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**CRITICAL OBSERVATIONS UPON THE METHODOLOGICAL ASPECTS IN
THE “CHINA STUDY” VOLUME**

**THE CHINA STUDY – The most comprehensive study of nutrition ever
conducted and the startling implications for diet, weight loss and long-term
health (“STUDIUL CHINA. Cel mai complet studiu asupra nutritiei”)**

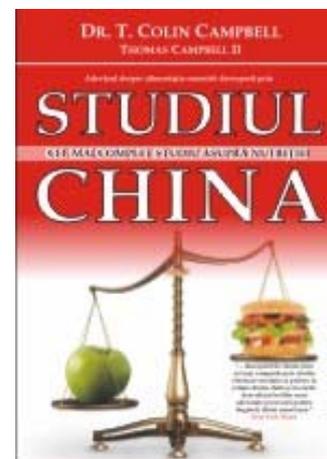
by Dr. T. Colin Campbell and Thomas Campbell II

Casa de Editura Advent, Rm. Valcea, 2007¹

A book of great international prestige, considered to be a best-seller (with over 100.000 readers worldwide), recommended by many remarkable persons², declared the book of the month or the book of the year³ by some organisations, was also published in Romania in April 2007. The book gained success⁴ and excited the interest of Romanian readers⁵. In the followings we wish to make a brief critical presentation, highlighting the quantitative elements included in the book.

Written by father-son collaboration, combining the vast experience of a famous American scientist⁶ with a career of over 40 years in nutrition, with the youth and written communication skills of his young follower⁷, the book claims to be a complete guide in nutrition and its implications upon health. **The main idea presented by this book is that “western” diseases (especially cardiovascular diseases, diabetes, coronary diseases, and the various types of cancer) can be fought against in a drastic manner, preventively, trough diet means.** The book is structured into four sections: the first is dedicated to actually presenting the China Study; the second presents the so-called wealth-diseases; the third presents a short guide of correct nutrition, and the last section (the fourth) is dedicated to vast critical constructions about the fact that

“the entire system – government, science, medicine, industry and media – promotes profits in the detriment of health,



technology in the detriment of nutrition and confusion in the detriment of transparency.”⁸

Practically, the study that entitles the book only represents a quarter of it (approximately 100 pages) the rest representing additional elements of comparison and analysis.

In order to avoid confusions, in the text we shall use words like book, volume, paper when referring to the entire publication, and the expression “The China Study” when referring strictly to the biomedical research conducted in China.

The China Study is an experimental research starting from an idea resulted after the studies performed in China in the early '70s; the results were published in the paper “Cancer Atlas Survey”⁹. The team was formed of experienced¹⁰ researchers, including two Chinese¹¹. The methodology of gathering information was based on a sample of 65 districts located in 24 of the 27 regions of China. Out of each district included in the sample 2 villages were selected, and biological tests¹² were taken from each village, from 100 volunteers (50 men and 50 women) with ages from 35 to 64. To summate, tests were taken from 13.000 persons. Because of the fact that the blood samples could be analysed, due to small quantities, in a reduced number of tests the blood samples from persons of same gender and village were combined, thus creating the possibility (by the considerable enhancement of blood quantity) of collecting information for 367 variables. Several times¹³, the book mentions that “over 8.000 statistical significant associations” were obtained through the analysis of the 367 variables. Far from bringing accusations to the intellectual honesty and the efforts made by all researchers committed to “The China Study” experimental research, some critical comments are worth mentioning:

- First of all, we must observe that there is no mention of the manner of sample selection (both the villages sample and the sample of persons whom were biologically tested). Obviously, if the selection was not at random, an eventual statistical inference in the conclusions for the entire population of China is misplaced.
- Secondly, although the experimental study was realized by collecting biological samples from 13.000 persons, a big question mark appears as a consequence of the combination of all blood samples from persons of same gender and village. This fact has implications such as:
 - i. Through this procedure, the volume of cases analysed by statistic means was drastically reduced from 13.000 to 260 (2 sets of blood samples –one for male one for female – from every village, each multiplied by 2 – two villages of every district – and then by 65). Changing the size class, in a descendent way, leads to a serious alteration in applying the statistical inference;
 - ii. By this combination, the operations were performed with a medium level for each gender from each village, implicitly supposing that there are no individual differences as against to the average of the village. This assumption was never proved. Ulterior, on the base of the associations between these medium levels at the range of village, conclusions referring to individual diet behaviour were drawn. Although a village is composed of individuals, their behaviour and genetic inheritance is not identical. In this context, any conclusion of this study applied to an individual level is not appropriate.
- Third of all, the 8.000 statistically significant associations are impressive as volume. Still, the maximum number of combinations in which the 367 variables

could be analyzed is 67.161 (C_{367}^2). The 8.000 statistically significant associations represent under 12% of the total number of possibilities. There are no details upon how many of the 8.000 associations were in the direction claimed by the authors. It is yet hard to believe that absolutely all were positive; there surely must have also been statistically significant associations but which infirmed the hypotheses of the authors.

In conclusion, the volume, despite the over 700 bibliographic references, is one that treats the subject descriptively, with the purpose of rather spreading the science than purely scientific. This fact is stated by the authors in the note at the beginning of the VIIIth page:

*"No information in this book should be looked upon as a substitute of medical consultation; also, no change in diet, physical exercise, or in lifestyle is to be made without a previous advice of the personal doctor, especially if there is a treatment for reducing heart-disease risk, arterial pressure, or any form of adult diabetes."*¹⁴

All these technical observations relatively to the methodological aspects specific to quantitative methods don't seriously diminish the value of the book. The volume remains one of reference in Nutrition, having as author an American scientist with an impeccable reputation, whom has dedicated his entire career to researches in this domain. The fact that it is easier to prevent than to treat is well known, and although there are some inconsistencies from the point of view of quantitative methodology standards, the book offers adequate advices and directions taking into account the behavioural features of the world we live in.

¹ Translation from English original version: Dr. T. Colin Campbell and Thomas Campbell II **The China Study – the most comprehensive study of nutrition ever conducted and the startling implications for diet, weight loss, and long-term health**, BenBell Books, Dallas, Texas, 2004

² A sort list of considerations is presented on cover IV and in the beginning of the book including important people diverse background (from Nobel Prize laureates –in Physics – to former officials of the World Bank).

³ It received, for example, the award for the book of the year-2005 on behalf of the editors of VegNews Magazine, and the book of the month on behalf of the site: www.1001bacau.ro

⁴ Despite the fact that the publishing house where it appeared is not among the important names in the field.

⁵ A simple web search on www.google.com about the "China Study" offers over 135 thousand results (only in Romanian, because in English it offers over 247 million results)

⁶ Dr. T. Collin Campbell graduated the university studies (undergraduate, master and PhD program) at Cornell University. He then became associate researcher at Massachusetts Institute of Technology, and he had an university career for 10 years at Virginia University. Afterwards he was in charged with a didactic position at Cornell University.

⁷ As his father did, Thomas Campbell II graduated Cornell University and presently attends the Medical School of Buffalo University- after reorienting his career with this book. Thomas Campbell II 's hobbies are soccer, ski, hiking, marathons, writing and acting.

⁸ The text is our translation of the paragraph from Romanian version which can be founded at page 270: "intregul sistem – guvern, stiinta, medicina, industrie si mass-media – promoveaza profituri in defavoarea sanatatii, tehnologiei in defavoarea alimentatiei si confuzie in defavoarea transparentei."

⁹ *** **Atlas of Cancer Mortality in the People's Republic of China**, China Map Press, Shanghai, China, 1979

¹⁰ We mention Professor Sir Richard Peto: Professor of Medical statistics & Epidemiology at the University of Oxford, United Kingdom.

¹¹ It is about one of the co-authors of "Cancer Atlas Survey": Dr. Junyao Li and Dr. Junshi Chen Assistant Deputy Chief of the main – at the time - laboratory of research in health and nutrition in China.

¹² Blood from all the persons included in the sample and urine from 50% of them.

¹³ For example: page 7 or page 77

¹⁴ The text is our translation of the disclaimer from Romanian version which can be founded at page VIIIth: "Nici o informatie din aceasta carte nu va trebui privita ca un substituent al consultatiei medicale . De asemenea, nici o schimbare in dieta, exercitii sau stil de viata nu va fi facuta fara o consultare prealabila a medicului personal, in special daca este in curs un tratament impotriva reducerii riscului de boala de inima, tensiune arteriala sau vreo forma de diabet la adulti."