ASCAP NEWSLETTER

Across-Species Comparisons And Psychiatry Newsletter
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"The genes sing a prehistoric song that today should sometimes be resisted but which it would be foolish to ignore." from the Minnesota study of twins reared apart[1]

(c/o Russell Gardner, 1.200 Graves Building (D29), University of Texas Medical Branch, Galveston, TX 77550)[2]

For the philosophy guiding this newsletter, predicated upon combinations of top-down and bottom-up analyses, see footnote on p12[3]

Newsletter aims; 1. A free exchange of letters, notes, articles, essays or ideas in whatever brief format.
2. Elaboration of others' ideas.
3. Keeping up with productions, events, and other news.
4. Proposals for new initiatives, joint research endeavors, etc.

L Sloman on p6 and JS Price on p8 respond to each other about JSP's stimulus essay in July ASCAP.

Don't despair if you've contributed but JSP's response hasn't yet been published. He's working hard! Wait for future issues!

Subscribe for 1991 if you haven't already done so! Twelve issues for calendar year 1991 (vol 4) will be $18 as was/is true for the 12 issues of calendar year 1990 (vol 3). Issues from the first two volumes are available free upon request. See page 13 for subscription form.

Basic Plan Group to meet in England!

The dates are 7 £ 8 July, 1991, near London. Mark your calendar and let me know soon if you plan to attend. This will occur immediately after The Royal College of Psychiatrists meeting in Brighton, England. Some of us are working on abstracts to submit to that meeting as a part of a panel on "Evolutionary Psychiatry'. Let me know (soon! - we have a 1 Jan 1991 deadline) if you are interested in contributing to that meeting as well as to the Basic Plan Group. I have the RCOP form to use--I will coordinate with J Price.

Publications: 1. Gilbert P, Reynolds S: The relationship between the Eysenck personality questionnaire and Beck's concepts of sociotropy and autonomy. Brit J Clin Psychol 1990; 29:319-325.

2. Gilbert P: Chapter 3. Changes: rank, status and mood. In Fisher S, Cooper CL, eds. On the Move: the Psychology of Change and Transition. J Wiley & Sons, 1990.

3. Weisfeld GE: An extension of the stress-homeostasis model based on ethological research. Perspect Biol Med 1982;26:79-97.

4. Nesse RM: Evolutionary explanations of emotions. Human Nature 1990; 1:261-289.

5. Nesse RM: The evolutionary functions of repression and the ego defenses. J Am Acad Psychoanal 1990; 18:262-285

Highlights; In the 1 Nov 90 issue of Nature, G Parker and J Maynard Smith reply to Gould and Lewontin's 1979 scathing indictment of Panglossian thinking for those of us caught up in searchs for the evolutionary 'adaptive purposes' of various attributes or behaviors[4].

The 15 Oct issue of Science (1990; 250:187-342) is unusually rich in topics of interest to ASCAP:

- Irrational behavior. An editorial by D Koshland (p189) highlights the enormous importance of the "rational

approach to the irrational" — he emphasizes that a most important objective of the human genome project is to gain mastery over mental illness.

- Human genome. How *little* is now known gets accented via an article and an extractable wall chart .
- Genes and behavior. The role of genes vs environment in determining behavior is stunningly presented in the Minnesota Study of Twins Reared Apart. Little difference on most measures exists between those reared together vs those reared apart . Note below that Mellon & Clark view skeptically the very dichotomy of 'g *vs* e'!
- Amyloid ß. The strategy of using features jointly found in mental retarded and mentally ill patients has bourne fruit in Down syndrome and Alzheimer's disease with clues to pathogenesis on the molecular level .

Two issues of Scientific American intrigue ASCAP: in Oct, C Sapienza writes on 'genomic imprinting'-- that the sex of the parent makes a difference on the traits of the offspring that stem from particular genes . This is interesting because Angelman syndrome (recall the laughing retarded children without speech and also without a segment of their chromosome 15 featured in Oct 89 ASCAP) is caused only by a deletion in the *mother's contribution* to the child's genome. When *father is the origin,* Prader-Willi syndrome (PWS) results. Here the patients have small hands, feet, genitals and stature, and after they pass infancy, they think only about eating and grow obese. The story gets even more complex (and exciting for those in the genetics world) because some of the patients do *not* have the deletion manifestly; however, 'uniparental disomy' seems to cause the PWS; this means that DNA from the critical region of chromosome 15 stems from one parent only, but in a duplicated form; thereby a *defacto* deletion exists from the other parent .

In the Nov Sci Amer, J Winson, mentioned by Tiger & Fox last issue, suggests that dreams echo evolutionarily important memory processes allowing animals to record and evaluate new experience so that they are better equipped for optimal survival .

Finally, Mellon & Clark in Perspectives Biol & Med (Autumn, 1990), offer ideas from modern genetics for determination of mental illness. What, besides trauma, can account for why relatives with more-or-less the same genome end up with different realizations of mental illness? M&C specify things that can happen on the molecular level between whatever the original DNA sequences seemed to code and what finally happened in less than optimal phenotypes[10].

Letter: *23 September*

I have some ideas about the cross cultural study. My enthusiasm mounts, but I question what seems to be the unstated research strategy in most discussions I've heard: cast a wide net to demonstrate congruities and discontinuities between cultures. The more cultures, the more primitive and remote, the better. But what about translation, instructions, etc. I suggest an alternative approach.

Create a network of collaborators. the Principal Investigators (PIs), at least at first, will be the usual suspects. Our subjects should be chosen for motivation, education, homogeneity, family participation, and the availability of biological sampling (blood, urine, etc). The PI would not recruit individuals but social entities: a kibbutz, a school, a union (all the letter carriers in Calcutta!)

One way to keep the costs down is pay for our participants' help with barter: e.g., 5 year old P.C.'s and xerox machines, training trips to the US for the local collaborator.

Another is to amortize costs by

using the network for a number of experiments and longitudinal observations. Repeated use would iron out the kinks and foster reciprocal altruism. Larger N's, lower $'s.

Such a project - relatively low dollar spread over 3-10 years - could ask some very interesting questions about human ethology, such as the effects of population density, latitude, kin density, and (dare I say) race on sexual behavior, reproductive success, resource holding, status, etc. And a good excuse for the PI to go to interesting places following the cross of science.

...I have my doubts about my making to England next summer, although subsidized air fare would increase the probability. Any chance of this..

Steve Heisel, Harvard Medical School

Alas, we have no funds underwriting this planning meeting. Hope you can make it as your ideas are valuable.

Letters (cont.) *October 27, 1990*

I notice, on careful reading of p3 of the Apr 1990 ASCAP Newsletter a serious transcribing error, or perhaps a Freudian slip. The text of the letter as it appeared in Chem Eng News has the following sentence in paragraph 2: "An elevated mood in response to an idea or opportunity can lead to exceptional creative output; an upwardly spiraling mood leads to the classic symptoms of mania." In ASCAP. the underlined portion did not appear.

While this omission may have been unintentional, it does point out the mindset of the Medical Industry. It is loathe to admit something basically good and positive which occasionally spirals out of control and causes problems. It may also not want to hear that since 1987 I have avoided all problems and remained under my own control by avoiding psychiatrists, drinking mineral water (with Li^{++} ion), and having a full understanding of the natural processes that gave a few of us the Bipolar trait. Many people have the Bipolar trait but avoid Bipolar Disorder, as I did for 35 years until 1986. While I crossed the fine line between creativity and madness a few times in 1986 and 1987, I crossed back prior to 1988 and have had no more problems. My employers and most of my friends here know nothing about this, and have no need to know.

As requested (though slowed by a broken leg from a bicycle accident on Sep 2nd), I enclose a personal essay giving my view of the evolutionary origins of the various positive and negative Bipolar disorders. In my three year immersion in the Mental Health Industry .., I never saw anything innate or ritualistic about mania or depression. It was always an individual response to outside circumstances, allowed to happen by a lack of automatic limits on mood and energy levels, caused to happen by outside events, and controlled by interactions between the content of the unconscious mind and the actions of unaware passersby. Above a threshold rate of thought, the manic no longer controls his or her actions. They are triggered, if not controlled, by the words and actions of those who interact with the manic.

Perhaps if we had a better appreciation of the positive aspects of the Bipolar trait, we might have better things to do and say. Then the distressed Bipolars we interact with might do more good and much less harm.

Steven C Crossan, Arlington, VA

I apologize for the omission that you underlined above. Thank you for the correction and for the personal essay which is slated for a future ASCAP. Sorry about the broken leg!

Letters (Cont) *October 29, 1990*

Here is my reply to John Price's article. ...

Do you want to write a short description of ASCAP for the Human Ethology Newsletter? I think our readers would like to know about the organization and its newsletter. I would probably run it in the March issue.

Glenn Weisfeld, Wayne State U

Thank you! A description will come.

Letters (Cont) *Oct, 1990*

I much appreciated your comments on The Imperial Animal. I hope, also, the response justifies your contribution of space.

Also, I passed on the issue to Gordon Getty of the Leakey Foundation, who is interested in these issues.

Lionel Tiger, Rutgers U

Letters (Cont) *November, 1990*

Thanks for printing my letter. ..

I agree there are too few ideas about..I thought the tone of the Human Evolution [group was uptight].

Don't Tiger and Fox write elegantly? Admirable.

John Pearce, Cambridge, MA, USA

Letters (Cont) *Oct 1, 1990*

I have taken a great interest in John Price's paper 'Metaphors of Submission'. The result is an answer formulated as a kind of paper. I think that ASCAP newsletter is a good forum of free exchange of ideas concerning human biobehavioural and psychiatic problems. ...

Nov 03, 1990

Thank you for the issues of ASCAP. I was glad to see my hypotheses of endogenous depression published in the Aug-issue 1990 - the way you edited is fully satisfying.

As for my paper concerning 'Depression and Submission' it is a close answer to John Price's considerations and as such it is only indirectly related to the earlier published hypotheses of depression...

Tyge Schelde, research ethologist, Fredericksburg Hospital, Denmark

The close direct observations of the kind you make need to be an important feature of future research on the pathogenesis of psychiatric disorders. Now the research of 'biological psychiatry' usually involves inferences from observations (then left unrecorded). For instance, manics are described as euphoric or elated without reference to laughing and smiling behaviors that gave rise to the inference; we need ethologists.

Fallacies of Fitness by CR Badcock[11]

Although often attributed to Darwin, the notorious slogan, 'survival of the fittest' was in fact coined by Herbert Spencer (1820-1903) seven years before the publication of The Origin of Species. Darwin's theory of evolution by natural selection does not necessarily and primarily predict 'the survival of the fittest' in Spencer's use of the term. This, and most other rival theories of evolution add other assumptions or draw other conclusions apart from the simple, single and supreme insight of Darwin: namely, that natural selection is ultimately a matter of differential reproductive success, and nothing else.

In order to understand how Darwin's concept of differential reproductive success as the final arbiter of natural selection differs from Spencer's notion of the survival of the fittest, consider the following paradox: It is now known that men die more readily than women at all ages from all causes which can affect both

sexes--an effect which is seen from conception to death and can only be reversed by castration . These data suggest that it is being male and being subject to the effects of male sex hormones which actually shorten male life-spans. For instance, one known effect of testosterone is to raise the resting metabolic rate of males by approximately five percent as compared to females. Effectively, this means that the male biochemical 'engine' is running about one-twentieth faster all the time than is that of woman, perhaps explaining why it wears out sooner. Again, a major factor in enhanced male vulnerability to death, disease and injury is the greater aggressiveness and readiness to take risks characteristic of males; this, too, seems to be an effect of testosterone. If castrated males survive better than sexually-intact ones as they are indeed known to do, and if evolution does in fact select the fittest in the sense of personal survival, why has natural selection not selected males without testes? Put in bald terms such as these the answer is obvious. Males without testes would do somewhat better in terms of individual survival and resistance to all causes of death at all ages, but they would leave no descendants who could enjoy those advantages! From this we can draw the correct conclusion, insufficiently appreciated until astonishingly recently: selection selects ultimately for reproductive success, not necessarily or primarily for personal survival. If it does select for the latter--and, of course, it usually does so in practice--the only reason that it does so is that personal survival, health, longevity or whatever are necessary factors in promoting an individual's ultimate reproductive success and nothing more.

Perhaps some will object that it is really a chicken-and-egg situation, with survival being necessary for reproductive success and vice versa. To a large extent this is true, but it is untrue if we interpret such a remark to mean that personal survival and well-being have exactly the same significance for natural selection as ultimate reproductive success. We can see that if organisms as such are essentially the packaging and vehicles of the genetic information which they contain and originally evolved to carry and to protect it, then organisms must be able to survive in order to reproduce, rather than be able to reproduce in order to survive. If it is indeed a chicken-and-egg situation (and it certainly is for chickens), we can say that it is not that the egg is the chicken's way of making another chicken, but that the chicken is the egg's way of making another egg: 'the organism is only DNA's way of making more DNA'[13].

Some readers might be tempted to observe that the general conflict of interest between reproductive success and personal survival and the apparent paradox regarding male survival and male reproductive success in particular were instances of distinct types of selection: what Darwin termed *sexual selection,* as opposed to purely *natural* selection. In these terms, it would be tempting to think that, whereas natural selection selected for individual survival, sexual selection selected for reproductive success. According to this view, adverse male survival would be a consequence of increased sexual selection among males which to this extent was working against natural selection in its prime role of safe-guarding survival.

Of course, it is perfectly true that Darwin did indeed use the term 'sexual selection' and that he did regard it as an adjunct to natural selection, somewhat in the manner suggested in the paragraph above. But Darwin's use of the term was more descriptive than analytic and he him-

self pointed out that 'in most cases it is scarcely possible to distringuish between the effects of natural and sexual selection'[14]. Today we would probably go further and say that it is scarcely possible to distinguish between the principles of selection involved if we wish to avoid confusion regarding the true meaning of 'fitness' and ambiguity about what natural selection actually selects. Since sex is natural and naturally-selected traits can be passed on only by sexual reproduction in sexually-reproducting species, it follows that the two types of selection are not conflicting principles so much as different descriptions of the same basic process. This process is the selective one which decrees that organisms which have heritable traits for greater relative reproductive success than others will pass those traits on to more descendants than will those not so endowed. 'To be selected' means to have enhanced reproductive success, and so both 'natural' and 'sexual' selection must come ultimately to the same thing: However it comes about, 'selected' traits are reproductively successful ones and reproductively successful traits are those which are selected. Whether they are naturally or sexually selected is really little more than a detail regarding the specific adaptation involved, not the basic evolutionary principle at work.

During the nineteenth and early twentieth centuries, Spencerian misunderstanding of the meaning of 'fitness' in evolution was perhaps understandable. After all, this was the era when the populations of Western countries were undergoing both rapid expansion in numbers and rise in living standards, health and general welfare. At that time it must have been as easy to confuse evolution with general health, welfare and survival of the population. But in today's world the countries with the most rapidly increasing populations are those of the Third World where poverty, ill-health and disease are more often the accompaniments of rapid population growth than anything else. Today no one could be forgiven for confusing affluence and general health and welfare with population expansion and for naively assuming that the two were synonymous. If we take the correct view that true, Darwinian fitness is only another term of *reproductive success,* there is no way in which we could make these mistakes. In other words, Darwinian fitness implies a purely *quantitative* measure--differential reproductive success--it does not necessarily imply any other kind of necessary *qualitative* improvement, superiority or enhancement of an organism's individual attributes. Thanks to these common fallacies about the meaning of 'fitness', I advocate following the precedent set by the best modern literature on evolution and referring only to *reproductive success.* For this is what Darwin's true original discovery was: that evolution by natural selection is the outcome of differential reproductive success, and nothing else.

Sloman-Price Exchange You invited me to comment on John Price's article "Metaphors of Submission" in the July 1990 issue of ASCAP. Though I very much enjoyed the article, JSP makes a number of points that I challenge. JSP summarizes his yielding hypothesis of depression. This is that in group-living primates, conflict is resolved by the development of a rank order or social hierarchy. Rank order is determined and maintained by ritual agonistic behavior the submission and escape components of which he labels yielding behavior. He goes on to discuss some of the difficulties with the hypothesis under the heading "Problems with the

hypothesis." Because I do not agree with him about these problems, I feel that, while challenging him, I also support him by presenting arguments that strengthen his hypothesis.

In order to discuss the points he raises it would be helpful to re-examine JSP's hypothesis. I will begin by quoting John Paul Scott's definition of agonistic behavior as "behavior that is adaptive in situations involving conflict between two or more members of the same species...A basic general function of agonistic behavior is the defence of an individual or group against injury or the threat of injury...The usual effect of agonistic interaction is that animals concerned move apart." Conflict is avoided, reduced, or terminated by yielding reactions by the loser and, to a lesser extent, by the dominant reactions of the winner. Yielding responses serve the double function of enabling the loser to control his own belligerent behavior and secondly to make peaceful overtures to his adversary. JSP has highlighted the adaptive functions of feelings of inferiority, inadequacy, helplessness and hopelessness etc. which comprise subordinate behavior and has demonstrated the degree of commonality that exists between yielding responses and depressive reactions.

Let us consider what happens when the individual is engaged in combat or feeling angry. If the yielding response comes into play, the yielding response must be strong or powerful enough to terminate the individual's aggressive behavior. Therefore, the more angry the individual or the more violent the combat, the more powerful the yielding response must be to terminate the combat or contain the anger. If the yielding response is not powerful enough to terminate the aggressive behavior, the yielding response is likely to be more intense and prolonged and the more intense and prolonged the yielding response the greater the likelihood of the development of a depressive reaction. This also implies that the greater the degree of anger the individual experiences initially, the more vulnerable that individual would be to depression, if that individual loses an agonistic encounter. My own clinical experience suggests that when individuals experience any kind of loss, including a loss of a close family member, the greater their anger about the loss, the more likely they are to experience a prolonged depressive illness.

The level of anger might have its origins in the intensity of the conflict or in the individual's personality constellation and previous experiences. An alpha individual, accustomed to dominate, might have more trouble in yielding. If the individual's yielding response is stronger than his level of aggressiveness, this leads to a rapid termination of the encounter. This individual gives up the non-productive struggle, which enables him to move on to some other more productive activity. If the individual's yielding response is relatively weak he may just return to the struggle and devote more effort to winning. When the individual's level of aggressiveness and submissive responses are equally powerful, this leads to a failure of resolution which may result in the conflict persisting and intensifying and in the individual becoming more depressed. In some cases, the yielding behavior is more obvious than the underlying aggression, which leads to what JSP calls "the depressed patient as non-yielder." Whereas JSP views the non-yielding depressed patient as a "problem with the hypothesis." I suggest this behavior is very consistent with the hypothesis. JSP raises the issue of "depression as a manipulation." I would submit that both agression and the yielding response

could contribute to manipulation. The aggression contributes to the individual's wish to get this way and the yielding could be exploited as a means of eliciting sympathy.

Another problem that JSP refers to is that whereas in other group-living primates rank order is determined and maintained by ritual agonistic behavior, "rank order between two human beings of the same sex is seldom determined by ritual agonistic behavior." Though a superficial observation might appear to support John's conclusion, I would suggest that one reason for this is that humans compete in so many arenas that most individuals belong to multiple hierarchies. This makes rank order a very comple phenomenon. At this point I would like to pose the question of why it is that we are so pleased, when a team we support wins on the sports field and why are we so crestfallen when it loses? To extend this argument, what is it that drives some of us to try so hard to succeed be it on the sports field, in a game, or in our professional capacities? One might answer "ambition." However, an ethological formulation seems to me to be more elegant. Ethologically a dominant response associated with winning an agonistic encounter elicits euphoria. Furthermore, it represents a way of erasing the dejection that is associated with a memory of previous losses, that is previous yielding responses. To come back now to JSP's argument that rank order between individuals is seldom determined by ritual agonistic behavior, I am suggesting that in humans, as in other primates, natural endowment is an important factor in determining rank order. However, ritual agonistic mechanisms provide the fuel that motivates us to use our natural talents, ie, to succeed so that ritual agonistic mechanisms continue to play an important role in determining rank order. To summarize, though I feel JSP appropriately examines critically his own hypotheses, I do not consider those criticisms of his hypothesis are justified.

I feel that it might be revealing to achieve a better understanding of the developmental origins of agonistic behavior. For example, there is good evidence that problems in attachment behavior tend to lead to problems in agonistic behavior. I also wonder whether yielding responses might have their origin in separation anxiety. For example, when a very young toddler is separated from his mother, the child is likely to initially react with a mixture of anger, depression and anxiety. I believe there is evidence that those who have experienced losses in early childhood are more likely to exhibit yielding responses in later life. To take this further one wonders if dominant responses could have their origin in the feeling of mastery that the young child has when it accomplishes new development challenges, eg, learning to walk.

Finally, I hope you continue your practice of inviting articles and discussants for ASCAP - I think it is a great idea.

Price-Sloman-Price by JS Price

LS and I have discussed this theory at length and I agree with his stress on the clinical importance of the termination of submission and yielding - we have discussed various situations wherein an individual wants to submit but cannot for some reason; for instance, a dominant mother prevents a wife from submitting to her husband in certain matters. Here, the agonistic encounter between wife and husband continues and the involuntary yielding of depression may supervene.

The terminology is difficult. I prefer to use the term yielding for all losing behaviour, regardless of whether it is acute or chronic,

oriented towards escape or submission, or whether it is voluntary or involuntary. By *involuntary* I mean outside of conscious control, like depression or hero worship or the slavery of love. By *voluntary* I mean that the decision to yield is taken in full awareness, balancing those pros and cons available to the conscious mind. Unfortunately voluntary also has the meaning of 'willing', and some acts of voluntary yielding may be very 'unwilling'. I think the potential semantic confusion is worth some examples.

Say I am queuing for a cup of tea at the station buffet. Someone barges in front of me. I look at him and see that he is a loutish creature, rude, ill-mannered, but unfortunately larger than I. I yield and allow him to precede me. This is voluntary yielding, even though I am unwilling to yield because of my pride (and I am in a hurry). I am unlikely to have made any submission signals apart from drawing back. The episode leaves me feeling hurt and angry and put down. On another occasion while I am standing in queue, the King comes in, obviously wanting a cup of tea. I bow to him, offer him my place, possibly even offer to pay for his tea (knowing the Royals seldom carry loose change). This is 'willing' voluntary yielding, and I have made submission signals which have been accepted. The episode leaves me feeling happy and boosted, with something to tell my wife proudly when I get home. Alongside these acute voluntary forms of yielding, it is possible that there are involuntary varieties. For instance, the sight of the large lout might induce a panic attack in me, in which I become incapable to opposing him; or he might knock me out. In the case of the King, I might be so overwhelmed by his majesty that I fainted, thus giving up my place by default. But I do not think of these acute involuntary cases of yielding are of importance as ultimate causes of psychopathology. I use them merely to illustrate the terminology. I submit to the lout by withdrawing, and to the king by bowing; submission in this sense is a conscious, directed act. However, when I yield to the lout with panic and to the king with paralyzing awe, I am using types of behaviour which should not be called submission and in the absence of a better label I suggest 'acute involuntary yielding'.

The difference between voluntary and involuntary becomes important when we come to chronic (or subacute) yielding. Let me give another example, and since I have introduced royalty as an extreme example of high RHP, let us continue with royalty (LS's 'alpha individual, who is accustomed to dominate'), but this time in the role of yielder. The speech by the King in Shakespeare's Richard II must be the greatest yielding speech ever pronounced. It is so majestic that I beg RG's indulgence in quoting it in full:

> What must the king do now? Must he submit?
> The king shall do it: must he be deposed?
> The king shall be contented: must he lose
> The name of king? o'God's name, let it go.
> I'll give my jewels for a set of beads,
> My gorgeous palace for a hermitage,
> My gay apparel for an almsman's gown,
> My figur'd goblets for a dish of wood,
> My sceptre for a palmer's walking staff,
> My subjects for a pair of carved saints,
> And my large kingdom for a little grave.
> A tittle, little grave, an obscure grave;
> Or I'll be buried in the king's highway,
> Some way of common trade, where subjects' feet
> May hourly trample on their sovereign's head;
> For on my head they tread now whilst I live;
> And buried once, why not upon my head?

According to my terminology, this is subacute voluntary yielding. The King does not want to yield, but he sees that he has no other choice, and he makes the decision in full consciousness. He is being pushed out of the kingly role, unwillingly. The

same act of yielding could have come into one of the other categories of yielding, without altering the overall effect (except how the King felt about it). It could have been willing voluntary yielding, for instance if the king had got bored with being king and wanted to devote himself to collecting stamps; he could have opted willingly out of the kingly role. Or it could have been chronic involuntary yielding which I have labelled depressive yielding: in this case, the King would have become unwell, would have been seen to be not himself, afflicted with all sorts of symptoms, prematurely aged and clearly unfit to govern. Perhaps a regent would have been appointed, or he would have said, "I am much too ill to continue as King" and then abdicated. These varied ways of exiting from the kingly role leave the ex-king feeling very different. In one, he is the resentful ex-king; in the second, he is a happy stamp collector; in the third, he is a sick man.

I hope these examples illustrate ways that yielding may be related to psychopathology; and even more important, that there may be an interaction between type of yielding and the presence or absence of psychopathology. If one had been the deposed King's physician, one might have influenced the outcome. One could have said, "Here, your majesty, take this nostrum, we'll soon have you fit and back on the throne", thus fueling an unrealistic aspiration to make a come-back. Or one could have said, "I'm afraid the prognosis is not good, your majesty, and the worry about regaining the throne is impeding your recovery; you should seriously consider abdication." If the king then abdicates, the pressure of his people treading on his head is removed (along with pressure from competitors) and, as the involuntary depressive yielding is no longer required to keep him out of his kingly

Figure 1. Classification of yielding behaviour.
1. Loser stays with winner in subordinate role.

	Voluntary		Involuntary
	Willing	Unwilling	
Acute min hrs days	Submissive act leading to conditional reconciliation(de Waals) and switch to hedonic mode	Submissive act not leading to reconciliation.Agonic mode continues.	Panic attack Sudden paralysis of will
Sub-acute weeks months			Depressive yielding (Depressive illness)
Chronic yrs life-time	Humble personality	Down-trodden,resentful personality	Depressive neurosis Dysthymic disorder Depressive personality Subordinate self-perception In-group omega psalic

role, he may recover and become a happy ex-king. Note the paradox: giving a bad prognosis improves the prognosis, whereas giving a good prognosis perpetuates the condition.

In an attempt to clarify matters, I offer the tentative classification of yielding behaviour illustrated in figures 1 and 2 on pages 10 and 11.

By voluntary and involuntary I mean the sort of difference in brain level that must exist in the realm of temperature between turning on central heating *vs* shivering. Decisions to shiver or turn on the central heating are made at different brain levels, even if we do not know exactly what those levels are. Information used in coming to the decision varies in the two cases. In the rational evaluation of temperature, made in order to decide about switching on the central heating, information about weather forecasts and thermometers may be

Figure 2. Classification of yielding behaviour.
2. Loser escapes from winner and does not return.

	Voluntary		Involuntary
	Willing	Unwilling	
Acute min hrs days	Set out to seek new territory	Be driven away	Flee in panic
Sub-acute weeks months			Depressive yielding (Depressive illness) prevents return
Chronic yrs life-time	Colonist	Exile	Out-group omega psalic Paranoid personality Phobic neurosis

taken into account, but this information has no direct effect on the 'decision' to shiver. Conversely, information about body temperature may affect the onset of shivering but not be available in making a decision about central heating. With regard to yielding, we do not know how much of the information which is used to make a rational decision of submitting is also available for the evaluation of relative RHP which may lead to involuntary yielding, or whether certain information may be used for the latter but not for the former. Information at the higher logical level, concerning fighting in general (such as rules against fighting), as opposed to information about this particular fight, might affect a rational decision to submit but have no influence on involuntary yielding. And it is possible that information at a somatic level (such as debility following a viral infection) might play a role in determining involuntary yielding but not be available for a decision about submitting.

The voluntary act of turning on the central heating may be willing or unwilling: I may be showing off my new central heating system to loved ones whom I want to keep warm; on the other hand, I may have been coerced into turning on a system which I may believe to be too expensive, harmful to health, or unnecessary. In the latter case I might switch it off when no one was looking, and this might lead to shivering, in the way that incomplete yielding may lead to depression. It makes no sense to talk of willing and unwilling shivering; no one likes to shiver in the way that no one likes to be depressed.

I think a lot more needs to be said about partial, incomplete and blocked submission, and the ways that these may predispose clinically to depressed states. In some cases submission may be blocked from outside, by social rules or by a third party; in others it may be blocked from inside the individual, in pride, scruples or the anger of which LS speaks. At the moment there is much knowledge about sub-total forms of submission, but it is in the minds not of psychologists but of priests, particularly those who hear confessions and who are expret at detecting when the penitent is holding some tiny little something back from a total submission to God. I think a total, complete voluntary submission to a higher power may pre-empt the involuntary yielding of depression, even if the higher power was outside the original conflict (as in the case of the alcoholic submitting to the AA group). This sort of option needs to be talked about clinically, and that is why I think we should reserve the use of the term submission for voluntary acts. Does the patient choose to submit, or does he choose to spare his pride and risk the involuntary yielding of depression? Of course involuntary yielding can also be pre-empted by victory. And the sensible person avoids agonistic confrontation altogether and takes Michael Chance's advice to stay in the hedonic mode.

1. Bouchard TJ, Lykken DT, McGue M, Segal NL, Tellegen A: Sources of human psychological differences: the Minnesota study of twins reared apart. Science 1990;250 (15 0ct):223-228 (p228)

2. For ASCAP Newsletter Volume 3 (Jan through Dec, 1990) please send $18 (or equivalent) for the 12 issues. Make checks or money orders out to "Department of Psychiatry and Behavioral Sciences, UTMB." Note on page 13 that subscriptions for ASCAP Newsletter Volume 4 (Jan through Dec, 1991) are now being taken.

3. ASCAP philosophy and goal. High scientific importance rests on comparing animal behaviors across-species to understand better human behavior, knowing as we do so that evolutionary factors must be considered for understanding properly such behaviors. To accomplish these comparisons, very different new ways of viewing psychological and behavioral phenomena are required. This in turn explains why we need new words to define and illustrate new dimensions of comparisons across species. We expect that work in natural history biology combined with cellular-molecular biologic research will emerge as a comprehensive biologic basic science of psychiatry. Both top-down and bottom-up analyses are needed. Indeed, this must happen if we are to explain psychiatric illnesses as deviations from normal processes, something not possible now. Compare to pathogenesis in diseases of internal medicine.

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