



NATIONAL ENDOWMENT FOR THE

Humanities

DIVISION OF RESEARCH PROGRAMS

Narrative Section of a Successful Application

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Note: The attachment only contains the grant narrative and selected portions, not the entire funded application. In addition, certain portions may have been redacted to protect the privacy interests of an individual and/or to protect confidential commercial and financial information and/or to protect copyrighted materials.

Project Title: Technology Transfer at Work in China-Africa Development Assistance: The TAZARA Railway, 1968-1986

Institution: Macalester College (Grant originally awarded to Carleton College and transferred in 2009 to Macalester College)

Project Director: Jamie Monson

Grant Program: Collaborative Research

STATEMENT OF PROJECT SIGNIFICANCE AND IMPACT

This research project will examine the history of work and technology transfer during the construction of the TAZARA railway (the acronym stands for Tanzania Zambia Railway Authority), a project that was built and operated with Chinese development assistance in East Africa between 1968 and 1986. During the construction of TAZARA some 30,000-40,000 Chinese railway workers and engineers were joined by about twice that many African counterparts to create a 1,060 mile line of rail that stretched from the Indian Ocean to the Zambian copper mines.

The project will investigate both labor and technology transfer during TAZARA's construction because they were closely intertwined through the Chinese method of "teaching by example" or *gong xue*. This research is especially interested in the way workers from different origins and levels of experience lived and worked together during the an era that encompassed China's Cultural Revolution (during survey and construction 1968-1976) and post-Mao reform (during technical cooperation 1976-1986); Africa's decolonization; and the international rivalries of the Cold War. Thus in addition to understanding the experience of work on a transnational project, there will be investigation into specific ways the political and ideological contexts of the time influenced technology and labor relations.

This project will have intellectual significance for the historical study of work in transnational settings. It will use historical methods to bring a humanities perspective to the study of technology's transmission in a global context, while focusing on an era that has until now been overlooked by scholars of globalization. The history of TAZARA will contribute in important ways to the social history of technology and transport in Africa. Finally, this study will have an impact on the emerging field of Africa-China relations, currently dominated by social science perspectives. This humanities-based approach will bring sorely needed historical background to debates about labor, technology transfer and sustainability in Chinese development aid to Africa.

LIST OF PARTICIPANTS

Ambindwile, George, Project Co-Collaborator. Lecturer, Department of History, University of Dar es Salaam (Tanzania).

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Note:

The project will also include a collaborator in Zambia, probably a humanities scholar at one of the country's institutions of higher education. Professor Monson has been working with Professor Bizeck Jube Phiri, Dean of Humanities and Social Sciences at the University of Zambia, to identify a co-collaborator there.

NARRATIVE

“Technology Transfer at Work in China-Africa Development Assistance: The TAZARA Railway, 1968-1986”

INTRODUCTION

On September 5 1967, the Chinese government formally agreed to assist with the construction of a railway that would extend from the Indian Ocean seaport of Dar es Salaam in Tanzania to the Zambian “copperbelt” region, some 1000 miles to the west. The ink was barely dry on the contract signed in Beijing between representatives of the three governments when Western critics sounded the alarm about Chinese influence extending into Africa. A *Wall Street Journal* article stated ominously that, “the prospect of hundreds and perhaps thousands of Red Guards descending upon an already troubled Africa is a chilling one for the West.”¹ A report read to a US congressional hearing cautioned that the railway represented the “great steel arm of China thrusting its way into the African interior.”² The idea that large numbers of Chinese and African people might have extended contact through development assistance was a fearful one for western countries at the height of the Cold War, especially given the perceived vulnerability of young African states to outside influence.

These warnings were seemingly contradicted by the assessments of other critics, who scoffed derisively that China’s technological backwardness would result in the creation of a “bamboo railway” rather than one made of steel.³ Delegates to the annual party conference of the Tanganyika African National Union (TANU) in 1971 were reassured by railway spokesman Waziri Juma that reports of a bamboo railway were “slanders spread by imperialists.” TAZARA was not being built from bamboo at all, he explained, but was of the “highest quality and long durability.”⁴ In one sense, these two critiques were related. For it was the Chinese approach to technology in African development assistance –

1. “Red Guard Line of China Chugging into Africa,” *Wall Street Journal*, 29 September, 1967.

2. U.S. Congress, Congressional Record – House, Washington: U.S. Government Printing Office, 18 January 1973, p. H 286.

3. The *Washington Post* stated that the Chinese would “operate by labor intensive methods in an antiquated style,” which would add three years to construction. In fact, the project was completed ahead of schedule. “Proposed Tanzam Railway becomes an African Issue,” *Washington Post*, 16 November, 1967.

4. Tanzania National Archives (TNA) C/2112/71, IS/I.317, September 23, 1971.

constrained by foreign currency shortages and therefore labor intensive – that resulted in the arrival of large numbers of Chinese railway technicians at Dar es Salaam between 1968 and 1986. During the period of surveying and construction, some 30-40,000 Chinese railway workers worked on the project in East Africa, where they were joined by approximately twice that number of Tanzanians and Zambians, most of whom were given “on the job” training in railway surveying and construction at their work sites.

This research project will examine the history of work and technology transfer during the construction of the TAZARA railway (the acronym stands for Tanzania Zambia Railway Authority, the bi-national administrative body that has overseen the railway since 1976), including the ten-year period of technical cooperation that followed the railway’s completion. Because technology transfer during TAZARA’s construction took place primarily through the Chinese method of “teaching by example” or *gong xue*, technology training and labor relations were closely intertwined. Technology and labor intersected within a specific historical context that included China’s domestic experience of the Cultural Revolution; Tanzania and Zambia’s emergence as newly independent African nations in the era of decolonization; and the international rivalries of the Cold War.

This project is therefore organized around three framing questions. First, what were the social spaces of work during this transnational project – meaning not only the physical workplace but also the spaces of social interaction for workers from different origins and with different levels of experience?⁵ Second, how does this project illuminate the social history of technology in China-Africa development assistance during the period 1968-1986, an era that encompassed both the Cultural Revolution (during survey and construction 1968-1976) and post-Mao reform (during technical cooperation 1976-1986)? And third, in what specific ways did the political and ideological environment at the time –at national, transnational and international levels – influence technology and labor relations during the project?

⁵ The term “social spaces of work” derives from the work of Pierre Bourdieu and has been put forward by Dutch labor historian Marcel van der Linden as a way to conceptualize historical studies of work that go beyond the boundaries of “national spaces.” Much of the research that utilizes this theoretical framework in global labor studies focuses on labor migrations and labor diasporas. See Marcel van der Linden, “Transnationalizing American Labor History”, *Journal of American History*, 86 (1999):1078-92. See also a review article by Michael P. Hanagan, “An Agenda for Transnational Labor History,” *International Review of Social History*, 49 (2004): 455-474.

To answer these questions, this project will use both documentary and oral historical forms of evidence. Preliminary interviews in China and Africa with retired railway workers and engineers indicate the richness and promise of oral sources for understanding the experience of work and technology transfer during the TAZARA project. Life history interviews in particular convey the meaning and significance of railway work in the lives of individuals, while at the same time providing information about shared experiences. This project will also rely upon written sources, both published and unpublished. There are several published memoirs written by Chinese project participants, including a book of poems and a collection of individual worker accounts.⁶ There are published and unpublished documentary materials in Tanzania's National Archives and at the East Africana section of the library of the University of Dar es Salaam. The Zambian National Archives has several files on TAZARA; records are also available at TAZARA headquarters in Lusaka and at the Mpika training workshop in Zambia.⁷ Our research team is already carrying out the first stage of project research in China (September 2008-June 2009), interviewing retired workers, and will begin visiting national, regional and municipal archives in December, 2008.

This proposal therefore seeks funding to support the second phase of collaborative research in Tanzania and Zambia, for a team of American, Chinese and African scholars to carry out oral interviews and to visit archives during a fifteen-week period between August 15 and November 30, 2009. This period of field research will be followed by a four-week period of data analysis and preliminary write-up of project materials. During these final weeks we will also hold workshops in Tanzania and Zambia to share our preliminary findings with African audiences. We seek funding to hold an additional collaborative workshop in China in spring 2010 and for project collaborators to present findings on a special panel at the Annual Meeting of the African Studies Association in November 2010. Lastly, we seek support to disseminate project materials through the creation of a web-based digital archive.

⁶ Zhang Tie Shan, *You Yi Zhi Lu: Huan Jian Tan Zan Tie Lu Ji Shi [The Road of Friendship: The Memoirs of the Development Assistance of the Tanzania-Zambia Railroad]*. Beijing: Zhongguo Tui Wai Jing Ji Mao Yi Cu Ban She, 1999.

⁷ Personal communication, Marja Hinfelaar and staff members of National Archives of Zambia, July, 2007.

This project will have intellectual significance for the historical study of work in transnational contexts. It will use historical methods to bring a humanities perspective to the study of technology's transmission in global contexts, while focusing on an era that has until now been overlooked by scholars of globalization. The history of TAZARA will contribute in significant ways to newly emerging social histories of technology and transport in Africa.⁸ This project also provides sorely needed historical background for the study of Africa-China relations, with particular relevance for debates about labor, technology transfer and sustainability in Chinese development aid to Africa. These debates have been dominated by social science perspectives that pay insufficient attention to China's historical experience in Africa and to the continuities that exist between past and present.⁹ Social science perspectives have so far failed to reveal the lived experience of the diverse historical actors in China-Africa development assistance, as they focus largely on state-level interactions. Media coverage in particular has tended to reproduce binary analytical categories of China-Africa that risk oversimplification and result in the polarization of intellectual engagement on this issue.¹⁰

The history of the construction of the TAZARA railway demonstrates that there were profound historical intersections between labor relations, technology transfer, and political ideology in China-Africa development cooperation. Our research team's emphasis on using oral life histories alongside documentary sources will bring forward the lived experience of the historical actors from the three countries that came together to survey, build, operate and manage TAZARA. In these ways, our project

⁸ Jan-Bart Gewald and other colleagues at the African Studies Center at Leiden University have been investigating the relationship between society, culture and technology in Africa in an interdisciplinary research program, "Connections and Transformations: The Social Construction of Linking Technologies in Africa and Beyond." See also Gordon Pirie, "Railways and Labour Migration to the Rand Mines: Constraints and Significance," *Journal of Southern African Studies*, December 1993, 19,4, p.713.

⁹ Liu Haifang, "Sino-African cultural exchange: past, present and lessons", *Chinese Academy of Social Science*, May 2006.

¹⁰ Sanusha Naidu, "China in Africa: Opportunity or Threat for Africa's Development," keynote address, International Conference on China in Africa, Frankfurt, Germany, December 14-15, 2007. See also Liu Haifang, "Evolution of China's Development Cooperation to Africa and its Cultural Dimension", paper presented at conference on "China and India in Africa: New Strategic Encounters," Nordic Africa Institute, Uppsala, Sweden. This topic has also been discussed by Barry Sautman and Yan Hairong, "Friends and Interests: China's Distinctive Links with Africa," *African Studies Review*, 50, 3, December, 2007, pp. 75-114.

will exemplify the significance of research in the humanities for understanding the past, present and future of China-Africa development assistance and cooperation.

SUBSTANCE AND CONTEXT

Project Description

Designed and constructed between 1968 and 1975, the 1,060-mile long TAZARA railway was built with financial and technical assistance from China amounting to over \$400 million.¹¹ China agreed to support the railway project after several requests for assistance from western donors and from the Soviet Union had been rejected. TAZARA became China's largest international development project and the third largest infrastructure development project in Africa (after the Aswan and Volta dam projects). Like most railways in the world, this one was built with both political and economic objectives. Known as the "Freedom Railway," TAZARA was conceived to provide the critical outlet to the sea that landlocked Zambia needed in order to break free from its dependency on Rhodesian, Angolan, and South African rails and ports. TAZARA was therefore an anti-apartheid as well as a pan-African project, intended to serve as a symbol of revolutionary third world solidarity and resistance to the forces of colonialism, neo-colonialism and imperialism.

Over the five-year period of TAZARA's construction, tens of thousands of African and Chinese workers came together in the base camps and workshops that sprang up along the railway corridor. This unprecedented work experience intentionally focused on the transfer of technology and skills from the Chinese to the African workforce. According to the seventh of China's "Eight Principles of Development Assistance" introduced by Zhou Enlai during his 1963-4 tour of Africa, "in giving any particular technical assistance, the Chinese Government will see to it that the personnel of the recipient country fully master such techniques."¹² During TAZARA's construction, material forms of technology formed only one part of the exchange of technological ideas and practices. The Chinese technicians were encouraged to assist

11. George T. Yu, "China's Africa Policy," p. 132. See also George T. Yu, "Working on the Railroad: China and the Tanzania-Zambia Railway," *Asian Survey* 11, 11 (1971): 1101-1117.

12. "Eight Principles Governing China's Economic and Technical Aid to Other Countries, As Set Forth by Premier Chou En-Lai During His Visit to Africa December 1963-February 1964," National Archives of Zambia, MFA 1/64/1. See appendix for a full copy of these principles.

their African protégés in “all around” ways, to impart not only practical knowledge of construction techniques but also ideological and practical life lessons.

From the survey and design phase through the onset of operations (1968-76), TAZARA’s construction process established social spaces of work in which labor and technology came together and shaped one another. These included the workplace itself, most often a temporary work camp that was set up and occupied for a period of time, then dismantled and reconstructed again in a new location. The workplace of TAZARA’s construction was therefore a mobile one, with a spatial and social configuration that was continually recreated as the project moved from the coast into the interior. The social spaces of work were formed by the relationships between the people who labored there, including the Chinese managers and technicians as well as younger and less experienced recruits from Tanzania and Zambia. These relationships were structured by the larger framework of railway administration and worker management that guided the project, a framework that imposed a strict regulation of work and leisure in the construction camps. Yet at the same time, in the camps and workshops themselves the relationships between workers retained their own form and distinctive character.

The Chinese workers who came to East Africa to work on the TAZARA construction project were recruited from throughout China through the regionally-based railway bureaus of the Chinese Ministry of Railways. Most were between 25 and 40 years of age, with prior railway experience and varying levels of expertise. Workers from China’s Second and Third Railway Bureaus were highly valued for recruitment. Those from the Second Railway Bureau had just completed building the Chengdu-Kunming railway through the rugged mountains of Sichuan and Yunan in 1970 and were respected for their skills and perseverance in difficult terrain.¹³ Workers from the Third Railway Bureau had taken part in the Korean War and were known for their strong wills, toughness under pressure, and high level of discipline.¹⁴ The workers from these railway bureaus thus displayed the “three strengths” that were prioritized for recruitment: strong minds (for ideological correctness), strong bodies (for physical labor),

¹³Interview with Rao Xue De, Chengdu, September 2, 2008.

¹⁴ Interview with Zhang Deshun, Taiyuan, October 20, 2008.

and strong technical skills. The workers recruited for the TAZARA project were among the most highly qualified in China at the time, in part because of the high visibility of the project and also because China's own industrial production was in disarray as a result of the Cultural Revolution.¹⁵

The Tanzanian and Zambian workers, on the other hand, were younger men who had no previous background in railway work. Most were recent school leavers or members of the national service, for recruitment had focused on finding the most “disciplined, loyal and dedicated youths of the ruling parties in both countries” rather than workers with prior railway experience or technical knowledge. Trainees were expected to be in good health, to have good work habits and good discipline. The minimum educational standard was Standard 7 or 8 (primary level) but this could be waived in case of workers who were of good character.¹⁶ Training of the African workers was approached in three ways. A carefully selected group of around 1700 workers received formal education in TAZARA's workshops, particularly as the construction phase of the project neared completion and the operations phase began. Between 1971 and 1974, railway training schools were opened at three sites in Tanzania and one in Zambia (1974). In 1972, some 200 Tanzanians and Zambians went to China for a three-year training program at Northern China Jiaotong (Communications) University in Beijing.¹⁷

Yet by far the majority of the African workers experienced technology transfer through the Chinese practice of teaching by example. During the 1970s the Chinese ideal in development assistance was to “pass on skills in real earnest to real people,” then to withdraw once the skills had been mastered.¹⁸ Chinese managers of projects in Africa approached worker mobilization through a combination of rhetoric and exhortation, teaching and demonstration. According to this model, young African workers would learn new skills through practical work as they labored alongside their Chinese counterparts,

¹⁵ Zhang Tieshan. Zhang Tieshan, *You Yi Zhi Lu: Huan Jian Tan Zan Tie Lu Ji Shi [The Road of Friendship: The Memoirs of the Development Assistance of the Tanzania-Zambia Railroad]*. Beijing: Zhongguo Tui Wai Jing Ji Mao Yi Cu Ban She, 1999. Interview with Zhang Tieshan, Tianjin, August 2, 2008.

¹⁶“Local Workers Participation in the Railway Construction,” TAZARA Brief Progress Report, March 3 1970, National Archives of Zambia (NAZ) MFA 1/286/144, 4.

¹⁷TAZARA Annual Report, 1973/4, 6.

¹⁸ Deborah Bräutigam, *Chinese Aid and African Development: Exporting Green Revolution*, pp. 147-8.

supplemented with occasional theoretical lectures.¹⁹ They would be exposed to the culture of industriousness and hard work, including the organization of the workday into hourly shifts and other forms of work discipline. During TAZARA's construction, work values and ideology were conveyed in regular meetings, where workers were encouraged to ensure smooth transport in the sections that had already been completed, to do away with complacency and retain a revolutionary spirit, and to implement the guiding policy of hard struggle and self-reliance.²⁰ Teaching by example, according to a 1967 report on China-Tanzania technical cooperation, was "characteristic of the classless international proletariat anti-imperialist ideology" an ideology best transmitted by "helping them learn to operate the machinery."²¹

This 1967 report on technology transfer during China's technical cooperation with Tanzania emphasized the simultaneous deployment of mechanical skills, ideology and practical lessons. In its description of progress made at the Chinese-built Urafiki textile mill in Dar es Salaam, the report began by stressing the importance of sustaining Mao's ideology and revolution; moved on to emphasize the benefits of worker solidarity and practical cooperation; then switched to technical specifications for certain types of dye and the width of cotton cloth. The last section of the report stressed the interconnectedness of ideology and practice through hands-on mentoring. This report illustrates clearly the ways that the technology of production in development assistance at this time incorporated the three themes of labor, skills and ideology that this project seeks to investigate. The conscientious reporting of both social values and material practices in an official report on development assistance shows that their intersection was part of the vision of state planners and project managers.

In preliminary oral interviews carried out in 2007-8, retired railway construction workers in China and East Africa recalled in rich detail the ways that these work values and directives were

¹⁹“Minutes of Talks between the Railway delegation of the Government of the People's Republic of China and the Railway Delegations of the Governments of the United Republic of Tanzania and the Republic of Zambia Concerning the Preparatory Work for the Construction of the Tanzania/Zambia Railway,” NAZ MFA 1/286/115.

²⁰ Zhang Tieshan, *You Yi Zhi Lu: Huan Jian Tan Zan Tie Lu Ji Shi [The Road of Friendship: The Memoirs of the Development Assistance of the Tanzania-Zambia Railroad]*. Beijing: Zhongguo Tui Wai Jing Ji Mao Yi Cu Ban She, 1999.

²¹ Shanghai Municipal Archives, “China's Aid to Tanzania's Textile Mills Unit: Final Report on Technical Cooperation, July 1968-June 1969,” B124-3-240-1, p. 6-15.

experienced and put into everyday practice during TAZARA's construction. One retired Tanzanian worker remembers that, as a young man, he was discouraged after sustaining a minor injury at a construction site. His Chinese mentor tirelessly exhorted him to continue working despite the setback, and he went on to learn Chinese and to become a highly placed railway engineer. Retired Chinese workers recall assisting their African friends with practical advice on such matters as saving their allowances, maintaining courage and fortitude in harsh conditions, and even shoe repair. One Tanzanian worker remembers that after completing secondary school, he began working on the railway with the back-breaking job of splitting stones in a quarry in the forest. Because he was seen to be hard-working and to have good character, his Chinese mentors promoted him until he was finally selected to join the railway operations staff. "We kept working with the Chinese for a long time," he remembered, "and then the Chinese left us on our own. Indeed, until today we are caring for the railway, we had grown experienced ourselves by that time."²² This life history illustrates the way that even the most menial worker skills training could lead to a higher level of technical accomplishment and responsibility.

During TAZARA's construction, workers from widely differing backgrounds labored side by side, organized into work teams that were supervised by Chinese and African foremen. The Chinese technicians were known throughout Africa for their willingness to "muck in," in the words of Philip Snow, to engage in the most menial forms of work.²³ At the same time, however, during leisure they mostly lived separate lives from their African counterparts, and did not mingle freely with the African populations that lived in the areas adjacent to the railway. Both African and Chinese workers came from diverse ethnic and linguistic backgrounds, and were conscious of the differences in their places of origin. Thus the social spaces of work were characterized simultaneously by social cohesion – as the workers from three nations came together to carry out work tasks – and also by social difference, as groups coalesced around diverse identities during times of leisure, in their living quarters and during mealtimes.

²² Interview with Hosea Mngata, Mlimba, 2000.

²³ Philip Snow, *The Star Raft: China's Encounter with Africa*, New York, 1988; Deborah Bräutigam, *Chinese Aid and African Development: Exporting Green Revolution*. London: Macmillan, 1998.

The majority of workers on the TAZARA project were men, although a small number of Chinese women served as translators and African women did join in camp life in some exceptional cases. The African workers were young men, many if not most still unmarried, and in this way they were different from their Chinese counterparts who had to leave wives and families at home for two years or more. For both African and Chinese participants, therefore, the experience of railway work was a masculine one. In oral interviews, African workers described their experience during construction as a process of developing a masculine modernity, a “coming of age,” as they worked and learned alongside their older Chinese counterparts.²⁴ One Zambian worker explained in a report that by working on TAZARA he and his African colleagues had entered into a ‘civilized kind of life’ through the practice and discipline of daily railway labor and through earning a wage that could support their families.²⁵ Retired Chinese workers on the other hand described the difficulties they experienced having to endure such a long separation from their families, some of which remained in uncertain circumstances back in China.²⁶

In our preliminary oral interviews, retired Chinese workers recalled the ways that building TAZARA affected their own personal experiences of technology and work. Most had not been able to travel outside of China at this time, and described the effects that exposure to new places, experiences and ideas had upon their lives. One retired worker described how he learned to repair British Land Rover engines and Japanese earth-moving machinery, technologies that were not available to him in China. In this and other ways, he said, work on TAZARA opened his mind to new ways of thinking that benefited him greatly after the project was completed. Chinese workers also purchased commodities in Dar es Salaam that were not available to them in China, most of them luxury items that they bought after saving their monthly allowances during two years of service. Many brought home Omega watches, while others purchased Konica cameras and Panasonic tape players.

²⁴ In this way, railway construction paralleled experiences of work and masculinity in colonial Africa. See Lisa Lindsay and Stephen Miescher, eds., *Men and Masculinities in Modern Africa*, Portsmouth, N.H.: Heinemann, 2003.

²⁵ D.D.S.M. Mumello, *Final Report on Construction of Tunnels, Mkela Base Camp*, 1972.

²⁶ Interview with Rao Xue De, Chengdu, September 2, 2008

Intellectual Significance of the Project

This study of the TAZARA railway will examine the intersections between labor, technology transfer and ideology in China's development assistance to Africa during the late 1960s and 1970s, the period of the Cold War and of Africa's decolonization. This is a period in the history of technology and development in Africa that has been poorly understood. Most historical studies of these topics have focused on the eras of empire and colonialism from the nineteenth through the mid-twentieth century. These studies examine flows of technology and ideas that moved from north to south, or that followed the paths of empire from one colony to another (between Africa and India, for example). Studies of post-colonial technology assistance, politics and development have continued to frame their arguments in similar geographic terms, emphasizing the western origins of development ideas and practices and their adoption (or imposition) in post-colonial African states. Studies of more recent flows of technology and globalization, on the other hand, while inclusive of multiple locations of expertise, have tended to pick up their story after the end of the Cold War. The result has been that a critical period of east-south technical assistance has not been fully explored by historians.²⁷ Further, the role of Soviet assistance – specifically, China's experience with Soviet technical aid as carried out by Soviet experts before 1960 – and its role in shaping China's own development principles -- has not been adequately understood.²⁸ This project's significance therefore lies in its reorientation of our scholarly understanding of the geographical flows and temporal locations of technical assistance, ideology and power in the history of the post-colonial world.

In a recent edited volume, Aihwa Ong proposed that contemporary processes of globalization and modernization have produced a specific set of interconnected phenomena that can be termed “assemblages,” incorporating technoscience, circuits of exchange, politics and ethics. These phenomena

²⁷ An important and singular exception is the work of Deborah Bräutigam, whose contribution is discussed further below.

²⁸ The role of the Soviet technical experts in China's relationship with Africa has been discussed by Zhang Tieshan and Deborah Bräutigam; See also Charles Feinstein and Christopher Howe, *Chinese Technology Transfer in the 1990s: Current Experience, Historical Problems and International Perspectives*, Edward Elgar, 1997, pp. 2-4 and 13-21; Shen Zhihua, *Su Lian Zhuan Jia zai Zhongguo (1948–1960) [Soviet Experts in China: 1948–1960]*, Beijing: Zhongguo Guoji Cu Ban She, 2003. New work by Fan Liping on China, the Soviet Union and railway development in Vietnam shows promise for unraveling some of the complex issues that this topic and time period raise for historians. Fan Liping, personal communication.

are mobile and dynamic, assembling into specific forms in distinct times and places. As they become territorialized, Ong argues, these assemblages have profound effects on people's lives and experiences. They have power because they are at the same time technological, political and ethical interventions.²⁹ Ong developed this proposal primarily as an analytical approach to understanding Southeast Asia in its contemporary context of globalization. Yet Ong's suggestion that scholars pay attention to mobile "assemblages" that include not only technoscience and politics but also ethics, is also a useful one for understanding the history of the TAZARA railway.

Certainly, the intersections between technology and politics have long been theorized by scholars of colonialism and of post-colonial development assistance, from Daniel Headrick to Michael Adas to David Arnold.³⁰ Arnold's recent work examined the relationship between Indian and western science and technology under the rule of the East India Company, and considered the dilemmas facing the emergence of nationalism and science in India. Studies of colonial medicine and power, including Arnold's earlier work, have been especially important in this literature, along with projects that examine the ways that forms of knowledge were used as "technologies of power" in the colonial period.³¹ Like Ong, several scholars of colonial science have argued that these configurations of technical knowledge and power were "deterritorialized," because they moved both within colonies and from one continent to another along the

²⁹ Stephen Collier and Aihwa Ong, eds., *Global Assemblages, Anthropological Problems*, Oxford: Blackwell, 2005, p. 4 of introduction. The most recent conference of the International Committee for the History of Technology made "Crossing Borders" their theme (Crossing Borders in the History of Technology, 35th ICOHTEC Symposium in Victoria, British Columbia, Canada 5-10 August 2008); The Society for the History of Technology has also begun an initiative to be more inclusive of African histories of technology in their symposia and publications, most explicitly in the incorporation into the 2007 annual meeting of special panels on the history of technology in Africa. See SHOT 2007 Annual Meeting Abstracts.

³⁰ Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*, Oxford, 1981; Michael Adas, *Machines as the Measure of Men: Science, Technology and Ideologies of Western Dominance*, Cornell, 1990; David Arnold, *Science, Technology and Medicine in Colonial India*, Cambridge: Cambridge University Press, 2000; David Arnold, *Colonizing the Body: State Medicine and Epidemic Disease in Nineteenth-Century India*, Berkeley: University of California Press, 1993.

³¹ Bernard Cohn and Nicholas Dirks, "Beyond the Fringe: Nation-State, Colonialism and Technologies of Power," *Journal of Historical Sociology*, 1,2, June 1988; Bernard Cohn, *Colonialism and its Forms of Knowledge: The British in India*, Princeton University Press, 1996; Timothy Mitchell, *Colonizing Egypt* (Berkeley: University of California Press, 1988).

circuits of imperial mobility.³² Other scholars of late colonial and post-colonial history, such as Mitchell, James Scott, James Ferguson, and Rudolf Mrázek, have also analyzed the conjunctures of technology and politics that were formed in the process of nation-building.³³

Ong's perspective on mobile assemblages and flows is especially useful for our project because it reminds us that there were diverse and multiple locations of technology and science in twentieth century African history. Technology and science did not only move from north to south; the "power of development" was not only located in the west.³⁴ Development technologies moved to and from Africa in conjunction with specific political ideologies and ethical practices. During the Cold War in particular, diverse and competing development "packages" intentionally defined themselves in reference to and in competition with one another.³⁵ American and European donors had rejected support for TAZARA in favor of road building, for example, and constructed the TANZAM highway as a rival project alongside the railway using a capital-intensive model that relied upon heavy machinery. China, meanwhile, explicitly framed its development technologies as "anti-imperialist" and "anti-hegemonic," terms that encompassed both the Soviet Union and the western powers.

The Chinese approach to development lifted up the ethical dimensions of assistance, for example in the eight principles of aid (see appendix) that emphasized self-reliance and friendship, and through the articulation of appropriate moral behavior and living conditions of the Chinese experts who lived and worked alongside Africans in development projects. This research project on the history of the TAZARA railway will therefore illuminate not only the uses of technology during railway construction, but also what technology transfer was used *for*, by recognizing that infrastructure projects in Africa were guided by historically specific sets of values and practices, and not only by technical determinants presumed to

³² Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860*. Cambridge: Cambridge University Press, 1995.

³³ James Ferguson, *The Anti-Politics Machine: "Development," Depoliticization, and Bureaucratic Power in Lesotho*, Minneapolis: University of Minnesota Press, 1994. Bernard Mrázek, *Engineers of Happy Land: Technology and Nationalism in a Colony*, Princeton: Princeton University Press, 2002, p. xvi.

³⁴ Jonathan Crush, *Power of Development*, Routledge, 1995.

³⁵ This included the competition for recognition between China and Taiwan, which also took place, in part, through development assistance in Africa.

be neutral and universal. In the case of TAZARA, official statements emphasized the ways that technology would be used not only to build a railway but also to give confidence to new nations, by training a workforce and conveying life lessons to a newly independent generation of young Africans. The development of a cohort of technically skilled, politically conscious youth as a national resource was emphasized frequently in public speeches and in worker recruitment as one of the most important legacies of the TAZARA project. At the opening ceremony of TAZARA in Lusaka, Zambia, Tanzania's president Julius Nyerere pronounced, "We have our own industrialists! We have our own industrialists!"³⁶

By using oral interviews and through the creative use of documentary sources, our project not only seeks to understand these public statements and official rhetorics of technology transfer. We also seek to go beyond them to understand the ways that work, technology, ideology and ethics were experienced by the workers on the project, both during construction and through the technical cooperation phase that followed it. Deborah Bräutigam's groundbreaking work on China's agricultural development projects during the 1970s in West Africa remains the single existing substantive study of these questions. In her study of Chinese irrigated rice farms in Sierra Leone and Liberia, she found that China's domestic ideas about development translated into distinctive approaches to the design and implementation of foreign aid, as China "deliberately set out to be different."³⁷ Our project will continue along this line by examining a contemporary project with a higher level of technological intervention; a more massive investment of human, social and political capital; and a more durable footprint on the African continent.

HISTORY AND DURATION OF THE PROJECT

The project director, Jamie Monson, has been researching the history of the TAZARA railway since 1999, when she received a Fulbright-Hays fellowship to carry out a study of the railway's development impact on local communities living in the railway corridor. Her forthcoming book, *Africa's Freedom Railway*:

³⁶ Zhang Tieshan, *Road of Friendship*, p. 220. A recruitment memo stressed that "disciplined, loyal and dedicated youths of the ruling parties" were to be recruited, after which railway work would instill in them not only valued work experience but also political consciousness. "Local Workers Participation in the Railway Construction," TAZARA Brief Progress Report, March 16, 1970. National Archives of Zambia, MFA 1/286/144.

³⁷ Bräutigam, *Chinese Aid and African Development*, p. 23, see also Law Yu Fai, *Chinese Foreign Aid: A Study of its Nature and Goals, 1950-1982*, Fort Lauderdale, Verlag Breitenbach, 1984.

How a Chinese Development Project Changed Lives and Livelihoods in Tanzania, describes the ways that TAZARA changed livelihoods and the physical landscape in what is known as the railway's "passenger belt" in Tanzania between the Selous Game Reserve and the regional town of Makambako. This initial study focused on technology's users rather than on the history of technology itself; it also dealt only in a very superficial way with the question of labor. During the research and writing of this book, however, Professor Monson found strong evidence that the history of labor and technology transfer was a critically important – and neglected -- part of the TAZARA story that was worthy of investigation. It also became clear that any comprehensive study of TAZARA's construction, and of the social history of technology transfer, would require a close knowledge of Chinese source materials, including oral histories.

Professor Monson traveled to China for the first time in 2003, where she met with colleagues from the Chinese Academy of Social Sciences Institute of West Asian and African Studies (IWAAS), and from Peking University. Over the next several years, a strong relationship developed between Professor Monson and Chinese scholars who had also carried out research on the history of China-Africa historical relations. In summer 2007, Professor Monson traveled to China, Tanzania and Zambia with a small grant from Carleton to investigate the possibilities of developing a joint project with Chinese colleagues on TAZARA's labor history and the history of technology. With the support of Professors Li Baoping and Liu Haifang, she visited archives in Beijing and Shanghai, and interviewed several retired railway workers. In Tanzania and Zambia, Professor Monson visited national archives and interviewed Chinese and African workers and technicians. This pilot project demonstrated the value of the overall project, and revealed that there were both oral and documentary sources available in the three countries to carry it out.

As a result of this connection, the three co-collaborators then made plans to carry out a joint project on TAZARA's labor history and the history of technology. With support from Carleton College, Peking University, IWAAS and a faculty fellowship from the American Council of Learned Societies, we began the first phase of our research in July, 2008 when we visited Tianjin to interview a historian of TAZARA, Zhang Tieshan, and a retired Chinese railway engineer who had worked in Zambia. This first phase of the project will last through June 2009, as we continue to conduct oral interviews with retired

railway workers and to review archival documents and published materials available in China (for example, worker memoirs and local histories). The project team has so far carried out interviews with retired workers in the cities of Tianjin, Beijing, Chengdu, Guangzhou, and Taiyuan, and will soon begin the process of accessing archives. The materials that we are collecting during this first phase are being transcribed and translated by a student research assistant so that they will be available in both Chinese and in English. Should this current grant proposal be funded, these materials will be included in our proposed web-based digital archive, with appropriate permissions from authors and interviewees.

This proposal is therefore for funding to cover the second phase of the project. This second phase will allow our team to extend our research work from China to the African countries of Tanzania and Zambia. It will also allow us to disseminate our combined research findings from the three countries in the form of interactive workshops, a web-based digital archive, and an edited volume.

STAFF

This project will be carried out by an international and interdisciplinary team of research collaborators from the United States, China, Tanzania and Zambia. In addition to the project director there will be two Chinese collaborators at the senior level, Dr. Liu Haifang and Dr. Li Baoping, both of whom are Africanist historians with experience in the field of Africa-China relations. Dr. Li and Dr. Liu, together with Project Director Dr. Monson, will devote full time to the project between August 15 and December 30 and are also committed to carrying out subsequent dissemination activities. There will also be one Tanzanian collaborator, Mr. George Ambindwile, who is a Lecturer at the University of Dar es Salaam in the Department of History. Mr. Ambindwile completed a Masters' Thesis on the history of Chinese development assistance to Tanzania at the Mbarale Rice Scheme in Mbeya, and has been collaborating with Dr. Monson for several years on her TAZARA railway research. Mr. Ambindwile will participate in the project during the first six weeks in Tanzania. It is our intention to include a Zambian faculty participant in the project; we have been communicating with Professor Bizeck Jube Phiri, Dean of Humanities and Social Sciences at the University of Zambia, who met with Dr. Monson in Lusaka in 2007. Dr. Phiri expressed interest in the project and in working with us to identify a co-collaborator there.

Our project funding request will also support website design and programming, to be carried out Wang Guoming, who is the website manager for the Chinese Society for African Historical Studies. We also seek funding to support research assistants in Tanzania and Zambia, and to support the work of translators who will assist with transcribing/translating materials which will appear on the website. During the current phase of the project (June 2008-June 2009), a bilingual Chinese student research assistant from Carleton is translating oral and written Chinese research materials into English as we collect them. The requested NEH funding would support the translation of the written documents and oral interviews that will be collected during the proposed grant period (August-December 2009).

Brief descriptions of the three primary project staff members appear below, supplementing the curriculum vitae in the appendix.

Project Director Jamie Monson

Professor Jamie Monson already has more than ten years of experience with archival and oral history interview research on the history of TAZARA in Africa, primarily in Tanzania. She is a fluent Kiswahili speaker and carries out her research and academic communication in Tanzania using the Kiswahili language. Professor Monson has been conducting historical research in East Africa for the past 24 years and has a history of strong collaborative relationships and cooperation with scholars at the University of Dar es Salaam, Tumaini University and also at TAZARA headquarters. She has lived and worked extensively along the TAZARA railway corridor, making her research base at Ifakara in Morogoro Region, and has an established research network at several individual TAZARA stations and in the communities that surround them. She began to carry out preliminary research in Zambia for the first time in summer, 2007 and had great success both with oral interviews and with accessing archival materials. For this project we will continue to interview the workers in both countries who participated in TAZARA's construction, including those who were involved with more formal worker training at the training workshops at Mpika, Mbeya and Mang'ula.

Project Co-Collaborator Li Baoping

Dr. Li Baoping is a research scholar and Professor of Politics and African Studies at the School of International Studies at Peking University. He has studied African issues for over twenty years, having completed his Ph.D. dissertation in 1986 on US foreign policy towards Libya during the Reagan Administration. Dr. Li is a recognized leader in Chinese African Studies, serving as Secretary-General of the Center for African Studies at Peking University and as Associate President and Secretary-General of the Chinese Society of African Historical Studies. For several years, Dr. Li has been researching and publishing on topics related to Tanzanian politics and foreign relations, and he is widely known as a specialist on the leadership of Tanzania's first president, Julius Nyerere. In 2005 he had the opportunity to spend seven months in Tanzania as a research scholar, based at the University of Dar es Salaam. While in Tanzania Professor Li had the opportunity to investigate the history of the TAZARA railway as part of his study of Tanzania-China relations. Dr. Li also brings practical railway expertise to our project, having worked from 1977 to 1980 as a Bench Worker at the Jinan Locomotive and Rolling Stock Plant in Qingdao Region. This factory work experience not only allows Dr. Li to bring technical knowledge to our project, but also facilitates our communication with the retired railway workers during interviews.

Project Co-Collaborator Liu Haifang

Dr. Liu Haifang is an Africanist historian who completed her Ph.D. in 2003 at Peking University on the topic of South Africa's white settler regime and racial ideology. Currently working as a research fellow and Assistant Professor at the Institute for West Asian and African Studies (IWAAS), she is a specialist on southern Africa and has published a book on Angola (the only book on Angola written in Chinese) and several articles on Angola and Rwanda. Her current research and publishing interests are in the area of cultural exchange in China's diplomacy with Africa. She further developed this work during her recent year as a visiting scholar at the Institute of Social Studies, The Hague, Netherlands (2007-8).

Dr. Liu is familiar with methods of discourse analysis and cultural studies through the work she carried out in completion of her M.A. and Ph.D. degrees. Since 1999 she has worked within the social sciences, documenting case studies through interviews and data analysis. In recent years, Dr Liu has

worked on China-Africa relations, particularly historical and social-cultural perspectives, and acquired country expertise on Angola, South Africa, São Tomé and Uganda. She has been invited to participate at several international meetings (see attached c.v.) These valuable experiences have enriched her understanding of the current situation of China-Africa relations. They have also strengthened her confidence to make great efforts to undertake this project on the history of technology transfer in the construction of TAZARA Railway, which is so relevant to current China-Africa cooperation studies. Because Dr. Liu is well connected with academics and analysts working on Sino-African relations, these networks will facilitate the sharing of policy findings from this project with policy makers.

Dr. Liu also supervises students in their research and is currently helping a young student from the Chinese Foreign Affairs College and a student of Chinese Studies from Leiden University to prepare their MA research on Angola and Chinese immigrants in Africa respectively. She is also frequently interviewed by academia, media and officials on China-Africa relations. This experience has contributed to her commitment to the development of a historical perspective in the study of China-Africa relations. She has published a paper on China-Africa relations viewed through a cultural prism (in English) and her recently presented paper on the evolution of China's development cooperation will be published in March, 2009. Dr. Liu is fluent in Chinese and English, and has knowledge of French.

METHODOLOGY

To investigate the experience of work and technology transfer on the TAZARA railway, we plan to use two primary methodologies: oral history and documentary research. Because we are explicitly interested in understanding social interaction among workers from different origins and with different levels of experience, our primary method will be oral history interviews, in particular life histories. While oral history methods are widely used in African history, they have been used less frequently in Chinese historical studies and only rarely in the historical study of China-Africa relations.³⁸ Yet the initial oral

³⁸In a recent study, anthropologist Lida Junghans used life history interviews of railway workers on the railway between Shanghai and Nanjing, during the transition from centralized planning ("plan") to commoditization ("market"). Lida Junghans, "Railway Workers between Plan and Market," in Nancy Chen, ed., *China Urban: Ethnographies of Contemporary Culture*, Duke University Press, 2001, p. 183-200.

history interviews we have carried out with retired railway workers in Tanzania, Zambia and China demonstrate their rich potential for understanding the history of work and technology transfer during TAZARA's construction. At the same time, there is now a rich body of theory on oral history and the memory of experience, especially in the field of African historical studies, that we will draw upon as we collect, interpret, and archive source materials. This project will therefore make a significant methodological contribution to the history of technology transfer and to the history of China-Africa relations, while creating an archive of oral history materials that will become an invaluable record of this important historical project as it is remembered by those who experienced it.

As described in our work plan (below), we plan to visit ten sites along the railway corridor where TAZARA base camps and workshops were located during the construction period. These sites are now the locations of TAZARA railway stations. At these stations and workshops, and in the communities that surround them, we will interview people who were involved in the railway project. During her previous research on TAZARA's rural development impact, Professor Monson found that many retired workers continue to live near these railway stations, either because they were given a land grant to settle there or because it was their place of origin. During the 1980s, railway workers were found to have been the largest group of initial settlers in the villages surrounding TAZARA stations after construction.³⁹ These sites are also important for recording the observations of members of local communities who witnessed the project and who felt its effects during construction. Our interview methods will include not only life histories but also unstructured question and answer sessions. During interviews in Tanzania we will use Kiswahili language as our primary language of research, using research assistants to assist with translation and communication. We will transcribe all interviews in their original language and later translate them into English and Chinese.

Though oral history methods tell us much about the ways railway construction and technical cooperation were experienced by workers, we will also consult written documents to further understand

³⁹ Rudolf Peter Mayombo, "Economic Structural Changes and Population Migration in Kilombero Valley." Masters' thesis, University of Dar es Salaam, 1990.

the relationship between labor, technology and the political ideology. We plan to visit archives, libraries, and informal collections (for example, at railway stations or in the collections of private individuals) to view primary documents; published accounts such as newspapers; and other written materials. These published and unpublished documentary sources can not only shed light on the experience of work and technology transfer; they will also be essential for answering our third framing question about the larger context of politics and ideology that influenced the project.

We plan to continue to carry out our documentary research work in the National Archives of Zambia and Tanzania. There are also regionally-based archives in Tanzania as well as an archive for the national party which is located in Dodoma. We expect these archives to hold some sources of interest. In Zambia, we plan to continue to carry out research in the archive of a key political party, and also at TAZARA headquarters in Lusaka and at the site of a training workshop. During Professor Monson's 2007 visit to Zambia, she interviewed archivists and TAZARA railway managers who informed her that there are records kept at these locations. With appropriate permissions, we will include a selection of documentary sources in our web-based archive, with translations in Chinese, English and Swahili.

The documents that we have collected so far from archival sources include correspondence between project managers and local and state government officials; diplomatic and government memoranda; field reports from railway work sites; lists of provisions and materials provided for construction; and other materials. There are also photographs of the construction itself (see appendix for examples) that were taken by Chinese and African news agencies, and some technical drawings. Interviewees have also shared their photo albums with us and allowed us to make copies of snapshots from their personal collections (an example is in the appendix). Documentary film footage of the project was also taken at the time of construction and afterwards, thus there are visual materials that will help us to reconstruct the physical and social spaces of work. Again, with appropriate permissions we hope to be able to include some of these materials on our website.

FINAL PRODUCT AND DISSEMINATION

The findings of this research project will be disseminated through collaborative international workshops; through a web-based archive of historical materials; and through an edited volume.

Collaborative International Workshops

Because this project is a transnational one, both in terms of its content and its collaborators, we plan to disseminate our project findings initially through three workshops and a conference panel, to be held on three continents. These workshops and panel will be designed to present our materials in the early stages of analysis and write-up to both scholarly and public audiences. By doing so we hope not only to share the findings of the project, but also to benefit from critical engagement with scholars and other stakeholders from diverse interests and backgrounds. This feedback will be crucial for the later development of our website project and our published volume. The first workshops will take place while we are still in Africa, during the final four weeks of our data analysis and preliminary write-up. We plan to hold workshops in Dar es Salaam, Tanzania, and in Lusaka, Zambia. The Tanzania workshop will be hosted by the History Department of the University of Dar es Salaam; we have not yet identified a host institution for the Zambian workshop. These workshops will allow us to disseminate our early findings with African scholars, policy makers, TAZARA representatives and members of the public. The workshop format will include presentations of preliminary conclusions by a panel of project staff (the director, co-collaborators and research assistants) with commentary by invited respondents. We will also share selected primary research materials – for example interview recordings, video and photographs – and will provide time for audience members to ask questions and make comments. We also plan to incorporate opportunities for informal exchange of ideas during reception periods.

The third workshop will take place in Beijing, China from March 20-23, 2010. This workshop will be hosted by the Institute of West Asian and African Studies of the Chinese Academy of Social Sciences and will include academics, policy makers and members of the public with an interest in China-Africa relations, technology and development. Finally, rather than hosting a fourth workshop in the United States, we plan to present our research and analysis at a special panel organized as part of the 2010

Annual Meeting of the African Studies Association. This will give us an opportunity to share the project findings with the largest possible informed and international audience of Africa specialists. This audience will be able to provide us with critical feedback and help us to disseminate our work more widely through their own scholarly networks. The 2010 Annual Meeting of the African Studies Association will take place from November 18-21 in San Francisco, California. While in California we also hope to obtain invitations to engage in scholarly exchange with interested institutions and individuals, in particular at the University of California at Berkeley which has a large East Asian Studies Program, at Stanford University which has both East Asian and African Studies, and at the University of California, Los Angeles.

Interactive Web-based Archive

We plan to place our research and selected analytical materials together into a web-based archive that will be hosted by a Chinese academic institution, facilitated through the Chinese Society of African Historical Studies of which Dr. Li Baoping serves as Secretary-General. This archive would be indexed and searchable in three languages (Chinese, English and Kiswahili) for use by graduate students, scholars, policy-makers and others who have an interest in Africa-China relations, Chinese development assistance to Africa, technology transfer and the history of transnational labor. The research materials to be included in the archive (with appropriate permissions) would be interview transcripts; videotapes of interviews; historical documentary photographs and films; and maps. We would provide introductory and explanatory materials to guide website users, along with links to published articles and other sources available online. The site would include a main map to guide users that would represent the locations of particular work sites, camps and workshops that are described in interviews and represented in visual materials. This site would be developed as a joint project with the assistance of Information Technology Services at Carleton College and the website manager for the Chinese Society of African Historical Studies, Mr. Wang Guoming (website address is www.africastudy.cn).

By creating a searchable online historical archive, we intend to maintain worldwide access to the primary research materials from our project, while at the same time carefully guiding visitors to the site through these materials using our introductions, guideposts and other texts. In this way we hope to

generate the widest possible dissemination of the project's primary sources, while at the same time ensuring that they are presented in a format that enables them to be understood in their historical contexts.

Edited Volume

The third component of our research dissemination strategy is to write and publish an edited, scholarly volume. This volume would include sections on the three framing questions of the project: labor and social relations; technology transfer; and ideology and politics in the historical context of the Cold War. The authors of the chapters would include the three collaborating scholars as well as African faculty research scholars. The appendix includes an outline of the volume and a brief summary of each section. This volume will be published in Chinese and in English, and we will collaborate with an African publisher to see that it also gains distribution in African countries, for example Pambazuka Publishers in South Africa and Mkuki wa Nyota Publishing House in Dar es Salaam.

WORK PLAN

The following narrative description of our project work plan is complemented by the detailed schedule of our work plan in the appendix. Because we focus on labor and technology transfer, we will begin our survey by visiting the sites of railway construction workshops and base camps, where railway workers from the construction period continue to work and where many retired workers have settled as farmers and traders. These sites include Dar es Salaam, Mang'ula, Ifakara, and Mbeya in Tanzania, and Lusaka and Mpika in Zambia. We will also follow up at smaller stations and communities along the rail line as we travel through towns in the southern highlands (Njombe and Iringa) that were important outmigration centers for TAZARA workers. We hope to not only locate the select group of workers who were retained and promoted to continue working on TAZARA into the present, but also to interview workers who left the project, whether after a long period of time or a shorter period of work. We will be especially interested in including in our interviews those workers who were dissatisfied with the project or were dismissed, so that our research can cover as wide a range of experiences and views as possible.

We will spend an initial period of three weeks in Dar es Salaam, in order to process our research documents and make initial introductions at the University of Dar es Salaam, TAZARA headquarters and

other relevant institutions. We will also hold a small one-day seminar with project participants, including our research assistants, to discuss and plan our fieldwork methods and activities. While in Dar es Salaam we will begin to carry out interviews with retired and current railway workers, and will seek out government officials and others who played a role in the project, including members of the Chinese Railway Expert Team. Professor Monson has already carried out extensive archival work in the National Archives and the East Africana Section of the University of Dar es Salaam; we will make additional visits to these collections to view any newly accessioned or previously overlooked materials.

We plan to spend ten days to two weeks at each of the research sites we have identified in the proposal, allowing a period of several days to travel from Ifakara to Mbeya through the section of the railway corridor where most of the tunnels and large bridges were constructed. We plan to be flexible about our itinerary so that we can take more time in places that are fruitful for our research, and less time where materials are not as promising. In each of the research sites we plan to carry out oral history interviews and, where possible, to consult documentary materials held in archives, district and regional offices, railway stations and workshops. We will travel together as a team including the project collaborators, Tanzanian and Zambian faculty and graduate student assistants.

At the end of November we will conclude our stay in Zambia with a one-day workshop to present our preliminary findings and conclusions, then return to Dar es Salaam for the month of December. During these final four weeks of the project we will assemble our research materials and begin the processes of transcription and translation. We will meet regularly to begin to analyze our research findings and to map out our dissemination products, in particular the website and edited volume. We will also organize a one-day workshop at the University of Dar es Salaam to be held mid-month, to allow time for follow-up in response to feedback we receive from colleagues and other interested parties.

We will convene again as a group in Beijing in March 2010, for our third workshop, and finally in November for our panel at the African Studies Association. We will continue to collaborate together as we complete the chapters and introduction to the edited volume, and anticipate having a first draft of our manuscript ready by summer 2011 for submission to publishers.