divide the globe into three worlds using the industrial revolution as a marker, with the Third World retaining its original composition. The Third World comprises countries whose societies have essentially remained untouched by the industrial revolution. The Second World consists of countries which have been transformed through industrial revolution, industrialization or by association, but have retained memories and sensitivities from the pre-industrial times. The First World, comprising a solitary country, USA, is a social product of post-industrialization era representing a total break from earlier times. The Second World represents, numerically as well as culturally, an arithmetic mean between the First World and the Third World. Because of its historical contacts with the Third World, it has been familiar with the latter's mindset. The First World on the other hand has consciously fashioned itself by reacting to the Europe it left behind. This is reflected for instance, in the definition of what constitutes novelty, in the First World.

Just as the first, physico-chemical, Industrial Revolution went hand in hand with European colonial expansion, the second, biotechnological revolution is being attended on by globalization. Whereas the Industrial Revolution was an entirely self-contained European enterprise, the biotechnological revolution needs the Third World with its stock of biodiversity and the attendant traditional knowledge on food and health care. The Third World countries today are a confused lot, just as Indian nationalists were before Mahatma Gandhi came on the scene. Should they expediently ask for petty profits for information supplied or should they oppose the regime itself on principle?

When patent laws at international level were first introduced, they dealt with tangible things, applied to a small part of the world, and had the benefit of actual practice over four centuries at local levels. In contrast, intellectual property laws pertaining to biotechnology and impinging on such civilizationally basic areas as food and health are being framed at the outset itself, when there is neither any ethical framework to interpret them nor benefit of actual practice to fall back upon.

Today when we talk of globally applicable laws, no national laws can serve as a role model. This is so because so far laws have been made to safeguard national or local interests. Global laws require fresh thinking. When the world was Euro-centric, it was easy to define what was new. If Europe did not know of it, it did not exist before. In 1738 William Champion was granted a patent in his capacity as 'the first European to produce metallic zinc', even though the process was known to have been brought from Asia. However 100 years previously, in 1608, when Hans Lippershey applied for a patent on telescope, he was turned down on the ground 'that it is evident that several others have knowledge of the invention'. By the same logic, if the knowledge is available anywhere in the world today, it should not be possible to patent it.

Notwithstanding its broad sweep and power, globalization suffers from a serious handicap. It is bereft of any serious theoretical underpinning. There is no philosophical basis for it beyond current economic interests. Enforcement of globalization seems to be its own legitimation. Even colonialism in its day was provided with an ideology no matter how abominable it may look now. The foremost task today is to put heads together in developing a cross-cultural civilizational perspective on various basic issues.

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Can information technology be another useful tool to diagnose and understand schizophrenia?

Schizophrenia is a severe mental disorder that leads to imperfect thought processes, socialization and cognitive difficulties. The patient cannot discriminate between fantasy and reality. Approximately 0.85% of the population is affected with schizophrenia, the overall lifetime prevalence is 1–1.5%, and the cost to handle schizophrenia is more than 33 billion dollars worldwide[1]. While applying this statistics in a country like India, it is not untrue that the number of patients could be very large and the cost to tackle the disorder very high. Moreover, in India, due to lack of proper awareness, interaction between psychiatric patients and doctors is not as much as it is expected. Therefore, the available epidemiological data on schizophrenic patient-population in India could be only the tip of the iceberg; the actual volume of the affected population is probably awesome.

The National Center for Research Resources (NCRR) under the supervision of the National Institutes of Health (NIH) offers a scheme to facilitate and encourage interactive biological research, especially on human-brain disorders using information technology (IT). This organization uses high-speed-supercomputers, linked among the US universities to develop a collaborative approach. Highly flexible artificial neural network is being tried in a sophisticated way to handle and understand the complex data structures related to the disorder, and schizophrenia is no exception. It is also relevant to mention that NCRR has already spent about $ 20 million!

India, on the other hand, is not fit enough economically to handle brain research in the above manner. Linking universities and interested professionals needs an updated infrastructure, yet to be available in India. Therefore, at least single institution-based use of IT with its flexible stem research could be done in India too to help the overall 'psychiatric-health' in the following ways:

(1) Patient-search could be possible by using 'tele-medicine' and 'tele-counselling'. A database of schizophrenics could be created.

(2) Data mining using several mathematical tools (logic and statistical methods) can give the actual picture regarding the illness. The trend of the illness could further be inferred using interactive and graphical systems.

Schizophrenia-diagnosis remains a challenge to the psychiatrists and psychologists because of a varied picture of the illness in the population at risk. Apart from differences in the core symptoms, socio-cultural and biological differences influence the varied picture further, to render a complex data tree and make the diagnosis more difficult. To solve the impending uncertainty of diagnosis, presently two guidelines are clinically followed: ICD (International Classification of Diseases) and DSM (Diagnostic and Statistical Manual) purely based on the Western data. Although modified from time to time, these guidelines are not sufficient enough to remove the apparent haziness because many other disorders, for example, manic-depressive, acute anxiety disorders, panic attacks or schizophreniform disorders are alike symptomatically and are often wrongly diagnosed as schizophrenia at first. Moreover, due to the prevailing adverse patient–doctor ratio, diagnosis is often based on manual skill without going into the details of ICD and DSM. Such manual diagnoses have often proved fallacious and the patient suffers. Therefore, according to Lucien Leape, Harvard School of Public Health, technology could help reduce such diagnostic errors.

Today's knowledge-intensive techniques of IT (primarily data engineering and artificial intelligence) are possibly the best handles to analyse such complex, varied data observed in schizophrenia-spectrum and obtain both macro-level as well as micro-level inter-relationships from it. Using these techniques for providing analytical tools to doctors and psychiatrists in the area of schizophrenia could be encouraging and later demanding. By using the secondary data sources, the above-mentioned tool can (a) identify different epidemiological factors (primary as well as secondary) behind the emergence of schizophrenia in the Indian scenario; (b) detect the actual '1st rank symptoms' in India weighing these epidemiological variables with each other, and (c) establish the 'probability' of illness-development in a person at risk by simulation studies. Diagnostic uncertainty or the error of misclassification could also be reduced. The database could be updated from time to time and a primary source could be used in future to enhance the skill of diagnosis using the tool.

This type of mathematically-based and empirically validated diagnostic criteria for patients in India would help the psychiatrists (a) to diagnose the population at risk for the development of illness in a considerably faster way, (b) to identify patients with early symptoms of schizophrenia, and (c) to exclude patients with schizophrenia-like disorders.

1. Victor, I. R., in *Harrison's Principles of Internal Medicine* (eds Braunwald, E. *et al.*), Williams and Wilkins, USA, 2001, p. 2554.

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Hepatitis C: a major health problem of India

Khaja *et al.*[1] have highlighted a major health problem due to hepatitis C virus (HCV) which accounts for one-fourth of all cases of chronic liver disease in India. It is estimated that there are 12.5 million HCV carriers in our country[2], and at least a quarter of them are likely to develop chronic liver disease in the next 10 to 15 years. In the absence of efficient anti-HCV screening among blood donors in our country, post-transfusion HCV-induced chronic liver disease is likely to increase. Also, HCV infection from other sources will continue to add to the disease pool.

Until the mid-1990s, interferon-2α (INF-α) was the only available treatment. The addition of ribavirin, a nucleoside analogue, substantially improved the response; however, viral genotype remains an important determinant of response rate[3]. Although cure remains the primary objective, the benefits of treatment are not necessarily restricted to those patients who achieved eradication of the HCV. It seems that interferon treatment alone or in combination may prevent progression of, or even reverse, hepatic fibrosis in infected patients even if cure is not achieved[4]. Although ribavirin alone does not seem to be active against HCV, the combination resulted in much improved and sustained biochemical, virological and histological response rates[5]. Recent studies have shown that long-acting pegylated interferon (modified form of interferon) have better viral response than standard INF-α preparations and in combination with ribavirin, achieved sustained viral eradication rates of 54–56% (ref. 6). In India, the percentage of sustained responders is quite high (50–60%). Such response of INF-α therapy in chronic hepatitis C is due to a predominant prevalence of hepatitis C genotype 3 in this region which is interferon-sensitive[7].

A short course (six months) of INF-α commonly led to transient normalization of serum alanine aminotransferase (ALT), loss of detectable virus in blood and reduction of inflammation in liver biopsies. Unfortunately, relapse occurred in most of these cases when treatment was stopped. No other treatment option was available for patients with chronic hepatitis C – thus, despite these modest responses, a six-month course of treatment with recombinant INF-α was approved by regulatory agencies in Europe and the US in the early 1990s. It was later shown that prolonging the duration of treatment with interferon for at least 12 months doubled the sustained response rate and this longer regimen was subsequently approved as the standard of care[6]. Due to the prevalence of hepatitis