Chapter 15: Introduction to Evolutionary Psychology

Introduction

Imagine yourself and your partner alone on a camping trip far from civilization. In the middle of a dark night, you see a bright light several hundred meters away. What do you do? You would probably talk with your partner about several different options: (1) staying where you are; (2) walking and introducing yourselves to the unknown campers; (3) waiting until morning and then playing it by ear; or (4) finding a different campsite the next day to be away from other people. You would arrive at some mutual agreement and then execute that action. There is one behavior that neither of you would do—stand upright and without communicating to each other walk in a zombie-like trance toward the light.

Now imagine that you and your partner are moths instead of humans. Faced with a bright light on a dark night, both of you would orient and then proceed to the light quite oblivious to the other. There would be no social discourse or give-and-take maneuvering to achieve consensus. There is only a built-in stimulus response connection.

So why do humans and moths behave differently? Among the several levels at which this question can be answered is an evolutionary level. Moths have a hardwired response to light because at some point in their evolutionary history moths that oriented and flew toward light reproduced more often than those who did not. We humans followed a different evolutionary path.

This example highlights an essential feature of evolutionary psychology—evolution predisposes the members of a species to engage in certain responses and at the same time constrains them from performing other responses. In the moth, DNA assists in the construction of a biological system that mechanically responds to light. Moth cognition—to the extent that there is any cognition at all—does not play a part in this behavior. In we humans, DNA assists in the construction of a biology that permits enormous learning, the ability to think and plan ahead, symbolic communication with conspecifics, and cognitive appraisal of the likely outcomes of situations that we have never experienced. We are predisposed towards flexibility and constrained from developing

Social Organization, Aggression, and Mating of Three Great Apes

Evolutionary psychology is ripe with examples from the animal world. Usually, a number of species, many of them quite distant to we humans, are used with each species illustrating a basic principle (e.g., the parental behavior of the male seahorse is an example of parental investment theory). Let us depart from this formula by first examining thumbnail sketches of the social organization, mating styles, and aggression of the three great apes that are our genetically closest relatives—gorillas, chimpanzees, and bonobos. By comparing and contrasting the behavior of these three species, we can illustrate many of the major issues of evolutionary psychology.

Gorillas

A gorilla community is dominated by a single adult male silverback, although sometimes the silverback will allow a good buddy or two to share his reign. The rest of

the group consists of several adult females and their juvenile and adolescent offspring. The silverback(s) vigorously defend their harem against the attempts of single males to entice away one or more of the breeding females. Young adult males almost always leave their natal group and try to gather a harem of their own. Life is tough for the bachelor. He will either wander alone or join several other bachelors and form a group of their own. Gathering a harem is not easy. By dumb luck, an old silverback may die and the closest bachelor, after fending off attempts by rival males, may claim most of the harem. More typically, however, the male collects a female at a time by challenging a silverback in an established group and luring a female away. As a result, most males do not mate while the lucky few sire a large number of offspring (Harcourt et al., 1980).

Gorilla mating begins when a female enters *estrus*[1]. In response to hormones, her labia change color and swell, and the females "present" their bottoms to the adult male(s) of the group. Because of the social structure, the female gorilla mates only with the silverback(s) in the group. In such a system, paternity is assured—if the father is not the dominant male, then it is his best buddy.

Although gorillas are remarkably peaceful in general, males engage in infanticide in two situations (Wrangham & Peterson, 1996). The first is when a male gains a new female or takes over a whole troop. Here, he will often kill all the infants of his new mate(s). The second situation is more insidious. A male may invade an established harem and kill an infant, despite an aggressive defense from the silverback and the infant's mother. When this occurs, a strange phenomenon takes place—within a few

[1] Estrus (adjectival form = *estrous*) is a cyclical phenomenon among mammals in which a female becomes sexually excited and will either initiate or accept mating. It occurs around ovulation and often involves physical change in the sex organs.

days, the infant's mother will abandon her group and take up with the strange male who killed her offspring! While a human mother would plot murderous revenge, the gorilla mother prefers to desert a male who proved incapable of defending her infant in favor of another male who is more likely to protect her future infants. For the killer, this type of infanticide is a tactic to gain a mating female.

Chimpanzees

Chimps are organized into communities centered around a cadre of adult males. Males remain within the troop into which they are born and forge strong social bonds with one another. They will travel together, groom one another, and aggregate into opportunistic hunting parties. Although power politics and alliances are a way of life among the males in a chimp community, the males of a group unite against the males in neighboring communities. They actively patrol their own groups territory to prevent incursion, and they form "party gangs" to raid a neighboring chimp community in order to kill a male or abduct a female (Goodall, 1986; Wrangham & Peterson, 1996).

Females emigrate from their natal community and become associated with another group of males. Females do not bond with other females or with males as strongly as the males of a troop bond to one another, and they live in home ranges that overlap the troop's territory. In the dominance hierarchy within the group, all the adult males are invariably dominant to the females. According to Wrangham and Peterson (1996, p. 143) a young male "enters the world of adult males by being systematically brutal toward each female in turn (when adult males aren't close enough to take sides) until he has dominated all of them. … In a typical interaction, he might charge at the

female, hit her, kick her, pull her off balance, jump on top of her huddled and screaming form, slap her, lift her and slam her to the ground, and charge off again."

Like gorillas, chimp mating begins with estrus and has three forms (Tutin, 1980). The first and most typical form is for the female to mate promiscuously and frequently with virtually every male in her group. In the second form, which often occurs close to ovulation, one of the high-ranking males may form a short-term, possessive bond with the female. Here, the male will remain close to the female and use combinations of threats and aggression to discourage her from leaving and to prevent subordinate males from copulating. Both the promiscuous and possessive forms can take place within a single estrous period. The third and rarest form is the consortship. Here, the female and a single male depart from the group, often surreptitiously, and remain together for an extended period during which they actively avoid contact with other chimps. Because of the highly promiscuous nature of chimp sex, paternity is seldom certain.

Chimp mating can involve considerable aggression. Males, especially lower ranking ones, will intimidate a female by threat and physical beating, eventually coercing her into copulating with him. A female in heat attracts the attention of numerous males who, particularly close to ovulation, chase her and fight among themselves over the right to have sex. And if a male can isolate the female from the other males, he will sometimes force her into a consortship.

Like gorillas, male chimps may practice infanticide when a new female joins their group with an infant. Males will gang up on the new female and despite her defense, eventually rip the infant away from her, take it to a secluded area, and kill it.

The vicious side of chimps is matched by their ability to make peace (de Waal, 1989). One group of chimps does not sit down with their neighbors to make peace, but individual chimps within a group deliberately go out of their way to reconcile conflict. A subtle touch and a glance might be sufficient to appease an aggressor. Grooming calms an upset colleague and promotes friendship.

Bonobos

Many scientists and most lay people are unaware of the pygmy chimpanzee or bonobo[2]. If they see one at a zoo, they will mistake it as a common chimpanzee. Indeed, although there are striking similarities in appearance between the bonobo and chimp[3], the two are separate species whose territories do not overlap. The bonobo (or *pan paniscus*) lives in the dense rain forests south of the Zaire (Congo) river while the chimp (*pan troglodytes*) lives north of the river, often in more open and dryer regions.

Like chimps, bonobos are social primates in which males remain with their natal group while females typically emigrate to a neighboring group. However, the structure of a bonobo community is quite different from a chimp. In contrast to the strong male-oriented chimp society, the adult bonobo female is either codominant or has a moderate dominance advantage over her male counterpart even though she is physically smaller than he is (Kano, 1992; Wrangham & Peterson, 1996). Among bonobos, who you are counts more than what sex you are. The strongest social bonds are among females and between a male and his mother. The weakest bonds are among males. The strong power

[2] Bonobos are also called pygmy chimpanzees. They do not, however, differ greatly in size from the common chimp.

politics of chimp males takes a decidedly softer tone in male bonobos. In fact, an adult bonobo male often relies upon his mother and her close female friends to intervene and mute aggression from another male (de Waal, 1989, 1995).

Like the chimp, heterosexual sex in bonobos is associated with estrus, but a bonobo female spends more of her cycle in sexually receptive mode than her chimpanzee cousin. Bonobo mating is largely promiscuous, so paternity is rarely assured.

The techniques of bonobo sex give the impression that some ancient bonobo had memorized a human sex manual and tried everything out. In the bonobo's life, sex begins long before puberty and involves a number of different positions (among them, the infamous missionary position), genital stimulation by hands, and overt oral sex. And bonobo sex is not strictly of the hetero variety. Two female bonobos will engage in *hoka-hoka*, the local African phrase for genito-genital rubbing. The two lie together in the missionary position, bring their clitorises together, and move their hips quickly from side to side. Hoka-Hoka ends, as Wrangham and Peterson (1996, p. 210) state, "with mutual screams, clutching limbs, muscular contractions, and a tense, still moment. It looks like orgasm."

Bonobos engage in sex for a much wider range of reasons than chimps and even humans. While it is not uncommon for a female chimp to offer sex in exchange for a favored food item, it is a regular occurrence in bonobo life. Sex is used for reconciliation after a disagreement (de Waal, 1989) for establishing friendships, for calming down an emotional friend, and for greeting someone who has been away for a while. It also may

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[3] The easiest way to distinguish a bonobo from a chimp is to look at the hair on top of their heads. Chimps have short hair with no "style" to it. Bonobos have long hair that is neatly parted right down the middle

be done just for the purpose of having fun. And sex is frequent; a bonobo can mate several dozen times in a single day. It should come as little surprise then that after hearing this lecture in class, one student turned his eyes skyward, clasped his hands in prayer, and muttered, "God, if there is reincarnation, then next time please make me a bonobo."

Compared to chimps, almost every species is peaceful but bonobos males are especially so. Intermale aggression does indeed occur among bonobos but not nearly at the rate it does among chimps. Male aggression against a female, almost a daily occurrence in chimps, is much less frequent in bonobos. Any bonobo male with sufficient temerity to threaten and attack a female is likely to find himself being driven off by a gang of her female friends. Infanticide, if it takes place at all, is rare. There have been no documented cases of bonobos forming party gangs to invade a neighboring territory in order to kill a male. *Au contraire*, two adjacent bonobo communities have been known to meet, socialize, and, of course, have sex with each other. This is something unheard of in chimp society.[4]

Is Human Social Organization and Mating Biologically Constrained?

To illustrate predispositions and constraints shaped by evolution, let us compare human social organization, mating patterns, and aggression to those of gorillas, chimps, and bonobos. Imagine, for the moment, the college-aged men and women belonging to a human culture that followed the pattern of gorillas. There could be sororities and

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with the appearance of being combed out to each side.

[4] The picture of bonobos as the "make love not war" species of *pan* is tempered by the fact that bonobos have not been studied in their wild habitats as intensively as chimps. Hence, certain types of aggression, like infanticide and murder, may actually occur but at such rare rates that they have yet to be observed.

fraternities, of course, but they would take a decidedly different form. Each sorority would be small and headed by a mature adult male[5] who would jealously guard his harem and their offspring from contact with any other college male. In order to keep his females under eye, the male would probably demand that they all take the same classes that he takes. Perhaps two or three different harem groups may share the same classroom, but there would probably be physical barriers in the room to prevent them from interacting. Otherwise, the males would disrupt the class by their displays, posturing, games of one-upmanship, and even overt aggression to prevent any female in their harem from leaving and/or to entice another female into joining their harem.

Each coed would feel that is quite natural to have sex with the male and have him as the father of her children. Although there may be squabbles among the women, there would be no possessiveness or jealousy about sharing him with the others. Both the male and the females may feel physical and perhaps even emotional attraction to one another. However, the concept of casually dating someone else would never even cross anyone's mind.

Males without a harem would either live solitary lives or join together into an all-male fraternity. Bachelor males could easily take classes with other bachelor males, but to maintain order, the college would prohibit bachelors from taking courses with harems. If a harem master gets a bit long in the tooth, a bachelor will engage in repeated displays of dominance and aggression with him (and with other bachelors) in order to drive him away and take over the women. If the bachelor succeeds, the females will not follow

[5] Or, in some cases, two or more adult males.

their former mate and father of their children. They will placidly go with the victor, have sex with him, and have his children.

There would be continual games of dominance between the bachelors and a harem male as he leads his harem and children across campus. Sometimes a bachelor might find a female and her infant isolated from the main group. Here, he might grab and kill the infant despite vigorous protests and attacks from the mother. It may take a few days for the female to get over this event, but soon she would find herself attracted to her child's killer and will leave her own harem group to join up with him. There would be no charges of murder nor would there be any disciplinary action from the university. The bachelor is doing what any reasonable unattached male would do to try to get a mate.

Now imagine a different scenario. Again, let us again consider collegiate life, but this time, one organized on the basis of the chimpanzee. Here, there are no dominant males with their harems. Instead, there would be very strong fraternities with fierce—perhaps even murderous—rivalries among them. Sororities, if there were any, would have poor internal organization compared to the fraternities. In general, the women would act a bit more as loners while the males would almost always be found with their buds. Each sorority would be strongly associated with a fraternity. The guys might play politics and power games among themselves, but each fellow would act bossy towards the women who, in turn, would submit to his authority.

A coed would go through cycles of heat and sexual abstinence. As she enters heat, the guys would pay closer attention to her and quarrel among themselves to get near her. Although she might prefer some males to others, she would find it very natural to have sex repeatedly with all the frat boys. She must be careful in spurning someone's

advances; if she protests too much, she may be beaten and raped. As ovulation nears, one of the more dominant males might try to sequester her for himself by challenging any subordinate who tries to mate with her. He may be successful for a while, but he usually fails to inhibit her promiscuity—after all, he cannot guard her 24 hours a day. If she becomes pregnant, she will not know who the father was.

Finally, let us imagine what a bonobo college might be like. There would be no harems like the gorilla; neither would there be the fraternity-dominated social structure of the chimp. There would still be fraternities and sororities, each fraternity being associated with a sorority, but if there were any dominance, the sororities would have the edge. There would indeed be disagreements and aggression but it would be very muted compared to chimps. Frat boys would soon learn that it was inadvisable to get too uppity with a lady—her friends would get together and chastise them for such rude behavior.

Like chimps, sex would be promiscuous, but in stark contrast to chimps and gorillas, sex would be used for much more than simple procreation. And it would not be strictly heterosexual. Are you with someone you care for? Then bond and have sex. Did you and friend just ace a difficult exam? Celebrate by having sex! Did you have harsh words with a friend? Don't just kiss and make up, have sex. Just run into a sorority lady that you haven't seen in a while? Run up to her and have sex! Is a friend distraught over a bad grade? Before you help him study, make certain that you calm him down by having sex. Did someone just bring a pizza into the frat house? Polite manners dictate that you have sex with the delivery person before you ask for a slice. Can you imagine your college winning the championship football game in the last few seconds? It would

be perfectly natural for the TV camera to pan over the victorious Bonobo U fans having wild sex in the bleachers.

What is wrong with the gorilla, chimp, and bonobo scenarios? Why do they appear frightening or amusing? If we humans are extraordinarily open to cultural influences, they why have we never evolved societies that have the organization and mating structure of gorillas? Certainly there are polygynous societies where a male can have a harem, but even these societies differ dramatically from the gorilla. One male with his harem can live peacefully along side other males. Although there may be challenges to a male, there would not be constant aggression on the part of bachelors to usurp another's harem. If a bachelor were to kill a woman's infant, we humans would forgive her if she retaliated in a murderous rage but consider it pathological for her to fall in love with him because of his action.

Many societies have the chimp's ethos of male dominance, even to the point of tacitly condoning male battery of women. But has there ever been a society with the promiscuous mating structure of the chimp? Promiscuity does occur in individuals and it does vary in degree from one culture to another. But has it ever been the *modus vivendi* of a whole culture?

Finally, we humans are like bonobos in using sex for bonding and friendship. We may spend a few hours acting like our primate cousins, as for example, descriptions of the banquets hosted by the Roman emperor Caligula suggest. But has there ever been a society with morals that match that of the bonobo? Do we know of any culture where proper etiquette dictates that you should have indiscriminant sex with all your male and female friends in all the different circumstances of the bonobo?

Exactly why are we different from gorillas, chimps, and bonobos? Students can easily develop a litany of possible reasons ranging from human language through human logic to human morals. An evolutionary psychologist, however, would trace all of these mechanisms back to a single source—our evolutionary history has biologically predisposed us to act in certain ways and has biologically constrained us from acting in other ways. In short, we do not organize and mate like gorillas, chimps, and bonobos because our genes make it difficult for us to adopt these patterns at a social level.

How are Humans Different from other Apes?

Humans definitely do not have the social organization of gorillas. All human societies are multimale in the sense that several adult males live together, form bonds, and cooperate among themselves. Neither do we have the organization of chimps. In stark contrast to chimps, human females form strong bonds with one another and human males can have strong bonds with human females. Bonobos also have flexible bonding, but we differ from bonobo social organization in terms of our flexibility. Human cultures can have the male-dominated social structure of chimps, an egalitarian structure, or possibly even strong matriarchies.

Our mating behavior differs from our ape relatives in two important ways. The first is our flexibility. Our cultures can be monogamous, polygamous, or polyandrous[6] . They can either permit or strongly proscribe promiscuity. The second difference between us and apes is marriage. All human societies that have ever been described recognize marriage, although the form of marriage may differ from our Western view of the

institution. Anthropologists disagree about the universals in marriage, but the following characteristics are typically present:

- Marriage is socially recognized. That is, the members of a village, tribe, or state recognize the union.
- Marriage has the expectation of generating offspring.
- Marriage is associated with kinship. While kinship ties can happen outside of marriage, marriage always involves the right of the offspring to be socially recognized as the kin of the parents and of the parents' kin.
- Marriage has relative permanence. The marital state is entered into for a long, as opposed to a short, time period (i.e., a brief sexual encounter, a night, a week, or a breeding season). The length of the time period is, of course, variable.
- Marriage involves some degree of sexual exclusivity. The partners in a marriage have the right to have sex with each other. Also one or both partners are often socially admonished not to have sex with certain others. The degree of sexual exclusivity is variable across cultures.
- Marriage involves the transfer of property and/or title. Again, exactly what is transferred and the degree to which it is transferred varies, but most societies that have personal property recognize that it can be bestowed on offspring.

Affective bonding is a reason for marriage. Love and romance may be the most variable characteristic of marriage. Many cultures condone arranged marriages between people who may have never even met. Typically, such marriages are entered for the

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[6] Polygamy is the generic term for multiple mates. In ploygyny, one male has more than one female mate,

purpose of establishing kinship and/or property ties. However, every culture either overtly recognizes romance as a legitimate reason for marriage or has myths or stories about couples in love who want to enter the state of marriage and consider it tragic if they cannot fulfill their desires.

While there are legitimate reasons to disagree with this list or to argue that other factors should be added to it, it is quite obvious that gorillas, chimps, and bonobos do not have the institution of marriage as we humans do. Humans can and do mate without marriage and can even have children, the recognition of kinship, and the transference of property outside of the institution. But virtually every human culture recognizes a special union between one (or more) male(s) and one (or more) female(s) that gives them the right to have sex, bear children, etc.

Questions about Human Behavior

Many of our evolutionary predispositions are so commonplace that they are taken for granted. The behaviors are so much a part of common sense and everyday action that we perform them and engage in them oblivious to their adaptive significance. It just seems natural to take a rock-hard peach and place it on the counter for a few days to let it ripen. How many of us are conscious of the possibility that this simple action is a result of adaptation of our taste buds and pleasure centers to bias us towards eating fruit at a stage of optimal nutritional value? Even though I teach this example year after year, I almost never think of it when shopping at the produce stand.

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and in polyandry, one female has more than one male mate.

Because many adapted behaviors appear so "natural," the only way to guess at their evolutionary significance is to ask questions that appear dumb and bizarre because everyone knows the answer in the first place. But it is not the *answer* to these questions that is important. The critical questions to ask are "*Why* is this the answer?" and "*Why* are other logical possibilities *not* the answer?" Do we humans mate like the preying mantis? Of course not! It is perfectly obvious that we do not! But now ask yourself, "Why don't we mate like the preying mantis?"

Below are a sampling of such questions. We lack a time machine that can transport us backwards for many millennia to observe whether the evolutionary psychologist's answers to these questions are correct. But the questions themselves do provide food for thought.

Why are there human societies in the first place?

Several animal species are solitary and do not form groups. Individual tigers, for example, keep to their own territory and come together only for mating purposes. Gibbons live in solitary nuclear family groups and deliberately hoot and call so that other gibbon families keep their distance. We humans are very strong social animals, so much so that we regard a hermit who desires no human contact as odd and eccentric. Are we biologically predisposed towards living in groups, interacting with others, and developing social codes of conduct? Perhaps the fact that humans have societies in the first place has derived through evolutionary adaptations.

Why are small children cute?

Imagine a public park with a playground for preschool children. Suppose that the day is so nice and warm that the residents of a local Alzheimer's center are sitting on park benches watching the children play. Why do passers by look at the children, smile, laugh gently when a youngster emits flatulence and messes his diaper, and strike up conversations with the childrens' caretakers about how "cute" and "precious" the little ones are? Why do people react so differently to the Alzheimer's patients? Only some extraordinary humans would regard them as cute and precious. Incontinence often accompanies the advanced stages of Alzheimer's Disease, but laughter at an elderly patient defecating in his diaper is regarded more as a sign of sarcastic disdain than an expression of mild bemusement.

Why do people adopt children and not Alzheimer's patients? Certainly both types of people are in equal need of care, succor, and nurturance, yet in Western societies there is great demand for babies to adopt but little demand for Alzheimer's patients. Our preference for the young often extends beyond humans. How many families prefer to adopt a young puppy and how many prefer an elderly dog? Evolutionary psychologists have pointed out that the physical features of "cuteness" in young children are shared with many other young in the mammalian world—large, rounded heads relative to body length, large eyes, and small noses. This is why puppies all have pug snouts. Are these characteristics some types of physical cues that we are biologically predisposed to respond to with a feeling of love and caring?

Why go through childbirth?

Until recently, childbirth was one of the most physically risky events for a young woman. Contrary to popular opinion, genealogies reveal a startling amount of serial marriages in the 1700s and 1800s. These marriages did not dissolve through divorce. Instead, they dissolved through death of a spouse, and the hemorrhages and infections associated with childbirth were a major contributor to mortality. Women knew this at the time, yet they still had babies. Logically, this was irrational. At the time, there was such a surplus of parentless infants and children that the orphanage was a stable institution in every large community. Why risk death when you can adopt a child?

Even today, most husbands and wives desire a child of their own, despite all the inconvenience and risk of pregnancy and childbirth. Why would a woman put up with months of nausea, vomiting, weight gain, possible edemas and hypertension when she could avoid all that and adopt a child? Couples will even spend tens of thousands of dollars in attempts to overcome fertility problems before considering adoption which itself could add more thousands of dollars to their debt. And why do we want to adopt babies and not the elderly?

Every parent acknowledges that children require an enormous investment in money and time. Career paths can be compromised, social life can be befuddled, and exotic vacations can be sacrificed, all for the purpose of having and raising one's own children. Yet the majority of partnered couples eventually eschews the safety of birth control and deliberately tries to reproduce. Perhaps our genes and biology have predisposed us humans to want to have children of our own, and the hidden evolutionary

urges and motivations are so strong that we humans will defy logic and reason to act on them.

Why have sex?

To most of us humans, this is a very dumb question. Sex with the right person is fun and pleasurable. It initiates and preserves close bonds. It is something that we seek after and will go out of our way to have. Why? The evolutionary psychologist's answer to this question is best investigated by imagining what sex would be like if it were as interesting and pleasurable as flossing your cat's teeth. How many people would actually reproduce if sex were a boring and onerous activity? Very few. And what would happen to any species biologically predisposed to experience sex as a burden? Surely, extinction.

Why is sex pleasurable and why do we humans go out of our way to have sex? An evolutionary psychologist might respond that sex is pleasurable because the pleasure we experience is one of nature's tricks to insure that we reproduce. What better way is there to guarantee reproduction than to make the very acts and behavior of reproduction rewarding and pleasurable? According to this line of thought, the phenomenal experience of enjoyment and pleasure in sex is the *proximal* evolutionary mechanism to achieve the *distal* evolutionary goal of guaranteeing reproduction. We humans are softwired to follow the proximal goal of pleasure regardless of the distal goal of reproduction. A surreptitious, Saturday night visit to the apartments and dorms on any college campus would surely give data that agree with this view. Sexual activity would be going on behind closed doors, but the majority of encounters would be for the purpose of mutual pleasure while very few would be directed at reproduction. Indeed, the

possibility of sex leading to pregnancy is usually a cause for concern and anxiety—not celebration—among single young adults.

Once again, the perspective of the evolutionary psychologist is best revealed by considering the logical and rational alternatives to what we humans would "just like to do." With contemporary medical technology, it is not necessary to have sex to reproduce. A couple desiring a baby could easily visit the local sperm bank and have the woman artificially inseminated. There are considerable advantages to this. There is no problem with contracting sexually transmitted diseases; sperm donors can be screened against medical and psychological problems; and donors can be selected for desirable traits like high intelligence, ambition, athletic ability, good looks, and even-tempered personality. If we humans were designed to have reproduction as our major, proximal goal, then sperm and egg banks are the logical choice. Yet we regard that option (save, of course, for problems of infertility) as sterile, cold, unromantic, and passionless. Most of us would prefer to generate offspring in the old fashioned way—having passionate and pleasurable sex with another fallible human being that we care about.

Why have sex with other people?

The next time that you find yourself in a conversation about relationships, ask your friends these questions: "What would you really like in a mate?", "Which of these qualities would be essential and which would just be nice to have?", and "What type of mate would you settle for?" You will receive many responses, virtually all of them describing positive traits—kind, nice, intelligent, good looking, outgoing, etc. There is one response that you will never hear—"I want my mate to be another human being."

How many people fall in love with a rock or spend a Saturday night playing romantic music to a fir tree? We have fondness and love for our pets, yet how many of your friends responded to your question that they would accept nothing less than a golden retriever as their ideal mate? Most people find these questions humorous. But to an evolutionary psychologist, the answer is obvious. We humans—like every other sexual species that have intercourse—are softwired to want to mate with conspecifics. We do not capriciously develop a fondness for mating objects depending on what is happening to us at the time. Sometime long ago in evolution—probably way before we mammals developed—mechanisms for mating with conspecifics and not other objects were firmly established in the nervous system and have continued to be transmitted to this day.

Why don't we just smell other humans?

We all know what dogs do when they meet. They see each other at a distance, approach, and then smell each other's behinds for a while. How many times have you watched two humans wave at a distance, come together, and then bend down to smell each other before shaking hands? We humans recognize each other through vision and sometimes through sound. According to the evolutionary psychologist, we are biologically biased towards experiencing the world in terms of sight and sound. Smells occur. We can sense them and differentiate them and act and behave differently because of odors. But the olfactory sense is not our primary mode of interfacing with the environment.

Many species behave in quite the opposite way. Mice and rats recognize their colony mates through a characteristic "colony smell." If one extracts a male rat from a

colony, washes him sufficiently to remove the characteristic odor, and replaces him, then other males—sometimes his own sibling littermates—can attack him as an intruder and even kill him. How many times have you read of people killing their brothers because they did not smell right?

Our biological predisposition towards vision and hearing over olfaction has influenced medical institutions. There are hearing clinics and hearing aids for folks with auditory problems, and we are all aware of friends who wear glasses or contact lenses to correct their vision. Have you ever heard of an MD specializing in "olfactorology," an olfactory clinic, or a "smelling aid" that people place in their noses to help them smell better? If rats and mice has evolved the equivalent of human intelligence and human technology, they probably would have invented the "smelling aid" long before they ever designed gizmos to correct vision.

Wrapping it up.

We have questioned the source of many simple human behaviors ranging from the cuteness of babies to the pleasure of sex. The interrogatory form of exposition was very deliberate. That is, the text is continually asking questions of the form "why do we humans behave this way and not this other way?" instead of declaring this or that as scientific fact. The reason for interrogatory form is that it is almost impossible to prove many evolutionary explanations. Scientists do not have a time machine that can transport them backwards in time to observe and objectively report human evolution. Instead, scientists operate as Sherlock Holmes did in solving a mystery—gathering current-day facts and using deduction to find a simple explanation for those facts. Holmes and Dr.

Watson, however, had an advantage over us. A putative culprit could always confess to the crime and remove lingering doubts. The "culprits" in evolutionary psychology are long dead and buried.

Consequently, many hypotheses and theories in evolutionary psychology are speculative. But so are many of the arguments *against* evolutionary psychology. How does one prove that we humans are *not* biologically predisposed toward viewing certain physical features as "cute" without crawling into the hypothetical time machine and observing that evolution progressed in a different direction? Society and culture may indeed influence our perceptions of sex as pleasurable, but are social and cultural norms the *only* reason for sex's hedonistic quality? Once again, we must climb into the time machine to disprove the evolutionary hypothesis.

Perhaps at some future date, we may identify genes and biological mechanisms that underlie our phenomenal sense of "cuteness." Or maybe, we will identify neuronal circuits and chemicals associated with the pleasure in sex. Such information together with future data on the genetic similarities and differences among primate species may help to untangle the different hypotheses about the evolutionary origins of these behaviors. Until such data are available, however, it is best to phrase the issue in terms of questions that with our current technology cannot be fully answered. We must also treat our personal answers to these questions with a healthy dose of skepticism. After all, many theories in the behavioral sciences that seemed "perfectly reasonable" at the time have had to be abandoned when the technology to disconfirm those "perfectly reasonable" hypotheses became available.

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