

Indigenous knowledge and the politics of classification*

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Indigenous knowledge has come to occupy a privileged position in discussions about how development can best be brought about so that finally, it really is in the interests of the poor and the marginalised. It may be true that contemporary research on and advocacy of indigenous knowledge is founded upon the earlier, pioneering writings of many anthropologists and ethnographers (Conklin 1957, Lewis 1975, Wyman 1964). It is also true that many of the questions that occupied earlier researchers who identified themselves as ethnoscientists continue to haunt current work on indigenous knowledge and peoples.¹ Thus, there is little consensus even today about issues of commensurability of different forms of knowledge, nature of ownership of specific indigenous practices, advisability of compensation, and how to view intensified cross-cultural interactions that potentially pose a threat to indigenous knowledge.

It would be fair to claim that the contemporary attention to indigenous knowledge is in no small measure a result of its successfully posited connection with development and environmental conservation.² More recent contributions from such scholars as Brokensha, Brush, Chambers, Richards, and Warren,³ among others, have all attended to the important place of indigenous knowledge in bringing about development and environmental conser-

vation, and have been crucial to the continuing vigour of discussions about indigenous knowledge. These scholars have persistently focused on the strategies that might be deployed in favour of the indigenous, cautioned against easy dismissals of the worth and utility of indigenous knowledge, and tried to create a greater awareness about the indigenous even among policy makers and neoliberal reformers pursuing privatisation and economic liberalisation.

This shift in the fortunes of indigenous knowledge is to be welcomed. It comes after long decades, perhaps centuries, of easy dismissals of the indigenous and what it signified. It is closely allied to the advocacy on behalf of indigenous peoples that is becoming a hallmark of much research and policy in the environmental arena. It occurs in consonance with the valorisation of allied social and conceptual formations such as community, locality, and subalternity.⁴

This paper focuses on a specific advocacy strategy on behalf of indigenous knowledge: creation of databases. Databases on indigenous knowledge systematically document specific elements of knowledge for later analysis. The documented knowledge can be a piece of technical information: the tubers of *Pueraria lobata* are used as a famine food among the kalam speakers of Papua New Guinea (Pawley 2001:

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238). Or, it can be drawn from highly detailed studies of particular ways of addressing a problem: the changing agricultural knowledge of small cultivators in West Africa (Richards 1985). Some databases catalogue "best practices," highlighting successful efforts by various indigenous peoples or local communities to address problems related to environmental conservation, health, education, or agriculture. In any case, the objective of the databases is typically twofold. They are intended to protect indigenous knowledge in the face of myriad pressures that are undermining the conditions under which indigenous peoples and knowledge thrive. Second, they aim to collect and analyse the available information, and identify specific features that can be generalised and applied more widely in the service of more effective development and environmental conservation.

The strategy of creating databases to preserve and spread indigenous knowledge has received significant support from a large number of donor agencies and international researchers, among them the World Bank, UNESCO, IDRC, UNDP, and also many networks of scholars and policy activists. It has proliferated especially in the last decade.⁵ In this paper, I identify the mechanics of this strategy, the epistemological contradictions at its heart, and the practical-political considerations because of which building databases of indigenous knowledge is likely to founder. The arguments in this paper are specific to the kinds of databases that advocates of indigenous knowledge have sought to create. But they might also be relevant for attempts to create databases and catalogues for other complex, dynamic social phenomena that are highly context-dependent.

The logic of database creation

The popular strategy of storing specific elements of information in a database is an example of *ex situ* conservation of indigenous knowledge systems. Many advocates of indigenous knowledge believe that documenting and collecting particular instances of knowledge is the prime feasible means to safeguard it and demonstrate

its relevance to a wider audience. Warren argues, "By recording knowledge, and making it available to the global community, I am confident that community-based knowledge systems will in the near future begin to be regarded as contributions to global knowledge."⁶ In tones reminiscent of Warren's assertion, the World Bank-led Initiative on Indigenous Knowledge operates on the assumption that indigenous knowledge is an under-utilised resource in the development process, and that therefore a database of indigenous knowledge practices and lessons should be created (World Bank 1998). Presumably, as more studies become available and as more instances of the relevance of indigenous knowledge are found and archived in national and international centres, development and conservation practitioners will become persuaded of its importance. The greater appreciation of the benefits of indigenous knowledge will lead, in turn, to greater efforts to further the interests of those who possess such knowledge.

Based on the above assumptions, a host of international NGOs and funding agencies have focused on and supported the development of databases. The Indigenous Knowledge and Development Monitor, a periodical supported and maintained by NUFFIC-CIRAN,⁷ counts as its affiliates more than 25 indigenous knowledge resource centres scattered across countries in Africa, Asia, Europe, Latin America, Middle East, and North America. It also lists eight different institutions that maintain databases. These databases cover topics as diverse as fisheries, botanical knowledge among native Americans, and veterinary medicinal plants in Africa.⁸

Nor are these centres the only ones involved in the creation of indigenous knowledge databases. The World Bank itself maintains an online database that can be searched using regional and thematic keywords.⁹ Other databases can be accessed from websites maintained by the IDRC, Conservation International, and CGIAR among others.¹⁰ These documentation- and publication-related developments have occurred all within the last decade, and mark a new beginning in the abstraction and harvesting of specific elements of indigenous knowledges. It would be fair to argue that among the strategies advocates of indigenous



Selling neem branches for dental hygiene, India, 1984. R. & S. Michaud/Rapho

knowledge have identified, that of creating databases and sharing the information in them has proved to possess widespread and significant appeal.

An examination of some of the databases reveals the kind of information that has been documented. The Native American Ethnobotany Database¹¹ provides information on specific uses of plants and trees as food and cosmetics, for agriculture and handicrafts, in medicines for humans and animals, and for decorative purposes among others. Each entry is a few lines long, and the sources for the database are original research, published materials, and grey literature. Much of the information that such ethnobotanical databases contain is reminiscent of earlier anthropological research from around the turn of the century on traditional knowledge. The difference is that the same knowledge and research is now represented through the powerful, utilitarian idiom of indigenous knowledge and justified on the grounds that it is crucial for successful development results.

Other databases contain more detailed information about their classified cases. For example, the World Bank database on indigenous knowledge classifies cases using several different keywords. Each case has a unique identifying number, and is arrayed by country, region, and the source that furnished the information. The case descriptions contain information about the people and their reasons for a particular practice. But ultimately, the description is aimed to give the reader a sense of the potential for generalisation and the lessons that the example furnishes for development or environmental conservation. Ironically enough, most of the cases on which the database contains information are examples of collaboration between some international development agency and a local group to initiate a development programme – as if the cases that are being documented are available only because of the external support being provided by the development agency. The information in this database is far more detailed in comparison to that contained in the Native American Ethnobotany Database. But the underlying process that has led to the creation of these two databases and their chief objectives are not very different.

Scientisation

Consider first the mechanics and logic of the creation of databases. The instrumental logic of development that underpins the creation of these two databases on indigenous knowledge, as indeed of all databases which seek to make indigenous knowledge useful to development, transforms what indigenous knowledge is seen to signify. The first demand of this logic is that useful indigenous knowledge be separated from those other knowledges, practices, milieu, context, and cultural beliefs in combination with which it exists. Only the forms of indigenous knowledge that are potentially relevant to development, then, need attention and protection. Other forms of such knowledge, precisely because they are irrelevant to the needs of development, can be allowed to pass away. I call the identification and separation of useful knowledge the process of *particularisation*. Successful particularisation is the first necessary step in the creation of any database. It occurs in conformity with the need of those practitioners of development who see indigenous knowledge as a resource to be used. Outside of the potential role that indigenous knowledges can perform in the service of development, they have no claims to mobilise powerful resources in their favour.

But particularisation takes place together with other processes. The second demand of the instrumental logic of development is that particularised knowledge be tested and validated using the criteria deemed appropriate by science. These scientific criteria are integral to any particularised statement about indigenous practices being considered knowledge. Thus, it would be quite right to say that even for advocates of indigenous knowledge, it must first be recast in the image of science before being utilised for development (Massaquoi 1993, Rajan and Sethuraman 1993). Independently, such knowledge has no existence, only possibilities. The use of scientific criteria to test and examine, and the documentation of these tests can be referred to as *validation*. Once validated, particular examples of indigenous knowledge are ready for inclusion in a database of knowledge.

Validation has a corollary: abstraction. Not all elements of useful indigenous practices are

necessary for development. Only the strictly useful elements need be abstracted for maximum effect. Rituals, words, movements, gestures, and actions that may be the concomitant of the administration of a herbal medicine or drug in an indigenous practice can be divested and discarded as not being part of the crux of the usefulness of the herbal medicine or drug. They can form no part of interest from the point of view of development. Only those elements of indigenous practices need be retained that can more easily be transplanted into other contexts. The stripping away of what seems to be non-essential also facilitates the next stage of the process through which indigenous knowledge is made ready for development.

Once knowledge is particularised and validated (abstracted), it needs to be catalogued, and archived, and then circulated before it can be used more widely. This can be termed the process of *generalisation*. Only insofar as a particular element of indigenous knowledge is capable of being generalised is it really useful for development. If suitable only for an individual and particular context, indigenous knowledge need not be studied at all – not at least by those interested in development.

At one level, the very process of being included in a widely accessible catalogue of knowledge renders indigenous knowledge potentially generalisable. But the process of generalisation does not end with the inclusion of a validated piece of information in a catalogue. Cataloguing of knowledge in a database only prepares it for generalisation. Whether the generalisability inherent in this process will be realised depends on the future actions of others regarding that piece of knowledge. Who refers to that knowledge, in what fora, for what purposes, and with what effect are some of the factors that will determine whether the knowledge will actually be generalised (Latour 1987).

I use the term *scientisation* to refer to the three processes of particularisation, validation, and generalisation. In the context of indigenous knowledge, these three processes can collectively be seen as the basis for establishing the truth content of a particular indigenous knowledge-based practice. In this sense, scientisation can also be seen as being identical to “truth-making”. All efforts to make indigenous knowl-

edge useful to development must run the gamut of these three processes. Scientisation of indigenous knowledge helps it emerge as fact. Take the example of neem (*Azadirachta indica*). Over the past 5 years, more than 500 papers on the uses of neem have appeared, a level and rate of publication far higher than in the past two decades. But although farmers in India have been using various parts of the neem tree for generations as feed, pesticide, and for human consumption, the vast majority of neem products marketed by corporations have been unsuccessful because of the relative instability when exposed to sunlight (Gupta 1996). Thus, although hundreds of different uses of neem can be identified as indigenous practices,¹² the number of patents and scientific papers on neem was minuscule in comparison until the 1980s. Only in the 1990s, with burgeoning scientific research and patent requests on neem has the indigenous knowledge on the tree begun to be investigated more intensively. But the exploration of this knowledge occurs together with questions about the extent to which it has remained indigenous and about who benefits from the scientisation of this knowledge (see below).

Statements that are successfully particularised, validated, and generalised become knowledge by satisfying a particular relationship between utility, truth, and power. The process of scientisation helps instantiate a division within indigenous knowledge systems so that only useful indigenous knowledge systems become worthy of protection. Whatever the truth value of other indigenous knowledge systems, their lack of utility makes them unsuitable for inclusion into databases that possess instrumental power in development initiatives. By being left outside of even the imperfect mechanisms of protection that activists for indigenous knowledge have devised, those pieces of indigenous knowledge that are deemed without any use cannot be used to advance salvage claims. They become neither true nor false; they are simply unnecessary to those engaged in the important task of development and environmental conservation.

On the other hand, once useful knowledge is isolated and documented, the machinery of development can crank into action. The potential utility of knowledge becomes the criterion that will lead to any efforts in favour of protec-

tion. Once a particular piece of knowledge is deemed useful, that is, once the truth value of some useful knowledge is ascertained, it can become the object of further action. The power of joint international development initiatives can be used to stamp that knowledge as indigenous knowledge. Utility becomes a necessary condition before procedures of truth-making can be initiated. Use value in combination with scientific validation invokes the power of protection.

But the valid doubt that should assail one at this point is whether there is anything particularly indigenous about knowledge that has undergone the sanitisation implicit in the movement from particularisation to generalisation. In the very moment that indigenous knowledge is proved useful to development through the application of science, it is, ironically, stripped of the specific characteristics that could even potentially mark it as indigenous.

The objective of those who advocate the creation of databases and catalogues of indigenous knowledge is admittedly twofold. They seek to develop local capacity to “capture” indigenous knowledge (World Bank 1998). They are also interested in developing mechanisms of dissemination and exchange of such knowledge. But instead, the creation of databases to capture and disseminate indigenous knowledge generates effects that for all their unintendedness are strikingly apparent. I examine these effects along three dimensions: practical, epistemological, and political.

Indigenous/practical

In his recent book, *Seeing Like a State*, Scott (1998) makes a strong argument about the perils of a marriage between powerful states and high modernism: when strong states undertake modernising projects, the basis for their planned reconfiguration of the world is typically a highly simplified version of a complex reality. By ignoring multiple, crucial, little noticed details, they prepare the way for disasters to unfold. Scott adapts this central thesis of his book to what he calls practical knowledge, or *metis*.

Scott’s thesis in favour of practical knowledge is that its successful use depends upon the intimate familiarity that practitioners gain in numerous applications of the knowledge in

many subtly differing situations. All practical knowledge, although the application of some familiar or unrecognised principle, is useful precisely because of the experience gained in the use of that knowledge. An unthinking, strict, bookish application of a known principle of knowledge likely fails to take into account the many, small, almost imperceptible variations that a constantly changing context creates. Thus workers on factory floors, operators of old pieces of machinery, doctors and surgeons, contract farmers, and many other workers constantly make small adjustments and changes in applying specified procedures for a task. It is these small and minute adjustments, gained through experience and impossible to enunciate as a matter of principle, that make the difference between success and failure of a task being pursued by a practitioner.

There is an important resonance between Scott’s argument about *metis* and the processes of particularisation, validation (abstraction), and generalisation that advocates of indigenous knowledge deploy. It is easy to see how the process of creating databases of indigenous knowledge is in error precisely in stripping away all the detailed, contextual, applied aspects of knowledge that might be crucial in producing the positive effects claimed for that particular piece of indigenous knowledge. The process of particularisation readies knowledge about a particular indigenous practice for validation on scientific criteria. But it limits the examination of the contextual factors that might be responsible for the effects being claimed for a particular indigenous practice.

A database depends for its efficacy on the homogenisation of elements that constitute it. The tabular form of the database implies that all cases that become its members will contain information on the variables that the makers of the database consider relevant. Furthermore, all cases must also be fully describable precisely in terms of those variables. Information on all important aspects of a particular entity should be anticipated in advance by the makers of a database, and the aspects included in a database should completely describe an included entity in all its essential features. Even prior to the examination of a particular piece of information about an indigenous practice, the maker of a database should be able to specify those factors

about the practice that make it effective. Such an implicit affirmation of the objectivity of the structure underlying the database is not qualitatively different from Lévi-Strauss's "objective fieldworker" who reasons "on the basis of concepts which are valid not merely for an honest and objective observer but for all possible observers" (1967: 361).

Such specification of indigenous practices could work in the case of the more technical aspects of indigenous knowledge, although even in these cases doubts must remain. But it should be clear that the creation of databases discriminates against all those forms of indigenous knowledge for which no practical use can be perceived, and which cannot be stated as direct cause and effect sentences. To this extent, the practical effect of databases of indigenous knowledges must be to flatten precisely that diversity of knowledge supposed to be a characteristic of indigenous forms.

Indigenous/epistemological

Initial studies of indigenous knowledge (and its analogues such as local, practical, or traditional) sought to underline its difference from scientific knowledge (and its analogues such as western, rational, or modern) along a variety of methodological and contextual criteria. But most scholars have now come to accept that there are no simple or universal criteria that can be deployed to separate indigenous from western or scientific knowledge.¹³ Attempts to draw a strict line between scientific and indigenous knowledge on the basis of method, epistemology, context-dependence, or content, it is easy to show, are ultimately untenable (Agrawal 1995).

Indeed, it is easy to see that the use of scientific criteria to identify and classify certain forms of knowledge as indigenous knowledge is a concession to the idea of direct commensurability between science and that which is included in a database. The identification of valid scientific elements in the host of practices that are termed indigenous is no more nor less than any other scientific pursuit. It is scientific not because there is anything self-obviously true about it, but because it conforms to the procedures whereby science is reproduced and some statements are termed knowledge. The

elimination of that very difference that advocates of indigenous practices seek to build and defend becomes the preoccupation when they focus on creating a database of indigenous knowledge. Those who seek to change the fortunes of the powerless and the marginalised instead come to submit to the power of science. They do so precisely because they focus on knowledge and its epistemological status rather than on interests and politics. But this focus on epistemological commensuration comes at a cost.

Time and indigenous knowledge

Ultimately, the effort to document, and then particularise, validate (abstract), and generalise, and finally to disseminate, misapprehends and works against the very characteristics of indigenous knowledge that are believed to render it indigenous. But in such commensuration between indigenous and scientific knowledges there is a deep irony. Its nature is best appreciated by appealing to Fabian's concept of "distancing". Fabian suggests that ethnographic discourse, "rests upon personal, prolonged interaction with the other" but ethnographic knowledge "construes the other in terms of distance, spatial and temporal" so that "the other's empirical presence turns into his theoretical absence" (Fabian 1983: xi). Fabian's argument can be extended to studies of indigenous knowledge that seek to produce catalogues and databases. His concept of distancing helps uncover some of the assumptions undergirding the use of a conceptual-classificatory, tabular space in which to locate and fix indigenous knowledge. It usefully illuminates the political consequences of scientising indigenous knowledge.

The methods of learning firsthand about indigenous practices require a shared time and a shared conception of time between the "indigenous" and the researcher. It is in fieldwork that knowledge about the "indigenous" is first gained, before it becomes reified as indigenous knowledge. Writing about that research transforms the "indigenous" into a category that is more conceptual-theoretical than intersubjectively constructed. The objective of this conceptual-theoretical move, especially in the context of development and database construction, is to construe the "indigenous" only

in terms of its possible utility for development. In itself, development is a project that seeks to transform the temporal experience of indigenous peoples by affirming the universal validity and desirability of a single experience of time: the experience that societies classified as developed have undergone. The creation of databases of indigenous knowledge also affirms the universality of a physical time within which the practices of indigenous peoples can be located. The commensuration between the “indigenous” and the scientific is established, in other words, by denying culturally produced ways of experiencing time; ways of sharing and experiencing time that underpinned the initial awareness of specific indigenous knowledges and practices.

Indigenous/political

Even if a scientific logic can be identified within the indigenous, even if particular indigenous practices can test true on the criteria of science, there is no reason such evidence should help those from whom indigenous knowledge is abstracted, then catalogued and archived. The instrumental logic of converting the indigenous into the scientific can certainly further the perception that indigenous knowledge is worth saving. But the prevalence of such perceptions might do little to modify prevailing relations of power among different social groups, especially since it is these same relations of power that lead in the first place to social changes that disadvantage indigenous groups. There are evident gaps in the argument that once the value of indigenous knowledge becomes obvious, efforts to channel greater resources and power to indigenous populations will begin to take place.

By their own efforts, conforming to an instrumental logic of development, advocates of indigenous knowledge make clear that there is no necessary unity between indigenous peoples and their knowledges. By scientising, (particularising, validating (abstracting) and generalising), they realise (in the sense, “make real”) the possibility of separating “useful” from “useless” indigenous knowledge. If the usefulness of knowledge possessed by indigenous peoples is the justification for pursuing their knowledge, the strategies that demarcate useful

and useless knowledge bear the unfortunate burden of condemning knowledge that is not useful. Once the knowledge systems of indigenous peoples are separated from them and saved, there is little reason to pay much attention to indigenous peoples themselves.

The efforts to document and scientise indigenous knowledges can, thus, be doubly unfortunate. One, they channel resources away from the more vital political task of transforming power relations. Two, they provide a means to more powerful social actors to appropriate useful indigenous knowledges. In the absence of real efforts to change the relations of power that define interactions between different social groups, weaker groups seen to possess valuable knowledge can be studied, and once their knowledge is in the public domain it can be refined and privatised through the existing system of patents and intellectual property rights. Located in asymmetrical relations of power and conditions of poverty, poorer and weaker groups would be ill equipped to resist such appropriation. The history of colonialism, replete with examples of unequal exchanges, should warn against any easy consolation that the strong, when coming in contact with weaker groups who have valuable possessions, will bolster the interests of the weak.

Even if we keep our field of vision confined to the role of indigenous knowledge in development – i.e., the development of those who are supposed to possess indigenous knowledge – the question of power, how it is exercised, and the effects it produces must remain central. The very defences that scholars of indigeneity and indigenous knowledge offer in favour of their enterprise show that those who possess indigenous knowledge have not possessed much power to influence what is done with their knowledge. Indigenous peoples have remained, for the most part, in positions of localised resistance to effects of power produced by those who possess and apply scientific knowledge, including the builders of databases and cataloguers of best practices. In this sense, one distinguishes between different forms of knowledge on the basis of particular institutional inscriptions, themselves products of differentiated relations of power and its exercise.

If knowledge derives its potency from the many ways in which it is practiced, the effort

to pin it down in a classificatory-taxonomic structure can only help in separating knowledge from practice and power. Ultimately, the irony involved in the scientisation of indigenous knowledge is driven by a particular relationship between development, science, and power. Development is founded on the conceit that scientific knowledge can help transform social processes. Because the current attention to indigenous knowledge finds justification in the claim that it is useful for development or some similar broad social aspiration, scientific criteria for the production of knowledge are inevitably invoked in the making of indigenous knowledge. Once indigenous knowledges test true on these criteria, they can be deployed to accomplish development – in ways that are likely to undermine the very conditions that have facilitated the continued existence of indigenous peoples.

Conclusion

The arguments in this paper are not aimed to suggest the necessity of a pure state in which the indigenous must, even less should, exist. Rather, they indicate the impossibility of escaping a particular instrumental logic of science and development once claims about the significance of indigenous knowledge begin to be made in the context of development. The paper also highlights some of the dangers that accompany efforts to keep in the foreground knowledge rather than people or their social and political context. It is important, if investigations of indigenous knowledges are to serve the interests of the poor and the marginalised, to bring to the fore the institutions and practices

sustained by different forms of knowledge. A satisfactory reading of how power operates in conversations on indigenous knowledge needs to consider not only the points at which different forms of knowledge connect with nodes of power. It also needs to consider how indigenous knowledge becomes necessary for development. In this context, Foucault's Nietzschean insight is critical: "knowledge is not gained prior to and independently of" the uses to which it will be put to gain power (Hoy 1986: 129). In the case of indigenous knowledge, we need to think how its postulated relationship with development leads its advocates to inscribe a series of practices that convert indigenous knowledge into an instrument of scientific progress, development, and the institutions that claim to control both development and the knowledge needed to develop.

In enunciating a critique of the utopian nature of particular attempts to strengthen the position of indigenous peoples vis-à-vis others, I insist on the need to keep in the foreground the ways in which power works. Without explicit and continuing attention to how power structures knowledge, it will remain impossible to achieve the aim of working in the interests of indigenous or other marginal peoples. Attention to power relations would necessitate that advocates of indigenous knowledge use the strategy of documenting and archiving knowledge as only one of the elements in their arsenal of weapons. They must, simultaneously, follow other courses of action – among them lobbying governments, questioning science, channelling resources towards more independent processes of decision making among indigenous peoples, and mobilising and organising indigenous peoples.

Notes

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1. See for example the discussion in, and following, Brown (1985).

2. One only need undertake a cursory examination of the more recent writings on indigenous knowledge to witness the validity of this assertion. These writings explore and justify their interest in the indigenous because of its suggested relevance to the politics of sustainable development. Even

the more critical contributions on the subject derive their justification from this initial connection (Agrawal 1995).

3. For some recent writings by these scholars, see Brush and Stabinsky (1996); Chambers, Pacey, and Thrupp (1989);

Warren, Slikkerveer, and Brokensha (1995).

4. Careful examinations of terms such as community, local, and subaltern that are key in current writings on the environment and development are available in Li (1996), Moore (1998), Raffles (1999), and Sivaramakrishnan (1996).

5. This strategy of creating databases to document particular examples by recording their common features has also been used by students of common property, decentralisation, resource management, and social services among others.

6. See Warren (1996).

7. NUFFIC–CIRAN are two separate organisations; the first is

the Netherlands Organisation for International Cooperation in Higher Education and the latter is the Centre for International Research and Advisory Networks. The specific initiative they have launched on indigenous knowledge is similar to the “Management of Social Transformations (MOST) Programme” that UNESCO has created on “Poverty and Social Exclusion.” See <http://www.unesco.org/most/welcome.htm>. Accessed on November 19, 2001.

8. For more information about indigenous knowledge-related activities of NUFFIC–CIRAN, see <http://www.nuffic.nl/ik-pages/index.html>.

9. See <http://www.worldbank.org/afr/ik/datab.htm>. Accessed on November 18, 2001.

10. Given the large number of such websites, it is possible only to give a flavour of the menu available even to someone only casually interested in indigenous knowledge. See, as examples, <http://www.idrc.org>, <http://www.conservation.org>, and <http://www.ipgri.cgiar.org>.

11. See <http://www.umd.umich.edu/cgi-bin/herb>. Accessed on November 18, 2001. This web page had received more than 171,000 hits in less than 2.5 years since August 1999.

12. For various uses of neem, see <http://www.neemfoundation.org>. Accessed on November 25, 2001.

13. The essays in Ellen *et al.* (2000) offer striking evidence of this consensus in the critical literature on indigenous knowledge.

References

- AGRAWAL, A. 1995. “Dismantling the divide between indigenous and western knowledge”. *Development and Change* 26(3): 413–39.
- BROKENSHA, D., WARREN, D. & WERNER, O. (eds) 1980. *Indigenous Knowledge Systems and Development*. Lanham, MD: University Press of America.
- BROWN, C. H. 1985. “Mode of subsistence and folk biological taxonomy”. *Current Anthropology* 26(1): 43–64.
- BRUSH, S. & STABINSKY, D. (eds) 1996. *Valuing Local Knowledge: Indigenous People and Intellectual Property Rights*. Washington, DC: Island Press.
- CHAMBERS, R., PACEY, A. & THRUPP, L. A. (eds) 1989. *Farmer First: Farmer Innovation and Agricultural Research*. London: Intermediate Technology Publications.
- CONKLIN, H. 1957. “Hanunoo agriculture: A report on an integral system of shifting cultivation in the Philippines”. Forestry Development Paper 12, Rome: FAO.
- ELLEN, R., PARKER, P. & BICKER, A. (eds) 2000. *Indigenous Environmental Knowledge and Its Transformations: Critical Anthropological Perspectives*. Amsterdam: Harwood.
- FABIAN, J. 1983. *Time and the Other: How Anthropology Makes its Object*. New York: Columbia University Press.
- GUPTA, A. 1996. “Patents on Neem: Will they deprive Indian farmers of their right to use it as a pesticide?” *Biotechnology Law Report* 15(1): 6–14.
- HOY, D. C. 1986. “Power, repression, progress: Foucault, Lukes and the Frankfurt School”. In David Couzens Hoy (ed.) *Foucault: A Critical Reader*, pp. 123–48. Oxford: Basil Blackwell.
- LATOUR, B. 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.
- LÉVI-STRAUSS, C. 1967. *Structural Anthropology*. New York: Doubleday Anchor.
- LEWIS, G. 1975. *Knowledge of Illness in a Sepik Society: A Study of the Gnau, New Guinea*. London: Athlone Press.
- LI, T. M. 1996. “Images of community: Discourse and strategy in property relations”. *Development and Change* 27(3): 501–27.
- MASSAQUOI, J. 1993. “Salt from slit in Sierra Leone”. In M. Gamser, H. Appleton, and N. Carter (eds) *Tinker, Tiller, Technical Change*, pp. 48–63. London: Intermediate Technology Publications.
- MOORE, D. S. 1998. “Clear waters and muddled histories: Environmental history and the politics of community in Zimbabwe’s eastern highlands”.

- Journal of Southern African Studies* 24(2): 377–403.
- PAWLEY, A. 2001. “Some problems of describing linguistic and ecological knowledge”. In Luisa Maffi (ed.) *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*, pp. 228–47. Washington: Smithsonian Institution Press.
- RAFFLES, H. 1999. “‘Local Theory’: Nature and the making of an Amazonian place”. *Cultural Anthropology* 14(3): 323–60.
- RAJAN, S. & SETHURAMAN, M. 1993. “Indigenous folk practices among indigenous Irulas”. *Indigenous Knowledge and Development Monitor* 1(3): 19–20.
- RICHARDS, P. 1985. *Indigenous Agricultural Revolution: Ecology and Food Production in West Africa*. London: Unwin Hyman.
- SCOTT, J. C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition have Failed*. New Haven, CT: Yale University Press.
- SIVARAMAKRISHNAN, K. 1995. “Situating the subaltern: History and anthropology in the subaltern studies project”. *Journal of Historical Sociology* 8(4): 395–429.
- WARREN, D. M. 1996. “Comments on article by Arun Agrawal”. *Indigenous Knowledge and Development Monitor* 4(1). <http://www.nuffic.nl/ciran/ikdm/4-1/articles/agrawal.html>. Accessed on November 18, 2001.
- WARREN, D. M., SLIKKERVEER, L. J. & BROKENSHEA, D. (eds) 1995. *The Cultural Dimension of Development: Indigenous Knowledge Systems*. London: Intermediate Technology Publications.
- WORLD BANK. 1998. Indigenous knowledge for development. Initiative led by the World Bank in partnership with CIRAN/NUFFIC, CISDA, ECA, IDRC, SANGONet, UNDP, UNESCO, WHO, WIPO. <http://www.worldbank.org/html/aft/IK>. Accessed on November 19, 2001.
- WYMAN, L. C. 1964. *Navaho Indian Ethnoentomology*. Albuquerque: University of New Mexico Press.