

# A Film Series on Social Biology

By ERIK CRIPPS

Today, everyone is talking and writing about conservation and natural resources. This is all very much to the good; but the very sudden outpouring of enthusiasm for a good cause may have its drawbacks: there is nothing quite so dull as yesterday's fashion. Yet the need for widespread understanding of the total human ecology is becoming desperate. Without such understanding the human race is destined to extinction. This is not just a scare statement; it is the temperate judgment of some of the world's leading thinkers.

A film series in social biology obviously has relevance. But what exactly is social biology? And how does such a series come into being?

## Personal Background of a Film-Maker

Perhaps I should begin with my own particular experience of the *Zeitgeist*. When I entered college, as a young Englishman in the 1930s, I was still undecided as to my future. Being obsessed, as the young should be, with the view that the world could be a better place to live in—a world Depression, a brutal Nazi Germany, a Fascist rape of Abyssinia, a Franco Spain, and a totalitarian Stalinist Russia left much to be desired—I wanted to help make some of the changes. I had read some Freud; but as an impatient teenager I did not believe it was feasible or expeditious to psychoanalyze whole populations into becoming more worthy of Utopia. Neither did it seem likely that the human race could have existed for millenia if this were the only way out. I therefore decided, in an

imaginatively naïve way, to become a “social biologist” and see where that led.

When I registered at my college the dean naturally assumed that I would major in chemistry and minor in physics. Imperial Chemical Co., I. G. Farben, and the large oil companies were among those few that offered good wages, fringe benefits, and an all-engulfing paternalism. This, obviously, was the smart route to go. When I objected to chemistry, the dean was reluctantly prepared to consider a major in physics—although he was kind enough to point out that jobs were hard to come by. When I tentatively suggested social biology, he asked what the hell that was. I found it difficult to explain; so he washed his hands of me and—for this I shall always be grateful—I was left to my own devices, to rush about all over the map on a motorbike and gather my courses where I might.

The whole basis of public education in England (and elsewhere) since the latter stages of the Industrial Revolution has been to train the young to function in an increasingly technologic society. The older, mandarin ideas of “culture” had given way to more pragmatic aims. The result has been an increasing specialization: the various disciplines have been crammed into tight little boxes. I found my own zoology courses boring and inept. One's examination success depended on one's ability to memorize classificatory details of organisms that one had never seen, smelled, touched, or tasted. The term naturalist was looked upon with disfavor. The word ecology crept into the textbooks by default.

Yet the late J. B. S. Haldane could attract hundreds of students to his genetics lectures because, for all his sophisticated mathematics, he related

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genetics to the larger social picture—and he was always good for a few smart cuts at the Establishment, for extra measure. I decided then on a “first principle” of learning, which has seemed valid ever since: that we absorb information only insofar as we can understand its relevance. (We can, of course, merely memorize; but such information appears to remain in a sort of mental caecum.)

I decided, by default, to become a documentary film-maker.

### Many a No-No in Wonderland

For many years the general aim of the documentary film-maker was to improve social conditions, press for egalitarianism, and agitate for a greater distribution of wealth. But soon after World War II it became apparent that, in the U.S. at least, the production of goods was no longer the major problem. Film-makers became less interested in the stomach and the vote: they began to be more concerned with the psyche, the self, and the emotions. They made important and revealing films; however, they failed to offer unifying concepts.

Some years back, I suggested and was finally commissioned to make an educational film series on modern history for a major distributor. It was not a rewarding experience. The project supervisor for the company had stern ideas that we must not “editorialize.” This meant in effect that we must not offer a point of view or any synthesizing principles. No one, but no one, must be offended. I endeavored to point out that by our very choice of material, by our very omissions, we were in fact editorializing. To no effect. I researched and scripted a film, “The Farm Problem.” It never got off the ground. I came to the conclusions that (i) the whole situation was as nutty as a fruitcake—that one had to be prepared to relinquish common sense and life experience for a Wonderland viewpoint; (ii) certain vested interests and power blocs were supporting sectional laws against the public weal; and (iii) a mass exodus of farm families (including Negroes) to the cities as the result of concentrated agro-industry and subsidized fallow land must end in social dislocation, urban blight, and political reaction. The precedent in England was well documented. I was told that this did not come within the scope of a “teaching” film and, to boot, that I was being sentimental. “Progress,” it seemed, decreed that some countryfolk had to go to the wall.

This was Social Darwinism at its worst. I questioned my own basic assumptions about what makes an educational film, as against the propagandizing of an ideology. I came to the conclusion that the major educational-film distributors were not the ones to tackle the job of education in many sectors of a rapidly changing society: like the dinosaur bitten on the leg in the cold morning, they felt the pain in the hot afternoon. Further consideration suggested that there was a desperate need to offer young people a holistic viewpoint relevant to our century

—not the century of physics and chemistry *per se* but the century of interdisciplinary biology. And biology is, by definition, the science of all of life.

### A Broad Look at Troubled Times

Today there seems to be a general growing awareness that mankind is heading toward great quantitative and, probably, qualitative change. Geometrically increasing technology confronts us with the fact that human ecology must subsume all the realms of knowledge; that biology, psychology, economics, sociology, and political science are all grist for one mill. Phrases like global village, Spaceship Earth, and ecosystem have come into the vernacular. To enumerate just a few relevancies:

The United States is presently involved in a war that few seem to want; that the political leaders imply they were drawn into; that offers dubious economic gain; that seems tenuously, at most, connected with this country's safety; that leads to the mind-boggling statement that we have to raze other people's towns in order to save them; that encourages men to behave with the depravity of the despised Nazis.

Is this due to some deep-seated “economic determinism”? Is it because we are descendants of tribal predators? Is this Thanatos against Eros? Is this the territorial imperative? Is this a breakdown of the intraspecific signals that prohibit murder?

Or consider this: we are inundated with information about hot economics and cold economies, of inflations and depressions; our governments claim to be penny poor for social services; global trade balances are in endless crisis; erstwhile friends become economic enemies; individuals are projected intricately to the moon while major cities fall apart.

Are we mad? Have we created such powerful myths around gold that we cannot see the biologic reality before our noses? Virtually all the energy that we so lavishly use up is biologic capital from the green plant—our continuing major source. But the fact of life is that the green plants use only 2% of the sun's daily energy and give us just about 1% in take-home pay; 98% of the incoming energy goes to waste. Even so, on our global spaceship the human race has been given almost unlimited wealth (energy)—yet we continue to scratch around with miserly ideas and myths of economics, as if we had evolved a fairly competent brain to no apparent purpose.

Some cultures insist that there is prime meaning in the freedom and individuality of each human organism. But what of the population explosion? Warmongering leaders have for centuries demanded their many hosts; child-spawners have been given public recognition and economic incentive; and quantity, not quality, has received social recognition. Many national and cultural institutions still cling to these degrading ideas.

Childish fantasies of the Superman and of race superiority continue to flourish. For lack of criteria,

this is the most obvious nonsense. What is really superior? To be seven feet high, to be blue in color, to have an I.Q. of 200, to have hair on the soles of one's feet? There is but one human gene-pool at our disposal (until we can change it), and fortunately we have remained sufficiently fluid in our evolution for the whole of mankind to interbreed.

Furthermore: man is a conscious organism, aware of his difference from all others and from his environment and with foreknowledge of the temporal limits to his life-span. To offer meaning, strength, and solace, the life sciences must continue where the religions left off: they must offer some positive, death-accepting (as against life-denying) philosophy that counteracts the desperation and nihilism that an out-of-control technology is obviously engendering.

So many of our current problems—emotional, behavioral, social, and economic—would appear to be related to the fact that we have not given sufficient recognition to the acceptance of the human organism as part of the total ecosystem. Man ignores this knowledge at his peril: it should determine his relationship to other men, to the plants and animals, and to the physical environment.

Man is bound by inherited limitations as well as potentials. Are there artificially made sounds that have an effect on his metabolism? His eyes are conditioned to greenness; does the lack of it in sufficient quantity set up emotional syndromes? What are his crowd tolerances? Perhaps these particular questions are unimportant—certainly they seem subordinate to other, graver problems—but they suggest the kind of questions that we should also be asking.

### Films to Meet the Need

Recently, the young of this nation have grasped—intuitively, it seems—the connections among these many ideas. And they want to take action.

Believing that such ideas could be presented meaningfully on film, when BSCS began to publish its findings I felt the time had come to put a social-biology film program into production. A young and energetic film distributor, Modern Learning Aids, New York City, agreed to a joint venture. (Five years ago is not today. I personally appreciate the firm's courage and educational foresight.) As my technical consultants I was fortunate to enlist Ted Andrews and Tom Overmire, both of whom had been associated with BSCS. (Andrews later became director of the Educational Research Council of America; Overmire was with the Council on Undergraduate Education in the Biological Sciences.) Andrews, Overmire, and I had many long, right-across-the-board discussions. We came to these conclusions:

1. No single classroom film (20 minutes) could easily offer a synoptic viewpoint.
2. A broad-based understanding of our viewpoint could only be achieved by cumulative filmic experience.

3. Each film should deal with a specific concept in such a way as to support our main thesis.

4. Each film must be able to stand alone.

5. Each film, although firmly standing on a biologic base, must be interdisciplinary.

6. The film format must not only allow the student to be "talked at" but also give him time for a subjective reaction to the screen.

Our generic title was to be "The Science of Life: a Film Series in Social Biology." To most people, a film on social biology might suggest a conservation film: it conjures up either a laudable effort to preserve some obscure species from extinction or else a populist demand that the factories refrain from opening their industrial cloacas into unspoiled rivers. But what did *we* mean? What was *our* thesis?

It was not easy to define. Even a definition of life has become slippery: "that which ingests, moves, and reproduces" is no longer adequate. (I am reminded of an anecdote about Marston Bates. He was undergoing great tribulation in trying to define the thesis for his book *The Prevalence of People*. Having written it down, he decided it made sense after he had consumed a couple of martinis and read it through fast. At other times he felt nervous.) Our description of life is as follows: Life blends imperceptibly into the inanimate as one evolutionary continuum. Only by creating boundaries of its own materials does it define the external environment. By continual interaction with that environment, all life is an interconnected web of dynamic systems in a constant state of becoming. (I know this is tautologic!)

### Example from "Man's Impact"

But what has this to do with drugs, guilt feelings, premarital sex, and the price of hamburger? Let us restate the question: "But what has all this to do with homeostasis, inherited behavior patterns, the population explosion, and energy?" Now the lines of interconnection are clearer.

To present our views we hammered out a filmic treatment that we hope will be effective. Each film is divided into three parts:

Part I dramatically presents a concept.

Part II offers some carefully selected and relevant facts.

Part III is set up by a topic sentence spoken by the narrator—a sentence that restates our thesis. This section is played entirely to music, dialogue, or counterpoint narration (not telling the student what he must think or look at); thus the student can make some personal observations and, we hope, will come out fighting. The teacher is expected to field a whole range of far-reaching questions: intelligent discussion should ensue.

For example, we start part I of *Man's Impact on the Environment* with bombs dropping from a war plane (sound of explosion); cut to a close-up of a hand taking a newspaper from a mailbox and of the headline JAPS ATTACK PEARL HARBOR; cut

to graves in Arlington National Cemetery (sound, "Taps"); cut to a close-up of a Marine in uniform; and pan to a widow with cats on her lap. "More widows, more cats," says the narrator. The film then cuts to a cat catching a mouse: "More cats, fewer mice"; to a honeybee on clover: "Fewer mice, more honeybees" (mice eat honeycombs); to a clover flower and, zooming, to a field of clover: "More bees, more clover"; and lastly—more clover, more beef—to a man at a country store changing the price docket of hamburger from 59¢ to 43¢ a pound: "The whole web of life is interconnected." Fade out part I.

The films that we have completed to date are *Check and Balance in Nature*; *Energy in Life*; *Man's Impact on the Environment*; and *The Ascent of Man*. As the result of a recommendation by the Wye Institute, Eugene Cronin, director of the Natural Resources Institute of the University of Maryland, became interested in the project. This has led, under Cronin's chairmanship, to the formation of a larger advisory committee, whose members are representatives of several disciplines as well as of the biology associations. Members include Edward J. Koromondy, director of the Commission on Undergraduate Education in the Biological Sciences; Jerry P. Lightner, executive secretary of the National Association of Biology Teachers; and Elwood Ehrle, associate director of the Office of Biological Education, AIBS. Discussion by the advisory committee has led to the selection of four further film titles: *Behavior*; *Communication*; *Technological Man*; and *Death—an Invention of Life*. Funds are being solicited to put these titles into production.

### Using Our Brains for Survival

There is general agreement in the advisory committee that these films can offer a very relevant contribution to contemporary teaching and at least a basis for a synthesizing framework on which the student can build. The viewpoint of the advisory committee can be summed up in the words of a member, Victor Ferkiss. In his recent book *Technological Man* (1969: George Braziller, Inc., New York; pp. 249-252) he says:

The increasing knowledge of the order of nature provided by contemporary scientific discovery, the increasing power over that nature given to man by his technology and the fact that increases in population have raised the amount and intensity of human interaction to a new plane that bespeaks an evolutionary breakthrough, all combine to present technological man with the outlines of a new philosophy of human existence, a philosophy that can provide general guidelines that he can and must take advantage of if he is to retain control of his civilization. . . .

The basic concepts of process and system imply a recognition that no part is meaningful outside the whole, that no part can be defined or understood save in relation to the whole. . . . But this whole, the universal as well as social, is a new kind of whole, determined not from outside but within. . . . Life exists within systems. And systems create themselves. . . .

Technological man must so internalize these ideas and make them so much a part of his instinctive world view that they inform his personal, political and cultural life.

My own viewpoint is that there is a purpose to evolution and its concomitant, the human brain. If we can properly use our brains and not fall back on biologic anachronisms we may warrant our time to evolve yet further. I still respond to the ideas and hopes of the Enlightenment. There are, to be sure. Neanderthals among us—biologic inventions often linger beyond their time—but (and this today may seem naïve and a *non sequitur*) there is also the Declaration of Independence.

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## THE CHEMISTRY OF LEARNING

"A number of research people in the field of memory transfer believe that chemical procedures capable of increasing man's intelligence will be available within 10 years," the Institute for Development of Educational Activities (I/D/E/A) reports. The implications for social and educational policy are staggering—witness the current controversy over the use of amphetamines to treat children with so-called learning disorders.

One who predicts an even earlier breakthrough in brain chemistry is James V. McConnell, of the University of Michigan, an early pioneer in transfer-of-memory experiments. McConnell found that when he trained flatworms and then cut them in half and threw away the head, the regenerated worm remembered its training. When trained worms were fed to untrained worms, the untrained worms remembered the lessons taught to their unfortunate cousins. From these experiments McConnell linked memory to transmittable chemicals throughout the flatworm's body.

McConnell predicts that researchers will learn within the next five years just what initial chemical reactions take place in learning, and the mechanisms by which these chemicals are transferred from one part of the brain to another. Copies of *The Chemical Transfer of Memory: Research and Implications* may be obtained from I/D/E/A Information and Services Division, P.O. Box 446, Melbourne, Fla. 32901, for \$1.50.

*Report on Education Research*

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## REFERENCES ON MERCURY POLLUTION

*Mercury Contamination in the Natural Environment*, a bibliography of more than 200 references to the English-language literature, is available from the Natural Resources Library, U.S. Department of the Interior, Washington, D.C. 20240. It was prepared cooperatively by USDI and the Fisheries Board of Canada. Effects on fish, wildlife, and water are emphasized.