Vol 4, no 8 August, 91

Conspecific comparison - a reply to Paul Gilbert

Paul is right. I should simply have presented the theory (that depressive states evolved as part of the yielding component of agonistic behaviour), rather than confuse everyone with trying to rebut an objection (that depression is essentially yielding behaviour but depressives sometimes seem adept at getting their own way). Also, the title should have been "Metaphors of Yielding", a term which encompasses both voluntary submission and depressive yielding.

In his distinction between social comparison by intimidation and social comparison by attraction I think Paul has made a very fundamental point - one that has certainly clarified things for me. This thinking about social comparison in an evolutionary context starts with Darwin's idea of sexual selection, and then there is Ginsberg's view of social organisation as providing an arena for social comparison, and then Wynne-Edwards idea of conventional competition for conventional goals; but I cannot recall anyone getting anywhere near Paul's analysis. We can now see ritual agonistic behaviour as one form of social comparison which is one form of the social competition which subserves intrasexual selection. Since this is all very new, I think it might be helpful if I just reflect back to Paul my current thinking about the evolution of social competition as it has been affected by his contribution.

The evolution of human social life can be seen as the evolution of ever more sophisticated and effective methods of sexual selection, and it might be helpful to enumerate some of the possible stages, concentrating mainly on the intrasexual component of sexual selection:

1. Unritualised social competition

Many insects kill members of the same sex, some worms plug each other's sexual orifices, some beetles spray each other with anti-aphrodisiac gas; this category includes any action to reduce the other's viability or fertility over which the victim has no role in "consenting". Possibly the suppression of sexual development by pheromones in some rodents and new world monkeys comes into the category, otherwise it does not occur in vertebrates.

2. Ritual agonistic behaviour

In ritual agonistic behaviour the loser, being unharmed, must consent to lose. He has the option (at an unconscious level) of not consenting, and can be said to choose between consenting and non-consenting strategies.

In evolutionary terms, ritual agonistic behaviour seems to be performing two rather separate functions. To the extent that it takes the form of intergenerational conflict, it serves to delay reproduction until later in the life span. To the extent that it is intragenerational conflict, it serves to create lifelong variation in fertility within a socially interacting cohort of cconspecifics. It is this second function which subserves intrasexual selection, and which concerns us here.

According to the simplest view, each individual has to choose between two strategies, a dominant strategy in which he reproduces more and a subordinate strategy in which he reproduces less. The dominant strategy is designed to maximise his own reproduction, the subordinate strategy is designed to maximise the reproduction of his close kin (and depends for its selection on the "kin selection" component of inclusive fitness). For individuals in this system, the overall strategy is similar to Maynard Smith's "assessor" strategy; on at least one occasion in their ontogeny they have to assess their chances and choose between the dominant or "hawk" substrategy on the one hand, and the subordinate or "dove" substrategy on the other.

How does they make this choice? There are a number of possibilities which have not in fact evolved. They could leave it entirely to the opposite sex and adopt the strategy "If chosen as a mate, adopt dominant strategy; if not chosen, adopt subordinate strategy", thus relying entirely on the intersexual component of sexual selection and eliminating the intrasexual component. Or, they could do it by counting heads, such as, "If the home/nest contains more than x individuals when you reach age y, adopt subordinate strategy, otherwise adopt dominant strategy." What has in fact evolved is a form of social comparison, which bears a certain resemblance to co-consultation. We can imagine a primitive vertebrate, scratching its head and wondering whether to adopt a dominant or subordinate strategy, so it chooses a consultant, and says, please help me make up my mind. The consultant says, use me as a yardstick, if you find yourself superior to me, your chances are good and you should adopt the dominant strategy; otherwise you should play safe and adopt the subordinate strategy. The consultation takes the form of a

fight in which our indecisive individual uses the strength of the consultant as a yardstick to estimate his own strength, and after the consultation he either says to himself "I am a strong person" and adopts a dominant strategy, or "I am a weak person" and adopts a subordinate strategy. Of course the interaction is symmetrical and the "consultant" is making a similar decision (it is a co-consultation). This could be called dyadic comparison because, in each comparative episode, each individual compares himself with one other. It is the main form of vertebrate social comparison and is called ritual agonistic behaviour.

As Paul points out, group living provides the opportunity for more sophisticated social comparison, and probably the selection mediated by ritual agonistic behaviour in groups is more effective than occurs in territorial species. The opportunities for effective comparison in a single fight are limited, but if animals live in groups they have extended time in which to evaluate each other's strengths. Fights can follow a long period of mutual assessment, can be protracted, and be divided into bouts.

As a result, the rank order in a group should reflect small differences in strength, skill, intelligence and courage (the components of RHP). Ritual agonistic behaviour amplifies these small differences into gross social disparity.

3. External mediation of intrasexual selection

In human evolution there has been a major change in ranking behaviour. Instead of two rivals A and B fighting it out between themselves, the choice between A and B is made by C, D, E etc. This is the change which Paul has pointed out as so important. In order to achieve social succcess, A has to make himself attractive to C,D and E rather than make himself intimidating to B. Selection is now by external judges rather than by interaction between the rivals themselves. The scope for greater efficiency of selection, and for cultural variation in the criteria of selection, opens up an entirely new "ball game" of the sexual selection process. In fact, this development must have been about as important as the development of sexual selection itself. To distinguish it from the dyadic comparison which occurs in ritual agonistic behaviour, the evaluation of A and B by C,D and E etc could be called polyadic comparison. Of course it is seldom as simple as that, and in most cases everyone is evaluating everyone else.

Does this kind of sexual selection occur in animals as well as man? In macaques, baboons and chimpanzees the outcome of ritual agonistic behaviour is affected by alliances with same-sexed conspecifics, so that the capacity for alliance formation is being selected for as well as fighting ability. The choice between two potential allies offers a primordium of polyadic comparison, in that the criterion of choice is not so much "Does he intimidate me?" as "Is he likely to intimidate the other fellow (and, if so, is he likely to favour me)?"; this is still some way from, "Which of the two is more attractive?", but it as a major advance from the evaluation of others entirely in terms of dyadic comparison. In chimpanzees, in addition, the influence of female group members affects the rank order in males, and this is a further step towards intrasexual polyadic comparison; in fact, it is similar to the situation in at least one tribe of American Indians in which only males are allowed to run for office and only females are allowed to vote.

In human society polyadic comparison has been enormously increased in importance, particularly due to language and the opportunity this gives for the comparers to discuss those being compared, and for the careful allocation of prestige; it also gives the group members the opportunity to discuss the criteria for the allocation of prestige. But it has not replaced the other forms of social competition, and so we see them operating side by side.

Some consequences of polyadic comparison

1. Proscription of agonistic behaviour by society. Groups practising polyadic comparison would have an enormous advantage over groups still limited to dyadic comparison (agonistic behaviour). Culturally they would be at an advantage because their leaders would have those characteristics which are the criteria for the allocation of prestige, and in most human groups these appear to be a combination of competence and dedication to the interests of the group. Groups with such leaders should outperform groups whose leaders were selected for power to intimidate. Genetically, the polyadic groups would tend to have more members with qualities of competence and unselfishness because there is a correlation in most human groups between prestige and reproduction; therefore we have probably experienced a gene/culture co-evolution for competence and group loyalty.

Among those groups practising polyadic comparison, there would be an advantage to those groups in whom selection was entirely by polyadic comparison, and therefore there would be an advantage in preventing agonistic behaviour as much as possible. Therefore we can

expect ritual agonistic behaviour to be proscribed by groups, both in their childrearing practices and in their code of behaviour for adults. In childhood there is an enormous parental influence towards non-intimidatory behaviour, see for instance the life histories described by Vaillant in his Adaptation to Life, in which a cohort of American college men report severe sanctions on aggressive behaviour during their childhoods. The proximate reason for parents stopping their children from quarelling may well be that they find the noise irksome, or that they consider it bad manners, or that they think the children should spend the time improving themselves in some way; but the ultimate, evolutionary reason may be that they want to decide the children's rank order themselves by the giving and withholding of praise and criticism, and so they do not want the rank order decided by the chidren themselves in the course of quarelling (ritual agonistic behaviour). Also they want to develop in their children the mentality that looks for SAHP in the form of praise rather than RHP in the form of the submission of others, so that when they leave home they will still be oriented towards polyadic comparison. The widespread existence of bullying in school playgrounds (1) might seem to gainsay this thesis, but it is probably due to the fact that there were no schools in our 'environment of evolutionary adaptedness'. Glanz and Pearce (2) have pointed out that in hunter/gatherer society children seldom interact with each other in the absence of adults.

In adult life, fighting between same-sexed adults is also proscribed. Duelling was forbidden by monarchs, not because of the fear of loss of life (which was slight), but because the king wanted prestige to go to people he approved of rather than to those who were skilled with the sword or pistol. What dyadic competition is allowed between adults is governed by society's rules rather than by nature's. Fine differences in ability can be assessed by pitting individuals against each other in sport and in intellectual tests. But these are polyadically controlled dyadic comparisons. Prestige is allocated not only for performance but also for sportsmanship, and bad marks are allocated to those who are seen to cheat or who do not accept the decision of the referee.

Because of this proscription, ritual agonistic behaviour is only seen in situations over which society has little control: in prisons, on street corners, in the school playground, in the family and in situations in which master and servant are alone together. Also, society does not proscribe ritual agonistic behaviour in marriage; in fact, sayings abound to the effect of "Never interfere between husband and wife". This may well be because the rank order within marriage does not affect the rank order in the group as a whole, and therefore it affects neither the choice of leaders nor the correlation between prestige and reproduction.

One or two contributors to this debate in ASCAP have questioned the idea that ritual agonistic behaviour does not occur in everyday human social interaction. It may indeed occur in subtle forms (such as damning with faint praise in committee meetings) but I very much doubt whether the mild forms that may occur contribute to rank order.

2. Development of latency period. Students of baboon social life have pointed out that the brief period of immaturity before the adolescents join the adult dominance hierarchy is a time in which they evaluate each other, and each group of peers has worked out its rank order by the time the canine teeth have developed. The human latency period allows a much extended time of mutual evaluation by the peer group. It also allows the previous generation to play an important part in the evaluation, and of course in human life we see a whole professional class of evaluators ranking our adolescents according to adult standards. Therefore, whereas the accepted function of the latency period is to allow more learning, we can add the additional function of allowing ranking according to ability to learn and according to other attributes which are manifested at this stage of development.

3. Religion and war as projective tests. Society wants individuals who are assertive and capable and yet have the capacity for submission of their individual goals to those of the group. The induction of children into religious practices allows an evaluation of this capacity for submission, and also provides a test of memorising capacity by requiring the child to learn scripture and ritual.

The wars of primitive man are ritualised and the death rate is low. There is much observation of individual fighting attributes. In this way society can allocate prestige to those who will risk their lives for the sake of the group. This is a possible explanation for the universality of religion and war in human groups: those groups that lacked these aids to polyadic comparison did not survive.

4. Why people are nice. On the whole society allocates prestige to people who are nice. Nice means that they are decent, honest, reasonable, cooperative people who put the good of the group before their own selfish interests; they are also likeable and interested in their fellow human beings. Thanks to polyadic comparison human goups have been selecting for niceness for millions of years, and we have become very good at it. Therefore we have to some extent overcome the legacy of dyadic comparison which is to select for

intimidating, selfish bullies. The genes may be selfish, but the people are unselfish, and it is the people we have to interact with, not the genes. I think in this sense the message of evolutionary biology is an encouraging one. We are nice because, for a very long time, we have selected each other to be nice.

Hedonic dyadic comparison

Of course in the hedonic mode there is a lot of comparison of social attention-holding power (SAHP) on a dyadic basis. This takes two main forms. There is furtive comparison, in which, for instance, a woman will look round a room she enters to make sure she is the most attractive woman present; this involves a comparison of herself with each other woman separately. Then there is the episode of mutual appraisal when two people meet. This is similar to the assessment stage of ritual agonistic behaviour; the differences are that it is SAHP rather than RHP that is being compared, and that evaluations of favourable relative SAHP are not signalled in the form of catathetic signals; in fact, politeness often directs the dyad into an exchange of anathetic signals (compliments) whatever the result of the evaluation. This helps to prevent a switch to the agonic mode, because inappropriate signals of favourable relative RHP lead to loss of face (loss of SAHP). It seems likely that dyadic evaluations of unfavourable relative SAHP, either furtive or mutual, may cause social anxiety or possibly even depression (fall of SAHP) but this is a matter for future empirical study.

Use of same mechanisms

It is likely that the SAHP system of hedonic polyadic competition developed out of the RHP ritual agonistic behaviour system, rather than starting from scratch. Thus in the RHP system we have catathetic signals in the form of threat and attack causing a fall in RHP which triggers a further fall in RHP which is the core element of depression. And in the SAHP system we have catathetic signals in the form of disapprobation causing a fall in SAHP which triggers a further fall in SAHP which is experienced as depression. Although the nature of the catathetic signals is different, it seems likely that the mechanism for receiving the catathetic signals is the same, also the mechanism that converts receipt of catathetic signals into fall of RHP, and also the hardware that calculates whether a fall in RHP is sufficient to trigger the depressive "devaluation" of RHP that takes the form of depression. And in the SAHP system, as in the RHP system, the withdrawal of an anathetic signal has the same effect as a catathetic signal. The main difference in the SAHP system is that catathetic signals are no longer signals of favourable relative RHP; in fact they have no comparative component; instead of signalling "I am better than you" they signal "You are no good." Likewise, anathetic signals are no longer signals of unfavourable relative RHP, signalling, "You are better than me"; instead, they signal "You are good", without any implication as to the SAHP of the speaker. This may be one reason why there has been such an enormous developmemt of anathetic signalling in the polyadic system.

SAHP and RHP are components of human self-esteem, and the evolutionary sequence RHP --- SAHP --- self-esteem goes a long way to explaining why there is such a wide variation in human self-esteem, why there is "global" self-esteem rather than separate self-esteem for each characteristic, and
why depression is associated with a global fall in self-esteem rather than just the component which is relevant to the social situation.

In summary, I think Paul's development of the SAHP/polyadic comparison system has made it possible to relate the yielding hypothesis to actual human behaviour, to integrate it with all the current psychological work on social comparison (particularly concerning social anxiety, shame and guilt) and to relate both the above to evolutionary biology. Keep going, Paul.

1. Tattum, D.P. (1989) Violence and aggression in schools. In Bullying in Schools, ed D.P.Tattum & D.A.Lane. Stoke-on-Trent: Trentham Books. Pp 7-19.
2. Glantz, K & Pearce, J.K. (1989) Exiles from Eden: Psychotherapy from an Evolutionary Perspective. London: W.W.Norton.