



SHRI GOPALKRISHNA GANDHI
THE GOVERNOR OF WEST BENGAL

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Sankhyā

Counting On The Counted

It is a privilege to address the 39th Convocation of the Indian Statistical Institute. I felicitate those who are receiving their parchments today for their accomplishments and for the fact of their having been associated with the Indian Statistical Institute. Remarkable for its origins and purpose, the ISI remains creatively engaged today as a centre for learning and as a vehicle for research. It is gratifying to see the ISI conducting not just academic courses but research activities of range and moment. Its Applied Statistics Division, Social Sciences Division, Planning Unit, Population Studies Unit, Computer and Communication Sciences Division, its Science Divisions and other units carry a great tradition forward.

On occasions such as this, it is instructive for an institution to think of its beginnings and to measure the day's progress against the promise of its dawn.

The ISI and Prasanta Chandra Mahalanobis are as linked to one another as Visva-Bharati is to Rabindranath Tagore. Even as Santiniketan gave to Indian aesthetics that from which a sensitive humanism may grow, the ISI has placed at the disposal of the nation a method of enquiry from which perspectives and policies may emerge. Many of the world's great philosophers visited the Poet at the Amrakunja. Statesmen such as Chou en Lai, Ho Chi Minh and Kosygin were drawn to Amrapali by the Institute's unusual work and its unusual chief, the physicist cum meteorologist, professor cum mentor, 'pointillist' cum 'muralist', planner cum master-administrator, 'PCM'.

It has been said that at Jawaharlal Nehru's cabinet meetings

an invisible chair used to be reserved for Harold Laski. That Laski Chair was, I think, really occupied by PCM from where he gave his considered views - his critics would have said 'wove his magic web' - as Statistical Adviser. He also provided from there the wherewithal for the definingly important Second Five-Year Plan, which set the tone for its successors. PCM did more than keep the numbers for Nehru's government; he was its thinking abacus.

In his biography¹ of PCM, Ashok Rudra says "If Mahalanobis had done nothing else, if he had only founded *Sankhyā*, the *Indian Journal of Statistics*, even so his contribution to science would have been outstanding and memorable."

Bengal had earlier seen the founding of journals with Sanskritic names : Maharshi Debendranath's *Tattva-bodhini Patrika* and Ishwar Dutta's *Samvad Prabhakara*, to name two. And so PCM's turning to ancient Indian wisdom for a name was natural. But his selection of the word also showed precision and rigour. Vaman Shriram Apte's Sanskrit-English dictionary of 1890, gives for the headword *sankhyā* the primary gloss as 'Enumeration, reckoning and calculation' followed by a series of secondary glosses : 'A number', 'A numeral', 'A sum', 'Reason, understanding, intellect' and, even more interestingly, 'Deliberation, reflection'. So *sankhyā*, is not just about uni-dimensional numbers; it is about a dynamic process of inference, understanding, cogitation. Likewise, *sānkhyā* (assumed to belong to the realm of metaphysics) is also connected to number-based discriminative reasoning.

PCM could not have chosen better from the collectivity of Sanskrit's nouns and adjectives for the name of the Institute's journal: *Sankhyā*, the enumeration that leads to understanding, the count that helps reflection. He of course also intended *sankhyā* to lead to planned action on a scale worthy of India's future.

The human mind is wont to make cross-connections. While

¹ *Prasanta Chandra Mahalanobis, A Biography*, Oxford, 1999 p.268.

reading Apte's small print on *sankhyā*, I recalled a verse² in the Bhagavad Gita. I refer to the binary division of humanity attempted in the lines :

*loke 'smin dvividha nistha pura prokta maya 'nagha
jnanayogena samkhyanam karmayogena yoginam*

'The twofold path was given by Me, O sinless one, in the beginning - the path of knowledge to the discerning, the path of work to the active.'

The world, according to that formulation, comprises two groups, that of the discerning ones or the 'thinkers' - doubtless well-shod and bi-focalled - working at systems of inference and deduction on the one hand; and of the active ones or the 'doers' - doubtless barefoot and bicepped - tilting at the windmills of fate on the other. I find that categorisation iniquitous if real : thinkers not having to 'do' and doers having no need to think.

Were PCM's *sankhyā* and *sāṅkhya* crafted by the 'discerning' and unconnected with the 'active'? I believe not. "...statistics", he wrote³ memorably "is not a branch of mathematics but is a technology which is essentially concerned with the contingent world of reality as distinguished from the world of abstraction". PCM saw statistics as a means involving empirical study, research and experimentation for certain goals in the real world. The research, be it through specialised methodologies, needed at its core, to unearth and interpret human experience so as to influence it. Contemplation was not only a form of action but was intended to lead to action. More practically, at the Institute, PCM saw to it that everyone, irrespective of his or her assignment, was a 'worker' and part of a creative aggregation where stature did not depend on status, hierarchy did not degrade.

² Chapter III, Verse 3 (translation by Swami Chidbhavananda, 1951). Sarvepalli Radhakrishnan gives 'O, Blameless One, in this world a two-fold way of life has been thought of yore by Me, the path of knowledge for men of contemplation and that of works for men of action'. (*Bhagavad Gita*, Allen and Unwin, 1948).

³ In an internal note circulated by PCM on 14.7.1964, on the scope of the ISI (cited by Rudra p. 176).

Vita contemplative as vita activa. This was not only a rational arrangement; it was renascent as well.

Defining encouragement to PCM came from contemporary figures who had worked towards the making of India's renaissance - Tagore himself, the philosopher Brojendranath Seal, the physicist Satyendranath Bose. Assistance, likewise, came from heralds of South Asian resurgence, no less, of whom Jawaharlal Nehru was the most inspirational, Chintamani Deshmukh, the most pragmatic and H.S. Suhrawardy the most complicatedly controversial.

But one person, whose pervasive influence was felt by the whole nation, does not seem to have touched PCM at all, Mohandas Karamchand Gandhi. I do not know if PCM's papers describe his equation, or the lack of it, with MKG. Be that as it may, in PCM's published work the Mahatma does not figure. I can only put this down to the fact that certain circles in our Left, during the 30s and right up to the 60s, were uncomfortable with him. Perhaps later disciples of Plato in Athens might have been ambivalent about Socrates. Nehru, true to his political ambience and antecedents, knew better. But not all Nehruvians. Today, of course, we see a wholesale reassessment of Gandhi in the Left. The late Hiren Mukherjee may be said to have led the process.

This audience will pardon me, a non-scientist, non-statistician, non-economist and non-academic, if I bring no specialisation to my observations today. I have none to offer. Having had occasion in recent months to study Gandhiana for an anthology, I would like to have your permission to make PCM and Gandhiji the subject of my observations today—not to compare them, for they cannot be compared—but to suggest that PCM's exclusion, in fact expunction, of Gandhiji from his vision may not have helped it. Also, to put it to the practitioners of PCM's method today that in the punctiliousness of Gandhi's pursuit of hard facts, they have an archetype to turn to, an archetype that can strengthen field investigations and raise the stature of their recommendations. Cults are wrong and I would not

want to burn incense at any iconic altar. If I invoke Gandhi today it is to reflect, in *sāṅkhyā* fashion, on a remarkable zero-equation between PCM who gave himself the worker number 'zero' at ISI and MKG who often said he was nothing and nobody, a mere instrument. Despite PCM's non-interest in MKG there is a methodological salience between the two. By instinct, preference and self-training both refrained from generalisation, exaggeration and hyperbole. Precision was more than a style with them; it was their 'second nature'.

In Rudra's life of PCM, Gandhiji occurs⁴ but once and that in an aside. Persons trained in archival research may like to analyse that narrow 'miss' in terms of the D^2 statistic and see the whys and wherefores of the *Mahalanobis distance* between PCM and MKG. There was a whole universe of a difference between the *darsana* of the two. Yet, in one respect the paths of the two met⁵ at the intersection of contemplation and action, of *sāṅkhyā* and *karma*, affirm that the world could not be divided between thinkers and doers, between the many who are counted and the few who count, that in free India, in renascent India, the counted will—not just at election time but continuously.

PCM, by training, and Gandhiji, by instinct, had a sense of what I would like to think of peoplehood as a great and fascinating plurality in which the large communities were not more important than the minuscule.

I understand that the formulation of the *Mahalanobis*

⁴ Referred to (p.79) in passing in a letter from PCM to Rani Mahalanobis describing Tagore's first comment on his return from Europe.

⁵ Historians may go into the linkages between the two in and through Tagore and the Sadharan Brahma Samaj or other affinities such as the adventitious similarity of their responses to legal interventions in the matter of the validity of marriage rites. PCM was propelled to action by Advocate General's Cowie's opinion on the *Brahmo Bibaha Bidhi* (Brahmo Marriage Rites) given in 1868. MKG's famous Satyagraha in South Africa in 1913 came from his response to Justice Searle's pronouncement de-recognising marriages performed under 'non civil' and non-Christian rites.

distance in taxonomical classifications started with N. Annadale's suggestion, made at the Nagpur session of the Indian Science Congress in 1920, that PCM analyse the anthropometrics of Calcutta's microscopic Anglo-Indian community. That task led to the publication of PCM's paper on the theme in 1922 and of other similar investigations over the next few years⁶ in the 1920s. It will interest ISI's Anthropology and Human Genetics Unit to know that around the same time⁷, MKG wrote a remarkably precise description⁸, while recounting his South Africa experience (1893-1914), of the Zulu physical form. I will not quote from it here because those interested would like to discover the writing directly. The description has compelling anthropological value for its detail and careful objectivity within a becoming economy of expression. It is also important as a corrective to the hasty conclusion of some analysts that the Mahatma lacked empathy for the African cause in South Africa, as opposed to Indian interests there.

Affinities or differences between populations as measured by mean values forming clusters were not part of the methodology of MKG's studies; indeed he used no given methodologies. His interest in people and communities was serious and he made it a point to go into the details of different communities, their language and culture. Bengal for instance knows how, because of Noakhali, he began to learn Bengali with an intensity startling in a septugenarian. Tribal India, the India of small communities such as the Parsis, absorbed his attention. He comprised, in his own way, the Anthropology Section of the Indian National Congress, even as PCM chaired the Anthropology Section of the Indian Science Congress of the time.

⁶ Later to be published in *sankhyā*.

⁷ *Satyagraha in South Africa*, M K Gandhi (Navajivan, 1924).

⁸ Gandhiji's use in the original Gujarati version of the phrase 'Habsi' and in the English of 'Kaffir', to describe the native African reflects the language that was current in his time. But it is natural that we should today wish that his leaping vision and creative vocabulary had foreseen the mischief of those typifications. Interestingly, PCM's published work using anthropometric tools and terminology also led to controversy.

Today, with the 1920s eight decades behind us, we may ask : where does the anthropometric method stand? How are institutions like the ISI examining the problems and prospects of genetics in the study of human history and of cultural heritage? Ignorance amongst us of the mores of fellow Indians is great. It ought to be embarrassing. It took a tsunami to increase general awareness of the people living in the Andaman Islands. Access to that island group is strictly regulated, especially to those from overseas. There are good reasons for this. I would like to excerpt, here, an observation ⁹ made by Dr. Erika Hagelberg, formerly of the University of Otago, New Zealand: (I quote) “Phylogenetic analysis of the mtDNA sequences and comparison with other populations world-wide revealed that the Andamanese are genetically similar to Africans. However, they exhibit the closest similarity to New Guinea highlanders. Our results agreed with linguistic studies which suggested that Andamanese languages might be the last representatives of pre-Neolithic Southeast Asia, perhaps going back to the initial settlement by modern humans, and largely unaffected by the vast linguistic spreads, including the Austronesian language family, which occurred in Southeast Asia during the Neolithic expansion. Sadly, the Andamanese are on the verge of extinction and the opportunity to learn their language and customs is disappearing fast. As a geneticist, I find the loss of culture particularly poignant. However much we might learn about genetics,

⁹ *Genetics in the Study of Human History*, (monograph, 2000) Biochemistry Department, University of Otago, Dunedin, New Zealand. Dr. Erika Hagelberg, now working in the University of Oslo, Norway, also says, "At the beginning of the twentieth century, the islands were visited by the Cambridge ethnographer Alfred Radcliffe-Brown, who made detailed reports of the material culture of the islanders. He also collected artefacts, and curiously, hair samples. Although the hair locks were almost a century old, we managed to recover mtDNA sequences from many of them. Shortly afterwards, I started to collaborate with a group of Indian geneticists who had collected blood samples from people representing three of the four surviving tribes, the Onge, Jarawa and Greater Andamanese. The fourth tribe, the Sentinelese, live in a small island on the path of the daily flights from the mainland, but has not been contacted by outsiders. MtDNA and Y chromosome analyses on the present day Andamanese reveal dramatically low levels of genetic diversity, but the mtDNA types fall into the same pattern as the Andamanese hairs sampled by Radcliff-Brown."

we will never understand the culture of a people unless we are able to ask them directly, preferably in their own language.” (unquote).

Friends, as you know, Tagore’s outstanding song which is our national anthem today reminds us of the different regions from which we, as a people, hail. In a portion of that song which is not part of the abridged official version of the Anthem he describes the ‘peoplehood’ of India in term of their faith traditions - ‘... *Shuni tava udara vani, Hindu, Bauddha, Shikh, Jaina, Parasik, Musalaman, Khristani...*’. This was an attempt to introduce us to ourselves. *Sva-parichaya* is not easy and an ‘introducer’ can help. I have, as a result of my recent time in Norway, been benefited by the work of a Norwegian, Wera Saether, on the Bauls and artisans of Bengal. Likewise, on the politico-cultural life¹⁰ of rural Bengal by the distinguished Norwegian academic Arild Engelsen Ruud. Globalisingly obliging, we are inviting foreign capital to our farms and factories, airports and hospitals. Perhaps the time has also come for the doors of academe to open less cumbrously to students of India from the outside world.

Let us satisfy ourselves about the credentials and academic objectives of the researchers from overseas. Let us link their labours with those of our own experts so as to make the team academically responsible to India, and let us insist on reciprocity from those universities for our own scholars going there. But let what PCM called ‘Brain Irrigation’ (bringing experts from abroad to India) as the opposite of ‘Brain Drain’ also take place. He was able to attract scholars to ISI like Pearson and Fisher (of course), Haldane, Neils Bohr, Joliot-Curie and Irene Curie, Julian Huxley, Joan Robinson, Jan Tinbergen, Kalecki and Nicholas Kaldor. They came here to study and to advise. The Gurudev and the Mahatma, likewise, had benefited from friends and associates from abroad such as C.F. Andrews, W.W. Pearson, Elmhirst, Tan Yun Shan, Verrier Elwin,

¹⁰ *Poetics of Village Politics, The Making of West Bengal's Rural Communism* by A.E. Ruud, Oxford, 2003.

Madeleine Slade, Richard Gregg who spent long years in India, enriching our understanding of ourselves. One of the greatest contemporary social scientists in India is of Belgian origin - Jean Dreze. One scarcely thinks of him as a naturalised Indian, so integral is he to our understanding of ourselves today.

ISI holds and participates in international conferences regularly. But conference participation is one thing; collaborative research another. While encouraging such collaboration in the future we would need to rectify the historically-conditioned Western leaning of PCM's time. I am sure scholars in African universities and in Latin America would want to study India, particularly its attitude to globalisation and world trade issues. ISI's scroll of research collaborations should, in the logic of PCM's vision, show work with the Witwatersrand University, for instance, no less than with Berkeley.

There are of course some areas where we must do our own studies ourselves and - urgently. India suffers from certain chronic enervations. A group of persons from West Bengal's Islamic community came to see me the other day. Their spokesperson said, "Muslims form 25% of the State's population - a large number. This State is secular, there is harmony between the communities. But there is under-representation in leading positions, in government, administration, among the senior law officers, in the legislature, and in academic faculties - excepting the tiny departments teaching Urdu, Arabic, Persian." He said "The explanation generally given is that there are not enough qualified people in the community, that their children do not attend school and college as they should be doing and prefer to study only in madrasas." "If", he said, "more schools existed in their vicinity, the children would attend madrasas for an hour or so and then go to the regular schools as they do in Kerala". He wanted the Sarva Siksha Abhiyan to specially focus on the villages, blocks, towns and wards where the minorities had a high concentration. He went on, "But most importantly if a comprehensive survey is conducted to find out why they are lagging

behind, it could lead to some action and in 5, 10, 15 years, a base would be built and there would be a levelling-up'. We have something to ponder here. A request for a field survey has come from within the *sankhyā's* thinking process.

Friends, I referred to Tagore's song, our Anthem. All of you also know of Iqbal's great 'Tarana-e-Hind'. Its opening line 'Sārey jahān se achhā' is justly famous. But not so famous is its concluding line: 'Iqbāl, koi mahram apnā nahin jahān me; mālum kyā kisi ko dard-e-nihān hamārā'. (Iqbal, there is no intimate of ours in the outside world, none, who knows the pain that lies concealed in our heart.) The Allama was of course referring to India's pain, not any particular community's, in that line. But we must see if a survey cannot become a *mahram*, an intimate, of a given community and help it get over its hidden pain.

If conducted today, such *sankhyā*-led surveys could work miracles, for we have 'felt needs' among, for instance, plantation workers in the closed tea acreages in North Bengal, Assam and in Wynaad, among jute workers just outside Kolkata, among minority communities, among dalits and among women. Such surveys could come up with revelatory knowledge about farmside suicides, provide invaluable support to the development report studies such as published recently for West Bengal and currently under way for Tripura, help crusading studies like the one being carried out single-handedly by P. Sainath for *The Hindu*.

I met a Dalit group recently. My visitors said West Bengal was one of the most progressive states in its rejection of caste discrimination. But, they said, an intellectual attitudinising did exist, invisibly. Precisely because of West Bengal's rejection of casteism it is important to ask : Why is it that Dalit literature in West Bengal is not stronger? Are there enough Dalits in senior faculty position? What is Santhal enrolment in primary schools like?

Private investigations run by the media can be useful but

they carry both the advantages and disadvantages of all that lives in the short-term. Disasters, for instance, lead to reflexive reports which catch the eye but do so for the short phase of the trauma alone. They must be helped to take the urgent now into the important next. Institutionally run, professionally conducted surveys have the capacity for doing that because they can apply an unagitated method, surgeon-like, to an urgent inquiry.

ISI's Applied Statistics Division would be interested to know that anticipating the method of large scale surveys and what PCM described as 'statistical engineering', MKG used a self-devised methodology of his own in 1916. This was to study the indigo scene in Motihari. How scale and accuracy of coverage can obtain official redress was shown by that initiative. He writes¹¹ "The work of recording statements of the ryots' grievances (progressed) apace. Thousands of such statements were taken, and they could not but have their effect. The ever growing number of ryots coming to make their statements increased the planters' wrath, and they moved heaven and earth to counteract my inquiry. The *tinkathia* system which had been in existence for about a century was thus abolished, and with it the planters' *raj* came to an end."

I draw three lessons for surveys from Champaran, 1916. The first lesson is : Any field survey needs must have a dual authorship : the questioner's and the respondent's. In the interplay of this moiety

¹¹ *The Story of My Experiments With Truth*, (Navajivan, 1927). He adds : "Sir Edward Gait, the Lieutenant Governor, asked me to see him and expressed his willingness to appoint an inquiry and invited me to be a member of the Committee. I ascertained the names of the other members, and after consultation with my co-workers agreed to serve on the Committee, on condition that I should be free to confer with my co-workers during the progress of the inquiry, that Government should recognise that, by being a member of the Committee, I did not cease to be the ryots' advocate, and that in case the result of the inquiry failed to give me satisfaction, I should be free to guide and advise the ryots as to what line of action they should take. Sir Edward Gait accepted the condition as just and proper and announced the inquiry. The late Sir Frank Sly was appointed Chairman of the Committee. The Committee found in favour of the ryots, and recommended that the planters should refund a portion of the exactions made by them which the Committee had found to be unlawful, and that the *tinkathia* system should be abolished by law."

lies the richness of the result. If an intensive field level inquiry involving a close interaction with respondents is conducted *at a time of the respondents' felt need*, the volume and quality of responder-input will be higher. In other words when the physics of a survey is congruent with the chemistry of the surveyed, the best results accrue. Round after cold round of data collection through questionnaires, however well conceived, without such a congruence may not yield the same participative fullness. I am not suggesting that a survey should mimic a referendum. But it need not hesitate to synchronise with a widespread concern, even help articulate it. The second lesson is : A field survey in India, to enjoy and gain credibility, must be available to authority *in its results*. But it must be independent in its objectives and operation. I believe MKG's and PCM's insistence on the functional independence of the survey in hand had to do with this. The third lesson is : A field survey should not start with or go behind the questions with *a priori* assumptions (even if it may have, to use slang, good 'hunches'). But it should be prepared, at a later point, to go beyond the data and make *post facto* recommendations involving the law and administrators. In other words like the classical loom, the survey should be neutral as to the fibre - data - being handled *while the shuttle flies*, but it should result in a strong weave that makes a clear statement.

One demoralizing thought cannot, however, be avoided. A survey led by Gandhiji and subject to his rigorous expectations of it, or by PCM and subject to PCM's uncanny ability to spot errors, commands attention. A survey - how well-devised soever and honestly conducted - without such a leader at its helm, does not. MKG on an indigo field and PCM, instructing investigators to harvest a circular cut of a given radius, could charge that survey with electricity. Who or what 'charges' today's surveys? Does anything at all? Can the clinical rigour of a good survey or its intrinsic worth alone bring it the attention it deserves? I would say if ISI is able to identify not just 'good' research projects but projects that go along the grain of the *jana-sankhyā's* needs, then that need, that groundswell of interest and participation, can take the place of charismatic helmsmanship. I would also say that the 'subjects' of a

survey should be integral to the survey and should in fact lead it. I have not participated in any survey anywhere but in the course of my knocking among people over the last three months here in West Bengal. A farmer in Bankura (who had no clue as to who he was talking to) told me in response to my query about the area's biggest need : 'De-silting of the irrigation channels'. He took precisely 10 seconds to tell me that. Likewise, women at a rally in the Sunderban to whom I put a similar question said in a trice : 'strengthening of the embankments'. Scheduled-caste growers of *rajani-gandha*, *gulab* and *genda* in Paschim Medinipur told me without a moment's hesitation that what they needed urgently was a regular water supply and cold storage facilities for their crops. So the *sankhyā* is not just so many digits; it knows better than most and is keen to speak out - as long as someone is interested. The *sankhyā* should not be the subject of *sānkhyā* but be, in fact, its prime mover.

It is instructive to recall that PCM's work in the 1920s as Professor of Physics at the Presidency College, Calcutta, coincided with his tenure as a Meteorologist in charge of the Eastern Region, when he studied river-related issues in detail. These were occasioned by the disastrous 1922 floods in North Bengal and that in 1926 in Orissa. Experts made certain recommendations in the heat of the moment. PCM demurred and going by a statistical study covering 60 years of the river's behaviour in flood recommended a dam ¹² in

¹² Dams today are the subject of controversy. A veteran Gandhian in the UK, Marjorie Sykes told me in 1994 'Dams are a damnation'. Gandhiji is inconvenient - for the large-scalers. But he is not to be taken for granted by the opposite side either. Speaking in Bombay on 18 February 1948, he said "...owing to our neglect and folly, the year's rains are allowed to run down into the Bay of Bengal and the Arabian Sea. If all this water was trapped and harnessed to irrigational purposes by the construction of dams and tanks, there should be no famine or food shortage in India." That will not be the Narmada Bachao Andolan's favourite Gandhi quote. He would have seen the point being made by the Narmada Bachao Andolan today about human distress. He would have been with the NBA on that, although he would have also seen the need for the parched western extremes of Gujarat getting its due share of water. A study based on hard calculations and statistics on how a network of small irrigation schemes could serve the purpose would, I think have met his approval. He would also have seen, I believe, the need to go into the criticality of seismological safety studies preceding any hydel project in the Himalaya.

the upper reaches of the Brahmini. The experts were using sight; he was using sight, hindsight and foresight.

Famine hit the Madras Presidency in 1928. Rajagopalachari, wiring from Tiruchengodu in Salem, asked Gandhiji to publish an appeal for funds in *Young India*. His reply to CR from Satyagraha Ashram, Sabarmati, on 21 October 1928 would be instructive to ISI's Psychology Research Unit and Sociological Research Unit : "I am publishing your appeal. But I am not satisfied with it. It is too scrappy and without any body to it. You ought to have given the population in the area affected, the nature of distress and the amount required. How are the people to respond to a general appeal of the type you have framed? It evidently betrays fatigue, haste, worry and overwork. If you want a good response you must send me an appeal worthy of yourself ¹³." Likewise, when Gandhiji learnt, in 1935, of the outbreak of malaria in Ceylon, he wrote sharply to his correspondent : "Malaria has been raging in Ceylon for some months now. Why not a word from you up to now? And then, a telegram? ...If you know something, you should give chapter and verse which I can publish. It must be the evidence of your own senses, not any hearsay. You may say also who are the villagers that are affected. Not that it matters who they are, but surely the public ought to know who are affected, or is the disease universal in Ceylon? These are all relevant questions. After all, I have no money of my own. I can only make an appeal to the charitable public. I cannot do so unless I can

¹³ CR tried to repair the omission but still could not quite satisfy the 'head surveyor'. Went another rap to CR from Mahatma : "You fail to back your appeal with facts and figures from week to week. You may not plead want of time or if you want to plead want of time, then don't expect any response. Surely Santanam or whoever is in charge can say from week to week how much relief has been given, what kind of relief has been given and to whom it has been given. You are talking about volunteers going to the villages taking notes. Some telling experience might be given. The condition of the homes of these people might be given. A hundred things suggest themselves to me. Do please wake up."

certify the veracity of the statements that come to me.” (unquote).

I would flag the phrases “the evidence of your senses” and “veracity of the statements”.

Friends, this year - 2005 - as you are aware, is the 75th anniversary of the Salt Satyagraha. We all know about the historic march to the saline edge at Dandi. But we may not know that the Mahatma’s instructions¹⁴ to the organisers of the march contained an injunction to obtain village-level data *en route*.

Watching him raise that fistful of salt, the world did not know that a statistical survey had preceded that climacteric and had, in fact, prepared the ground for it. I hope the fact-sheets prepared in 1930 are preserved at the Sabarmati archives. How instructive it would be if the organisers of the Dandi commemoration today were to do a re-survey of the villages along that route on Gandhiji’s prescribed parameters.

D² statistics and Gandhiji’s DIY methods are poles apart and yet a common quest motivated them, linking means with ends. This audience may think, (although out of courtesy to the Chief Guest it would not say so) ‘Oh well, alright, Gandhiji had a penchant for

¹⁴ He wrote on 9 March 1930 (*Collected Works of Mahatma Gandhi*, Vol. XLIII, p 33-35) :

"The march will begin at 6.30 on the 12th morning.

It is desirable that information under the following heads should be kept ready for each village : - 1) Population : Number of women, men, Hindus, Muslims, Christians, Parsis, etc, 2) Number of untouchables, 3) If there is a school in the village, the number of boys and girls attending it, 4) Number of spinning-wheels, 5) The monthly sale of khadi, 6) Number of people wearing khadi exclusively, 7) Salt consumed per head; salt used for cattle, etc, 8) Number of cows and buffaloes in the Village 9) The amount of land revenue paid; at what rate per acre, 10) The area of the common grazing-ground if any, 11) Do the people drink? How far is the liquor shop from the village? 12) Educational and other special facilities, if any, for the untouchables.

It will be good if this information is written out on a sheet of paper neatly and handed to me immediately on our arrival." (Unquote).

facts, for accuracy like any good Gujarati book-keeper. But why make such a big deal of it in this Convocation Address?' It is not my intention to propose Mohandas Karamchand Gandhi for a posthumous doctorate *honoris causa* in statistical method. I will only say this in defence of my choice of theme that it stresses the importance and integrity of verifiable facts in the formulation and pursuit of public policy. It also suggests that ISI's continuing excellence (and that of the methodology of the CSO and the NSS) will avail little if government and NGOs working on socio-economic issues do not carry reliable facts into objective interpretation followed by earnest action - in a quick and organic sequence. Also that statistics-gathering while doing its repetitive rounds must also take on, at short notice if necessary, urgent investigations in which the public is interested. In other words it shows that *sankhyā* must count and count on the counted. The great and creative response to the campaign for the Right to Information generated by Aruna Roy and the MKSS in Rajasthan shows that the *sankhyā* can participate fully and definingly in a procedure that requires enumeration and door to door elucidation.

The ISI's researches cover an extraordinary range that cannot fail to impress. One question that inevitably suggests itself is : What is being done with the findings and recommendations? Is appropriate use being made of them? Who or what functions as a P.N. Haksar linking the Planning Commission with the ISI? I believe it is our extraordinary good fortune that we have today a scholar Prime Minister, Dr. Manmohan Singh, who knows the value of research, pure and applied, and respects facts, hard, ascertained, tested facts. It is equally our good fortune that ISI's Chairman is the distinguished former Finance Minister and now our Defence Minister, Shri Pranab Mukherjee. With the ISI's Chairman himself in the Union Cabinet,

PCM can, in a sense, be said to be back at the Cabinet table today. And how fortunate for the ISI that a scientist of the international eminence of Professor M.G.K. Menon presides over its working. With this concatenation, a heightened use of ISI's researches cannot but result. In the larger analysis, however, it is not the utilization of the ISI *per se* but that of the statistical method that matters. There the prospect is undoubtedly bright. There has taken place a distinct popularization of the *sankhyic* method. If the Citizens' Report on environment issues pioneered by the late Anil Agarwal and the CSE adopted it and if the UNDP Human Development Reports model now taken up nationally and within States is doing that, part of the credit for their statistical approach to issues has to go to the ISI, to the CSO and NSS.

I will close with a conversational nugget. K.R. Narayanan had won a Tata scholarship in 1945 that was taking him to study in London. Not without some difficulty KRN managed to get an appointment with Gandhiji in Bombay on 10 April 1945. The seventy five year old did not know that his twenty five year old visitor was a future President of India. KRN asked Gandhiji : "All great men have a passion for simplification. You have simplified the nature of human conflict as between violence and non-violence, truth and untruth, right and wrong. But in life, is not the conflict between one right and another right or between one truth and another truth? How can non-violence deal with such a situation?" Gandhij's answer was that it was a matter of application. What he meant by "application", I think, is that the person faced with that dilemma has to apply the non-violent method with discernment.

Friends, KRN's question and the reply are of significance. How can the statistical method help in a choice from out of two

options based upon two sets of data when they are both 'true'? Or does statistics at that point, reach its dead-end? There is a lovely line in Longfellow -

*She stood with uncertain feet
Where the brook and the river meet.*

Would the statistical method turn uncertain at the fork where two facts or two truths meet but flow in separate or opposite tracks? Is that the point where something above and beyond statistics takes over and where PCM could conceivably have told JN 'Now, over to you, Mr. Prime Minister'? Perhaps. But in so doing, the statistician would be giving to the republic of moral adjudication, the franchise of proven fact. He would be placing sight, hindsight and foresight at the disposal of insight.

I thank you.