

INTELLECTUAL DISCIPLINE FOR THE FILIPINOS

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Flying high over the Carribean on Delta Airlines, I was reading the Safety Instructions which said, "In case of emergency put the oxygen mask on first and then put the oxygen mask on your child." The reason was "If you black out first, you would not be able to put the oxygen mask on your child." Much intrigued by this way the Americans think, I asked myself, "How will the Filipino mother think? Will she not first put the oxygen mask on her child?" The question brings up the theme of this present paper which has to do with two modes of mind or two ways of thinking: the objective-rational way and the subjective-intuitive way.

Another experience. In cooperation with the DAP I was giving a human development seminar to the top officials of the Development Bank of the Philippines to demonstrate the process of consensus-formation. To start off the process, I would give the participants a simple arithmetic problem to solve individually and then to see if they could then reach consensus. The problem went like this: "I bought a carabao for P6,000. I sold it for P7,000. I bought it back for P8,000. I sold it for P9,000. How much money did I gain?"

Less than 25 per cent of the group came up with the correct answer, which was P2,000. The shocking thing was that the chairman of the board gave P1000 as his answer and insisted on being right because as he said, "You buy at P6000 and sell for P7000, you make P1000. You buy back at P8000, you lose the P1000. You sell at P9000, you gain P1000. So the answer is P1000 gain." His assistant, a woman, gave the answer as "No gain, no loss. You buy P6000, you lose money, you sell P7000, you gain money. You buy P8000, you lose money. You sell P9000, you gain money. *Patas*. No gain, no loss." This was said in all seriousness, with some anxiety at the possibility of being wrong and at having gone against her boss. Yet they and the majority were wrong.

I gave the same problem to sixth, seventh and eight-graders at the International School. Ninety-five percent of the students gave the right answer on the first try. I gave it to a Chinese group with similar results. One Chinese boy explained how he

got it: "I have a money box. I buy P6000, *labas*. I sell P7000, *pasok*. I buy again, P8000, *labas*. I sell P9000, *pasok*. P14000 *lumabas*, P16000 *pumasok*. So, P2000, gain." It was a beautiful combination of rational and intuitive thinking, probably the result of receiving early math education on the abacus.

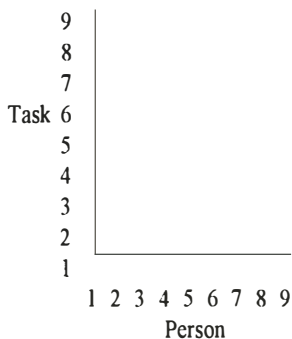
THEORY

At this point it is not my intention to arouse the ire of the nationalists by asserting that Americans and Chinese are more intelligent than Filipinos. The question is not intelligence but the quality of intelligence. In the 1950s, psychologists still thought of intelligence as a unitary ability, an IQ. With the development of factor analysis, we have come to realize that intelligence is made up of several factors which may be considered as distinct abilities. Different cultures differ in the composition of these abilities according to how that culture evolved in response to the challenges of its times. Filipinos have developed the subjective-intuitive factor of intelligence and have not fully developed the objective-rational.

In the 1970s, as a result of Nobel Prize winner Sperry's left-brain, right-brain experiments, emphasis was given to dividing mind functions into two: left-brain functioning which has to do with the verbal, rational, problem-solving ways of thinking, and the right-brain functioning which has to do with the intuitive, emotional, artistic, etc. ways of thinking. What Sperry seems to have proven is that the brain locations are the seat of these functions when they occur, but not necessarily that they determine a man's intelligence or even the quality of his intelligence. Left-brain and right-brain are but shortcut ways of describing functions of the mind which have long been known to psychologists. The syndromes are the same even when different words or concepts are used to describe them. This two-syndrome view of the mind was already foreseen as early as the early 20th century by Carl Jung who divided personalities into intuitive and rational. Since then, personalities, mind functions, attitudes, abilities, etc. have been classified into similar dimensions, for instance:

task-orientation	-	person-orientation
scientific	-	artistic
obsessive-compulsive	-	hysterical
objective	-	subjective
head	-	heart

Different disciplines may have given different names to their mind-sets according to their own experiences but in general they agree on these two syndromes. Furthermore, they agree on seeing these two dimensions as fusing into a whole. For example, task-orientation and person-orientation can be plotted on a two-dimensional graph with abscissa and ordinate each numbered from one to nine like this:



Thus a subject scoring 9-1 can be considered a TOB (task-oriented bastard) and a subject scoring 1-9 would be a BH (bleeding heart). Of course, the holistic person might score a high 8-7 or a more retarded 2-3, balanced but low.

All this is the theoretical model relevant to our theme, the Transformation of the Filipino, trying to locate him on a point between the ordinate which we can call objective-rational and the abscissa which we can call subjective-intuitive. It is not our intention to determine in actual number the Filipino mind processes (though this can be done easily by social scientists), but rather to give a clinical picture of how the Filipino mind works, with a view to transforming what can be transformed in order to adjust to the demands of the 21st century. Following Lee Kuan Yew's call for social discipline, this psychologist is calling for intellectual discipline. To survive in the modern world the Filipino has to learn to think rationally, objectively, scientifically and to develop left-brain functioning.

The Underdeveloped Left-Brain Function

For over 10 years, I had the pleasant task of selecting candidates for college scholarships of the Insular Life from all the regions of the Philippines. Every year we tested over 2,000 high school valedictorians, salutatorians and first honorable mentions, and interviewed the finalists. To test the quality of thinking, I might ask a question such as, "Suppose while riding in an airplane, I simultaneously dropped one kilo of solid steel and one kilo of loose, fluffy cotton. Which package would hit the ground first?" More than half of these "bright" high school students would answer, "The steel and the cotton would hit the ground at the same time."

These are the Filipinos who have been over-educated by the system to think by rote, in slogans and cliches. In the course of their education, they have been taught "scientific" answers but they have not developed the rationality (and common sense) to look at objective reality and know how objective reality works, which is the true science. The educational system has taught them to memorize a lot of words but did not develop basic scientific thinking. Certain regions of the

Philippines, in particular Eastern Visayas and Southern Mindanao, exhibited this thinking among their high school graduates.

The individual has not been taught to trust his own objective observation. For instance, in the comprehensive examinations for a Master of Arts degree in Psychology, I asked the following question, "If one researcher can jump one meter high, how high can 10 researchers jump?" Three of the ten answered, "Ten meters high."

If one were to analyze the answer of these three, one may see that in their eagerness to please the examiner, they tried to use their weakest part which was the verbal-analytic. They failed to use their own intuition which was really the strongest part of themselves. They came out with an answer which was against their own common sense and which they would, if confronted, say was wrong: the researchers jumped 10 meters high. Wrong analysis and/or poor expression.

In a similar way, to analyze the thinking process of college students, I have asked the question, "Which is bigger, a circle or a square? About a fourth will answer, "The square is bigger because it has four corners." Another fourth will answer, "The circle is bigger because it goes beyond the sides of the square. Another fourth will answer, "I don't know. I was poor in geometry." Only a fourth can verbalize the answer, "It depends on the size. A big square is bigger than a small circle and a big circle is bigger than a small circle." One can see how rational analysis and/or verbal expressiveness, both left-brain functions, seem to be lacking.

The cultural predominance of right-brain thinking over the left brain manifests itself on the one hand in the Filipino's cultural artistry, his spontaneity in music and dance (Most of the musical bands in Southeast Asia are composed of Filipinos.). On the other hand, this is also manifested in his poor handling of modern technology and in his inability to plan for the future. The present crisis in electrical power gives testimony to this. In the first place, it was the lawyers, not the scientists who made the decision on the nuclear power plant. There was inability to plan and there was inability to handle the technological problems when they arose.

This low-level rational-objective, problem-solving quality of thinking shows itself in the way Filipino culture has responded to other 20th century social needs. Take for instance the transportation system. There are no railways or other forms of mass transportation needed to link the nation together, leading further to a way of thinking which may be called the *barrio* or small town mentality. Jeepneys crawl at snail's pace in the towns, stopping anywhere for passengers. Routes and terminals have not been nationalized, with the exception of a few towns like Subic. The jeepney itself stands as an incarnated symbol of cultural thinking.

The jeepney was originally a step in modernization when it replaced the *calesa*. But it froze in its early form and remained the way it was in the post World War II Liberation period. It has grown slightly from *limahan* to *waluhan* on each side. But it has kept (except in the U.P.) the huge sign in front: "Lyn-Lyn," "Katas ng Saudi," "2 Sisters," etc., while the jeepney's destination is relegated to a tiny sign behind the windshield. (It is interesting that U.P., the bastion of rationality,

has made the jeepneys that pass through the campus place their destination in big letters on the jeepney's forehead, a big step toward rationalization). But the windshield remains crowded with "borlology," with signs and slogans narrowing the driver's view. And the two tin horses over the motor, symbolizing speed, complete this symbolic monument to the subjective-intuitive Filipino mind. It is a lovely symbol – it is not much but it is ours.

We come to the theme of this paper: that we must raise a new generation that is capable of thinking scientifically and rationally, away from slogans and rote thinking. The emphasis here is on scientific thinking, objectively, rationally, not on having more classes in science where students are made to memorize "The earth is round like a ball." Scientific thinking can be taught even in non-science classes where the emphasis is put on producing the specific word, the exact image, and of course, in correct grammar. Students can learn to do critical thinking, observation, can know when data are insufficient, can withhold judgment when necessary, can push the truth when it deserves to be pushed. This is left-brain thinking.

A sign of our own lack of analysis is that our human development trainers emphasize right-brain thinking. They do so in rote imitation of American trainers, never thinking that Americans need right-brain improvement in order to be more "human." But the Filipino needs more left-brain thinking to be "humanized" or more explicitly, a holistic merging of the two dimensions at a more balanced level, a 9-9 rather than a 9-1 or a 1-9.

The thinking of the Filipino is right-brain thinking; the subjective-intuitive aspect of the mind occupies a dominant position over the objective-rational. This condition does not necessarily mean that the Filipino is inferior to, let us say, the German or American. It merely means that the Filipino has a way of seeing reality and mentally manipulating it differently from the German or American. But it is good to be aware of this quality of thinking of our people because we can understand why we are ranked among the happiest people in the world (cf. Newsweek), why we do not worry about the future (e.g., that Laguna de Bay is the last possible source of fresh water for Manila yet it is fast becoming polluted), why the culture has given over to the Chinese and Americans the task of running manufacturing plants and megamalls or why we always call on foreign experts to solve our problems in science, medicine traffic and technology.

Why does a population prefer left-brain thinking over right-brain thinking or right-brain thinking over left-brain thinking? Is the difference genetic, cultural or both? There is not enough evidence to say. But certainly, culture has at least a large influence in shaping one's thinking preferences as may be seen from the notable differences between the Filipinos brought up in the United States and Filipinos brought up in the Philippines. Likewise, individual introspection brings out the correlation between early experiences and life careers. For instance, taking my present interest in Psychology, I can trace this interest to early experiences in my father's Physiology laboratory at the U.P. College of Medicine where I practically grew up amid the calculators and the experimental animals. My father taught me

how to hypnotize a chicken when I was only eight years old. It seems most natural to drift into empirical psychology. Early experiences have much to do with ways of thinking.

This is the culture that we have developed in the Philippines and which we also find in Indonesia and Malaysia. It is interesting to note that the most economically advanced nation in the ASEAN is Singapore, which is basically Chinese and which by the highly disciplined social behavior of its populace shows them to be highly objective-rational and left-brained.

Consequently, the question can be asked: Should we Filipinos be happy with the way we are, bring up our children in the traditional values, teach them *pakikisama*, *utang na loob*, etc. the way the nationalists teach in the schools? Should we remain happy in our subjective-intuitive ways of thinking? The answer that this paper suggests is: *Yes*, but at the same time we must develop our objective-rational side, raising our scientific and technological skills to meet the challenges of modern times. Actually, whether we like it or not, the culture will change in this direction.

SHIFTING TO THE LEFT BRAIN

How does one develop objective-rational thinking in the Filipinos? The total answer is still hidden from us. Maybe exposure to the modern world by itself will force the nation to evolve its way of thinking to meet its challenges. For instance, the power shortage and all the failed attempts to solve this problem politically will force the nation to enter into the nuclear age and to think science and technology rather than politics and law.

However, this psychologist may make the following suggestions: teach the Filipinos the three Rs: reading, 'Riting, 'Rithmetic on a higher level.

Reading

The Filipino simply does not read. Our neighbors in China, Japan and Korea have crowded bookstores. Xiamen, for instance, has a bookstore four stories high, stocked with books from the equivalent of Pepe and Pilar all the way to the highest levels of literature, science and philosophy. And the store is crowded with eager readers. And each apartment has its own little collection of books. In the Philippines, even today's college students cannot or do not read. When assigned scientific articles for them to read and evaluate, there are feelings of helplessness and cries of dismay because they simply do not know how to teach themselves from the printed page. In the absence of reading, self-learning becomes impossible. As one participant in a human development seminar said in defense, "All I needed to know in life I learned in kindergarten." And the only answer one can give is "Yes." And thus the nation remains backward, the basket case of East Asia.

The Filipinos must read a lot if they have to survive as a nation in the modern world.

'Riting

Verbal ability is closely related to rational thinking because words give a person control over his world. The ability to manipulate mental symbols, i.e. language, has a double effect. It allows the speaker to organize his own thoughts, to improve rationality, to make his unconscious, conscious. Secondly, it allows social communication and makes possible thinking and acting in groups. As the saying goes, "One learns from what one says rather than from what one hears."

Thus, besides reading, proper verbal expression develops rationality: the apt word in the proper context, to write and speak with clarity, force and interest. Honeybees can work together as a hive because they have their own ways of communicating with one another. Filipino human beings must use words and language to work together with one another and with the modern world.

There is the particular problem: which language to use to develop the objective-rational ability of the Filipino. The emerging national language, Taglish, is on its way to becoming language. But it has a long way to go. For now it is not understandable to farmers on the one hand, or to English-speaking foreigners, on the other. It has no stable rules of syntax nor an accepted dictionary of clear-cut meanings. And so, for the language of instruction, I suggest a bilingual policy that even the Tausugs and Maranaws can accept. Let there be two languages, Tagalog and English. Set as goal of education equal facility in both and if possible let there be no mixture of both. The upper class in Manila schools have succeeded in producing such bilingual speakers and thinkers. It may be possible to broaden this base. Otherwise, we will end up in the 21st century with a nation whose higher socio-economic class speaks English and Tagalog or Cebuano, and a lower socio-economic class that understands only the local dialect and a kind of chabacano like that of Papua New Guinea. (And whether we like it or not, English is the language of modern science as well as of airports, air controllers and computers. The world has changed a lot from the time of Napolcon, Bismarck and Jose Rizal.)

'Rithmetic

Quantified thinking is the basis of modern science. Up to now, Philippine culture has not adequately evolved this form of objective-rational thinking but has relegated this function to the Chinese and Americans in its midst. This is why manufacturing and megamalls are the creation of minds brought up in a different culture, which demands hard quantitative thinking from them.

It is safe to assume that the Filipino mind is not anatomically nor physiologically inferior to that of the Chinese or Americans. The deficiency in

mathematical functioning can be seen as cultural in origin: 1) it is taken for granted that mathematics is hard; 2) there are no real demands for Filipinos to study math or do problem-solving; and 3) the teachers, themselves, being part of this culture, do not practice quantitative thinking and accordingly do not demand this kind of accurate and exact thinking. (to do so would be "kulit," unpopular and undemocratic.)

And yet accurate, objective observation should be a major objective of all scientific thinking. Respect for data is something learned. It is not learned by being allowed to copy a classmate's experiment just to fulfill an academic requirement. The mind never learns to tell fact from fiction. There is no felt need to take pains to verify facts. All this because they were taught to write reaction papers, not to discover facts. As a result, we end up with a whole slew of newspaper columnists but no real reporters. What is needed then is culture change. The setting up of science high schools is a step in the right direction. Then it is a matter of political will by the government to bring about change in the teaching of math and science in the nation. Whoever sets up and enforces such a policy will have to be a cultural non-conformist. But there is always the possibility that such a person may get through the Commission on Appointments.

The question remains then: how can we make this change in the teaching of science and mathematics when the whole culture is against it? To change the whole culture seems an impossible task, but it may be possible (following the Chinese example, cf. Time) to set up islands in the culture where a select school made up of select teachers and students can develop scientific thinking in the population. An honors high school or a regional science high school in every region can do much to introduce scientific thinking in the public school system. But national change will be very slow.

By way of digression: The Philippine Science High School was the result of the vision and persistence of one man, Dr. Torabaya, a simple math professor in New York University in the 1950s. With help from Dr. Frank Co Tui and later from Dr. Paulino Garcia, almost single-handedly he set up this school which may be studied now as a model on how to develop the mathematical and scientific abilities of the Filipino. It has become the model for various science high schools all over the Philippines, and even if the financial constraints of these other schools limit the extent to which they can emulate Philippine Science (which is a very expensive school), the quality of change is there and we begin to reserve capable young Filipinos from mediocrity in science and technology.

Lee Kuan Yew of Singapore, when asked what the Philippines needed to become a Newly Industrialized Country (NIC), gave Social Discipline as his answer. This paper is saying the same thing. Social discipline is the other side of the coin with intellectual discipline on the other side. Is it possible to develop this intellectual discipline in the Filipino? We certainly hope so!

SYMPOSIUM IX

Symposium	:	Intellectual Discipline for the Filipinos
Moderator	:	Academician Ruben L. Villareal
Rapporteur	:	Academician Faustino T. Orillo
Speaker	:	Fr. Jaime Bulatao, S.J.

SUMMARY

The paper mentions two modes of mind or two ways of thinking: the objective-rational way and the subjective-intuitive way.

On the subject of intelligence, the question is not intelligence per se but the quality of intelligence. Intelligence is made up of several factors which may be considered as distinct abilities. Different cultures differ in the composition of these abilities according to how that culture evolved in response to the challenges of its times. Filipinos have developed the subjective – intuitive factor of intelligence; they have not fully developed the objective – rational.

The paper cites Sperry's left-brain, right-brain experiments which gave rise to the division of mind functions into two: left brain functioning which has to do with the verbal, rational, problem-solving ways of thinking, and the right-brain functioning which has to do with the intuitive, emotional, artistic, etc. ways of thinking.

Following Lee Kuan Yew's call for social discipline, Fr. Bulatao is calling for intellectual discipline. To survive in the modern world, the Filipino has to learn to think rationally, objectively, scientifically and to develop left-brain functioning.

The cultural predominance of right-brained thinking over the left-brained kind manifests itself on the one hand in the Filipino's cultural artistry, his spontaneity in music and dance. On the other hand, this is also evident in his poor handling of modern technology and in his inability to plan for the future. The present crisis in electrical power gives testimony to this.

The low-level rational-objective, problem-solving quality of thinking shows itself in the way Filipino culture has responded to other 20th century social needs as exemplified by the country's transportation problems.

The paper suggests – teach the Filipinos the three R's: Reading, 'Riting, 'Rithmetic on a higher level.

READING

Unlike the Chinese, Japanese and the Korean, the Filipino simply does not read or does not read enough. In the Philippines, even today's college students cannot or do not read. When assigned scientific articles for them to read and evaluate, there are feelings of helplessness because they simply do not know how to teach themselves from the printed page. In the absence of reading, self-learning

becomes impossible. The Filipino must read a lot if he is to survive as a nation in the modern world.

'RITING

Verbal ability is closely related to rational thinking. Words give a person control over his world. The ability to manipulate mental symbols, i.e. language, 1) allows the speaker to organize his own thoughts, to improve rationality, to make his unconscious, conscious; and 2) allows social communication and makes possible thinking and acting in groups. As the saying goes, "One learns from what one says rather than from what one hears." With regard to language, Fr. Bulatao suggests a bilingual policy that even the Tausugs and Maranaws can accept. Let there be two languages, Tagalog and English. Set as goal of education equal facility in both and if possible let there be no mixture of the two.

'RITHMETIC

Quantified thinking is the basis of modern science. Up to now, Philippine culture has not adequately evolved this form of objective-rational thinking but has relegated this function to the Chinese and Americans in its midst.

It is safe to assume that the Filipino mind is not anatomically or physiologically inferior to that of the Chinese or the American. The deficiency in mathematical functioning can be seen as cultural in origin: 1) it is taken for granted that mathematics is hard; 2) there are no real demands that Filipinos study math or do problem-solving; 3) the teachers themselves, being part of this culture, do not practice quantitative thinking and accordingly do not demand this kind of accurate and exact thinking.

A culture change is needed. The setting up of science high schools is a step in the right direction toward solving the aforementioned shortcoming in the scientific and rational thinking of the Filipino.