

The Evolution of Beauty

Richard Prum

This is an important book by a new generation Darwinist. Prum takes on the intellectual heritage of the first generation of evolutionary biologists and their associates. These former iconoclasts are now revered names – O. Wilson, Richard Dawkins, Daniel Dennett, Hrdy, Pinker and many others. Their disciplines are called sociobiology, evolutionary psychology, evolutionary anthropology and such.

Prum respects them. He doesn't revere them, and he challenges them. The book is rich with citations of other younger scientists who are breaking new ground.

Prum's heresy is to refute the Darwinists by going back to Darwin's original texts, in particular *The Descent of Man*. This second opus was not nearly as well received as *The Origin of Species*. Darwin's avid fans, led by Alfred Russell Wallace, thought that Darwin had gone off the deep end to propose that sexual preference, alone and apart from evolutionary fitness, was a prime mover in evolution. Wallace and Darwin argued until the latter's death, after which it became standard Darwinist dogma to insist that aesthetics operated only as signals of evolutionary fitness. Viz: the peacock's cumbersome tail is a signal that it must be a very healthy bird indeed to bear such a handicap and yet survive.

Prum became a devoted bird watcher as a child in the 1960s. Barely mentioned here is his ground-breaking work in the evolution of feathers. The first few chapters, however, cover a wealth of innovative science on avian evolution, and especially the evolution of their mating behavior. He makes a strong case that (1) female choice operates among all bird species, though more strongly among some than others, (2) that male and female behavior co-evolved in ways that were (3) often unrelated to adaptive fitness – how well the birds could cope with their environment.

Starting with Chapter 8 he generalizes his theories to human beings. We are quite different from old world monkeys and apes. A major difference is that, as with birds, females have had considerable power to choose the fathers of their children. They have also had incentive – humans are the only ape males who help much with their upbringing. Prum theorizes that female choice has been a major factor driving human evolution.

He then launches into politically sensitive issues, providing Darwinist arguments to support feminism and homosexuality. While the early chapters hint at Prum's political liberalism, these are where the gloves come off.

One hopes that conservative scientists will take up the argument. This is the kind of intellectual ferment in which science progresses rapidly. While some of Prum's conclusions may be overdrawn, one suspects that many of his claims will stand. One of my frustrations as a reviewer is that the opponents of books such as *The Bell Curve* and *Climate Change Reconsidered* talk them down, they seldom offer refutations. Prum's book is serious, his arguments well formed, and intellectual honesty demands that those (conservatives) who would disagree cite scientific arguments to refute him. It is a five-star effort all around.

Below is a chapter outline, with notes on the most interesting points raised in each.

1: Darwin's Really Dangerous Idea

Darwin accounted for sexual selection by two factors: battle and beauty. The first mechanism, the battle, was the struggle between individuals of one sex – often male – for sexual control over the individuals of the other sex. The second sexual selection mechanism, which he called the taste for the beautiful, concerned the process by which the members of one sex – often female – choose their mates on the basis of their own innate preferences. Darwin described females as having a "taste for the beautiful" and an "aesthetic facility." He described males as trying to "charm" their mates. Since then it has been widely demonstrated that females do choose their mates. The basis we might as well call "aesthetic" as anything else. Darwin also concluded that it must be co-evolutionary. The female standards of beauty

evolved at the same time as the male evolved whatever it took to attract them. This is the only way to explain such animals as the Argus pheasant or the peacock. Moreover, this means that animals are not mere subjects to extrinsic forces, but they play a distinct and vital role in their own evolution through their sexual and social choices. Alfred Russell Wallace and many others refused to believe that aesthetics alone were responsible. That has remained the standard Darwinist dogma ever since.

One skeptic along the way, however, was Ronald Fisher, who was coincidentally one of the founders of the field of statistics. He did a statistical model that showed how such co-evolution could work. In particular, if one population of birds included short tailed and long tailed birds of both sexes, if the short tailed birds preferred short tailed mates, and vice versa, it would drive both the selection of birds with short and long tails, and the preference for birds with short and long tails. The two populations might diverge into two breeding groups.

There are a number of people who promoted the handicap theory, the belief that the peacock's tail is so cumbersome that it demonstrates that an animal who can survive the handicap is good breeding stock. But this makes no sense. The handicap would by definition offset the advantage. More than that, there are several species that have gone extinct through too elaborate displays. The sexual selection must be independent of evolutionary fitness. The Irish elk, which is not mentioned by Prum, is presumed to have gone extinct because it couldn't carry its huge antlers.

2: Beauty Happens

The great Argus pheasant is an extraordinary demonstration of evolution. The male has highly evolved feathers that are able to bend backwards, have incredibly elaborate three-dimensional spots, include optical illusions in the form of our perspective distortion, as well as some elaborate mating display. There are so many factors involved that it is impossible to believe that each individual factor, evolving independently, could have contributed to overall adaptability of the bird. Prum writes: "the totality of the sexual ornaments and the great Argus includes the male territory and court clearing behavior, court attendance, vocalizations, the diverse display repertoire, including each of his movements, the facial skin color and the size, shape, and patterning, and pigmentation of each feather. The full display behavior of the great Argus is like an opera or a Broadway musical. It consists of music, dancing, elaborate costumes, lighting, and even trompe d'oeil effects, albeit on an intimate stage with a solo cast." They must have evolved on the basis of aesthetics alone. Although the male bird knocks himself out with his elaborate display, the female acts unimpressed. She has the luxury of choice among many exquisite displays. She can allow herself to be mated with or not. He cannot force her.

The point that Prum makes only peripherally is that the birds with the most elaborate displays seem to be those that live in habitats that offer them enough nourishment and freedom from predation that they have the time and metabolic energy to perform these displays. These are not birds that are on the margin of survival. In particular, many of them seem to live for so long lives, giving them time to build up quite a young repertoire, quite a bit of experience. Moreover, the most elaborate displays are by the males with the least involvement with the offspring. Mating is their only contribution to the next generation.

Next comes a discussion of the null hypothesis. In statistics the null hypothesis is that nothing is going on – two observations are only randomly related. So if there is a hypothesis that all of these traits in birds are contributing to their adaptive fitness, it is a non-null hypothesis. The null hypothesis is that they did not. Though the null should be the default, it has not been held as such. We are biased toward thinking that some something special must be happening. Prum contends it is not so.

3: Manakin Dances

Manakins are small birds of the American tropics. These are fruit eaters between 3 and 6 inches long and weighing up to 1 ounce. They are fairly long-lived birds who pretty much stay put in a habitat. This gives them a lot of time for mating activity which is what is described.

Phylogenetics is the study of relationships among animal clads, or species. In the case of the manakins the subject was not only their physical appearance, their physiognomy, but their courtship rituals. Manakins have elaborate courtship rituals and the similarities of one ritual to another seem to track the genetic closeness of the clades. The manakins have developed a very complex courtship ritual. They have specially adapted body structures. The simplest are coloration – spots and brightly colored legs, and so on.

The birds also have behavioral attributes. They many species clap their wings together over their backs to make a special popping sound. Some manage to do it with other feathers on their rump. And as mentioned, the club wing is able to produce a whistling sound with its wings. All of these can be seen by videos on Google.

The inescapable conclusion is that these adaptations are simply for sexual selection. The males have no responsibility aside from in inseminating the females. The females are able to do all of the nest building and child rearing on their own. Therefore, the current competition for mating as a matter of female selection only and the females are very strict judges of male performance. The females have evolved to be more and more critical, and the males have evolved to be more and more exotic in in their courtship practices.

Going back to the concept of relatedness of clades, all have unique but analogous behaviors in the mating ritual includes the setting up of a courtship area, placing objects, and that courtship area to make it attractive, keeping it clean, and various dances on the ground and aerial maneuvers such as backflips in midair hopping back and forth.

The only reasonable explanation for this behavior is that it attracts the females. There is no adaptive advantage. No adaptive advantage is needed – the manakins do a good job of filling their niche. A question that Prum does not ask is whether or not these birds saturate the carrying capacity of the forest. It appears that it would be easy to overbreed. It could be that some aspect of this wasteful behavior is intended to keep their numbers down to the carrying capacity of their habitat.

There is an aside on bird feather pigmentation. The history of feathers was Prum's early interest. Apparently the color bearing portions of bird feathers are like are similar to those in mammals. They date way back. Since the days of the dinosaurs – and remember that many dinosaurs were feathered – there have been little small little pigmentation sacks called melanosomes on the feathers. When seen under the microscope they are different shapes for different colors. And remarkably, some dinosaur feathers have been fossilized and it is possible to discern that they had stripes of different colors.

Feathers, incidentally started out as hollow tubes, kind of like soft quills. Then they evolved into fluff, as on baby chicks. Those should have kept birds warm and dry. Then came flat feathers, such as birds have, long before dinosaurs evolved into birds. So – feathers came first. Prum suggests that the advantage of flat feathers may have been their ability to carry a pattern – sexual selection – and they only later did they become instrumental in flying.

4: Aesthetic Innovation and Decadence

Absolutely the most elaborate sexual adaptation is the wing structure of the club winged manakin, which is become totally deformed in order to enable the birds to produce music through the vibration of their feathers. The structure of the wing bones is absolutely unlike any other wing bone in the bird kingdom and it is only used for producing this music in a courtship ritual. Rather than long, light and hollow, it is bulky and solid. There is no conceivable way that it is has an adaptive advantage other than for sexual display. See them on YouTube.

5: Make Way for Duck Sex

This chapter is about duck sex. We learn that ducks are among the 3% of bird species that have penises. And what penises! Sometimes as long as the duck itself. They are not whatsoever like

mammal penises. They are long and skinny and unroll like a New years' noisemaker at the moment they are needed. They expand at about 3 miles an hour, do the deed in a split second, and retract very quickly. NB: the other 97% of birds do it by simply rubbing their rumps together and exchanging fluids.

Among ducks, there are about twice as many males as females. The result is a lot of horny males. Rape among ducks is well known. The females have evolved elaborate mechanisms to thwart it. Their vaginal tract is convoluted, corkscrewed, twisting and turning to keep rapists out. The result is that about 95% of duck babies are born to fathers who were invited by the mother. Nonetheless, many female ducks experience rape. Unpaired males will gang up and attack her in a group, taking their chances. Without this they would have no chance at passing on their seed. It is violent, often resulting in injury, sometimes death.

This is a contest between female selection – choosing the mate she wants, which works most the time, and male dominance, males forcing themselves on the female. How this evolved to be poses a very interesting set of questions.

6: Beauty from the Beast

Bowerbirds are a family of Australian birds with elaborate mating behavior. The males build a courtship arena to which they invite the female and in which they perform an elaborate courtship dance. Each species builds the arena somewhat differently. Some of them build, quite symmetrical haystacks, some of them build large wicker tubes, sometimes the tubes are thick, and sometimes they have grass walls that the female can see through. They usually decorate them with colorful objects that they pick up from the area. Most of them are color sensitive, and the color preferences runs from blue, most favored down to through yellow and green to red, the least favorite color. They are very fussy about the layout. If a birdwatcher moves things around, the Bowerbird will straighten it out put it the way it should be.

The male waits for the female to come and observe his work. When she comes, he does his dance. She decides, between the dance and the display, whether he is a worthy mate. The bower is structured in such a way that he cannot trap her and force copulation. She always has a way out. She will leave if he becomes too aggressive. Good manners are important among bowerbirds. The bird with a good display and good manners was the one who will get to leave his seed for the next generation.

7: Bromance Before Romance

This chapter observes that there is a lot of cooperative effort among the male manakins. Even though they are competing for females, they cooperate in their mating behavior. The group together into a lek, a group of between 3 and maybe 15 males all displaying for the females in the same area. It makes it easier for the females to comparison shop.

Moreover, their mating displays depend on each other. Often two birds will display the time, in the dance whereby they fly back and forth between branches. The in each lek there is an alpha bird who will generally be the one to get the opportunity to mate if they are successful. However, there is understudies are preparing to take over should the opportunity arise.

The females select on the basis of the overall display as well as the individual. They favor collegiality. There sexual selection of males on the basis of their collegial behavior in the lek ensures that they will have male offspring who are all likewise collegial. Thus female sexual selection has ramifications for male behavior down through the generations.

This is the implications from the manakin birds can be drawn into many other species and even outside of the avian kingdom. Cooperation and competition go hand in hand. In most species the females encourage more of the cooperation.

8: Human Beauty Happens Too

Human beings are most closely related to the common chimpanzee and the bonobo. We are a sister group to the gorilla. And we all evolve from old world apes and monkeys.

Human beings split off between six and 8 million years ago. Over the last 50,000 years the pace of change has accelerated and we have spread all over the globe.

Gorillas and chimpanzees are not interested in sex unless the female is in estrus. When they are, interest is intense. In gorillas and common chimpanzees, a dominant male controls access to females. Among bonobos it is a free-for-all. Only among bonobos is there a lot of non-reproductive sex, including same-sex sex.

Humans are different than apes in that ovulation gives no visible sign. We have sex regardless of whether or not the woman is fertile. Also unlike the apes, both males and females are quite discriminating in our selection of partners.

Our underarm hair and pubic hair generates pheromonal odors that are attractive to the other sex. There's no reason whatsoever for the hair on our heads to be the way it is except for sexual attractiveness. Unique among 5,000 mammalian species, human females have permanent breasts. All the others develop breasts only when they are nursing. The placement of fat on the buttocks is also unique, the hourglass figures of a slim waist and broader hips. What for if not sexual attraction?

There is less literature on female preferences for male physical attraction. Why not? Researchers have simply not found it interesting. What they find is that the most masculine facial features such as heavy eyebrows and a square jaw are simply not that attractive. Women like intermediate or even somewhat feminine facial features. They like slender V-shaped torsos not what lot the larger, more musclebound bodies. Human mate selection depends on a number of factors other than physical beauty. We are really interested in the whole person – the personality, the interactions, and that person's social standing and network of friends.

The human penis evolved to be quite different. It is larger than that of the other apes. It is quite conspicuous. The glans penis is something unique – chimpanzees and other apes are simply tapered at the end. Our penis does not retract. It has no basculum (penis bone) to retract it when not in use. Instead, it is always dangling there. Even though our testes are smaller than those of the chimpanzees, our scrotum is big and obvious. Our sexual equipment is more prominently on display than that of other apes.

Cultural mating preferences probably have a lot to do with our evolution. Prum mentions the Polynesians liking big bodies. The Xhosas like prominent buttocks. He doesn't mention their dangling labia. He also doesn't mention the widespread preference for blue eyes, which seem to have evolved only in the last 10,000 years or so.

9: Pleasure Happens

The female orgasm is a conundrum. Copulation is ill-suited to eliciting female orgasm and the female orgasm is completely unrelated to female fertility. We also observe the female orgasm is broadly distributed in nonhuman primates. Prum says that a genuinely Darwinian explanation has been missing. That pleasure is an aesthetic and it should be considered as such. He suggests, "As selection by female mating preference gradually transformed male mating behavior, females' own capacity for subjective pleasure coevolved and expanded to become more complex, intense, and satisfying. To be as explicit as possible, the aesthetic proposal is that human female sexual pleasure and organs have evolved because females have preferred to mate, and re-mate, with males who stimulated their own sexual pleasure; females have thereby also selected indirectly for those genetic variations that contributed to the expansion of their own pleasure. By selecting on male traits and

behavior that elicit orgasm more frequently, female mate choice has evolutionarily transformed the nature of female pleasure."

One of the things that Prum does not investigate is the differences among human populations. It has been widely noted that East Asians have the lowest libidos and Africans the highest. In fact, the East Asians failure to get excited about sex has led them to have replacement rates well below two.

Human copulation has evolved for female pleasure. It takes several minutes, as opposed to that of the chimpanzee or gorilla, which get it over in seconds. Prum also observes "another piece of evidence that seems to suggest the primacy of female pleasure is the driving force in much human sexual evolution is the diversity of copulatory positions."

10: The Lysistrata Effect

Among apes, the females have the worst of both worlds. They have all responsibility for raising the children and yet they are dominated by the males who limit their sexual access. More than that, the males are given to infanticide when a new male takes over the leadership of the troop. This cuts down the females' reproductive success. It is a major example of the conflicting evolutionary interests between males and females. Some female apes attempt to buy insurance by mating with all of the dominant males to protect their children because the new leader of the pack, if there's a change, won't know whose child it is.

The hypothesis is that female choice made remade the human male. Females choose men who will participate in raising children. Prum calls the evolutionary mechanism "aesthetic remodeling" because it involves the use of aesthetic mate choice to transform, or remodel, males to be less coercive, disruptive, and violent. As humans evolved, our canine teeth got steadily smaller. Also, the difference in size for males and females diminished. By including aesthetic female mate choice, aversion to sexual coercion, and female sexual autonomy in the evolution of humans, I think we arrive at a better account of how we have become human.

Prum says that less aggressive, more cooperative males living an ongoing relationship would have created an environment of greater stability for their developing offspring, which would have given more time for the kids to develop properly.

I agree with Prum and I think he's leaving out some strong arguments. The human species has always been characterized by tribal warfare. Bands of individuals have always fought each other. This is part of our primate character – Jane Goodall and Diane Fossey have described similar behavior among chimpanzees and apes and gorillas.

The essential factor in tribal warfare is warriors. The society that can create the most fighters will dominate, all other things being equal. Therefore, the males and the females need to coordinate to produce the next generation.

I witnessed this myself when living among the Kayapo Indians in the Amazon. Although the tribe has a reputation for great fierceness, the dedication of the men to the children is impressive. The whole tribe works to raise the children. The men cooperate as much as they can in child rearing. It is an evolutionarily successful strategy.

11: The Queering of Homo sapiens

As women have come to appreciate men who were more like themselves – closer to the same size, without such impressive masculine features as huge musculature, hair, long canine teeth and brutal temperaments, the sexual dimorphism is going away.

So as female aesthetic preferences continued to coevolve with male traits associated with male sexual preferences, the aesthetic remodeling could have resulted in a minority of males with

predominantly, or even exclusively same-sex sexual preferences. Of course there isn't any single gene for such a broad suite of traits. There is no single gene for almost anything.

Prum observes that any losses to male reproductive success resulting from the evolution of same-sex preferences did not create an evolutionary conundrum, because female mate choice necessarily results in variation in male reproductive success in any case.

This is debatable. Among Caucasian males such as Prum and myself the replacement rate everywhere is well less than two. He is an exception, having had three children. I am an outlier having five. Most of our peers, however, do not reproduce themselves. Moreover, Satoishi Kanazawa observes that the tendency towards being gay is skewed toward the more intelligent members of our society. There is a loss.

What is missing from, and what would probably go against Prum's politics to address, is the question of polygamy. There is no doubt that human females are hypergamous. They like alpha males. But there simply are not enough alpha males to go around – by definition of the concept. In other times, other societies in human history, those alpha males have been able to be polygamists. In this day and age that is not possible. Except for Muslims, who get a pass, serial, polygamy and especially concurrent polygamy is severely punished by the legal systems in Europe and the United States.

Prum notes that female mating preferences have reduced will reduce the ability of males to dominate females and future generations. Yes, this is certainly true. Men have very little power relative to what they had even 50 years ago. Sexual coercion except for the in the crudest form, rape, is diminishing rapidly. This is happening via societal changes such as female employment. Women simply do not need men. This is a return to the tribal situation in places like West Africa where the women are self-sufficient and don't need men for much of anything. It duplicates the bowerbird and the manakin situation, except that homosexuality is not mentioned in those cases. But for Western man, it appears to be a strong temptation.

Prum writes "human evolution has also involved many other changes in sexual behavior. There has not only been an increase in the frequency of sexual behavior beyond the limited period of female fertility, but a broadening and deepening of its sensory and emotional content." As James Q. Wilson writes, this definitely has been true, but recently it seems to be going in reverse in Western Europe and the United States. The relationship between the sexes is deteriorating rather than improving. Men have lost so much power and the trust between the sexes is so diminished that such relationships are more and more difficult. It appears that even Prum underplays the importance of cultural factors in sexuality. The West's devaluation of white men and celebration of gay men over the past three decades has certainly changed the perceptions. Men find it easier to decide to be gay. They are less inclined to marry or even participate in heterosexual relationships.

How this occurs is different in different societies depending on their sexual proclivities. In Japanese and Chinese societies, where both female and male libidos are a lower in the first place, they simply give up in large numbers and do not attempt to compete for women. This does not mean that they opt for men – they seem to be simply disinterested in the whole sexual scene, as Men Going Their Own Way, into porn, manga and sex toys.

One can argue that the earth is overpopulated. But, over the long term, if humankind has destroyed its ability to reproduce, it is in trouble.

12: This Aesthetic View of Life

"The aesthetic view of life reveals new ways in which evolutionary biology has been hampered by failing to recognize the aesthetic agency of individual animals." Prum says that our anxiety about sexual pleasure has resulted in a lack of even a vocabulary to investigate sexual pleasure in the natural world as an evolutionary factor. Prum launches into a diatribe against eugenics. "Eugenics

was a scientific theory that maintained that human races, classes and ethnicities have evolved adaptive differences in genetic, physical, intellectual and moral quality."

The eugenic argument is mostly right. People have evolved different evolved to be different and all of these areas. It is only in the application of a universal standard of morality that we err. However, there are measures of every other factor that he mentions. Intelligence is the most significant, temperament, our skin tone, muscle tone, eye color – everything can be measured. Human populations do differ.

The legitimate criticism of the eugenics movement is that it attempted to make moral judgments on the relative value of different peoples. This action is immoral. However, to fail to note that people are different is simply to be blind. This is a major issue as Europe is grappling with the task of integrating a number of very dissimilar peoples into its historic populations. It is not going well.

I would throw the argument back to Prum and say that these people evolved to be different, by all of the mechanisms he recognizes, both adaptive and or sexual selection. They adapted to fit their niches in Africa and the Middle East and their other points of origin. These adaptations are not necessarily suited for life in Europe or the United States. His diatribe against eugenics is correct in identifying its immorality, but he is incorrect in saying that there is no scientific validity to the observations that the eugenicists made about populations. In fact, with the continual improvement in the science of genetics, we are more and more able to identify and quantify those differences.

In this regard we should note the desirability of European women, Circassian women, tall, well-formed and blonde, were highly valued on the slave markets of throughout the Middle East. This remains true today. A blonde wife for a black man is a trophy. A black wife for a white man is not so special. However, one may feel about the morality of the situation, one cannot deny its truth. The aesthetic argument that Prum makes is a powerful one and it certainly holds among modern human populations.

In conclusion, this book appears to be wholly authoritative on the topic of birds. There is likewise no doubt that sexual selection plays a major, perhaps the major role in human courtship and mating. His arguments with regard to how this has effected our evolution are also compelling. The implications of these findings on how we should order our societies are a matter for discussion. As always.