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# REVIEW

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My endorsement on the dust jacket of Lerner's book states, "Professor Lerner tells a story we need to know and presents a perspective we need to consider." As Lewontin makes clear in the foreword:

> *Final Solutions* is a book about the extreme horrors that arise when people take seriously the proposition that there are racial and national characters from which we cannot escape. Unlike other books on Nazi race theory, *Final Solutions* extends ideas of determinism beyond the purely biological into the cultural as well. Cultural determinism—the doctrine that our cultural heritage passed down by a process of unconscious acculturation is inescapable—differs only in a trivial mechanical detail from biological determinism, the doctrine that we cannot escape our genes. Both biological and cultural determinism deny essential freedom to human consciousness.

I still believe that these characterizations accurately describe the valuable message conveyed by this important book. So this review now reendorses my earlier endorsement. That said, I shall comment on both the strengths and weaknesses of the presentation. Its strength lies in the clarity and drama with which past evil and everpresent danger are communicated. There are, however, major weaknesses.

The key person in the story told by Lerner is Konrad Lorenz. As Garland Allen commented in his review of a Lorenz biography,

> Nisbett . . . has . . . miss[ed] the main point to be learned from a study of Lorenz's work. . . . Ideas can become deadly weapons when they provide a supposedly objective and rational description for human social behaviors. . . . From his notions that many social behaviors are innate and that humans have an instinct for preserving the "purity of type," all else follows. Lorenz was a respected scientist whose views, inadvertently or not, could be used to legitimize a brutal genocidal

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> philosophy. In killing Jews, Aryans were only "doing what comes naturally." . . . Lorenz's case ought to help us see that the prevalence of such theories (not just one theory, but many of similar ilk) can pave the way for a holocaust. It is not a perversion of history to try and learn from the past. (Allen, 1977, p. 84)

Richard Lerner has now written the book for which Garland Allen was calling in 1977 when at the end of his review he dismissed Nisbett's biography of Lorenz as "a great disappointment" for the reasons stated above.

Unfortunately, the reader is led to believe by Lerner as well as by Lewontin and Muller-Hill that Lorenz's contributions to ethology (and ethology itself) have been discredited because he used (or misused) that information in support of Nazi ideology. I agree that his misuse of knowledge, including overgeneralization from animals to man, was tragic. But that is a human tragedy, not a scientific one. Werner Heisenberg's leadership of Hitler's atomic bomb project is, as in the Lorenz case, a personal tragedy, but it does not diminish the importance in physics of the uncertainty principle for which he too received a Nobel prize. Nor is Wagner's music to be rejected either because of his personal life or because the Nazis liked his music.

In reviewing the same Lorenz biography as Allen did, Aubrey Manning makes the important points:

> There can be no doubt of Lorenz's key role. . . . He *is* the father of ethology, however many of his children now reject his ideas.
>
> The early papers in which Lorenz developed the concepts of the fixed action pattern, the releaser and the evolution of displays, of action-specific energy and of imprinting, are all the result of dedicated observation and description shot through with brilliant intuitive thinking. The approach to the animal in its natural environment and the concern with function and evolution came as a powerful tonic to behavioural science stultified by white rat experimental psychology.
>
> When we come to look back at Lorenz's contribution in more tranquillity . . . it is *King Solomon's Ring* that will stand out as his great book. Within its easy charm are all the important ideas which make up Lorenz's profound contribution to the study of behaviour. (Manning, 1977, p. 783; also see Marler & Griffin, 1977/1973)

A serious omission from Lerner's discussion is an appreciation of the important correction to Lorenz's too pessimistic ideas about vertebrate (especially primate, including human) aggression that has been provided by Frans de Waal's (1989) superb exposition in *Peacemaking among Primates*. Yes, primates are driven by a strong aggressive motivation to hostile acts, as Lorenz suggested, but there is a countervailing motivation towards reconciliation which, circumstances permitting (i.e., the oppor-

tunity to avoid the fight or flight plight), takes over and preserves the group cohesiveness—an ingredient that was lacking on Monkey Hill in Zuckerman's (1932) classic, but flawed, study of primate aggression and which Lorenz also failed to appreciate.

Chapter 4 on sociobiology appears to have been prepared at the same time as an article written by Lerner and von Eye (1992) on that topic. I was invited to write a commentary that has been published together with their article (Hirsch, 1992). Therefore, I say here again some of what is relevant to both texts.

There is a message from genetics that can clarify our thinking about development—Lerner's main interest—because it delineates what is and is not possible. Developmental scientists think in terms of people who are born, mature and reproduce themselves by contributing children to the next generation, and the cycle repeats every generation. The foregoing statements are focussed on what geneticists call the level of the phenotype. At that level it appears that each generation reproduces itself in the children it contributes to the next generation.

The story is quite different, however, at the level of the genotype. In diploid, bisexual, cross-fertilizing species like man, *no* genotype can replicate itself! In fact, the term "reproduction" becomes misleading if it is interpreted to mean self replication, as appears to be the case in Lerner's version of sociobiology. In a very important sense it is not the individual, but rather the *species* that reproduces. Because of meiosis, none of us can reproduce ourselves genetically, rather we can contribute only a haploid gamete to the reproduction, or continuation, of the species at each conception (Hirsch, 1963). Meiosis is the mechanism that distributes to the genome of the gametes a randomly chosen single homologue (intact or as a cross-over product) from each of our 23 pairs of chromosomes. In this way the chromosome number ($2N = 46$ in man) is reduced to half ($N = 23$) at gametogenesis. This occurs in both sexes at the so-called reduction division of meiosis. Therefore, during the fertilization produced by mating—the union (syngamy) of the two haploid gametes (sperm and ovum), one contributed by each sex—the new individual thus formed, though reconstituting the diploid chromosome set (karyotype) of the species, has a genotype that is markedly different from that of either parent. So, each parent contributes a haploid gamete to the reproduction of the species, but can never reproduce him- or her-self. Therefore, we should not speak of reproduction as self-replication, because that is genetically impossible.

It is good that Lerner articulates his version of the language of sociobiology, thereby enabling readers to appreciate why so many of its claims are incorrect. The sociobiological perspective is characterized as maintaining that

> . . . we have evolved not to produce other people but only to replicate our particular complement of genes. (p. 92)

> All genotypes must struggle arduously to include as many copies of themselves in the gene pool as possible. . . .
>
> All genotypes are not equally fit for having their replicates in the pool of genes. . . .
>
> Aggression is the key to getting one's genotype reproduced maximally. (p. 95)
>
> Women . . . remain monogamous . . . to maximize the probability that their relatively few replicates will survive. (p. 102)
>
> . . . genes provide the ultimate basis of our functioning, the replication of our genotype. (p. 103)
>
> . . . the . . . humans in question . . . possess evolutionarily based genetic "directives" for genotype reproduction. (p. 110)
>
> . . . women as genotype reproducers . . . . (p. 132)

What is not appreciated by either sociobiologists or the critics is the impossibility of genotype replication.

Lerner's treatment of the question of racial differences in "intelligence" as measured by IQ tests (see especially ca. p. 145, his discussion of Rushton's claims) ignores the fundamental *experimental* analysis and clarification of the nature of test construction by Harrington (1975, 1984, 1988; Hirsch & Tully, 1982), who has cogently demonstrated the impossibility of any test being unbiased. The racial comparisons and their usual interpretation, that are discussed, are without any justification. As Reynolds has recognized, because of Harrington's work "100 years . . . of psychological research in human differences . . . must be dismissed as confounded, contaminated, or otherwise artifactual" (Reynolds, 1980). In other words, as was recognized by the U.S. National Academy of Sciences in 1967 and reported by me in a publication (Hirsch, 1981, p. 8) cited by Lerner: ". . . there is no scientific basis for a statement that there *are* or that there *are not* substantial hereditary differences in intelligence between Negro and white populations" (my emphasis).

A point in need of emphasis is the independence of knowledge from its use or misuse. Knowledge results from the interaction of events with observation, theory (or interpretation) and our perception of distinctions (i.e., distinguishing from previous knowledge information that then becomes new knowledge), even though the use or misuse might not be independent of the knowledge (i.e., some might seek to justify an action [the use or misuse] as being based on the knowledge).

Emotionally I'm strongly sympathetic with Lerner's developmental contextualism concept, that has the innate mechanisms continually in strong interaction with the external context in which development is occurring, but not at the expense of precluding research into the separate influences of the innate and external factors. Johnson, Bolhius and Horn

(1992) show by experimental analysis that imprinting in chickens involves at least two processes: a process of learning to recognize certain features of various kinds of stimuli and a predisposition (innate) to approach stimuli resembling conspecifics. Starting with a population of *Drosophila melanogaster* manifesting the species typical (innate) negative geotaxis and individual variations in the degree of its expression, we have bred two populations (races) with opposite manifestations of the behavior, i.e., what was formerly species-typical has evolved in response to selection to become population-typical (Hirsch & Erlenmeyer-Kimling, 1961).

My reaction to the discussion in the Epilogue about helping "to ensure that 'it doesn't happen again'" is simple: Only an educated citizenry in a democratic state that excludes any individual or group from a monopoly of power is our safest, but uncertain, protection. The old cliché remains apropos: the price of liberty is eternal vigilance.

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