



# THE ORIGINS OF SOCIETY

by  
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THE ORIGINS OF SOCIETY was written in 1988, three years before the publication of my *Blood Relations: Menstruation and the origins of culture*. It still provides a good basic outline of my argument.

With hindsight, this rendering appears to me as one of several early "mythical" versions of my story - although by no means the worst of these. Scientifically speaking, it is now somewhat out of date. Thanks largely to the work of Ian Watts, it is now known that the human revolution occurred well before the Europe Upper Palaeolithic, and that the location (almost certainly) was sub-Saharan Africa. In the light of this knowledge, this pamphlet's many references to "the Ice Age" no longer seem very appropriate. Writing today, I would also amend my style of argumentation, which in this pamphlet is hardly Darwinian. Shortly after *Blood Relations* was published, Camilla Power recast the theory in more rigorously Darwinian ("selfish gene") terms, making it rather more persuasive to scientists working in this field. Despite these shortcomings, I have found that newcomers to the whole topic appreciate the brevity and conceptual simplicity of this particular version, so it seemed worthwhile to reprint it in the form in which it was written.

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First printing (fifty copies) November 1988.

Second printing (five hundred copies) September 1989.

Printed & Published in 1989 by Ian Watts, Radical Anthropology Group Publications, 58 Eastdown House, Amhurst Rd., London E8.

UNTIL ABOUT FIFTEEN YEARS AGO, hunting was taken to be an early development in hominid evolution. Recent reinterpretations of the evidence, however, indicate how remarkably late it was before our ancestors succeeded in hunting effectively at all. It now appears that effective big game hunting did not get under way until well into the Middle Pleistocene. Those involved would have been neither *Australopithecus* nor *Homo habilis* but much later populations of *Homo erectus* and/or early Neanderthals. The earlier stages of hominid evolution were based on omnivorous foraging and the gathering of vegetable foods.

Why was the transition to big game hunting - and to the full elaboration of symbolic culture - so late? A contributing factor may have been that in experimenting with carnivory, our ancestors faced initially-severe problems in (a) organising the proper distribution of meat and (b) controlling the destructive potentialities of a weapons technology. Only once these problems had been solved can we speak of the emergence of "culture" in the full sense.

How was this tremendous leap made? What factors enabled an animal scarcely different in genetic terms from a chimpanzee to become *Homo sapiens*?

### **The selfish male?**

Studies of baboons and chimpanzees - which occasionally kill small animals to eat - have often been used in constructing models of the origins of human hunting. But ape and monkey hunting-activity is overwhelmingly male, and - not surprisingly - it is the males who eat most of the meat. Females, relatively immobilised by their offspring, obtain rather little. If protohuman sociality was at first based upon some version of the "dominance" pattern of apes or baboons (as earlier theorists assumed), it is difficult to understand how females could have secured an adequate meat-supply.

In this context, to the extent that hunting began to matter as a potential food-source - which would certainly have been the case for later Ice Age populations migrating beyond the tropics - the females in each pre-cultural population (with their young) must initially have been discriminated against. Hunting would have contributed little to the survival-prospects of populations if males simply ate their own kills out in the bush, with females and offspring going hungry. At its worst - if chimpanzee aggression is anything to go by - we can even imagine a situation in which males armed with weapons used these not only for hunting but also for internal sexual threats, violence or murder.

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In the past, male-centred solutions to such problems were thought to be sufficient. It was argued, for example, that if the hominid male were to become an effective hunter, he would have needed to learn cooperation. Further, if he were to immortalise his genes, he would have had to learn to bring meat to his offspring and mate. Such notions underlay the "Man the Hunter" hypothesis popular in the nineteen sixties. "The two-parent family", "cooperation", "the sexual division of

labour” and much else seemed satisfactorily “explained” on this basis - all without crediting the female with any innovative, creatively active role. Despite changes in detail and in emphasis, recent discussions of human origins have generally been conducted within the parameters established by this hypothesis.

The argument had two major drawbacks. First, its findings did not sufficiently engage with those of social anthropologists (in fields such as the study of kinship, ritual or symbolism) for the model to act as an anthropological research guide. Social anthropologists, consequently - maintaining a tradition established at the turn of the century - felt justified in continuing to ignore evolutionary biology and theories of social origins.

Second, even on its own level, the theory left major problems unsolved. Granted that the hominid male “had to” learn to hunt effectively, the question remained: how did this come about? Dominant primate males - for example, chimpanzees and baboons - are impeded in hunting efficiently by the internal sexual structure of dominance, which sets the animals in conflict with one another and partially immobilises them by requiring each male’s round-the-clock physical attachment to “its own” females. A male which went off to hunt would risk losing its mate or mates to male sexual rivals during its absence. Until recently, it has not been clear how this particular problem could have been overcome.

Moreover, unlike wolves and hunting-dogs (which transport meat in their stomachs, regurgitating it for dependents in the den), non-human primate males seem to lack the necessary instincts to avoid on-the-spot “selfish” consumption of whatever food they find. Are we to assume that the protohuman male, unlike his non-human primate relatives, developed an instinct to carry meat home rather than eating it without delay? Is there such an instinct in the human male? And if not, what were the mechanisms through which this male’s “need” to provision his sexual partner became translated into normative cultural practice?

### **A human innovation: the “home base”**

It is widely agreed that a crucial human evolutionary innovation was the establishment of a fixed “home base”. No monkey or ape has this facility. Chimpanzees, gorillas and other primates display different patterns, but in no instance do we find reproductively-active males who are free to leave “their” females in a home base whilst they depart to hunt. They would lose their females to rival males if they did leave. The absence of a home base makes it impossible for males to go in one direction in search of game while females and juveniles disperse to gather vegetable foods - a system of food-getting which seems universal as an option available to human hunter-gatherers.

Protohuman males, then, in evolving the institution of the home base, must have begun adopting a very different reproductive and foraging strategy from other primates, going away from “their” females for extended periods of time and returning later with meat. It is important to recognise the social and sexual

correlates of such a change. It is in this context that the problems arise. Given the primacy of “dominance” relationships, how could hominid females have stayed away when “their” males went off to hunt? What would have induced the females to stay for long periods away from their dominant “protectors”? How could they have been sure that the males would return? And if the females were typically available as sexual/reproductive prizes to be competed for, how could the males have torn themselves away - even temporarily - from the mating-opportunities and the competition? Finally, let us suppose that despite all this, some males did manage to form into a co-operative band and then went off to hunt. How could these males have been sure that when they returned, “their” females would still have been “theirs”? What would have prevented rival males from taking advantage of the situation, dominating and claiming the unguarded females in their absence?

### **The “prostitution” hypothesis**

Many writers have linked the home base with a sexual division of labour, inferring some kind of sexual and economic “trade-off” between the sexes. The assumption is that female sexual choice was important: males brought meat because there was no other way of securing sex with females. Males who failed would have reduced their chances of passing on their genes.

This idea implies that females favoured males who were good hunters, making sex dependent upon gifts of meat. Rightly or wrongly, this has been termed the “prostitution” theory of human origins: females “traded” their sexual favours for economic gain.

It has frequently been suggested that this pattern is quite normal in human hunter-gatherer societies. Sex and hunting are often intimately intertwined: women tend to link virility with hunting-prowess. A good hunter, in some communities, may be able to maintain simultaneous liaisons with several wives or mistresses who value his gifts of meat.

But let us explore the logic of this conception more closely. There are two possibilities. First, let us remain within the primate tradition of relations based on “dominance”. Imagine pre-cultural, protohuman females competing with one another in securing consortships with dominant, occasionally meat-eating males, trailing after these continuously in the hope of obtaining a share in their meat. Under these circumstances, the most adaptive male reproductive strategy would have been to attract females on this basis. Males would have had to move sufficiently slowly for “their” females and offspring to keep up with them. If and when they made a kill, they would have allowed such females to eat flesh on the spot in exchange for immediate sexual access.

The problems here are that (a) slow-moving, sexually-possessive, parentally-burdened males do not make the best hunters and (b) those females who remained “at home” during a hunt would have been furthest from the meat when a kill was made, and so would have been the least likely to receive a share. Since there would

have been no selection pressures in favour of females “staying at home”, the home-base institution simply could not have evolved. A relatively successful category of meat-eating females might have come into existence - but this would have consisted of the non-pregnant, unburdened ones who could maximally protect their mobility, display their sexual attractions and trail along following the hunters. This would have been the opposite of what was required if a large-brained, neotenuous, slow-developing hominid in need of prolonged nurturing was to reproduce and evolve.

### **The alternative: sexual morality**

However, as noted, there would have been two logically-possible ways in which our female ancestors could have made sex dependent upon the availability of meat. Only one of these was the “prostitution” strategy of active, mobile soliciting in search of meat. The other would have been for females to stop where they were and compel the males to bring their kills home.

Let us provisionally assume that this second option was chosen, and follow the logic through. We can then test the resulting logically-deduced pattern in the light of the relevant evidence.

The second option implies a sex-strike. Females refuse to leave the home base, and refuse sex to any male who does not return “home” with meat.

Unlike the “yes”-strategy (continuously “presenting” to males in the hope of gaining favours), this “no”-strategy (refusing sex until males bring meat) implies inter-female solidarity. It would have been impossible for a female to use refusal as a means of putting pressure on one or more males unless she could rely on her sisters to back her up. To have allowed males to play off one female against another - to have allowed her sex-partner to turn elsewhere whenever she signalled “no” - would have undermined her completely. In other words, the “second option” female strategy required gender-solidarity for internal reasons, just as - by contrast - the “prostitution” strategy necessarily involved inter-female rivalry and competition within each gender group.

Assuming the second option, an implication is that whenever the male community was unsuccessful in obtaining meat - or whenever meat-supplies seemed dangerously low - the female community had to refuse all sexual favours. A ban on sexual relations - according to this model - would have been necessary as the prelude to each successful hunting-expedition; it would have been the means through which protowomen motivated males not only to hunt but also to concentrate their energies on bringing back the meat.

### **Kin selection**

The concept of “inclusive fitness” is the core scientific insight around which the various claims of sociobiology have formed as accretions. It may be relevant in developing a model for the “second option” as outlined above.



Suppose that a particular gene conferred upon a female protohominid an unusual capacity for restraining her own sexuality, and that behaviourally this expressed itself in altruistic tendencies towards her sisters. It might be that hormonally-governed oestrus behaviour (see next section below) was in her case weaker than normal, so that when she was ovulating she was still able to avoid sex. Oestrus-loss of such a kind would have made it easier for her to refrain from sexual competition with her sisters. In the event that these were refusing a male's sexual advances, it would have been easier for her to defend them, instead of undercutting her sisters by making advances herself. Such a hypothesised tendency would be "altruistic" in that it would mean incurring a cost (in terms of opportunities for personal reproductive success) to herself, and a similar benefit to her sister or sisters. Are there any circumstances under which such a gene could be favourably selected and thus increase in frequency over the generations?

Normally, we would expect any gene that risked damaging its carrier's personal reproductive success to be selected against. However, in the case of altruism towards a sister, each recipient of the benefit would already have a chance of carrying a copy of the same gene as a result of descent from the same ancestor. To the extent that such were the case, the "altruistic gene" would really be doing what all genes must do to survive - namely, helping its own replication.

The daughters (or sons) of a hominid mother carrying such a gene would have no more probability of carrying that gene than would the mother's full siblings. From the gene's point of view, therefore, it would be as useful for the mother to risk her future reproductive success in defending her sister as to risk it in defending her offspring. To the extent that a sister's child-bearing years were still ahead of her, the gene's future would be fostered by that route just as effectively. It is in fact on such a basis that sociobiologists account for the well-documented phenomenon of sibling-solidarity in group-living monkeys, both in peaceful activities such as grooming, and also in coming to the aid of brothers and sisters under attack.

The relevance of this to the above model will be appreciated. Kin selection can account for a degree of biological sibling solidarity as a genetically viable aspect of reproductive strategy. If for various reasons such solidarity among protohumans could have developed to the point at which related females supported one another in asserting themselves sexually as "on strike", the threshold of culture might have been reached before being crossed.

### **Loss of oestrus**

It is a suggestion which facilitates an elegant solution to an old problem - that of oestrus loss in the human female. In non-human primates, the female experiences a hormonally-governed strong impulse to copulate during ovulation - when she is in oestrus. The moment is publicly announced, each female signalling her enhanced receptivity to males. While in some species such signals are purely behavioural, in others they also take the form of visible swelling of the genital region, changes in colouring of the sexual skin, scent-emissions and so on.

Accentuated oestrus-displays are related in an obvious way to inter-female sexual competition for consortships with dominant males. They may be regarded as uncontrollable, involuntary “yes”-signals sent out by females around the period when they are most likely to conceive. No mature male in the vicinity can resist the temptations of a female in such a state.

In human females, the “yes”-signal has been lost. Instead of being externally displayed, ovulation has evolved in the reverse direction, to the point at which the crucial moment has become effectively concealed. In neither appearance nor behaviour is it possible to determine a human female’s fertile period. Far from males in her presence being made publicly aware of her ovulation, the human female’s special condition is kept so close a secret that unless she is unusually aware of her own physiology she will not even know the moment herself.

Moreover, the human is in principle sexually receptive throughout the whole of her cycle. Despite possible slight peaks at ovulation and/or following menstruation, her interest in sex never becomes as overwhelming as it is for primates in oestrus. Being able to “say ‘No” at any time, she is never the slave of her hormonal state.

Yet hormonally-controlled sexual signals are not entirely missing, for menstruation in the human case has been accentuated as an external display. A woman loses considerably more menstrual blood than does any other primate. Although there is no biological imperative to avoid sex during this period, in traditional human cultural contexts, menstruation almost always signals “sex strike” or “no”. Explaining the accentuation of menstruation in humans has presented as great a challenge to biologists as accounting for the elimination of oestrus.

We can sum up by saying that taking together (1) oestrus-loss, (2) accentuated menstruation and (3) continuous sexual receptivity, the human configuration in these respects is not just different from the usual primate pattern: it displays the inverse image of it. Whereas the basic primate pattern is to deliver a periodic “yes”-signal against a background of continuous sexual “no”, the human one is to emit a periodic “no”-signal against a background of continuous availability or “yes”.

### **Loss of oestrus: a product of female solidarity**

This inversion can be simply explained.

Picture a protohuman population adopting the strategy of the periodic sexual strike. What might be the effects of this new social and sexual logic on the female cycle?

Whilst we have supposed a periodic on/off sexual alternation embodied in the “sex-strike”, it must be remembered that the reproductive cycle is itself already a periodic on/off alternation in terms of reproductive receptivity. How do these two rhythms interrelate? Or to ask this another way: At which point in their menstrual cycles would evolving protohuman females have been best advised to go “on strike”?



According to the initial premises of the sex-strike model, the overriding consideration in determining the moment and duration of any period of celibacy would have been economic. Fertility would not have been a consideration: if there was no meat, there had to be no sex, and the "sex-strike" had to last until the hunt had been successfully completed and meat brought home. The whole point of the action would have been undermined were it necessary to end it at a certain moment on hormonal grounds, regardless of whether the males had brought meat or not.

Under such conditions, it would have become particularly important during each sex strike - no matter when this occurred nor how long it had to last - for each woman to display solidarity with her sisters by showing not the slightest sign of sexual flirtatiousness or desire. Each strike would have demanded a "united front" against all male potential sexual partners. Had one woman involuntarily displayed signs of inappropriatelytimed sexual interest, she would have aroused the antagonism of her sisters. It can be seen at once that such a situation would have demanded of each woman that her moment of ovulation be kept as secret and private as possible. Within the population, then, the sex-strike would have sought out those females best able to adapt to its requirements. Those with strong oestrus-patterns would have tended to reject the new system or be rejected by it; those with weaker oestrus would more easily have thrived.

From this point of view, the evolving human female had to gain increasing control over herself. She could no longer afford to be chained down by her hormones. If the males in her life were unco-operative, they had to be coaxed, persuaded or otherwise dealt with - no matter what her cyclical state happened to be. If they were lazy or failed in the hunt, they had to be treated coldly. Each female, linking up with others, had to control her own sexual inclinations and participate in controlling those of her sisters.

To the extent that hunting was a chancy business, this ruled out any fixed time for sexual activity. Females would have needed the power to say "no" at any time and for as long a period as necessary. By the same token, they would have needed the freedom to say "yes" at any time, too, since no-one could have predicted the moment of the hunt's successful conclusion. Continuous receptivity and an equally continuous ability to say "no" are requirements with a basis in physiology; over a period, given the logic of the strike, the necessary physiology would have evolved.

### **Biological and cultural periodicity: one rhythm or two?**

Freedom from hormonal control, then, was the initial precondition if the "sex-strike" was to work. In the long term, however, the entire strategy would have been beset with reproductive problems unless there were harmony between the periodic sex-strike and the periodicity of the menstrual cycle. Females would otherwise have risked being on strike during their fertile periods and available when they were infertile.

Assume, now, an Ice Age population in which the “no”-strategy has been in operation for some time - tens of thousands of years, perhaps. Assume that big-game hunting has been developed to a fine art, that game is abundant and that each hunting-expedition can in general be counted on to produce results. If all this were the case, then the very success of the new strategy would make it possible for a new stability to emerge. Females would not have to organise sex-strikes on the spur of the moment, knowing neither the likely duration of each action nor its prospects of success. Whilst retaining as a fall-back option the ability to say “No” at any time, in practice, as a normal rule, they would be able to settle down into a regular, predictable pattern whose features we may now predict.

In the long run, a balance had to be struck between two great rhythms and two corresponding imperatives - cultural/economic on the one hand, natural/reproductive on the other. The impact of the first imperative - the principle that without meat there could be no sex - was immediate, operating on the level of conscious female will and decision. It was an economic rhythm and determinant, which on any particular occasion had to take precedence over all others. The second - sex must be permitted during the fertile period - was a biological, natural constraint, and acted as a determinant only in the longer term, at a level beyond that of conscious decision-making or will. On no particular occasion could it be allowed to impose itself as the overriding consideration (that would have implied a return to oestrus-behaviour); yet over a period its demands could not be escaped.

In terms of striking a balance, the most perfectly adaptive outcome would have been one in which the cultural on/off alternation of the hunt exactly matched the natural on/off alternation of the female reproductive cycle. Since the menstrual cycle cannot be stretched or telescoped from month to month so as to fit in with hunting contingencies, the only long-term solution was to establish some compatible regularity in the hunt itself. It is here suggested that such a solution was found. Where technology, the abundance of game, a climate permitting the cold storage of meat and other factors made it possible for monthly extended hunting-expeditions to be predictably successful and to suffice, the necessary conditions for harmony in at least certain localities or for certain periods would have been met.

To the extent that an adaptive balance between the two great imperatives was struck, then, harmony would have been achieved - if not perfectly, then at least as a tendency. In this context, just as the females would have been able to bring their periodic, hormonally liberated “no” increasingly into phase with the menstrual flow, so they could have been quite liberated about saying “yes”, making this dependent not on fertility but on success in the hunt - and yet able to time their period of sexual activity on most occasions so as to overlap with their fertile period. Women would then have got the best of both worlds. Of necessity they would have liberated themselves from hormonal control, retaining the fall-back option of being able to say “No” at any time - but they would have done this only to re-establish a normative attunement with their cycles now on another level, as an expression of collective will - setting up a rhythmic pattern in which the whole of culture now

participated. In those localities where conditions best permitted such an outcome, our ancestors would have been particularly successful, both in passing on their genetic characteristics and in extending the hegemony of their cultural configuration, which would eventually have become the dominant culture of humanity - leaving its traces, therefore, in all subsequent cultural traditions.

### **The human female reproductive cycle: conclusion**

In evaluating the selection-pressures shaping evolution of the human female reproductive cycle, we have examined a cultural/economic determinant in the form of the “logic of the strike”, and a natural/reproductive one stipulating that despite everything, fertile sex must still occur. The combined effects of these two kinds of determinants may now be summarised. Every female risked being occasionally out-of-phase. But pronounced menstruation at the “wrong” moment, however embarrassing, was not nearly so serious a risk as untimely oestrus-signalling. To have allowed even one female’s oestrus-signalling to have ended a collective sex strike at the “wrong” moment would have been potentially disastrous. To reduce the risk of this to nil, such signalling had to be eliminated altogether. By contrast, the opposite “mistake” - bleeding during what for others was the fertile period - may have been inconvenient for the individual concerned, arousing social unease and proving reproductively maladaptive in the long term, but it would not have undermined the entire cultural enterprise in so direct a way. It would have been tolerable on occasion, provided it did not settle down into becoming the normative, regular pattern. While oestrus-signalling simply had to go, then, it was affordable for menstrual signalling to be strong and even to become accentuated (for reasons to be discussed) despite some risk of its being occasionally out of phase.

In terms of female biological evolution, then, the sex-strike hypothesis would lead us to expect selective pressures towards (a) a capacity for menstrual synchrony (b) continuous sexual availability, (c) enhanced cortical control over sexuality (d) the complete elimination of oestrus behaviour and oestrus-signalling and (e) accentuated menstrual bleeding in the human female. These are precisely the features which we do find.

With its emphasis on “No” or “negativity”, the model would also predict that the main impact of any hormonal surges in determining female behaviour would peak around the “negative” pole of the cycle - indicating refusal, irritability, or “rebellion” rather than accentuated marital availability or desire for sexual “surrender”. “Premenstrual tension” confirms this prediction nicely. We may think of it as a physiological trace - still operative amongst women today - of earliest Womankind’s struggle to assert the power of her sex strike. It is interesting to speculate what might be the creative forms taken by such “irritability” or “unpredictability” in cultures which endorsed women’s periodicity rather than demanding its denial or suppression.

## **Cultural selection - the logic of the strike**

In principle, it would only have needed two females - perhaps sisters, or mother-and-daughter - to have set in train the movement towards culture as an unstoppable force. Let us suppose that the two females supported each other, acted in concert, and began to synchronise their menstrual cycles - a phenomenon which would have tended to occur spontaneously. If these females were able to motivate two or more males to hunt for them by making sex dependent on hunting-success, then they might have been unusually successful in securing meat - much more so than other females in the population. In that event, their strategy might have seemed an attractive model for other females to follow, any genetic characteristics facilitating such solidarity gradually spreading through the population.

Unlike other "family" units in the population, such a unit would have been capable of recruiting new members almost indefinitely. There are limits to the viable size or territorial range of any primate-type horde or other grouping, but with a strike - the bigger the better. Strike action cuts across parochial boundaries spontaneously and of necessity. The striking group would have had a powerful motive to extend its influence and recruit, since with each sex-strike - as with any strike, including within contemporary culture - there could have been no tolerance of neutrality. If the surrounding females could not be brought into the strike, then they were a threat to it. Every female encountered by any male was potentially on one "side" or the other. And the more females brought into the fold, the more powerful the strike on each occasion, and the greater the attractions of joining the movement next time.

Moreover, the females adopting the new strategy would have been linked not to one or more dominant individual males but to an immeasurably more effective force, both for hunting and defence. In addition to links with offspring or biological kin, the females would have been attached sexually to a male group whose capacity for joint action would have far exceeded that of unorganised males still prioritising their individualistic struggles for status, sex and food. The band of hunter-males, like the females, could not have been indifferent to the behaviour of the surrounding male population. Any male who could not be recruited into the new-strategy hunting-band would have constituted a potential danger. The dominant individual male, the loner or the rapist would have seemed a sexual threat. Any of such males as were unable to co-operate with the new strategy would have been treated in principle like any other animal predator - chased away, wounded or possibly killed. In any event, where conflicts occurred, no violent male would have been able to match the coercive power of the organised, sexually motivated hunting-band. The traditional male sexual strategy of immortalising one's genes through competitive assertions of dominance would no longer have worked. And if this were the case, then the cultural configuration - once established - would have spread through the protohuman population rapidly, sweeping all before its path and precipitating the extinction of all competing hominid groups unable to adopt the new way of life.

## **The universe of rules**

The females in any hypothesised protohuman population would have been divided into (a) those more liable to “break ranks” and mate regardless of their sisters’ feelings and (b) those more liable to form coalitions with other females, following the “sex-strike” strategy, placing pressure on other females to follow suite and submitting to similar pressures themselves. Of these two female types, there seems little question as to which would most plausibly have led social life towards culture. We need hardly ask which would most have needed new communicative skills or which would have been most receptive, potentially, to the notion of a “rule”. Assuming that some accident made it temporarily possible to control fire, it seems unnecessary to ask which females would have been most likely to succeed in keeping it alight. And assuming that the complex of activities implied above - speaking, rule-making, fire-tending, hunting etc. - represented a viable mode of production, and that individually or competitively- obtainable food-resources were scarce, it is clear which category of females would have succeeded in producing the most surviving offspring.

The sex-strike would have provided the most fundamental and obvious feature of human culture, and the one which underlies all the capabilities for joint action which have been suggested above - the fact that it is based on rule. Here, the crucial point is not whether conventionalised patterns of behaviour exist. Such patterns, which can perhaps misleadingly be called “rules” by external scientific observers, are discernible throughout the animal world. Baboons and chimpanzees behave in predictable ways, according to conventionalised patterns determined both genetically and in complex interplay with the social and external environment. But this has nothing to do with “rules” as defined here.

A cultural rule exists when there is genuinely collective agreement to secure adherence to it. Where the rule is concerned, indifference, tolerance and neutrality are of necessity abandoned. Every individual who has entered the agreement has to submit to its terms. A violation outrages the community as a whole.

Such a situation does not prevail among non-human primates. To touch on a central issue - that of incest in sexual relations - imagine a dominant male gorilla with three females. Two of these are his daughters. The question is not whether he has sexual relations with all three. That would be a matter of behaviour - not of rule. The question is: in the event of this male’s attempting such relations, what would be the reaction of the other gorillas in the wider “community”? Would they express some gorilla version of collective moral outrage?

We can only answer negatively. Although one or other neighbouring gorilla might feel aggrieved, the surrounding society as such would simply show indifference, leaving individuals to get on with things as best they could in their own way, each basically preoccupied with its own affairs.

Primate “society” in this sense does not exist. Admittedly, individual primates in a local community may take sides, involve themselves in others’ affairs, express “anger” and attempt to involve allies in their emotions or schemes - but despite all this there is no over-arching collective body which makes it its business to interfere with its members’ private affairs. Although coalitions (as among chimpanzees) may come into being, they are formed around dominant or threatened individuals seeking immediate advantage for themselves, and allegiances and coalition-boundaries shift as perceptions of self-interest change. The result is that individuals are left to follow the possibilities opened up by social interaction; they do what they can get away with doing. There is certainly no collectivity which endures beyond and despite the flux of alliances and coalitions between individuals. No social group can be relied upon either to arbitrate impartially or to assert the validity or otherwise of universally-acknowledged categories of behaviour. There exists, consequently, no collectively-imposed system of constraints, no supra-individual force to impose sanctions - no “rule”, no “law”. We can put this another way by saying that in chimpanzee society, coalitions indeed form - but every coalition is always sectional, opportunistic and unstable, none being capable of embodying “society” as a whole.

Human culture - in its traditional forms particularly - is above all the “rule of law” in this sense: that the behaviour-patterns culture prescribes emanate from a source beyond instinct and beyond private enforcement by coalitions or individuals. In a human cultural system with its harmonising collective rituals and its formal structures of kinship we find something which transcends the parochial, petty level of interaction to which primates are confined. Beyond all private coalitions or alliances is a wider one - a set of shared understandings uniting the community as a whole. Whilst it is true that practical experience falls short of ideals, and that “complex” societies are indeed characteristically conflict-ridden, the fact remains that shared perceptions and understandings are what language, ritual and culture in its traditional forms are essentially about. No hunter-gatherer community, in any event, can be understood without reference to this level of its being, which tends to be the most meaningful for its members themselves. And it is surely inconceivable that primate “dominance” could have led to such a level. It could never have led to shared symbol and rite, because - with its roots in the dominance of private interest - it could never have led to a sufficiently wide and representative coalition. It could not have sustained the wholly-necessary element of collective responsibility and collective *intolerance* which characterises human cultural rule-making at its best - intolerance of rape, of murder, of incestuous abuse, of anti-social greed.

Dominance is from this perspective the *antithesis of culture*. It is the pseudo-law, the pseudo-order of alliances in the service of private interest and force - the patterned, structured outcome of self-seeking interaction based on inducement, threat and fear. Despite all the subtleties of social interaction which primatologists understandably celebrate, and despite whatever glimpses there may be of generous and sharing behaviour, the popular conception of “jungle law” retains its essential validity in this respect. Except to the extent that genetic relatedness motivates

“altruism”, such a situation leads each individual to look to itself, to attempt to bend others to its private interests (interpretable ultimately as those of its genes) and to display ultimate indifference to the fate of the wider community of which it is a part. There is no way that this could have led to culture - except along the road of revolutionary, point-by-point negation and transcendence of its deepest logic.

On the other hand, if we are looking for a source of collective, impersonal intolerance leading to the “universe of rules”, we can have no better model than that of the strike. Like chimpanzee alliances, the strike is a coalition. But it is a coalition with a difference. The strike by its very nature undermines the dominance of private interest. It has its own logic, sweeping along individuals caught up in its current. It cannot be indifferent. It must impose “the law” - its own law of solidarity - with intolerance, its survival depending on it. It has to extend, intrude, embrace and include ever more widely to avoid being thrown into reverse. And yet the strike-concept avoids the anti-Darwinian mysticism or veiled theologism which has accompanied previous attempts to assert in humanity a spiritual, moral or psychological uniqueness demarcating us from the animal realm. We are not required to assume anything genetically or socially unrealistic in terms of altruism or morality. The individual seeks her/his material interests - which may well include those of reproduction and genetic self-perpetuation - through those of the collectivity which is involved in the strike. At this point, kin selection indeed transcends itself, for in principle the striking individual must be motivated to defend and identify equally with all “kin” - who must now be defined as all those involved in the strike - instead of discriminating in favour of those genetically most “close”. The model leads us to the concept of culture because it provides a realistic framework within which biological interests can finally transcend themselves - a point of intersection at which genetic, personal and collective interests can be experienced to coincide.

### **Sexual morality**

Baboons and chimpanzees show no trace of sexual morality. A female chimpanzee may be coy or withdrawn, but she shows no sexual embarrassment or shame. Whether she engages in intercourse may depend on many factors. But in deciding whether there exists “sexual morality” or not, the question is not whether any male may come up and start to copulate - sometimes he will be invited, sometimes he will not. Neither is “coyness” relevant - in all animal species, courting-behaviour takes place, and one or other participant may often play at being hard to catch. In determining the presence or absence of sexual morality, we have to ask a different question. Suppose that a primate female made it clear that whenever she was receptive physiologically, males in general were welcome publicly to examine her intimate regions, to compete for intimate contact or copulate with her at will, regardless of what other females felt about this. What would be the attitude of her sisters? Would they feel undermined by her? Would they try to exert pressure on her not to be so “loose”?



There are no social conditions under which they would do this. Female chimpanzees cannot collectively judge or shape sexual behaviour. The necessary element of unanimity is always lacking. Could sufficient unanimity be achieved, the result would be a chimpanzee version of the cultural institution known as human sexual morality.

The sex-strike gives us such conditions. From the moment when two or more protohuman females went "on strike", supporting one another in the maintenance of such action, the context of their sexuality had become transformed. Each may not have been motivated to wear a pubic covering or clothes. But no longer could she in public do with her body as she liked. Each had to take account of her sisters, whose responses would have been shaped by the requirements of their own solidarity. All around her, then, was a set of collective constraints. Sexual behaviour was now in moral terms either "right" or "wrong". Even a private act of lovemaking, far away in some secluded spot, could now be viewed as a wrong directed against all if it undermined what was supposed to be a general sexual strike.

Such morality was all-intrusive. By going on strike, the females were extending their claims ever outwards, stretching their influence into all corners of life, exerting a collective stake in the value which their sexuality now represented for them. Such collective sexual self-control - which is the antithesis of primate oestrusbehaviour - was the source of their pride, their status as women, their economic and social power. Each female could no longer allow her instincts to carry her where they would. As a sexual being, she was an asset to her gender-group as a whole. Her body was no longer just that of a physical individual. It was the incarnation of something collective, something universal - or, to use the terminology of later religions, something "divine". It was part of the most precious, irreplaceable, inviolable treasure of all - the body of Womankind, which was to be guarded against all male attempts at seduction or privatisation.

\* \* \* \* \*

The strike not only generates female sexual morality. It also gives us male morality as its mirror-image. For once two or more males were acting as co-operative hunters, respecting the inviolability of their sexual partners' periodic strike, they too, by the internal logic of the situation, would have felt threatened by any male defiance of the rules. Without vigilant self-defence against the spectre of the dominant male, they might have lost their women. Before the whole community headed for starvation following cultural collapse, the members of the hunting-band would have become sexually expropriated - reduced, perhaps, to something like the status of baboon-like "bachelor males" excluded from access to females by a few dominant "overlords". Such, in any event, might have been the fear. It was this tangible collective fear which gave force to the men's moral vigilance.

The hunters' new sexual security rested on an inversion of previous patterns of female mate-selection. What females found sexually appealing in males now was neither aggressiveness nor dominance, but adherence to rule and success in co-

operative hunting. This pattern, although logical under the new circumstances, was not “natural”. It was a reversal of the usual higher primate pattern, and could be sustained by each individual woman only to the extent that she felt herself to be in a wider system which worked and which validated her choice. It could easily be undermined: Indeed, given a few males’ success in breaking women’s resistance, individual females might quickly revert to the search for dominance in sexual partners. The dominance- suppressing band of males, in other words, had as great a collective interest as the females in upholding the new order at all points. With “the human revolution”, they had won for themselves collective sexual security - without struggles for dominance, without “haves” and “have nots”, without fear of complete sexual expropriation. It was a treasure they could not afford to lose.

### **Incest and exogamy**

The sex-strike model not only gives us sexual morality in a general sense. It also accounts for the incest taboo.

No other postulated starting-point can account for the emergence of the fully-cultural incest taboo so simply and neatly. We are not asked to believe that female protohumans at a certain stage began complicating life by adding an “incest taboo” to the already-existing configuration of artificial constraints. Still less need we follow Levi- Strauss in postulating (as he does in *The Elementary Structures of Kinship*) the sudden appearance of sexual generosity and altruism on the part of woman-exchanging groups of dominant males.

The sex-strike inhibited the sexual advances of stay-at-home, non-hunting males - of all such males, regardless of status or affiliation. There could be no sex except with males who brought meat. By remaining faithful to this principle even with regard to their own immature male offspring, the females involved were simplifying life, not complicating it. The inhibition of young males’ “incestuous” advances was the result. In other words, the “incest rule” is explained as the sex-strike when experienced from within - by male offspring who participate in the solidarity of the strike. Women’s imposition of this rule is not a separate “thing”: it is their refusal or inability to threaten the strike or otherwise complicate matters by making an “exception” of stay-at-home sons.

Let us review the picture which the model outlines. The females are on sex-strike. They are insisting that adult hunter-males separate themselves off and go out to hunt. These males will not go unless they are secure in the knowledge that the strike applies to all those of their gender without favour or discrimination - and in particular that the females will remain during their absence in control of the situation back at home. They need to know that no young males left behind, for example, will be allowed to gain the upper hand in securing sexual relations with any female. As part of their sex-strike, then, the females must inhibit their sons and show that yielding sexually to them would be unthinkable.

To the extent that sexual freedom in relations with their mothers/sisters is impossible, the young males in each group become conditioned against perceiving “their own” women as potential sexual partners. They therefore look elsewhere for partners as they mature. They cannot join the hunting-band of their fathers, for that would involve difficulties with their own conditioning. It would mean sharing in their fathers’ solidarity and therefore thinking the unthinkable - seeing their mothers/sisters as women to whom gifts of meat are brought in expectation of sexual rewards. So they must either join another hunting band, or - if none exists - form one of their own. There must be, then, at least two hunting bands whose identities and solidarities are counterposed. Men can join one or the other, but not both. The cleavage between “fathers” and “sons” exists already; we have only to assume its permanence for the necessary dual organisation - the requisite division of the male community into two counterposed camps, each with its own internal solidarity - to come into view.

The recently-matured hunters seek sexual relations outside the community of their own women. But which other women exist within the system for them to turn to? There is an answer. Their fathers must have been nurtured in a female group of mothers and sisters with whom sexual freedom was (for these “fathers”) “unthinkable”. In seeking sexual relations, the sons must turn, therefore (since there are no other women in the system) to this female group. Assuming that they seek partners of their own generation, the sons will in fact relate to the daughters of this group - “fathers’ sisters’ daughters”, who would also be “mothers’ brothers’ daughters”. In other words, the model has generated the standard anthropological form of a matrilineal exogamous moiety system, in which marriage is with classificatory cross-cousins.

### **The role of “brothers”**

The exogamy rule would in turn have buttressed the sex-strike power of women. On condition that women retained internal ascendancy within each sex-striking unit, it would now have been possible to draw on male offspring, as these grew up, as an important resource. A potential rapist would have encountered a group of mothers, sisters, daughters and their male kin acting together in maintaining the inviolability of each strike. To the extent that offspring could not constitute sexual threats themselves, every woman would have been able to call on a son or brother to assist her in fighting off a sexual threat. This would have meant that whilst asserting themselves as “on strike”, women would have gained repossession of their male kin at the very moment of maximum disjunction from men as marital partners - in a sense replacing one kind of partner with another. For the moment, kinship relations would have overridden relations of sex. Consequently, as the men went off to hunt, women would not have needed to remain at the home-base entirely without male protection. They could always have arranged for some men - sons and brothers - to stay behind, children would have had as their guardians not only their mothers but also their mothers’ brothers. Such collaboration between male and female siblings,

as is well-known, is a characteristic feature of huntergatherer and other traditional cultures.

### **Classificatory kinship**

The model specifically generates “classificatory” kinship - the kind of kinship-logic characteristic of most hunter-gatherer and other traditional cultures.

The essence of this is that siblings occupy similar positions in the total social structure. If a woman has a relationship, any of her sisters may in theory join her in exercising the rights or fulfilling the obligations which that relationship entails. As far as formal structuring is concerned (actual behaviour being ignored here for the sake of argument), she may stand in for her sister (just as any of her sisters may stand in for her) in any kinship capacity, whether it be it as mother to her (the sister's) child, as mother-in-law to her sister's daughter's husband - or even, theoretically, as wife to a sister's husband. Moreover, since sisters are each other's “equivalents”, it follows that theoretically, no mother should discriminate in favour of her own biological children as opposed to those of her sister. All of their joint children are addressed as “daughter” or “son” Indiscriminately, and all are in theory collectively “sisters” and “brothers” to each other - which is an example of what anthropologists mean when they say that people who use a classificatory system, such as the Australian Aborigines, do not recognize physiological but only social relationships. Over the generations, the class of people who can be considered theoretically one's “sisters” (or “brothers”) may expand indefinitely.

Classificatory kinship seems puzzling to Europeans because the ego or “I” is not its point of departure. Neither is the “two-parent family”. Although such kinship does not eliminate intimacy or individuality, it operates on another level - a level at which group-to-group relationships have primacy over personal interests or bonds. On this level, there is a profoundly meaningful sense in which it really does not matter who the individual is. What matters is everyone's participation in the collective identity of a class of people in similar positions, each category or class defining itself through its relationships with other classes. This, it will be remembered, is a fundamental feature of our sex strike model, in which the women as a whole say “yes” or “no” in relating collectively to their sexual partners taken as a whole.

### **The Moon**

It is a mysterious but undeniable fact that all over the world, hunting traditions link success in the chase with the moon. Whereas agricultural peoples ascribe centrality to seasonal changes and to the sun in their symbolic systems, hunters usually view the moon as having the greater status and power. Throughout Aboriginal Australia, for example, the moon is considerably more important mythologically than the sun; the same applies to most of the Bushman cultures of southern Africa. Hunting-magic is very frequently linked with the moon, as when hunters pray to the moon for good luck; it is virtually unknown for the sun to play such a role. At first sight, all of this

appears puzzling: in real life, humans tend to hunt in broad daylight, so that moonlight seems in material terms irrelevant.

But there is an explanation. Humans have poor nocturnal vision. Logically, this ought to be a disadvantage to any hunting animal. Stealth is never easiest in daylight; the techniques of deception intrinsic to the hunt are most effective in darkness or in the twilight hours. Wolves, foxes, cats and most other carnivorous animals hunt by night. A carnivore rigidly restricted to daylight hours would be unusual in nature and would not make a competitive hunter. Many models of early human hunting envisage trailing after prey animals - perhaps slightly wounded - for hours or even days until they are finally exhausted. It would be a handicap if the chase always had to be abandoned at dusk, sometimes allowing the victim to escape. In short: although early humans would have preferred to hunt in daylight, flexibility would have paid dividends. Those hunters who could on occasion travel overnight or extend the hunt into the twilight hours would have fared better than those who could not.

When the moon is full, the fears of the dark which most humans display are minimised and nocturnal travel becomes possible. The moon may therefore have been important to our ancestors not because hunting in our case was ever exclusively nocturnal, but because for several days once per month, its light extended our options, enabling us to choose between or combine diurnal and nocturnal hunting. Archaeological discoveries of Upper Palaeolithic lunar calendars may be relevant in this context. There is certainly no shortage of contemporary ethnographic evidence showing that where traditional peoples travel or hunt by night - as they often must - the moon's light is much valued.

For solid material reasons, in any event, it would have been convenient - if hunting expeditions were to be organised once per human biological ("menstrual") month - for this rhythm to coincide, normatively, with the periodicity of the moon. Besides other advantages, the visible moon would have provided an obvious "clock", visible to everyone, by reference to which to synchronise hunting-schedules with the menstrual cycle. In this context, we could predict that the human female menstrual cycle, unlike that of chimpanzees, baboons and most other primates, should have an average periodicity of 29.5 days - exactly matching that of the moon. This, of course, is the case.

### **The discovery of fire**

Among the technological preconditions required by the novel system, two stand out in prominence. At the start of the human revolution came the mastery of artificial tools - the basket, digging-stick, wooden club, thrown stone or pointed stick. Towards the close of the revolution - as perhaps the culminating technological event of the hominisation process - came the mastery of fire. Primitive mythologies the world over repeatedly emphasise that humans differ from animal carnivores in eating their meat properly cooked.

In the earliest stages, protohuman males might often have “discovered” fire. They may sometimes have tasted meat which had been accidentally cooked - as a prey animal was occasionally trapped in a naturally caused blaze. Most theoretical speculations on the discovery of fire indeed assume such an event, and then go on to infer that “man”, because of his large brain, would have realised the advantages to be gained from cooking raw meat, whereupon the domestication of fire would have been an obvious logical step.

In reality, accidental discoveries of fire or of cooking would not necessarily have been relevant. Preserving and reproducing fire - not just finding it - was the crucial challenge, and this demanded certain social and sexual preconditions, not just intellectual ones. Fire-tending could not successfully have been left to males, whose priority was and had to be the hunt, and for whom freedom of movement had to remain the paramount consideration. Wherever a man was the temporary sole custodian of a fortunately-discovered fire, we can imagine him all too often chasing after an animal only to drop the brand or to return hours later to find the embers extinguished by a shower. The only safe way to preserve a flame which had been found would have been to stay with it at all costs, perhaps taking turns to sleep - and certainly watching it, feeding it and defending it against all dangers at all times, night and day.

On any interpretation of early humanity’s sexual division of labour, it is impossible to square such responsibilities with the roles traditionally allocated to men. Essentially, fire as a preserved, controlled resource presupposed the institution of the fixed home base. Not until the camp was permanently occupied could there be any hope of keeping alight whatever fire-brands were temporarily seized. We can safely infer that only the female sex, once freed from the necessity to roam perpetually with the males, could have been positioned to meet this scale of challenge.

Millennia would elapse between the first culturally-preserved tradition of fire-tending on the one hand, and the discovery of how to make fire on the other. In the meantime, the home-base and fire would have been virtually synonymous, neither being able to exist without the other. Anyone wanting fire would have been compelled to return home to get it. The likelihood of being able simply to light up a fire while out in the bush would have been remote. And from this, an important consequence would have flowed: no hunter could have got his meat cooked without first taking the kill home.

### **The raw and the cooked**

This brings us to one of the theory’s most intriguing implications, which will generate fine-grain predictions as to the range of variability of mythico-ritual structures the world over. The “raw and the cooked” is one of a small number of logical structures which have been shown by Claude Lévi-Strauss to underlie the mythological systems of both North and South America. A materialist explanation for such structural uniformities will now be suggested.

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Within the specifications of the model, men's task was to kill game; women's was to act as guardians of the fires needed for cooking the meat. The connection with menstrual blood-symbolism can now be clarified. The contrast between men's roles and women's can be defined in relation to blood: while men in general monopolised the weapons necessary for the shedding of animal blood, women monopolised the fire necessary to remove visible blood from meat.

In this context we can discern the outlines of an extraordinarily coherent symbolic system. Women's monthly periodic sex-strike, it has been suggested, was normatively synchronised with the onset of menstruation. Menstrual bleeding, in other words, signalled to men a sexual "No". I will now outline what I believe must have been the symbolic correlates of this.

Somehow, it became established that blood was simply blood. That is, it made no difference where the blood came from: it was conceptually all the same. The blood of murder, the blood of the hunt, the blood of menstruation or of childbirth: it was all in the final analysis just blood. We can speculate as to the intellectual processes involved in making this identification. We can describe it as metaphor, perhaps, or as analogy. What is important is that once the confusion or merging had been accomplished an extraordinary result would have been achieved. If the preceding arguments in connection with menstruation are accepted, then no substance could have been equated with menstrual blood without the most potent of consequences in evoking "respect" or in conveying "power".

Once the blood of the hunt had been likened to menstrual blood, a symbolic breakthrough would have been made. At a stroke, women would have achieved a radical simplification of some of life's most pressing problems. No more could men feel at ease about eating an animal raw, out in the bush - even if no-one were looking. Each time a group of men killed an animal, its flesh would have seemed to them to "menstruate". The men would have had to take it home in order to get the flesh cooked, the visible blood removed, and the meat thereby rendered safe to eat. In other words, the same blood-symbol through which women temporarily separated themselves from men would have functioned on an economic level as well, temporarily separating game animals from their potential consumers. The equation of blood with blood would have extended women's blood-symbolised sex-strike to the world of consumption generally, so that whilst blood of any kind was flowing, abstinence had to be observed not only with regard to sex but with regard to meat-eating, too

Once men's meat had been brought home for cooking, it would have entered the feminine sphere. We can imagine, perhaps, large earth-ovens filled with hot stones into which the game was put. To the extent that the blood in the meat was "like" menstrual blood, the ovens may have been perceived as "like" immense wombs in which a transformative process was taking place. In the case of a large animal - such as a mammoth - the cooking may have lasted many hours. The test of whether the



meat was finally ready or not would have been a simple one: Was the blood in it still visible? If it was, the oven had yet more work to do. If no blood could be seen, the cooking-process had been completed - whereupon eating could safely begin.

### **Specifications of the lunar model**

It is exciting to discover that myths and fairy tales familiar to us both in our own culture and from ethnographic accounts can be understood as expressions of this logic. Before it is possible to explain this, however, it will be necessary to describe in greater detail the cultural norms which the sex-strike strategy would have generated. Some of the detailed specifications of the resulting model - details such as the precise relationship between cooking-time and women's menstrual onsets - may at first sight seem puzzling; their bearing on the study of ritual and myth will become clear as we proceed.

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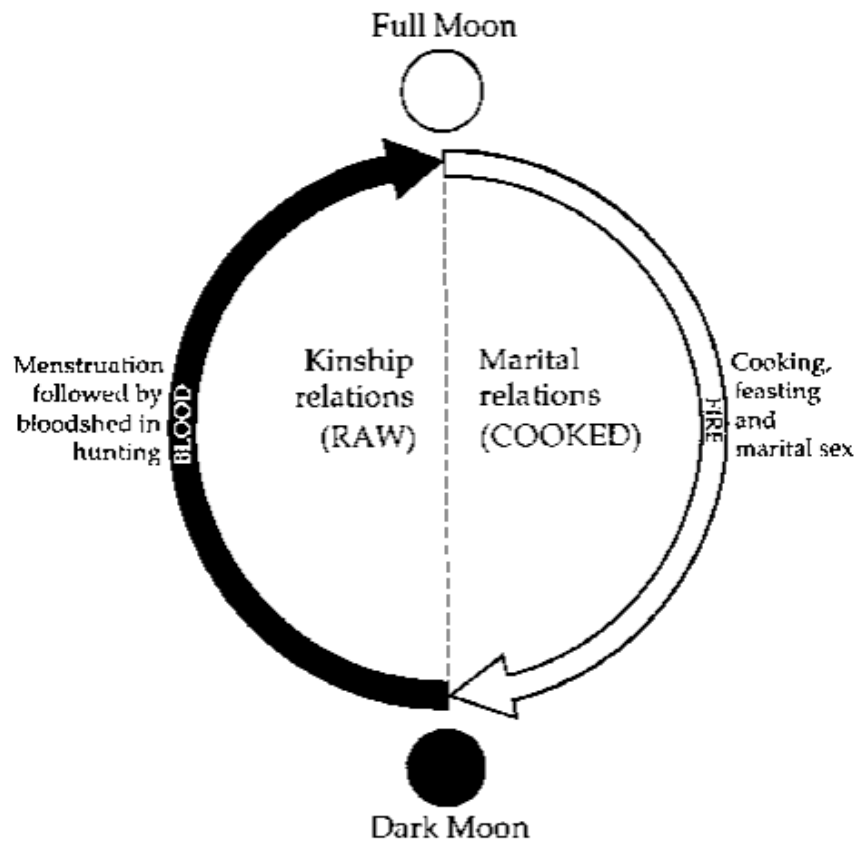
Just as, earlier, it was deduced that any periodic sex-strike must have synchronised with the menstrual flow, so now we must assume that the periodicities of the moon and of the cooking-process - the alternation of the moon between "dark" and "light", and of edible flesh between "raw" and "cooked" phases - were rhythms capable of being incorporated into the same system. In this context, it will be found that as we attempt to fit the various bi-polar pieces into the picture, there is a wrong way and a right way round for each element - only one way of producing a result which makes sense.

The argument is purely logical. If we ask, for example, whether the cooking-process took place when women were menstruating or when they were fertile, there can be no doubt as to the answer. Cooking would have been pointless if there were no meat to cook. The cooking-process had to begin, then, no earlier than at the conclusion of the sex-strike, when the hunters would have been expected to return home with their kills. By this time, the women's menstrual periods would have been over and the fertile period would have been beginning or about to begin. We have already determined that this would have been the normative time for marital sex. This gives us a preliminary result: meat-eating and sex would have been concurrent activities. Following each sex-strike, we can picture a period of celebration in which, day after day, women and men feasted on cooked meat, formed into couples and enjoyed one another's bodies.

The same kind of reasoning will fill in the remaining essential details of the model (Figs. 1, 2). If hunting takes place while the moon is waxing and sex is to take place immediately following the hunt, the phase of feasting/celebration must begin at the full moon. Logically, the moment of full moon would have to be a paradox or point of transition, marking (a) the climax of the hunt (the hunt's consummation bringing it to an end) and (b) the point at which cooking, sex and feasting all begin. If ovulation occurs around this time (which it must do if sex is to be fertile), then menstruation, by contrast, must occur at the opposite point in the lunar month - coinciding with

the moon's absence from the sky. Dark moon, then, must mark the onset of the sex-strike. If the full moon - with the success of the hunt - brings this strike to a conclusion, we are left with two weeks in which to be on strike (while the men are preparing for and engaging in the hunt) and two weeks in which to relax and enjoy the results. Full moon marks the transition from sex-strike to the consumption-phase. Dark moon marks the reverse transition back into the sex-strike phase.

Figure 1. The model: lunar-scheduled alternation between hunting and feasting, menstruation and sex.



**Figure 2.**

**The model:  
kin conjoin at  
dark moon,  
marital partners  
at full.**

**KEY**

Full moon



Dark moon



Male



Female



First moiety



Second moiety



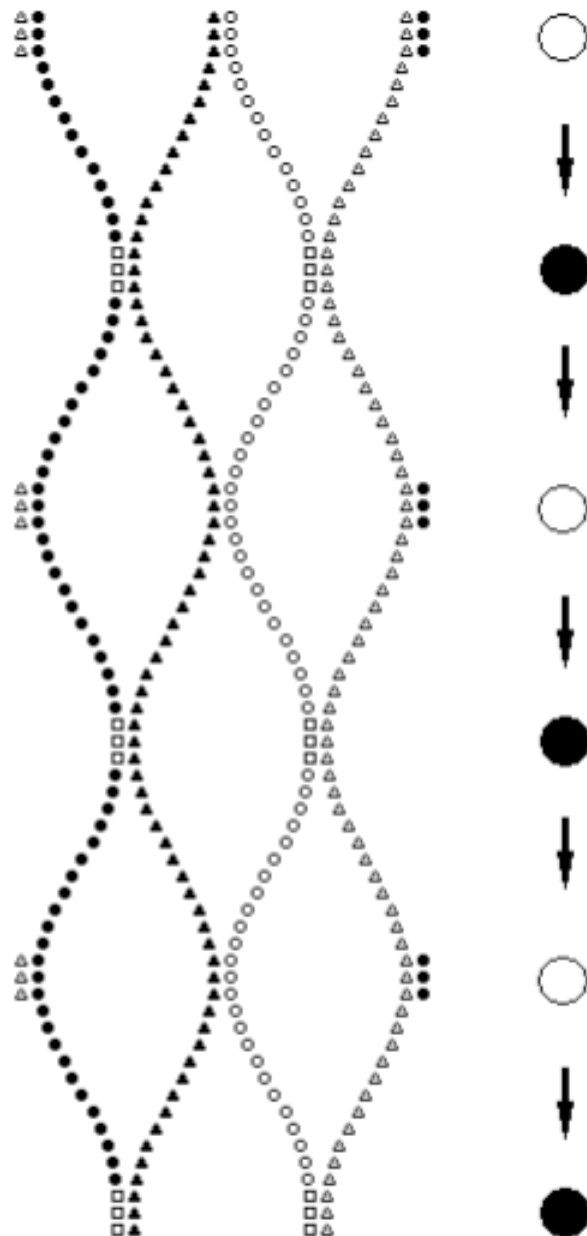
3 days menstruation



One man day



One woman day



We are left, then, with a picture of two social “worlds” corresponding to two kinds of time - that of the waxing moon on the one hand, waning moon on the other. In one temporal sector, blood-relations dominate, marital relations are excluded, meat is raw and meat-hunger prevails; in the other, cooking-fires are lit, marital relations predominate and there is feasting on cooked meat. In the first phase, men are essentially “maternal uncles”, “sons” and “brothers” to their kin, while women are “mothers”, “sisters” and “daughters”; with the transition to the second phase, everyone exchanges partners and roles - to become spouses or lovers to polar-opposite kinds of relatives.

## Ritual

This gives us the point of departure for the world's most recurrent ritual and mythological traditions. In folklore the world over, the moments for "magical" transformation are, above all, those of dark and full moon. It is at such times that men reveal themselves as werewolves, witches cast their terrible spells or toads turn into princes.

\* \* \* \* \*

The menstrual sex strike which forms the model's point of departure is "ritual power" in its initial, simple form. Admittedly, going on strike in the circumstances defined by the model may not necessarily appear to be a "ceremony", nor the casting of a magical "spell", nor the performance of a "religious" act. But already it displays the defining characteristics of ritual action in human culture.

The process is linked with the moon. We may imagine the participants engaging in dancing, singing or other collective activities at full and dark moon, emotional harmony assisting in the achievement of physiological harmony and hence menstrual synchrony. In going on lunar-scheduled menstrual sex strike, each woman brings her body into tune with an internal clock which may seem to derive from the sky itself, and which is in any event beyond arbitrary manipulation or conscious direction by individuals. The blood-flow has its own periodicity, independent of human will, and it is this seemingly- transcendental force which regularly binds the participants to each other, setting them apart in a distinct sphere.

The strike is coercive. Its necessary tendency is to negate the sexual-political dominance of men. To the extent that its logic prevails, women present a common front, lining up as one body. Each man respects the boundary they present; none will sexually invade the feminine sphere. Yet the power of the strike transcends the need for violence. Its sanction is the threat of exclusion. The uncooperative male risks excommunication not only from female company but from the human community as such. This is a forceful sanction, with ultimate death very much implied. Yet the threat works autonomously. A man who has violated a woman becomes stained with her blood; his action therefore publicly marks him out. As he anticipates the consequences, fear works its own - perhaps lethal - effects. To its would-be violators, therefore, menstrual blood seems poisonous in a quite literal way.

\* \* \* \* \*

Ritual power among hunter-gatherers and others in the ethnographic record has the following general characteristics:

1. It sustains its momentum primarily through participatory, rhythmic, synchronised activities such as dancing and singing;
2. It involves the synchronisation of the activities of humans with those of the heavenly bodies;
3. It appeals to forms of authority which transcend the powers of human individuals;
4. It frequently demands the observance of sexual and dietary taboos, insisting on the inviolability of persons or things "set apart";
5. Where sanctions are concerned, these are primarily non-violent and operate directly through the emotions. People respect ritual power for fear of offending "the spirits" and thereby incurring illness or bad luck.

To the extent that women in traditional cultures are said to possess ritual power, men usually depict this negatively. Virtually throughout the world, the strongest and most negative form of feminine ritual power is the potency of menstrual blood, male contact with which is thought to produce illness or bad luck. There are often comparable or associated attitudes towards blood in meat.

Despite these negative attitudes, in cultures in which men claim a monopoly over ritual power, they frequently assert such power by bleeding. Under such circumstances, the blood is thought of as life-giving and positive. Synchronised male "childbirth" and "menstruation" are in fact recurrent features of secret male initiation rites (see below), whose associated myths insist that men's power once had to be "stolen" from women.

If ritual power the world over stemmed from a tradition in which women went periodically on lunarscheduled menstrual sex-strike, these are precisely the features we would expect to find.

### **Concepts of divinity**

The strike transcends the identity of physical individuals. Its participants may not yet be priestesses, but each is certainly the representative of an overriding social power. If the sex strike can extend indefinitely - if in principle it is as omnipresent as is menstrual synchrony or the moon's light - then in embodying this power, each woman stands for something transcendental. She stands for her sisters, who may be potentially limitless in number. And if men respect this power, then although they need acknowledge no divinity, there is present here at least something of the formal structure of religious deference to "higher beings".

Let us re-examine the characteristics of these women. What powers do they really possess? And in what respects do these powers resemble or differ from those which, in more developed, complex social systems, will become thought of as those of "the gods"?

These women cannot magically strike men dead - but they can certainly exclude them from sex. To that extent, men can be rendered impotent at a stroke. No prayers are offered to these women, but men do strive to please and to be included when the time for love-making arrives. No-one offers them bloody animal sacrifices - but men do hunt and bring back game. No-one regards these women as living in the sky or in the underworld - but, when menstruating, they are certainly in a world "set apart". No-one conceptualises them as half-animal and half-human - as "totemic" mother-figures or as "mistresses of the game animals". But their menstrual blood is certainly identified with the blood of the hunt, both kinds of blood being saturated with taboo or power. Failure to respect this blood leads to failure in the hunt. These women are not immortal - they do not die and then resurrect themselves, nor undergo reincarnation, nor flit between heaven and earth, but their strike is periodically renewed, as is their life-blood which flows from generation to generation. Moreover, in menstruation they do seem to accompany the moon to its own temporary death, moving into another realm from which they later return. Admittedly, these women are ordinary human beings. They are subject to gravity and to the other ordinary laws of physics. They cannot levitate, nor fly magically through the night, nor be in two places at once, nor have eyes which pry into all corners simultaneously. Yet during each menstrual ritual these women's potency is indeed that of their strike - which, like any strike, does make its presence felt everywhere at once, transcending space, as if possessed of a thousand ears and eyes.

There is much, then, that is "goddess-like" about the menstrual sex- strike. Admittedly, to use such language is to apply a later cultural category - that of developed religious ideology - to a situation in which it is not yet applicable. It can be conceded that to begin with, there are no shamans, no priestesses, no temples. The social world is not divided into mortals and immortals, nor are humans divided into lay people and those who are "set apart". Unlike in developed religions, there are no specialists in the sacred life: all humans are involved in the solidarity of the sacred community during one phase of the lunar cycle, and then released from it in the next. All take turns in being "set apart" and reunited, in "the other world" and in this. If there are priests and priestesses, everyone is such - at least for a part of each month. If there are goddesses and gods, everyone can at the appropriate time participate in their identity and power - which is no more than the ordinary cultural strength and solidarity of human beings themselves. Each of these points of contrast is significant, and each underlines why it would be confusing to speak of "religion" as present already within the specifications of the model. But it would be an oversimplification to state simply that my model has no room for religion - that humans acknowledge no transcendental power. What we can say is that men (and, in a different way, women) respect no power other than the moon-linked, blood-washed, periodically-asserted sanctity and inviolability of menstruating women linked in solidarity with one another and with their offspring. This gives us a springboard from which the world's religious and magical traditions can be derived.

## **The Ice Age and beyond**

Towards the end of the last Ice Age, all over the world, a gradual deterioration in hunting-conditions made it increasingly difficult for the trail-blazing cultures of humanity to synchronise with the moon.

At the human revolution's high-point, hunters would have tended to select the larger game animals - those requiring the greatest collective endeavours to hunt, and providing the greatest rewards once taken. In addition to reindeer, elk, bison or other herding species - which may have been driven into traps and slaughtered in large numbers at a time - we can imagine a single slain mammoth feeding a sizeable community for weeks. It is not difficult to reconcile infrequent, not-more-than-once-per-month hunting with a reliance on large catches or on single kills of very large animals, particularly if the meat could be frozen or preserved by other means. But large animals, besides making the most broad and visible targets, would have been the slowest to reproduce. To have killed an adult female mammoth may have threatened the survival-prospects of a whole herd. It is quite different with small, rapidly-reproducing species such as rabbits: these can be culled without noticeable effect on the rate of reproduction of local populations.

To the extent that late Ice Age peoples focused upon large game, then, it seems probable that human hunting would have become a factor in driving some of these species towards extinction. This, in any event, is a widely-supported interpretation - known as the "overkill" hypothesis - which has been put forward to explain the phenomenon of "Pleistocene extinctions". This expression refers to the fact that towards the end of the last Ice Age, nearly simultaneously in all continents, a wave of extinctions took place affecting in particular the largest species of game animals and certain animal predators. Woolly mammoths, giant camels in North America, diprotodons in Australia - these and other huge creatures were either hunted to extinction or for other reasons proved unable to survive. In parallel with this, herds of smaller game began to shrink whilst in many regions, with the warmer climate, the great expanses of open tundra over which human hunters had previously roamed became covered with dense forest. The "golden age" for the world's great hunter-cultures was over.

As large game became scarce, human populations would have had to adapt by broadening their subsistencebase. It would have been necessary more and more to supplement the diet with both smaller game and vegetable food - to revert, in other words (except in regions where agriculture later evolved), to something in many ways closer to the resource-base of omnivorous higher primates and ancestral hominid forms.

As small game became relied upon, hunting-technology and its associated social forms would have had to change. A single kill would no longer have sufficed to feed a community for days. Game may have been more dispersed, and finding it more difficult. If the most a hunting-excursion could normally produce were one or two small animals, it may no longer have seemed efficient to form into large hunting



bands. It may have made better sense for communities to disperse thinly over the landscape, forming into small family-type groups or bands, each continuously gathering and hunting as opportunities presented themselves - much as most hunter-gatherer peoples do today.

Rather than remain for a season at a fixed home base while the menfolk departed periodically for the hunt, under the new conditions it may often have made better sense for each woman to keep up with "her" man, moving with a few children or other relatives, roaming almost continuously as her husband searched for game. In time, increasingly advanced kinds of weapons - leading eventually to the most elaborate of barbed spears, the bow-and-arrow, blow-pipes and poisoned darts - may have made it possible for single male hunters to make their kills without the need for large-scale co-operative endeavours.

Such changes would have had profound social effects. But the relevant populations would not easily have relinquished their traditions. If there is one thing which characterises traditional human culture, it is surely its conservatism. Even when changes of substance are made, people tend to do all possible to ensure that at least the forms of the old ways of life are preserved. In this context, we may imagine the ancient hunting traditions being kept alive in one form or another wherever possible. Should there have been just one season or month during each year when a moon-scheduled collective hunt could be arranged, people would have gathered from far and wide to be able to participate.

It seems that the forms of ritual action which are familiar in the ethnographic record emerged through a process of some such kind. We can view most rituals as functional in contemporary contexts, yet ancient in their logic. Ultimately, they are explicable as attempts to hold up and validate culture's most elementary and basic ideals even when daily life can no longer be modelled on them.

An annual collective hunt, linked to women's sexual cycle and to the moon, used primarily as a means of establishing a principle rather than as a means of obtaining food - would be a ritual. Millennia after it had first begun to be practised, social anthropologists might describe such a recurrent event as a "rite of sacrifice", a "fertility rite" or an "increase rite" - depending on which particular aspect of the re-enacted cosmically-synchronised hunt seemed to the interpreter most significant. In an earthly drama harnessed to events in the skies, blood would alternate with fire, fasting would be followed by feasting, sexual abstinence by an "orgiastic" celebration. For the participants, the whole point would be to ensure general well-being by preserving concordance and harmony, making sure that the blood flowed at the proper cosmological moments, that society's power to enforce sexual and dietary taboos was safeguarded - and that the almost-forgotten logic of the old life-style was preserved and handed down even despite its near-impracticability in materialistic terms.

Eventually, a time would come when the whole ritual would have become so disembodied, so divorced from obvious economic necessity, and so fragmentary in

its implementation as to need laborious explanation in order to justify its being re-enacted at all. Why was it necessary to watch the skies and, at the correct moment, to take an animal, to cut its throat and to offer the blood which poured out to the spirits? What had this to do with pleasing the ancestors, with preserving women's fertility, with rain-making or with the prevention of drought or famine? As questions of this kind were asked, explanatory stories would have been elaborated. The tribal elders would have explained that the secrets lay hidden in the distant past, in the instructions handed down from the heroic "dreamtime" or magical epoch when the world was still being formed, when people could travel to and fro between "this world" and "the world beyond" and when gods and humans conversed on easy terms.

### **The disharmony of the spheres**

According to the hypothesis, women's synchronisation of their menstrual cycles was not achievable by mere act of will. It had evolved as a necessary component within a total system. The periodicities of the moon, of cooking-fire, of sex and of feasting - all were involved in the synchrony, whose techno-economic basis and ultimate precondition was the lunar periodicity of the hunt. Only within this framework could women's solidarity be repeatedly validated and sustained by the internal social forces against which it was counterposed - sustained, above all, by the need to harness the endeavours of men as hunters. As the game herds diminished, as female-inspired collective hunting increasingly proved unreliable, and as it became more and more advisable instead for people to disperse, women's solidarity would have begun to break down.

As meat became scarce, the idea of waiting for the correct lunar moment before catching a small animal would have seemed inappropriate. When game came close to the camp, everyone would have wanted to chase it, no matter what the moon was doing. But if a creature were caught, then the idea that cooking had to be a full moon ritual would likewise have begun to seem impracticable. People would have wanted to cook when there was meat to be cooked - not just when the shamans declared the moment to be cosmologically auspicious.

Diminishing supplies of game would have led to the need for men in their hunting-expeditions to be less limited in the types of game selected. In less favoured regions, anything - rabbits, lizards, rats - might have had to be considered. Whereas killing a mammoth or slaughtering several reindeer would have concentrated numbers of hunters and consumers, generating intensive co-operation and sharing, this may not have been true for the new kind of hunting. The prospects of finding only small game may have been insufficient to motivate women's efforts in organising prolonged sex-strikes, or in inducing men to depart on lengthy expeditions involving overnight stays. It may have made better sense in any case for the whole community to break into small groups, each camping, moving and foraging continuously wherever the opportunities were best. As one thing led to another, neither the moon nor women's menstrual cycles could have seemed significant in the way they were before. They would no longer have seemed capable of governing society's rhythm of

work alternating with rest. Faced with the choice between moon and meat - between ritual ideal and survival - people would have chosen to survive.

### **The rule of men**

As women's economic value as gatherers increased, so their power would have declined. There is nothing in history to indicate that those whose labour sustains society are automatically those who rule: on the contrary, all the evidence is that the "ruling classes" are those who can compel others to labour for them. Women were powerful when they could compel men to hunt for them, when this compulsion was successful economically, and when the associated organising work brought women joyfully together as sisters. They lost power as this moon-scheduled mode of production gave way to another which required women's dispersal, turned women into an exploited labour-force, and prioritised marital relations at the expense of sisterhood or "blood".

\* \* \* \* \*

In asking why and how women lost their former "magical" power, it should be recalled that the model specifies two phases between which society alternated. We may then note that the second phase - the "waning moon" phase of consumption and sexual enjoyment - contains within it already the seeds of what will later become the "the individual family". According to the model, at full moon - the point in each cycle when the cooking fires were lit and blood-pollution was dispelled - women no longer prioritised their solidarity. They ceased to be "powerful" on account of their blood. They became available - free to meet their male sexual partners as individuals. Full moon, then, in a sense already signified transference of the bride from her own kin to her affines' side.

With the decline in the importance of moon-scheduled hunting and therefore of women's monthly sexstrike, this "waning moon" phase - the phase during which the powers of "the blood" were in temporary suspension - began to extend throughout the cycle as a whole. Or to put this another way: with the increasing importance of continuous, every-day-of-the-month food-foraging, and with men's increasing reliance on the gathered produce of the opposite sex, men were increasingly tempted to retain their sexual partners as helpers throughout the month, whilst women - lacking their own former strength in solidarity - felt a new level of dependency on the marital tie.

Marriage became not a renewable monthly "honeymoon" but a permanent bond. Instead of relinquishing their wives during each dark moon, men held on to them, menstruation or no. Despite all tradition, they could do this because economically it made more sense. And as men began to live off the food-gathering labour of their wives, hunting only sporadically and providing an unreliable supply of meat, each man with his wife or wives, together with dependent relatives, began turning into the main productive unit.

Once this shift in emphasis had occurred, the basic conquests of women's revolution were under threat. The various woman-centred social mechanisms which had humanised society lost their former effect. Once a woman had been taken as a permanent wife, her sexual "yes" was assumed to be in principle continuous. A man expected sex, now, not because he brought meat but because he had a wife. It was a matter of his "rights" as a husband. Since (given women's atomisation a collective sex-strike was no longer something to worry about, men could increasingly take their wives for granted. The pressures on them to "behave" were therefore correspondingly weakened. And women, by the same token, were increasingly tempted to use sex in competing with one another in the struggle to gain favours from men.

Menstrual synchrony was not sustainable because each woman, sexually isolated in a partnership with her husband, could no longer keep in close physical contact with her sisters. To the extent that - out of deference to tradition - men still respected women's menstrual condition in any sense, this "respect" took a changed form. Men, now, simply kept out of the way when their wives were menstruating. Or, as their power increased, they forced their wives to keep out of the way, valuing them only when they were available - and at other times marginalising them in special huts or on the outskirts of the camp. Menstrual "taboos", in other words, now assumed politically-inverted, woman-oppressing forms.

\* \* \* \* \*

In many ways, all this was a return to the pre-human, pre-cultural state. But it was not a simple return. An evolutionary regression to the animal stage was now no longer an option for humans. Culture had made us dependent on one another in zoologically unprecedented ways, and there was no going back. Without rules of sexual morality, and without language, tradition and technology, the defenceless human animal in most environments could not have survived. But conquests such as the rule against incest were still intimately bound up with the language of blood and with the ancient symbolic system of which this was a part. They could not be retained without retaining much of their original framework and context. And so a "compromise" solution had to be arrived at - a compromise which still defines our condition today. We retained as much of the cultural heritage as was possible, preserving the abstract forms of the ancient lifeways even whilst their real contents were largely lost, adjusting always between two opposite constraints - the need to innovate in the food-search on the one hand, and the need to preserve tradition on the other. Out of this clash of necessities, the world as we know it was born.

Note.

This article is based on a lecture given to the Traditional Cosmology Society and Scottish Royal Anthropological Institute in Edinburgh University in February 1987. Whilst retaining responsibility for any possible errors, I thank those present - including in particular Emily Lyle, Alan Barnard, Kenneth Maddock and Roy Willis - for their helpful comments and criticism.

References are omitted, but the following works indicate something of the range of findings which the argument is designed to link and to explain:

Leroi-Gourhan, A. 1968 *The art of prehistoric man in western Europe*. London: Thames & Hudson.

[In the symbolism of European Ice Age cave art, penis is to vagina as spear is to wound. The symbol for "vulva" may equally be used to indicate "wound" in a game animal. The focus of ritual attention is particularly on the female reproductive organs and the colour red].

Lévi-Strauss, C. 1970-81 *Introduction to a science of mythology*. Vols. 1-4. London: Cape.

[The myths of the Americas - and by implication of humanity - are reducible to a single supermyth. In this, sexual oppression is justified on the grounds that women are periodic creatures, unable to synchronise their menstrual cycles and so liable to throw the moon, sun and cosmos into chaos].

McClintock M. 1971 *Menstrual synchrony and suppression*. *Nature*: 229: 244-5.

[Women who associate closely with one another tend to synchronise their menstrual cycles].

Marshack, A. 1972 *The roots of civilization. The cognitive beginnings of man's first art, symbol and notation*. London: Weidenfeld & Nicolson.

[The earliest notation-systems of Ice Age hunters were lunar calendars].

Testart, A. 1985 *Le communisme primitif* Paris: Editions de la Maison des Sciences de l'Homme.

[The most archaic hunter-gatherer symbolic traditions centre on an "ideology of blood". Its function is to polarise society into segregated male and female camps. The ideology consists of a series of positive and negative relationships drawn between women's menstrual blood and the blood of game animals].

Turke, P. W. 1984 *Effects of Ovulatory Concealment and Synchrony on Prothominid Mating Systems and Parental Roles*. *Ethology and Sociobiology*, 5: 33-44.

[In the course of human evolution, female protohominids forced males to provide consistent parenting by concealing ovulation, synchronising their menstrual cycles and extending sexual receptivity].

For a fuller elaboration of the argument and for further references, see:

Knight, C. 1983 Levi-Strauss and the Dragon: Mythologies reconsidered in the light of an Australian Aboriginal Myth" (Man, N.S., 18, 2 1-50).

----- 1987 Menstruation and the Origins of Culture, Ph.D. thesis, University of London.

----- 1988 "Menstruation and the Australian Rainbow Snake", in: T. Buckley and A. Gottlieb (eds.), Blood Magic: The Anthropology of Menstruation. Berkeley: University of California Press.

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C. K., August 1989

## ABSTRACT

Prothominid females became women by relating to males in a completely new way. As the males of our species began hunting to obtain meat food, an initial problem for females was to obtain an adequate share of such meat. There was little in the genetic make-up of males to make them bring back their game instead of eating it themselves in the bush. Although there was nothing to stop females from hunting for themselves, responsibilities for offspring tended to immobilise them, rendering them less free to hunt than were their sexual partners.

Human females solved the problem by refusing sex to all males except those who came home to them with their kills. This strategy required and generated inter-female solidarity. When a female was refusing sex to a "lazy" male partner and was determined to make him hunt, she had to prevent him from finding sex elsewhere. She had to organise other females to join her in refusing sex, keeping up the boycott of this male unless or until he went off and brought back some meat.

Such solidarity brought females into intimate contact with one another - contact close enough to bring their menstrual cycles into synchrony. In each female group, in other words, those who were not pregnant, lactating or menopausal would have menstruated simultaneously. These women "implicated" all the other women in this, so that the whole group - including pregnant and lactating females - were in effect "menstruating" together. The importance of this was that bleeding had to be used as the basic means of signalling "No sex" to males.

During each collective menstrual period, women had to assert themselves as "on strike". They had to signal "No" not just individually but as a gender-group. It was important that no woman should be allowed to undercut her sisters by appearing to be sexually available at such a time, even if she were not able to menstruate in a literal sense herself. Women measured up to this challenge by transcending biology. On the one hand they dampened down and eventually eliminated oestrus-signalling; on the other, they proved able to "borrow" the symbolic effects of one another's menstrual blood, on occasion actually painting one another in shared blood where biology failed to provide what was required.

Women, then, went periodically "on strike". By this means, each month, they motivated their menfolk to organise an extended large-scale hunting-expedition. By establishing that menstrual bleeding indicated "No" or "taboo", moreover, the females made possible a further step. The game animals which men hunted also bled. To the extent that an analogy between women's and animal blood could be established - assuming, in other words, that blood as such could be treated as "taboo" - this meant that men could not eat the meat. They were prevented by the menstrual taboo from being "selfish" with the game animals which they killed.

Women would have been the earliest custodians of cooking-fire. The taboo on bloody meat would have compelled men to bring their game home for women to cook as the condition of rendering it edible. A man who wished to eat his own kill

out in the bush would have had to violate the blood-taboo, eating his meat "menstrually" polluted - i.e. raw.

Further, it would have made sense for collective hunting expeditions to have been held at the time of each month when the light of the moon made overnight travel possible. This would have facilitated the emergence of a total system in which hunting, menstruation and the moon were brought into synchrony - a system in which the hunt as a periodic work/rest activity was governed by a lunar/menstrual clock.



*Editor's note, 2011 – Developments in Sex-Strike theory*

This 1988 account of the sex-strike theory is still a very good introduction to the ideas. Since then, there have been some significant updates and developments, which can be summarised in three main points:-

**i) Timing of the revolution**

Knight focused here on the European Ice Age and Upper Palaeolithic, c.40,000 years ago – the time modern humans arrived in Europe. We now have a growing body of evidence for symbolic culture in the African Middle Stone Age, well over 100,000 years ago, before modern humans left Africa, and probably dating back to the origin of our species, nearly 200,000 years ago. This suggests the revolution in fact coincides with the emergence of *H. sapiens*. This does not affect the general argument about the hunting out of large game leading to social and economic change by the end of the last Ice Age, c. 10,000 years ago.

See Ian Watts (1999, 2002 and 2009) for analysis of African MSA ochre record and associated symbolic artefacts.

**ii) Costs of bigger brains**

Knight's female-centred model for the emergence of hunter-gatherer economies and kinship systems is driven by the costs of childcare for evolving women. But what exactly was causing these costs to increase? In the past half million years, brain sizes radically increased. By looking at fossil cranial capacities we can quantify the degree of reproductive stress in different species of hominins (*H. erectus*, *H. heidelbergensis*, *Neanderthals* and early *Homo sapiens*).

See Camilla Power and Leslie Aiello (1997) and Power (1999) for discussion of reproductive stress as the factor driving these female strategies.

**iii) Menstruation as vital information to males**

Knight describes menstruation as a 'NO' signal emblematic of the sex strike. This is certainly true across a wide range of cultures – but this is a culturally constructed taboo. From a purely biological or Darwinian perspective, a menstruating female is showing that she is not now pregnant and will be fertile soon. No male can ignore that information; we can predict that mate-guarding of menstrual females would be a male strategy. This is why menstruation as both *biological* and *cultural* signal became pivotal in the evolution of symbolism.

See Power (2009) on how cosmetic manipulation of menstrual signals came to be sexually selected and influenced male behaviour.

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