

INTERROGATING KNOWLEDGE GLOBALIZATION

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Part I

HANDLING KNOWLEDGE SYSTEM DIVERSITY

I. A Historical Perspective

The problem of the proper handling of the diversity of knowledge systems is being faced by human civilization for the very first time in its history.

Earlier, mankind has had some occasion to handle the diversity of *belief systems* as such, whether these belief systems be ideologies of the sacred (That is to say, religions) or secular ideologies (such as confucianism, Sthaviravadi Buddhism, Libertarianism or Dialectical Materialism). Broadly speaking, two trends have emerged in the course of this handling. One trend is represented by Islamic notions of infallibility and *kufr* (the denial of this ideology amounts to ingratitude to God) or the Marxist notions of *ideological correctness* and *bad faith*. The other trend in the opposite direction is represented by the Jaina notion of intellectual nonviolence (the key expressions being *anekānta*, *naya*, and *syāt* reality being inherently many-layered but its knowledge being one sided, any knowledge-claim is at best entitled to qualified assent) or the European Enlightenment notion of *tolerance*. Later, impressed by the diversity of flora and fauna and of languages in the rest of the world, the European civilization invented the 'comparative method' and, having applied it to botany, zoology, and philology, extended it to religion, literature, and the arts, and finally, to philosophy, without quite realizing the full implications of its extension from natural diversification to ideological and intellectual diversification.

Until recently, however, mankind hasn't had any in-depth experience in the handling of the diversity of *knowledge systems* as such, whether these knowledge systems are epistemic disciplines (such as Euclid's geometry, Bharṭṛhari's grammatical theory, or the Chinese science of botany) or technical or useful disciplines (such as Pāṇini's grammar and phonetics or the Arabic horse lore or shipping lore). Civilizations freely 'borrowed' specific useful facts or skills or even specific fascinating insights or attitudes and grafted these on to their 'own' knowledge system without any hesitation or reservation. (Thus, Yunani medicine of the Islamic civilization is almost wholly made up of borrowals from Classical Greece, Yunan, that is Ionia, to the Arabs and Classical India, Ayurvedic treatises being translated into Arabic. Venetian merchants freely borrowed the Indian zero and the Papal whippers fell by the wayside.) But all that remains piecemeal borrowing. The signal examples in human history of wholesale borrowing of knowledge even involve borrowings from a conquered people by the conquerors (thus, Romans from the Roman province of Greece, from 146 BC onwards, or Mongol rulers from China from the time of Kublai Khan in 13th c CE.)

But then came a loss of such cheerful innocence. The secularization of European philosophy and the concurrent transformation of European natural and moral philosophy into modern natural and human sciences and of European mechanical and medical useful arts into modern engineering and medicine was to erode this happy unselfconsciousness about diverging knowledge systems. There were also other factors contributing to the loss of innocence : (a) European exposure to various non-European civilizations and the eventual European hegemony of the Ecumene (that is, the known inhabited world.) (b) the semitic religious habit, to be seen in Judaism, Christianity, and Islam, of advancing monopolistic belief suasions getting carried over into monopolistic knowledge claims, (c) the initial lack of clarity in the distinction between belief systems and knowledge systems (a case in point being Marxist ideology getting presented as a science. Note, incidentally, that the expression 'human sciences' being used here comprises not only the canonical social sciences of economics, sociology, and political science but also psychology, anthropology, linguistics and others, and that the expression 'European' being used here is inclusive of Europeanized

societies in North America, Australasia, and elsewhere.)

The loss of innocence in dealing with divergent knowledge claims critically affected the handling of diversity both within and across the boundaries of European civilization. In the history of modern European science, one finds it plausible to use a terminology reminiscent of the history of religious or political ideology. One could thus speak of schisms in certain cases. (Is anagenesis entirely self-engendered, as Darwin said, or largely environment-engendered, as Lamarck did? Does the cosmos have a single centre or many centres or none at all? Human beings are alike in some respects but unlike one another in other respects--are these resemblances and differences largely nature-made or largely man-made?) But one could speak rather of mainstream revolutions in certain cases. (Vitalism was discarded in organic chemistry. Evolutionism replaced creationism in biology.) And one could end up speaking only of marginalized heresies in certain other cases. (Homoeopathic medicine seceded from mainstream medical science.) The 'paradigm shifts' in Thomas Kuhn's account of the structure of revolutions in European science sound painfully like disorderly gang wars rather than orderly debates. Again, in the history of European attitudes towards non-European knowledge systems, Europeans self-consciously looked upon them with fascination (how exotic the native lore is !) with hegemonic arrogance (it is nothing but sheer superstition !) alternating with benevolent indulgence (ethnic science offers some amazing insights !), and, in turn, in these post-modern times, with penitential recompense (how could we possibly have ignored non-global or local science!). It is as if Europeans often treat knowledge systems as belief systems. A magnificent and trend-setting exception to this sorry tale was Otto Böhtlingk's quietly adopting the Pāṇinian model when called upon to analyse a Siberian language, Yakut. Whitney's carping criticism of clumsy Hindu grammarians simply fell by the wayside of history.

Again, in the history of non-European attitudes towards European knowledge systems, non-Europeans in their turn self-consciously looked upon these with cultivated horror or indifference, or with abject uncritical acceptance, or in these post-colonial times, with cultivated nativistic hauteur. (Thus, Ayurveda and Acupuncture are no longer seen as mere ancestral relics but 'our' still viable medical systems.) Vishwanath Rajwade, the

historian from Maharashtra, and Krishna Chandra Bhattacharya, the philosopher from Bengal, are some of the exceptions for whom Western thinkers were no more and no less than colleagues across the seas. When it comes to the attitudes of the Indian intelligentsia towards non-dominant knowledge systems of women, lower castes, and tribes one sees a somewhat comic reprise of the treatment dished out by Europeans to traditional Indian knowledge, one sees the attitudes of fascination, arrogance, indulgence, and penitential recompense by turns !

It will be readily seen, therefore, that a simple uncritical distinction between global and local knowledge systems may turn out to be problematic if not questionable even in these globalizing times. An interrogation is certainly in order.

It is the responsibility, then, of the contemporary generation to work out the appropriate strategies for handling the diversity of epistemic and technical knowledge systems of the ecumene of today.

To summarize the argument so far, mankind has been handling diversity of belief systems for quite some time, it has done so either dogmatically or tolerantly. Faced with the diversity of knowledge systems, however, people responded with a certain innocence in the past but lately with a far from innocent self consciousness after the emergence of European secularization of natural and moral philosophy and hegemony of the known inhabited world. A historical perspective thus reveals the dubious character of any proposed distinction today between global and local knowledge systems.

II. The Question of Political-Economic Motivation

Now that the problem of knowledge system diversity is being squarely faced for the first time in human history, one certainly needs to look into the considerations of political attitude or economic exigency that are liable to enter into the selection, whether appropriate or not, of strategies for handling the problem.

An improper handling of this diversity has been motivated in the past by notions of the civilizing and globalizing mission of Europe. The civilizing mission was naturally defined in Graeco-Roman and Judaeo-Christian terms, and the globalizing mission in Roman-Catholic and Roman-

Imperial terms. Just as the Islamic civilization never forgave India for her passive resistance (refusing to be swamped by Islam the way Egypt or Persia were swamped), so did the European civilization find it impossible to forgive India for offering a civilization that just had to be taken seriously (any arrogance or even patronizing beginning to sound unmistakably ridiculous.)

A more respectful handling of this diversity in these post-modern times has been motivated by political correctness (which is the 1968 descendant of the 'ideological correctness' of Marxist vintage.)

Motivation, however, is not justification. Considerations of political exigency (such as the post-colonial North-South ambience) or even of political attitude (such as extending power sharing to the sharing of knowledge-as-power) are essentially irrelevant to the selection of appropriate strategies for the handling of knowledge diversity. True, improper handling is often traceable to wrong-minded attitudes and proper handling to well intentioned attitudes. But such unhappy or happy circumstance is no help in identifying what is proper and what is improper in handling knowledge diversity. Convincing arguments for such discrimination have to be looked for elsewhere.

This is even clearer as we turn from political attitudes to economic exigencies. Improper handling of this diversity has been motivated in the past by considerations of economic exploitation of non-European peoples as ready sources of raw materials, trainable labour, and captive markets. Thus, the 'native' textile technology of India was an obstacle rather than an asset to the newly mechanized textile industry of Britain. But then the contemporary trend towards a more 'enlightened' handling that reserves a corner of the market for 'ethnic' textiles may equally be motivated by the very same economic considerations. Enlightened self-interest is still self-interest, only being more adaptive to the contemporary global North-South set-up than the more old-fashioned rapacious self-interest would be.

What about the economic and political considerations brought into play by globalization? A clearer understanding of the process of globalization and its historical roots is called for at this point in our argument. The revolution of intensive riverine agriculture in ancient Egypt and elsewhere

led to the accumulation of surplus goods and the acquisition of surplus land and labour through land conquest and labour migration. This led to the rise of extensive civilizations out of local cultures and of large empires out of local principalities and republics. This as well as mercantile and adventurist explorations together led to the gradual enlargement of the ecumene. This in turn created a favourable milieu for proselytizing ideologies (such as Buddhism, Christianity, Islam, or Marxism), and for the widespread acceptance of classical languages and literatures (such as Sanskrit, Greek, Chinese, Arabic and others.) The European hegemony of the Ecumene (complete by mid-19th c) facilitated the ecumene-wide adoption of modern science and technology and of the notions of public instruction and constitutional government (howsoever etiolated these may be). It also created conditions for the ready cosmopolitanism of the cinematic art and of the communication media (whether linguistic, audial, or visual). The current spurt in globalization is thus only the latest phase of an age-long process. Owing to a combination of certain circumstances, the drive to export one's surplus goods turned, around 1980, into a drive to produce goods specifically for export in order to meet previously identified local needs. This was the Japanese policy of *dochakucha* (global localization), that consists in adapting exported goods and services to changing local needs and demands rather than depending solely on the adapting of existing local needs and demands through advertising to changing marketed goods and services. It will be seen, therefore, that contemporary globalization is not by any means an unanticipated upstart or a cunning manoeuvre and, more reassuringly, that it has built into it mutually contrary tendencies, the tendency seen in centralization, standardization and co-ordination on the one hand and the tendency seen in decentralization and encouragement of variety and local initiative on the other hand. The paradigm case is the progressive globalizing of language (adopting and developing an insight from Otto Jespersen's essay on the dialect) : the gradual replacement of local idioms each imposing a uniform pattern of cognition and communication on their users by widely intelligible literacy languages that place a rich variety of styles and vocabularies at the disposal of the speaker/listener who is then invited to choose from among them in accordance with the needs and inclinations. In Medieval north India, for

example, what were basically local or social idioms (the Braj of Mathura, the Avadhi of Ayodhya, and the pilgrims' contact language of Varanasi) got assigned to religious modes (bhakti of Kṛṣṇa, Rāma and the abstract godhead respectively). A more problematic case is that of single-control production (patent, copyright, demand preference) with widespread marketing. This may turn out to be exploitative rather than protective in practice. Imposing uniformity, Eurocentric or otherwise, in the name of globalization, will indeed be a travesty of globalization as a truly understood historical dispensation.

A proper handling of knowledge system diversity naturally presupposes that one has correctly understood the diverging systems in the first place, at least carefully studied and reconstructed them. Sheer curiosity and fascination undoubtedly motivated Europeans to undertake such study, which was often followed by comparative study, *pace* Edward Said. But then political and economic self-interest also came to motivate the study of non-European cultures, belief systems, and knowledge systems in all their particularity. Teams of Orientalists, Africanists, and Americanists of earlier times and, more recently, institutionalized 'area studies' offered useful inputs to effective governance, effective exploitation, and yes, effective proselytization.

Political and economic considerations also affect the response of various non-European civilizations to the study of knowledge systems. Thus, the doctrine of *swadeshi* in India got extended beyond the boycotting of foreign goods to the revitalization of traditional Indian knowledge systems, whether philosophical, scientific, technical, or artistic. At this point, it is worth recalling the controversy between the orientalists and the occidentalists in the early 19th century India among British policy makers as well as among some Indian intellectuals in respect of the content and the medium of public instruction. The orientalists lost the battle but not completely so. The new university-educated Indians espoused a combination of occidental and oriental learning and gloried in their double heritage. In contemporary India, the controversy has shifted from the content of education to the language medium of education. Macaulay's dream of a generation of brown sahibs is being fulfilled today to all appearances, at least in the professional, administrative, and managerial cadres. To the intellectual, *swadeshi* no longer holds any appeal. The scientist, the

technologist, or the thinker does not argue in favour of giving primacy to 'our' tradition over 'their' tradition, but rather is slowly veering round to the doctrine of swaraj rather than swadeshi. Let us not be content to play second or third fiddle to the European initiative, but rather let us feel free to draw upon both the European and the Indian heritages and to seize the initiative where we can, and let us in this way repay the intellectual debt we owe to the European civilization.

In sum, now that the problem of handling knowledge diversity is being squarely faced by mankind, it is all the more important to realize that political and economic considerations are legitimate as motivators, but not as arguments in selecting the proper mode of handling the diversity of knowledge systems. The tide of globalization offers both centralizing and decentralizing, assimilative and variationist possibilities towards the proper mode of handling diversity.

III. Ideological Considerations

The discussion so far is predicated on a rather sharply drawn distinction between belief systems and knowledge systems, that is, between religious and secular ideologies on the one hand and epistemic and technical knowledge disciplines on the other hand. Diversity is something ingrained in belief systems and so is effort at persuasion. Knowledge is inherently uncomfortable with diversity, it is content with just making the claim along with presenting evidence by way of validation. Belief systems are ultimately made up of persuasively used statements and mandates; knowledge systems are ultimately made up of factively used statements and mandates.

Before we proceed further with the argument a terminological digression is in order. In the course of their use, sentences exhibit both the functions of language, namely, the communicative function and the cognitive function. Language performs the communicative function of conveying mental contents from sender to receiver and thus helping people to gain access to social life and secure cooperation. Language, at the same time, performs the cognitive function of processing mental contents and thus helping people to gain access to the world and feel at home in the environment that the world has to offer. In performing the communicative function, sentences take the shape of either statements or mandates or language gestures. (Language gestures comprise exclamations, greetings, abuses

or the like and need not detain us any further.) statements offer either reports, that is, observations *of* reality (It is raining), or comments, that is, observations *on* reality (Rain was untimely). Statements are supposed to fit reality or else stand rejected as unsupported. In the course of communication, if statements chiefly call for their actual fulfilment in reality, they are being used factively, but if they chiefly call for the acceptance of the report or comment, they are being used persuasively. Mands are distinct from statements, imperatives, wishes, calls for attention, and questions are all mands. Mands stake either a claim *from* reality by way of a demand (Rain, rain, go to Spain !) or a claim *on* reality by way of a recommendation (If only it rains !). Reality is supposed to fit mands or else stands rejected as unsupportive. Mands too can be used factively or persuasively in the course of communication, if they chiefly call for their actual fulfilment in reality, their use remains factive; if they chiefly call for the acceptance of the demand or recommendation, their use is persuasive. To use a statement (or mand) factively is to take the stand that, since one is offering the right description (or prescription) that is being supported by reality, its suasion, that is, acceptance by the addressee can take care of itself. On the other hand, to use a statement (or mand) persuasively is to take the stand that, since one is offering the ascription (or inscription) that is rightly being accepted by the addressee, that is, effecting suasion, its validation in reality can take care of itself. Knowledge systems, whether epistemic disciplines or technical disciplines, are on the whole content to offer statements or mands in factive use. Belief systems, whether religious ideologies or secular ideologies, are on the whole intent on offering statements or mands in persuasive use.

This account of knowledge and belief systems should now be of help to us in understanding how the two are distinct but not wholly separable kinds of systems that offer an understanding of reality. True, knowledge systems are affected by ideological considerations and belief systems are affected by factivity considerations. On the whole, however, the two perform distinct functions in the life of people. Thus, when a certain group within a community establishes its hegemony over other groups in political and economic terms, it tends to consolidate its hegemony by getting the other groups to accept not only its belief system but also its knowledge system. That is what Antonio Gramsci's argument was all about. Again, when a

certain community within the ecumene establishes its hegemony over other communities in political and economic terms, it tends to consolidate its hegemony by getting the other communities to accept not only its belief system but also its knowledge system. That is what the suspicions and reservations about any Eurocentric proposal for globalization of knowledge that are so rampant in non-European civilizations are all about.

One must not lose sight of the fact that ideological considerations do not have equal weight in varying knowledge systems. To begin with, one needs to differentiate between epistemic disciplines in which statements predominate and mands subserve them and technical disciplines in which mands predominate and statements subserve them. (Technical disciplines include not only engineering and technology in the narrow sense but also agriculture, animal husbandry, medicine, education, the useful arts of management and communication, and so forth.) Diversity of technical disciplines can be countenanced when linked with diversity of natural environments and diversity of lifestyles. Farming systems in tropical and subtropical wet lands and in subtropical and temperate semi-dry and dry lands are bound to differ. Even global plant science can profit from inputs from local plant lore, but the latter cannot be expected to survive competing plant science. But then even farming systems may involve ideological considerations concerning the whole relationship between mankind and natural environment. The use of inorganic fertilizers, organic manure, and 'natural' straw-mass are successively less invasive methods. Likewise, with successively less invasive methods of disease management in medicine. Global Eurocentric medicine is primarily a management of illness deformity and injury and degeneration; the Indian medical system of Ayurveda is primarily a way of health-maintenance. The latter could certainly offer worthwhile ideological inputs to the former, over and above specific remedies and therapies. But then Ayurveda is already coming to terms with the disciplines of anatomy and physiology proposed by the global Eurocentric epistemic system.

Further, one also needs to differentiate between two kinds of epistemic disciplines, namely, natural sciences and human sciences. In natural sciences, factively used statements (with subservient mands) tend to exercise a fuller control over persuasively used statements (with

subservient mands). In human sciences, the control is not so complete; ideological considerations keep slanting factively used statements. The underlying reason is not, as is often supposed, the greater exactness and quantifiability of the former than of the latter. Exactness is not simply a matter of number-crunching so much as a matter of logical rigour. Quantifiability is not just a matter of calculability but also a matter of statistical assessment of probability. Both of these requirements enter into both groups of sciences. Again, the underlying reason is not, as is often supposed, the greater scope for determinacy in the former and contingency in the latter. Contingency comes into play in natural sciences (chaos theory, evolution theory) and determinacy in human science (regularity of sound change in linguistics and the general equilibrium theory of Walras in economics). Rather, the underlying reason for the difference between natural sciences and human sciences is twofold. Sciences vary from one another in respect of (a) the degree of context-intrusion into events and objects under observation and (b) the degree of observer intrusion into the observation of and on reality (inclusive of manipulative observation involving instrumentation and experimentation.) In both these respects, life sciences are intermediate in character between physical sciences with their minimal context-intrusion and observer-intrusion and human sciences with their maximal context-intrusion and observer intrusion. Physical sciences, of course are not entirely free from context-intrusion (terrestrial and cosmic space-time, microscale object-events and macro-scale object-events) or observer intrusion, (Heisenberg uncertainty, work in relation to kinetic and potential energy, recoverable and 'lost' information-where 'information' stands for the way matter and energy get distributed over space and time and where 'recoverable' stands for being open to observer-interpretation of space-transmitted or time-recorded messages whether natural, as with spectroscopy or carbon-dating or man-made, as with sending out/looking for outer space signals or leaving behind/looking for imprints and other geological messages.) In human sciences, the context-intrusion amounts to the decisive presence of natural and human history and geography and the observer intrusion amounts to the decisive presence of ascribed object properties and event properties and corresponding relations along with purely describable object-properties and event-properties and corresponding

relations (thus, phonemes weigh more than phonetic facts, gender and conjugal relation mores weigh more than the facts of human sex.) (The biology of humans is of course a life science and not a human science.) In life sciences, of course, the picture is intermediate in character. Given this peculiar state of affairs, ideological considerations progressively weigh more as one moves from physical sciences through life sciences to human sciences. Consequently, the proper handling of knowledge system diversity is seen to be even more of a challenge than the proper handling of belief system diversity.

In view of their close relationship with each other, knowledge systems and belief systems are liable to be confused with each other. A knowledge system may be mistaken for a belief system (consider Christian fundamentalist objections to Darwin). Alternatively, a belief system may be mistaken for a knowledge system (Christian science is a case in point.) The secularization of philosophy qualified it to be deemed a knowledge system rather than a belief system or ideology, and yet Hegelian cosmology and account of human history and its projection into future have come to be looked upon by some as secular myths within a secular ideology. Together, knowledge and belief systems constitute the worldview of human beings, and play connected though distinct roles in human life. The two shape each other and shape the worldview as a whole; the worldview in its turn shapes the knowledge and belief systems encompassed by it.

In sum, while diversity and hopes to persuade are ingrained in belief systems hopes to validate and the minimizing of diversity are ingrained in knowledge systems. Ideological considerations shape knowledge systems, technical disciplines and human sciences more so than other knowledge disciplines. Ideological considerations, therefore, influence our strategy for handling knowledge diversity, but influencing the selection does not amount to justifying its appropriateness. Ideologies and knowledge disciplines operate within a human worldview.

IV. Philosophical Considerations

It should be clear by now how a historical perspective, political-economic considerations, and ideological considerations all help us to understand how knowledge system diversity can be a serious problem

today, but these cannot help us to find out what the appropriate strategy of coping with the problem will be. To this end, we need to do three things : (a) to understand what knowledge systems are all about, (b) to distinguish between two kinds of relationships between knowledge systems, namely, diversity and complementarity, and (c) to set our possible alternate strategies to the handling of diversity from which to make an intelligent choice.

We have already seen (at the end of section III) that belief systems and knowledge systems together constitute the worldview of human beings. Human beings interact with their environment. They seek to cope with the environment, modifying it if need be, through their practices and procedures. At the same time, they seek to understand that environment through their beliefs and their knowledge. The practices and procedures adopted by human beings constitute their lifestyle. The beliefs and knowledge accepted by human beings constitute their worldview. The worldview is naturally shaped by the lifestyle and the lifestyle by the worldview. The lifestyle and the worldview together shape and are shaped by human life.

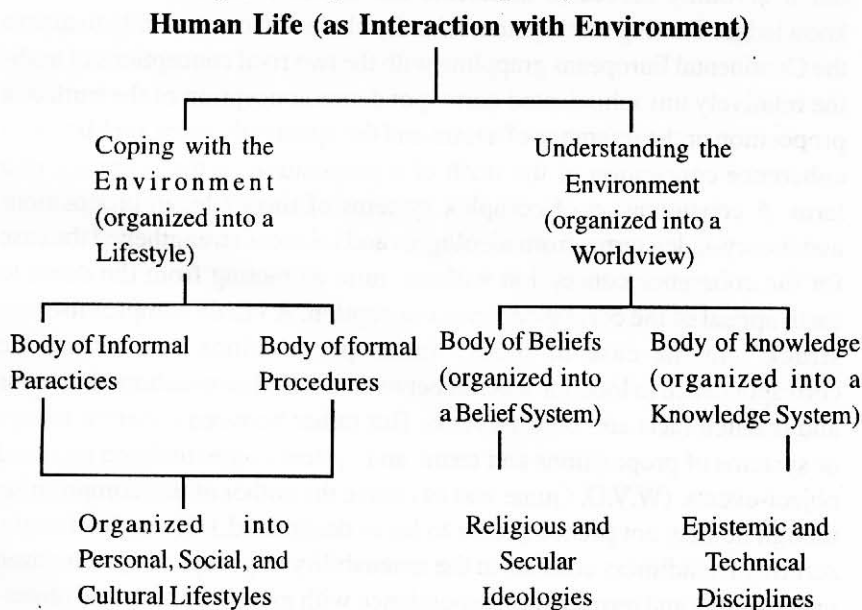


Figure 1
Knowledge Systems in Perspective

Human lifestyle is mediated by the personality of the coping human being, by the society surrounding the person, and by the culture modifying, enriching, or diminishing the coping by the person. Human worldview mediates between the objects and events (the object-events, for short) together with their properties and relations on the one hand and the understanding subject equipped with certain capacities and disposed along certain inclinations on the other hand—in other words, between the incoming given and the processor. The processing may be on line and so relatively quick or off-line and so relatively leisurely—in other words, belief yielding and knowledge-yielding respectively. (One may note in passing that language gestures, unlike statements and mands, partake in the relevant personal, social or cultural lifestyles rather than any worldview as such.)

Being the outcome of relatively leisurely processing, knowledge is more amenable to scrutiny and to systematizing than belief is. The traditional British definition of knowledge as justified belief is not wholly satisfactory, but it certainly serves to underline the scrutiny-friendly character of knowledge. Turning to its system friendly character, one has only to turn to the Continental Europeans grappling with the two rival conceptions of truth—the relatively unsophisticated correspondence conception of the truth of a proposition or the reference of a term and the apparently more sophisticated coherence conception of the truth of a proposition or the reference of a term. A consideration of complex systems of theory-laden propositions and theory-laden terms from ideologies and sciences strengthened the case for the coherence conception without quite detracting from the down to earth appeal of the correspondence conception. A viable compromise was struck : in the case of theory laden propositions and terms, the correspondence to look for was not between isolated propositions and terms and isolated facts and object-events. But rather between coherent groups or systems of propositions and terms and system contextualized facts and object-events. (W.V.O. Quine was of course the author of this compromise, though he may not probably care to be so designated.) Given this insight, scrutiny friendliness consists in the amenability of groups of systematized propositions and terms to correspondence with groups of facts and object-events, while system friendliness consists in the amenability of propositions and terms to derivation from relatively more primitive propositions and

terms. We propose to adopt this insight in our consideration of knowledge and belief systems without losing sight of the permeability of the boundaries of these systems to single propositions or single terms. Indeed, in the course of history, knowledge disciplines typically arise as a consolidation of what till then has been little better than a knowledge aggregate : thus, star lore is systematized into astronomy. Occasionally, knowledge disciplines may degenerate into aggregates or, worse still, into bricolage, to use Claude Lévi-Strauss's term. The astronomy underlying latter-day astrologies is often little better than degenerate astronomy. Folk Ayurveda would be another example. Knowledge systems have typically been losing out by relying excessively on correspondence (Ptolemy's astronomy was so smug about its correct identification of objects and predictions of events that it overlooked the increasing incoherence of its epicycles on circular geocentric orbits) or excessively on coherence (Freud's psychology or Marx's political economy were so smug about the elegant coherence of the apparatus of propositions and terms that they overlooked the increasing untenability of the predictions and tenuousness of reference of the terms.) System-friendliness and scrutiny-friendliness are *both* important. Knowledge systems need not be hermetically sealed, but then they should not be utterly porous either. Knowledge systems need not hug the observational ground all the time, but then they should not utterly take to the clouds either.

Any knowledge system has a certain anatomy : It comprises the following components (with varying degrees of explicitness, to be sure), namely, (a) a domain, (b) its treatment, and (c) the underlying approach :

(a) It has a furniture of objects and events, which are delineated either through a set of concrete images or a set of abstract concepts or some mixture of the two. In terms of language, this turns out to be a set of names or nomenclature, a set of terms or terminology, or a combination of names and terms, and of course a syntax yielding epistemically well-formed statements and mands. This component serves to set out adequately the facts that constitute the *domain* of the knowledge system. Setting out the facts adequately is setting them out exhaustively, relevantly, precisely and accurately.

(b) A furniture of first and second order insights. The first-order collational insights set out, for example, simple positive or negative

correlations between object-events of various sorts within certain domains, or more complicated functions linking inputs and outputs of the processor. The second order explicational insights offer explications either through certain manifestations of potency or energy or through certain interactions of forces.

The historically earlier of the two explicational strategies invokes the notion of participation and operates from the following principles : (i) The discrete and complex be traced to the continuous and simple. (ii) The determinate be traced to the contingent. (iii) The apparent be traced to the potent, whether immanent or transcendent.

The historically later of the two explicational strategies invokes the notion of efficacy and operates from the following principles : (i) The continuous and complex be traced to the discrete and simple. (ii) The contingent be traced to the determinate. (iii) The apparent be traced to the interactive.

In terms of language, this turns out to be a system of primitive and derived sentences. The sentences may be either statements with subservient mands or mands with subservient statements.

This component constitutes the heart of the knowledge system offering a *treatment* of the domain.

(c) An apparatus of the practices and procedures of discovery-making and claim scrutinizing. In terms of language, this turns out to be a set of mands setting out the practices and procedures of knowledge seekers and a set of statements distinguishing between the presuppositions and the demonstrables within the system. This component constitutes the *approach* underlying the treatment of the domain of the knowledge system.

A historical aside. The separation of domain, treatment, and approach partially resembles the three limbs of a discipline *śāstra*, namely, *uddeśa* (pointing out and attending to), *lakṣaṇa* (characterizing), and *parīkṣaṇa* (examining) in traditional India. The separation of collational and explicational partially resembles the differentiation between induction and abduction proposed by C.S. Peirce. The disjunction of participation and efficacy as explicational strategies broadly correspond to : (a) in classical Greece, Plato's *methéxis* (Phaedo) and Aristotle's efficient cause; (b) In traditional

India; the *satkārya-vādins* and their allies and the *pariṇāma-vādins* and their allies, (c) in Modern Europ : the distinction between the primitive mentality and the scientific mentality (looking for atom-like units, predictabilities, and interactive vectors). Mediaeval European scholars translated *methéxis* as *participatio* in Latin, the term picked by Lucien Lévy-Bruhl and others in describing the explicational strategy through manifestations of potency.

A knowledge system offers an understanding of some domain. What offers, then, an understanding of that knowledge system? In other words, how does one go about interpreting a knowledge system? Such an interpretation can be undertaken from various points of view :

(a) It can be undertaken purely as a faithfully explicit record of the three components of the knowledge system in question or alternatively as an edited version designed to show off the knowledge system to the best advantage. As Immanuel Kant once put it not in a spirit of bravado but in a spirit of humility (*Critique of Pure Reason* B 370), our job is to understand Plato better than he understood himself. This is interpretation amounting to a sympathetic elucidation rather than a mere record.

(b) The interpretation can be undertaken from an insider's point of view (the *Verständnis* as advocated by Dilthey, Weber, Schutz and others) or from some stranger's point of view (early European Orientalist interpretations of Indian and other knowledge systems are a case in point) or from the Archimedean point of view of a truly 'neutral' observer (this still remains a desideratum). 'Neutral' here means neutral as between human communities offering their differing knowledge systems.

(c) The interpretation may be undertaken so as to connect the knowledge system to its historical motivation (Hellenic geometry can be understood as a way of measuring land and traditional Indian astronomy as a way of rightly timing a ritual) or its historical intention (early economics was intended to show how 'the invisible hand' of demand and supply worked better than any governmental intervention).

(d) The interpretation may be undertaken so as to find out about the exact status of the sub-systems recognized within some knowledge system. Do these sub-systems merely offer treatments or the respective subdomains

within the over-all domain of that knowledge system? (Frequency-wise segments within electromagnetic radiation within the object-events of physics.) Alternatively, do those sub-systems offer respective modes of treatment of the same sub-domain within the over all domain of that knowledge system? (The same sub-domain of zoology such as sleep, sex or locomotion is being treated under the sub-systems of physiology, ethology, or ecology operating within zoology.) Such an interpretation may serve to reveal unresolved contradictions within a knowledge system. Such is liable to be the case, for example, when the knowledge system attempts to syncretize two sources that are separated in space and time or separated in ideological motivation. Unresolved contradictions within a knowledge system can be seen as knowledge diversity plaguing a knowledge system, as an incipient split into schools, or as unresolved tensions within the historical motivation or the historical intent underlying the knowledge system.

Having attempted an understanding of what knowledge systems are all about, let us now move on to distinguish diversity from complementarity between connected knowledge systems. Two knowledge systems may complement each other. Thus, modern chemistry complements modern physics, physical chemistry being the measure of that complementarity. Traditional Indian medicine makes references to traditional Indian astronomy or chemistry. Indian medicine, Indian chemistry, and Indian poetics all use the term *rasa* in similar ways by virtue of similar presuppositions concerning the rôle of an active principle. (This last observation I owe to the Late D. K. Bedekar's discussion of Indian poetics.) This is complementarity and not diversity. But then two knowledge systems may compete with each other. Thus, in Medieval Islamic civilization, the classical Greek medicine and the traditional Indian medicine came to be drawn upon at the same time. This is diversity (between Greece and India) in action and not complementarity. The domain is approximately the same, but the treatment or the approach or both diverge from each other. The notion of knowledge system diversity can also be applied to major shifts within the same tradition. Physics before and after Newton and later, before and after Einstein and Quantum Mechanics exemplify such diversity. The many schools of psychology, whether flourishing simultaneously or not, also exhibit true diversity. It will be seen from these examples that knowledge system

diversity may exist across civilizations or within a single civilization, across major historical periods or within a single period : the problem presented in all such cases is essentially the same. Indeed there may sometimes be greater resemblance between systems that are widely separated historically or geographically than between systems not so separated. Medieval European medicine resembles Hellenic, Yunani and Ayurvedic medicine far more than it resembles modern European medicine. All these pre-modern systems, for example, recognize the rôle of an 'active principle' in a medication or recognize the rôle of cosmic elements as 'humours' of some sort. Handling diversity between competing systems is quite different from handling division between complementary systems : schools are one thing but branches are quite another thing.

What now remains to be done is the setting out of possible alternate strategies for the handling of diversity from which to make an intelligent choice. The strategies available for handling diversity, whether of belief or of knowledge, differ from each other in respect of two crucial questions : (a) Should the system be bonded to the specific sort of object events to be understood? Should knowledge system, for example, offer a treatment or even an approach that is specific to the domain? If specific, how relativized? If non-specific, how universal? (b) Should the system be bonded to the understanding subject? Should a knowledge system, for example, offer a treatment or even an approach that is specific to the knowing subject? If specific, how relativized? If non-specific how universal? since the knowing subject is also a living human being, the specificity of the knowing subject is bonded to the personality, the society, or the culture that define the lifestyle of that human being. Further, since the human being needs to have some direct or indirect access to the knowledge domain, the problems, mentioned earlier, of context-intrusion and observer-intrusion also make themselves felt in all their complexity at this point.

The questions of domain-specificity and of human-subject- specificity are of course correlated respectively to the cognitive function of reality-fulfilment performed by a sentence, whether a statement or a mand, and to the communicative function of acceptance-by-the-addressee (or suasion, for short) performed by a sentence, whether used factively or used

persuasively.

Having first made a scrutiny of divergent knowledge systems (or belief systems, as the case may be) one may then adopt, broadly speaking, one of three alternate strategies, namely, (a) Anarchism, (b) Absolutism and (c) Relativism. Anarchism takes the position that the domain-bondage and the subject-bondage be maximal. Let the system be so selected that it is suited to the specific body of object-events to be understood and suasive to the specific body of understanding subjects. This strategy often makes a virtue of being eclectic and *ad hoc*. The more the merrier, as it were. Absolutism takes the position that the domain-bondage and the subject-bondage be minimal. Let the system be so selected that it is valid for the whole body of object events and deserves to be suasive to the whole body of understanding subjects. This strategy often makes a virtue of being grandly comprehensive in coverage and dogmatically orthodox, saying in effect that the selected knowledge-claim is alone valid and deserving to be suasive and no other competing knowledge-claim. This strategy should and often does cheerfully accept the responsibility of showing how the rejected knowledge-claims are in error and why they are undeservedly suasive to the understanding subjects in spite of making erroneous knowledge-claims. Relativism takes the position that the domain-bondage be reduced to the extent feasible or the subject-bondage be reduced to the extent feasible or both. The strategy often makes a virtue of being domain-wise flexible and subject-wise liberal and thus equally shunning anarchism and absolutism. Relativism certainly has a level-headed sanity about it that is missing in the other two, but then Anarchism and Absolutism have a certain heady daringness about them that is missing in the tepid middle position of Relativism.

It will be seen that anarchism is the most flexible and liberal strategy and encourages exploration of alternative points of view, that absolutism is the least flexible and liberal strategy and encourages resolution of all differences within some all-inclusive framework and that relativism occupies a middle position and encourages level-headed moderation.

Let us recall (the opening of section III) that belief systems are on the whole hoping to offer persuasively used statements and mands, but that knowledge systems are on the whole content to offer factively used

statements and mands. Belief systems can afford to be more accomodative, more flexible and liberal, but are often not so. (Religious or ideological dogmatism is proverbial.) Knowledge systems cannot countenance anarchism without abdicating their function of making a reliable and successful understanding of the world available to human beings engaged in the business of life; they cannot afford to be accomodative, but are often so. (The way physicists lived comfortably for a period with wave and particle theories of llight and other electromagnetic radiation is legendary. The qualification 'for a period' must not of course be lost sight of.)

Having tackled the preliminary philosophical questions of the character of knowledge systems of their diversity and complementarity and of the available alternate strategies for handling diversity of knowledge (and incidentally, also belief), we are now ready to address ourselves to the main question : how to select the strategy appropriate to the kind of knowledge systems in view? Some broad principles could be set out, for each principle, other things shall of course remain equal.

Let us recall (from section III) that epistemic disciplines give priority to statements over mands and technical disciplines to mands over statements. Technical disciplines involve the living human being not just as the knowing subject but also as the acting subject aiming at the fulfilment of the mand. In consequence, *technical disciplines need to be more accommodative, more concerned with flexibility in domain-bondage and liberality in subject-bondage than epistemic disciplines need to be.*

Let us recall from section (III) that physical sciences give priority to factively used statements over persuasively used statements to a higher degree than life sciences and human sciences and that life sciences do so to a higher degree than human sciences. This is by reason of progressively higher context-intrusion and subject intrusion. In consequence, *there is progressively higher scope for domainwise flexibility and subjectwise liberality as one moves from physical sciences through life sciences to human sciences.* This principle of course applies to epistemic disciplines (such as physics, biology, or anthropology) as well as technical disciplines (such as engineering, medicine, or education).

Does this mean that Eurocentrism in human epistemic disciplines

such as psychology, sociology, or economics, for example, is excusable? If so, to what extent? Eurocentrism is certainly excusable to the extent that the accessibility of the human domain was mostly limited to European persons, societies, or economies especially during the formative phase in the history of these disciplines. Have the knowledge-claims based on such limited exposure to the domain ever been tested since then beyond European data? Even more damaging is the criticism, if historically borne out, brought against Freud's psychology that it was entirely based on Viennese middle-class Jew patients? It is more damaging because it is not just a question of imperfect access to the human domain but also a question of the treatment of the domain being permeated by observer-intrusion in terms of a circumscribed lifestyle. Globalizing should be harnessed not only to overcoming limited access to the human domain but also to overcoming parochialism of treatment. Will an Indian sociologist have free access to European society in the study of politically 'sensitive' sub-domains like discrimination based on race even as a European sociologist has free access to Indian society even in the study of politically 'sensitive' sub-domains like discrimination based on ritual status? A realistic answer is probably negative. Will a European psychologist ever draw upon the ideas stored in traditional Indian psychology? A realistic answer is, again, probably negative. Eurocentrism in global human science is too rampant for comfort. Should we then prefix the qualifier 'so called' to the phrase 'global human science'? If political correctness motivates European knowledge-seekers to be more intellectually hospitable to non-European knowledge systems and to rid themselves of any remnants of nativistic fervour, and if nativistic fervour motivates non-European knowledge-seekers to resist firmly a wholly Eurocentric globalization of knowledge systems, that is all to the good. But in working out appropriate strategies for the handling of knowledge system diversity, let philosophical considerations be our guide rather than political correctness, however well-intentioned, and nativistic fervour, however constructive.

We have not brought into this complex picture formal knowledge systems such as the epistemic disciplines of logic and mathematics and the technical disciplines of rhetoric and statistics. Formal epistemic disciplines are, paradoxically enough, anarchist and absolutist at the same time. Being

free to choose definitions and axioms, they can afford to be maximally flexible-liberal, being bound to follow rigorously the consequences of their choice, they have to be minimally flexible-liberal. Kindly permit me to share with you my suspicion that it is this paradox that motivates and possibly underlies the controversy as to the covenantal or real character of mathematical objects and properties (say, the controversy between David Hilbert and Bertrand Russell) or the controversy about the impossibility or possibility of viable conceptual translation across knowledge systems (say, the controversy between W.V.O. Quine and Donald Davidson). Formal technical disciplines can be somewhat more accommodative of both flexibility and liberality in a relativist fashion within the limits set by their formal character.

We have also not brought into this complex picture philosophical disciplines such as the epistemic disciplines of the philosophy of reality and understanding or the philosophy of life and coping-with-life and the technical disciplines of the philosophy of lifestyle-criticism (such as the philosophy of moral action, political action, or artistic creation) and the philosophy of belief systems (such as the philosophy of religion, magic or secular ideologies). To begin with, the secularization of philosophy in Classical Greece, Classical India and Renaissance Europe has ensured that there need be no confusion about philosophical disciplines being knowledge systems rather than belief systems. F. H. Bradley's *bon mot* that philosophy is the finding of reasons for what one instinctively believes was probably meant as a jibe but turns out really to be a compliment. (In Britain, the term 'technical philosophy' is sometimes used for emphasizing that philosophy is being considered as a knowledge system and not as a belief system. This British use should not of course be confused with our proposal to separate epistemic and technical disciplines in philosophy.) Unfortunately, the comparative study of philosophies across the boundaries of civilizations is still in its infancy and is plagued by the problem of translating abstract concepts and concrete images, and by the European failure to *verstehen* non-European philosophies. We have just seen the paradox about formal knowledge systems and the underlying reason, philosophy probably shares the paradox but the underlying reason is probably not the same for philosophy being anarchist and absolutist at the same time.

In sum, human beings interact with their environment. Their worldview, made up of beliefs and knowledge, constitutes their attempt to understand that environment. Their lifestyle, made up of practices and procedures, constitutes their attempt to cope with that environment, modifying it if need be. Human lifestyle is mediated by the personality, the society and the culture associated with the coping. A human worldview mediates between the objects and events being understood (in terms of the properties and relations thereof) and the understanding subject (given certain capacities and dispositions of the subject).

Before one could suggest a proper mode for handling knowledge system diversity, one needs to understand how knowledge systems operate and how they function within human life. Two knowledge systems may be no more than complementary branches within some larger domain or they may offer treatments of broadly identical domains thus exhibiting true diversity. Knowledge-seekers, like belief-holders, adopt alternative strategies differing in object-wise flexibility and subject-wise liberality. Philosophical considerations should help us in selecting a strategy appropriate to the kind of system. Other considerations, however well intentioned, cannot really help us; at best they can only motivate us.

Our immediate quest was to find out why we need to handle the diversity of knowledge systems with particular care and how one could go about doing so in the proper way and so avoid some of the improper ways being proposed and canvassed lately. We have then come to the end of the immediate quest.

But this is much more than a simple intellectual exercise. For what is at issue here is the responsibility of the contemporary generation to work out the appropriate strategies for handling the diversity of epistemic and technical knowledge systems of the ecumene of today. In what follows, therefore, we propose to do the following. We shall begin by taking up a concrete case study, sketching and comparing two available knowledge systems of comparable domains, comparable sophistication, and yet with quite distinct presuppositions. By watching such strategies for handling diversity in action, we could reassure ourselves about the feasibility of such projects. Finally, we shall move on to consider the prospects of a truly humane globalization of human knowledge and to the ways we could go about it.

Part II

THE PHILOSOPHERS' RESPONSIBILITY

V. A Sase Study

What we propose to do here is to sketch two divergent epistemic knowledge systems with comparable domains and with treatments of comparable sophistication which are widely separated in period and location. Then we shall follow this up with a broad comparative assessment. The systems selected for this modest exercise are traditional Indian psychology and contemporary European psychology. The sketches, especially the first one, are in the nature of an elucidative record in the spirit of Kant's comment on understanding Plato (cited in section IV), and are something of a consensual statement that is largely confined to the furniture of objects and events. In the account of traditional Indian psychology, the Sanskrit terms are given at the first occurrence; their literal gloss in English is also given parenthetically where this was deemed useful.

First, a sketch of the traditional Indian psychology (there is no traditional name for the discipline any more than there was one for the pre-modern European psychology).

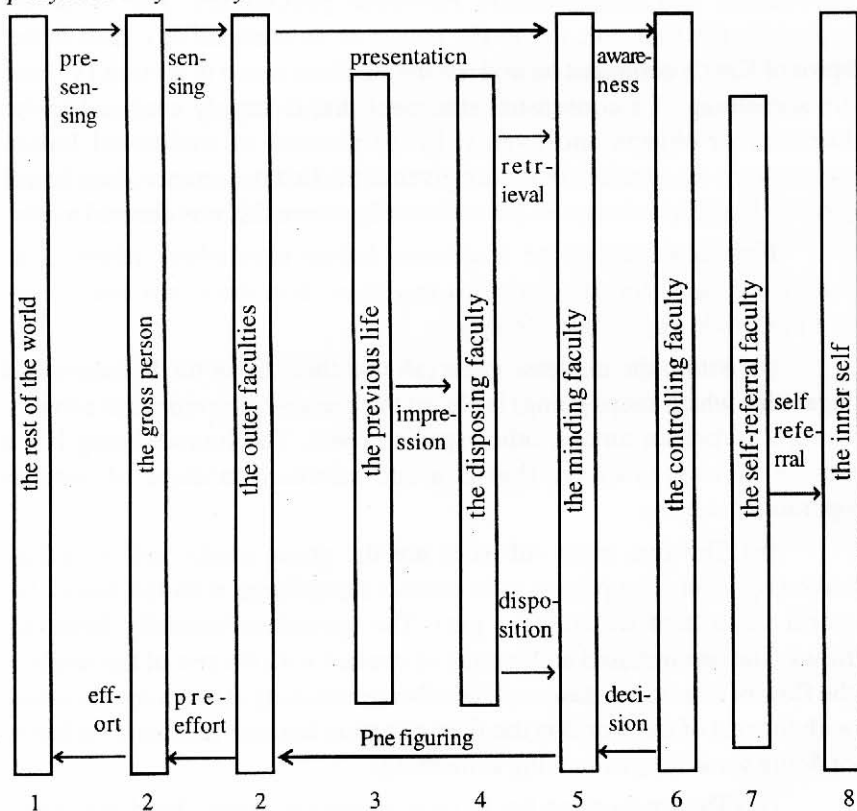
(i) Within the universe *viśva* (all that there is) or the human-world *jagat* (that which keeps going) is placed the human-being *manuṣya* a living-being *Jīva/prāṇin* among other species *yonis*. The human being has a person *deha/śarīra/kāyā* that is a site *adhikaraṇa/ālaya* of various operations *kāryas*.

(ii) The two main sub-sites are the gross *sthūla* and the subtle *sūkṣma* person. The person is in contact *sarṇīkarṣa* with the rest of the world *vastu* (that which stays put). The operations basically form two flows : the one initiated at the point of contact with the rest of the world is the flow of cognition *jñāna* and the other terminating at the point of contact with the rest of the world is the flow of action *karman* (action is inclusive of doing something or making something).

(iii) The gross person has its own constituents *aṅgas* (head, shoulders, etc.), ingredients *dhātus* (bone, flesh, etc.), and three operation systems, namely, the fluid system *kapha* (phlegm), the heat system *pitta* (bile/choler), and the message system *vāta* (wind).

(iv) The subtle person comprises its own faculties *karaṇas* (instruments), outer and inner, with their respective operations.

(v) The outer-faculties *bāhya-karaṇas/indriyas* (Indra's restive horses) comprise five cognition outer-faculties (of sight and such) and five action outer-faculties (of handling and such). The cognition outer-faculties receive sensing *saṁvedana* through the gross person which in turn receives pre-sensing *vedana* from the rest-of the world and the action outer-faculties transmit pre-effort *êśṭā* to the gross person which in turn transmits effort *prayatna / vyavasāya* to the rest of the world.



The notes 1 to 8 are incorporated in the body of the text.

Figure 2

The Furniture of Objects and Events in the domain of traditional Indian Psychology

(vi) The inner-faculties *antaḥ-karāṇas* comprise the minding-faculty *manas*, the disposing-faculty *citta*, the controlling-faculty *buddhi*, and the self-referral faculty *asmitā* (am-ness)/*ahaṁkāra* (I-making). The inner-faculties have a cognition side and an action side each.

(vii) The minding-faculty, on the cognition side, receives presentation *pratyakṣa* (in-front-of eye) from the cognition outer-faculty concerned and transmits awareness *bodha* to the controlling-faculty. On the action side, it receives decision *niścaya* from the controlling-faculty and transmits prefiguring *saṁkalpa* to the action outer-faculty concerned. Thus, the on-line processing initiated at the contact with the rest-of-the-world comprises experience *anubhava*, that is, pre-sensing, and behaviour *carita/ācāra/vartana*, that is, decision, prefiguring, pre-effort, and effort, on the action side, so terminating at the contact with the rest-of-the-world.

(viii) The disposing-faculty and the self-referral-faculty are engaged in some off-line processing. The disposing-faculty receives and stores impressions *saṁskāras* from the life span-up to that point of time *pūrva-āyusya/āyus* and transmits memory retrievals *smṛtis* on the cognition side and dispositions *citta-vṛttis* on the action side to the minding-faculty. The self-referral-faculty monitors all processing and subjects it to self referral *abhimāna* for the benefit of the inner-self *antar-ātman*.

(ix) The inner-self is that which all the subtle person faculties are faculties of and which the gross person is the embodiment of. It is the seat of consciousness *saṁvitti/saṁjñā*.

A flow-chart will serve to render a quick overview of the main objects and events of the domain of human psychology. (See Figure 2.) The notes that follow add some refinements and details. Under refinements, for example, the main departures from the consensual view by Yoga (as proposed by Patañjali), Lokāyata, Buddhist, Jaina schools are set out. The consensual view is mainly the achievement of Sāṁkya school (as available in the *kārikās*. The numbers refer to Figure 2.)

1) The rest of the world presents objects in contact *arthas*, whether objects-at-cognitive-contact *viśayas* or objects at action contact *uddiṣṭas/uddeśyas*.

2) The gross-person shares certain states with nonhuman species, namely, hunger and thirst, lust and fear, swoon and sleep. The gross person presents five cognition organs *śrotras*, namely, ears, eyes, skin, nose and tongue transmitting their respective sensings, namely, hearing, sight, touch, smell and taste; and five action organs *gātras*, namely, hands, feet, speech apparatus, anus, and procreative-urinary organ transmitting their respective efforts, namely, handling, footing, speaking, defecation and coition/urination. The cognition and action organs correspond to the cognition outer faculties with their respective sensings and to the action outer-faculties with their respective pre-efforts.

3) Lokāyata does not accept belief in rebirth. For the rest of the schools, which accept belief in rebirth, the previous lifespan is inclusive of the previous embodiments. Such inclusion serves to explain otherwise inexplicable retrievals and dispositions.

4) Most Upanishadic thought as also Yoga do not separate minding and disposing faculties and name the minding and disposing faculty *manas* and *citta* respectively.

5) Experience is typically figure defined *sa-vikalpa*, but can be figureless *nir-vikalpa* also, as with pre-sensing, neonates, non-human species and certain kinds of trance. Awareness can be awareness of thoughts *vicāraṣ* or emotions *vikāras/bhāvas*. Thoughts comprise present actions, minding generated presentations *mānasa-pratyakṣas*, figurings out *vikalpas*, and configurations *kalpanās*. Emotions can feed into thoughts or prefigurings, emotions whether stable or passing, are disposition-guided and directed to objects-in-contact. The cardinal emotions comprise pleasure-pain *sukha-duḥkha* and attraction repulsion *rāga-dveṣa*. The over all disposition *śīla* is shaped by impressions and emotions.

6) The decision transmitted by the controlling faculty consists in the sorting out *viveka* between right-wrong *sāra-asāra* (Whether on the cognition side or on the action side) so that on the cognitive side there is discovery *pratyaya* (reaching) and on the action side there is intention *uddeśya* (reaching-out). In so far as some of the decisions of the controlling faculty involve some sort of a leap, they are attributed to a special aspect of the controlling faculty : high-cognition *prajñā* underlies such discoveries

and high-prefiguring *pratibhā* (in-front-shining) underlies such intentions (whether of doing something or making something).

7) Most Upanishadic thought as also Yoga, and Buddhist thought do not separate controlling and self-referral faculties and name the controlling and self-referral faculty *vijñāna*. The self-referral transmitted consists in the sorting out *viveka* between pertaining to self *sva* and pertaining to other *para*.

8) Lokāyata does not accept the separation of any inner self from the person and speaks of person-as self *dehātman*. Buddhist and Jaina thought does not recognize any gross body outlasting inner self but speaks only of an individual place time holder *pudgala/ālaya/sarīrāna* that is susceptible to rebirth. Sāṃkhya and others accept the inner self that is susceptible to rebirth. The inner-self (or its counterpart in another school Kāraṇa śarīra) is susceptible to certain distinct aspects : knower *jñātṛ* and agent *karṭṛ* aspects in respect of interaction with the rest of the world, being-awake *jāgati*, dreaming *svapna*, dreamless sleep *suṣupti*, and possibly, trance *samādhi* (bringing-together) states *avasthā* in respect of consciousness and detached *taṭastha/alīpta* and involved *līpta* aspects in respect of self referral. (There may be differences in view over the possibility of combinations. Thus, Bhagavadgītā in expounding its belief-system accepts detached action as a possibility but Sāṃkhya does not.) Buddhists accept consciousness, but do not accept faculties of inner self as there is no inner-self to speak of, but they accept bundles of operations *skandhas*. Some Upanishadic thought accepts inner self along with its layered sheaths *kośas*. The broad correspondences between the Upanishadic, the Buddhist and the mainstream thought can be set out as follows :

	The sheaths consisting-in	The bundles-of operations	The faculties
The gross person	<i>anna</i>	<i>rūpa</i>	<i>sthūla-deha</i>
The subtle person		<i>nāma</i>	<i>sukṣma-deha</i>
→ Outer faculties	<i>prāṇa</i>	<i>vedanā</i>	<i>bāhya-karaṇa</i>
→ Minding	<i>manas</i>	<i>samjñā</i>	<i>manas</i>

→ Disposing	<i>manas</i>	<i>saṁskāra</i>	<i>citta</i>
→ Controlling	<i>vijñāna</i>	<i>vijñāna</i>	<i>buddhi</i>
→ Self-referral	<i>vijñāna</i>	<i>vijñāna</i>	<i>asmitā</i>
Inner self	<i>ānanda</i>	<i>pudgala</i>	<i>antar-ātman</i>

Note that under the faculties, Yoga conflates minding and disposing faculties into *citta* and controlling and self-referral faculties into *vijñāna*.

It is to be noted that in Notes 3, 4, 7 and especially 8 we have indulged in an exercise in what is admittedly imperfect cognitive translation across the Indian schools to do some justice to the fact that traditional Indian Psychology is not a monolithic product but a productive process of understanding embedded in more than one worldview and evolving over a long period (circa 8th century BC to 8th century CE).

A word of elucidation will be useful at this point in respect of the impact of the two logically distinct but historically closely associated beliefs, namely, the belief in rebirth *punar-janma* and the belief in fruit-of-action *karma-phala*. These appeared on the Indian scene after the vedic period and before the period of intellectual ferment that produced Upanishadic, Sāṁkhya, Jaina, Buddhist and Lokāyata thought (around 8th-4th c BC). It is plausible to see the beliefs not as some strange and peculiar elements in a certain ideology but as extrapolations from certain reasonable-sounding observations on the following lines. (I owe the basic insight to Linda Hess, writing on Kabīr.)

On the one hand, one's thoughts and emotions (recall note 5 to figure2) condition one's actions and so one's actions are a comment on the validity of one's thoughts and actions. But then, on the other hand, one's actions need not remain dormant but go on to condition one's subsequent thoughts and actions. This creates a causal feedback loop, as it were. One gets to be what one has done just as one gets to do what one has come to be. Such is the unbroken round-of-life *saṁsāra*, as one may observe.

Given the round of life, some may come to believe in the round of rebirth. Because one was born, one will die. By analogy, because one has died, one will be born again unless something interrupts the round of life. (Compare the notion of rites of passage that make one born-again and the

notion of life after death which are available in Indian and certain other belief systems.)

Again, given the round of life, some may come to believe in fruit of action. One's previous Life's actions will have conditioned one's present life and one's present life will condition one's future life's actions. So much so, that there is hardly any circumstance in life that is not traceable to some previous action and hardly any thought or emotion that is liable to condition one's life's actions that is not traceable to one's past actions. (Compare the notion of action leading to reward/punishment and these in turn affecting future action and the notion of one's mode of work and social interaction leading to one's mode of thought and emotion, which are available in certain non-Indian belief systems.)

The point of the foregoing intervention is to show how traditional Indian psychology does not presuppose either the belief in rebirth or the belief in fruit of action, but how it certainly does lead to the notion of the round of life. The intervention also serves to show how knowledge systems and belief systems are closely related yet quite distinct facts of human life.

Now, a sketch of contemporary European psychology (the name 'psychology' dates from mid-17th century CE and the discipline from mid-19th century CE). (Earlier, there was no traditionally recognized discipline by that name.) Such an attempt to present a consensual view is worthwhile even though this is not easy in view of the presence of schisms and heresies. To remind the reader once more, the sketch is an elucidative record and the consensual statement is largely confined to the furniture of objects and events.

Human beings not only have a body like other animals but also a mind that somehow goes beyond animal behaviour and yet somehow remains tethered to the animal body. The human mind has certain functional modes and its processes are subject to certain overall distinctions. The functional modes may be taken up first.

i) Cognition : This is a grouping of certain sub-functions : (a) sensation and perception; (b) learning, that is, acquisition (through the undergoing of experience) of novel content by way of modifying and extending existing contents whether they are inherited or acquired, (c) storage and retrieval

of contents (that is, memory), (d) problem-solving through intelligence rather than retrieval, (e) acquisition of contents in a manner that bypasses all the foregoing sub-functions (that is, intuition). The contents of cognition comprise facts or insights or skills and attitudes. The contents may be represented in concrete image form or in abstract concept form. Concrete image forms are relatable to the forms of external objects and events together with the landscapes and scenarios embedding them. Abstract concept forms are relatable to the properties and relations of objects and events together with the field of attention in which the objects and events are embedded.

(ii) Imagination : This is the proliferation of concrete images by way of recovery or innovation and the effecting of global or sequential patterning of representations (whether concrete or abstract). This proceeds consciously (and not out of awareness) but not always through free choice. Dreamlife and fantasy-life are also processes in this functional mode.

(iii) Emotion : This is a way of effecting a transition from awareness to behaviour by maintaining tension consciously but not always through free choice.

(iv) Action : This is an undertaking of behaviour (a) by virtue of a felt deprivation of want by way of a motivating drive that is subject to reinforcement or attenuation such that (b) the behaviour so undertaken comprises a pattern of activity towards a goal, and (c) the outcome may be either failure and frustration or success and subsidence of want or renewal of behaviour with or without modification of the pattern of activity.

(v) Integration : This consists in : (a) the continuing development of the human being, (b) into an integrated and individuated person, (c) through self-referral and self-imaging.

Any given mental process is subject to certain overall distinctions. It may be conscious or unconscious, freely chosen or compulsive, sequential or global, and may proceed from sources that are acquired or inherited, normal or abnormal, individual or social.

Finally, a comparative assessment of these two knowledge systems. The comparison hopes to be broad without being vague and sympathetic to both without being indulgent. In presenting the sketch of traditional Indian psychology we have resisted the temptation to present it through conceptual

translation, even risking the use of clumsy coinages like figurings-out or controlling-faculty. In consequence, some of the English renderings of the Indian concepts and images depart from Indological practices. Even at this stage, we shall refrain from undertaking any ambitious conceptual translation of Indian into European psychology or of European into Indian psychology in view of the severe limitations of this whole exercise. Even so, certain broad observations may usefully be made.

(i) An eventual conceptual translation will be worthwhile in that the comparison will not be a hopelessly unequal one between a naïve and a sophisticated knowledge system. Both systems are fairly complex and sophisticated. It is perhaps worth noting that traditional Indian psychology, not being a distinct discipline, was simply incorporated in traditional Indian cosmology and that European psychology continued to be tied to the apron-strings of philosophy for a generation or so even after it acquired the status of a discipline in mid-19th century CE.

(ii) While both knowledge traditions have been subjected to schisms and heresies, the Indian system appears to be better integrated in spite of them than the contemporary European system. It may be that the better integrated Indian discipline has a poorer data base and a less rigorous discovery procedure, while the more poorly integrated European discipline happens to have been caught in the throes of multiple innovations and on the threshold of a fresh integrative effort at the present historical juncture—in short, in a phase of ferment.

(iii) The Indian system does attribute learning *avagamana* to the minding faculty, while it attributes creativity to the minding faculty (as *kalpana*) as also to the controlling faculty (as *prajñā* or *pratibhā*) (see notes 5, 6 to Fig. 2). However, there is on the whole an underplaying of the processes of learning and creativity. Such is the case probably because of a highly tradition bound lifestyle. See also note 3 to Figure 2, which is also very relevant here. Note incidentally that, while human creativity was accepted in India in 5th-6th centuries CE (see note 6 to Figure 2), the European civilization dared not accept human creativity till late 18th early 19th century CE probably because this was felt to be blasphemous in the Christian ideology or belief system.

(iv) While the European system makes a great play of the capacity to learn as well as of the over-all distinctions conscious-unconscious, free-compulsive, inherited-acquired, and the rest, the Indian system makes some play of the over-all distinction attention-inattention and involvement detachment / indifference. Actually, the distinction inherited-acquired gets obscured in the Indian system, since inheriting or acquiring may be confined to the present life-span upto the moment or may go back to one's previous life-span (on life spans). Any claim, therefore, to novelty in learning or creativity is somewhat suspect. Consider how the European teaching system emphasizes the distinction between learning on one's own and mere memory retrieval while the Indian teaching system failed to do so with disastrous effect. Obviously, the Indians made no use of their wise distinction between ready memory *upasthiti*, routine explication *vyutpatti*, and innovative explication *upapatti*.

(v) The European system has had to outgrow the classical Greek idea of somehow putting a body and a *psychē* together to make up a man (the idea received a new lease of life from Descartes), the Christian idea of somehow joining together an animal body (the 'flesh' image) and an angelic soul (the 'spirit/breath' image), and the unesay Mediaeval European compromise of the body-mind-soul triad. Modern psychology consigned the soul (sometimes even mind) to the limbo of belief. The Indian system, in contrast, had a headstart by an early recognition of a composite entity and a deft use of the gross subtle distinction between the readily accessible (gross) and the poorly accessible (subtle) aspects of the person. (Traditional Indian medicine not only integrated hygiene and pathology but also spoke of hygiene, pathology, aetiology, and therapy in body-and-mind terms.)

(vi) The European system has had to struggle with Plato's reason-passion dichotomy and the Roman thought-action dichotomy and to make do with a triad of cognition, emotion and conation. The triad was later abandoned to make room for the Enlightenment's reason-imagination dichotomy and the late 19th-early 20th century idea that the integration of the human person is not an inheritance to be taken for granted but an achievement that is often painful and sometimes in danger of getting damaged if not lost. The Indian system, in contrast, consistently operated

with a simple dyad, cognition and action, based on the simple biological fact of the two interfaces of covert responses and overt responses between the living being and the rest of the world. The flow-chart representation (of Fig.2) reminiscent of information-processing terminology comes naturally in attempting to bring out the system's simple unidimensional-but-bidirectional model. The notion of the feedback loop comes naturally to this way of thinking as one may see in the Indian notion of the round of life (and the belief in fruit-of-action) as well as the Indians' recognizing that one may become the recipient of one's own outgoing message. The feedback loop may thus be either causal or informational. Emotion and Imagination are neatly tucked away along with Memory as functions of the minding faculty and the disposing faculty, as also Integration as a function of the self-referral faculty. Note further that the disposing and self-referral faculties operate in off-line processing. Some Indian thinkers, for example Buddhists with their bundles-of-operation, for which the individual-place-time-holder is no more than a site (in place of the mainstream idea of faculties serving an inner self), have shown a persistent scepticism about the reality of integration in the human person; Lokāyata accepts person-as-self but no distinct inner-self as such.

(vii) The Europeans have shown a certain preoccupation with the distinction between inborn and acquired elements and, among acquired elements, between individually achieved and socially absorbed elements. The Indians appear to be casual about such distinctions, probably because the idea of rebirth helps in accounting for elements for which the Europeans invoke genetic inheritance and occasionally even the dubious Lamarckian idea of 'racial memory' and because the Indian lifestyle appears to put a premium on socially-passed-on *parāmpaāgata* elements.

In sum, it was found worthwhile to sketch and then compare the traditional Indian and the contemporary European psychologies by way of a case study, which illustrated ways of matching domains and the concrete image forms and abstract concept forms featured in the respective domains. The exercise was seen to be feasible though by no means easy. The discussion of the notion of the round-of-life and its extrapolations will have shown how delicate and complicated the link between knowledge and belief systems could be. As we have already seen, knowledge systems are not

the contexts of its applications. Not only in the context of formal logic but also in the context of informal logic the concept of rationality does not preserve the same criteriological meaning because the sense in which we use the concept of rationality in the context of natural sciences, we do not use it in the same sense in the context of social sciences like history, sociology and political sciences etc. Take, for example, the formal canon of consistency. The formal canon of consistency no doubt is considered as one of the canons of rationality. But the sense in which we use it in the context of formal sciences like mathematics and logic, we do not use it in the same sense in the context of natural and social sciences. In the context of formal sciences when we use it, we use it in a rigorous sense. But in the context of informal sciences when we use it, we do not use it in the same degree of rigorousness. We use it relatively in loose sense. Those thinkers who have tried to use the axiomatic deductive model of rationality, which is considered to be the paradigm of rationality, to evaluate human thoughts and beliefs of the empirical sciences, to my mind, have gone wrong because empirical phenomena which these sciences study are of such kind that they cannot be presented rigorously in terms of axiomatic deductive model of rationality on par with formal sciences. They can best be presented in the inductive model of rationality. The reason for it is that human thinking concerning the matter of empirical reality is of such kind that it is always open to susceptibility and revision. We cannot claim that we have arrived at the final truth concerning the matter of empirical realities by assuming certain finite number of axioms or postulates as we do claim in the case of formal sciences. If we apply the axiomatic deductive model of rationality in the field of empirical sciences, we will have to first assume that the truth of explanatory premises, that is, laws and theories are the truths of reality which we cannot assume. Karl Popper was right when he said that the system of scientific knowledge concerning the matter of reality is always open ended. It is not a closed system.

Even within the contexts of formal and informal sciences, we find that the concept of rationality does not preserve the same meaning in criteriological sense of the term. Its meaning changes from one context to another. For example, the sense in which we use the concept of rationality in the context of natural sciences like physics and chemistry, we do not use

accomplishment of a true globalization of knowledge in the face of sharp actual diversity? True globalization will promote the creation of a human pool not only of facts and skills but also of available alternatives by way of insights and attitudes. The pioneering work, for example, of Joseph Needham's *Science and Civilization in China* (1954ff) at one end to John Hoffman's *Encyclopaedia Mundarica* (1930ff) at the other end of the spectrum needs to be emulated and reciprocated by non-Europeans casting a critical eye on European civilization. (India certainly needs a centre for European studies.) Then, in the sweat of their brow, knowledge-seekers (inclusive of seekers of knowledge of belief-holders) will have to work out bidirectional translations and comparative assessments between knowledge systems available in the ecumene. Eventually, some inspired genius will, rising above parochialism, work on truly anthropocentric (if not cosmocentric) lines in each knowledge and belief domain. The hardest work will have to be invested in the human epistemic and technical disciplines. Assuming, against all indications to the contrary, that all goes well, the project should keep mankind busy for the good part of a century. It is a job that demands patience without exasperation, sympathy without indulgence, clear-sightedness without mechanical rigour, and confidence without a loss of nerve. But then there is probably every possibility that, in the process, the knowledge industry will cease to be the over-centralized, capital-intensive heavy industry that it has become in this late phase of the European civilization and will once again come to wear the more humane and less intimidating face of a light industry with generous room for amateurs. The Internet and its future successors will certainly come in handy in the whole enterprise. One only hopes that one result of such a change would be that knowledge Industry will generally show greater initiative and inner motivation rather than wait for a cue from the powerful offering capital investment in direction of their choice. (I learned to take the idea of knowledge industry to be a useful idea and not a sarcastic joke from the economic writings of Kenneth Boulding.)

The diversity of human knowledge systems needs to be seen in the context of the diversity of human belief systems and the diversity of human lifestyles as seen in terms of personalities, societies and cultures. Mankind is slowly, with painful sloth indeed, coming to friendly terms with diversity

of belief, personality, culture and even technical knowledge (witness the parliament of religions, multiculturalist programmes, the acceptance of non-mainstream healing systems). So far as the globalization of diverse lifestyles is concerned, the Indian tradition of friendly coexistence of lifestyles without any forced unification or assimilation already offers a good model for ecumene-wide cultural globalization that is more humane than either the Roman model or the Islamic model. (One wonders about the Chinese model and the treatment through the ages, of non-mainstream lifestyles in China and its empire.)

Diversity is no mere spice of life, it is nothing less than a value in life. Living organisms variously work out their survival in interaction with the specific environment they happen to cope with over a time span. Different species within a given habitat work out different equations that mediate this process. Different varieties within the species make different contributions to the overall gene pool. This is what biodiversity is all about.

Within the human species, different human cohabiting groups variously work out their different way-of-life equations in coping with the natural environment and of course, with the human environment. ('Cohabiting' is of course to be taken in both the senses of that term.) Each way of life, that is each paired lifestyle and worldview, makes its own precious contribution available to the rest of mankind. This is what ethnodiversity is all about. (The concept of *ethnos* or a human cohabiting group is not to be confused with the concept of race or genetic variety of the human species.)

Having a worldview to subserve the lifestyle is of course a peculiarity of the human species associated with the 'new brain'. (Having made that crack about philosophy, F. H. Bradley went on to say with some reason that to find those reasons for what we believe upon instinct is no less an instinct.) Having that worldview split into a belief system and a knowledge system was probably made possible by the hemispheric specialization in the new brain. But of course the mere possibility did not become the actual split till the great axiological revolution (6th cBC-6th c CE) in human history took place and led to the emergence of a prosaic-didactic-ethical-technical-anthropocentric worldview by the side of a poetic-mythic-ritual-magical-

ethnocentric worldview. (The Indian intellectual ferment mentioned earlier in connection with the round-of-life and its two extrapolations was probably a part of this revolution. The first thinker to spot this event in human history was probably Hegel. As for systematic philosophy, Alfred Kroeber, in his *Roster of civilizations and culture*, credits Classical India and Greece with being the fountainheads of systematic philosophy and systematic linguistics in human history-another achievement of the same revolution.)

The precipitation of the age-long process of globalization was brought on by European hegemony conjoined with the industrial and communicative revolution (19th-20th c). As we have seen earlier, globalization has both a centralizing-assimilative tendency and a decentralizing-variationist tendency.

Our immediate concern is of course the achievement of the humane globalization of human knowledge systems in the coming times. We said a little earlier that the project should keep us busy for the good part of a century if all goes well. Will it go well? One anticipates difficulties, both intrinsic and extrinsic to the project. Let us consider the intrinsic difficulties first.

The separation of knowledge from belief leads to the paradox (section IV), namely, that belief-holders can afford to be more accomodative, but are often not so, while knowledge-seekers cannot afford to be accomodative, but are often so. The precipitation of globalization has made the consequences of the paradox more acute. Knowledge systems cannot let flexibility and liberality be carred to anarchistic lengths without abdicating their function of making a reliable and successful understanding of the world available to human beings engaged, with their worldviews, in the business of life. (The days when a seriously ill orthodox Hindu would rather die than imbibe European medicine are over.) And yet the overall climate of opinion favours flexibility and liberality in the name of giving our not especially humane times a humane face. Any humane globalization of knowledge has to consider the intrinsic limits of flexibility and liberality without losing out on the accomodative open-mindedness in handling knowledge diversity.

Again, different kinds of knowledge systems differ in their amenability to object-flexibility and subject-liberality (section IV), depending on whether

they are epistemic or technical, physical, life-related, or human, actuality-validable or formally-validable. The human disciplines (like psychology or linguistics or like medicine or management) are badly in need of early humane globalization.

The first obvious extrinsic obstacle to humane globalization is the fact that knowledge comes handy for the acquisition and maintenance of power. Knowledge helps the power-seeker and the power-wielder not only to enhance the brute force (through weaponry) and the pecuniary force (through accumulation and saving of goods, services, labour, and land) but also the reconciliatory force (through controlling motivation, alliance, and dissension in such a way as to dissuade others from exercising force). Now, the powerful will not part with the advantages of knowledge monopoly without resistance. Humane globalization of knowledge will not suit them in that it promotes dissemination and wide availability of knowledge and combines unification of knowledge carried out in an accomodative and inclusive spirit. The European civilization, along with the subjection-subdued and the subjection-seekers among the non-Europeans, are going to welcome an inhumane globalization of human knowledge with steamrolled uniformity and monopoly of knowledge initiative if not of knowledge availability and resist humane globalization. We have had an occasion to salute the humane knowledge-seekers like Böhlingk and Schopenhauer among the Europeans and the emancipated knowledge-seekers like Rajwade and K. C. Bahttacharya among the non-Europeans. Will these swallows add up to a sizable flock?

The second group of obstacles have to do with human resistance to enlightenment. There is unenlightened self-interest, which will continue to harp on monopoly and exclusivity, dead uniformity and assimilation even in areas in which these are counterproductive. There is unenlightened political correctitude, which will continue to harp on diversity for diversity's sake. Should we not dissuade conservative Brahman women and tribals from, say, ruining their health by following their ancestral ways? Earlier we have had an occasion to welcome the changing European climate of opinion that favours multiculturalism and such. At the same time, we cannot ignore signs of a certain ill-tempered backlash to be detected in the European climate of political and academic opinion (especially in its outer American

limb).

And of course there are brutalized versions of each of these obstacles, which are powered by human cunning, rapacious greed, power-hunger and sheer cussedness. A few swallows do not a summer make, but a few vultures can certainly devastate the intellectual landscape and foul up the scenario of an overall humane globalization, including the humane globalization of knowledge. The brutalized versions of course need to be overcome by applying the appropriate brute, pecuniary, and reconciliatory force.

Brutalized obstacles apart, the philosophers have a major rôle to play in the humane globalization of knowledge. The step-by-step accomplishment of the project will call for not only hard work but a certain broad vision and intellectual penetration that philosophers are eminently qualified to offer to the knowledge-seekers (and belief-holders too). They can render wonderful assistance by way of providing conceptual analysis and logical infrastructure to the discipline specialists and to the historians of lifestyles and worldviews. Also, philosophers can spread enlightenment as an antidote to unenlightened self-interest, unenlightened political correctitude and unenlightened conservatism. After all, aren't philosophers (like the enlightened and emancipated and enterprising swallows) the first citizens by right of the humane commonwealth of knowledge. They don't have merely a rôle to play but a responsibility to fulfil.

To sum up, globalization? Yes ! European recolonization? No !

NOTES

An earlier version of this paper was presented under the title 'Handling knowledge system diversity' at the Symposium on Global and Local Knowledge systems held at Indira Gandhi National museum of Mankind, Bhopal on 19-23 February 2001 as a part of the German Festival in India 2000-2001. The author has benefitted from the various discussions there as also from comments on the earlier version by Professor Ashok Aklujkar (Asian Studies, University of British Columbia, Vancouver), Mr. G. R. Patwardhan (Pune) and Dr. Shyamala Vanarase (Pune).

My intellectual debts are too many to be usefully recorded in a bibliography. I must however mention my senior friend the late Professor K. J. Shah, who was so passionate about the need for India's intellectual decolonization.

May I take the liberty of suggesting that the paper will bear a quick first reading followed by another slow ruminating reading for yielding its full import?

In revising the paper before publication, I changed the title and organized the material in two parts, namely, I. Handling knowledge system diversity and II. The Philosopher's responsibility. The second part takes up a case study sketching and comparing two diverse psychologies, Indian and European, and then goes on to assess the worthwhileness and feasibility of any true globalization of human knowledge.

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The reader may have noticed that there are a number of digressions in the present study occasioned by my reluctance to make do with the received wisdom concerning certain topics that were germane to my argument such as the nature and origin of globalization or the alternate strategies of anarchism, absolutism and relativism for dealing with knowledge and belief diversity. On some of these I have offered fuller discussions elsewhere. The references follow. The bibliographies appended to some of these should also serve to indicate many of my intellectual debts for the present study as well.

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