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The Absolute Weapon¹

AN ABSOLUTE WEAPON is one which conquers the enemy because he cannot *or will not* oppose it. The hydrogen bomb does not meet this definition because both sides have it and are willing to use it in retaliation. The result is a stalemate.

It was in 1960 that the USA Central Intelligence Agency got its first inkling that the USSR was developing in project "G" a truly absolute weapon. The year is now 1975, and we are beginning to appreciate the future effectiveness of that weapon.

Our failure to foresee Russian intentions in 1957, when we were shocked by their first earth satellite, can be explained primarily in terms of our own defense-mindedness—our willingness to match the enemy in building military devices, but our reluctance to suppose that he had the intellectual aggressiveness which is the essential characteristic of a nation bent on conquest. Beyond complacency, as we shall see later, there were some special reasons for our blindness.

Another historic date must be added to those mentioned above. The pilot study for project G was begun by the Russians in 1946 at the end of World War II, and the program laid out at that time has been adhered to without change. The project was originally expected to reach effectiveness by 2050 AD, but recent technical developments may allow the Russians to attain their goal in another 20 years.

Such a long-term project, requiring perhaps a century for its completion, may seem surprising to those who think of national supremacy as a military goal to be won or lost in the course of a single war. But it must not be forgotten that the later greatness of nations has often hinged upon some slight but far reaching effort, followed by continuing exploitation over several generations. In the history of the USA the purchase of the Louisiana Territory in 1803 was such a trigger effort.

Although it is a weapon of biological warfare, project G derived its inspiration directly from the atom bomb. For it was only the Russians who saw at once the true significance of nuclear fission as a discovery of one of

nature's deeper secrets. They perceived that the future of military power lay, not in atomic energy alone, but in the whole of scientific knowledge.

From that time onward the Communist Party put a major effort into gaining scientific supremacy for the USSR. Within the Party the struggle for personal power continued, producing plots, purges, and other manifestations of dynamic totalitarianism. And as we know from Lysenkoism, scientific research did not escape political involvement. But project G was preserved from interference by the simplicity of its program and the moderateness of its immediate purpose.

The first earth satellite brought to the Western countries a realization that the USSR was running an all-out educational race. If we did not recognize that education was only half that race, it was because in our egalitarian tradition we had never understood the nature of civilization. In our pride of achievement it had never occurred to us that all we are we owe to a tiny fraction of our population. Remove from history 1000 great names in science, 1000 in philosophy and religion, 1000 more in the arts, and the rest of us would still be Bronze Age savages.

Unable to understand that man's progress had depended upon the outer fringes of the statistical distributions of his abilities, we were unable to appreciate how that progress might be speeded up by a relatively small eugenics program. Because the leaders of the USSR were without our cultural handicap, project G was developed by them as an obvious supplement to intensive education.

The scientific facts underlying this project were well known before World War II, but their implications had been largely obscured by a failure to distinguish between "positive" and "negative" eugenics. The hope of eliminating inferior strains from the human race (negative eugenics) was based largely upon statistical and genetic fallacies, and the idea had fallen into notorious disrepute after its crude and cruel pursuit by Adolph Hitler.

1. Fictional.

Whereas negative eugenics seems to promise substantial benefits in one generation or less, the improvement of the species by selection of good characteristics requires from one to ten generations. For this reason, positive eugenics has never been attractive as a solution for urgent social problems. Until a totalitarian government capable of detailed planning for its great-great-grandchildren came into being, there was little likelihood that positive eugenics would get a practical tryout.

What was the scientific background that encouraged the Russians to begin their project G? Known to us and to them was the fact that controlled breeding had revolutionized the farm industry. The methods of animal and plant husbandry were not directly applicable to the slow-breeding, morally conscious race of man, but the success of farm genetics gives an inkling of the ultimate possibilities at which the USSR was aiming.

It is ironic that the basic studies from which the USSR made its bold departure were carried out by English-speaking persons. Well known to every psychologist was the classic paper by R. C. Tryon (3) on "Genetic Differences in Maze-Learning in Rats" in which he described the creation of two separate strains by eight generations of breeding of bright rats with bright, and dull with dull.

Admittedly, there is an inferential gap between a running rat and a thinking man. For encouragement by more clearly relevant evidence the Russians may have turned to measurements of mental age as a function of heredity and environment. Such information was not lacking to us. From elementary psychology textbooks of the post-war period one might have learned that the correlation of intelligence quotient between parent and child is .50, while that between parent and foster child is only half as great. Even a layman might correctly guess that this established a strong link between intelligence and heredity.

That this link is important had long been known. In 1958, two years before the USA suspected the existence of project G, the American Psychological Association published (1) a lecture on "The Inheritance of Mental Ability" by Cyril Burt, an English authority on mental testing. One comparison from that lecture will suffice to show how widespread was our knowledge of facts which the USSR was even then putting to use. Professor Burt pointed out that when identical twins are reared together their IQ's have a correlation of .92 out of a possible 1.00, but when non-identical twins are reared together the correlation is .55.

Identical twins evolve from a single egg and have identical genetic heritage, while non-identical twins have the same genetic relationship as brothers and sisters generally. The striking fact here is that .92 is approximately the "reliability coefficient" of this kind of test, i.e., the highest meaningful correlation that can be obtained. From his studies Cyril Burt concluded that inheritance is of dominating importance in determining the upper limit of scholastic attainment.

Biologists were concerned with the implications of genetic discoveries even sooner than psychologists. Very few people know that for a quarter of a century before 1960 one of the greatest geneticists of his time,

H. J. Muller, wrote popular articles and gave lectures attempting to draw attention to the important possibilities of selective human breeding. In 1959 at the international celebration of the centenary anniversary of Darwin's *Origin of the Species*, Muller (2) said:

"How are men to attain the higher intelligence and enhanced fellow feeling and sensitivity that will better fit them to the modern world? . . . That genetic methods could be effective is illustrated by the vast individual differences in native intellectual capacity, temperament, and emotional pattern that exist among human beings, even as among other higher animals. Studies of twins and people brought up in institutions and foster homes have shown clearly the high, though far from absolute, importance of their heredity in the determination of psychological as well as so-called physical traits. Undoubtedly, even seemingly minute features of the personality can be strongly influenced by the genes. More important, there are abundant instances of extremely high mental ability, of a generalized kind, reappearing conspicuously in some members of families while missing other members. Certainly, there is already genetic material [i.e., genes and their combinations] on hand, recognizable through its expressions, which, if conferred on the population at large, could enable men in general to find freedom and release by engaging in great co-operative as well as individual assaults against the seeming inexorabilities of the outer world and their own stubborn natures and by giving the feelings thus engendered creative and artistic expressions."

From what was known to science before World War II, the Russians saw no reason to doubt that the breeding of a human elite could be accomplished. And from the intellectual achievements of their first-generation product, we in the year 1975 can now believe that they were right.

Concealment of their project was impossible after 1960 when its first children reached puberty. To show why this was so, we shall describe their plan in its entirety.

Its practicality lay in its limited objective, which was not to upgrade the population as a whole, but to create an intellectual elite—against which our best scientists would find it impossible to compete. This avoided the need to destroy unsuccessful genetic combinations, and in other ways made it possible to impose the program upon the existing population with a minimum of social upheaval.

The breeding method was simplicity itself; it had none of the straw-man fantasy that in Aldous Huxley's *Brave New World* makes good drama but bad science. The work was carried out in two stages starting in 1946 and 1960, respectively, with both continuing indefinitely.

In the first stage 1000 married women each year were selected for scientific aptitude and physical stamina and were artificially inseminated with the sperm of an equal number of selected men. The program was on a voluntary basis and the offspring were reared in the home of the mother and foster father.

These offspring, of both sexes, were psychologically tested throughout their childhood, and to the extent

of their abilities were intensively educated—as was the custom for all exceptional Russian children. It is the recent appearance of a disproportionate number of these first generation offspring among the present scientific leaders of Russia that has convinced us that project G is succeeding.

Stage two of the project began about 1960 when the first generation offspring reached puberty. Those of the greatest promise were tagged for further breeding. The males were required only to donate semen upon demand. The females were allowed the alternatives of marrying one of a selected group of males or of bearing three children by artificial insemination while married to a man of their own choice. The second generation offspring, like the first, are being reared in the mother's home.

Because of these genial rules, there has been little personal opposition to the plan. Nevertheless, because all exceptional female progeny are coerced into controlled child-bearing, the project could not easily be kept secret after 1960. This did not matter because the Russians correctly judged that we were not willing to follow their example.

Project G is already paying its way scientifically. Meanwhile its development goes forward. The group under investigation can be maintained at any desired size by selection. The constant influx of 1000 offspring per year from the outside and the control of reproduction within the group make possible a wide variety of experiments with a minimum of administrative effort.

Our own geneticists are unwilling to predict the limits of achievement to be expected from these simple breeding methods, but they have pointed to the publication of four new experimental procedures which remove whatever doubt there may have been that the Russians are creating an absolute weapon. These techniques would have seemed visionary in 1960, although all of them were foreshadowed at that time.

The first of these procedures is psychological testing by electrical instruments, whereby "creative scientific ability" and its supporting attributes can be recognized and quantitatively assessed as early as five years after birth.

The second technique is that of ovum transplanta-

tion. In 1973 the Russians perfected a non-operative method for recovering an unfertilized egg from a normal woman and of implanting it in the womb of another after fertilization under a microscope. The egg develops normally and is born as the child of its foster mother. In this way, a female genius, for example, can have one offspring per menstrual period instead of one per year, and can do so without interrupting her intellectual activities.

In a third technique the Russians are using hormones to induce temporary sexual maturity in male and female as early as age three. The drugs are administered only long enough to produce sperm and eggs, which can be removed, united, and implanted in a fully grown woman for pregnancy and birth as described above. There is apparently no permanent disruption of the normal life-cycle of the child thereafter, nor impairment of later physical and intellectual vigor. Before this discovery parenthood under the age of ten was a medical rarity. Now it will be possible to produce succeeding generations of man as fast as the child's developing brain allows the selection of desirable characteristics.

Their fourth and in many ways their most dynamic discovery is a method of inducing selective mutations by chemical agents. As of 1975 the control is still crude. Although the general bodily location of the mutation can be specified, its exact nature cannot yet be predicted. It is reasonable to suppose that given a little more time the Russians will be able to speed up the evolutionary process so that perhaps 50,000 years of development will take place in the span of a lifetime.

In this perspective the term "absolute weapon" seems somehow inadequate, and "warfare between nations" is bereft of its old meanings. What will happen sociologically in the period ahead of us is a question that might disturb a thoughtful person.

REFERENCES

1. Burt, Cyril. 1958. The inheritance of mental ability. *Am. Psychologist*. 13: 1-15.
2. Muller, H. J. 1960. The guidance of human evolution. The evolution of man. Chicago University Press.
3. Tryon, R. C. 1940. Genetic differences in maze-learning in rats. 39th Yearbook. Part I. National Society for the Study of Education. 111-119.

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