

Letters

Animals and Man: Divergent Behavior

Tinbergen's article "On war and peace in animals and man" (28 June, p. 1411), rightly stresses the need for more research on the sources of man's aggressiveness. This plea deserves wide support. Meanwhile, among the many questions he raised, there are implications that deserve immediate discussion.

Tinbergen favors the hypothesis "that man still carries with him the animal heritage of group territoriality." This seems to him most likely because "As a social, hunting primate, man must originally have been organized on the principle of group territories." Is it not strange that, if man still carries with him the animal heritage of group territoriality, his closest living relatives, the great apes (gorilla, chimpanzee, and orangutan), do not exhibit the slightest evidences of such territoriality? How does Tinbergen reconcile this fact with his preferred hypothesis?

As for the social, hunting primate man being organized on "the principle of group territories," this possibly may have been the case in some prehistoric societies, but it is most unlikely to have been so, for such societies were very small in numbers and tended to remain geographically isolated from other groups for considerable periods of time, during which there would have been no pressure whatever to organize into territorial groups. Among hunting peoples still living today, such as the Bushman of South Africa, the Pygmies of the Ituri Forest, the Eskimo of the Arctic Circle, and others, there is absolutely no sense of territoriality. As one would expect, some peoples are territorial, some only indifferently so, and others not at all. What has happened to "the animal heritage" of those peoples who are nonterritorial? "In order to understand what makes us go to war," writes Tinbergen, "we have to recognize that man behaves very much like a group-

territorial species." Indeed, he does, but the group territorialism he exhibits is not due, I suggest, to genetics but to frenetics, to tribalism culturally closely identified with a particular territory.

I have been unable to find in Tinbergen's article the evidence for that "internal urge to fight" in man which he seems to accept as a fact. Education may find it very difficult if not impossible, according to Tinbergen, to eliminate this "internal urge to fight." How has it come about then, that the Pueblo Indians, the Eskimo, the Bushman, the Ifaluk, the Australian aborigines, the Pygmies, and many other peoples have managed to avoid this alleged "internal urge to fight"? By education, gene loss, or what? May it not be that "the urge to fight" is an acquired form of behavior? That anyone can *learn* to fight or not to fight? That the urge may become internalized through learning, that it is not innate?

When Tinbergen speaks of scientists sublimating their "aggression into an all-out attack on the enemy within," we are, indeed, in the land of Topsy-Turvydom. Is the scientist's consuming curiosity to be equated with "aggression"? Are his investigations to be bracketed with "an all-out attack"? And is "the enemy within" to be identified with an innate "urge to fight"? "The question is," said Alice, "whether you *can* make words mean so many different things."

ASHLEY MONTAGU

321 Cherry Hill Road,
Princeton, New Jersey 08540

Tinbergen poses an interdisciplinary challenge. . . . He criticizes, for example, those psychiatrists who "apply the *results* rather than the *methods* of ethology to man," and looks wistfully to "one coherent science of behavior." Yet he, too, omits something in his broad extrapolations—that is, the fact that man can study *psychoanalytically* his own motivations, introspections, and other mental processes. Thus men can

now describe and consensually validate what goes on in the "control tower" itself which mediates behavior. The data we obtain from the free associations of the patient on the couch include not only ideas, questions, narratives of daily events, memories, bodily sensations, dreams, and daydreams, but also the immediate experiences of libidinal and aggressive feelings toward the person of the psychoanalyst who sits quietly behind the couch. I say quietly, although he may arouse much by his inquiries, interpretations, confrontations, and reconstructions.

From this carefully delineated situation data may be obtained and formulated into scientific hypotheses and theories. Tinbergen's behaviorally based inferences about the song of birds lead him to posit a behavioral set which cannot be directly validated by inquiry of the bird but must be verified by more experimentation. The concept of *Sollwert* ("literally 'should value,' an ideal)," is then abstracted to account for the processes whereby birds learn adaptive song, and its internalization is explained thus: "The birds have acquired it by listening to their father's song." Tinbergen's need for the *Sollwert* strikes a psychoanalyst as not too dissimilar from his own need for the "structural theory" with its Ego, Superego, and Id. The *Glossary of Psychoanalytic Terms and Concepts* carries the following definition of superego and ego-ideal:

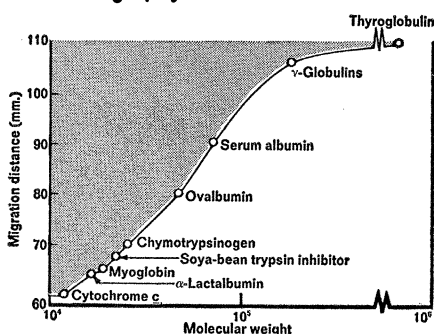
Superego: A theoretical concept designating those psychic functions which, in their manifest expression, represent moral attitudes, conscience and the sense of guilt. It results from the *internalization* of the ethical standards of the society in which the person lives, and develops by *identification* with the attitudes of parents and other significant persons in the child's environment. Superego functions may be divided into two categories: 1) the protective and rewarding functions which set up ideals and values that are grouped under the term ego-Ideal; 2) the critical and punishing functions which evoke the sense of guilt and the pangs of conscience. In the *structural theory* the superego is one of the three component parts or systems of the psychic apparatus. In neuroses, symptoms arise as a compromise in the conflict between instinctual drives (id derivatives) and the forces seeking to forbid or restrain expression (the superego).

The drives to be controlled are, of course, the sexual (libidinal) and the aggressive ones. How fortunate that, although Tinbergen's nonverbal animals cannot be asked to validate his concept of *Sollwert*, where the expression of human aggression is concerned the analyst can not only infer its existence

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from the patient's verbalizations, but confirm and verify its controls from ego and superego material. However, he would be presumptuous were he to anthropomorphise animal behavior.

In keeping with Tinbergen's extrapolations to groups perhaps one might remark that there is today no worldwide Institute for Interpopular Ideals.

HERMAN M. SEROTA

55 East Washington Street,
Chicago, Illinois 60602

More on Forest Defoliation

Newton's statement "High forest is not particularly good habitat for many animals, birds, and insects . . ." ("Defoliation effects on forest ecology," *Letters*, 12 July) has no relevance to his conclusion that the use of herbicides and defoliants in Vietnam should not be criticized on the basis of ecological considerations.

It may well be true, as he implies, that the clearing or defoliation of near pure-stand temperate forests (by "game biologists") might lead to development of second growth or undergrowth vegetation which is more diverse than the forest and is thus a more suitable and more available habitat for many "animals." However, the situation is quite different in the tropical forests of Vietnam. There it is again true that "High forest is not particularly good habitat for many animals, birds, and insects . . .," but it is also true that the tropical forest canopy, with its diversity of tree species, is the *only* habitat for countless more species of insects, birds, aboreal reptiles, mammals, and epiphytes. In short, most of the life in a tropical forest is connected with the canopy in some vital way. For the most part these organisms are not an important part of the naturally occurring second growth vegetation (river clearings, land slides) or of man-made clearings choked with second growth. These organisms have their specific food plants, nectar sources, nests, and territories in the canopy. They cannot be expected to move successfully into adjacent second growth (or even adjacent forest) when their part of the canopy is defoliated.

The life functions of tropical forest organisms take for granted, so to speak, the predictability of tropical climate. Defoliation or killing of vast areas of forest is an event unprecedented in the

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