In the previous chapter, Cernea has argued that forced population displacement may lead to eight forms of impoverishment: unemployment, homelessness, landlessness, marginalisation, food insecurity, loss of access to common property, erosion of health status, and social disarticulation (see also Cernea 1990a). Reconfirmed by a wider World Bank review, (World Bank 1994a), each merits preventative measures. This chapter deals with the most conceptually intractable of these problems - that of social impoverishment.

Involuntary population displacement may lead to irreversible social and cultural impoverishment. Resettlement rips routine relations of social time and social space, laying bare critical, but often ignored, dimensions of culture. What is less clear is 'why'? Shamelessly drawing upon my colleagues' work and my experience with resettlement, I offer a prologue of a theory of social geometry. I argue that involuntary displacement forces people to re-examine primary cultural questions which, under routine circumstances, need not be considered. Key among these is 'where are we'? The social geometry of a people consists of infinite intersections of socially constructed spaces, socially constructed times, and socially constructed person-

1. My appreciation to Thomas Weaver, Edward Hall, Michael Cernea, Scott Guggenheim, Inga-Lill Arronson, Anthony Oliver-Smith, Rohn Eloul and Gilbert Kushner for comments on an earlier version.
ages. And, for many cultures, the geometry also defines 'who are we?' Mitigating social impoverishment begins by reconstructing, in a culturally appropriate manner, the social geometry of the displaced.

Social Impoverishment

Why does involuntary displacement increase the risk of social disorder? When people are refugees from war, famine or natural disasters, social chaos seems macabrely expectable. However, when people are displaced by development projects, social impoverishment seems incongruous, if not grotesque. Provided that relocated persons are granted adequate compensation for lost goods, health care, housing and humanitarian assistance, involuntary resettlement should be little more than a temporary inconvenience. Relatives, friends and neighbours are still alive. Families are not permanently fragmented. New economic opportunities may be provided. Community infrastructure may be upgraded. Movable property may be relocated to the new environs, and exposure to natural hazards reduced. In some cases, some people may be wealthier than they were before.

To their disappointment, politicians, engineers and resettlement specialists have discovered that involuntary resettlement sometimes unravels the underlying social fabric. In resettlement after resettlement, similar patterns reappear (World Bank 1994a, Cemea 1993b). Vital social networks and life-support mechanisms for families are weakened or dismantled. Authority systems are debilitated or collapse. Groups lose their capacity to self-manage. The society suffers a demonstrable reduction in its capacity to cope with uncertainty. It becomes qualitatively less than its previous self. The people may physically persist but the community that was is no more. Social scientists have not reached agreement on what to call this social phenomenon which haunts involuntary resettlement, but I prefer to use Cemea’s terminology – social disarticulation (Cemea 1994a).

Discomfort

Despite universal acceptance by resettlement theorists and policy makers that there are social impacts to resettlement and that the negative ones should be avoided, I am uncomfortable with the theoretical underpinnings of resettlement policy, and by extension refugee studies. So-called ‘social costs’ and ‘social impacts’ are mentioned again and again without clearly explaining what is meant by ‘social’. I am equally uncomfortable with the ease with which only economic actions are prescribed to mitigate social impoverishment. Conventional wisdom is synthesised into prescriptive economic action – holding that social impoverishment, like other forms of impoverishment, can be mitigated by re-establishing disrupted productive activities. Granted that re-establishment of the economy is indispensable to successful economic recovery and poverty abatement, I am still not convinced that destruction of a local economic order is the primary reason for social disarticulations.

Careful examination of the temporal sequencing of resettlement reveals something is amiss. Signs of social disorder appear quite early in the resettlement, often before the loss of productive activities, when relocatees are reaping benefits of the temporary employment boom and indemnifications associated with public works. Conversely, communities which are not being resettled undergo transformations of productive activities all the time without the radical social disorder associated with resettlement. Apart from the very serious socio-political consequences associated with the coerciveness of the decision, the fact that people move from one place to another should not lead to the radical social changes which have been witnessed. Nor should we anticipate social changes greater than those normally observed with voluntary migration, trips to the market or visits to a relative. Unlike plants, people move about all the time.

My discomfort increased as I struggled with unanswered, apparently unrelated questions which keep reappearing in resettlement after resettlement, and not coincidentally, in studies of recovery from natural disaster (Oliver-Smith 1986). Why do children seem to recover more quickly than adults? Why do some resettled people return again and again to the shores of a lake covering their inundated home and experience a sense of relief from their visits? And why do disaster victims sometimes refuse to move into shelters, preferring to camp at the location of their former homes? Why do resettlers not occupy houses that architects have carefully modeled after their original houses? And why do resettlers and disaster victims often describe their experience ‘like a dream’? I wondered if a focus upon the political and economic dimensions of involuntary resettlement had led us to ignore subtle, important social dimensions of such events – hidden dimensions that might prove crucial to mitigating social impoverishment and, perhaps, facilitate political and economic restoration.

My discomfort could have been easily assuaged if resettlement policy and practice were based on a firm theory of spatial and temporal dislocation which explained why and how social disarticulation occurred. It is not. Fortunately, the building blocks for construction of a powerful theory of social dislocation are scattered
about in the form of bits and pieces of observations, concepts and insights from every conceivable discipline and in all the cracks in between. Outside of the arena of displacement, almost every social scientist worthy of note has probably, at some point, struggled with social definitions of time and space although only a handful have worked on the dysfunctional situation where this order is disrupted.

**Social Geometry**

For most, culture answers what I prefer to call 'primary questions'. Primary questions are: Who are we? Where are we? Why do people live and die? What are our responsibilities to others and ourselves? In everyday life, the answers are routinely provided, leaving it up to the individual to focus upon tactical problems. How might I move to a more desirable location, how might I make minor adjustments within my own backyard? Life focuses upon repairing broken doors, collecting firewood, getting from one well-known place to another, gaining access to restricted places/situations by performing routine events such as going to school, paying for admissions or working for income to facilitate tactical adjustments to life. The routine culture is what social scientists normally describe. In routine culture, people navigate within a space-time continuum in which they chart their positions within socially constructed time, socially constructed space, and among socially constructed personages. Victims of involuntary resettlement and natural disasters and refugees experience an unexpected destabilisation of routines. In rural cultures whose group and self-definements are inextricably interlocked with their knowledge of their local environment, resettlement can devalue their shared survival skills and lead to what Bartolomé and Barabas (1992) have called 'ethnocide'. From the perspective I am proposing, relocatees are forced to re-examine their primary cultural questions - 'where are we?' And, for most, this means, also re-examining 'who are we?'

**Properties of Spatial-Temporal Order**

The disruption occurs along multiple dimensions of a culturally arbitrary, but nonetheless meaningful spatial-temporal order. I wish to identify ten salient properties of the social space-time continuum, demonstrate how they appear in displacement situations, and then turn to ways in which this knowledge might be used to mitigate social impoverishment. Although my anthropological training tempts me to draw on exotic spatial-temporal orders (see Fabian 1992), I will try to draw my examples from an English-speaking culture.

**Multi-dimensionality.** Most cultures command a vast repertoire of concepts and coordinates of time and space which overshadow the mechanistic, equal interval measures (Bock 1968; Sutro and Downing 1988; Hall 1959; Low 1992; Turner 1990). Within the narrow temporal confines of measuring the time of day, Frake (1993) observes great variation in how societies slice time. Culturally specific interval time systems include variations in the numbers of minutes in an hour, Canonical hours, Jewish hours, astrological signs, Saint's Day cycles and Greek hours. The evolution of Western technology is tightly linked with a struggle to create mechanical analogues of socially meaningful time.

Recent first-hand, cross-cultural evidence has revealed rich variations in constructions of time, especially among indigenous people (Layton 1994). These constructions need not depend upon a written tradition. To highlight only the most obvious constructions, consider festival calendars, planting and harvesting calendars, weekly marketing calendars and so on. In many societies, the organisation of time has become a major political resource and its control varies with competing elements of a society (de Pina-Cabral 1994; Males 1994; Elazar 1994; Rutz 1992).

Space and time are socially defined and ordered in many ways. Time may be linear (1993, 1994, 1995) containing within it sets of repetitive, cyclical orders (Monday, Tuesday, Wednesday ... night/day, lunar cycles and so on). Temporal-spatial orders may be shared with larger groups (a national festive calendar, Mexico City as the capital), or may be regional (market days and regional fairs), local (patron saint's days, unique historical events, harvest calendars) or even familial (wedding anniversaries). Social geometry shows properties of inclusion both temporally (e.g., second, minute, hour, day, year) and spatially (e.g., yard, neighbourhood, barrio, town, county, state, nation, continent). Orders may also be temporally sequential (baby, child, teenager, adult, old) and spatially sequential (gate, courtyard, entrance, house). Complex orderings may involve a sequential intersection of time, space and personages (baptism, confirmation, first communion, marriage). In brief, it follows that societies have many social geometries - alternative logic constructs of order. A social spatial-temporal continuum may be simultaneously 'occupied'. For example, a person might be in Mexico City, at the doorway to the Virgin of Guadalupe and having a birthday.
Intangibility. Cultural spaces and times are often intangible, but real. They need not occupy the physical universe familiar to an engineer. Imagined spatial orders have more meaning, power and importance in the role of human experience than concretely experienced social orders (Riley 1994). We do not need anthropological fieldwork in the Developing World in order to understand this. Millions of Christians share familiarity with places to which they have never been and may never reach—Calvary and Heaven. Social groups can be expected to hold special rights to times and places—an ownership as socially recognized, and often more respected, than a legal title.

Behavioural ordering. Patterns of social behaviour are associated with culturally recognized spaces and times—be they tangible or not. The particular configurations of the geometry create order in the form of finite expectations for social actors and action. They provide human beings with productive rules for acting appropriately in different situations (Hall 1959; Bock 1968). Catholics, for example, expect a Mass at the hinge of a socially constructed time (Sunday, weddings, funerals, political transitions), place (altar in the Church), and personage (Priest). Remove any of the three elements and something is amiss. Economists quickly learn this when they try to provide rural resettlers with a subsidy for crop losses as a protection against social disorder. Harvest is not simply an output of a commodity. It is the association of familiar people at a particular place in a biotemporal cycle.

Prioritisation. Social geometries are also prioritised. Profound differences have been detected between ordinary and extraordinary spatial and temporal orders (Low and Altman 1992). Times and places, just like people, are frequently ranked with some being more valued than others (weekends > workdays, and Sunday > Monday in Christian societies). Prioritised orders often validate fundamental social values and beliefs. For example, the highest valence possible in the Catholic spatial-temporal order occurs when a high valence time in their religious calendar—Easter, intersects a high valence place in their spatial order—the Vatican, and a high valence personage in the social organisation—the Pope. The high valence geometry—Easter/Vatican/Pope—is linked to the expectation of a message for Peace and Hope directed to the World and a High Mass. Barring the Apocalypse, a thousand Easters from now, the intersection of three dimensions should recreate the same sense of awe among the faithful and tangibly demonstrate the eternalness of the Church.

As groups are threatened with forced relocation, they experience unparalleled disruptions of routine behaviours. Their spatial-tempo-
Imbeddedness. Forming the basis of routine interaction, social geometries are often as conservative as they are arbitrary. The seven-day week is the most obvious example of an artificial, mathematical rhythm disassociate with nature that sets the cadence for most of the world's cultural activities. Three of the great religions may differ on what day of the week the cycle peaks, but they share conservative agreement as to the number of days in a week. In both the French and Russian Revolutions, unsuccessful and, for some, fatal attempts were made to change the number of days in a week (Zerubavel 1985). Imbeddedness is also evident within the lifespan of individual members of the culture. Research on environmental memories has discovered the near universality of fondly remembered childhood places, representing the intersection of culturally constructed time and place (Marcus 1994). In more mobile societies, continuity of environmental memories is more rooted in things – movable, storable, shipable – rather than in attachment to a concrete physical space. This finding is particularly important for those working on urban resettle-

ment which recently took place at the Aguamilpa hydroelectric dam in western Mexico, architects and anthropologists worked side-by-side to design four different house types which followed traditional, indigenous, Huichol design principles (Guggenheim 1993:221). Guggenheim reports, 'the families hated the new houses.' The designers assumed that the Huichol wanted traditional thatched roofs. In response, a Huichol noted that 'thatch may look very refreshing and folkloric for you who come from far away, but you don’t have to live with scorpions falling into your soup every time you sit down to dinner.' Thatch was the best material that they could afford. At the Zimapán hydroelectric dam, I discovered that, at the last minute, several male heads of households hastily rearranged meticulously planned, spatial layouts of house lots in a new community to decrease contact with their mother-in-laws! Nor can one expect intrasociety uniformity of satisfaction. Environmental memory research has found that some people choose to reproduce the essence of their childhood spatial arrangements in adulthood, while others choose to create a contrasting environment.

Attachment to space and time. Attachment to space and time can be a powerful binding force for displaced social groups. Oliver-Smith’s (1986) work on the cultural responses in the aftermath of a 1970 Peruvian earthquake is an exemplar of the widely reported bereavement and symbolic importance of attachment to place and its role in reconstruc-

tion of community identity. Similarly, Setha Low (1992) notes that the longing of exiled people and refugees to return to their homeland, and the importance of the symbolic existence of that homeland (as in the case of Israel), suggests that loss or destruction of place is as powerful an attachment as its presence.

In a comparable manner, attachment to time, a particular constructed history, may be an equally powerful force for binding people to one another. Evidence of this is emerging in exciting new research on the values indigenous peoples attached to cultural constructs of 'their past' (Layton 1994). Temporal-spatial identification systems may be quite extensive and subtle, extending far beyond small primary groups and settlements. Recent work in southern Mexico shows that culturally constructed time may be encoded into the landscape and take on concrete architectural form. Archaeologists working at the famous ancient city of Monte-Alban found that the length of adjacent ball-courts and the distances between ceremonial sites were proportionate to the number of days in the Zapotec astronomical and ceremonial calendars (Peeler and Winter 1993). In a display of genius foreshadowing modern relativity, the Zapotecs have architecturally united their organisation of space and time.

Control, manipulation and recreation. Landscape architect studies have shown that control over meaningful space: manipulation of that space by means of construction, subtle changes, decoration, modification and the recreation of previous settings in the future, help people to define who they are. In urban areas, for example, the ability of the resettled people to recreate the interior of their home in a new apartment, and to find a parallel in the layout of rooms, increased their chances of positively adjusting to a move (Marcus 1994).

Observational Support

If socio-temporal order gives a society predictability and sets priorities and meaning, its destruction may render social life chaotic,
unpredictable and meaninglessness. Involuntary relocation overloads a society with uncertainties and disorder. In large-scale infrastructure projects, such as hydroelectric dams, spatial-temporal dislocation can begin months before the physical relocation-construction work begins, the routine order of daily life and the landscape is fractured by unscheduled high explosives—creating a demonstrable uneasiness among the population (Inga-Lill Arronson, personal communication 1993). From the perspective of social geometry, social dislocations accompanying involuntary resettlement may change some of the spatial-temporal dimensions which define a people’s identity, threaten intangible spaces and moral order, modify behavioural orders, set new priorities and have a differential impact on people depending on their age, sex and rank. Hopefully, resettlement may offer some or all of those being resettled an opportunity to correct dissatisfactions with the previous order. I will now examine six discernible patterns.

Relocated and disaster-struck communities show what some might consider an irrational attachment to inexact, prioritised spatial-temporal orders. In central Mexico, three adjacent riverine mestizo peasant communities near the Zimapan Dam were relocated to a nearby arid, riverless plateau. Potable water was piped in from twenty-three kilometres away and no water was available for irrigation. Early in the project, resettlers were permitted to rename the principal street in their new town. To the surprise of outside observers, they named their principal street River Boulevard. The community claims over who had the right to live on the right bank of ‘River Street,’ in a position identical to their previous location. A few months later, they selected the new name for their arid, hilltop community: Bella Vista del Rio (Beautiful View of the River). But the river is nowhere to be seen.

Cernea offers another example of ingenious solutions to spatial-temporal distortion. In Fujian Province, China, involuntary resettlement gave Chinese peasant families a rare opportunity. Young people from large, extended families could obtain new houseplots, but the issue became ‘where?’ In the local social geometry, house sites adjacent to the main road were more valuable. Only a few could have choice locations and the potential for internal conflict was evident. The dissatisfaction was rectified by the peasants, who revamped their lottery system to permit the drawing of a cluster of 2-3 housesites (Cernea, personal communication November 1994). The element of chance, which plays a powerful role in social geometry, was reintroduced into an over-structured planning exercise.

The power of the continuum—the attachment to prior conceptions of socio-cultural space—has been witnessed again and again in disasters. Following the devastation of Hurricane Andrew in 1990, families in Homestead, Florida, preferred to camp among the ruins of their homes rather than accept government shelter—often maintaining precisely the same spatial arrangements in the streets that were present in their now obliterated apartments. A comparable attachment was witnessed following the 1978 Mexico City earthquake, when families camped in front of the rubble of their fallen apartment houses—in some cases maintaining the same spatial referents which they had to their neighbours. Something is occurring which goes beyond a rudimentary defence of what might remain of one’s property.

It follows that re-establishment of spatial-temporal prioritisation and order is an important part of the recovery process. An American television network’s videotape crew followed one of the 200,000 families left homeless by this hurricane—the Lucketts (ABC News 1992). The Lucketts are an extended, sixty-five person matriarchal clan who, before the disaster, occupied sixteen homes in Homestead, Florida. Homeless, without belongings, they were temporarily relocated in a high school auditorium. The Lckett clan’s women concentrated on re-establishing the routine organisation of the family, focusing on the children. The women stressed that it was important that the children have ‘three meals a day, bath, and get to bed on time.’ At the shelter, each part of the family organised a small, personal space. The children’s behaviour in their socially defined space was of considerable concern as the mothers struggled to establish where they perceived the children should and should not go within the school auditorium and yard. They made and believed in an unstated contract with the relief officials. The matriarch told the interviewer, ‘if the children don’t get out of line ... don’t go where they’re not supposed to ... then we won’t get kicked out into the streets.’ Re-establishment of temporal priorities was evident when the entire gymnasium of relocatees joined in celebrating what might normally be an insignificant familial ritual—a birthday party, as a human-scale temporal regularity returned to an incomprehensible large disaster.

Social geometry provides insights into another problem. Following Hurricane Andrew, the Luckett matriarch stumbled through the ruins of what, a week before, had been her home. She described her post-relocation situation ‘like a dream in which you wake up’. In June 1994 in central Mexico, I listened to a distraught young wife describing her loss following our visit to a mountain top where we watched a new reservoir slowly flood what had been, for many generations, her family’s home. Using almost identical words, she
described her feelings 'like a dream. Someday I will wake up'. In both cases, the women's expressions are more than metaphors. In human experience, dreams are thoughts disoriented in time and space (Friedlander 1940). They represent another geometry which is divorced from the elaborate, ordered conscious geometries which characterise waking life. From the perspective of social geometry, both women's descriptions were correct.

The spatial-temporal order influences which segments of a population will be affected by social dislocation. This sometimes yields unexpected results. Investigations following the devastating 1976 Guatemala earthquake uncovered an unusual age-specific mortality pattern. Eighty per cent of casualties were the penultimate child (Kates 1973). Rural, indigenous Guatemalans suffered heavy casualties. In this culture, it is common for the youngest child to sleep next to the mother, and the penultimate child sleeps with the elder brothers and sisters. The quake struck at 3:05 am on 4 February. The youngest were protected by the parents when the quake hit, but the weakest child, the penultimate child, was the most exposed to danger. Consequently, the socio-spatial and socio-temporal sleeping patterns exposed a particular segment of the population to higher mortality.

For some time, I was puzzled by the apparent resiliency of children to involuntary resettlement and natural disasters. Within days of the disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp. Within two weeks of what, to the adults, was a disaster, the children of the Luckett clan gleefully played basketball in the relocation camp.

Policy And Other Implications

For over fifteen years, development anthropologists and sociologists - led by their colleagues in the World Bank - have painstakingly crafted a policy framework to mitigate the harmful economic and social impacts of involuntary resettlement (Cernea 1993b; Kardam 1993). An architect of the policy and Senior Advisor on Social Policy at the World Bank notes that resettlement policy has been enhanced by the feedback between theoretical assumptions about change and lessons gleaned from development projects (Cernea 1993b). As feedback and theory have changed, the policy frameworks have been updated and refined (World Bank 1994a). Identification of the eight forms of impoverishment, mentioned at the outset, is a relatively recent example of this knowledge-based policy.

At this point, the theory of social impoverishment seems to be edging ahead of policy development. Presently, resettlement policies pay minimal attention to mitigating spatial dislocation and almost no attention to relieving temporal dislocation. World Bank policy (OD 4.30 para. 7) and OECD guidelines propose identical language - reducing dispersion, sustaining existing patterns of group organisation, and retaining access to cultural property (temples, pilgrimage centers, etc.), if necessary through the relocation of that property (OECD 1991). In the realm of want-to-be policies, the American Anthropological Association White Paper on Involuntary Resettlement goes further, introducing an element of temporality - reducing social costs by making the move as quickly as possible and avoiding temporary holding facilities (American Anthropological Association 1991). In light of the preceding discussion, it is apparent that the policies are culturally unsophisticated. Practice supports this judgement. A simple decision to displace a population to a location proximate to that of origin does not necessarily reduce human and social costs (Lightfoot 1979).

On a positive note, resettlement practitioners who are directly responsible for resettlement operations, as well as many of those who are displaced, are well aware of the dislocation problems that I have identified in this discussion. Some have, with minimal theoretical or policy guidance, forged solutions of their own. In western Mexico, for example, Huichol resettlers worked with anthropologists to record not just sites being inundated, but to create a symbolic reference map for the new sites (Guggenheim 1993:224). In Zimapan, Mexico, the centrality of the bandstand (kiosk) to community life was
recognised, and each of the three communities was provided with a spatial area for performing recurring temporal events. Government engineers wisely postponed a scheduled relocation until after the annual village festival and organised a new festival to celebrate the founding of the new town. The relocation was stressful, but peaceful. Comparable sensitivity is reported on the successful resettlement at the Costa Rican Arenal Hydroelectric project (Partridge 1993).

Drawing policy lessons from these isolated cases is risky. The sensitivity of people to social and temporal displacement varies markedly between, as well as within, groups. Some show minimal disorientation. Others become almost culturally dysfunctional. This variation forces policies to identify groups at high risk. It appears that people with long-standing relationships to their environment, especially indigenous populations, will be more likely to need special attention.

The combination of theoretical findings and development experience strongly suggests that social impoverishment of displaced people can be mitigated by intentionally repairing fractured social geometries. The solution requires that resettlement policy step outside the narrow arena of economic rehabilitation and technological fixes. It requires solid, innovative ethnographic work to complement aerial photography, conventional mapping, demographic surveys and socio-economic censuses. In addition, it requires close scientific collaboration between the displaced and the cultural analyst which can never be accomplished in a windshield visit to a relocation area.

Positive actions to reduce social impoverishment include:

Field Reviews. Policy development will emerge from the interchange of the rich, on-going research into spatial-temporal organisation and the growing practical experiences of resettlement projects. Cases of development-induced displacement should be reviewed to uncover serendipitous or intentional actions which helped people re-establish their social geometry. How did they find (new?) answers to primary cultural questions, especially ‘where are we?’ and ‘who are we?’ The results of this rich experience should be codified into systematic social knowledge.

Social geometric analysis. A cross-culturally applicable, rapid-assessment methodology must be developed to discover the social geometries of people to become a part of project planning and execution. Minimally, the method would a) identify and prioritise the times and places which people regard as critical to their society, b) identify intra-group differences which are likely to be effected by social dislocation (e.g., religious, gender or class differences), and c) find areas of dissatisfaction which might provide a potential ray of hope for planning a future following displacement. The methodology might adapt techniques used to study ‘attachment to space’ to the analysis to understand the social geometric matrix of time/space/person. Likely remodelling candidates for creative adaptation are spatial memory studies, environmental autobiographies, role playing, behavioural mapping and favourite-place analysis, as well as more formal ethnographic methods.

Theory building. Much work remains to refine the theory of social geometries, starting with a synthesis of more than a century of insightful intellectual efforts to understand spatial-temporal organisation which is dispersed throughout many disciplines.

Open dialogues. Awareness of the social impoverishment problem may increase by encouraging in-house discussions and workshops within development agencies and non-governmental organisations. Those to be displaced must also be provided with an opportunity to examine and search for ways to protect what might be heretofore hidden dimensions of their culture.

Refinement of operational indicators for project performance. Social impoverishment indicators of spatial-temporal disruptions should provide ‘early warnings’ of more serious social and economic dysfunction in a displaced population. Development and monitoring of social-geometric indicators may be injected into project cycles. This would include explicit recognition of the threat of social impoverishment and planning for its mitigation. At minimum, operations would include pre-resettlement social geometry surveys and plans to mitigate social impoverishment in culturally acceptable ways, with full participation of members of the affected population in both the initial study and the reconstruction.

Determination of rates of return. It is highly probable that minimising social impoverishment and economic impoverishment are mutually reinforcing actions. A review might be undertaken to determine if the rates of return of projects which resolved socio-temporal disruptions were higher than the rates of return of those that did not, in a fashion comparable to the classic World Bank study by Kottak (1991).

Conclusion

Each year, another ten million people become involuntarily displaced and risk social impoverishment (World Bank 1994a). Social
impovery occurs when the displaced are unable to answer the primary cultural question - ‘where are we’? For many, the answer to this question also defines ‘who are we?’ Reconstruction of the lives of the displaced demands carefully, coordinated economic and social action. It requires a theory capable of explaining how displacement leads to social impoverishment. I advocated a theory of social geometry, finding that the answers to primary questions are encoded in the linkage of socially constructed places, socially constructed time and socially constructed personages. This linkage provides a framework for routine and ritual activities. Weaken the framework, and social impoverishment becomes likely. Reconstruct it, and increase the likelihood of meaningful reconstruction of the lives of the displaced.

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Notes On Contributors

Dr Gautam Appa is a Senior Lecturer in Operational Research at 
the London School of Economics and Political Science, specialising 
in mathematical programming. His research interests include the 
effects of development policies on people and the environment, and 
the political economy of India.

Dr Alicia M. Barabas is a Senior Research Professor at the National 
Institute of Anthropology and History, Mexico. She has worked for 
twenty years with Indian people displaced by the Cerro de Orro 
dam in Mexico and has published widely on inter-ethnic relations 
development in Mexico and Latin America.

Dr Miguel A. Bartolomé is a Senior Research Professor at the 
National Institute of Anthropology and History, Mexico. His re-
search focuses on inter-ethnic relations and development issues in 
Mexico and Latin America with a concentration on the displace-
ment arising out of the construction of the Cerro de Orro dam.

Dr Michael Cernea is the World Bank’s Senior Adviser on Social 
Policy and Sociology in Washington. His work and main research 
focuses on the application of sociology and anthropology to devel-
lopment policies and programmes, migration, population settlement, 
the social organisation of natural resource management and public 
policy. He received the Solon T. Kimball Award in 1988 and the Bron-
nislav Malinowski Award in 1995 for his work applying social sci-
ence knowledge to development policies and programmes and to 
the formulation of public policies.

Dr Theodore E. Downing is Research Professor of Social Devel-
opment at the University of Arizona, former President of the Society 
for Applied Anthropology and frequent consultant to major interna-