

Kashgar to Islamabad: the impact of the Karakorum Highway on mountain society and habitat.

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ABSTRACT: The recently opened Karakorum Highway (KKH) has forged a new geopolitical link between China and Pakistan. Multiplier effects of the highway have transformed the indigenous mountain society and habitat by introducing tourism and cash cropping. Enhanced accessibility created by the road

has reoriented mountain land use away from the traditional altitudinal zonation model to a strassendorf model of clusters of intensity along the KKH itself.

KEYWORDS: Mountain geography, Cultural geography, Karakorum Highway, China-Pakistan.

INTRODUCTION

The poet, William Blake, said "Great things are done when men and mountains meet." When Lt. Cols. Mushraq and Waziri of the Pakistani Army Engineers' Frontier Works Organization moved out of the foothills of the western Himalaya and eastern Hindukush in 1965 to start a road survey over the Karakorum mountains to China they may not have fully realized the enormity of the task. Today, the Karakorum Highway, colloquially known as the KKH, provides a lifelink for the Pakistani mountaineers to the plains of Punjab, while on a more ethereal level, the road is a geopolitical weld between Pakistan and China thereby thwarting any territorial link between the Soviet Union and its regional ally, India (Fig. 1).



Figure 1 Inner Asia.

This road has produced a different geography in this uppermost corner of South Asia and westernmost portion of Inner Asia. It is the purpose here to describe and analyse the impact of the KKH on mountain society and habitat between Kashgar, China's westernmost city, and Islamabad, the capital of Pakistan (Fig. 2).

In mountain geography, the longstanding model of mountain life has been dominated by one created by Alexander von Humboldt (Bromme, 1851), Ratzel (1889), and Carl Troll (1988). This idealised image assumes a mountain habitat controlled by environmental components that are reflected in the native vegetation. Uhlig's (1984) review article summarises the development of these models of mountain habitat. Further development of models has led to the creation of a 'high mountain culture' type (Jentsch and Liedtke, 1980). But there is enough evidence from the mid-twentieth century to indicate that as roads are built through mountain territory, land use reverts to a type portrayed by the common distance-decay model (Allan, 1986b). This accessibility model for mountain habitat appears to be the driving force behind the changes in mountain land use in the South Asian mountain rimland (Allan, 1984a), although modifications of the traditional model are now being explored (Groetzbach, 1985; Soffer, 1986; Uhlig, 1986). The changes noted here along the Karakorum Highway buttress the arguments for the accessibility model.

Concomitant with the reorientation of intensive land use along roads is the transformation of settlement pattern from tightly packed nucleated villages easily defensible when under attack, to a *strassendorf* settlement with new shops, lodging and other commercial facilities, strung out along the new roads. This new model is common in the Pakistan sector of the KKH but in Xinjiang Province a Chinese urban plan with streets and buildings oriented in cardinal directions has been superimposed upon native settlements. This latter model has wide streets, with avenues of trees, and pavements. Large compounds, akin to the traditional *caravanserai*, flank the wide streets.

The historic route of the KKH traverses country that has occupied the British imagination for a century and a half (Alder, 1963). Explorers like Ney Elias, Younghusband and Lockhart travelled these routes at one time and Macartney journeyed to his post in Kashgar. The Karakorum's best known post World

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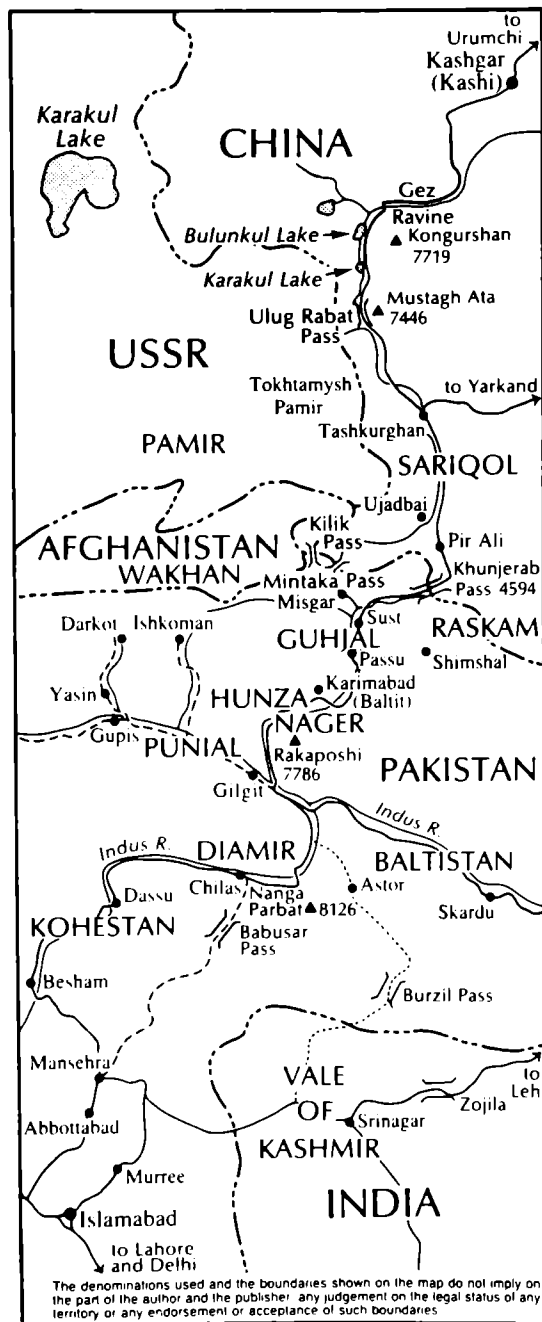


Figure 2 The Karakorum Highway.

War I traveller and British intelligence gatherer, Colonel Reginald C.F. Schomberg, wrote in these pages half a century ago about the difficulty of travel in these mountains (Schomberg, 1933; 1934). Author of four books and more than 30 articles about this area, Schomberg wrote of one small portion of his peregrinations in the Karakorum, from the Khunjerab Pass to Misgar village, wherein he

recounted the arduous passage through the Khunjerab River gorge that took six days (Schomberg, 1936). Today, a traveller on the KKH passes by Misgar and climbs up to the top of the Khunjerab pass in 70 minutes. To magnify the relative ease of travel, *Nevé's Guide* (Nevé, 1934) — the standard handbook on travel in old British India's northern frontier — quoted a travel time of 23 marches between Rawalpindi, the terminus of the railway in the Punjab, and Gilgit, the northernmost British garrison. Today this distance is covered in 17 hours by local bus, and 13 hours by private minibus for those who do not want to pay the £8 for the one-hour trip by air.

Fully completed in 1978 and open in its entirety to the public in 1986, the KKH is the latest of four trans-montane roads that have been completed over the South Asian mountain rimland since the early 1960s. These 'Highways to the Sky' (Allan, 1988), are all manifestations of geopolitical alliances on the mountain landscape. The enormous costs of these roads could never be rationalised as mere economic-development projects. Now that they are completed they do, of course, have multiplier effects on the mountain communities. The Kathmandu-Lhasa road (lately severed by disastrous landslides and consequent flood on 30 June 1987) enticed Nepal away from a dependency on India. Now supplemented by the Manali-Leh road over the Rohtang, Baralacha and Tangla passes, the Srinagar-Leh road permitted the military convoys to bring supplies from the Vale of Kashmir up to the Indian troops stationed in Ladakh in the aftermath of the disastrous Indian confrontation with China in 1962. Today these roads serve the tourist traffic and act as supply routes for the unfortunate Indian troops sent to their deaths in the 5500m skirmishes on the Siachen glacier border with Pakistan. To the west of the KKH, the fourth main road through the South Asian mountain rimland was built by the Soviets from Qyzil Qala on the Amu Darya, south over the Central Asian portion of Afghanistan, through the Salang Tunnel of the Hindukush mountains into South Asia and Kabul. The KKH, like these other mountain roads, has irreversibly changed the mountain society and habitat through which it passes.

KKH AS A GEOPOLITICAL ENTITY

Britain, being an island nation with little experience in demarcating and holding boundaries, had to subdue and enter into treaties during the nineteenth century with the small principalities scattered along the mountain border of the Indian sub-continent. Despite the British presence in these mountains the principalities were always subject to the blandishments of secret agents of competing powers who offered guns, money and power. The route that the KKH now travels was used to supply the British outposts in the Karakorum mountains and the British forward post at its consulate in Kashgar.

The geopolitical machinations between Tsarist (later Soviet) Russia, China, and British India are well known through popular writers like Hopkirk (1985)

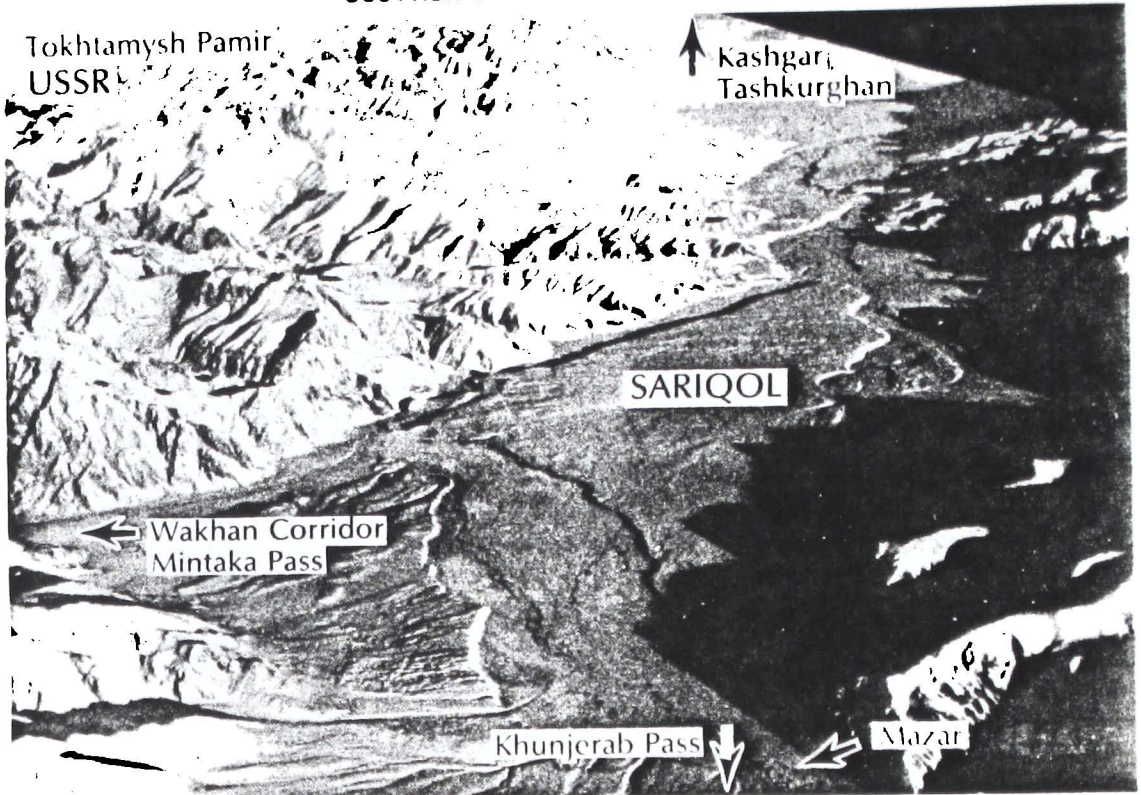


Figure 3 Aerial view of Sariqol Pamir Route of the Karakorum Highway, flight PK 752, 19 January, 1986.

and Keay (1977, 1979). The European disputants viewed these wild uncontrollable Muslim border territories as places ripe for the civilising (and Christianising, one might add) influence of European powers. The Great Game, as it was dubbed by Captain Connolly two years before his ghastly death in Khiva in 1842, was fought over control and demarcation of the hinterland boundaries of the respective power blocks in Central and South Asia (Morgan, 1981). Today the KKH, driven as it is between the Hindukush and the Himalaya and through the Karakorum, can be seen as the latest manifestation of this rivalry.

For an ethno-linguistic group like the Wakhi (Tajik)-speaking pastoralists, who live in the Wakhan corridor of Afghanistan, in the *pamir* — the high valleys — of Soviet Tadzhikistan, in Sariqol of Xinjiang, and on the northern margins of Chitral and Gilgit districts in Pakistan, the events of last century have demolished their ethnic solidarity, as they have been barred from their migration routes to traditional grazing grounds and forced to settle in sedentary agriculture in the lower valleys subject to the laws of four different countries. Despite the incursion of the modern nation-state into the lives of these pastoralists, the general welfare of local folk and safety of travellers is much greater than it was a century ago when Macartney went to Kashgar as the political representative of Imperial India (Skrine and Nightingale, 1973). At that time mobs of brigands

plundered the caravans and travellers along the road.

Macartney, and most other travellers between the Vale of Kashmir and Kashgar, crossed the Karakorum mountains to the west of the present-day road over the Khunjerab pass. The Mintaka and Kilik passes, between Misgar village and the Karachukur valley, provided a much easier crossing than the Khunjerab pass as Schomberg's tale of woe testifies (Schomberg, 1936). In constructing the KKH, the Pakistani engineers chose to forge a route further to the east of the Soviet border because it was only a day's horseback ride away from the Mintaka Pass. Choosing the more easterly route meant more difficulties for the road engineers, not that they had not experienced difficult road building conditions up the Indus Valley. Both the old and new routes now unite at the head of the Sariqol *pamir* (Fig. 3).

KKH CONSTRUCTION

Aside from the purely engineering aspects of the construction of the KKH up the Indus Valley between the Himalaya and the Hindukush and through the Karakorum (Jones *et al.*, 1983), the major impacts have been on space and place. Much of the territory through which the road travels has been only loosely administered because of the difficulty of access. With the construction of the KKH came a reorganization of administrative districts. Hazara district in the foothills was split into three districts, Abbottabad,

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Mansehra and a new district of Kohestan was formed out of northern Mansehra district and the eastern portion of the former principality of Swat (now a district).

This reorganization had administrative convenience but it changed the circulation patterns of the inhabitants. In traditional highland-lowland interaction systems in many mountain societies, the social networks can be one of four models. Movement between one side of a valley and across the high pastures to the side of an adjacent valley is known as the 'crest-slope' model (Allan, 1985). The river at the bottom of a valley is usually perceived as a boundary dividing one side of the valley against the other. Social communication usually occurs during the summertime when the villagers are at the high pastures with the animals where they meet villagers from the adjacent valley. With the construction of the KKH these circulation patterns have been irrevocably changed as the new road at the bottom of the valley acts as a magnet for the surrounding population and a dendritic 'watershed' pattern of human movement ensues. The numerous small bridges and jeep tracks linking valleys and villages with the KKH have reinforced this new pattern. Concomitant with the construction of the road is the reorganization of formal (government) space in Pakistan with the creation of the new Kohestan district and its headquarters, Dasso.

Dasso is like many new places scattered along the KKH. They serve as bazaar towns in addition to their governmental functions. Among the new buildings are the police station and the jail, both of which are kept busy. By providing ready access to any territory in the district, the new roads have induced a spate of murders from blood feuds formerly kept at bay by the inaccessibility of remote valleys. Because the Indus and Hunza river valleys are narrow the new settlements are strung out along the valley bottom in a *strassendorf* pattern. They are frequently located where a bridge to a side valley has been built. Dasso is typical of this pattern as it is now spread out along the KKH where it crosses the Indus via a large bridge. From a political standpoint the incursion of police and civil administrators has become intolerable to many Kohestanis — highlanders — because they now are obligated to conform to the ways of the plains society. This the local mountaineers deeply resent.

As one sets off up the KKH road the usual Pakistani starting point is Islamabad, the capital city, or the neighbouring cantonment town of Rawalpindi. After a short trip up the Grand Trunk Road in the direction of Peshawar, the route branches north past the Afghan refugee camps at Havelian and the huge munitions factories at the head of the railway before the road climbs up to the Rash plain where the cantonment, and now retirement town, of Abbottabad spreads out.

The KKH really begins at the bridge of Thakot next to the remains of a pioneer bridge which the Pakistanis built prior to the Chinese collaboration in construction of the KKH. A plaque announces distances to all points up the highway to Kashgar and even beyond

to Beijing. At Besham, once incorporated into the principality of Swat, the road forks with the left fork going over the Shangla Pass into the Swat Valley proper and the KKH going straight on. Clinging to the precipitous walls of the Indus River gorge, the road then traverses the geologic main mantle thrust where the Gondwanaland tectonic plate crashed into Eurasia. The frequent landslides that periodically stop traffic are only small indicators of the instability that occasionally devastates the area as it did in 1974 with great loss of life (Hewitt, 1976).

The road ahead travels through Indus Kohestan — now formalized into the district of Kohestan separate from Mansehra. To the British this was 'Yaghistan', the land of the wild people who never came under their jurisdiction. For Asian travellers like Sir Marc Aurel Stein and other intrepid explorers it was World War II before any outsiders ventured into this area. Fredrik Barth's (1956) journey is one of the first comprehensive accounts of anarchic society and habitat in this Kohestani (sometimes called Dardic) language-speaking area. The residents of the area, colloquially known as Kohestanis, linguistically related to the Kashmiri and Shina immediately to the east and westward to the Pashai indigenous language group around Kabul, were formidable opponents to the construction of the KKH because they knew that they would forfeit their autonomy in their "protected" tribal area. Beyond the mouth of the Kandia Valley, road-survey crews were repeatedly ambushed by local tribesmen. Their opposition forced a realignment of the highway to the left bank. The new Kohestan district town of Dasso grew up at this critical detour. Further on, in Diamir district the convenient left bank route avoids the notorious tribesmen of Tangir and Darel — an area now once again off limits to the plainsman and foreigner. The mountains still reverberate with anarchy. It was these Sunni tribesmen incited by Wahabi *mullahs* from the Pushtun religious academies in the plains who invaded and killed several hundred Shia and Ismaili villagers while on a proselytizing rampage near Gilgit town in May 1988.

Shortly after Chilas, the district town for Diamir district, the road crosses the Rakhiot bridge and as shown in Figure 4 traverses the avalanche track of the massive 1841 landslide when a Nanga Parbat ridge collapsed into the Indus River (Shroder, 1989). The KKH continues to wind its sinuous path through rock slides and over raging torrents (Fig. 5). Constant mass wasting in the surrounding slopes of rockfalls and debris flows requires continual road maintenance by Pakistan Army road crews. The road may be blocked for several days and periodically needs realignment (Fig. 6). Along the roadside landscape are the memorials to the construction workers killed in accidents. A large central Chinese cemetery outside Gilgit contains memorials to hundreds of Chinese labourers killed. Legend has it that one worker was killed for every mile of the highway constructed. After Gilgit much of the actual construction was done by Chinese. Their abandoned roadside camps indicate the

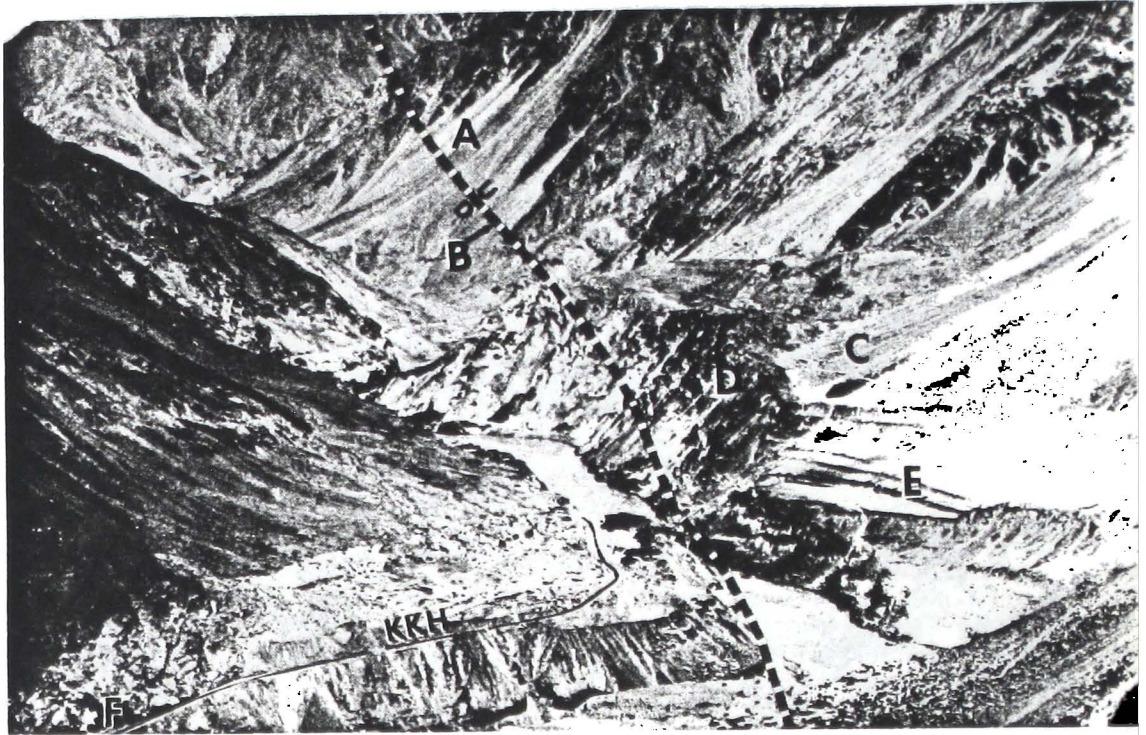


Figure 4 Karakorum Highway in left foreground at Rakhiot with 1841 landslide in background.

Photo: John F. Schroder, Jr.

- A 1841 Landslide B Thakot Reverse Fault C Lichar Fault Block D Bedrock
E 1841 Flood Scars F to Rakhiot Bridge KKH Karakorum Highway

labour-intensive method of road construction that is still much in evidence in the road section north of Tashkurghan in Tajik Autonomous County. Labour camps with young male and female Han Chinese workers have separate stints from local Wakhi, Uighur, and Uzbek workers. Other than traversing the Gez ravine beyond Bulunkul lake at the foot of the northern flanks of the Kongur Shan, the road construction north of the 4594m Khunjerab pass was easy when compared to forging the highway up the Indus, Hunza and Khunjerab rivers.

Although it is only now that Pakistanis from the plains venture up the KKH, the joint China-Pakistan construction effort was seen by the Pakistani press as a major foreign policy venture (Kamal, 1979). Construction of the road began shortly after resolution of the China-Pakistan boundary (Lamb, 1964). For those people who saw the KKH as an immediate panacea to the underdeveloped Northern Areas, the results have been rather slow in coming. As one might expect, there has been considerable impact on the environment through which the KKH travels.

KKH IMPACT ON THE MOUNTAIN HABITAT

Traditional mountain land use in the South Asian mountain rimland, as elsewhere in most high mountains, was closely correlated with the altitudinal zonation of native vegetation. The aforementioned

archetype model was that of Alexander von Humboldt (Bromme, 1851) who, after seeing Chimborazo in 1802, fashioned a typical tiered-belt model of mountain land use. More elaboration followed with Ratzel's (1889) effort. The tiered-belt or altitudinal zonation model became deeply ingrained in twentieth century mountain geography (Uhlig, 1984).

With the construction of rapid transportation routes into mountains in the latter part of the twentieth century, mountain land use became a function of access to nearby roads (Allan, 1986b). The old German notions governing mountain habitat such as *hoehengrenzen* (threshold), *hoehengurtel* (belts or zone), and *hoehenstufe* (step) (Groetzbach, 1985) became modified by rapid access to mountain roads. With the completion of the KKH in 1978, the mountainous habitat of the Upper Indus basin has undergone significant changes. Over in the Inner Asian KKH sector in western China, the primary changes have been the links of military and civil supply road with a few scattered settlements and the provision of new agricultural land through the construction of several irrigation projects. Throughout its entire length, the KKH has induced new local, national and international circulation patterns and, from a geopolitical standpoint, consummated the relationship between China and Pakistan thereby thwarting an territorial hegemony by the Soviet Union and India

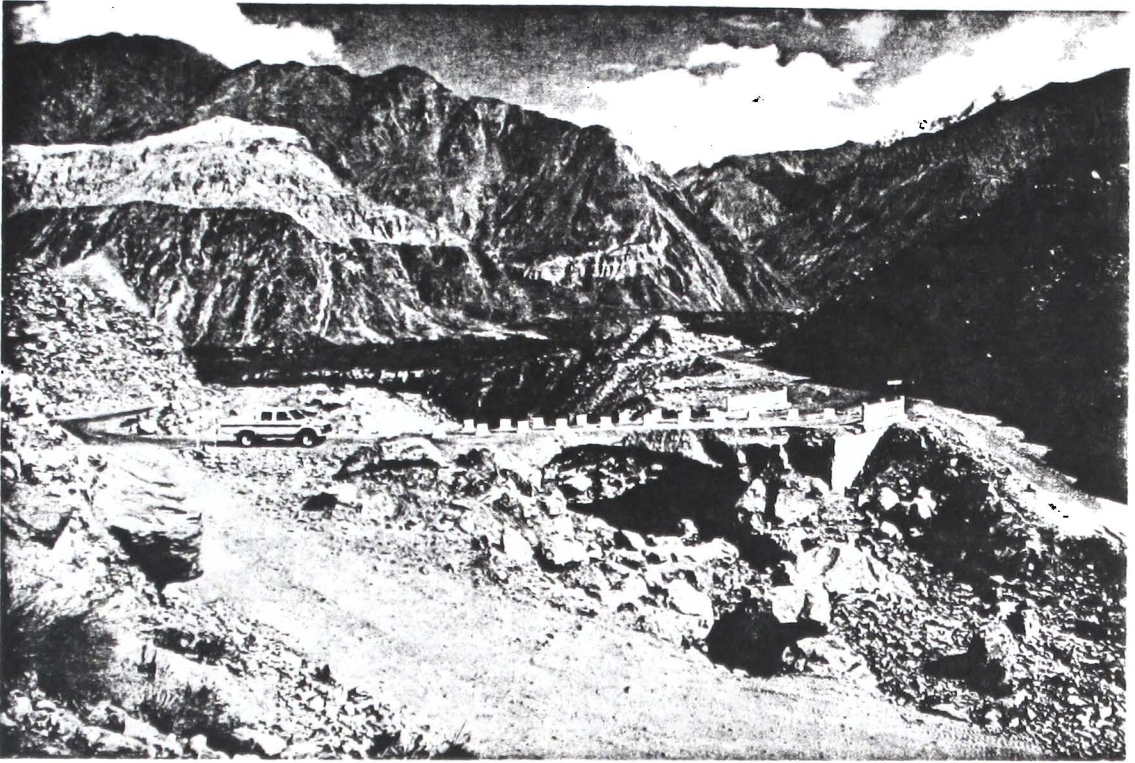


Figure 5 Partly destroyed bridge damaged in the July 1984 wet debris flow across the Karakorum Highway near Gilgit. The river was dammed for about an hour. Photo John F. Schroder, Jr

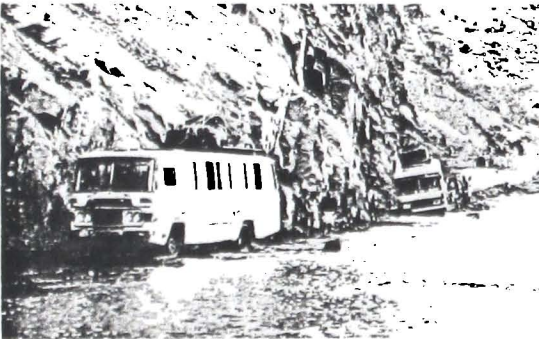


Figure 6 A Chinese bus negotiating the Khunjerab River Gorge dammed by a debris flow in Spring 1988.

Throughout the northern, Chinese portion, the KKH follows the military supply roads built by the Chinese to the contiguous Soviet border, the location of which is still in dispute on the Sariqol western flanks. The principal benefit of these new roads to local people are the numerous bridges that span rivers, which in spate were difficult for pastoralists to cross in spring transhumance. The vast summer-pasture grounds in the Subashi basin between the mountains west of Kashgar and the Soviet border can now be reached over permanent bridges from the Gez ravine at Kongur Shan where the *pamirs* beyond Bulankul lake can be fully exploited. Pastoralism in China has

been assisted by the new road but in the Pakistan section the opposite is true. The Tajik shepherds who live in Guhjal, it is true, now use the road as a drove route during their migration to the high pastures but the number and amount of livestock going to the high pastures have decreased considerably in recent years.

Contemporary pastoralism in Xinjiang's Tajik Autonomous County has evolved differently from that found among the people of northern Gilgit district. Last century the Tajiks were essentially pastoralists with the bulk of their income derived from the sale of animal products. In China this system has prevailed. In Pakistan, however, most Tajiks were induced to settle permanently last century on riverine land north of Hunza by the local chieftain, the Tham of Hunza. With irrigation water plentiful and without being encumbered by the restricted riparian rights that existed in Hunza (Kreutzmann, 1988), the Tajiks became primarily agriculturalists. Livestock husbandry was retained but it shifted from a *transhumance* pattern in which large numbers of livestock summered in the high pastures and wintered in the low valleys to an *almwirtschaft* mode whereby much smaller numbers of livestock of individual owners were taken by a few inhabitants — now mostly older women — to the nearest high pastures. Livestock husbandry became secondary to cropping. The recent decline is caused by the expanding opportunities for work close to the road and for rapid periodic migration down to

the plains via the KKH. In Guhjal, catering to the tourist trade as porters and working in small rest houses along the road and in market-oriented agriculture, especially in the certified seed-potato production (Whiteman, 1988), have given a cash income to the local folk — the first of its kind. Consequently, the use of high pastures has declined. This has had an effect on ungulate wildlife as the numbers have increased.

When the KKH was under construction, huge numbers of local wildlife were killed, not so much for sport as the local people did, but to satisfy the meat-hungry Punjabi construction battalion troops. The noted wildlife naturalist, George Schaller, recounts how one Pakistani army officer killed an estimated 60 Marco Polo sheep in the area that has now become the Khunjerab National Park (Schaller, 1977; 1980). Others killed ibex and the rarer markhor and occasional blue sheep. Rapid access to winter feeding grounds undoubtedly took a heavy toll of game animals. Sightings of snow leopard are extremely rare although the national park designation seems to be effective, as tourists in May 1987 reported a snow leopard at a wild animal carcass adjacent to the KKH near the Khunjerab Pass. Wolves and foxes are still common.

A recent survey by Schaller and Chinese wildlife experts around the Chinese sector of the KKH reveals no male Marco Polo sheep permanently residing in Chinese territory. Unlike the situation 100 years ago (Cobbold, 1900) they now breed only in China and return to Gorno Badakhshan Autonomous Oblast in Soviet Tadzhikistan for the rest of the year (Schaller, 1987). Schaller blames the absence of wild goats and sheep in the region on wanton killing by pastoralists. What is not mentioned, however, is that until recently the Tajik pastoralists in Han Chinese-mandated communes could not even kill for themselves any animal they were herding. All were the property of the state and only diseased and dead animals could be consumed by the herders. To obtain a supply of fresh meat the pastoralists shot wildlife with the guns they had been supplied with for eliminating the marauding wolves. Now that devolution of herd management from the provincial authorities to the herd owners has occurred since the 1978 reforms, the amount of wildlife killed for culinary purposes is in decline as meat from locally owned domestic livestock is available. A Taxgorgan Nature Reserve established in 1984 should offer some protection for the indigenous wildlife.

In the southern reaches of the KKH, in the area influenced by the summer monsoon rains, much of the forest adjacent to the road has been destroyed. Government-approved logging had been done for several years prior to the KKH. In the old days, contractors bid on felling contracts in remote forests and logs were simply dumped into the Indus and floated down to a point where they were retrieved from the river. Northwards from Besham the striking visual impact of the road can be viewed. Substantial native vegetation exists on the left bank but on the right bank

where the road is located, most of the steep side the gorge has had timber and even shrub removed. Deforestation continues as Gujjar pastoralists and their animals graze and browse the area, until finally it reverts to agricultural colonizers (Allan, 1986a).

As the KKH winds out of the Rash plain Mansehra District, several Afghan refugee camps have been created in the prime *chir* (*Pinus roxburghii*) forest. The devastation is enormous (Allan, 1987); the refugees sought fuel for cooking despite provision of kerosene and stoves by the dispensers of refugee aid. True to their culture, the Afghans, large Pushtuns, preferred their food cooked on wood sticks. Most of the refugees had never seen such deforestation and perceived the forest as an impediment to their life as cultivators and graziers. Trees were felled, and, in collusion with obliging Pakistanis, sold and transported down to the timber-starved plains.

Much more land has come under cultivation along the roadside and with increased accessibility of land selection has also changed. With cheap wheat and dried milk available in the bazaar as surplus from the Afghan refugee food program, the traditional focus on basic food commodities has changed. Land is now devoted to the higher income-generating fruits and vegetables. Agroforestry plantations now line the KKH in the foothill districts of Abbottabad and Mansehra while in the Gilgit and Hunza regions the traditional fruits like apricots and apples are being marketed domestically. Such is the demand for strawberries that it is possible to see local farmers board the daily flight from Gilgit to Islamabad loaded with baskets of fruit. The sale of the strawberries will pay for their flight in a few days in the Rawalpindi bazaar.

Formerly, land use in the foothill districts had conformed to the familiar altitudinal zonation pattern with lower land being terraced for irrigated cropland, forested land above that, and summer pasture above the forest. Rapid transportation into the area has induced much denser settlement along the roads and temperate vegetables and fruits intercropped with grain fields. Several trans-national broiler-chicken companies have opened hatcheries in the foothills thereby further intensifying land use close to the transportation routes. The population pressure on land has caused much deforestation and dryland agriculture is practised on terraces on the steep hill and mountain slopes. Agriculture now dominates at all altitudes and intensive market-oriented farming closer to the road (Allan, 1986a).

A curious lag in multiplier effects occurred as soon as the KKH was opened. Development planners in Islamabad thought the road would trigger an immediate economic boom in the mountain rural economy of border districts like Gilgit (Kamal, 1979). What was clearly underestimated were the critical links to the KKH from adjacent villages. As a network of steel wire suspension bridges strung across the rivers and jeep tracks was built into the remote valleys of Pakistan's Frontier Works Organization, the human use of the environment changed.

TOURISM

Foreign and Pakistani tourist patterns differ greatly. Like the Indians (Bharati, 1977; 1988), the Pakistanis from the Punjab and elsewhere never saw much attraction in the mountains; in fact they regarded them with fear and loathing and their inhabitants were always seen as "jungly". With the advent of British hill stations, it was fine for the gentry to take a jaunt into the foothills and a visit to Murree and adjacent hill stations is still popular. But visiting the high country is not appealing to the Pakistani middle class who can afford to go on holiday.

But the Pakistani middle class now views a trip to Kashgar on the KKH as a substitute for the trips they used to take to Kabul. When the KKH was opened in 1986 almost no accommodation was available for the travellers. Within two seasons, however, many small overnight hotels have sprung up in Hunza and Guhjal. At the frontier post of Sust over 250 beds are now available at the end of the second tourist season. These facilities accommodate incoming and outgoing tourists. Two or three buses arrive and depart each day. Overnight stay in Sust is necessary for clearing of immigration and customs. Usually, two to five foreigners pass through immigration each day with Japanese, Overseas Chinese, and Germans being the most frequent foreign tourists. Tourist travel lasts from May to November but the road remains open for Pakistani and Chinese mail and goods traffic throughout the year. Large numbers of army pioneer corps workers keep the road clear of snow and avalanche debris most of the year (Fig. 6).

The opening of the KKH has resulted in a substantial increase in foreign-tourist registrations in Gilgit district (Fig. 7). Because of the danger of vehicles falling into the river gorges found throughout the Pakistani route and the Gez ravine north of Kongur mountain, the Chinese and Pakistani authorities insist on registration of all foreigners at check points and hotels. These statistics are collected regularly by local police. The increases in foreign tourists reflect the phased opening of the KKH. Open travel to Hunza was possible in 1980 when the Royal Geographical Society celebrated its 150th anniversary by sponsoring a mountain and glacier-surveying expedition to the Karakorum (Miller, 1984). Unfortunately, the Westerners on this expedition were unable to obtain permission for travel beyond the Batura glacier outwash channel in Guhjal *tehsil*. In 1984, foreigners were permitted as far as the customs checkpoint at Sust and by spring 1986 foreigners could travel by scheduled bus over the Khunjerab pass to China as part of a general policy of an open boundary. With special permission, foreigners had gone to China via the route of the KKH for many years. One enterprising Norwegian, who had hired many Pakistanis for the oil and gas business in the Persian Gulf, transferred his good will into presidential permission to bicycle to Kashgar as early as 1978.

New hotels at Pir Ali, the Chinese customs post, and at Tashkurghan, the overnight stop between Sust and

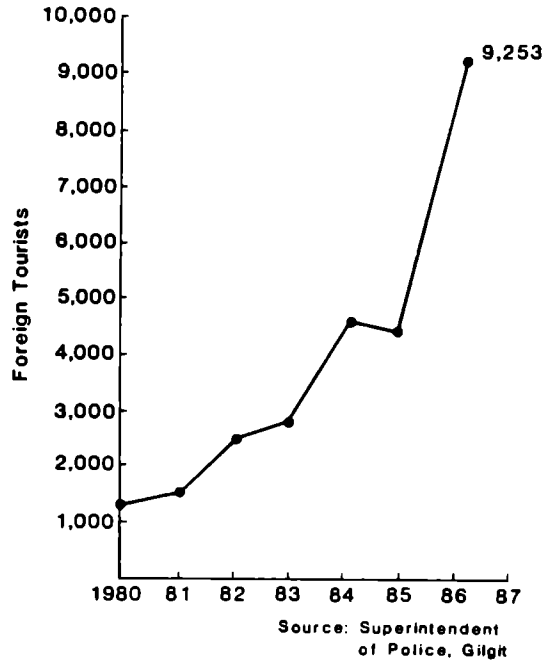


Figure 7 Foreign tourist registrations in Gilgit, Pakistan.

Kashgar, will enable tourists to enjoy the trip in considerably more comfort than at the present time. One Hong Kong travel agency is advertising pony-trekking expeditions in Pakistan's Khunjerab National Park. This type of activity will permit tourist avoidance of the arduous climbs out of the precipitous Khunjerab gorge. Most of the Pakistani hotels are being financed by local entrepreneurs, usually retired military officers, but there is considerable opposition to outside ownership of local facilities that do not supply or hire local staff. Local protests have been so strong, in fact, that one large hotel in Hunza remains incomplete and is to be destroyed.

TRADE AND COMMERCE

Reading the nineteenth-century literature on the British efforts to establish trading relationships of India with China (Morgan, 1981), one is constantly amazed — from the contemporary perspective — how this could be accomplished and how much was to be gained in financial terms (Rawlinson, 1869). The Yarkand-Leh caravan route over the Karakorum Pass (Fig. 1), where the mid-nineteenth century Scottish explorer ~~Thompson~~ left his bones, is high, windblown, and without fodder for pack animals. The slightly easier route to the west, up the Shaksgam valley and the (northern) Braldu glacier, was exposed to the raids of Hunzakuts plundering for goods and slaves in their resource-deficit stronghold.

In Pakistan, the area served by the KKH is still resource-deficit as the central government imports and

subsidizes one third of the wheat consumed in Gilgit District. Heavy vehicle traffic in the KKH also supplies the military garrisons. Prior to the opening of the KKH a barter agreement had existed between Pakistan and China. This historic trade before 1975 was carried by Bactrian camel and horse from Misgar over the Kilik pass down the Karachukur valley to the walled Ujadbai *serai* at the head of the Sariqol *pamir* (Fig. 3), whereupon it was conveyed to Tashkurghan. The Kilik pass was more suitable for pack animals as the grades were relatively smooth compared to the rocky and steep, but shorter, Mintaka pass. By 1975 the KKH construction between Hunza and Sariqol was complete and road convoys sponsored by the Border Trade Department headquartered in Gilgit replaced the ancient caravan trade.

Among the trade items in demand in Gilgit were teasets, cloth, and Chinese bicycles. With road transport available greater quantities were exchanged but the Chinese demand for Pakistani goods was poor. In 1987 virtually all of the PRs80 million trade to China consisted of 'Red and White' and 'K2' Pakistani cigarettes. These cigarettes are manufactured specially for the foreign markets in Afghanistan and China and convoys of a score of vehicles trundle over the Khunjerab Pass all year long (Fig. 8). A large range of goods is acquired by the Pakistanis from China. Two and three megawatt small hydro-electric generating plants are popular for installation in the mountains of northern Pakistan. Chinese crockery, silk, and agricultural implements and hand tractors continue to be in demand in Pakistan. The cost of Chinese goods tends to be relatively high, which no doubt reflects the heavy road transportation costs of three days' travel from the Chinese railhead in Urumchi or Korla to Kashgar.

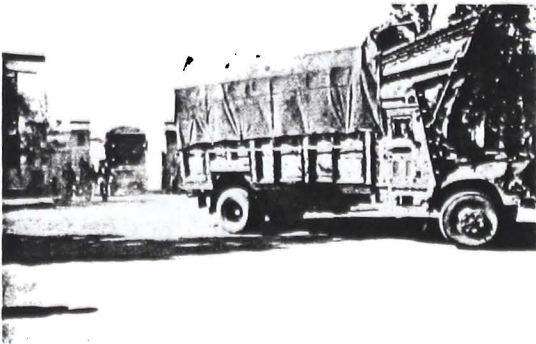


Figure 8 Pakistani lorries loaded with cigarettes leaving the Tashkurghan serai.

In 1985, 1200 Chinese Muslim pilgrims to Mecca travelled along the KKH on their way to Saudi Arabia. When they had reached Pakistan they were under the jurisdiction of Pakistani Islamic authorities who transported them to Mecca. To pay for their travel the government of Pakistan allowed the prospective *hajjis* to barter goods from China. These goods were mostly high-quality embroidery cloth which had the

immediate effect of totally crippling the rather low-quality embroidery cottage industry in Pakistan. This barter arrangement is now no longer in effect although the *hajjis* continue to travel to Mecca via the KKH and convert Chinese yuan for Pakistani rupees at market rates to pay for their transportation.

For most mountaineers living in frontiers there has always been a formal economic sector and an informal one. That, of course, is smuggling. This native craft is not well developed on the KKH between the two countries. Opium smuggling had come from Badakhshan in neighbouring Afghanistan to northern Gilgit district for many years (Shahrani, 1979). The pernicious effects of opium addiction were dealt with by instigation of a United States-induced UNDP-funded agricultural development project implemented by UN/FAO. Much of the addiction was in villages not aligned along the KKH but in Ishkoman and Yasin valleys to the west where routes to the Wakhan Corridor were open. Among several projects initiated by UN/FAO to enhance rural income, by far the most successful one has been the seed-potato project that sends certified seed potatoes to the Punjab plains every autumn where they are planted as seed for the winter crop (Whiteman, 1988).

Drug smuggling is negligible although many Pakistanis smoke cannabis on the bus to and from Kashgar. In alcohol-free Pakistan, Chinese spirits find their way into northern villages. For individual Pakistanis a PRs2000 (£70) limit is placed on goods that are personally imported. For second and third trips to Kashgar within one year this amount is reduced further. Local Gilgit residents are permitted PRs5000 of goods imported per year. Perhaps the most cogent reason for the relative lack of smuggling is not the vigilance of customs authorities but the difficulty in smuggling goods over great distances and steep terrain.

KKH IMPACT ON MOUNTAIN CULTURE

A decade ago an ecological anthropologist, Brooke Thomas (1979), outlined the strategies of a subsistent mountain community: rotation, regulation, co-operation, mobility, and storage. Most of these "insurance" features have been abandoned by the communities bordering the KKH. The KKH has permitted the cultivation of temperate crops like potatoes in the higher valleys. Despite the admonitions of the agricultural extension officers, the trend is towards monocropping, not rotation. Other vegetables are being inserted into the cropping system but vegetable eating is not a common habit of the mountaineers. Formerly, the wintering animals manured the fields through free grazing but the number of wintering animals is now drastically reduced. The self-regulating mechanism between animals and cropping is now out of synchronization as cash cropping becomes the norm and old water buffalo are brought from the plains (even smuggled from India) and driven up the KKH on lorries and eventually slaughtered and consumed in Pakistan's northern valleys.

Herding the animals once required the mobilization of an entire village's labour but now, with the reduction of animals going to the high pastures, the communal practice has almost ceased. In its place one now finds a vigorous community development programme funded and administered by the Aga Khan Foundation, an organization responsible for disbursing aid from wealthy Ismaili communities in the developed countries to the poorer peripheral Ismailis in places like Gilgit district. The programme emphasizes the construction of self-help village communal projects such as new irrigation leats and jeep tracks. All decisions about choosing, organizing and funding these small labour-intensive development projects are now made by new village organizations based on the mutual co-operation of the villagers. The enhancement of these village organizations in Ismaili and Shia villages has provided a bulwark against the religious incursions of the crusading Saudi-financed Wahabi sect of Sunni Muslims.

The mobility feature mentioned by Thomas focused on the notion of occupying and using different 'niches' over a range of altitudes, thereby minimizing the risk in food-supply sources. Now that Pakistan government-subsidized wheat is available in northern Pakistan and wheat is regularly brought from the Xinjiang oases to Tajik Autonomous County, the elimination of the risk factor has diminished the need for exploitation of 'niches' that could only be recognized by regular treks up and down the mountains. Food is now available with cash payment in the winter time, and the periodic starvation in the springtime that was such a ghoulish feature of life in Hunza has now been eliminated. Stores of food were never adequate in these mountain areas, hence it is not surprising that there was always a high percentage of older people in the population. Sickly infants and vulnerable small children simply died off in the spring starvation.

Out of many of these formerly self-sufficient communities have emerged individual entrepreneurs who are cashing in on the major artery through their villages. The greatest change has occurred in the Tajik communities in Pakistan and China. Unlike their neighbours in Afghanistan and the Soviet Union who were forcibly removed or lured from remote highlands to lower settled communities during modernization (Grevemeyer, 1982; Groetzbach, 1972), the Tajiks are now enjoying the advantages of their ideal mountain location and trans-continental accessibility. The recent devolution of authority from provincial to local control in China means that families are free to move and dispose of their animals as they see fit. Living and working as they do at 3000m and above, this is a timely improvement for the Chinese pastoralists. In Guhjal *tehsil* in Pakistan, the Tajiks have been freed from the domination of the Hunza chieftain to whom they had to pay taxes. He was removed in 1974 and the revised water-management system reflects the autonomy and efficiency of the Tajiks as they are free to irrigate their potato cash-crop fields as they wish.

For the anarchic communities south of Gilgit the imposition of central authority has disrupted their communities. Their autonomy has disappeared and now they must answer to an alien political power living in the plains of Punjab. This they deeply resent. A symptom of their frustration at being confronted by alien ways can be seen in the attacks on Westerners and armed uprising against local, civil and police authorities. Age-old animosities between Muslim sects formerly fought with primitive weapons, now take on a new dimension when the combatants are armed with rocket launchers, grenade launchers, and automatic firearms once destined for the rebels in Afghanistan. For many mountaineers in the southern portion of Gilgit district and all of Kohistan district, the construction of the KKH has resulted in the diminution of ethnic identity and the usurpation of local autonomy.

Contrasting the plight of the Kohistanis, in Tajik Autonomous County, the 20,000 Wakhi-speaking Tajiks, who represent 80 per cent of the population, have benefited from the construction of the highway. Because their land is much higher than the valleys the KKH traverses in Pakistan, most of their grain had to be imported from the oases around Yarkand, Yengisar, and Kashgar and paid for by exchanging livestock. The marauding Kirghiz, so common a hundred years ago (Cobbold, 1900; Morgan, 1971), seem to have been siphoned off because Uighurs and Uzbeks outnumber the Kirghiz living in Tajik Autonomous County today.

On a social level many old family ties are being solidified between Gilgit folk and their relatives in Sariqol. The Pamir high pastures prior to the demarcation of national boundaries were formerly the negotiation areas for marriages. The frequent internecine rivalry among the heirs to the Hunza chieftaincy often caused them to seek refuge in the remote Sariqol valleys, especially Tung valley to the east of Tashkurghan. Older people in these areas have kinfolk on both sides of the Karakorum. Most are Ismaili Muslims; hence this feature reinforces the bonds of a common culture already existing in the Wakhi language. Although most of the human traffic has been from Pakistan to China, these tenuous cultural bonds are being solidified by the KKH.

CONCLUSION

The extent of pastoralism has declined but there is a greater financial return to the pastoralists because they are able to sell their wool at more favourable prices because of rapid access by road to markets. This is especially true in China. In Guhjal, the chronic lack of meat has resulted in premium prices paid for mutton by the small hotels catering for the tourists. Only one village in Gilgit district, Shimshal, does not have motor vehicle access to the KKH; hence no charges of any substantial spatial inequality can be made in reference to road alignment and accessibility. All settlements in the side valleys in Tajik Autonomous County have at least jeep tracks. The enhanced accessibility created

by the KKH has irreversibly changed the communities in the valleys along the road.

Geographers have condemned road building elsewhere in the South Asian Mountain Rimland (Blaikie *et al.*, 1977; Gruber, 1986) because of the dislocation of existing communities; the impact of the KKH appears to be beneficial. The settlement pattern of dense nucleated villages has changed to the *strassendorf* model with new structures strung out along the road in Pakistan. In China, an attempt has been made at urban planning in which avenues and large compounds have been superimposed on the indigenous settlements such as that seen in Tashkurghan.

In addition to providing material and cultural benefits for the indigenous population, the changes in mountain habitat have made redundant some of the shopworn theories and notions geographers retain about mountain society and habitat. From a theoretical vantage point, perhaps the foremost conclusion one can reach in examining the impact of the KKH is the rejection of the proposition that the bio-physical mountain environment determines the human productive behaviour in this habitat as reflected in the work of Humboldt, Ratzel, Troll and Uhlig. Cash-crop agriculture, made possible by the construction of a road, now provides the first legitimate cash income for impoverished mountaineers in Pakistan. Not since 1890, when they were freebooters, have the Burushaski and Wakhi-speaking people in the Karakorum enjoyed such economic freedom. With *Pax Britannica* in 1891 came the cessation of caravan raiding. In addition to their more traditional pursuits of pastoralism and agriculture these people can legitimately raid the pockets of the foreign and domestic tourists.

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