAT: Johnson, 1989), and the standard deviations for males and females.

Trait anger The second data set involved trait anger, and was selected from the same source (Archer, 2002b). This consisted of studies presenting standard deviations for males and females, located throughout the period when most studies were published. The selected studies involved standardised scales, either trait anger, such as the Spielberger Trait Anger Scale (Spielberger, 1988) or the Aggression Questionnaire anger scale (Buss & Perry, 1992). There were 22 samples from 13 sources, including several large samples from the manual for the State Trait Anger Expression Inventory (Spielberger, 1988). Table 2 lists the studies used, together with the effect sizes (*g* or uncorrected *d*) for the sex difference in anger (calculated using DSTAT: Johnson, 1989), and the standard deviations for males and females.

Self-esteem The third data set concerned self-esteem, and was taken from the National Center for Education Statistics studies. These were four large-sample panel studies (totalling over 40,000 participants), the relevant data for which were summarized by Kling et al. (1999: 477), but not analysed overall (they undertook a meta-analysis of variability on a separate sample of 174 smaller-scale studies). The data for age 17 years was used, which was the consistent age across all four studies. In this case, effect sizes and variance ratios were provided for each study by Kling et al. (1999).

Mate choice The next five data sets (4a to 4e) concerned measures of mate choice, from the same sample of 10,047 men and women in 37 cultures, reported by Buss (1989). Table 3 shows the measures used in his study, together with effect sizes (*g*) for the difference between men and women calculated from the means and standard deviations provided in the original study.

Statistical Methods

Analysis of Mean-Level Differences (d)

Meta-analysis is a way of statistically combining and comparing data from a number of different samples. It is typically used to compare the mean differences between two populations (often males and females, or two conditions in a randomised clinical trial) by examining the effect size (*d*). In the case of sex differences, the convention is to calculate *d* by subtracting the mean score for males, from the mean score for females, and then dividing by the overall or pooled standard deviation. According to Cohen (1988), $d = 0.2$ is regarded as a small effect size, $d = 0.5$ is a medium effect size, and a $d = 0.8$ or higher is a large effect size.

Statistical Analysis of Variability

For the eight data sets, Fisher's variance ratio (VR) statistic was calculated for each study. By convention this is calculated by dividing male variance by female variance (Kling et al, 1999). Variance scores are obtained by squaring standard deviations. The VR is then log transformed to eliminate the numerator bias (Kling et al, 1999), so that a LTVR of zero would mean no difference in variability between the two populations (similar to the convention for calculating effect sizes), a positive value would describe a higher variance among males than females, and a negative value the reverse.

Study-level log-transformed variance ratios were each weighted by the total sample size for that study. These values were then transformed into weighted LTVRs by dividing each one by the mean sample size across all studies, following procedures pioneered by Hedges and Nowell (1995). The resulting values were used to compute a one-sample *t*-test (test value = 0) to test whether the weighted LTVRs were significantly different from zero, i.e. no sex difference in variance ratios.

RESULTS

Sample 1: Physical Aggression

As predicted, and in accord with much of the previous research in this area, there was indeed a sex difference of medium to large magnitude in the central tendency (d = .77, CI .66/ .75; $p < .0001$) for the self-reports of physical aggression listed in Table 1. Also as predicted, there was greater male than female variability, with a weighted mean LTVR of .30 (CI .16/.45; one-sample $t = 4.20$, $p < .0001$). In addition, greater male than female variability occurred in 90.9 per cent of the samples used (Sign test: $z = 4.53$; $p < .0001$).

Sample 2: Anger

As predicted, and in accord with the findings for a larger sample of studies (Archer, 2001b), there was no difference in central tendency between men and women (d = .006; CI -.03/.04) for self-reports of anger listed in Table 2. Also as predicted, there was no significant difference between the variability of males and females, with a weighted mean LTVR of -.00002 (one-sample t = .001; CI -.076/.076; $p = 1.0$). Greater male than female variability occurred in 50% of the 22 samples used, which was chance level.

Sample 3: Self-esteem

In accordance with the findings from a meta-analysis of a wider range of smaller-sample studies of self esteem (Kling et al., 1999), there was a small difference in central tendency across the four large-sample studies analyzed here, with a mean weighted *d* value of .10 (CI .09/.12; $p < .0001$). Although the result was statistically significant, the *d* value was nevertheless below Cohen's convention of .2 deemed necessary for the presence of a bona fide sex difference. As predicted, there was no significant difference between the variability of males and females, with a weighted mean LTVR of -.044 (CI -.12/.031; one-sample $t = 1.87$; $p = .16$).

Sample 4: Mate Choice

4a Valuation of good financial prospects in a potential partner The current meta-analysis confirmed Buss' conclusion of a large sex difference in the female direction ($d = -.76$, CI -.81/-.72; $p < .00001$). In addition, as predicted by the present model, there was greater male than female variability, with a weighted mean LTVR of .15 (CI .06/.24; one-sample $t = 3.5$, $p < 0.001$). Greater male variability occurred in 75.7% of the samples (Sign test: $z = 3.2$; $p = .0014$).

4b Valuation of ambition and industriousness in a potential partner The meta-analysis confirmed Buss' conclusion, with a medium level effect size ($d = -.50$, CI -.54/-.46; $p < .00001$) in the female direction. As predicted by the present theory, there was greater male than female variability, with a weighted mean LTVR of .28 (CI .08/.48; one-sample $t = 2.86$, $p = .007$). Greater male variability occurred in 75.7% of the samples (Sign test: $z = 3.0$; $p = .0026$).

4c The preferred age difference between self and a potential partner The meta-analysis in this study confirmed Buss' conclusion, with a very large effect size (d = -2.0, CI –2.05/-1.95.; $p < .00001$) in the female direction. Again, there was greater male than female variability for this measure, the weighted mean LTVR = .32 (CI .07/.57; one-sample $t = 2.6$, $p = .014$). Greater within male variability occurred in 62.2% of the samples (Sign test: $z = 1.66$; $p = .096$).

4d The valuation of good looks in a potential partner The meta-analysis confirmed Buss' conclusion, with a medium effect size ($d = .59$, CI .55/ .63; $p < .00001$) in the male direction. However, in this case there was no significant difference between the variances of men and women, the weighted mean LTVR = -.02 (CI -.10/.07; one-sample $t = -.398$, $p = .69$). Greater within male variability occurred in only 35.14% of the sample (Sign test: $z = .70$; $p = .48$).

4e The valuation of chastity in a potential partner As noted above, there was greater cross-cultural variability for this measure than all of the others in Buss' study. The result of the present meta-analysis also showed the smallest effect size ($d = .30$, CI .26/ .34; $p < .00001$) of all the five measures. With regard to the present theory, we should note that in this case we should expect higher parentally investing men to be more concerned about chastity, than low-parentally investing men, since paternity certainty only matters for long-term relationships. As predicted, there was greater variability among males than female (LTVR = .26; .07/.45; one-sample $t = 2.75$, $p = .009$). Greater within male variability occurred in 56.7% of the sample, which is only slightly higher than chance (Sign test: $z = 1.20$; $p = .23$).(see APPENDIX 1 for complete data sets).

Table 1. LTVR and *d*-value results in sexually selected domains (d > 0.2).

	N	Weighted LTVR	*d*	%	z
Physical aggression (*K* = 33)	7477	0.31*	0.70*	90.0%	4.53, p <0.0001
Valuation of resources (*K* = 37)	10047	0.15*	-0.76*	75.7%	3.2, p < 0.014
Valuation of industriousness (*K* = 37)	10047	0.28*	-0.5*	75.7%	3.2, p < 0.014
Valuation of good looks (*K* = 37)	10047	-0.02	0.59*	35.14%	0.7, p < 0.48
Difference between own and aged and partner's age (*K* = 37)	10047	0.32*	-2.0**	62.2%	1.66, p< 0.096
Valuation of chastity (*K* = 37)	10047	0.26*	0.30*	56.7%	1.20, p < 0.23

Note. * $p < 0.05$, ** $p < 0.001$ (two-tailed), K = number of cases in each meta-analysis. N = total number of participants. % = Percentage of cases in each meta-analysis that showed greater male variability.

Table 2. LTVR and *d*-value results in domains that are not associated with sexual selection (d < 0.2).

	N	Weighted LTVR	*d*	%	z
Anger (*K* = 22)	17114	-0.00002	0.006	50%	NS
Self-esteem (*K* = 4)	46867	-0.0244	0.10*	-	-

Note. * $p < 0.05$, ** $p < 0.001$ (two-tailed), K = number of cases in each meta-analysis. N = total number of participants. % = Percentage of cases in each meta-analysis that showed greater male variability.

DISCUSSION

In general the above results show a good fit with the predictions derived from MADWIS. The meta-analyses of sex differences in variability for six characteristics regarded as the outcome of sexual selection found that in five cases men showed significantly higher variances than women. This supported the prediction that there would be greater variability among men than women, associated with men's wider variation in parental investment. In nearly all of these cases, there were substantial sex differences in central tendencies (the exception being a moderate *d* value of .30 for the valuation of chastity). Two characteristics regarded as not being the outcome of sexual selection, anger and self-esteem, showed similar variances for men and women, along with either no sex difference (anger) or a very small sex difference (self-esteem) in central tendency, which was consistent with the predictions. The exception mentioned above was the results for valuation of good looks, where despite a sex difference in the male direction, male and female variances were similar.

There may be a number of possible explanations why the results for the valuation of good looks did not accord with the prediction made in this study. The first is that the above results may represent a statistical anomaly (i.e. a possible false negative). On the other hand this sort of explanation could potentially be said to apply in all the results in this study that were *consistent* with our predictions. A second possibility is that although a persistent sex difference can potentially be demonstrated in a number of domains of human behaviour, perhaps including in the case valuation of 'good look', it may not always be possible or indeed meaningful to carry out investigations into the notion of within sex variability in these domains. For example, differences between men and women may be said to be fundamentally asymmetrical with respect to such things as menstruation, pregnancy and childbirth, lactation, menopause, penis size and erectile dysfunction, to name a few obvious examples, and any comparisons and subsequent findings of 'differences' between the sexes in these areas can have little relevance to the above GMV hypothesis. For instance it should come as no surprise that more women become pregnant than men, or that more men experience erectile dysfunction than women. However, it makes little sense to say that there is greater variability in men's experience of erectile dysfunction. In addition there are also less obvious instances where such asymmetry may be encountered (one example, masturbation, has already been discussed in a preceding section).

Therefore it is possible that the valuation of 'good looks' or physical attractiveness may belong to the same class of ideas as the above, whereby the notion of 'good looks' for males may be fundamentally and conceptually dissimilar to 'good looks' for females. For example certain visual cues to attractiveness such as the waist-to-hip ratio (WHR) may denote different adaptive problem solving for men and women. In women low WHR may be related to fertility value, whereas in males optimal WHR may relate to health and status (Buss, 1994). Only further research and the proper application of Darwinian insights can answer this question.

A third possibility is that in some sex differences studies the measure being investigated may have two or more disparate components (in other words this may be a composite as opposed to unitary measure). The classic example is intelligence. Social scientists have long reported both no difference between the sexes in intelligence *and* greater variability within males (Archer & Lloyd, 1995). Nevertheless intelligence tests often investigate more than one measure of mental capacity, for example visual-spatial ability and verbal ability. Individually these two measures often produce sex differences in opposite directions. Generally speaking males tend to score slightly higher in visual-spatial ability and females score higher in verbal ability. Combining such conflicting measures has the effect of 'cancelling out' an overall sex difference, but the model used in the present study (MADWIS) predicts that in such an event the expected greater variability within males will be unaffected. Greater within male variability is expected irrespective of the direction of the sex difference. This is because in general it is mainly in the case of males that variance in reproductive strategy corresponds to variance in parental investment.

The concept of 'good looks' may also be such a composite measure; according to Buss (1994) what we call 'good looks' or physical attractiveness is really composed of the concepts of 'youth' and 'health'. Results from Buss' third measure (age difference preferred between self and partner) suggest that males and females place different emphasis on 'youth' as a desirable characteristic in a partner. On the other hand it may be that both males and females place *equal* value in a healthy potential partner (Buss, 1994). If so this might then affect both the overall sex difference and any differences in with-sex variability. The possible permutations of results based on the number, the direction and effect size of sex difference for each individual component in a composite measure can make predictions in this area complicated, although not impossible.

With respect to the meta-analyses on the measures of mate choice, it should be added that Kasser and Sharma (1999) have suggested an alternative interpretation of Buss' (1989, 1990) findings. While essentially ignoring the near-consistency of the results in almost all 37 cultures, they have argued that women's desire for 'good financial prospects' and 'ambition and industriousness' (which they combined into a single composite measure they refer to as 'resource-acquisition preference') may in reality be associated with women's reproductive freedom and educational opportunities in any particular culture. In other words in those cultures or environments where women have little or no control over their own 'reproductive capacities' and/or where they lack equality in educational levels with men, women are likely to place greater value on resource-acquisition characteristics in potential partners (Kasser & Sharma, 1999, p.376). However, neither the above nor Kasser and Sharma's preferred explanation (*social role* theory; Eagly, 1987) can account for the greater within male variability in the above measures. To be consistent with the results of the present study such explanations have to also predict greater variance within males in terms of male reproductive freedom and educational attainment, and the restrictions and flexibility these impose on male roles. Furthermore the prediction of greater male than female variability can apply to other domains where sex differences are found (as the above meta-analyses has shown), many of which, on the face of it, appear have little or no bearing on restriction placed on female reproductive freedom or education (e.g. physical aggression).

STUDY TWO

Standardisation of the Pilot Paternal Investment Questionnaire

INTRODUCTION

Although in some cases it is difficult to discriminate between these component of reproductive effort (RE), it is one of the main assumption of this paper that an organism's RE is their combined mating and parenting effort (Cieplak, 1999) and that, as each represent a fitness cost, spending energy or effort in one direction will draw resources that can be spent in the other, suggesting a trade-off between mating and parenting (Dawson, 1996). According to Dawson (1996) although 'in species where both sexes allocate some resource to parental effort, there need not be any trade-off', because in such cases mate choice can potentially include reliable indicators PI (e.g. female choice for parentally investing males), often the above trade-off does to some extent occur as some individuals benefit more from making themselves more conspicuous (attractive) or by intimidating rivals (by means of physical aggression).

In the preceding sections it has been suggested that the variations in male parenting effort is the reason for greater male variability in sexually selected traits. As a trade-off between parenting and mating is assumed, variation in male mating effort should also be to some extent reflected in variability in sexually selected attributes. In fact it may be predicted that the largest variability effect size should occur in samples where there is an *equal* mix of mating and parenting efforts. Any tendency towards one or the other strategy would lead to a decrease male variability. However a tendency towards male mating effort will tend to increase the magnitude of the sex difference, and any tendency toward male parenting effort will tend to decrease the size of the sex difference.

In order to the test the above hypotheses preliminary studies are required to operationalise the concepts involved (Cads v. Dads). The essential difference between the Dad and Cad strategies involves two dimensions: the first is the tendency towards fidelity versus indiscriminate sexual relations, and the second is the tendency to be involved in parenting or not to be involved. The first has been to some extent operationalised already, in the form of the Sociosexual Orientation Inventory (SOI) scale (Simpson & Gangestad, 1991), which measures an individual's preferences for impersonal sex and many partners. In the present study this was supplemented by the Extramarital Behavioral Intentions Scale (EBIS) (Bunnk, 1980). The second dimension, parental investment, has not yet been operationalised, although the beginnings of a scale used by Cashdan (1993). Building on this latter, a more extensive scale to measure interest in parenting was developed. In addition, measures of reported behaviour was also used.

For the second study a number of predictions were made with respect with the concurrent and construct validity of a proposed paternal investment (PI) scale (since mating and parenting to some extent represent trade-offs we should expect opposite predictions for the measures of socio-sexuality and infidelity):

1. *Trade off between mating effort and parent effort* It was predicted that the proposed measure of parenting effort (Paternal Investment Questionnaire: see APPENDIX 3), would be negatively correlated with measures of mating effort (e.g. SOI, EBIS).

2. *Relationship between jealousy and reproductive effort* As Geary (2000) has suggested, in humans male parental involvement may be expressed facultatively and may be adjusted according to conditions of paternity. In other words the lower a male's certainty of paternity the less likely he will be to invest in putative offspring. Male jealousy is thought have an adaptive function in the sense that expressing higher levels of sexual jealousy is likely to have reduced the chances of extra-pair mating by the female partner and increased the likelihood of paternity certainty for males in the ancestral environment (Buunk, et al, 1996). As a result it is predicted that in men jealousy will be positively associated with measures of parenting but negatively associated with measures related to mating effort (SOI, EBIS).

3. *Relationship between age and reproductive effort (trade-off between mating and parenting)* As individuals have had to solve different adaptive problems at different life stages and as these problem follow an ordered sequence (survival in infancy first, followed by mating, followed by parenting) a generally positive correlation should be expected between the allocation of parental investment and age (in other words, as a rule, the older the individual the more likely that they are facing the problems of parenting). Conversely, after puberty, a generally negative relationship between mating effort and age should be expected.

4. *Relationship between anthropometric measures and reproductive effort* Past research (Buss 1994) suggests that when women are seeking short-term

mating they are much more likely to attend to cues to physical attractiveness in a potential male partner. According to Cook and McHenry (1978) one feature that may be associated with male attractiveness is a tendency towards having a 'v-shape' (a high shoulder or chest-to-waist ratio). It is therefore predicted that in males there will be a positive relationship between mating effort and having a high chest-to-waist ratio (and conversely a negative correlation with PI). In addition it has long been known that women, regardless of their own height, tend to prefer taller men as partners (Graziano, et al, 1978). According to Baker (1996), in proportionate males there is usually a positive relationship between height and testes size (the taller the man the larger the testes). Since larger testes size may denote greater sperm production capacity, such males may be physiologically better suited to 'specialize' in sperm warfare (i.e. short term mating). This may predict a positive relationship between height and mating effort (and a negative correlation with PI). Similar predictions can be made for proportionality (absolute difference between body mass index [BMI] and ideal BMI = adjusted BMI): it is predicted that the lower the adjusted BMI (the closer the man's BMI is to the ideal BMI) the higher the mating effort. An alternative explanation for the possible relationship between height and reproductive effort is that the reason women show a preference for taller men is because for men height has traditionally been associated with status and power and with wide-ranging economic and social advantages. However according to this model males engaged in either mating or parenting effort can benefit from being taller.

5. *Relationship between birth order and reproductive effort* It has been suggested (Sulloway, 1996, Michalski & Shackelford, 2002) that as parents have finite resources to allocate to their offspring, ancestral parents were often forced to differentially invest in offspring in order to maximise their reproductive success, depending on both fluctuating and stable features of their environment. Cieplak (1999) has reviewed an extensive list of factors that may predispose parents to differentially invest in offspring (e.g. operational sex ratio, relative maturity and parental experience etc). According to Michalski and Shackelford (2002), one such stable feature is birth order. Is has been suggested that successive laterborns will tend to find themselves in an increasingly competitive environment compared to first-borns. This means that differing psychological strategies adopted by laterborns and firstborns should be expected. The latter may benefit more by upholding the parental 'status quo' whilst the former may be better off using an alternative PI solicitation strategy. It is also suggested that firstborns are more likely to engage in long term sexual behaviour (for males this may mean high parentally investing behaviour) because of their assumed greater identification with the parents. So far empirical evidence for the above model has been mixed with one study (Rodgers & Row, 1988) suggesting that that laterborns do have more intimate sexual behaviours than older siblings, whilst another (Michalski & Shackelford, 2002) found that firstborns and laterborns do not differ in sociosexuality or desired age at marriage, but do differ at the age when they desire first child and in number of partners desired (laterborns want children at a later age and desire more partners). For the present study it was

predicted that firstborns would tend to show higher parenting and lower mating effort than their laterborn siblings.

METHOD

Design

This study was questionnaire-based. The question form was composed of 4 main sections relating to the participants' sociodemographic status, their current relationship and birth order, the pilot paternal investment questionnaire and measures of sociosexuality and jealousy.

Participants

Participants were a mainly convenience sample of 97 men (of the 101 questionnaires collected, 4 had to be discarded because of incomplete or implausible data). Of these 33 were students enrolled at the University of Central Lancashire. The mean age of sample was 30.9 (standard deviation = 10.37); the age range was from 18 to 58.

Materials & Measures

The only materials used in this study were an 8 page questionnaire form and business reply post envelopes. The questionnaire contained the following items:

1. In addition to age, there were 5 self-report anthropometric measures relating to the participants' estimated height, weight, chest, waist and hip measurements.

2. Sociodemographic indicators included checklists on sexual orientation, ethnicity, religious orientation, income, employment and housing status and educational attainment.

3. Participants were asked to complete a checklist about their current marital and relationship status, child status, infidelity, duration of current relationship, number of previous relationships, birth order and pet ownership.

4. The 29 item pilot paternal investment questionnaire (PIQ) used a 5 point Likert-type scale with responses ranging from 1 = 'strongly agree' to 5 = 'strongly disagree'. On items 3, 8, 12, 13, 16, 27 and 28 the scores were reversed. The PIQ is a self-report survey measure of attitudes to the allocation of paternal investment in actual/future offspring and partners. In addition to entirely new items (chosen for their face validity) this new scale employed a number items derived from scales used by Cashdan (1993). These latter items were 1) 'a woman can raise children successfully on her own', 2) 'men have a natural need for sexual variety so a woman should not be bothered by occasional infidelity' (this was shortened to ' men have natural need for sexual variety') 3) '(when I get married) I hope my marriage will last, but I know that we may get divorced', (this was changed to ' all men hope that their marriage will last but most know that they might get divorced') and 6) 'a woman with a healthy attitude about sex does not feel the need for a long term commitment in order to have sex with a man' (this items was changed to ' amen who have a healthy attitude about sex don't always feel the need for a long-term commitment in order to have sex with a woman') (Cashdan, 1993, p. 10-11).

5. Time and resource budgets were included as an attempt to assess concurrent validity of the scale (time and resources spent on partners and children, where applicable).

6. The Sociosexual Orientation Inventory (Simpson & Gangestad, 1991). This inventory has 7 items relating participants' willingness to engage in short term mating. The first 3 items represent the overt behavioural components of the scale: 1) with how many partners have you had sex within the last year? 2) How many partners do you foresee yourself having sex with during the next 5 years? 3) 'With how many partners have you had sex on one and only one occasion? Item 4 is a covert behavioural item: 'how often do you fantasise about having sex with someone other than you your current dating partner? (this item was on 8 point scale ranging from 'never' to 'at least once a day'). The last 3 items represent the attitudinal components of the scale: 5) 'Sex without love is Ok, 6) 'I can imagine myself being comfortable and enjoying "casual" sex with different partners', and 7) 'I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her'. These latter items used a 9 point Likert-type scale with responses ranging from 1 = 'strongly agree' to 9 = 'strongly disagree'. Item 7 is reversed scored. The total score was calculated by aggregating the z scores for all components. Simpson and Gangestad's (1991) discriminant and convergent validity study suggested that the SOI is valid measure of the willingness to engage in uncommitted sex. Those with high scores on the SOI tended to engage in sex

earlier in a relationship, were more likely to have had more than one partner, expressed less investment and commitment in a relationship and had weaker emotional ties to partners.

7. Extramarital Behavioral Intention Scale (EBIS) (Bunnk, 1980, Davis, et al, 1998) – The scale has 5 items (with the same format on each); participants are asked to indicate the likelihood of engaging in behaviours such as flirting, light petting, falling in love, sexual intercourse and long term sexual relations with someone other than a primary partner. There is a 7 point response option for this scale, ranging from *certainly not* to *certainly yes*. Cronbach alpha was .91 in sample representative of the Dutch population and .73 in a sample of individuals engaging in extramarital relationships. Test-retest reliability over 3 months was $r(100) = .70, p < .001$. There was good evidence of concurrent validity for this scale, with those who had had an extramarital affair in the previous year showing a quite high correlation (r [250] = .74, $p < .001$). Construct validity was assessed by several studies, showing high correlations with scales measuring permissive attitudes toward extramarital sex. In 3 samples there was a negative correlation between the EBIS and a measure of anticipated sexual jealousy (ASJS - see below). In a study of open marriage scores on the EBIS correlated highly for both women ($r = .53, p < .001$) and men ($r = .42, p < .001$) with the partners' perceptions of the participants' extramarital intentions (Davis, et al, 1998).

8. The Anticipated Sexual Jealously Scale (ASJS) (Buunk, 1985, Davis, et al, 1998) - The scale has 5 items (the same format on each). Participants are

asked to indicate how they would feel if their partner were to engage in behaviours such as flirting, light petting, falling in love, sexual intercourse and long term sexual relation with someone else. There is a 9 point response option for this scale, ranging from *Extremely pleased* to *Extremely bothered.* Cronbach alpha for the scale was .94 in a sample representative of the Dutch population and .90 in sample of individuals who had engaged in extramarital relationships. Test-retest reliability over 3 months was $r(100) = .76, p < .001$. The scale discriminated between low and high sexual permissive individuals. Construct validity was established by several studies, showing high correlations with other jealousy scales. In 3 samples there were negative correlations between the ASJS and a measure of extramarital intention (EBIS – see above). In one study a correlation of $r(218) = .56, p < .001$ was obtained between scores on the ASJS and scores on a scale measuring jealousy after the spouse's extramarital affair. The ASJS has also been found to be highly correlated with the Love scale (Rubin, 1970). In a study of open marriage ASJS correlated highly for both women ($r = .61, p < .001$) and men ($r = .39, p < .001$) with the partners' perceptions of the participants' jealousy (Davis, et al, 1998).

Procedure

In order to increase the generality of the sample to include men who are currently in a long-term partnership and/or who have children, in addition to those recruited opportunistically, friends, colleagues and acquaintances were asked to pass on questionnaires and return envelopes to friends and family members in accordance with a snowballing procedure. Potential participants were approached and asked to complete a multipart questionnaire (PIQ). The participants were provided with a business reply post envelopes to facilitate the anonymous return of the questionnaire. There was an option to withdraw from the study by means of allowing participants to choose and enter a personally relevant 'code' word on a space provided on the cover sheet of the questionnaire. The participants could then contact the researcher and ask for the removal of their questionnaire from the study by citing their personalised code without breaking anonymity.

Statistical analysis

The data was analyzed using the Statistical Package for Social Sciences software (SPSS v.11.5). Primarily correlational analyses (based on the Pearson and Spearman formulas) were used for this study. Gamma correlation coefficients were employed where there was a mix of ordinal and nominal data. For all intents and purposes this latter can be treated as simple tests of difference (as opposed to tests of association), akin to a *t*-test. Due to the exploratory nature of this pilot study the more stringent two-tailed alpha level was used when determining statistical significance ($p < .05$).

RESULTS

Sociodemographic indicators

Table 3 shows the sexual orientation, ethnicity and religious orientation of the sample. The majority of the participants were heterosexual (93.8%), described themselves as 'white' (87.5%) and of belonging to the Christian faith (44.4%), although a sizeable proportion (39.2%) of the sample described themselves as atheists/agnostics/non-practicing.

Table 3. Numbers (*N*) and percentages (%) of participants by sexual orientation, ethnicity and religious orientation

	N	%
Sexual orientation		
Heterosexual	91	93.8%
Homosexual	4	4.1%
Bisexual	2	2.1%
White	85	87.5%
Black-Caribbean	2	2.1%
Indian	2	2.1%
Pakistani	2	2.1%
Mixed or other	5	5.2%
Missing data	1	1%
Protestant	19	19.6%
Catholic	18	18.6%
Christian – other	6	6.2%
Moslem	4	4.1
Jewish	1	1%
Buddhist	2	2.1%
Atheist/ non-practicing	38	39.2%
Other	6	6.2%
Missing data	3	3.1%

Tables 4 relates the sample's employment, education, housing and socioeconomic status. The majority were employed (69.1%), non-student (66%) (some students also described themselves as being employed). Predictably in terms of income, 33 participants (corresponding with the total number of students) were in the lowest income bracket. Most had some higher education qualification (74.3%) with more than a quarter (25.8%) being postgraduates. Most participants either rented their homes (44.3%) or were owner/occupiers (42.3%)

Table 4. Numbers (*N*) and percentages (%) of participants by employment and student status, income range, education and housing status

Employment status	*N*	%
Employed	67	69.1%
Unemployed	1	1%
Student	28	28.9%
Retired	1	1%
Student status		
Non-student	64	66%
Student	33	34%
Income		
0-5000	33	34%
5001-10000	8	8.2%
10001-20000	21	21.6%
20001-30000	24	24.7%
30001+	11	11.3%
Qualifications		
No qualifications	2	2.1%
Secondary school	7	7.2%
FE	15	15.5%
HE	47	48.5%
Postgraduate	25	25.8%
Housing status		
Owner-occupier	41	42.3%

Renting	43	44.3%
Live with parents/relatives	12	12.4%
Live with friends	1	1%

Tables 5 show the participants' partner, relationship and parental status. Just over 50% described themselves as being single (although it seems 15.5% of these were in some kind of relationship, albeit a casual one). Slightly less than 39% of the participants reported having children.

Table 5. Numbers (*N*) and percentages (%) of participants by partner status, relationship and parental status

Partner Status	N	%
Single	49	50.5%
Divorced	2	2.1%
Separated	3	3.1
Married	24	24.7%
Co-habiting	19	19.6%
Relationship status		
Single	34	35.1%
Relationship	63	64.9%
Parental status		
No children	68	70.1%
Children	29	29.9%

Reliability Coefficients

For the 29-item pilot PIQ questionnaire the Alpha coefficient was .72 (standardised Alpha was .74). The 10 items with highest item to total correlation coefficient results were selected for concurrent and construct validity testing. The Alpha coefficient for these 10 items was .773 (standardised Alpha was .78) (see APPENDIX 2). The 10 items selected for validity testing are listed below:

1. It is important for a man to care about children
2. A man should always put his family before his job or social life
3. A man should be prepared to make financial sacrifices for the sake of his children
4. Children need their father present when they are growing up
5. It is normal for a man to want to be known as a 'family man'.
6. It would feel uncomfortable to be around a man who was a househusband (R)
7. A man should be willing to agree to stay at home to look after children while his partner goes out to work.
8. If the worst happened a man should be ready to raise his children on his own as a single father.
9. When a man becomes a father he should be ready to give up his freedom and take up new responsibilities
10. It is never too soon for a new father to start planning for his child's future.

Item 6 was reverse scored. It should be noted that none of the items adapted from Cashdan's (1993) PI questionnaire appear in the above list.

Concurrent validity: Time Budget

It had been predicted that the proposed 10 item PI measure would correlate positively with a self-report behavioural measure of the allocation of resources (time) in partners and children. As the results table (6) below shows this prediction was not empirically supported. None of the correlations coefficient results on these two variables (child and partner) were statistically significant. For the whole sample PI was positively correlated with time spent in work: those who spent more time at work scored lower on the PI scale.

Table 6. Pearson correlation coefficient (*r*) results for the 10-item PI scale and the Time Budget.

	Sleeping	Shopping	Eating	Travel	**Time w/partner**	Grooming	Going out	Working	Time w/friends	**Time w/ children**	Exercise	Other
Mean time budget (in hours). Standard deviations in bracket	7.42 (1.09)	0.48 (0.65)	1.25 (0.66)	1.29 (1.23)	**1.52 (1.64)**	.92 (0.71)	1.15 (1.49)	6.85 (2.63)	1.54 (1.62)	**.47 (.99)**	.67 (.83)	.86 (3.47)
PI / time budget correlation	-0.195	-0.111	-0.181	0.123	**0.027**	0.078	-0.128	0.244 *	-0.076	**-0.46**	0.161	-.06
Single / no children	-	-0.006	-0.332	-	**0.064**	0.282	-0.05	0.347	0.130	**0.243**	0.383*	0.236

(n =28)	0.446*			0.075								
Single/ children (n = 2)	-	-	-	-	-	-	-	-	-	-	-	-
Relationship/ no children (n = 35)	0.083	-0.137	-0.10	0.064	- **0.086**	-.05	-0.283	0.349 *	-0.222	**0.176**	0.008	0.258
Relationship/ children (n = 27)	0.177	-0.411*	-0.83	0.388	- **0.089**	- 0.097	0.227	0.002	-0.156	**-0.331**	-0.121	- 0.465*

Note. * $p < .05$, ** $p < .001$

Child & relationship status and reproductive effort

Table 7 shows that those participants who had children and/or who were in a relationship did not differ significantly from those who did not, on any of the Cad/Dad measures.

Table 7. Gamma correlation coefficient results for the association between PI scale (10 item) and SOI, EBIS and ASJS scales.

	Paternal investment scale (PI) (10 items)	Sociosexual orientation (SOI) ($N = 88$)	Jealousy (ASJS) ($N = 93$)	Extramarital intentions (EBIS) ($N = 94$)
Have children?	.063	-.045	-.110	-.137
In a relationship?	.126	-.047	-.151	-.127

Note. * $p < .05$, ** $p < .001$

Construct validity: sociosexuality, infidelity intentions, and jealousy

Mating effort versus parenting effort

There was some mixed support for the prediction that measures of mating effort would be negatively correlated with the proposed PI measure (see table 8). The correlation results for SOI and PI, although in the predicted direction, were not statistically significant. However, there was a statistically significant correlation, again in the predicted direction, between the other mating effort measure (EBIS) and PI (-.220, $p < .034$). The second prediction, that PI would be positively correlated with jealousy was also supported (.423, $p < .001$).

Table 8. Pearson correlation coefficient (r) results for the association between PI scale (10 item) and SOI, EBIS and ASJS scales.

	Paternal investment scale (PI) (10 items)	Sociosexual orientation (SOI) ($N = 88$)	Jealousy (ASJS) ($N = 93$)	Extramarital intentions (EBIS) ($N = 94$)
PI	-	-.124	.423**	-.220*
SOI		-	-.105	.383**
ASJS			-	-.299**
EBIS				-

Note. * $p < .05$, ** $p < .001$

Age and reproductive effort

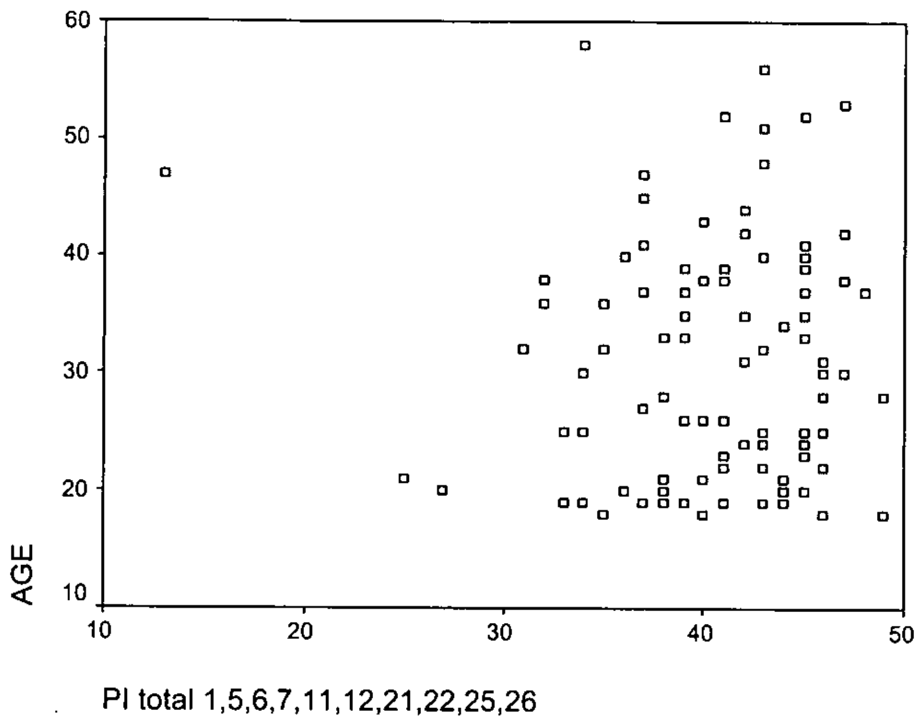
As shown in Table 9, age did not correlate significantly with any of the Cad/Dad measures, although the results were in the predicted direction for the EBIS and SOI.

Table 9. Pearson correlation coefficient (r) results for the Cad/Dad measures and age.

	Paternal investment scale (PI) (10 items) n = 96	Sociosexual orientation (SOI) ($N = 88$)	Jealousy (ASJS) ($N = 93$)	Extramarital intentions (EBIS) ($N = 94$)
Age	-.034	-.168	-.119	-.137

Note. * $p < .05$, ** $p < .001$

Figure 1. Scatter plot diagram showing the relationship between age and PI.



Anthropometric measures and reproductive effort

Table 10 shows that there was some support for prediction 3, that a) chest-to-waist ratio would be positively related to mating effort (both SOI and EBIS) b) height would be positively correlated with mating effort (SOI only), and c) proportionality (adjusted BMI) would be related to mating effort (EBIS only). The correlation coefficient results for the PI scale were not statistically significant.

Table 10. Pearson correlation coefficient (*r*) results for the Cad/Dad measures and various anthropometrics measures.

		Chest to waist ratio	Height	BMI	BMI (adj)	WHR	WHR (adj)
DAD	PI	.233	-.062	.025	.179	.095	.037
	SOI	.377**	.288**	-.128	-.08	.076	.06
CAD	EBIS	.302*	.064	-.130	-.267*	.029	.139

Note. * $p < .05$, ** $p < .001$

Birth order and reproductive effort

Table 11 shows that birth order (firstborns v. laterborns) did not correlate with the pilot parenting effort measure (PI), anticipated jealousy or with sociosexuality. However, birth order was negatively correlated with EBIS (but this was not in the predicted direction): firstborns scored higher on this measure of extramarital intentions.

Table 11. Gamma correlation coefficient results for the Cad & Dad measures and birth order.

	Paternal investment scale (PI) (10 items) n = 96	Sociosexual orientation (SOI) ($N = 88$)	Jealousy (ASJS) ($N = 93$)	Extramarital intentions (EBIS) ($N = 94$)
Birth order	.072	-.095	.117	-.249*

Note. * $p < .05$, ** $p < .001$

DISCUSSION

Although there is evidence of a moderately high internal consistency in the PI scale, in terms of concurrent and construct validity testing, the results of the above study are more mixed, with some indication that the scales used for the Cad dimension, SOI and EBIS (and particularly the latter) measure what they claim to be measuring. Despite predictions the proposed PI measure was not correlated with age, chest-to-waist ratio, height or proportionality. However, the Cad (SOI and EBIS) measures were correlated with the latter 3 variables as predicted. However, there is still uncertainty about whether the sperm warfare model (Baker, 1996) or the status models best explain the above pattern of results. As predicted PI was to some extent negatively correlated with mating effort (with the EBIS but not with the SOI), which suggests some support for the notion of a trade-off between parenting and mating (although here this association appears to be rather weak). Additionally as predicted there was a positive correlation between PI and anticipated jealousy (Geary, 2000). This supports the idea that for human males paternity certainty and associated behaviour (i.e. jealousy) may be a necessary obligate of parenting behaviour. Males who invested in putative offspring with some degree of certainty in the paternity of those offspring, likely out-reproduced those males who made no attempt to safeguard paternity (i.e. did not experience or act on jealousy).

There may be a number of reasons why PI in this study did not correlate with age or with anthropometrics measures such as height or chest-to-waist ratio. First in relation to age, as can be seen in Figure 1 there is clearly a discernable pattern in the participants' responses despite there being no apparent statistical association between age and PI. For example it is possible to see that with only a handful of exceptions (in fact there is one clear outlier) older participants scored higher on the PI scale, whereas younger participants were more variable in their responses with some younger men scoring high and some scoring low on the scale. This may suggest the possibility of the presence of a social desirability bias in the participants' responses. It should also be noted that although a positive relationship between age and PI was predicted, we should expect not a one-to-one relationship between these variables, but rather a relatively weak association. It is possible that the sample was too small to detect such an effect size. In terms of the anthropometrics and PI one possibility for the absence of a correlation may be that the measure used in the study is that these were based on the participants' self-report, often on their best guess and in some cases hampered missing data. Future studies may benefit from a more systemic and objective approach to obtaining these sorts of information.

An area where the concurrent validity of this PI scale may be called into question is absence of a correlation between PI and those part of the time budget which may be associated with a behavioural measure of paternal investment (i.e. time spent with children and/or with partner). Men who spent time with a partner and/or with children did not tend to score higher than single men on the PI scale. Similarly there was no relationship between PI and the participants' child or relationship. This may suggest that attitudinal measures of PI do not relate well with behavioural ones, or may be another indication of a possible social desirability bias.

Another unexpected finding was the relationship found between firstborn status and extramarital behaviour intentions (mating effort). This finding is the reverse of the predictions made by Sulloway (1996) and the results obtained by Michalski & Shackelford (2002). One possible explanation for this result may be that birth order might be just one of the stable and fluctuating feature of the family environment that may have predisposed parents to differentially invest in offspring (Cieplak, 1999).

Another possible explanation the above results failed to produce strong support for the predicted trade-off between mating and parenting might be the problem of phenotypic correlation. According to Smith and Winterhalder (2003, p.383) phenotypic correlations occur 'when hidden heterogeneity in uncontrolled variables confounds the effect of the causal variable under investigation'. For example, given limited resources it might be reasonable to expect a negative correlation (or trade-off) between ownership of expensive cars and ownership of expensive houses (in other words the more cars a person owns the lower the remaining resources available for buying houses). However, extremely rich individuals can have both expensive cars and expensive houses (a phenotypic correlation), and still have resources to spare (Smith & Winterhalder, 2003).

Smith and Winterhalder (2003) have suggested that a human behavioural ecology (HBE) approach can be a powerful framework for understanding the interaction between mating and parenting in humans as this approach attempts to focus less on how natural (or sexual) selection has designed living things to behave in fitness enhancing ways, and more on the match between socioenvironmental conditions and behavioural variations. According to HBE, postpartum differential parental investment decisions are not only chronologically ordered but also depend on the sex of offspring status (Trivers-Willard hypothesis; Trivers & Willard, 1973), competition between siblings and a host cultural and ethnographic condition (e.g. culturally imposed sex differentials in prospects for better adult economic prospects or opportunities to claim political power, skewed operational sex ratio leading to better mating prospects for one sex or the other, etc) (Smith & Winterhalder, 2003).

OVERALL DISCUSSION

Socio-cultural models often invoke variants of learning theory (i.e. differential or gendered socialisation; Archer, 1995) and a *tabula rasa* psychology to explain sex differences in aggression. At heart these perspectives implicitly assume a general-purpose model of how brains process information, which is thought to be a 'blank slate' at birth and ready to be programmed by the arbitrary dictates of 'culture' to ultimately make men and women think and behave differently.

Within the evolutionary framework aggression cannot be regarded as something that is triggered by a unitary (or domain-general) mechanism (Buss, 1999). Given the necessary assumption that all phenotypic design features (whether biological or psychological, although this distinction is actually moot since psychological features are essentially also biological) are the end products of natural selection processes (Buss, 1999), then it is an inevitable conclusion that such processes, constrained as they are by the twin principles of cumulative selection and quasi-random mutation (Dawkins, 1985), and operating in the course of a geological timeframe, cannot under any normal circumstances produce domain-general mechanisms or phenotypes (Buss, 1999). Although sometimes the powerful but ultimately superficial illusion of domain-general design may be present. For instance, the human tongue whilst seemingly multi-functional in appearance and design, is in fact an example of a number of entirely different adaptations and exaptations (e.g. taste, licking, speech) each of which is phylogenetically distinct. It may therefore be more useful to think in terms of a number of discrete domain-specific aggression mechanisms, which have all been 'calibrated' in the *environments of evolved adaptedness* (the EEA) to solve specific adaptive problems (Buss, 1999).

In almost all cases, aggression (whether offensive, defensive, maternal, predatory, territorial, etc.) can be viewed as the ultimate consequence of *competition* that automatically exists in any situation wherein a 'resource' is deemed rare or scarce relative to the demand for that resource, and/or where access to that resource can be effectively controlled or restricted. For example food can be regarded as a 'resource' but in a food-rich environment, competition over food may well be maladaptive (actually wasteful). It is important to note that the term competition is employed in a somewhat different sense by evolutionists than the commonly accepted usage (Dawkins, 1989). For instance there is a sense in which a predator 'competes' against a prey for a 'resource' (protein rich meat that is part of the prey's body), access to which the prey works hard to restrict (Dawkins, 1989).

According to the orthodox Darwinian view, a sexually reproducing organism's greatest competitors are most likely to be not only members of his/her own species, but more specifically those of his/her own *sex* (Ridley, 1994, Dawkins, 1989). This is for the simple reason that it is with these same-species, same-sex rivals that an organism must contend with for the same food, the same territory and shelter, and crucially (given that the 'engine' that drives evolutionary processes is *reproduction* (genetic replication) very often the same potential mates (Ridley, 1994, Baker & Bellis, 1995, Dawkins. 1989). It was this latter problem – constraints on acquiring potential mates - which led Darwin to propose his controversial theory of sexual selection, by which he attempted to explain within-species differences in terms of adaptive design. The two mostly commonly discussed principles in sexual selection are inter-*male* (intrasexual) competition and *female* (preferential mate) choice (Cunningham & Birkhead, 1998). Despite a shaky start sexual selection is now regarded by many evolutionists as implicated in the ultimate origins of almost all sex differences (directly or indirectly), including both intersexual and intrasexual aggressive and/or violent behaviour (Buss, 1995, Archer, 1996). Later Trivers (1972) clarified sexual selection processes in terms of differential parental investment, paving the way to models of human reproductive behaviour (e.g. sexual strategies theory or strategic pluralism; Buss & Schmitt, 1993, Gangestad & Simpson, 2000)

Nevertheless there is no sense in which males and females can be regarded as equivalent in terms of their net payoff and costs from their 'time' investment (short or long term) in a partner (Archer & Mehdikhani, 2000, 2003). This is in part because males and females tend to differ from each other with regards their reproductive variance. The basis for this is the fact for males reproductive success is related to the number of eggs they can fertilise and for females reproductive success is related to the number of eggs they can produce (Trivers, 1972; Bateman, 1948). This means that in purely quantitative (number of offspring) terms the net reproductive payoff of consorting a 'short' time with lots of sexual partners (as opposed to a 'long' time with a single partner) is potentially far greater for males than for females (Nielsen, 1994).

This advantage is lost, however, if all or most of the males in the population are allowed to pursue short term dalliances (Wright, 1994), and instead here reproductive advantage can accrue to males who are the ablest sperm competitors. The above also suggests that whilst in males sexual strategy (short term versus long term) may be closely associated with parental investing behaviour (low versus high investing), the same may not be true in women. This is in part the source of the greater male variability hypothesis investigated in this thesis. As the first study showed, as predicted, there is some evidence that in sexually selected domains men are indeed more variable than women (and where a domain is not associated with sexual selection there was no difference between men and women in variability).

According to Wilson and Daly (1985), in addition to the 'young male syndrome' (simply put, young males are physiologically and psychologically the best equipped demographic for expressing violent behaviour), both marital status and employment status are strong predictors of inter-male violence; in a study of homicide rates it was found that in general both victims and perpetrators were somewhat more likely to be both unmarried (single) and unemployed. For this reason it has been concluded that it is partly the inability to attract a long-term mate which provides the 'social context linked with male-male homicides' (Buss, 1999, p.293). This argument is flawed partly because it ignores the dichotomous nature of male reproductive strategies (mating and parenting). The existence of alternative mating strategies suggests that failure to attract a *long term* mate need not automatically lead to 'reproductive oblivion' (Buss, 1999, p.293), when in fact there exists the option of pursuing *short term* mates, or even as a last resort channelling resources towards genetic relatives (siblings, nephews, nieces, etc).

With respect to the former, a study by Fetchenhauer and Rohde (2002) found that male risk proneness (assumed to be related to higher levels of intrasexual competition) was associated with short-term mating orientation. Additionally the above fails to explain why a similar 'inability to attract long term partners' does not appear to be predictive of violent behaviour among younger single women (who are presumably physiologically and psychologically *better* equipped than older women for aggressive behaviour). According to Campbell (1995) when inter-female physical aggression does occur it is often more about keeping a long term partner than in the context of attracting a long term partner.

In a sense, for modern humans, for both males and females, sometimes merely being single (i.e. not in a relationship, irrespective of own actual sexual behaviour or conscious desires) can suggest short-term sexual strategy status, but only when single status means that there is no or very little *paternal* investment present. A single male (typically) provides no paternal investment, and a single female often receives little or no paternal investment (for actual/potential offspring). Note that where single status does relate to paternal investment the situation may be very different, as exemplified by the asymmetrical ways in which society often treats single mothers (a situation with low male parental investment) as opposed to single fathers (potential for high male parental investment). According to Gross (1995, p.123) very often 'single fathers [are] more like mothers [i.e. nurturant and sympathetic] than like married fathers' and that this is often not the result of a predisposition to good parenting skills but can simply be the consequence of these men having single parenthood 'thrust upon them'.

It is a crucial point that evolved psychological mechanisms are to a large extent context and situation dependent. The notion of the relationship between single fatherhood and male parental investment could not be properly investigated in the second study due to small sample size ($N = 2$). Nor was there any support in that study for the idea that single males are substantially different from partnered males in terms of levels of parental investment (at least as measured by the PI scale used in this study). One reason for this may be the problem of concurrent (and convergent) validity between attitudinal and behavioural measures of PI. It may be that the scale needs further amendment, perhaps including a rating scale measure of preference for photographs involving infant features.

Nevertheless there are a number of important implications in the findings of the above studies. Firstly, the support for the greater male variability hypothesis, derived from MADWIS and linked specifically to sex differences, is indirect support for the notion that many sex differences may in reality be *parental investment* differences. If true this means that in studying sex differences we can no longer ignore the role played by reproductive effort (mating versus parenting) particularly in the male sample. As pointed out earlier, assuming a trade-off between mating and parenting, we should expect the magnitude of the sex difference to vary according to the extent to which males in the sample engage in mating versus parenting behaviour (higher mating effort will mean a lager effect size, higher parenting effort will mean smaller effect sizes), and we should expect variability among males to be greatest where mating and parenting effort are at equilibrium.

E M Miller's (2001) suggestion of a possible connection between greater male variability and testosterone is also interesting because of its implication for the study physical aggression among males. In the past, research into aggression has implicated a role for testosterone in male violence, often based on the 'mice' model (Archer, 2004). Indeed it has been suggested that in males testosterone levels tends to peak in the early 20s, and falling into full decline by the late 30s and early 40s (Hyde & DeLamater, 1997), which is a pattern that conforms closely with the age distribution for assaultive behaviour by males in the crimes statistics; male arrest rates for assault tend to peak sharply by the early to mid 20s and drop equally sharply from the late 30s (Campbell, 1995). Williams (1997, p.141) argues that very often 'raised hormone levels, like raised voices, are a sign of conflict', and it was once believed that a decline in hormone levels with age might be in some way related to a decrease in the conflictive urge in males. However, the mere presence of greater amounts of testosterone just as a result of being a younger male might not be entirely predictive of offensive aggression (after all not all young males are physically violent); according Wilson (1989, p.120) it has been found that 'men who win fights and sporting contests demonstrate an increase in testosterone, while those who lose show a decrease'.

Archer (2004), by applying the 'challenge hypothesis' to humans, suggests an alternative explanation for the above association. He argues that the rise in the levels of testosterone in puberty is related to mating effort, which then creates conditions for competition (ultimately for access to mates), which can in some cases lead to aggression. Testosterone levels decrease as males begin to care for offspring (this also suggests that the traditionally accepted of the relationship between age and decline in testosterone may hide an important confound: the positive relationship between age and parental investment). There is indeed some empirical support for this hypothesis. In one study by Gary et al (2002) it was found that married men (with or without children) have higher levels of testosterone than single men, and married men with children had lower levels of the hormone than married men without children (in other words the higher the parental and 'spousal' investment had lower levels of testosterone). In a more recent study (Burnham et al, in press) it was found that partnered and married men (including fathers) had significantly lower levels of testosterone (21% lower) than men who were 'unpaired'. Burnham et al have suggested that their results are consistent with the 'challenge hypothesis' (Wingfield et al, 1990) which links male-male competition to reproductive contexts. However, they advise cautious interpretation of the results as these do not address the issue of causality: it could be that high testosterone males may be less inclined to pair-bond, or it may that for a man, entering in to a long term sexual partnership has the effect of lowering testosterone levels, which in turn may lead to a reduction in mating effort. This may suggest testosterone as the proximate mechanism by which the trade-off between mating and parenting is expressed, ultimately accounting for greater male variability.

The above thesis has a number of implications for future research in human sex differences. For example, the results obtained in study one should (if the MADWIS principle holds true) also obtain in other domains (psychological or physiological) that have resulted (either directly or indirectly) from sexual selection. This suggests a programme of research involving large scale meta-analyses to be undertaken on sex differences or similarities in anthropometric measures (height, weight, waist, hips etc), in phobic anxiety (Arrindell et al, 2003, personal communication), in desire for sexual variety, romantic attachment and sociosexuality (Schmitt et al, 2003a, 2003b, in press, personal communication), valuation of money, savings and competitiveness (Lynn, 1993), brain size in schizophrenia and in controls (Harrison et al, 2003), and in corpus callosum weight (Bishop & Wahlsten, 1997, personal communication), among many other possible domains. It is predicted that in all cases where there is a sex difference (notwithstanding the four caveats; see introduction) there will be greater male variability and where there are sex similarities no difference will be expected in the variability of men and women.

The assumed link between sex differences and parental investment, and the possible link implied by study one's results between greater male variability in sex differences domains and greater male variability in parental investment, suggest that the study of human sex differences (particularly their magnitude or effect sizes) may require consideration of the sample-level composition of male participants along the Cad/Dad dimension. It is predicted that the size of any sex difference will be smallest in samples where paternally investing behaviour predominates and largest where it does not. However, before this hypothesis can be experimentally investigated, further development on a paternal investment measure (following on from study two) may be required. This may require attempts to control for phenotypic correlations and a possible social desirability bias. Finally, once such a valid measure is available it may be possible to investigate the proximate mechanisms involved in male paternal investment by exploring the association between high scores on the PI measure and levels of testosterone.

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APPENDICIES

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APPENDIIX 1

Table 1. Sex differences in Intrasexual Physical Aggression

Study 1 (Intrasexual Physical Aggression)	Year	N_{males}	$N_{females}$	d	SD Males	SD Females	Weighted LTVR
Buss & Durkee	1957	85	88	0.75	2.48	2.31	0.11
Buss (1)	1961	73	104	0.97	2.5	1.4	0.91
Buss (2)	1961	70	58	0.84	2.7	1.9	0.4
Buss (3)	1961	53	114	0.36	2.2	2.2	0
Buss (4)	1961	49	77	0.72	2.8	2.3	0.22
Buss (5)	1961	52	73	0.55	2.3	2.1	0.1
Buss (6)	1961	50	85	0.76	2.6	2	0.31
Sarason	1961	80	68	0.93	2.16	2.15	0.01
Prasad	1980	25	25	0.56	1.7	1.42	0.08
Russell	1981	101	119	0.45	2.12	2.03	0.08
Schill et all	1985	88	88	0.87	2.33	2.2	0.09
Reinsch & Sanders	1986	89	105	-0.05	3.62	3.36	0.13
Reinsch & Sanders	1986	89	103	0.06	3.81	3.29	0.25
Reinsch & Sanders	1986	90	81	-0.12	3.95	3.29	0.28
McCann et al	1987	96	110	0.04	2.23	2.07	0.14
Ujjwala Rani & Ramavani (1)	1989	25	25	0.54	1.3	1.35	-0.02
Ujjwala Rani & Ramavani (2)	1989	25	25	0.4	1.55	1.8	-0.07
Unverzagt & Schill	1989	71	60	0.15	2.22	2.23	-0.01
Schill et al	1990	102	101	0.86	1.38	1.53	-0.19
Buss & Perry	1992	612	641	0.89	7.7	6.6	1.72
Cotton et al	1994	222	214	0.45	6.7	6.1	0.36
Finkelstein et al	1994	43	63	0.82	8.85	7.07	0.21
Finkelstein et al	1994	29	48	0.94	8.97	4.64	0.45
Finkelstein et al	1994	30	40	0.35	5.85	5.48	0.04
Hausman et al	1994	203	201	0.27	0.308	0.29	0.22
Archer et al	1995	160	160	0.65	6.65	4.9	0.87
Archer et al	1995	160	160	0.54	3.32	3.2	0.1

Baumgartner et al	1995	70	76	0.74	1.36	0.54	1.2
Bushman	1995	210	210	1.07	7.41	6.04	0.76
Bushman	1995	80	80	0.9	10.16	8.63	0.23
Stanford et al	1995	59	155	0.75	2.37	2.22	0.12
Harris	1996	97	247	1.08	6.646	6.063	0.28
Harris et al	1996	155	151	0.74	6.3	4.9	0.68
Harris & Knight-Bohnhoff	1996	60	46	1.38	1.58	2.39	-0.39
Meesters et al	1996	244	518	0.73	6.5	5.4	1.26
Archer & Haigh	1997	100	100	0.28	7.57	6.47	0.28
Archer & Haigh	1997	62	47	-0.21	7.62	8.19	-0.07
Andrau et al	1998	100	100	0.44	0.87	0.67	0.46
Buchanan	1999	37	67	0.65	3.87	3.53	0.09
Carlo et al	1999	43	46	0.62	1.05	0.99	0.05
Felsten & Hill	1999	14	19	1.27	6	5	0.05

Table 2

Sample	Good Financial Prospects		Ambition/ Industriousness		Age difference preferred between self and partner		Good looks		Chastity	
	(LTVR)	*g*	(LTVR)	*g*	(LTVR)	*g*	(LTVR)	*g*	(LTVR)	*g*
Nigeria	0.1	-1.65	0.25	-.556	1.07	-2.6	-0.09	.612	0.54	.713
S Africa white	0.06	-1.01	0.08	-.556	-0.34	-2.6	0.12	.554	0.4	.200
S Africa Zulu	0.33	-.52	0.18	.398	1.02	-2.31	0.01	.389	0	.981
Zambia	0.61	-1.08	0.43	-.197	0.17	-2.26	-0.64	.686	1.51	.660
China	0	-.48	0.17	-.553	-0.02	-2.55	0	.724	-0.06	-.088
India	0.6	-.49	0.22	-.806	0.48	-2.85	-0.05	.081	-0.23	.255
Indonesia	0.08	-1.46	0.06	-.461	-0.04	-2.02	0.03	.606	-0.05	.071
Iran	0.52	-.82	1.16	-.247	-0.87	-5.27	0.75	.538	0.5	.470
Israel Jewish	0.11	-.55	0.05	-.77	0.05	-1.53	-0.24	.252	-0.06	.337
Israel Pales.	0.06	-.39	0.23	-.405	0.19	-3.85	-0.42	1.28	0.09	1.12
Japan	0.03	-2.09	0.14	-.681	1.19	-2.81	-0.03	.551	0.13	.666
Taiwan	0.04	-1.26	0.27	-.951	-0.05	-3.22	0.16	.668	0	.136
Bulgaria	0.01	-.517	-0.03	-.557	0.15	-2.66	-0.09	.572	0.84	.284
Estonian SSR	-0.01	-.23	-0.06	-.226	0.78	-2.37	0.07	.921	0.37	.406
Poland	0.07	-.799	0.18	-.458	-0.35	-2.08	0.07	.201	0.12	.233
Yugoslavia	-0.15	-.51	0.19	-.571	0.47	-2.84	0.16	.664	-0.19	.635
Belgium	-0.44	-.465	-0.57	-.35	0.42	-1.33	0.22	.618	2.71	.343
France	-0.2	-.484	-0.24	-.258	0.37	-2.09	-0.17	.404	-0.21	.047
Finland	0.19	-.64	0.04	-.158	0.22	-1.22	-0.11	.758	-0.03	-.031
Germany-W	0.19	-.739	0.07	-.309	0.01	-1.65	-0.07	.822	-0.04	.269
Great Britain	-0.11	-.666	-0.07	-.524	0.1	-1.36	-0.13	.882	0.41	-.034
Greece	-0.11	-.867	0.13	-.313	-0.56	-2.10	0	.383	0	-.093
Ireland	-0.14	-.98	-0.08	-.378	0.55	-2.51	0	.973	-0.03	.019
Italy	0.05	-.606	-0.08	-.484	-0.51	-2.31	-0.17	.465	0.25	.518
Netherlands	0.23	-.301	0.03	-.137	0.71	-1.33	-0.1	.764	-0.3	.000
Norway	0.06	-.35	-0.02	-119	-0.03	-1.48	-0.26	.663	-0.04	.014
Spain	0.21	-.153	0.1	.042	-0.06	-1.09	-0.01	.866	0.26	.367

Sweden	0.78	-.682	2.41	-.09	3.53	-1.31	0	.238	1.34	-.050
Canada English	-0.19	-1.11	0.37	-.709	-0.31	-2.15	0.03	.532	0.16	.282
Canada French	0.29	-.666	0.4	-.367	0.32	-1.69	-0.06	.417	0.03	.373
USA	0.19	-1.039	-0.12	-.898	0.06	-1.82	0.05	.638	0.57	.367
USA Hawaii	0.3	-.792	0.24	-417	-0.09	-1.85	-0.12	.723	0.14	.368
Australia	0.15	-1.085	1.34	-.539	1.31	-1.76	-0.34	.560	0.23	.318
New Zealand	0.45	-.321	0.17	-.44	0.9	-2.05	0.28	.985	-0.07	.152
Brazil	0.49	-.806	0.26	-.595	0.66	-2.09	0.03	.258	0.45	.618
Colombia	0.61	-.594	2.3	1.391	0.61	-3.05	0.64	.443	-0.28	1.16
Venezuela	0.16	-.684	0.21	-.291	-0.37	-2.09	-0.1	.520	0.1	.333

APPENDIIX 2

RELIABILITY ANALYSIS - SCALE (ALPHA) Paternal investment questionnaire

1.	PI1	1. 5=5
2.	PI2	2. 5=5
3.	PI3	3. 5=1
4.	PI4	4. 5=5
5.	PI5	5. 5=5
6.	PI6	6. 5=5
7.	PI7	7. 5=5
8.	PI8	8. 5=1
9.	PI9	9. 5=5
10.	PI10	10. 5=1
11.	PI11	11. 5=5
12.	PI12	12. 5=1
13.	PI13	13. 5=1
14.	PI14	14. 5=5
15.	PI15	15. 5=5
16.	PI16	16. 5=1
17.	PI17	17. 5=1
18.	PI18	18. 5=1
19.	PI20	20. 5=5
20.	PI21	21. 5=5
21.	PI22	22. 5=5
22.	PI23	23. 5=5
23.	P24	24. 5=5
24.	PI25	25. 5=5
25.	PI26	26. 5=5
26.	PI27	27. 5=5
27.	PI28	28. 5=1
28.	PI29	29. 5=1
29.	PI30	30. 5=5

N of Cases = 96.0

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.0880	-.2882	.5439	.8321	-1.8873	.0212

R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A) – Paternal investment questionnaire

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PI1	96.3646	93.2236	.4829	.6725	.6982
PI2	97.9479	95.9025	.2219	.3745	.7146
PI3	96.8125	95.3539	.3281	.5812	.7072
PI4	98.4792	102.1890	-.0298	.4509	.7316
PI5	96.9688	93.7359	.4195	.6285	.7013
PI6	96.6146	93.7973	.5207	.6465	.6982
PI7	96.6458	93.0732	.4001	.5004	.7014
PI8	98.1875	96.4487	.2356	.5118	.7132
PI9	97.7917	98.8404	.1325	.4714	.7201
PI10	97.9792	96.5048	.2318	.3692	.7135
PI11	97.6250	95.5211	.3413	.4283	.7067
PI12	96.7083	93.5351	.3856	.4868	.7027
PI13	98.8229	99.6841	.1092	.3541	.7210
PI14	98.7188	101.8464	-.0246	.5294	.7335
PI15	96.7396	96.8683	.2349	.4101	.7132
PI16	98.3750	100.8895	.0364	.3717	.7263
PI17	98.2708	97.8627	.2060	.4339	.7150
PI18	96.8750	94.3632	.3397	.5504	.7059
PI20	97.1563	96.3438	.2455	.4245	.7125
PI21	97.0729	94.9315	.3479	.4998	.7059
PI22	96.3438	94.2701	.4423	.5851	.7012
PI23	97.3542	98.8627	.1576	.4429	.7180
P24	96.9271	96.2578	.2709	.3665	.7109
PI25	97.0417	93.1561	.4481	.6484	.6993
PI26	96.7292	96.0943	.3674	.4400	.7064
PI27	97.6354	98.0446	.1335	.3164	.7214
PI28	98.0104	99.7788	.0715	.3799	.7253
PI29	96.8854	99.5130	.0932	.2601	.7231
PI30	97.1250	98.6789	.1730	.3139	.7170

Reliability Coefficients   29 items

Alpha = .7200   Standardized item alpha = .7367

Reliability

****** Method 2 (covariance matrix) will be used for this analysis ******

R E L I A B I L I T Y   A N A L Y S I S - S C A L E   (A L P H A)

1. PI1 1. 5=5

2. PI5 5. 5=5

3. PI6 6. 5=5

4. PI7 7. 5=5

5. PI11 11. 5=5

6. PI21 21. 5=5

7. PI22 22. 5=5

8. PI25 25. 5=5

9. PI26 26. 5=5

10. PI12 12. 5=1

N of Cases = 97.0

Inter-item Correlations	Mean	Minimum	Maximum	Range	Max/Min	Variance
	.2619	-.0490	.5218	.5708	-10.6405	.0173

Item-total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Alpha if Item Deleted
PI1	36.0000	24.5000	.5707	.4782	.7374
PI5	36.6186	25.9884	.3594	.3789	.7648
PI6	36.2577	24.9225	.6126	.4965	.7354
PI7	36.2887	24.0616	.4978	.3410	.7460
PI11	37.2680	26.3857	.3412	.2706	.7665
PI21	36.7113	25.7700	.3762	.2673	.7627
PI22	35.9794	24.7079	.5741	.4343	.7378
PI25	36.6804	24.8447	.4827	.3924	.7483
PI26	36.3608	26.8789	.3513	.2172	.7646
PI12	36.3814	25.9259	.2984	.2316	.7760

Reliability Coefficients 10 items

Alpha = .7733 Standardized item alpha = .7802

APPENDIIX 3

Participant No:	

Form No.	

Parental Investment Questionnaire

Please return to:
Mani Mehdikahni, PI Questionnaire, Psychology Department, Harrington Building
The University of Central Lancashire, Preston, Lancashire, PR1 2HE

For more information please contact Mani Mehdikhani (Researcher)
Mobile: 07790 662 461
e-mail: mani.mehdikhani@boltonh-tr.nwest.nhs.uk

This question form contains sensitive and personal items (relating to sexual experience and attitudes), which some people may find embarrassing or objectionable.

Please DO NOT attempt to answer questions on this form if you are easily offended or if you are aged less than 18 years.

Please read all instructions carefully and answer as completely as you can. Please don't worry if there are any individual items you can not or do not wish to complete for whatever reason. Remember you DO NOT have to take part in this research, and if you do you are still free to withdraw from the study at any time: simply make up your own code and write it in the box below, and make a note of this for your own record. If later you decide to withdraw from the study contact the researcher (Mani Mehdikhani) and ask for the question form with your code to be returned or destroyed.

You are NOT required to divulge your identity and all information collected will be treated in the strictest confidence. Your completion of this form will be taken as implied consent to take part in this study.

Although this form may appear long, you will find that most questions only require a tickbox response. The questionnaire should take approximately 15minutes to complete.

Please enter your own code here

IF YOU HAVE CHOSEN NOT TO TAKE PART

We would greatly appreciate your responses to the items below (again your participation in this is entirely voluntary):

Sex : Age: **Ethnicity:** **Relationship status (single, cohabiting, girl/boyfriend etc):**

I chose not to take part in the above study because (please tick as many as apply, and rank those that apply in order of importance, with '1' as most important):

	tick	rank
I don't think the research will be relevant to my situation.		
I consider the subject of the study to be an intrusion into my privacy.		
I am concerned that the information collected about me might fall into the wrong hands.		
I think it would be a waste of my time.		
I don't have the time to take part.		
I am concerned that my behaviour/ attitude will be judged or criticised.		
Other (please specify):		

Section One: Demographics

Physical Characteristics

Please give your best guess/estimate for the following physical attributes (please state whether the measurement is in inches or cm, or in stones/pounds or kilogram in the case of 'weight'):	Height	
	Weight	
	Chest measurement (if known)*	
	Waist measurement (if known)	
* Circumference at the widest point	Hip measurement (if known)*	

Please provide the following demographic information.

1. Age: ☐

2. Male ☐ **Female** ☐

3. Please describe your sexual orientation

Heterosexual (straight) ☐
Homosexual (gay) ☐
Bisexual ☐

Other (specify): ☐

4. Please describe your ethnic origins?

White ☐
Black-Caribbean ☐
Black-other ☐
Chinese ☐
Bangladeshi ☐
Indian ☐
Pakistani ☐

Other (specify): ☐

5. Please describe your religious affiliation?

Christian (Catholic) ☐
Christian (Protestant) ☐
Christian (Other) ☐
Moslem (Sunni) ☐
Moslem (Shia) ☐
Moslem (Other) ☐
Jewish ☐
Hindu ☐
Sikh ☐
Buddhist ☐
None (atheist, agnostic, non-practising etc) ☐

Other (specify): ☐

6. Employment status:

Employed ☐
Unemployed/sickness benefits ☐
Student ☐
Retired ☐

Other (specify): ☐

7. Income:

£0-5,000 ☐
£5,001-10,000 ☐
£10,001-20,000 ☐
£20,001-30,000 ☐
£30,001-50,000 ☐
> £50,000 ☐

8. Housing status:

Owner occupier ☐
Rented ☐

9. Education status (tick as many that apply):

Secondary School level ☐
Further Education (sixth form, A Level etc) ☐

Living with parents/relatives ☐

Other (specify): ☐

Degree, HND or diploma ☐

Postgraduate ☐

Other (specify): ☐

Section TWO: Relationship Status & Resources

With regards to your current relationship(s) and child status **please tick only one box** in each of the five following sections:

Section a

Single ☐
Divorced ☐
Separated ☐
Married ☐
Cohabiting ☐
Widowed ☐

Section b

Live with other-sex main partner ☐
Live with same-sex main partner ☐
Live apart from other-sex partner in committed relationship ☐
Live apart from same-sex partner in committed relationship ☐
Casual relationship with an other-sex partner(s) ☐
Casual relationship with same-sex partner(s) ☐
No partner ☐

Section c (if applicable you may tick more than one box here)

No children ☐
Child or children ☐
Step-children ☐
Adopted children ☐

Section d ('children' includes adopted or step-children. This applies to ALL other sections of the questionnaire)

Children (or at least one child) live with me and partner ☐
Children (or at least one child) live with me with no or little support from (ex)partner ☐
Children (or at least one child) live with me with support from (ex)partner ☐
Children (or at least one child) live with (ex)partner with no or little support from me ☐
Children (or at least one child) live with (ex)partner with support from me ☐
All children live elsewhere (relatives, in care) with no or little support from me ☐
All children live elsewhere (relatives, in care) with support from me ☐
All children live alone or with own partner (i.e. grown up) ☐

Section e

You are in serious relationship (i.e. having an affair) w/ someone outside your main partnership ☐
You are in a casual relationship w/ someone outside your main partnership ☐
No other relationships outside your main partnership ☐

Please specify in the box below if, and in what way, your current situation does not fit in with those described in any of the above sections:

What is the duration of your current relationship in years (if applicable):	
How many prior long-term, committed relationships have you been involved in?	
What was the duration of the most recent?	
What was the duration of the second most recent?	
What was the duration of the third most recent?	

No. of children (if any):		**No. of step-children (if any):**		**No. of adopted children (if any):**	

Number of dependent children (who live with you and/or under 16):	
How many brothers or sisters do you have?	
Please list their ages:	

Do you own any pets?		If yes, what type?	

Thinking about the last year please give (as quickly as you can) your best guess/estimate of the amount of time you might spend in a typical **DAY** engaged in any of the following activities **(NOTE: please ensure that the total does not exceed or fall below 24 hours!)**:

Activity	**Hours spent in a day (to nearest ½ hour)**	**Hours remaining**
Sleeping		
Working / going to classes		
Shopping (for yourself)		
Eating/cooking		
Travelling (e.g. to and from work)		
Spending 'quality' time with your partner (e.g. time spent in talking, helping or other bonding activity) if applicable		
Toilet and grooming (including baths, showers, getting dressed, getting ready to go out, etc)		
Going out (movies, clubbing, etc)		
Spending 'quality' time with your friends (i.e. time spent in talking, helping or other bonding activity)		
Spending 'quality' time with your children (i.e. time spent in talking, helping with homework or problems, looking after or other bonding activity) if applicable		
Exercising (including, yoga, aerobics, martial arts etc)		
Other:		
TOTAL (24 hours)		0.0

Thinking about the last year, please give (as quickly as you can), your best guess/estimate of the percentage of your own *personal* (excluding your partner's or any others') total overall income that you might spend in a typical **MONTH** in any of the following areas (**NOTE: please try and ensure that the total does not exceed or fall below 100%!**):

	Percentage of income spent in a month (only if at	**Percentage**
Food and grocery shopping		
Household bills (electricity, gas, water, council tax/rate, TV licence, telephone, internet etc)		
On a partner (clothes, jewellery, flowers, dinner, presents, nights out etc) if applicable		
Mortgage/ rent		
On your children (clothes, toys, presents, days out, books, school material, etc) if applicable		
Car (payments, petrol, tax, repairs, service, insurance)		
Clothes shopping		
Travel expenses		
Pets		
Holiday expenses		
Furniture and Appliances		
Entertainment (movies, theatre, comedy clubs, dance clubs, bowling, sporting events etc)		
Eating and Drinking out (at work, going to restaurants, fast food)		
Other:		
TOTAL (100%)		0%

Section Three: Paternal Investment (MALES ONLY)

Please circle the number that best corresponds with your level of agreement with items below (what is important is your opinion on these attitudes, so please respond even if you are not in a relationship or do not have any children):

1. **It is important for a man to care about children.**

1	2	3	4	5
I strongly disagree				I strongly agree

2. **A man, who is seeking a sexual partner, should be looking for someone with whom he can settle down.**

1	2	3	4	5
I strongly disagree				I strongly agree

3. **Looking after children is women's work.**

1	2	3	4	5
I strongly disagree				I strongly agree

4. **Most men wouldn't have much in common with a woman who didn't want children.**

1	2	3	4	5

I strongly disagree — I strongly agree

5. **A man should always put his family before his job or social life.**

1 2 3 4 5

I strongly disagree — I strongly agree

6. **A man should be prepared to make financial sacrifices for the sake of his children.**

1 2 3 4 5

I strongly disagree — I strongly agree

7. **Children need their father present when they are growing up.**

1 2 3 4 5

I strongly disagree — I strongly agree

8. **Men have a natural need for sexual variety.**

1 2 3 4 5

I strongly disagree — I strongly agree

9. **Most unmarried men are as strongly committed to supporting their children as women are.**

1 2 3 4 5

I strongly disagree — I strongly agree

10. **All men hope that their marriage will last but most know that they might get divorced.**

1 2 3 4 5

I strongly disagree — I strongly agree

11. **It is normal for a man to want to be known as a "family man".**

1 2 3 4 5

I strongly disagree — I strongly agree

12. **It would feel uncomfortable to be around a man who was a househusband.**

1 2 3 4 5

I strongly disagree — I strongly agree

13. **A woman can raise children successfully on her own**

1 2 3 4 5

I strongly disagree — I strongly agree

14. A man should not want to have sex with a woman unless he was convinced that she is serious about a long-term commitment.

1 2 3 4 5
I strongly disagree I strongly agree

15. When couples are divorced, both the man and the woman should have equal chance for getting custody of the children.

1 2 3 4 5
I strongly disagree I strongly agree

16. Men who have a healthy attitude about sex don't always feel the need for a long-term commitment in order to have sex with a woman.

1 2 3 4 5
I strongly disagree I strongly agree

17. A man should be entitled to some leisure time even if it means not being home for his children.

1 2 3 4 5
I strongly disagree I strongly agree

18. It is more important for a man to mix with other men than to spend time with his children.

1 2 3 4 5
I strongly disagree I strongly agree

20. Men should not leave their childcare arrangements to their partners.

1 2 3 4 5
I strongly disagree I strongly agree

21. A man should be willing to agree to stay at home to look after the children while his partner goes out to work.

1 2 3 4 5
I strongly disagree I strongly agree

22. If the worst happened a man should be ready to raise his children on his own as a single father.

1 2 3 4 5
I strongly disagree I strongly agree

23. A man should periodically surprise his partner with expensive gifts and extravagant romantic gestures.

1 2 3 4 5
I strongly I strongly agree

disagree

24. It is natural for a father to want to spoil his children.

1 2 3 4 5

I strongly disagree ... I strongly agree

25. When a man becomes a father he should be ready to give up his freedom and take up new responsibilities.

1 2 3 4 5

I strongly disagree ... I strongly agree

26. It is never too soon for a new father to start planning for his child's future.

1 2 3 4 5

I strongly disagree ... I strongly agree

27. A man should be ready to respond with physical force to insults or threats against his partner, by another man.

1 2 3 4 5

I strongly disagree ... I strongly agree

28. Women are better fitted biologically for looking after children.

1 2 3 4 5

I strongly disagree ... I strongly agree

29. Most men would be comfortable marrying their fiancé if she were pregnant with a child that might belong to another man.

1 2 3 4 5

I strongly disagree ... I strongly agree

30. Most men would be happy to adopt a child if they or their partner could not have children.

1 2 3 4 5

I strongly disagree ... I strongly agree

Section Four: Sexual Behaviour and Attitudes

1. **With how many different partners have you have had sex (sexual intercourse) within the past year?** ☐
2. **How many different partners do you foresee yourself having sex with during the next five years? (Please give a specific, realistic estima** ☐
3. **With how many different partners have you ever had sex on one and only one occasion?** ☐

4. When you have a regular dating partner how often do you fantasise about having sex with someone else? (Tick one box only).

- Never ☐
- Once every 2 or 3 months ☐
- Once a month ☐
- Once a week ☐
- Once every 2 weeks ☐
- A few times each week ☐
- Nearly every day ☐
- At least once a day ☐

Please circle the number that best corresponds with your level of agreement with items below:

5. Sex without love is OK.

1	2	3	4	5	6	7	8	9
I strongly disagree								I strongly agree

6. I can imagine myself being comfortable and enjoying 'casual' sex with different partners?

1	2	3	4	5	6	7	8	9
I strongly disagree								I strongly agree

7. I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her.

1	2	3	4	5	6	7	8	9
I strongly disagree								I strongly agree

Please circle the number that best corresponds with your level of agreement with the items below:

8. How would you feel if your partner were to engage in the following behaviour with another man (if you are currently without a partner, say how you would react if you were with a partner)?

a) Flirting

1	2	3	4	5	6	7	8	9
Extremely pleased	Very pleased	Fairly pleased	Somewhat pleased	Neutral	Somewhat bothered	Fairly bothered	Very bothered	Extremely bothered

b) Sexual intercourse

1	2	3	4	5	6	7	8	9
Extremely pleased	Very pleased	Fairly pleased	Somewhat pleased	Neutral	Somewhat bothered	Fairly bothered	Very bothered	Extremely bothered

c) Light petting

1	2	3	4	5	6	7	8	9
Extremely pleased	Very pleased	Fairly pleased	Somewhat pleased	Neutral	Somewhat bothered	Fairly bothered	Very bothered	Extremely bothered

d) A long term sexual relationship

1	2	3	4	5	6	7	8	9
Extremely pleased	Very pleased	Fairly pleased	Somewhat pleased	Neutral	Somewhat bothered	Fairly bothered	Very bothered	Extremely bothered

e) Falling in love

1	2	3	4	5	6	7	8	9
Extremely pleased	Very pleased	Fairly pleased	Somewhat pleased	Neutral	Somewhat bothered	Fairly bothered	Very bothered	Extremely bothered

9. Would you engage in the following behaviour with another woman/man (delete as appropriate to your own sexual orientation) if the opportunity were to present itself?

f) Flirting

1	2	3	4	5	6	7
Certainly not	Probably not	Maybe not	Uncertain	Maybe yes	Probably yes	Certainly yes

g) Sexual intercourse

1	2	3	4	5	6	7
Certainly not	Probably not	Maybe not	Uncertain	Maybe yes	Probably yes	Certainly yes

h) Light petting

1	2	3	4	5	6	7
Certainly not	Probably not	Maybe not	Uncertain	Maybe yes	Probably yes	Certainly yes

i) A long term sexual relationship

1	2	3	4	5	6	7
Certainly not	Probably not	Maybe not	Uncertain	Maybe yes	Probably yes	Certainly yes

j) Falling in love

1	2	3	4	5	6	7
Certainly not	Probably not	Maybe not	Uncertain	Maybe yes	Probably yes	Certainly yes

Thank You for Your Participation

APPENDIIX 4

```
            List of variables on the working file

Name
Position

PARTICIP  participant number
1
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

HEIGHT    height in inches
2
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

WEIGHT    weight in pounds
3
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

CHEST
4
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

WAIST
5
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

HIP
6
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

AGE
7
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

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```

SEX
8

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

ORIENTAT sexual oreintation
9

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	heterosexual
2.00	homosexual
3.00	bisexual

ETHNICIT ethnicity
10

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	white
2.00	Black-Caribbean
3.00	Black-other
4.00	Chinese
5.00	Bangaldeshi
6.00	Indian
7.00	Pakistani

_

RELIGION
11

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	christian-catholic
2.00	christian-protestant
3.00	christian-other
4.00	moslem-sunni

5.00	moslem-shia
6.00	moslem-other
7.00	jewish
8.00	hindu
9.00	sikh
10.00	buddhist
11.00	none -atheitst, non-practicing
12.00	other

EMPLOY employment status
12

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	employed
2.00	unemployed
3.00	student

STUDENT
13

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
.00	non-student
1.00	student

_

INCOME
14

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	0-5000
2.00	5001-10000
3.00	10001-20000
4.00	20001-30000
5.00	30001+

HOUSING
15

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2

Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	owner
2.00	rent
3.00	living with parents/relatives

EDUCTION edcuation status
16

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	secondarys school
2.00	FE
3.00	HE (eg degree)
4.00	postgrad

MARITAL marital status section a
17

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	single
2.00	divorced
3.00	separated
4.00	married
5.00	cohabiting
6.00	widowed

RELATION relationship status section b
18

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	live with other-sex partner
2.00	live with same-sex partner
3.00	live apart form other-sex partner
4.00	live apart from same sex partner
5.00	casual relationship with other-sex partner
6.00	casual relationship with same-sex partner

7.00 no partner

SINGLE single or in relationship
19
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
.00	single
1.00	relationship

CHILDREN has childern?
20
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
.00	no childern
1.00	childern
2.00	step-childern
3.00	adopted childern

CHILD2 child support
21
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	child live w/me + partner
2.00	child lives w/me w no support form partner
3.00	child live w me with support from ex-partner
4.00	child live ex partner w no support from me
5.00	child live w ex partner with support from me
6.00	child lives elsewhere with no support from me
7.00	child live elsewhere with support from me
8.00	child grown live alone

AFFAIR affair?
22
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

Value	Label
1.00	serious relaship outside regualr partnership
2.00	casual relationship outside regular partnership
3.00	no other relationships

\-

DURATION 23 duration of current relationship

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PREVIOUS 24 no. of previous long term relationships

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

DURRECEN 25 duration of the most recent pervious relationship

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

DUR2MSTR 26 duration of the 2nd most recent

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

DUR3MSTR 27 duration of the 3rd most recent

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

NOCHILD 28 number of childern

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

STEPCHIL 29 number of step-children

Measurement Level: Scale

```
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

_

ADOPTED   number of adopted childern
30
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

NODEPCHI  number of dependent child
31
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

NOSIBLIN  number of siblings
32
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

SIB1      ages of siblings
33
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

SIB2      ages of siblings
34
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

SIB3      ages of siblings
35
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

SIB4      ages of siblings
36
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
```

SIB5 ages of siblings
37

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

_

SIB6 ages of siblings
38

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

SIB7 ages of siblings
39

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

SIB8 ages of siblings
40

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

PETS own pets
41

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PETYPE type of pet
42

Measurement Level: Nominal
Column Width: 8 Alignment: Left
Print Format: A8
Write Format: A8
Missing Values: '999'

PI1 1. 5=5
43

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI2 2. 5=5
44

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2

Write Format: F8.2
Missing Values: 999.00

PI3 3. 5=1
45

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI4 4. 5=5
46

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI5 5. 5=5
47

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI6 6. 5=5
48

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI7 7. 5=5
49

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI8 8. 5=1
50

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI9 9. 5=5
51

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI10 10. 5=1
52
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI11 11. 5=5
53
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI12 12. 5=1
54
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI13 13. 5=1
55
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI14 14. 5=5
56
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI15 15. 5=5
57
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI16 16. 5=1
58
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI17 17. 5=1
59

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

_

PI18 18. 5=1
60

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI20 20. 5=5
61

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI21 21. 5=5
62

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI22 22. 5=5
63

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PI23 23. 5=5
64

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

P24 24. 5=5
65

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

```
PI25      25. 5=5
66
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

_

PI26      26. 5=5
67
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

PI27      27. 5=5
68
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

PI28      28. 5=1
69
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

PI29      29. 5=1
70
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

PI30      30. 5=5
71
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

SS01      with how many different partner have you had sex in past
yea       72
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00
```

SSO2 how many partner do you forsee having sex with in next 5
yea 73
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SSO3 how many partners have you had one night stand with
74
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SSO4 how often do you fantasise about sex
75
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SSO5 sex without love is ok
76
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SSO6 I can enjoy casual sex
77
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SSO7 have to be closely attached before enjoy sex
78
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SSO7R
79
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

JEALOUS1 j-flirting
80
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

–

JEALOUS2 j-sexual intercourse
81
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

JEALOUS3 j-light petting
82
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

JEALOUS4 j-long term relationship
83
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

JEALOUS5 j-falling in love
84
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

STM1 stm-flirting
85
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

STM2 stm-sexual intercourse
86
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

STM3 stm-light petting
87
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

_

STM4 stm-long term relationship
88
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

STM5 stm-falling in love
89
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SLEEPING
90
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

WORKING
91
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

SHOP
92
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

EATING
93
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

```
TRAVEL
94
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

_

PARTQUAL  quality time with partner
95
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

GROOM
96
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

GOINGOUT
97
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

QUALFREI  quality time with friends
98
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

QUALCHIL  quality time with children
99
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

EXERCISE
100
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00
```

```
OTHERTIM
101
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

_

FOOD
102
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

BILLS
103
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

PARTNER   present
104
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

MORTGAGE
105
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

CHILD     spend on children
106
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

CAR
107
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00
```

```
CLOTHS
108
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

_

TRAVELEX  travel expenses
109
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

PET       pet expenses
110
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

HOLIDAY
111
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

FURNITUR
112
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

ENTERTAI
113
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

EATINGOU  eating expenses
114
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00
```

```
OTHEREX
115
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

_

CHESTWIA  chest to wiast ratio
116
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

WAISTHIP  waist to hip ratio
117
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

JEALOUSY  jealousy total
118
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

STM       short term mating
119
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

WEIGHTKI  weight in kilos
120
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
          Missing Values: 999.00

HEIGHTME  height in meters
121
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

BMI       body mass index
122
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
```

```
IDBMI     absolute difference of own BMI from ideal 22
123
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

_

ZSSO1     with how many different partner have you had sex in past
yea      124
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

ZSSO2     how many partner do you forsee having sex with in next 5
yea      125
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

ZSSO3     how many partners have you had one night stand with
126
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

ZSSO4     how often do you fantasise about sex
127
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

ZSSO5     sex without love is ok
128
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

ZSSO6     I can enjoy casual sex
129
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2

ZSSO7
130
          Measurement Level: Scale
          Column Width: 8  Alignment: Right
          Print Format: F8.2
          Write Format: F8.2
```

SSOTOTAL total sociosexuality zscores
131
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

WHRMALE absolute differenece own whr from male ideal
132
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

WHRFMALE absolute differnece from own whr and ideal female
133
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

BIRTHORD birth order 1st born vs late borns
134
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

BIRTH birth order
135
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

PITOTAL PI total 1,5,6,7,11,12,21,22,25,26
136
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

TOTALTIM total time in a day
137
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

PIBEHA PI time spent
138
Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

PI 139 PI time as porportion of total time

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2

PARTTIME 140 quality time with partner

Measurement Level: Scale
Column Width: 8 Alignment: Right
Print Format: F8.2
Write Format: F8.2
Missing Values: 999.00

1.00	73.20		174.00		999.00		999.00		999.00	
36.00	1.00	1.00	1.00	1.00	1.00	.00	4.00	2.00	4.00	5.00
1.00	1.00	1.00	1.00	3.00	7.00	1.00	2.50	.00	.00	1.00
.00	.00	1.00	.00 .	.	.	.	.	.	.	.
	.00 0		5.00	2.00	4.00	3.00	5.00	2.00	5.00	1.00
1.00	2.00	2.00	1.00	1.00	5.00	5.00	1.00	1.00	1.00	3.00
2.00	5.00	4.00	4.00	1.00	4.00	4.00	1.00	5.00	4.00	1.00
1.00	2.00	7.00	9.00	5.00	1.00	9.00	9.00	9.00	9.00	9.00
9.00	7.00	4.00	4.00	4.00	4.00	7.00	9.00	.50	1.00	.50
5.50	.50	.00	.00	.00	.00	30.00		10.00		.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00 .	.		45.00		23.00		79.09		1.86	22.88
	.88	-.42	-.43	-.30	1.58	1.18	-.08	1.35	2.88 .	.
	1.00	1.00	32.00	.	.	.	.			
2.00	72.00		200.00		44.00		36.00		999.00	
45.00	1.00	1.00	1.00	2.00	1.00	.00	5.00	1.00	2.00	4.00
1.00	1.00	1.00	1.00	3.00	10.00		.00	.00	.00	.00
5.00	.00	.00	2.00	3.00 .	.	.	.	.	.	.
.		.00 0		5.00	3.00	4.00	1.00	3.00	4.00	5.00
1.00	2.00	5.00	4.00	5.00	3.00	2.00	3.00	1.00	2.00	3.00
4.00	4.00	2.00	4.00	3.00	2.00	3.00	2.00	3.00	2.00	4.00
1.00	1.00	.00	.00	8.00	2.00	2.00	8.00	8.00	9.00	9.00
9.00	9.00	4.00	2.00	2.00	1.00	1.00	7.00	8.00	.50	1.00
1.00	3.50	.50	.00	.50	2.00	.50	.00	8.00	15.00	
10.00	25.00		1.00	15.00		10.00		5.00	.00	4.00
1.00	1.00	1.00	.00	1.22 .		44.00		10.00		90.91
	1.83	27.18		5.18	-.42	-.43	-.59	-1.14	.74	-1.18
.96	-2.05 .	.		999.00		999.00		37.00	.	.
.	.									
3.00	71.00		175.00		40.00		36.00		999.00	
35.00	1.00	1.00	7.00	999.00		1.00	.00	2.00	1.00	3.00
3.00	3.00	1.00	1.00	4.00	3.00	.00	1.00	12.00		.00
.00	3.00	.00	.00	.00	7.00 .	.	.	.	.	.
.	.		1.00 cat		5.00	5.00	4.00	4.00	4.00	5.00
4.00	3.00	4.00	1.00	3.00	4.00	2.00	5.00	5.00	4.00	2.00
5.00	4.00	4.00	3.00	3.00	2.00	2.00	5.00	4.00	2.00	5.00
5.00	1.00	1.00	7.00	.00	6.00	2.00	9.00	1.00	9.00	9.00
6.00	9.00	9.00	1.00	1.00	6.00	1.00	5.00	6.50	5.00	.50
2.00	2.00	.00	2.00	1.00	2.00	2.00	1.00	.00	20.00	
15.00	10.00		20.00		15.00		5.00	5.00	.00	1.00
2.00	.00	2.00	5.00	.00	1.11 .		42.00		14.00	
79.55	1.80	24.46		2.46	-.42	-.43	.42	-1.14	-.13	-1.18 -
1.72	-4.59 .	.		999.00		999.00		39.00		24.00
	2.00	.08	.00							
4.00	70.00		168.00		42.00		32.00		33.00	
33.00	1.00	1.00	1.00	11.00		1.00	.00	3.00	1.00	3.00
4.00	1.00	1.00	1.00	1.00	3.00	10.00		1.00	6.00	.00
.00	2.00	1.00	.00	3.00	2.00	35.00		31.00	.	.
.	.	.	.		1.00 dog		5.00	2.00	5.00	2.00
5.00	5.00	5.00	3.00	4.00	4.00	2.00	5.00	1.00	1.00	4.00

5.00	1.00	5.00	5.00	5.00	5.00	1.00	5.00	4.00	4.00	4.00	
2.00	5.00	4.00	1.00	1.00	15.00		3.00	9.00	6.00	6.00	
4.00	1.00	9.00	9.00	9.00	9.00	1.00	1.00	1.00	1.00	1.00	
7.00	5.00	.00	1.50	1.00	2.00	1.00	1.50	1.00	3.00	1.00	
.00	10.00		20.00		5.00	20.00		15.00		5.00	
5.00	.00	1.00	.00	.00	9.00	10.00		.00	1.31	.97	
37.00	5.00	76.36		1.78	24.16		2.16	-.42	-.43	1.57	
.03	1.18	.28	-.57	1.64	.08	.25	2.00	2.00	45.00		
24.00	5.00	.21	2.00								
5.00	74.00		224.00		999.00		37.00		999.00		
22.00	1.00	1.00	1.00	11.00		1.00	.00	3.00	2.00	.00	
1.00	5.00	1.00	.00	.00	3.00	.00	3.00	.83	1.17	.33	
.00	.00	.00	.00	2.00	32.00		20.00	.	.	.	
.	.	.		1.00 cat		5.00	3.00	4.00	1.00	4.00	
5.00	5.00	3.00	2.00	2.00	3.00	5.00	3.00	1.00	5.00	2.00	
2.00	4.00	4.00	3.00	5.00	4.00	5.00	3.00	5.00	5.00	2.00	
5.00	3.00	5.00	25.00		20.00		3.00	9.00	9.00	1.00	
9.00	5.00	9.00	8.00	9.00	9.00	7.00	4.00	6.00	1.00	1.00	
7.00	8.00	.00	.50	.50	.00	1.00	3.00	3.00	.00	1.00	
.00	4.00	18.00		.00	10.00		.00	.00	12.00		
.00	1.00	12.00		.00	25.00		10.00		.00 .	.	
	40.00		19.00		101.82		1.88	28.82		6.82	
1.15	3.56	2.29	.03	1.18	1.38	1.35	10.93	.	.		
2.00	2.00	43.00		24.00		.00	.00	.00			
6.00	66.00		161.00		999.00		999.00		999.00		
34.00	1.00	1.00	1.00	11.00		1.00	.00	3.00	1.00	3.00	
5.00	1.00	1.00	.00	.00	3.00	9.00	1.00	3.00	.00	.00	
.00	.00	.00	.00	1.00	32.00	.	.	.	.	.	
.	.		1.00 cat		5.00	3.00	4.00	2.00	4.00	4.00	
5.00	4.00	4.00	4.00	2.00	5.00	2.00	1.00	4.00	4.00	3.00	
4.00	5.00	5.00	5.00	3.00	3.00	5.00	4.00	3.00	3.00	5.00	
3.00	1.00	.00	1.00	.00	5.00	1.00	7.00	3.00	8.00	9.00	
9.00	9.00	8.00	3.00	2.00	2.00	2.00	2.00	7.00	9.00	.00	
1.00	1.00	5.50	.50	.00	.00	.00	.00	.00	5.00	20.00	
	5.00	40.00		.00	10.00		.00	5.00	5.00	.00	
.00	.00	10.00		.00 .	.		43.00		11.00		
73.18	1.68	26.04		4.04	-.42	-.59	-.44	-1.14	-.56	-1.54	-
.95	-5.66 .	.		1.00	1.00	44.00		24.00		5.50	
.23	5.50										
7.00	71.00		150.00		999.00		999.00		999.00		
24.00	1.00	1.00	8.00	7.00	1.00	.00	3.00	2.00	2.00	4.00	
1.00	1.00	.00	.00	3.00	1.17	1.00	.08	3.00	1.17	.00	
.00	.00	.00	2.00	28.00		18.00	.	.	.	.	
.	.		1.00 dog		5.00	1.00	5.00	1.00	4.00	4.00	
5.00	5.00	4.00	5.00	4.00	5.00	3.00	1.00	5.00	4.00	2.00	
5.00	4.00	3.00	5.00	4.00	5.00	5.00	5.00	5.00	5.00	5.00	
5.00	1.00	1.00	40.00		.00	8.00	1.00	2.00	8.00	8.00	
9.00	9.00	9.00	9.00	2.00	1.00	1.00	1.00	1.00	8.00	8.00	
.00	1.00	1.00	2.00	.50	1.00	.00	.00	.50	2.00	8.00	
3.00	10.00		25.00		.00	15.00		.00	.00	1.00	

.00	.00	25.00		5.00	8.00	.	.	44.00		6.00	
68.18	1.80	20.96		1.04	-.42	-.43	5.17	-1.14	.74	-1.54	
.96	3.35	.	.	2.00	2.00	45.00		24.00		2.00	
.08	2.00										
8.00	68.00		168.00		36.00		32.00		36.00		
30.00	1.00	1.00	1.00	11.00		1.00	.00	4.00	1.00	4.00	
4.00	1.00	1.00	.00	.00	3.00	7.00	.00	.00	.00	.00	
.00	.00	.00	.00	2.00	32.00		22.00		.	.	.
	.	.	.	.00 0		5.00	1.00	5.00	3.00	4.00	
5.00	5.00	2.00	3.00	5.00	5.00	5.00	1.00	1.00	5.00	2.00	
3.00	5.00	5.00	5.00	5.00	4.00	2.00	4.00	4.00	2.00	3.00	
4.00	3.00	1.00	1.00	.00	1.00	8.00	7.00	2.00	8.00	6.00	
9.00	9.00	9.00	9.00	5.00	1.00	1.00	1.00	1.00	8.00	7.50	
.50	1.00	1.00	1.50	.50	1.50	1.00	.00	1.50	.00	10.00	
	15.00		5.00	20.00		.00	10.00		2.00	.00	
.00	10.00		5.00	2.00	5.00	16.00		1.13	.89	42.00	
	9.00	76.36		1.73	25.60		3.60	-.42	-.43	-.59	-
.75	.74	.65	.96	.17	.00	.17	2.00	2.00	47.00		
24.00	1.50	.06	1.50								
9.00	71.00		175.00		40.00		34.00		36.00		
52.00	1.00	1.00	1.00	2.00	1.00	.00	3.00	1.00	1.00	4.00	
1.00	1.00	1.00	8.00	3.00	22.00		3.00	999.00		999.00	
	999.00		2.00	2.00	.00	.00	3.00	60.00		56.00	
	49.00		.	.	.	.	.	1.00	cat/dog		
5.00	3.00	5.00	5.00	3.00	3.00	5.00	3.00	2.00	2.00	4.00	
5.00	1.00	2.00	3.00	3.00	3.00	5.00	5.00	5.00	5.00	3.00	
4.00	5.00	5.00	3.00	1.00	3.00	5.00	1.00	.00	1.00	4.00	
6.00	1.00	3.00	7.00	6.00	9.00	9.00	9.00	9.00	6.00	1.00	
3.00	1.00	1.00	8.00	.00	.00	.00	9.50	.00	.50	.00	
6.00	.00	.00	.00	999.00		999.00		999.00		999.00	
	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		1.18	.94	
42.00	12.00		79.55		1.80	24.46		2.46	-.42	-.59	-
.44	.42	-.13	-1.54	.58	-2.13	.05	.22	2.00	3.00	45.00	
	24.00		.00	.00	.00						
10.00		68.00		168.00		999.00		32.00		34.00	
	28.00		1.00	1.00	1.00	11.00		1.00	.00	4.00	
2.00	3.00	5.00	1.00	1.00	.00	.00	3.00	1.50	3.00	1.50	
2.00	.50	.00	.00	.00	.00	999.00		.	.	.	.
	.	.	.	.	.00 0		5.00	4.00	5.00	2.00	
5.00	5.00	4.00	3.00	2.00	4.00	5.00	5.00	3.00	2.00	3.00	
5.00	5.00	4.00	5.00	5.00	5.00	1.00	5.00	5.00	5.00	1.00	
1.00	5.00	5.00	1.00	1.00	1.00	1.00	9.00	9.00	1.00	9.00	
7.00	9.00	8.00	9.00	9.00	5.00	2.00	2.00	1.00	2.00	8.00	
7.50	.50	.50	2.00	3.00	1.00	1.50	.00	.00	.00	.00	
.00	10.00		.00	30.00		.00	.00	20.00		10.00	
	.00	.00	.00	.00	15.00		15.00		.	.94	
42.00	12.00		76.36		1.73	25.60		3.60	-.42	-.43	-
.44	-.75	1.18	1.38	1.35	1.86	.05	.22	999.00		999.00	
	49.00		24.00		3.00	.13	3.00				

11.00		74.00		170.00		40.00		34.00		999.00
	33.00		1.00	1.00	1.00	11.00		1.00	.00	4.00
1.00	3.00	2.00	7.00	.00	.00	.00	999.00		.00	3.00
5.00	2.00	2.00	.00	.00	.00	.00	3.00	41.00		39.00
	38.00	.	.	.	.	.		.00 0		4.00
2.00	4.00	2.00	4.00	4.00	4.00	3.00	3.00	4.00	2.00	4.00
2.00	2.00	5.00	2.00	3.00	5.00	2.00	4.00	4.00	3.00	5.00
4.00	4.00	3.00	3.00	4.00	4.00	6.00	3.00	.00	.00	6.00
6.00	5.00	5.00	6.00	9.00	8.00	9.00	9.00	5.00	3.00	3.00
3.00	3.00	8.00	8.00	.00	2.00	3.00	.00	1.00	.00	2.00
.00	.00	.00	10.00		30.00		.00	40.00		.00
.00	.00	5.00	.00	.00	.00	5.00	10.00		.00	1.18 .
	41.00		17.00		77.27		1.88	21.87		.13
1.54	-.09	-.59	-1.14	-.13	.28	-.19	-.32 .	.		2.00
4.00	38.00		24.00		.00	.00	.00			
12.00		73.50		238.00		48.00		40.00		999.00
	43.00		1.00	1.00	1.00	2.00	1.00	.00	4.00	1.00
3.00	4.00	1.00	1.00	1.00	1.00	3.00	27.00		.00	.00
.00	.00	3.00	.00	.00	3.00	2.00	41.00		38.00	.
	.	.	.	.	.	1.00 dog		3.00	1.00	3.00
1.00	4.00	5.00	5.00	3.00	2.00	4.00	2.00	5.00	2.00	1.00
5.00	1.00	4.00	5.00	2.00	2.00	5.00	4.00	1.00	4.00	5.00
2.00	2.00	4.00	2.00	1.00	1.00	.00	5.00	8.00	5.00	2.00
8.00	6.00	9.00	8.00	9.00	9.00	5.00	1.00	5.00	1.00	1.00
6.50	8.00	.00	1.00	1.00	2.00	.50	1.50	1.00	2.00	.50
.00	10.00		10.00		5.00	.00	15.00		10.00	
5.00	10.00		2.00	10.00		5.00	3.00	15.00		.00
1.20	.	41.00		13.00		108.18		1.87	31.04	
9.04	-.42	-.43	-.59	.80	.74	-.08	.96	.99 .	.	
1.00	1.00	40.00		24.00		4.00	.17	2.00		
13.00		75.00		210.00		999.00		39.00		999.00
	999.00		1.00	1.00	999.00		1.00	1.00	.00	4.00
1.00	3.00	4.00	1.00	1.00	1.00	1.00	3.00	18.00		2.00
3.00	1.00	.00	.00	.00	2.00	2.00	5.00	50.00		48.00
	47.00		44.00		38.00		.	.	.	.00 0
	4.00	3.00	5.00	2.00	3.00	3.00	4.00	4.00	3.00	4.00
3.00	4.00	2.00	2.00	3.00	3.00	2.00	3.00	4.00	4.00	5.00
3.00	3.00	4.00	4.00	2.00	4.00	4.00	5.00	1.00	1.00	.00
.00	5.00	3.00	5.00	5.00	6.00	9.00	8.00	9.00	9.00	2.00
1.00	2.00	2.00	2.00	7.00	8.00	.25	.75	.50	4.00	.25
.50	.50	3.50	.50	.00	11.00		15.00		10.00	
22.00	.00	6.00	10.00		.00	.00	10.00		10.00	
3.00	3.00	.00 .		.	41.00		9.00	95.45		1.91
26.30	4.30	-.42	-.43	-.59	-1.14	-.56	-.81	-.19	-4.14 .	.
	999.00		999.00		38.00		.	.	.	.
14.00		74.00		240.00		38.00		40.00		999.00
	39.00		1.00	1.00	1.00	2.00	1.00	.00	4.00	1.00
3.00	5.00	1.00	1.00	.00	.00	3.00	12.00		.00	.00
.00	.00	.00	.00	.00	.00	2.00	48.00		45.00	.
	.	.	.	.	.	.00 0		3.00	3.00	3.00

1.00	5.00	5.00	5.00	3.00	3.00	2.00	3.00	4.00	1.00	3.00	
3.00	3.00	5.00	5.00	5.00	5.00	5.00	4.00	3.00	5.00	5.00	
5.00	3.00	5.00	1.00	1.00	1.00	4.00	1.00	3.00	2.00	7.00	
3.00	6.00	9.00	8.00	9.00	9.00	4.00	2.00	3.00	1.00	1.00	
6.00	8.00	1.00	1.00	1.00	3.00	1.00	.00	1.00	.00	2.00	
.00	.00	20.00		5.00	40.00		.00	20.00		5.00	
5.00	.00	.00	.00	5.00	.00	.00	.95 .		41.00		
11.00	109.09		1.88	30.88		8.88	-.42	-.43	-.01	-.75	-
1.43	-1.18	-.95	-5.18 .	.		2.00	3.00	45.00		24.00	
	3.00	.13	3.00								
15.00		68.00		170.00		40.00		34.00		999.00	
	40.00		1.00	1.00	1.00	2.00	1.00	.00	4.00	1.00	
2.00	4.00	1.00	1.00	1.00	1.00	3.00	18.00		.00	.00	
.00	.00	2.00	.00	.00	2.00	1.00 .	.	.	.	.	
.	.	.		1.00 dog		4.00	5.00	4.00	4.00	5.00	
5.00	5.00	4.00	4.00	3.00	4.00	4.00	1.00	3.00	5.00	3.00	
3.00	4.00	4.00	3.00	5.00	4.00	3.00	3.00	5.00	3.00	4.00	
4.00	5.00	1.00	.00	3.00	.00	4.00	5.00	5.00	5.00	6.00	
9.00	9.00	9.00	9.00	4.00	1.00	1.00	1.00	1.00	7.50	8.50	
.50	1.00	1.00	2.00	.50	.00	.00	1.00	2.00	.00	20.00	
	40.00		7.00	10.00		6.00	10.00		5.00	.00	
2.00	.00	.00	.00	.00	.00	1.18 .		42.00		8.00	
77.27	1.73	25.90		3.90	-.42	-.59	-.16	-1.14	-1.00	-.08	-
.19	-3.58 .	.		999.00		999.00		43.00		24.00	
	3.00	.13	2.00								
16.00		71.00		168.00		42.00		999.00		32.00	
	22.00		1.00	1.00	1.00	3.00	1.00	.00	2.00	2.00	
4.00	4.00	1.00	1.00	.00	.00	3.00	4.00	1.00	1.00	.00	
.00	.00	.00	.00	.00	3.00	27.00		24.00		18.00	
.	.	.	.	.		.00 0		5.00	4.00	5.00	
2.00	4.00	5.00	4.00	5.00	3.00	5.00	3.00	4.00	2.00	4.00	
5.00	2.00	3.00	1.00	4.00	4.00	5.00	3.00	3.00	2.00	5.00	
2.00	5.00	3.00	4.00	1.00	1.00	2.00	2.00	2.00	1.00	9.00	
1.00	9.00	9.00	9.00	9.00	9.00	5.00	1.00	1.00	1.00	1.00	
8.00	9.00	.00	.50	.50	2.50	1.00	.00	.50	.00	2.00	
.00	20.00		25.00		9.00	25.00		.00	5.00	.00	
1.00	.00	.00	.00	10.00		5.00	.00 .	.		45.00	
	9.00	76.36		1.80	23.48		1.48	-.42	-.43	-.30	-
.36	-1.87	-1.54	-1.72	-6.64 .	.		2.00	3.00	41.00		
24.00	2.50	.10	2.50								
17.00		71.00		150.50		38.00		32.00		999.00	
	25.00		1.00	1.00	6.00	4.00	1.00	.00	3.00	3.00	
4.00	1.00	7.00	.00	.00	.00	999.00		.00	.00	.00	
.00	.00	.00	.00	.00	.00	3.00	31.00		28.00		
22.00 .	.	.	.	.		.00 0		5.00	3.00	4.00	
1.00	5.00	5.00	5.00	2.00	4.00	2.00	4.00	5.00	4.00	1.00	
5.00	2.00	1.00	5.00	5.00	2.00	5.00	4.00	5.00	4.00	5.00	
2.00	1.00	5.00	5.00	1.00	1.00	.00	.00	6.00	5.00	3.00	
7.00	8.00	9.00	7.00	9.00	9.00	7.00	6.00	6.00	5.00	5.00	
8.00	10.00		.00	.50	1.00	.00	.50	1.00	2.00	.00	

.00	.00	20.00		20.00		.00	.00	.00	.00	10.00	
	10.00		.00	.00	.00	20.00		20.00		.00	
1.19	.	42.00		29.00		68.41		1.80	21.03		
.97	-.42	-.43	-.59	-1.14	-.13	-.08	.58	-2.21	.	.	
2.00	3.00	45.00		.	.	.	.				
18.00		68.00		140.00		38.00		32.00		34.00	
	18.00		1.00	1.00	1.00	2.00	1.00	.00	2.00	3.00	
1.00	1.00	5.00	1.00	.00	.00	3.00	1.00	.00	.00	.00	
.00	.00	.00	.00	.00	2.00	20.00		6.00	.	.	.
	.	.	.	.00	0	5.00	4.00	4.00	2.00	4.00	
4.00	4.00	3.00	4.00	3.00	3.00	4.00	2.00	2.00	4.00	3.00	
2.00	3.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	2.00	3.00	
3.00	3.00	3.00	1.00	2.00	5.00	7.00	4.00	3.00	7.00	6.00	
9.00	7.00	9.00	9.00	3.00	1.00	2.00	1.00	1.00	8.00	9.00	
.00	.50	.50	3.00	.50	.00	3.00	.00	.00	.00	.00	
.00	10.00		10.00		.00	15.00		10.00		10.00	
	.00	.00	.00	15.00		30.00		.00	1.19	.94	
40.00	8.00	63.64		1.73	21.33		.67	.36	-.43	-.30	
.80	.31	-.45	.58	.88	.05	.22	2.00	2.00	40.00		
24.50	3.00	.12	3.00								
19.00		66.00		126.00		38.00		30.00		32.00	
	25.00		1.00	1.00	6.00	4.00	1.00	.00	3.00	3.00	
4.00	1.00	7.00	.00	.00	.00	999.00		.00	.00	.00	
.00	.00	.00	.00	.00	.00	999.00		.	.	.	.
	.	.	.	.	.00	0	4.00	3.00	4.00	2.00	
4.00	4.00	4.00	4.00	4.00	2.00	3.00	4.00	4.00	3.00	4.00	
4.00	3.00	4.00	2.00	2.00	3.00	3.00	3.00	3.00	3.00	3.00	
4.00	4.00	3.00	999.00		999.00		999.00		999.00		
2.00	2.00	7.00	3.00	7.00	9.00	8.00	9.00	9.00	6.00	2.00	
2.00	2.00	2.00	7.00	8.00	.00	2.00	1.50	.00	.50	.00	
2.50	.00	.00	.00	.00	.00	.00	.00	.00	20.00		
10.00	10.00		.00	20.00		.00	20.00		20.00		
.00	1.27	.94	42.00		14.00		57.27		1.68	20.38	
	1.62	.	.	.	.	-1.87	-1.18	-.95	.	.05	
.22	999.00		999.00		34.00		.	.	.	.	
20.00		74.00		170.00		999.00		999.00		999.00	
	25.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	2.00	
3.00	1.00	5.00	1.00	.00	.00	3.00	.04	1.00	1.50	.00	
.00	.00	.00	.00	.00	2.00	28.00		17.00		.	.
	.	.	.	.	.00	0	3.00	2.00	5.00	2.00	
3.00	4.00	1.00	2.00	2.00	3.00	3.00	5.00	1.00	1.00	3.00	
4.00	2.00	3.00	5.00	3.00	3.00	3.00	3.00	4.00	4.00	1.00	
4.00	3.00	3.00	4.00	16.00		1.00	7.00	9.00	9.00	2.00	
8.00	5.00	9.00	9.00	9.00	7.00	6.00	6.00	6.00	5.00	4.00	
10.00	7.00	.50	1.00	.50	1.00	1.00	1.00	1.00	.00	.00	
.00	20.00		40.00		5.00	.00	.00	.00	10.00		
8.00	.00	.00	.00	.00	9.00	.00	.	.	39.00		
27.00	77.27		1.88	21.87		.13	.75	2.06	-.44	1.58	
1.18	1.38	.96	7.48	.	.	2.00	2.00	33.00		.	.
	.	.									

21.00		72.00		196.00		999.00		36.00		999.00
	23.00		1.00	1.00	1.00	1.00	3.00	1.00	1.00	2.00
3.00	1.00	5.00	1.00	.00	.00	3.00	.17	1.00	2.00	.00
.00	.00	.00	.00	.00	2.00	20.00		18.00	.	.
.	.	.	.		1.00	rabbit	4.00	2.00	3.00	2.00
4.00	5.00	5.00	3.00	3.00	2.00	3.00	3.00	2.00	2.00	4.00
3.00	2.00	4.00	3.00	4.00	5.00	4.00	3.00	4.00	4.00	3.00
2.00	5.00	4.00	3.00	2.00	1.00	6.00	7.00	7.00	6.00	4.00
6.00	9.00	8.00	9.00	7.00	5.00	2.00	2.00	2.00	4.00	8.00
6.00	1.00	1.50	.50	3.00	.50	2.00	1.00	.00	.50	.00
10.00	.00	10.00		50.00		.00	.00	10.00		.00
.00	.00	.00	10.00		10.00		.00 .	.		39.00
	15.00		89.09		1.83	26.64		4.64	.36	-.26 -
.44	1.19	.31	.65	-.57	1.24 .	.		1.00	1.00	41.00
	24.00		3.00	.13	3.00					
22.00		70.00		154.00		999.00		34.00		999.00
	38.00		1.00	1.00	1.00	2.00	1.00	.00	5.00	1.00
1.00	5.00	1.00	1.00	1.00	1.00	3.00	9.00	4.00	5.00	1.00
1.50	1.00	2.00	1.00	1.00	3.00	51.00		48.00		45.00
.	.	.	.	.		.00 0		5.00	5.00	5.00
1.00	3.00	3.00	3.00	3.00	5.00	1.00	4.00	5.00	3.00	1.00
5.00	1.00	1.00	5.00	3.00	5.00	5.00	5.00	5.00	5.00	3.00
1.00	3.00	5.00	5.00	1.00	1.00	1.00	5.00	5.00	2.00	9.00
1.00	6.00	9.00	9.00	9.00	9.00	5.00	1.00	1.00	1.00	1.00
6.00	10.00		.00	.75	4.00	1.00	.00	1.00	1.25	.00
.00	7.00	10.00		5.00	15.00		3.00	8.00	2.00	.00
.00	15.00		5.00	3.00	1.00	26.00		.00 .	.	
42.00	9.00	70.00		1.78	22.14		.14	-.42	-.43	-.44
.80	-.56	-1.18	-1.72	-3.95 .	.		2.00	4.00	41.00	.
.	.	.								
23.00		74.00		175.00		999.00		32.00		999.00
	26.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	1.00
3.00	1.00	7.00	.00	.00	.00	3.00	.00	1.00	1.00	.00
.00	.00	.00	.00	.00	1.00	23.00	.	.	.	.
.	.	.		.00 0		4.00	4.00	3.00	3.00	3.00
4.00	5.00	3.00	4.00	2.00	4.00	4.00	2.00	3.00	4.00	3.00
3.00	5.00	4.00	4.00	5.00	3.00	3.00	4.00	4.00	2.00	2.00
5.00	4.00	1.00	5.00	1.00	7.00	5.00	6.00	7.00	3.00	6.00
9.00	8.00	9.00	9.00	6.00	5.00	6.00	2.00	4.00	8.00	6.00
1.00	1.00	1.00	.00	1.00	2.50	3.00	.00	.50	.00	10.00
	30.00		.00	30.00		.00	10.00		5.00	5.00
.00	.00	.00	5.00	5.00	.00 .	.		41.00		23.00
	79.55		1.88	22.52		.52	-.42	.24	-.44	1.58 -
.56	.28	-.95	-.28 .	.		1.00	1.00	41.00		24.00
	.00	.00	.00							
25.00		70.00		154.00		999.00		34.00		999.00
	19.00		1.00	1.00	8.00	3.00	1.00	1.00	1.00	2.00
3.00	1.00	5.00	1.00	.00	.00	3.00	1.50	.00	.00	.00
.00	.00	.00	.00	.00	.00 .	.	.	.	.	.
.	.		.00 0		5.00	4.00	5.00	1.00	4.00	4.00

5.00	2.00	3.00	4.00	4.00	4.00	3.00	2.00	3.00	3.00	2.00	
3.00	2.00	3.00	4.00	3.00	2.00	2.00	3.00	4.00	3.00	3.00	
4.00	1.00	1.00	.00	.00	2.00	2.00	7.00	3.00	5.00	5.00	
5.00	5.00	5.00	5.00	6.00	5.00	4.00	4.00	8.00	6.00	.50	
1.00	1.00	1.00	.50	4.00	1.50	.00	.50	.00	5.00	.00	
10.00	50.00		.00	.00	5.00	2.00	.00	23.00		.00	
2.00	3.00	.00 .	.		25.00		24.00		70.00		
1.78	22.14		.14	-.42	-.43	-.59	-1.14	-1.87	-1.18	-.95	-
6.58 .	.		1.00	1.00	38.00		24.00		1.00	.04	
1.00											
27.00		74.00		154.00		999.00		999.00		999.00	
	21.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00	
2.00	3.00	1.00	7.00	.00	.00	.00	999.00		.00	3.00	
2.00	.50	1.50	.00	.00	.00	.00	1.00	22.00	.	.	
.	.	.	.	.		1.00	cat/dog		4.00	2.00	
5.00	1.00	4.00	3.00	5.00	3.00	3.00	3.00	4.00	5.00	1.00	
2.00	5.00	2.00	3.00	2.00	3.00	4.00	5.00	3.00	4.00	3.00	
3.00	3.00	3.00	5.00	4.00	3.00	10.00		1.00	.00	7.00	
7.00	3.00	7.00	9.00	9.00	9.00	9.00	9.00	2.00	1.00	1.00	
1.00	1.00	8.00	6.00	.50	1.00	1.00	.00	.50	5.00	2.00	
.00	.00	.00	15.00		10.00		.00	20.00		.00	
.00	.00	.00	.00	.00	.00	5.00	5.00	.00 .	.		
45.00	6.00	70.00		1.88	19.81		2.19	.36	1.07	-.44	-
1.14	.31	.65	.58	1.38 .	.		2.00	2.00	40.00		
24.00	.00	.00	.00								
28.00		71.00		147.00		999.00		32.00		999.00	
	18.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	2.00	
3.00	5.00	1.00	1.00	.00	.00	3.00	2.00	2.00	2.00	2.00	
.00	.00	.00	.00	.00	1.00	9.00 .	.	.	.	.	
.	.		.00 0		5.00	5.00	5.00	5.00	5.00	5.00	
5.00	1.00	3.00	3.00	5.00	5.00	1.00	1.00	5.00	1.00	4.00	
5.00	4.00	4.00	5.00	4.00	5.00	5.00	5.00	5.00	2.00	5.00	
5.00	1.00	1.00	2.00	2.00	5.00	1.00	1.00	9.00	5.00	9.00	
9.00	9.00	9.00	1.00	1.00	1.00	1.00	1.00	7.00	6.00	.00	
1.00	1.00	3.00	.50	3.00	2.00	.00	.50	.00	10.00		
.00	50.00		.00	.00	10.00		10.00		10.00		
.00	.00	.00	5.00	5.00	.00 .	.		41.00		5.00	
66.82	1.80	20.55		1.45	-.42	-.43	-.30	-.36	-.56	-1.54	
1.35	-2.27 .	.		1.00	1.00	49.00		24.00		3.00	
.13	3.00										
29.00		71.00		196.00		999.00		36.00		999.00	
	18.00		1.00	1.00	1.00	11.00		1.00	.00	1.00	
2.00	3.00	1.00	7.00	.00	.00	.00	999.00		.00	2.00	
.50	.17	.00	.00	.00	.00	.00	1.00	16.00	.	.	
.	.	.	.	.		.00 0		5.00	3.00	5.00	
3.00	5.00	5.00	5.00	3.00	3.00	3.00	3.00	5.00	2.00	1.00	
5.00	2.00	2.00	5.00	5.00	3.00	5.00	4.00	5.00	5.00	5.00	
3.00	2.00	4.00	3.00	3.00	6.00	1.00	999.00		5.00	5.00	
5.00	5.00	5.00	9.00	9.00	9.00	9.00	2.00	1.00	1.00	1.00	
4.00	5.00	3.00	1.00	.50	.00	.00	.50	3.00	6.00	.00	

2.00	4.00	.00	.00	5.00	.00	.00	.00	10.00		.00
.00	50.00		.00	35.00		.00	.00 .	.		41.00
	9.00	89.09		1.80	27.39		5.39	.36	.40	-.44 .
	-.56	-.08	-.19 .	.	.		1.00	1.00	46.00	.
.	.	.								
30.00		74.00		196.00		999.00		999.00		999.00
	21.00		1.00	3.00	1.00	12.00		1.00	.00	1.00
2.00	3.00	1.00	5.00	1.00	.00	.00	3.00	.00	2.00	3.50
.25	.00	.00	.00	.00	.00	1.00	23.00	.	.	.
.	.	.	.		.00 0		1.00	3.00	3.00	3.00
2.00	2.00	2.00	3.00	2.00	4.00	2.00	4.00	2.00	2.00	3.00
2.00	4.00	4.00	4.00	2.00	2.00	3.00	5.00	4.00	4.00	2.00
4.00	5.00	4.00	1.00	6.00	4.00	7.00	9.00	9.00	2.00	8.00
5.00	5.00	5.00	7.00	9.00	7.00	7.00	7.00	2.00	1.00	6.00
4.00	1.00	1.00	.00	3.00	1.00	4.00	4.00	.00	.00	.00
40.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	50.00		.00 .	.		31.00		24.00		89.09
	1.88	25.22		3.22	-.42	.40	-.01	1.58	1.18	1.38
.96	5.07 .	.		2.00	2.00	25.00		24.00		3.00
.13	3.00									
31.00		74.00		175.00		999.00		999.00		999.00
	20.00		1.00	2.00	1.00	11.00		3.00	1.00	1.00
2.00	3.00	1.00	7.00	.00	.00	.00	3.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	1.00	17.00	.	.	.
.	.	.	.		.00 0		5.00	2.00	5.00	3.00
4.00	4.00	2.00	2.00	3.00	2.00	3.00	5.00	1.00	2.00	4.00
3.00	2.00	4.00	4.00	3.00	4.00	3.00	3.00	4.00	4.00	3.00
2.00	4.00	5.00	.00	5.00	.00	.00	7.00	6.00	6.00	4.00
7.00	8.00	8.00	9.00	9.00	6.00	6.00	6.00	6.00	7.00	9.00
3.00	.50	2.00	1.00	.00	1.00	2.00	2.00	.00	.00	.00
3.00	2.00	.00	50.00		.00	.00	30.00		5.00	.00
5.00	.00	3.00	2.00	.00 .	.		41.00		31.00	
79.55	1.88	22.52		.52	-.81	.24	-.59	-1.14	.31	.28 -
.57	-2.28 .	.		1.00	1.00	38.00	.	.	.	.
32.00		73.00		168.00		999.00		34.00		999.00
	20.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00
2.00	3.00	1.00	7.00	.00	.00	.00	999.00		.00	.00
.00	.00	.00	.00	.00	.00	.00	1.00	18.00	.	.
.	.	.	.	.		.00 0		5.00	1.00	3.00
1.00	1.00	5.00	4.00	1.00	5.00	5.00	5.00	5.00	3.00	1.00
5.00	1.00	1.00	5.00	1.00	5.00	5.00	3.00	5.00	5.00	5.00
5.00	3.00	5.00	5.00	10.00		20.00		20.00		7.00
9.00	9.00	1.00	9.00	9.00	9.00	9.00	9.00	9.00	7.00	5.00
5.00	2.00	4.00	9.00	3.00	.50	.50	.25	.00	1.00	5.75
1.00	.00	3.00	.00	20.00		.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	10.00		70.00		.00 .	.
	45.00		23.00		76.36		1.85	22.21		.21
3.11	2.73	2.29	1.58	1.18	1.38	1.35	13.62	.	.	
1.00	1.00	45.00		24.00		.00	.00	.00		

33.00		78.00		168.00		999.00		34.00		999.00
	20.00		1.00	1.00	1.00	1.00	1.00	.00	2.00	2.00
3.00	1.00	7.00	.00	.00	.00	999.00		.00	1.00	.50
.00	.00	.00	.00	.00	.00	2.00	18.00		14.00	.
.	.	.	.	.		1.00 cat		5.00	4.00	3.00
3.00	4.00	5.00	5.00	3.00	3.00	2.00	4.00	5.00	1.00	1.00
5.00	1.00	2.00	5.00	4.00	3.00	5.00	4.00	4.00	5.00	4.00
4.00	3.00	4.00	3.00	9.00	20.00		10.00		.00	8.00
9.00	2.00	8.00	5.00	9.00	9.00	9.00	9.00	6.00	3.00	3.00
6.00	6.00	6.00	8.00	1.00	2.00	.00	.50	4.00	.00	.00
1.50	.00	10.00		10.00		.00	.00	.00	.00	.00
30.00	10.00		.00	.00	.00	30.00		10.00		.00 .
.		41.00		24.00		76.36		1.98	19.45	
2.55	2.72	2.73	.85	-1.14	.74	1.38	.96	8.24 .	.	
1.00	1.00	45.00		33.00		2.00	.06	.50		
34.00		74.00		182.00		41.00		32.00		36.00
	33.00		1.00	1.00	1.00	11.00		1.00	.00	4.00
1.00	2.00	4.00	1.00	1.00	.00	.00	3.00	6.00	3.00	6.00
2.00	1.00	.00	.00	.00	.00	.00 .	.	.	.	.
.	.	.		1.00 cat		5.00	1.00	3.00	4.00	4.00
4.00	5.00	1.00	2.00	2.00	3.00	4.00	2.00	1.00	4.00	1.00
2.00	4.00	4.00	4.00	4.00	3.00	3.00	2.00	4.00	2.00	1.00
5.00	4.00	2.00	1.00	.00	6.00	9.00	8.00	3.00	7.00	7.00
8.00	8.00	9.00	8.00	5.00	5.00	6.00	3.00	3.00	8.00	10.00
	.00	2.00	1.00	2.00	1.00	.00	.00	.00	.00	.00
5.00	15.00		.00	50.00		.00	25.00		.00	.00
5.00	.00	.00	.00	.00	.00	1.28	.89	40.00		22.00
	82.73		1.88	23.42		1.42	-.03	-.43	-.59	1.19
1.18	1.01	.58	2.92	.00	.17	1.00	1.00	39.00		24.00
	2.00	.08	2.00							
35.00		72.00		168.00		999.00		999.00		999.00
	19.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00
2.00	2.00	1.00	5.00	1.00	.00	.00	3.00	1.00	.17	.00
.00	.00	.00	.00	.00	.00	1.00	17.00	.	.	.
.	.	.	.		1.00 dog		3.00	2.00	3.00	2.00
4.00	4.00	5.00	3.00	3.00	4.00	3.00	5.00	2.00	2.00	5.00
3.00	2.00	3.00	3.00	3.00	4.00	4.00	4.00	4.00	4.00	3.00
3.00	3.00	3.00	2.00	7.00	1.00	7.00	6.00	7.00	5.00	5.00
6.00	9.00	8.00	9.00	7.00	6.00	6.00	6.00	6.00	5.00	5.00
5.00	.00	1.00	.00	2.00	1.00	4.00	5.00	.00	1.00	.00
20.00	.00	.00	.00	.00	.00	5.00	1.00	.00	.00	.00
40.00	20.00		.00 .	.		39.00		29.00		76.36
	1.83	22.83		.83	-.03	.57	-.44	1.58	-.13	.65 -
.19	2.01 .	.		1.00	1.00	39.00		24.00		2.00
.08	2.00									
36.00		72.00		158.00		999.00		34.00		999.00
	41.00		1.00	1.00	1.00	11.00		1.00	.00	5.00
1.00	3.00	5.00	1.00	1.00	.00	.00	3.00	24.00		.00
.00	.00	.00	.00	.00	.00	.00	2.00	38.00		33.00
.	.	.	.	.	.		1.00 cat		3.00	2.00

4.00	1.00	4.00	4.00	3.00	3.00	2.00	4.00	2.00	5.00	2.00	
2.00	5.00	2.00	3.00	5.00	5.00	4.00	5.00	2.00	3.00	4.00	
3.00	3.00	1.00	5.00	2.00	1.00	1.00	.00	999.00		8.00	
3.00	7.00	3.00	6.00	9.00	9.00	9.00	9.00	6.00	2.00	2.00	
2.00	4.00	6.50	8.00	.50	1.50	2.50	3.00	.50	1.00	.00	
.00	.50	.00	13.00		14.00		1.00	15.00		.00	
7.00	3.00	6.00	3.00	4.00	2.00	1.00	2.00	29.00	.	.	
	42.00		16.00		71.82		1.83	21.47		.53	-
.42	-.43	-.59 .		.74	-.81	-.95 .	.	.		1.00	
1.00	37.00		24.00		3.00	.13	3.00				
37.00		65.00		126.00		36.00		29.00		999.00	
	39.00		1.00	1.00	1.00	11.00		1.00	.00	4.00	
1.00	4.00	1.00	7.00	.00	.00	.00	999.00		.00	1.00	
8.00	.00	.00	.00	.00	.00	.00	3.00	47.00		44.00	
	43.00	.	.	.	.	.		.00 0		5.00	
3.00	4.00	3.00	5.00	5.00	4.00	4.00	2.00	2.00	3.00	2.00	
1.00	3.00	4.00	2.00	2.00	5.00	5.00	5.00	5.00	3.00	4.00	
5.00	2.00	4.00	2.00	5.00	4.00	.00	1.00	.00	5.00	7.00	
5.00	8.00	2.00	6.00	9.00	8.00	9.00	9.00	5.00	6.00	6.00	
6.00	6.00	8.00	8.00	.50	2.00	1.00	.00	1.00	1.00	1.50	
.00	1.00	.00	10.00		10.00		.00	20.00		.00	
5.00	2.00	.00	.00	5.00	5.00	2.00	2.00	39.00		1.24 .	
	41.00		29.00		57.27		1.65	21.01		.99	-
.81	-.43	-.59	.80	.31	-.08	-1.33	-2.13 .	.		2.00	
4.00	41.00		24.00		.00	.00	.00				
38.00		69.00		160.00		42.00		32.00		999.00	
	31.00		1.00	1.00	1.00	11.00		1.00	.00	3.00	
1.00	4.00	5.00	1.00	1.00	.00	.00	3.00	9.00	2.00	5.00	
2.00	.00	.00	.00	.00	.00	1.00	33.00	.	.	.	
.	.	.	.		999.00		999	5.00	1.00	2.00	
4.00	4.00	5.00	5.00	1.00	1.00	3.00	2.00	4.00	1.00	5.00	
5.00	1.00	1.00	5.00	3.00	5.00	5.00	4.00	5.00	4.00	3.00	
5.00	2.00	1.00	3.00	1.00	1.00	1.00	6.00	4.00	1.00	9.00	
1.00	6.00	9.00	9.00	9.00	9.00	7.00	1.00	2.00	2.00	5.00	
9.00	7.00	.00	1.00	1.50	1.00	1.00	.00	1.00	.00	.00	
1.50	20.00		10.00		.00	35.00		.00	10.00		
.00	10.00		.00	.00	.00	10.00		5.00	.00	1.31 .	
	42.00		17.00		72.73		1.75	23.68		1.68	-
.42	-.43	-.44	1.19	-1.00	-1.54	-1.72	-4.36 .	.		1.00	
1.00	42.00	.	.	.	.						
39.00		71.00		999.00		40.00		34.00		999.00	
	37.00		1.00	1.00	1.00	11.00		1.00	.00	4.00	
1.00	4.00	2.00	3.00	1.00	1.00	5.00	3.00	.67	3.00	10.00	
	2.00	.25	1.00	.00	.00	1.00	2.00	37.00		31.00	
.	.	.	.	.	.		.00 0		5.00	3.00	
5.00	2.00	4.00	4.00	5.00	3.00	4.00	4.00	4.00	5.00	3.00	
3.00	5.00	2.00	3.00	4.00	4.00	4.00	5.00	4.00	5.00	4.00	
5.00	4.00	3.00	2.00	3.00	1.00	1.00	1.00	2.00	6.00	2.00	
6.00	4.00	4.00	9.00	9.00	9.00	9.00	7.00	1.00	1.00	1.00	
1.00	7.00	9.00	.50	1.00	1.50	2.00	.50	1.00	.50	1.00	

.00	.00	5.00	30.00		5.00	25.00		10.00		5.00	
5.00	5.00	.00	5.00	.00	3.00	2.00	.00	1.18 .		40.00	
	11.00	.		1.80 .	.		-.42	-.43	-.44	-.36	-
.13	-1.18	-.57	-3.53 .	.		1.00	1.00	45.00		24.00	
	3.00	.13	2.00								
40.00		71.00		147.00		40.00		32.00		34.00	
	35.00		1.00	1.00	8.00	12.00		1.00	.00	4.00	
1.00	4.00	5.00	1.00	1.00	.00	.00	3.00	3.50	5.00	2.00	
.83	2.00	.00	.00	.00	.00	2.00	38.00		37.00	.	
.	.	.	.	.		.00 0		5.00	4.00	5.00	
1.00	5.00	4.00	4.00	5.00	2.00	5.00	4.00	5.00	4.00	2.00	
4.00	3.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	3.00	
4.00	5.00	5.00	2.00	1.00	1.00	2.00	2.00	3.00	6.00	7.00	
3.00	6.00	9.00	9.00	9.00	9.00	6.00	2.00	2.00	2.00	2.00	
8.00	8.00	.50	3.00	2.00	.50	.50	.50	.50	.00	.50	
.00	5.00	5.00	2.00	70.00		.00	5.00	2.00	5.00	.00	
.00	2.00	2.00	2.00	.00	1.25	.94	42.00		14.00		
66.82	1.80	20.55		1.45	-.42	-.43	-.30	-.36	-1.43	.28	-
.95	-3.61	.05	.22	2.00	3.00	42.00		24.00		.50	
.02	.50										
41.00		72.00		203.00		999.00		38.00		999.00	
	20.00		1.00	1.00	1.00	13.00		3.00	1.00	1.00	
2.00	3.00	1.00	7.00	.00	.00	.00 .		.00	.00	.00	
.00	.00	.00	.00	.00	.00	1.00	25.00	.	.	.	
.	.	.	.		.00 0		5.00	3.00	5.00	3.00	
5.00	4.00	4.00	3.00	2.00	3.00	3.00	5.00	2.00	3.00	3.00	
3.00	3.00	4.00	3.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00	
1.00	3.00	3.00	.00	1.00	.00	.00	1.00	1.00	8.00	2.00	
7.00	9.00	9.00	9.00	9.00	3.00	1.00	1.00	1.00	1.00	8.50	
6.00	.50	2.00	.00	.00	1.00	2.00	2.00 .	.		2.00	
10.00	5.00	.00	35.00		.00	.00	.00	.00	.00	.00	
.00	10.00		10.00		30.00	.	.		43.00		
7.00	92.27		1.83	27.59		5.59	-.81	-.43	-.59	-1.14	-
2.31	-1.54	-1.33	-8.15 .	.		2.00	2.00	44.00	.	.	
.	.										
42.00		73.00		210.00		40.00		38.00		999.00	
	32.00		1.00	1.00	1.00	2.00	1.00	.00	5.00	1.00	
3.00	4.00	1.00	1.00	.00	.00	3.00	8.00	2.00	2.00	1.00	
.00	.00	.00	.00	.00	1.00	30.00	.	.	.	.	
.	.	.		.00 0		3.00	2.00	3.00	3.00	2.00	
2.00	4.00	2.00	3.00	4.00	4.00	2.00	2.00	2.00	3.00	2.00	
2.00	3.00	4.00	4.00	4.00	3.00	4.00	3.00	3.00	2.00	3.00	
4.00	3.00	1.00	1.00	1.00	2.00	3.00	7.00	5.00	5.00	6.00	
8.00	8.00	9.00	9.00	6.00	1.00	1.00	1.00	1.00	7.00	.00	
1.00	1.00	1.00	3.00	2.00	4.00	3.00	.00	1.00	.00	.00	
10.00	.00	15.00		.00	15.00		5.00	10.00		.00	
15.00	10.00		10.00		10.00		.00	1.05 .		40.00	
	10.00		95.45		1.85	27.76		5.76	-.42	-.43	-
.44	-.36	-1.43	.65	-.19	-2.63 .	.		1.00	1.00	31.00	
.	.	.	.								

43.00		71.20		144.00		44.00		32.00		999.00	
	42.00		1.00	1.00	1.00	999.00		1.00	.00	4.00	
1.00	4.00	4.00	1.00	1.00	1.00	1.00	1.00	6.00	5.00	7.00	
3.00	4.00	1.00	.00	.00	.00	.00 .	.	.	.	.	
.	.	.		.00 0		5.00	1.00	5.00	3.00	2.00	
4.00	2.00	2.00	4.00	2.00	5.00	5.00	1.00	1.00	5.00	1.00	
2.00	4.00	3.00	5.00	5.00	4.00	5.00	4.00	5.00	1.00	5.00	
4.00	3.00	1.00	1.00	5.00	5.00	9.00	9.00	3.00	7.00	5.00	
7.00	7.00	7.00	9.00	7.00	4.00	4.00	2.00	1.00	6.00	9.00	
.00	1.00	1.50	2.00	.50	.00	1.00	2.00	1.00	.00	25.00	
	20.00		.00	25.00		10.00		10.00		.00	
.00	.00	.00	10.00		.00	.00	.00	1.38 .		35.00	
	18.00		65.45		1.81	20.01		1.99	-.42	-.43	
.13	.80	1.18	1.38	.58	3.23 .	.		1.00	1.00	42.00	
	24.00		4.00	.17	2.00						
44.00		74.00		164.00		44.00		32.00		999.00	
	25.00		1.00	1.00	1.00	11.00		3.00	1.00	3.00	
2.00	4.00	1.00	6.00	1.00	.00	.00	3.00	.00	3.00	1.50	
.75	.50	.00	.00	.00	.00	.00 .	.	.	.	.	
.	.	.		.00 0		4.00	3.00	4.00	3.00	5.00	
5.00	5.00	2.00	4.00	2.00	3.00	5.00	2.00	1.00	5.00	1.00	
2.00	5.00	5.00	4.00	5.00	4.00	5.00	5.00	5.00	3.00	2.00	
5.00	3.00	5.00	2.00	9.00	4.00	9.00	9.00	7.00	3.00	7.00	
9.00	9.00	9.00	8.00	6.00	5.00	5.00	3.00	3.00	8.00	8.00	
.50	2.00	1.00	.00	1.00	.00	2.50	.00	1.00	.00	20.00	
	10.00		.00	30.00		.00	5.00	10.00		.00	
.00	.00	.00	15.00		10.00		.00	1.38 .		42.00	
	22.00		74.55		1.88	21.10		.90	1.15	-.26	
.71	.42	1.18	1.38	-.95	3.61 .	.		1.00	1.00	46.00	
	24.00		.00	.00	.00						
45.00		69.00		196.00		40.00		36.00		42.00	
	58.00		1.00	1.00	1.00	11.00		1.00	.00	4.00	
1.00	1.00	4.00	1.00	1.00	1.00	8.00	3.00	36.00		3.00	
4.00	2.00	1.00	2.00	.00	.00	.00	.00 .	.	.	.	
.	.	.	.		.00 0		4.00	4.00	4.00	3.00	
3.00	4.00	3.00	3.00	2.00	3.00	3.00	3.00	3.00	2.00	3.00	
2.00	3.00	4.00	4.00	3.00	4.00	3.00	4.00	3.00	4.00	3.00	
3.00	4.00	3.00	1.00	1.00	.00	1.00	4.00	4.00	5.00	5.00	
6.00	9.00	9.00	9.00	9.00	5.00	1.00	1.00	1.00	1.00	8.00	
11.00	.00	1.00	1.00	1.00	1.00	.00	1.00	.00	.00	.00	
10.00	10.00		5.00	.00	.00	10.00		10.00		10.00	
	.00	.00	.00	15.00		15.00		.00	1.11	.86	
42.00	9.00	89.09		1.75	29.00		7.00	-.42	-.43	-.59	-
.75	-1.00	-.45	-.19	-3.82	.03	.14	1.00	1.00	34.00		
24.00	1.00	.04	1.00								
46.00		68.00		156.00		40.00		31.00		32.00	
	35.00		1.00	1.00	1.00	999.00		1.00	.00	4.00	
2.00	3.00	1.00	3.00	1.00	.00	.00 .		5.00	3.00	1.00	
.50	5.00	.00	.00	.00	.00	1.00	37.00	.	.	.	
.	.	.	.		.00 0		5.00	1.00	5.00	1.00	

5.00	5.00	5.00	1.00	1.00	1.00	4.00	3.00	1.00	1.00	5.00	
2.00	3.00	5.00	3.00	5.00	5.00	5.00	5.00	5.00	3.00	5.00	
3.00	4.00	4.00	2.00	1.00	2.00	.00	7.00	8.00	7.00	3.00	
8.00	9.00	9.00	9.00	9.00	5.00	1.00	1.00	1.00	1.00	8.00	
8.00	.50	.50	1.00	.00	.50	.00	.50	.00	.00	5.00	
10.00	25.00		10.00		25.00		.00	10.00		10.00	
	2.00	.00	1.00	2.00	2.00	2.00	.00	1.29	.97	44.00	
	9.00	70.91		1.73	23.77		1.77	-.03	-.43	-.30	-
1.14	.31	1.01	-.95	-1.53	.08	.25	2.00	2.00	45.00		
24.00	.00	.00	.00								
47.00		73.00		156.00		999.00		34.00		999.00	
	26.00		1.00	1.00	8.00	1.00	1.00	.00	3.00	2.00	
.00	1.00	1.00	1.00	.00	.00	3.00	6.00	2.00	6.00	1.00	
1.00	.00	.00	.00	.00	2.00	29.00		19.00	.	.	
.	.	.	.		.00 0		4.00	4.00	4.00	2.00	
4.00	4.00	4.00	4.00	3.00	3.00	4.00	4.00	1.00	3.00	3.00	
3.00	4.00	2.00	4.00	3.00	4.00	4.00	4.00	4.00	4.00	2.00	
4.00	5.00	3.00	3.00	1.00	5.00	2.00	3.00	3.00	7.00	3.00	
8.00	9.00	8.00	9.00	9.00	4.00	3.00	3.00	3.00	1.00	6.00	
7.00	.00	.00	1.00	6.00	1.00	1.00	1.00	.00	1.00	.00	
10.00	10.00		10.00		25.00		.00	.00	10.00		
5.00	.00	10.00		.00	10.00		15.00		.00 .	.	
	43.00		14.00		70.91		1.85	20.62		1.38	
.36	-.43	.13	-.36	-1.43	-.81	-.95	-3.49 .	.		1.00	
1.00	39.00		24.00		6.00	.25	6.00				
48.00		67.00		175.00		999.00		999.00		999.00	
	40.00		1.00	1.00	1.00	11.00		1.00	.00	4.00	
1.00	3.00	4.00	1.00	1.00	1.00	1.00	2.00	12.00		3.00	
12.00	2.00	.50	4.00	.00	.00	.00	3.00	15.00		12.00	
	8.00 .	.	.	.	.		.00 0		5.00	1.00	
2.00	3.00	3.00	4.00	2.00	2.00	5.00	3.00	3.00	4.00	2.00	
1.00	5.00	1.00	3.00	4.00	2.00	3.00	4.00	2.00	4.00	4.00	
4.00	4.00	4.00	4.00	4.00	3.00	4.00	3.00	7.00	9.00	9.00	
1.00	9.00	4.00	3.00	5.00	6.00	5.00	7.00	7.00	7.00	3.00	
1.00	6.00	.00	1.00	1.00	2.00	2.00	1.00	.00	5.00	4.00	
2.00	.00	999.00		999.00		999.00		999.00		999.00	
	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00	.	.		23.00		
25.00	79.55		1.70	27.47		5.47	.36	.07	-.16	1.58	
1.18	1.38	1.35	5.76 .	.		1.00	1.00	36.00		24.00	
	6.00	.25	2.00								
49.00		70.00		150.00		999.00		34.00		999.00	
	30.00		1.00	1.00	2.00	1.00	1.00	.00	3.00	3.00	
3.00	1.00	7.00	.00	.00	.00 .		.00	3.00	.67	1.00	
.00	.00	.00	.00	.00	2.00	25.00		20.00	.	.	
.	.	.	.		1.00 dog		5.00	5.00	4.00	5.00	
5.00	5.00	3.00	1.00	2.00	2.00	5.00	5.00	1.00	1.00	3.00	
1.00	3.00	5.00	3.00	3.00	5.00	3.00	4.00	5.00	5.00	4.00	
2.00	5.00	3.00	5.00	30.00		10.00		3.00	9.00	9.00	
1.00	9.00	8.00	9.00	9.00	9.00	9.00	5.00	6.00	7.00	5.00	

5.00	6.00	8.00	2.00	1.00	3.00	1.00	1.00	.00	2.00	.00
.00	.00	999.00		999.00		999.00		999.00		999.00
	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		.	.	44.00	
28.00	68.18		1.78	21.57		.43	1.15	4.39	.85	.03
1.18	1.38	1.35	10.32	.	.		1.00	1.00	46.00	
24.00	1.00	.04	1.00							
50.00		72.00		160.00		40.00		33.00		999.00
	36.00		1.00	1.00	1.00	11.00		1.00	.00	3.00
2.00	4.00	1.00	1.00	1.00	.00	.00	3.00	.50	5.00	7.00
1.00	2.00	.00	.00	.00	.00	2.00	34.00		32.00	.
.	.	.	.	.		.00 0		3.00	1.00	5.00
3.00	3.00	4.00	3.00	3.00	3.00	3.00	3.00	5.00	1.00	4.00
4.00	3.00	3.00	3.00	3.00	3.00	4.00	3.00	4.00	4.00	3.00
1.00	2.00	4.00	4.00	1.00	5.00	10.00		7.00	9.00	9.00
9.00	1.00	6.00	8.00	7.00	6.00	6.00	6.00	7.00	7.00	6.00
3.00	7.00	8.00	.50	1.50	2.00	2.00	1.00	.00	.00	.00
2.00	.00	10.00		10.00		.00	10.00		.00	10.00
	10.00		10.00		.00	.00	10.00		10.00	
10.00	.00	1.21 .		33.00		29.00		72.73		1.83
21.75	.25	-.42	.24	.85	1.58	1.18	1.38	-1.72	3.09 .	.
	1.00	1.00	35.00		24.00		2.00	.08	2.00	
51.00		67.00		160.00		38.00		32.00		999.00
	26.00		1.00	2.00	8.00	1.00	1.00	.00	4.00	4.00
3.00	5.00	2.00	1.00	.00	.00	3.00	2.50	.00	.00	.00
.00	.00	.00	.00	.00	1.00	29.00	.	.	.	.
.	.	.		1.00 fish		5.00	3.00	5.00	1.00	4.00
4.00	4.00	2.00	3.00	4.00	2.00	5.00	2.00	1.00	5.00	4.00
1.00	2.00	5.00	4.00	5.00	5.00	5.00	3.00	4.00	4.00	4.00
5.00	4.00	1.00	2.00	8.00	6.00	9.00	7.00	3.00	7.00	6.00
9.00	9.00	9.00	9.00	7.00	5.00	5.00	2.00	2.00	7.00	8.00
1.00	2.00	2.00	1.00	1.00	1.00	.50	.00	.50	.00	10.00
	2.50	5.00	15.00		.00	.00	20.00		5.00	.00
25.00	2.50	5.00	10.00		.00	1.19 .		42.00		21.00
	72.73		1.70	25.11		3.11	-.42	-.26	.56	1.19
1.18	.65	.58	3.48 .	.		2.00	2.00	40.00		24.00
	1.00	.04	1.00							
52.00		72.00		147.00		999.00		999.00		999.00
	23.00		1.00	1.00	1.00	11.00		1.00	.00	3.00
3.00	3.00	1.00	3.00	1.00	.00	.00	3.00	2.00	1.00	2.00
3.00	.00	.00	.00	.00	.00	2.00	25.00		15.00	.
.	.	.	.	.		1.00 fish		5.00	3.00	3.00
2.00	5.00	5.00	4.00	2.00	2.00	4.00	3.00	5.00	2.00	2.00
4.00	3.00	4.00	5.00	4.00	5.00	5.00	3.00	5.00	4.00	4.00
4.00	3.00	3.00	4.00	1.00	1.00	.00	3.00	7.00	7.00	3.00
7.00	8.00	9.00	9.00	9.00	9.00	2.00	1.00	1.00	1.00	1.00
6.00	8.00	.00	1.00	1.00	.00	1.00	.00	1.00	.00	1.00
5.00	10.00		40.00		5.00	25.00		.00	10.00	
.00	5.00	.00	.00	.00	2.50	2.50	.00 .	.		44.00
	6.00	66.82		1.83	19.98		2.02	-.42	-.43	-.59

.03	.31	.65	.58	.13	.	.	2.00	2.00	45.00	
24.00	.00	.00	.00							
53.00		73.00		147.00		40.00		999.00		999.00
	28.00		1.00	1.00	1.00	2.00	1.00	.00	1.00	2.00
1.00	5.00	3.00	1.00	1.00	1.00	3.00	2.00	4.00	2.00	1.00
3.00	1.00	.00	.00	1.00	1.00	.83	.	.	.	. .
	.	.	.00	0	5.00	2.00	5.00	1.00	1.00	5.00
5.00	1.00	5.00	1.00	5.00	5.00	1.00	1.00	3.00	1.00	1.00
5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	3.00
5.00	1.00	.00	14.00		6.00	6.00	6.00	1.00	9.00	6.00
9.00	9.00	9.00	9.00	1.00	1.00	1.00	1.00	1.00	8.00	10.00
	.00	3.00	1.00	.00	.50	.00	.00	1.50	.00	.00
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		.	.	42.00		5.00	66.82		1.85
19.43	2.57	-.42	-.59	1.43	1.19	-.13	.28	1.35	3.11	. .
	1.00	1.00	46.00		24.00		1.50	.06	.00	
54.00		71.00		175.00		40.00		32.00		32.00
	40.00		1.00	1.00	1.00	1.00	1.00	.00	4.00	1.00
4.00	1.00	7.00	.00	.00	.00	.00	.00	2.00	10.00	
5.00	.00	.00	.00	.00	.00	.00	.	.	.	. .
	.	.	.	.00	0	5.00	3.00	5.00	2.00	5.00
5.00	5.00	1.00	2.00	2.00	2.00	5.00	5.00	1.00	5.00	1.00
2.00	5.00	5.00	5.00	5.00	3.00	3.00	3.00	5.00	5.00	5.00
1.00	4.00	5.00	.	.	.00	3.00	3.00	6.00	4.00	6.00
9.00	9.00	9.00	9.00	6.00	1.00	5.00	1.00	1.00	7.00	8.00
.00	1.00	1.00	.00	1.00	.00	4.00	.00	2.00	.00	999.00
	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		1.25	1.00	42.00		14.00		79.55	
1.80	24.46		2.46	1.15	.	.	-1.14	-1.43	-.81	-.57 .
	.11	.28	1.00	1.00	45.00		24.00		.00	.00
.00										
55.00		64.00		138.00		38.00		34.00		38.00
	47.00		1.00	2.00	1.00	1.00	4.00	.00	4.00	1.00
2.00	5.00	4.00	1.00	.00	.00	3.00	16.00		.00	.00
.00	.00	.00	.00	.00	.00	.00	.	.	.	. .
	.	.	.	1.00	dog	3.00	3.00	5.00	1.00	3.00
4.00	3.00	3.00	3.00	3.00	2.00	5.00	3.00	3.00	5.00	2.00
3.00	4.00	4.00	4.00	5.00	4.00	3.00	3.00	5.00	3.00	2.00
3.00	4.00	.00	.00	.00	.00	5.00	2.00	6.00	4.00	6.00
9.00	8.00	9.00	9.00	5.00	1.00	1.00	1.00	1.00	7.00	5.00
.50	2.00	1.00	2.00	1.00	.00	1.00	.00	3.00	.00	999.00
	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		1.12	.89	41.00		9.00	62.73		1.63
23.74	1.74	-.81	-.59	-.59	-1.14	-.56	-1.18	-.57	-5.45	.00
.17	1.00	1.00	37.00		22.50		2.00	.09	2.00	
56.00		78.00		224.00		44.00		36.00		999.00
	42.00		1.00	1.00	1.00	3.00	1.00	.00	4.00	1.00

1.00	4.00	1.00	1.00	1.00	1.00	3.00	5.00	3.00	6.00	5.50
2.00	1.00	.00	.00	1.00	2.00	38.00		24.00	.	.
.	.	.	.		.00 0		5.00	1.00	5.00	1.00
5.00	5.00	5.00	3.00	4.00	5.00	3.00	5.00	1.00	1.00	5.00
1.00	3.00	5.00	5.00	5.00	5.00	4.00	5.00	5.00	4.00	5.00
5.00	5.00	5.00	1.00	1.00	4.00	7.00	9.00	9.00	3.00	7.00
5.00	9.00	9.00	9.00	9.00	7.00	5.00	6.00	1.00	4.00	7.00
9.00	.00	.50	5.00	2.00	.50	.00	.00	.00	.00	.00
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		1.22 .		41.00		23.00		101.82	
1.98	25.94		3.94	-.42	-.43	-.01	1.58	1.18	1.38	.58
3.86 .	.		1.00	1.00	47.00		24.00		2.00	.08
2.00										
57.00		69.00		175.00		999.00		32.00		999.00
	24.00		1.00	1.00	7.00	4.00	1.00	.00	3.00	3.00
2.00	1.00	7.00	.00	.00	.00	3.00	.00	3.00	3.00	.17
.25	.00	.00	.00	.00	4.00	36.00		34.00		25.00
	18.00	.	.	.	.		.00 0		5.00	2.00
3.00	3.00	5.00	5.00	5.00	5.00	4.00	4.00	3.00	5.00	4.00
3.00	3.00	3.00	3.00	4.00	4.00	3.00	4.00	2.00	4.00	4.00
4.00	5.00	2.00	5.00	5.00	1.00	1.00	.00	.00	3.00	1.00
2.00	8.00	9.00	9.00	9.00	9.00	9.00	1.00	1.00	1.00	1.00
1.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00	.	.		45.00		5.00	79.55
	1.75	25.90		3.90	-.42	-.43	-.59	-1.14	-1.43	-1.54
.96	-4.59 .	.		2.00	4.00	43.00	.	.	.	.
58.00		70.00		161.00		999.00		32.00		999.00
	21.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	2.00
4.00	1.00	7.00	.00	.00	.00	3.00	.00	1.00	2.50	.00
.00	.00	.00	.00	.00	3.00	38.00		36.00		19.00
.	.	.	.	.		.00 0		5.00	4.00	4.00
2.00	4.00	4.00	2.00	3.00	4.00	2.00	3.00	4.00	1.00	2.00
5.00	2.00	2.00	4.00	4.00	4.00	5.00	5.00	5.00	3.00	4.00
4.00	4.00	5.00	4.00	3.00	5.00	.00	6.00	5.00	5.00	7.00
3.00	7.00	9.00	9.00	9.00	9.00	6.00	2.00	2.00	1.00	4.00
10.00	4.00	.50	1.00	.50	.00	1.00	3.00	3.00	.00	1.00
.00	20.00		30.00		.00	30.00		.00	.00	10.00
	5.00	.00	.00	.00	4.00	1.00	.00 .	.		43.00
	15.00		73.18		1.78	23.15		1.15	.36	.24 -
.59	1.19	-.56	-.08	-.95	-.39 .	.		2.00	3.00	38.00
	24.00		.00	.00	.00					
59.00		67.00		159.00		38.00		32.00		36.00
	53.00		1.00	1.00	1.00	1.00	1.00	.00	4.00	1.00
3.00	4.00	1.00	1.00	1.00	8.00	3.00	30.00		.00	.00
.00	.00	2.00	.00	.00	.00	1.00	51.00	.	.	.
.	.	.	.		.00 0		5.00	5.00	5.00	3.00

5.00	5.00	5.00	5.00	5.00	5.00	4.00	4.00	3.00	4.00	5.00
2.00	4.00	5.00	2.00	4.00	5.00	3.00	3.00	5.00	5.00	3.00
2.00	4.00	4.00	.00	.00	.00	.00	7.00	6.00	7.00	3.00
5.00	9.00	7.00	9.00	9.00	5.00	1.00	2.00	1.00	1.00	8.00
7.00	.00	.50	1.00	4.00	.50	2.50	.00	.00	.50	.00
5.00	25.00		10.00		20.00		.00	10.00		5.00
2.00	.00	10.00		3.00	5.00	5.00	.00	1.19	.89	39.00
	10.00		72.27		1.70	24.95		2.95	-.81	-.59 -
.59	-1.14	.31	.28	-.95	-3.50	.00	.17	1.00	1.00	47.00
	24.00		4.00	.17	4.00					
60.00		71.00		202.00		44.00		36.00		999.00
	56.00		1.00	1.00	1.00	1.00	1.00	.00	5.00	1.00
1.00	5.00	1.00	1.00	1.00	8.00	.00	13.00		1.00	10.00
	16.00		.00	2.00	.00	.00	.00	5.00	54.00	
52.00	51.00		47.00		45.00	.	.	.		.00 0
	4.00	4.00	1.00	1.00	3.00	4.00	5.00	3.00	5.00	1.00
5.00	5.00	1.00	1.00	5.00	2.00	2.00	5.00	1.00	2.00	5.00
5.00	5.00	5.00	5.00	5.00	1.00	5.00	5.00	.00	.00	20.00
	1.00	9.00	6.00	1.00	9.00	5.00	8.00	6.00	9.00	9.00
3.00	2.00	3.00	1.00	1.00	7.00	8.00	.00	2.50	2.00	3.50
1.00	.00	.00	.00	.00	.00	10.00		20.00		1.00
30.00	.00	20.00		5.00	.00	.00	12.00		.00	.00
1.00	.00	1.22 .		37.00		10.00		91.82		1.80
28.23	6.23	-.81	-.59	2.29	-.75	1.18	.28	1.35	2.94 .	.
	1.00	1.00	43.00		24.00		3.50	.15	3.50	
61.00		69.00		161.00		40.00		33.00		999.00
	37.00		1.00	3.00	1.00	10.00		1.00	.00	4.00
2.00	4.00	3.00	3.00	1.00	1.00	5.00	3.00	2.00	3.00	12.00
	1.00	.00	1.00	.00	.00	1.00	1.00	6.00 .	.	.
.	.	.	.		.00 0		5.00	1.00	3.00	1.00
4.00	4.00	4.00	3.00	4.00	1.00	3.00	1.00	2.00	1.00	1.00
1.00	2.00	3.00	2.00	3.00	5.00	2.00	4.00	4.00	4.00	3.00
3.00	1.00	4.00	1.00	3.00	.00	2.00	8.00	6.00	6.00	4.00
6.00	8.00	8.00	9.00	9.00	5.00	5.00	5.00	5.00	5.00	7.00
7.50	.50	2.00	.50	.50	.50	.00	2.00	1.50	.50	2.50
.50	.50	.50	15.00		30.00		10.00		.00	.50
.00	10.00		.00	.50	.50	.00	1.21 .		40.00	
25.00	73.18		1.75	23.83		1.83	-.42	-.09	-.59	-.36
.74	.28	-.57	-1.01 .	.		1.00	1.00	37.00	.	.
.	.									
62.00		73.00		154.00		36.00		32.00		999.00
	38.00		1.00	1.00	1.00	10.00		3.00	1.00	3.00
1.00	4.00	3.00	7.00	.00	1.00	3.00	3.00	16.00		2.00
16.00	11.00		.00	2.00	.00	.00	2.00	2.00	25.00	
24.00 .	.	.	.	.	.		1.00 fish		5.00	3.00
5.00	2.00	3.00	5.00	1.00	2.00	2.00	2.00	3.00	5.00	1.00
2.00	5.00	2.00	2.00	4.00	1.00	4.00	1.00	4.00	5.00	2.00
3.00	4.00	3.00	4.00	4.00	1.00	2.00	1.00	6.00	8.00	8.00
2.00	8.00	6.00	9.00	9.00	9.00	8.00	6.00	1.00	1.00	1.00
4.00	9.00	7.50	.00	1.00	.50	.00	.50	.00	1.50	4.00

.00	.00	20.00		40.00		.00	10.00		20.00		
5.00	5.00	.00	.00	.00	.00	.00	.00	.00	1.13 .		
41.00	13.00		70.00		1.85	20.36		1.64	-.42	-.26	-
.44	1.19	.74	1.01	.96	2.79 .	.		1.00	1.00	32.00	
	24.00		4.00	.17	.00						
63.00		71.00		154.00		999.00		32.00		32.00	
	19.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00	
3.00	3.00	1.00	7.00	.00	.00	.00	.00	.00	2.00	2.00	
.42	.00	.00	.00	.00	.00	1.00	17.00	.	.	.	
	.	.	.	.	1.00 guinea p			5.00	4.00	5.00	
3.00	4.00	4.00	2.00	1.00	2.00	2.00	1.00	4.00	1.00	2.00	
4.00	3.00	4.00	5.00	2.00	3.00	5.00	2.00	4.00	2.00	3.00	
3.00	4.00	4.00	4.00	2.00	10.00		1.00	4.00	4.00	4.00	
8.00	2.00	6.00	9.00	8.00	9.00	9.00	6.00	7.00	7.00	5.00	
4.00	10.00		3.00	1.00	2.00	.50	3.00	1.00	3.50	3.50	
.00	.00	.00	20.00		10.00		30.00		10.00		
.00	.00	10.00		.00	.00	.00	5.00	15.00		.00	
.00	.	1.00	41.00		29.00		70.00		1.80	21.52	
	.48	-.03	1.07	-.44	.42	-1.00	-.45	-1.33	-1.77	.11	
.28	1.00	1.00	33.00	.	.	.	.				
64.00		69.00		130.00		999.00		999.00		999.00	
	19.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00	
2.00	3.00	1.00	7.00	.00	.00	.00	.00	.00	1.00	2.00	
.00	.00	.00	.00	.00	.00	.00 .	.	.	.	.	
	.	.	.	.00 0		5.00	3.00	4.00	2.00	4.00	
5.00	4.00	1.00	4.00	4.00	4.00	4.00	2.00	1.00	5.00	3.00	
4.00	5.00	4.00	4.00	5.00	5.00	5.00	4.00	4.00	4.00	2.00	
5.00	3.00	3.00	.00	1.00	2.00	7.00	6.00	3.00	7.00	6.00	
9.00	8.00	9.00	9.00	5.00	2.00	1.00	1.00	1.00	999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00 .	.		41.00		10.00		59.09		1.75	19.24	
	2.76	.36	-.59	-.44	-.36	.31	.28	.58	.13 .	.	
	1.00	1.00	43.00	.	.	.	.				
65.00		70.00		196.00		42.00		36.00		999.00	
	19.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00	
2.00	2.00	1.00	7.00	.00	.00	.00	3.00	.00	1.00	2.50	
.00	.00	.00	.00	.00	.00	1.00	21.00	.	.	.	
	.	.	.	.	.00 0		5.00	4.00	4.00	3.00	
4.00	3.00	4.00	2.00	4.00	3.00	3.00	4.00	1.00	2.00	4.00	
3.00	3.00	3.00	3.00	4.00	4.00	3.00	4.00	2.00	4.00	4.00	
2.00	4.00	5.00	4.00	3.00	2.00	2.00	9.00	7.00	3.00	7.00	
6.00	9.00	9.00	9.00	9.00	6.00	1.00	1.00	1.00	4.00	999.00	
	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		1.17 .		42.00		13.00		89.09		

1.78	28.18		6.18	.75	-.09	-.30	-.36	1.18	.65	.58	
2.40	.	.	2.00	2.00	37.00		.	.	.	.	
66.00		72.00		155.00		40.00		32.00		36.00	
	38.00		1.00	1.00	1.00	3.00	2.00	.00	1.00	2.00	
3.00	4.00	1.00	1.00	1.00	1.00	3.00	6.00	2.00	4.00	5.00	
.00	3.00	.00	.00	3.00	8.00	50.00		49.00		46.00	
	45.00		43.00		41.00		36.00		33.00		
1.00	fish	5.00	3.00	3.00	4.00	5.00	5.00	4.00	3.00	5.00	
4.00	2.00	2.00	2.00	2.00	5.00	2.00	1.00	4.00	3.00	3.00	
5.00	2.00	4.00	5.00	4.00	4.00	2.00	4.00	4.00	1.00	1.00	
8.00	5.00	7.00	8.00	6.00	4.00	6.00	7.00	7.00	9.00	9.00	
6.00	6.00	3.00	2.00	3.00	8.00	2.00	.50	2.50	2.00	3.00	
.50	1.00	1.50	2.00	1.00	.00	15.00		10.00		2.00	
20.00	3.00	.00	5.00	5.00	.00	5.00	10.00		10.00		
15.00	.00	1.25	.89	38.00		20.00		70.45		1.83	
21.07	.93	-.42	-.43	.56	.80	.31	1.01	-.57	1.27	.00	
.17	2.00	7.00	40.00		24.00		5.00	.21	3.00		
67.00		82.00		210.00		42.00		36.00		999.00	
	39.00		1.00	1.00	1.00	12.00		1.00	.00	3.00	
2.00	3.00	4.00	1.00	1.00	1.00	1.00	3.00	5.00	3.00	6.00	
5.00	3.00	1.00	.00	.00	1.00	2.00	55.00		50.00		.
	.	.	.	.	.	1.00	cat/dog		5.00	5.00	
3.00	4.00	5.00	4.00	5.00	2.00	3.00	4.00	3.00	2.00	3.00	
2.00	3.00	4.00	3.00	2.00	4.00	4.00	3.00	3.00	4.00	4.00	
4.00	5.00	3.00	3.00	5.00	1.00	1.00	4.00	1.00	7.00	7.00	
4.00	6.00	6.00	9.00	9.00	9.00	9.00	5.00	2.00	2.00	1.00	
1.00	6.00	9.00	1.00	2.00	1.00	1.50	.50	.00	.00	3.00	
.00	.00	20.00		15.00		15.00		20.00		5.00	
5.00	2.00	2.00	2.00	6.00	3.00	1.00	4.00	.00	1.17	.	
42.00	11.00		95.45		2.08	22.00		.00	-.42	-.43	
.01	-.75	.31	.65	.20	-.46	.	.	2.00	3.00	39.00	
	24.00		4.50	.19	1.50						
68.00		72.00		182.00		999.00		999.00		999.00	
	20.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	2.00	
3.00	1.00	7.00	.00	.00	.00	.00	.00	2.00	.50	4.00	
.00	.00	.00	.00	.00	.00	.	.	.	.	.	.
	.	.	1.00	fish		1.00	3.00	3.00	3.00	2.00	2.00
1.00	4.00	3.00	3.00	3.00	2.00	4.00	4.00	3.00	4.00	4.00	
3.00	4.00	4.00	4.00	4.00	3.00	4.00	4.00	4.00	3.00	3.00	
4.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		.	999.00		999.00		999.00		999.00	
	999.00		999.00		999.00		999.00		999.00		
999.00	7.50	2.00	1.00	1.50	2.00	.00	2.00	4.00	4.00	.00	
.00	.00	35.00		.00	.00	.00	.00	.00	25.00		
25.00	.00	.00	.00	25.00		.00	.00	.	.	.	.
	82.73		1.83	24.74		2.74	.	.	.	.	.
	.	.	.	.	.	1.00	1.00	27.00		24.00	
	.00	.00	.00								
69.00		73.20		176.00		44.00		34.00		999.00	
	31.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	3.00	

3.00	1.00	5.00	1.00	.00	.00	3.00	1.00	2.00	9.00	2.00
.00	.00	.00	.00	.00	2.00	28.00		24.00	.	.
	.	.	.	.	1.00	dog	5.00	2.00	5.00	4.00
5.00	5.00	4.00	1.00	4.00	3.00	4.00	4.00	3.00	1.00	3.00
2.00	2.00	4.00	4.00	4.00	5.00	4.00	5.00	5.00	5.00	1.00
3.00	4.00	3.00	3.00	5.00	1.00	3.00	8.00	8.00	3.00	7.00
5.00	9.00	9.00	9.00	7.00	6.00	5.00	5.00	5.00	5.00	7.00
9.00	.50	.50	.50	1.00	.00	1.00	.00	1.00	.00	2.00
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		1.29 .		39.00		26.00		80.00	
1.86	23.14		1.14	.36	.24	-.44	.03	.74	1.01	.58
2.52	.	.	1.00	1.00	46.00		.	.	.	.
70.00		73.00		196.00		44.00		34.00		999.00
	38.00		1.00	1.00	2.00	4.00	1.00	1.00	2.00	1.00
3.00	1.00	7.00	.00	.00	.00	.00	.00	6.00	3.00	2.00
7.00	.00	.00	.00	.00	3.00	38.00		36.00		33.00
	.	.	.	.	.	1.00	cat	5.00	5.00	5.00
2.00	5.00	5.00	5.00	4.00	2.00	4.00	4.00	4.00	2.00	4.00
5.00	4.00	2.00	4.00	4.00	5.00	5.00	3.00	3.00	4.00	5.00
4.00	4.00	3.00	5.00	.00	1.00	.00	.00	2.00	1.00	9.00
1.00	9.00	9.00	7.00	9.00	9.00	3.00	2.00	2.00	6.00	6.00
7.00	8.00	1.00	1.00	3.00	2.00	3.00	.00	1.00	1.00	3.00
.00	20.00		5.00	10.00		5.00	.00	5.00	10.00	
2.00	3.00	.00	10.00		15.00		15.00		.00	1.29 .
	43.00		19.00		89.09		1.85	25.91		3.91 -
.81	-.43	-.59	-1.14	-1.87	-1.54	-1.72	-8.10 .		.	1.00
1.00	47.00		.	.	.	.				
71.00		69.00		169.00		44.00		32.00		999.00
	28.00		1.00	1.00	1.00	11.00		1.00	.00	5.00
1.00	4.00	1.00	7.00	.00	.00	.00	.00	.00	3.00	2.00
3.00	2.00	.00	.00	.00	.00	1.00	27.00	.	.	.
	.	.	.	.	.00	0	5.00	5.00	5.00	3.00
3.00	4.00	4.00	4.00	3.00	3.00	3.00	1.00	1.00	1.00 .	
2.00	4.00	5.00	5.00	4.00	5.00	5.00	5.00	4.00	5.00	3.00
2.00	5.00	4.00	3.00	4.00	20.00		1.00	7.00	9.00	2.00
8.00	7.00	9.00	8.00	9.00	9.00	5.00	4.00	4.00	4.00	5.00
9.00	10.00		.00	1.00	2.00	.00	.50	.00	1.00	.00
.50	.00	10.00		15.00		.00	30.00		.00	20.00
	.00	.00	.00	.00	.00	20.00		5.00	.00	1.38 .
	42.00		22.00		76.82		1.75	25.01		3.01
.36	.07	2.29	-.75	.31	1.38	.96	4.62 .		.	1.00
1.00	38.00		24.00		.00	.00	.00			
72.00		66.00		168.00		38.00		37.00		999.00
	48.00		1.00	1.00	1.00	11.00		1.00	.00	5.00
1.00	4.00	4.00	1.00	1.00	.00	.00	3.00	14.00		1.00
.00	.00	.00	.00	.00	.00	.00	.00 .	.	.	.
	.	.	.	.	.00	0	5.00	5.00	3.00	2.00
5.00	5.00	5.00	2.00	3.00	2.00	3.00	2.00	3.00	2.00	5.00
2.00	4.00	5.00	4.00	4.00	5.00	5.00	5.00	4.00	5.00	2.00

3.00	2.00	3.00	1.00	1.00	2.00	1.00	5.00	6.00	9.00	1.00	
9.00	9.00	8.00	9.00	9.00	2.00	2.00	2.00	1.00	2.00	8.00	
7.00	1.00	1.00	1.00	3.00	2.00	.00	.00	.00	1.00	.00	
10.00	5.00	20.00		20.00		.00	.00	10.00		25.00	
	.00	5.00	5.00	.00	.00	.00	1.03 .		44.00		
9.00	76.36		1.68	27.17		5.17	-.42	-.43	-.30	-.75	-
.56	.28	-1.72	-3.90 .	.		1.00	1.00	43.00		24.00	
	3.00	.13	3.00								
73.00		72.00		210.00		44.00		34.00		36.00	
	37.00		1.00	1.00	1.00	11.00		1.00	.00	3.00	
1.00	2.00	5.00	1.00	1.00	1.00	5.00	3.00	.42	2.00	9.00	
4.00	.00	1.00	.00	.00	1.00	2.00	42.00		34.00	.	
	.	.	.	.	.	1.00 cat		5.00	3.00	5.00	
1.00	4.00	5.00	5.00	3.00	5.00	1.00	4.00	5.00	1.00	1.00	
5.00	2.00	3.00	5.00	5.00	5.00	5.00	4.00	1.00	5.00	5.00	
4.00	5.00	3.00	5.00	2.00	.00	.00	7.00	9.00	3.00	1.00	
9.00	8.00	9.00	9.00	9.00	9.00	5.00	2.00	2.00	2.00	2.00	
7.00	7.00	.00	1.00	1.00	4.00	1.00	.00	.00	.00	1.00	
.00	10.00		25.00		.00	25.00		10.00		15.00	
	.00	.00	.00	.00	.00	.00	.00	15.00		1.29	
.94	44.00		13.00		95.45		1.83	28.54		6.54	-
.03	-.59	-.59	1.58	1.18	-.81	1.35	2.09	.05	.22	2.00	
2.00	48.00		.	.	.	.					
74.00		71.00		130.00		34.00		32.00		38.00	
	32.00		1.00	1.00	1.00	11.00		1.00	.00	5.00	
1.00	3.00	5.00	6.00	1.00	.00	.00	3.00	8.00	2.00	8.00	
5.00	2.00	.00	.00	.00	.00	.00 .	.	.	.	.	
	.	.	.	1.00 fish		5.00	5.00	3.00	3.00	3.00	
3.00	5.00	1.00	4.00	1.00	4.00	3.00	1.00	1.00	3.00	1.00	
1.00	1.00	4.00	5.00	5.00	5.00	5.00	5.00	5.00	1.00	3.00	
5.00	2.00	3.00	1.00	1.00	5.00	6.00	7.00	1.00	9.00	7.00	
9.00	9.00	9.00	9.00	5.00	5.00	5.00	4.00	4.00	5.00	12.00	
	.00	1.00	1.00	1.00	1.00	.00	3.00	.00	.00	.00	
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		1.06	.84	43.00		23.00		59.09		
1.80	18.17		3.83	.36	-.43	-.44	.80	-.13	.65	1.35	
2.16	.05	.12	1.00	1.00	43.00		24.00		1.00	.04	
1.00											
75.00		70.00		154.00		999.00		999.00		999.00	
	24.00		1.00	1.00	1.00	3.00	1.00	1.00	1.00	2.00	
3.00	1.00	7.00	.00	.00	.00	.00	.00	.00	.00	.00	
.00	.00	.00	.00	.00	.00 .	.	.	.	.	.	
	.	.	.00 0		5.00	4.00	3.00	2.00	5.00	4.00	
5.00	4.00	3.00	3.00	3.00	4.00	4.00	5.00	3.00	3.00	5.00	
5.00	5.00	3.00	5.00	4.00	3.00	4.00	4.00	1.00	2.00	5.00	
4.00	.00	1.00	.00	.00	1.00	1.00	9.00	1.00	7.00	9.00	
9.00	9.00	9.00	2.00	1.00	1.00	1.00	5.00	8.00	8.00	.50	
2.00	.50	.00	.50	3.00	1.00	.00	.00	.00	10.00		
7.00	.00	60.00		.00	5.00	3.00	5.00	.00	.00	.00	

15.00 5.00 .00 . . 43.00 10.00 70.00
1.78 22.14 .14 -.81 -.43 -.59 -1.14 -2.31 -1.54 -1.72 -
8.54 . . 1.00 1.00 42.00 . . . .
76.00 73.00 154.00 999.00 999.00 999.00
19.00 1.00 1.00 1.00 11.00 3.00 1.00 1.00
3.00 3.00 1.00 3.00 1.00 .00 .00 3.00 2.00 1.00 .50
.00 .00 .00 .00 .00 .00 2.00 29.00 25.00 .
. . . . . 1.00 cat 5.00 4.00 5.00
3.00 4.00 4.00 5.00 3.00 3.00 3.00 3.00 4.00 4.00 5.00
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5.00 6.00 8.00 5.00 9.00 9.00 6.00 4.00 3.00 1.00 4.00
999.00 999.00 999.00 999.00 999.00 999.00
999.00 999.00 999.00 999.00 999.00 999.00
50.00 .00 5.00 .00 .00 .00 10.00 15.00 .00
.00 .00 .00 20.00 .00 . . 37.00 18.00
70.00 1.85 20.36 1.64 -.03 -.59 -.30 -.75 -
.56 .65 -.19 -1.78 . . 2.00 3.00 44.00 . .
. .

77.00 70.00 168.00 999.00 999.00 999.00
43.00 1.00 1.00 1.00 1.00 1.00 .00 1.00 1.00
3.00 4.00 1.00 1.00 1.00 1.00 .00 999.00 999.00
999.00 999.00 999.00 999.00 999.00 999.00
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999.00 999 5.00 4.00 5.00 1.00 4.00 4.00 4.00 3.00 4.00
2.00 3.00 4.00 2.00 1.00 4.00 3.00 3.00 3.00 1.00 4.00
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999.00 999.00 . . . . 76.36 1.78 24.16
2.16 . . . .
999.00 999.00 40.00 24.00 3.00 .13
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78.00 70.00 196.00 46.00 38.00 999.00
51.00 1.00 1.00 1.00 11.00 1.00 .00 3.00
1.00 2.00 5.00 1.00 1.00 1.00 8.00 3.00 13.00 2.00
15.00 3.00 .00 2.00 .00 .00 .00 .00 . . . .
. . . . 1.00 cat 5.00 3.00 4.00 3.00
4.00 5.00 5.00 5.00 4.00 2.00 3.00 4.00 2.00 3.00 5.00
3.00 2.00 4.00 4.00 3.00 5.00 5.00 5.00 4.00 5.00 3.00
2.00 2.00 3.00 1.00 1.00 1.00 7.00 7.00 8.00 3.00 7.00
5.00 9.00 8.00 9.00 9.00 7.00 7.00 7.00 7.00 7.00 8.00
4.00 .50 1.00 3.00 6.00 .50 .00 1.00 .00 .00 .00
999.00 999.00 999.00 999.00 999.00 999.00
999.00 999.00 999.00 999.00 999.00 999.00
999.00 999.00 1.21 . 40.00 35.00 89.09

1.78 28.18 6.18 -.42 -.43 -.44 1.58 .31 1.01 .58
2.19 . . 1.00 1.00 43.00 24.00 6.00 .25
6.00
79.00 73.00 133.00 999.00 29.00 999.00
19.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00
3.00 1.00 3.00 1.00 .00 .00 3.00 .25 1.00 .25 .00
.00 .00 .00 .00 .00 1.00 18.00 . . . .
. . . .00 0 5.00 2.00 4.00 2.00 4.00
4.00 5.00 2.00 3.00 2.00 4.00 4.00 2.00 2.00 3.00 4.00
3.00 3.00 5.00 4.00 5.00 4.00 4.00 4.00 4.00 4.00 3.00
4.00 4.00 2.00 .00 .00 .00 7.00 7.00 3.00 7.00 5.00
9.00 8.00 9.00 7.00 5.00 1.00 1.00 1.00 4.00 9.00 4.00
5.00 2.00 1.00 .00 5.00 2.00 3.00 .00 2.00 .00 999.00
999.00 999.00 999.00 999.00 999.00
999.00 999.00 999.00 999.00 999.00 999.00
999.00 999.00 . . 38.00 12.00 60.45
1.85 17.58 4.42 -.03 -.59 -.59 -1.14 .31 .65 .58 -
.82 . . 1.00 1.00 43.00 . . . .
80.00 68.00 146.00 42.00 32.00 999.00
35.00 1.00 1.00 1.00 11.00 1.00 .00 3.00
1.00 4.00 4.00 1.00 1.00 1.00 1.00 3.00 9.00 1.00 2.00
.00 .00 2.00 .00 .00 2.00 2.00 37.00 31.00 .
. . . . . 1.00 cat 5.00 3.00 4.00
1.00 3.00 4.00 4.00 2.00 3.00 2.00 4.00 4.00 2.00 2.00
5.00 3.00 2.00 4.00 4.00 4.00 4.00 3.00 4.00 3.00 4.00
3.00 3.00 2.00 4.00 1.00 2.00 1.00 6.00 6.00 6.00 7.00
3.00 6.00 8.00 8.00 6.00 4.00 6.00 5.00 5.00 5.00 5.00
6.00 8.00 .00 2.00 2.00 1.00 1.00 .00 .00 2.00 2.00
.00 999.00 999.00 999.00 999.00 999.00
999.00 999.00 999.00 999.00 999.00 999.00
999.00 999.00 999.00 1.31 . 32.00 26.00
66.36 1.73 22.25 .25 -.42 -.26 -.44 1.19 -.13 .28 -
.95 -.73 . . 2.00 2.00 39.00 24.00 3.00
.13 1.00
81.00 71.00 168.00 999.00 999.00 999.00
18.00 1.00 1.00 1.00 11.00 3.00 1.00 1.00
3.00 3.00 1.00 7.00 .00 .00 .00 .00 999.00 999.00
999.00 999.00 999.00 999.00 999.00
999.00 999.00 999.00 . . . .
. 999.00 999 4.00 3.00 3.00 3.00 4.00 3.00
4.00 3.00 3.00 2.00 2.00 1.00 3.00 1.00 3.00 2.00 2.00
5.00 3.00 4.00 4.00 3.00 4.00 4.00 5.00 3.00 1.00 5.00
2.00 2.00 3.00 2.00 5.00 6.00 3.00 5.00 5.00 7.00 9.00
8.00 9.00 9.00 6.00 5.00 4.00 2.00 1.00 8.00 5.00 .00
1.00 1.00 .00 1.00 5.00 .00 .00 3.00 .00 .00 .00
.00 .00 .00 .00 10.00 25.00 .00 .00 .00
50.00 15.00 .00 . . 42.00 18.00 76.36
1.80 23.48 1.48 -.03 -.09 -.30 .80 -.13 -.81 -
.19 -.74 . . 999.00 999.00 35.00 24.00
.00 .00 .00

82.00		72.00		196.00		999.00		36.00		999.00
	37.00		1.00	1.00	1.00	11.00		1.00	.00	4.00
2.00	4.00	1.00	3.00	1.00	.00	.00	3.00	.08	10.00	
2.00	2.00	.25	.00	.00	.00	.00	1.00	26.00	.	.
	.	.	.	.	.	.00 0		5.00	2.00	4.00
1.00	3.00	5.00	5.00	4.00	4.00	3.00	1.00	4.00	2.00	1.00
5.00	1.00	2.00	5.00	3.00	2.00	5.00	2.00	4.00	4.00	5.00
2.00	3.00	4.00	3.00	1.00	1.00	5.00	2.00	8.00	6.00	1.00
9.00	6.00	8.00	8.00	9.00	9.00	5.00	4.00	4.00	2.00	2.00
7.00	8.00	.50	1.00	.50	.00	1.50	1.00	2.00	.00	.00
2.50	10.00		12.00		.00	40.00		.00	6.00	3.00
1.00	.00	.00	.00	3.00	7.00	18.00	.		.	40.00
	17.00		89.09		1.83	26.64		4.64	-.42	-.43
.13	-.36	.74	.28	1.35	1.29 .	.		1.00	1.00	39.00
	24.00		.00	.00	.00					
83.00		72.00		210.00		999.00		38.00		999.00
	19.00		1.00	1.00	1.00	1.00	3.00	1.00	1.00	2.00
3.00	5.00	1.00	1.00	.00	.00	3.00	.50	1.00	1.00	.00
.00	.00	.00	.00	.00	1.00	21.00	.	.	.	.
	.	.	.	1.00 fish		5.00	5.00	5.00	3.00	4.00
4.00	5.00	3.00	2.00	3.00	2.00	4.00	3.00	2.00	1.00	3.00
3.00	5.00	5.00	5.00	5.00	3.00	3.00	4.00	3.00	2.00	5.00
5.00	3.00	1.00	1.00	.00	1.00	5.00	2.00	9.00	1.00	7.00
9.00	9.00	9.00	9.00	2.00	1.00	1.00	1.00	1.00	8.00	5.00
1.00	1.50	1.50	3.00	1.00	3.00	.00	.00	.00	.00	20.00
	20.00		10.00		20.00		.00	.00	5.00	5.00
.00	.00	.00	15.00		5.00	.00 .	.		43.00	
6.00	95.45		1.83	28.54		6.54	-.42	-.43	-.59	-.75 -
.56	-1.18	-1.72	-5.65 .	.		2.00	2.00	41.00		24.00
	3.00	.13	3.00							
84.00		72.00		154.00		38.00		30.00		999.00
	25.00		1.00	1.00	1.00	11.00		3.00	1.00	2.00
2.00	4.00	1.00	7.00	.00	.00	.00	.00	.00	3.00	3.50
2.00	.50	.00	.00	.00	.00	.00 .	.	.	.	.
	.	.	.	.00 0		5.00	3.00	5.00	5.00	5.00
5.00	4.00	3.00	2.00	3.00	4.00	5.00	1.00	3.00	5.00	4.00
2.00	4.00	5.00	4.00	5.00	4.00	4.00	4.00	4.00	2.00	3.00
4.00	4.00	6.00	2.00	7.00	1.00	7.00	5.00	3.00	7.00	7.00
9.00	9.00	9.00	9.00	3.00	1.00	1.00	1.00	999.00		8.00
9.00	.50	.50	.50	1.00	1.00	1.00	1.00	.00	2.00	.00
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		999.00		999.00		999.00		999.00	
999.00	999.00		1.27 .		43.00	.		70.00		1.83
20.93	1.07	1.54	-.26	.42	-.75	.31	-.08	.58	1.75 .	.
	1.00	1.00	45.00	.	.	.	.			
85.00		74.00		182.00		999.00		36.00		999.00
	19.00		1.00	2.00	1.00	1.00	1.00	.00	3.00	2.00
2.00	1.00	6.00	1.00	.00	.00	.00	.00	2.00	.75	.58
.00	.00	.00	.00	.00	2.00	14.00		10.00	.	.
	.	.	.	.	.00 0		4.00	2.00	4.00	3.00

3.00	4.00	5.00	2.00	2.00	2.00	3.00	5.00	2.00	2.00	4.00
3.00	3.00	4.00	4.00	4.00	2.00	4.00	3.00	2.00	2.00	1.00
2.00	4.00	5.00	19.00		30.00		25.00		5.00	9.00
9.00	4.00	6.00	7.00	9.00	8.00	9.00	9.00	6.00	6.00	6.00
6.00	6.00	8.00	8.00	2.00	.50	.50	3.00	.50	.00	1.00
.00	.50	.00	25.00		10.00		10.00		25.00	
.00	.00	15.00		5.00	.00	5.00	.00	2.50	2.50	.00 .
.		42.00		30.00		82.73		1.88	23.42	
1.42	6.64	4.39	3.01	.80	1.18	1.38	.20	17.60	.	.
	1.00	1.00	34.00		24.00		3.00	.13	3.00	
86.00		74.00		154.00		999.00		999.00		999.00
	27.00		1.00	1.00	1.00	11.00		1.00	.00	3.00
2.00	3.00	1.00	7.00	.00	.00	.00	.00	.00	3.00	1.50
.75	.50	.00	.00	.00	.00	3.00	33.00		31.00	
28.00 .	.	.	.	.		1.00 cat		3.00	3.00	4.00
2.00	3.00	4.00	4.00	2.00	3.00	2.00	3.00	5.00	2.00	5.00
1.00	2.00	2.00	4.00	3.00	3.00	5.00	4.00	4.00	3.00	4.00
4.00	4.00	1.00	4.00	1.00	10.00		3.00	7.00	9.00	9.00
1.00	9.00	6.00	9.00	8.00	9.00	9.00	1.00	1.00	1.00	1.00
1.00	6.00	8.00	.00	.00	.50	.00	1.00	4.00	2.00	.00
.00	.00	15.00		10.00		10.00		30.00		.00
.00	10.00		10.00		.00	.00	.00	10.00		5.00
.00	.	.	41.00		5.00	70.00		1.88	19.81	
2.19	-.42	1.07	-.16	1.58	1.18	1.38	1.35	5.98 .	.	
2.00	4.00	37.00	.	.	.	.				
87.00		72.00		178.00		41.00		35.00		999.00
	52.00		1.00	1.00	1.00	1.00	1.00	.00	4.00	1.00
4.00	4.00	1.00	1.00	1.00	1.00	3.00	33.00		.00	.00
.00	.00	4.00	.00	.00	.00	4.00	60.00		45.00	
38.00	27.00	.	.	.	.		1.00 cat		5.00	5.00
2.00	5.00	5.00	5.00	5.00	1.00	3.00	4.00	4.00	5.00	4.00
4.00	3.00	4.00	4.00	4.00	3.00	1.00	3.00	5.00	5.00	4.00
4.00	4.00	4.00	4.00	5.00	1.00	1.00	1.00	1.00	3.00	2.00
3.00	7.00	7.00	9.00	9.00	9.00	9.00	1.00	1.00	1.00	1.00
1.00	8.00	7.50	.00	2.00	1.00	4.00	1.00	.00	.00	.00
.00	.00	17.00		60.00		3.00	.00	10.00		10.00
	.00	.00	.00	.00	.00	.00	5.00	.00	1.17 .	
43.00	5.00	80.91		1.83	24.19		2.19	-.42	-.43	-.44 -
.75	-1.43	-1.18	.58	-4.08 .	.		2.00	2.00	41.00	.
.	.	.								
88.00		71.00		168.00		36.00		34.00		37.00
	30.00		1.00	1.00	1.00	1.00	3.00	1.00	1.00	2.00
999.00	1.00	7.00	.00	.00	.00	3.00	.00	3.00	.50	.67
.42	.00	.00	.00	.00	2.00	19.00		16.00	.	.
.	.	.	.		.00 0		3.00	1.00	3.00	2.00
4.00	3.00	4.00	3.00	2.00	2.00	3.00	3.00	2.00	3.00	4.00
3.00	2.00	2.00	4.00	3.00	4.00	1.00	2.00	4.00	3.00	3.00
2.00	4.00	4.00	3.00	3.00	1.00	2.00	6.00	6.00	3.00	7.00
5.00	8.00	9.00	9.00	9.00	4.00	4.00	2.00	2.00	1.00	999.00
	999.00		999.00		999.00		999.00		999.00	

999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		1.06	.92	40.00		13.00		76.36		
1.80	23.48		1.48	.36	-.09	-.44	-.36	-.13	.28	.58	
.20	.03	.20	1.00	1.00	34.00	.	.	.	.		
89.00		72.00		154.00		40.00		34.00		40.00	
	44.00		1.00	1.00	1.00	2.00	1.00	.00	5.00	1.00	
4.00	4.00	1.00	1.00	1.00	1.00	3.00	8.00	1.00	10.00		
.00	.00	.00	2.00	.00	2.00	2.00	14.00		12.00	.	
.	.	.	.	.		1.00 bird		5.00	2.00	5.00	
1.00	3.00	5.00	5.00	4.00	3.00	3.00	4.00	5.00	2.00	1.00	
3.00	3.00	2.00	5.00	5.00	4.00	5.00	3.00	4.00	4.00	2.00	
2.00	4.00	5.00	2.00	1.00	1.00	.00	3.00	4.00	3.00	2.00	
8.00	6.00	9.00	9.00	9.00	9.00	6.00	1.00	1.00	1.00	1.00	
7.00	9.00	.50	2.00	1.50	1.50	.50	.00	.50	1.00	.50	
.00	12.50		25.00		.00	12.50		.00	20.00		
.00	.00	.00	.00	.00	.00	.00	.00	1.18	.85	42.00	
	10.00		70.00		1.83	20.93		1.07	-.42	-.43	-
.59	.03	-1.00	-.81	.96	-2.26	.04	.13	1.00	1.00	42.00	
	24.00		2.50	.10	1.50						
90.00		70.00		168.00		40.00		33.00		999.00	
	20.00		1.00	1.00	1.00	11.00		3.00	1.00	1.00	
2.00	3.00	5.00	5.00	1.00	.00	.00	3.00	.00	3.00	.25	
.25	2.00	.00	.00	.00	.00	1.00	16.00	.	.	.	
.	.	.	.		.00 0		5.00	4.00	4.00	3.00	
3.00	4.00	5.00	4.00	5.00	3.00	4.00	5.00	2.00	2.00	5.00	
3.00	2.00	3.00	4.00	5.00	5.00	4.00	5.00	4.00	5.00	4.00	
2.00	4.00	4.00	5.00	.00	1.00	.00	6.00	3.00	8.00	2.00	
7.00	9.00	9.00	9.00	9.00	6.00	7.00	7.00	7.00	7.00	8.00	
4.00	.00	1.00	.00	6.00	2.00	.00	3.00	.00	.00	.00	
2.00	5.00	8.00	30.00		.00	.00	3.00	5.00	.00	.00	
.00	5.00	10.00		.00	1.21 .		43.00		34.00		
76.36	1.78	24.16		2.16	1.15	-.59	-.44	-1.14	-.13	-.81	-
1.33	-3.31 .	.		1.00	1.00	45.00		24.00		6.00	
.25	6.00										
91.00		72.00		154.00		999.00		999.00		999.00	
	23.00		1.00	1.00	1.00	2.00	1.00	.00	2.00	2.00	
2.00	1.00	7.00	.00	.00	.00	3.00	.00	2.00	.50	.50	
.00	.00	.00	.00	.00	5.00	27.00		13.00		13.00	
	11.00		9.00 .	.	.		.00		5.00	3.00	
5.00	2.00	3.00	5.00	4.00	3.00	2.00	3.00	4.00	4.00	1.00	
2.00	4.00	3.00	3.00	3.00	4.00	5.00	5.00	5.00	4.00	5.00	
5.00	5.00	3.00	4.00	3.00	1.00	4.00	.00	5.00	3.00	7.00	
6.00	4.00	4.00	8.00	8.00	9.00	9.00	6.00	1.00	2.00	1.00	
4.00	6.00	8.00	.50	1.00	.50	.00	1.00 .		8.00	.00	
1.00	.00	9.00	5.00	5.00	40.00		.00	.00	1.00	5.00	
.00	.00	5.00	10.00		20.00		.00 .	.		38.00	
	14.00		70.00		1.83	20.93		1.07	-.42	.07	-

.59	.80	-1.43	.65	-.57	-1.49 .	.		2.00	2.00	45.00	
.	.	.	.								
92.00		72.00		168.00		40.00		34.00		999.00	
	47.00		1.00	1.00	1.00	12.00		3.00	1.00	1.00	
2.00	2.00	1.00	7.00	.00	.00	.00	.00	999.00		999.00	
	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00	.	.	.	.	.	.	.	
.		999.00		999	1.00	3.00	1.00	3.00	1.00	2.00	
1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	3.00	4.00	1.00	
1.00	3.00	1.00	1.00	3.00	1.00	1.00	3.00	3.00	1.00	3.00	
3.00	3.00	14.00		1.00	5.00	9.00	1.00	5.00	5.00	5.00	
4.00	6.00	4.00	5.00	4.00	3.00	5.00	5.00	5.00	10.00		
2.00	1.00	2.00	1.00	.00	.00	.00	.00	.00	.00	.00	
40.00	10.00		.00	50.00		.00	.00	.00	.00	.00	
.00	.00	.00	.00	.00	1.18 .		24.00		22.00		
76.36	1.83	22.83		.83	.36	1.73	-.44	.80	1.18	-1.54	-
.19	1.91 .	.		999.00		999.00		13.00	.	.	
.	.										
93.00		69.00		126.00		999.00		32.00		999.00	
	22.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	2.00	
3.00	1.00	7.00	.00	.00	.00	.00	.00	2.00	.58	1.00	
.00	.00	.00	.00	.00	.00 .	.	.	.	.	.	
.	.		1.00 dogs		5.00	1.00	5.00	4.00	5.00	5.00	
5.00	3.00	1.00	3.00	3.00	5.00	1.00	5.00	5.00	3.00	3.00	
5.00	2.00	5.00	5.00	3.00	5.00	3.00	5.00	5.00	1.00	3.00	
3.00	.00	1.00	.00	.00	1.00	1.00	999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		7.00	1.00	.00	1.00	
1.00	.00	1.00	1.00	2.00	.00	1.00	.00	45.00		5.00	
.00	20.00		.00	10.00		.00	5.00	.00	.00	.00	
10.00	5.00	.00 .	.	.	.		57.27		1.75	18.65	
	3.35	-.81	-.43	-.59	-1.14	-2.31	-1.54 .	.	.	.	
	1.00	1.00	46.00	.	.	.	.				
94.00		68.00		140.00		999.00		999.00		999.00	
	19.00		1.00	1.00	1.00	1.00	3.00	1.00	1.00	3.00	
2.00	1.00	7.00	.00	.00	.00	.00	.00	2.00	8.33	.25	
.00	.00	.00	.00	.00	3.00	32.00		28.00		17.00	
.	.	.	.	.		1.00 cat		4.00	3.00	3.00	
2.00	4.00	4.00	5.00	2.00	3.00	3.00	4.00	3.00	3.00	2.00	
5.00	3.00	3.00	3.00	2.00	3.00	4.00	5.00	5.00	3.00	5.00	
5.00	4.00	2.00	4.00	6.00	10.00		1.00	5.00	5.00	5.00	
999.00	999.00		8.00	9.00	9.00	9.00	9.00	6.00	4.00	4.00	
5.00	4.00	8.00	3.00	1.00	3.00	1.00	.00	1.00	4.00	2.00	
.00	1.00	.00	999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00		999.00		999.00		
999.00	999.00		999.00		999.00	.	.		44.00		
23.00	63.64		1.73	21.33		.67	1.54	1.07	-.44	.80	-
.56	-.08 .	.	.	.		2.00	3.00	39.00		24.00	
	.00	.00	.00								

95.00		68.00		210.00		999.00		36.00		999.00
	25.00		1.00	1.00	1.00	2.00	3.00	1.00	1.00	3.00
2.00	1.00	7.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	1.00	27.00	.	.	.	.
	.	.	.	1.00 dog/fish			5.00	3.00	5.00	3.00
4.00	4.00	5.00	3.00	2.00	3.00	4.00	4.00	2.00	3.00	5.00
3.00	2.00	4.00	5.00	4.00	5.00	4.00	4.00	4.00	4.00	3.00
3.00	4.00	4.00	.00	2.00	1.00	999.00		6.00	5.00	7.00
3.00	6.00	9.00	8.00	9.00	9.00	5.00	2.00	2.00	2.00	4.00
8.00	5.00	1.00	1.50	1.00	.00	1.00	1.50	2.00	.00	1.00
2.00	.00	20.00		.00	.00	.00	10.00		.00	10.00
	.00	.00	.00	25.00		35.00		.00 .	.	
41.00	15.00		95.45		1.73	32.00		10.00		-.81 -
.26	-.44 .		-.13	-.08	-.95 .	.	.		2.00	2.00
43.00	24.00		.00	.00	.00					
96.00		66.00		999.00		999.00		999.00		999.00
	20.00		1.00	1.00	1.00	11.00		1.00	1.00	1.00
2.00	3.00	1.00	7.00	.00	.00	.00	.00	.00	1.00	4.00
.00	.00	.00	.00	.00	.00	3.00	25.00		23.00	
13.00 .	.	.	.	.		1.00 cat/fish		5.00	2.00	3.00
2.00	4.00	4.00	5.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00
2.00	4.00	2.00	4.00	3.00	2.00	5.00	3.00	3.00	2.00	4.00
4.00	2.00	5.00	2.00	1.00	3.00	1.00	1.00	6.00	6.00	3.00
7.00	7.00	9.00	9.00	9.00	9.00	6.00	2.00	5.00	5.00	4.00
6.00	10.00		.00	1.00	.50	.00	.50	.00	6.00	.00
.00	.00	15.00		5.00	.00	40.00		.00	.00	.00
20.00	2.00	.00	.00	9.00	9.00	.00 .	.		43.00	
22.00	999.00		1.68 .	.		-.42	-.09	-.44	-.75	-.13
.28	.58	-.98 .	.		2.00	3.00	36.00		24.00	
.00	.00	.00								
97.00		69.00		168.00		40.00		33.00		999.00
	21.00		1.00	1.00	1.00	12.00		3.00	1.00	2.00
2.00	3.00	1.00	7.00	.00	1.00	5.00	.00	.00	3.00	7.00
1.00	1.00	2.00	.00	.00	2.00	6.00	33.00		32.00	
34.00	34.00		23.00		21.00	.	.		.00 0	
5.00	3.00	3.00	2.00	5.00	5.00	5.00	1.00	5.00	3.00	2.00
4.00	2.00	1.00	4.00	2.00	3.00	5.00	4.00	4.00	5.00	4.00
4.00	4.00	5.00	3.00	2.00	4.00	4.00	2.00	4.00	20.00	
1.00	8.00	4.00	3.00	7.00	6.00	9.00	9.00	9.00	9.00	6.00
4.00	5.00	1.00	4.00	8.00	3.00	.50	1.00	1.00	.00	1.00
1.50	1.00	3.00 .		4.00	20.00		10.00		.00	5.00
20.00	10.00		5.00	10.00		.00	.00	5.00	5.00	10.00
	.00	1.21 .		42.00		20.00		76.36		1.75
24.86	2.86	-.03	.07	2.29	-.75	.74	-.45	.58	2.46 .	.
	2.00	7.00	44.00	.	.	.	.			
98.00		74.00		238.00		46.00		36.00		999.00
	41.00		1.00	1.00	1.00	3.00	1.00	.00	5.00	1.00
4.00	4.00	1.00	1.00	1.00	1.00	3.00	14.00		2.00	6.00
1.00	.00	2.00	.00	.00	.00	5.00	50.00		46.00	
45.00	41.00		38.00	.	.	.		.00 0		5.00

2.00	5.00	2.00	3.00	5.00	5.00	3.00	2.00	3.00	2.00	5.00
2.00	1.00	5.00	2.00	4.00	5.00	5.00	5.00	5.00	2.00	5.00
5.00	5.00	2.00	4.00	5.00	5.00	1.00	1.00	20.00		5.00
8.00	1.00	4.00	6.00	6.00	9.00	8.00	9.00	9.00	5.00	2.00
2.00	2.00	2.00	6.00	12.00		.50	1.00	3.00	.00	.50
.00	.00	.00	.00	.00	10.00		10.00		15.00	
50.00	20.00		15.00		5.00	.00	.00	5.00	.00	10.00
	.00	.00	1.28 .		41.00		13.00		108.18	
1.88	30.62		8.62	-.42	-.43	2.29	.80	.74	-1.54	.20
1.65 .	.		2.00	4.00	45.00	.	.	.	.	
99.00		69.00		196.00		999.00		36.00		999.00
	32.00		1.00	1.00	1.00	11.00		1.00	.00	5.00
1.00	4.00	5.00	1.00	1.00	.00	.00	3.00	1.00	6.00	.50
999.00	999.00		.00	.00	.00	.00	1.00	31.00	.	.
.	.	.	.	.		.00 0		3.00	1.00	5.00
3.00	3.00	4.00	3.00	3.00	2.00	3.00	3.00	5.00	1.00	5.00
5.00	1.00	3.00	3.00	3.00	3.00	5.00	3.00	3.00	3.00	3.00
2.00	5.00	5.00	3.00	1.00	1.00	10.00		4.00	9.00	9.00
1.00	9.00	7.00	9.00	9.00	9.00	9.00	5.00	1.00	1.00	1.00
1.00	7.50	8.00	.50	2.00	2.50	1.50	1.00	.50	.50	.00
.00	.00	6.00	10.00		5.00	30.00		.00	15.00	
4.00	8.00	.00	10.00		2.00	5.00	6.00	.00 .	.	
43.00	9.00	76.36		1.83	22.83		.83	-.42	-.43	.85
.42	1.18	1.38	1.35	4.32 .	.		1.00	1.00	35.00	
24.00	1.50	.06	1.50							