

All That Glitters: Diamond Mining and Tłı̄ch̄o Youth in Behchok̄o Northwest Territories

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ABSTRACT. Currently, Canada's northern territories have three active diamond mines and one mine under construction, and one mine has recently closed. In response to local concerns, and in partnership with members of the Tłı̄ch̄o First Nation, this ethnographic study examines the positive and detrimental impacts of diamond mining on youth in Behchok̄o, Northwest Territories, using data collected from intensive fieldwork and participant observation, focus groups, interviews, and archival documents. The study of mining impacts remains a complex and contested field. Youth in Behchok̄o experience both negative and positive effects of mining. Diamond mining companies are places of employment and act as community resources; their development has influenced the transience of individuals in the region, the identity and roles of family caregivers, the motivation of students, the purpose of schooling, and the level of economic prosperity in some (but not all) families. The diverse impacts of these changes on the health of northern individuals and communities can be understood only within the broader context of social, economic, political, and environmental changes occurring in the Arctic today. Results of this study help inform ongoing efforts by those in Behchok̄o and the Northwest Territories to monitor the effects of diamond mining and maximize the potential benefits for local people, including youth.

Key words: Aboriginal health, youth, diamond mining, resource development, education, employment, impacts and benefits

RÉSUMÉ. En ce moment, on compte dans les territoires du nord du Canada trois mines de diamants actives, une mine en construction et une mine dont la fermeture est récente. En raison d'inquiétudes exprimées par les gens de la région, et en partenariat avec les membres de la Première Nation Tłı̄ch̄o, la présente étude ethnographique se penche sur les incidences favorables et défavorables de l'extraction des diamants chez les jeunes de Behchok̄o, dans les Territoires du Nord-Ouest, à partir de données recueillies dans le cadre de travaux intensifs sur le terrain et d'observation des participants, de groupes de discussion, d'entrevues et de documents archivés. L'étude des incidences de l'exploitation minière constitue toujours un domaine complexe et contesté. À Behchok̄o, l'exploitation minière a des conséquences négatives et positives chez les jeunes. Les sociétés d'extraction de diamant constituent à la fois des employeurs et des ressources communautaires. L'expansion de ces sociétés a amené des personnes transitoires dans la région, en plus d'avoir des effets sur l'identité et le rôle des aidants membres de la famille, sur la motivation des élèves, sur l'utilité d'une formation scolaire et sur le degré de prospérité économique de certaines familles (mais pas toutes). Les diverses incidences découlant de ces changements sur la santé des personnes et collectivement du nord ne peuvent se comprendre que dans le plus grand contexte des changements d'ordre social, économique, politique et environnemental qui s'exercent dans l'Arctique de nos jours. Les résultats de cette étude aident à informer les efforts qui sont déployés en permanence à Behchok̄o et dans les Territoires du Nord-Ouest, efforts visant à surveiller les effets de l'extraction des diamants et à maximiser les retombées éventuelles sur les gens de la région, dont les jeunes.

Mots clés : santé des Autochtones, jeune, extraction des diamants, mise en valeur des ressources, éducation, emploi, incidences et retombées

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INTRODUCTION

Mining in the Canadian North

Mining and oil and gas development have a long history in Canada's North and in the Northwest Territories (NWT) specifically. Mining was a main incentive for colonial movement to the North and the central justification for negotiating Treaties 8 and 11 (Fumoleau, 2004), and it led to rapid increases in northern population (Helm, 2000). Oil was first discovered by Europeans in Norman Wells in the 1920s, and private-sector mineral exploration and extraction occurred in the same period (Fumoleau, 2004). Charles Fipke and Stewart Blusson are credited with the first documented discovery of diamonds in northern Canada in 1991 (Frolick, 1999). At present, three diamond mines, Diavik, Ekati, and Snap Lake, are active in the NWT. The Jericho Mine in Nunavut has recently closed, and a fifth mine, Gahcho Kué (Kennady Lake) in the NWT, is still under construction. Figure 1 shows the sites of these five mines and the location of the study community Behchokò (formerly Rae and Edzo).

Studying the Impacts of Mining

The study of the impacts of mining and mineral developments on indigenous peoples is a growing field of inquiry, both in Canada and worldwide (Canada: Hobart, 1982, 1989; Bielawski and the Lutsel K'e Dene First Nation, 1992; Keeping, 1999; Brubacher and Associates, 2002; Coumans, 2002; Dreyer, 2002; North Slave Métis Association, 2002; Bielawski, 2004; Gibson and Klinck, 2005; Paci and Villebrun, 2005; Tsetta et al., 2005; Windsor and McVey, 2005; Gibson, 2008; other countries: Banks, 1997; Kauffman, 1998; Bury, 2002; Ali, 2003; Izquierdo, 2005; Doohan, 2006; O'Faircheallaigh, 2006; Ali and Grewal, 2007; O'Faircheallaigh and Ali, 2008). Historically, large-scale resource development near indigenous communities has produced very few benefits for indigenous people, but significant detrimental impacts (Freudenburg and Frickel, 1994; Ballard and Banks, 2003). A number of comprehensive reviews of impacts have been undertaken (Howard, 1988; O'Faircheallaigh, 1991; Bedford and Warhurst, 1999; Mining Watch Canada, 1999; Forest Peoples Programme et al., 2000; Rosenfeld et al., 2000; Whiteman and Mamen, 2002). O'Faircheallaigh (1991) notes that, while indigenous groups vary greatly by geographical location, cultural practices, and history, they experience quite similar negative and positive impacts of large-scale mineral developments. Whiteman and Mamen (2002) determine that the impacts of mining activities on indigenous communities can be roughly grouped under five main themes: impacts resulting from environmental damage, health impacts, abuse of human and indigenous rights, socio-cultural impacts, and gender-related impacts. Some of the most cited negative impacts are health and lifestyle changes that occur because of greater economic prosperity and personal incomes in

communities affected by mining (England and Albrecht, 1984; Freudenberg, 1984; Goldenberg et al., 2010). Increased incomes have been linked to increased levels of alcohol and drug use and gambling. Hobart (1989) determined that in Kugluktuk, NWT, a 29% increase in alcoholism among Gulf Oil's Inuit workers was found initially, but it did eventually subside. In a North Slave Métis Association study of the impacts of diamond mining thus far on their community, 65% of respondents indicated that the increase in personal income was associated with an increase in gambling, and 71% reported spending less time on the land (North Slave Métis Association, 2002). Brubacher and Associates (2002) noted that being able to buy better vehicles and equipment often led to increased efficiency in hunting activities and decreased the actual time spent in these pursuits.

Mining also has profound impacts on the social environment (Paci and Villebrun, 2005), pollution, boom-and-bust economic cycles, and movement of workers onto indigenous lands and communities (Duhaime and Comtois, 2003). Rotational work cycles can put pressures on families, which can lead to family breakdown (IWGMI, 2005).

A number of detrimental factors associated with the influx of an outside labour force have been noted by previous researchers. These include impacts on spousal and family relationships and significant changes in social ties and community health, including a rise in sexually transmitted infection (Goldenberg et al., 2008a, b, c, 2010; Haley and Magdanz, 2008). Language and culture can also be affected (IWGMI, 2005); one concern is that people are no longer training to become language interpreters because they are working in the mines (Tsetta et al., 2005).

Finally, large-scale mineral development has important impacts on the environment, traditional lands, and land use (Duhaime and Comtois, 2003). During recent interviews, Dene elders identified 27 closed or abandoned mines, including Rae Rock, Colomac, Giant, Discovery, Neegus, Ptarmigan, Pine Point, Canadian Zinc, and Nanisivik (Gibson, 2008:58). No fewer than 20 mines were in operation in Tłı̄chò territories between 1950 and 1982 (Legat, 2007). There have been dramatic accounts of experiences of loss of land and environmental degradation, and abandoned and closing mines remain as financial and environmental burdens for the territory and local people. Mining can also affect Dene life through interference with traditional food sources (IWGMI, 2005).

Much existing literature has focused on identifying and mitigating negative effects of mining; however, some positive effects for indigenous communities have also been documented. Economic prosperity, higher employment rates, and increased incomes are some of the most cited. For example, employment rates and incomes have increased across the NWT, especially in communities close to the mines (GNWT Department of Finance, 2006). Aboriginal people at the two operational diamond mines in the NWT were estimated to make up 31% of total mine employees in 2004 (IWGMI, 2005). Training and educational

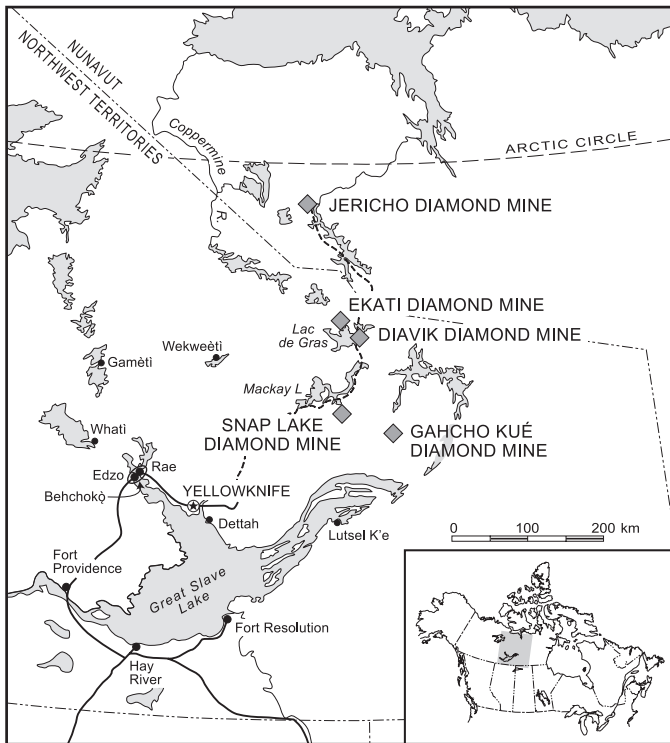


FIG. 1. Map showing locations of the diamond mine and study community in northern Canada (Map by Marilyn Croot, 2011).

opportunities for local people have also been noted in communities affected by mining (Dogrib Treaty 11 Council and Dogrib Community Services Board, 2005; IWGMI, 2005). Other positive impacts include increases in business opportunities, mining-related (“spin-off”) spending in the region, and support for social, cultural, educational, and other community activities (Paci and Villebrun, 2005; Diavik Diamond Mines Inc., 2010). Communities near the Nanisivik zinc-lead mine in Nunavut reported an increase in sharing, not of money directly, but of equipment and vehicles bought by mine workers and shared throughout the community (Brubacher and Associates, 2002).

Mining and Its Impact on Young People

Studies of how large-scale mining affects young people, and more specifically indigenous youth, make up a very small subset of the literature on mining impacts. Seyfrit and Hamilton (1992; Hamilton and Seyfrit, 1993) studied the social impacts of resource development on Alaskan youth (primarily Yupik, Inupiat, Athabaskan, Tlingit, and Haida adolescents) in 15 rural villages in the Northwest Arctic and Bristol Bay boroughs. Focusing on the impacts of resource development on the educational and employment aspirations of these young people and their tendency to stay in, or leave, rural Alaska, these authors found that Alaskan Native youth were less inclined than their non Native peers to consider moving from rural villages for work or school. More young women than young men aspired to move out of their home regions. The opinions

of parents and grandparents were very important in young peoples’ decision making. Some differences appeared when findings were stratified by community location in relation to mining developments, but Seyfrit and Hamilton also found broad similarities across the regions studied. Some important contrasts existed between rural village youth and those already in larger hub towns regardless of proximity to a mine site.

Goldenberg et al. (2008a, b, c, 2010) recently examined the impact of an economic boom (primarily from oil and gas development) on young people’s health and social well-being in Fort St. John, British Columbia, Canada, where approximately 11% of the population identify themselves as Aboriginal. Their main findings were that among young people, overall levels of educational attainment fell (jobs in the oil patch being available with a low level of education), substance abuse and addiction increased, and finding affordable, appropriate housing became increasingly difficult.

Some studies looking at broad or overall impacts of mining have also mentioned impacts on youth. For example, Hobart (1979), examining the socioeconomic impacts of the Nanisivik mine on communities in the North Baffin region, mentioned the effects of mine rotation schedules on children. More than two-thirds of the respondents indicated that mining employment had negative effects on children, such as missing a father or needing a father for parental discipline. In a more recent study of mining impacts by the territorial government (GNWT, 2000), more than half of those surveyed said that their employment in the mine affected their children in some way. A report by the North Slave Métis Association (2002) on the Slave Lake Métis community found that the recent development of the diamond mining industry can be linked to acting out, dropping out of school, or mimicking addictive behaviours among youth.

While not specifically focused on the impacts of resource development on youth, Condon’s (1987) ethnography of Inuit youth on Holman Island, NWT, also provides important insight into the context and lives of some young people in the region.

The Study Community

In his report from the Mackenzie Valley Pipeline Inquiry of the 1970s, Thomas Berger remarked that while outsiders view the North as a frontier, and the early explorers and fur traders (and perhaps today’s natural resource developers) see it as a land to conquer, for Northerners, it is a homeland and a place where indigenous peoples have lived for thousands of years (Berger, 1977). One of these indigenous groups in the diamond mining region is the Tłı̄chǫ (also seen written as “Tlicho” or “Dogrib”) Dene First Nation people of the North Slave and southern Mackenzie Valley region of the NWT. Their life is supported through “Denendeh, the land and water, which produces a rich complex of traditional foods that provide, nutritionally and otherwise, the spiritual, cultural, and physical well-being of the Dene”

(Paci and Villebrun, 2005:75). M̄w̄h̄i Gogha D̄e N̄ij̄tl̄èè is the traditional T̄ìch̄q̄ area described by Chief Monfwi during the signing of Treaty 11 in 1921. For centuries, the T̄ìch̄q̄ have made their living by hunting and fishing in this region throughout the boreal forest and barrenlands around the present-day communities of Behchok̄q̄, Gam̄èti, Whati, and Wekwēèti. T̄ìch̄q̄ families today continue to value the land and the livelihood it provides: their relationship with the land is an important aspect of self-respect and self-reliance for the Dene people (Parlee and Marlowe, 2002). In 2008, in Behchok̄q̄, 36% of the population reported having hunted or fished (GNWT Bureau of Statistics, 2009a, b). Indeed, the increased interest in the effects of large-scale mineral development and concern for mitigating those effects reflect the central role of the land in the lives and well-being of the Dene people (Parlee and Marlowe, 2002).

Behchok̄q̄, NWT, a community made up of the twin towns of Rae and Edzo, is located 115 km northwest of Yellowknife. Rae is on the southeast shore of Marion Lake, and Edzo is about 13 km away by road on the east shore of a channel between Marion Lake and the north arm of Great Slave Lake (Fig. 1). The current population of Behchok̄q̄ is 2026 people, 94% of whom identify themselves as Aboriginal (GNWT Bureau of Statistics 2009a, b).

Until the 1960s, the T̄ìch̄q̄ people were a nomadic group (Helm, 1972, 1979, 2000). In 1960, the community of Rae consisted of tents, small shacks, the trading posts, a few storage buildings, and a basic hospital. Electricity was brought to the community in the 1950s, and the road connecting Rae with Yellowknife and other points south was built in 1960 (Dogrib Community Services Board, 2000). Edzo was created as a second community because in 1966, the federal government (and later the newly formed Government of the NWT) determined that Rae was not an appropriate site for the development of a school. An appropriate sewage disposal system did not exist, there were hundreds of stray dogs, and fish in the nearby lakes were infested. The Band Council in Rae supported establishment of the new site; however, others in the community opposed the move. Regardless of any dissent, a new site was selected 13 km from Rae, and a school was officially opened in this new “community” of Edzo on 9 January 1972 (Dogrib Community Services Board, 2000). This did not mean, however, that the full move of the community ever happened. Today, about 90% of the population of Behchok̄q̄ has remained in Rae, separated by an all-weather road from the school and the few houses and other buildings in Edzo.

Over the past three decades, the T̄ìch̄q̄ people developed and negotiated the T̄ìch̄q̄ Agreement with the NWT and federal governments. The Agreement, which came into effect on 4 August 2005, is the first combined comprehensive land-claim and self-governance agreement in the Northwest Territories (INAC, 2005; Dogrib Treaty 11 Council et al., 2006). With the signing, the T̄ìch̄q̄ people negotiated, among other things, a share of mineral royalties, wildlife harvesting rights, water, tree, and forest rights and management, and exploration and subsurface rights and

resources in a section of land about 39 000 km² between Great Slave Lake and Great Bear Lake in the NWT. In addition to the T̄ìch̄q̄ Agreement, the Treaty 11 Band Council (now the T̄ìch̄q̄ Community Government), have also signed Impact and Benefit Agreements (IBAs). For example, separate agreements were negotiated with BHP Billiton Diamonds Inc. in 1996 and Diavik Diamond Mines Inc. in 1999 (GNWT, 2007).

In this regional, economic, social, and cultural context, the aim of the present research was to gain a better understanding of how diamond mine developments in the NWT might be affecting the well-being of T̄ìch̄q̄ young people, directly or indirectly. We were particularly interested in what impact mining may be having on the health and family life of youth and how mining may be changing educational and employment patterns (established social determinants of health).

METHODS

This ethnographic study, undertaken with the T̄ìch̄q̄ First Nation of Behchok̄q̄, NWT, broadly examines how changes in the macro-environment (including resource development, the economy, and governance) are affecting the education and employment pathways of youth in the community. The intense fieldwork for the study took place between June 2004 and March 2005. In September 2004, the total population of Rae and Edzo was estimated at 1951 people, about 200 of whom lived in Edzo (GNWT Bureau of Statistics, 2006). The school in Edzo had a total of 358 registered students (47 in elementary grades, 119 in grades 7–9, and 192 in grades 10–12).

C. Davison spent seven months in the community and took extensive field notes from participant observation. These notes recorded such things as daily routines; interactions and events in the school and community; behaviors of young people, parents, and others; the use of symbols and resources; public presentations; and informal discussions with school staff, students, and members of the community. In addition, she recorded detailed accounts of other visits, interactions, and observations throughout the region, such as a multi-day hunting trip with community members on the NWT barrenlands and time spent in the neighbouring communities and the territorial capital of Yellowknife. Time was spent each day at the school and in the communities of Rae and Edzo, for example, in students’ homes, at the church, at the recreation centre, at the bingo hall, and while taking language classes and shopping at local stores.

Participants in focus groups and interviews included Aboriginal and non-Aboriginal people, both males and females. Three formal focus groups were undertaken, one with six school staff members, another with nine students, and a third with seven community healthcare workers. Twenty-one formal, semi-structured interviews were conducted. Participants included two elders, four young people, four school administrators, four teachers and other school

staff including youth counselors, two adult educators in the community, one government official, and two Band Council employees. Two participants were interviewed twice. Of the 21 interviews, 14 were video- or tape-recorded and transcribed, and seven were recorded with detailed, handwritten notes. Archival documents were also collected. These included registration, attendance, discipline, achievement, and graduation records; letters; program evaluations; local newspaper articles and announcements; and publicly available transcriptions of interviews from previous studies done in Behchokò.

Although each interview and focus group was unique, and questions were adapted to suit the particular group or person's roles and perspectives, general questions included:

- Can you tell me a little bit about yourself? About your community?
- What do you think is really great about living in this community?
- Are there tough parts about living here?
- What are the most difficult issues facing this community?
- What are the employment and education pathways of young people here now?
- What do young people do in their free time?
- Have you noticed any changes in the community over time?
- Have you noticed any changes in the community since the diamond mines opened?
- From your perspective, how is diamond mining affecting, or going to affect, the community as a whole? And youth more specifically?
- Is there anything else you would like to add?

The majority of research participants were Tłı̄chò and long-term or lifelong residents of the region. All non-Tłı̄chò participants had lived in the community for at least three years (and often longer).

The researchers were guided by the *CIHR Guidelines for Health Research Involving Aboriginal People* (CIHR, 2007). The study was approved by the University of Calgary Conjoint Health Research Ethics Board and by the Aurora Research Institute of the Northwest Territories. The approval process included gaining support for the research from the local governments and school board. In deciding the exact research topic and methods, the researchers were guided by school staff, young people, and other community members they consulted in Behchokò. (See Caine et al., 2009, for a fuller account of this preliminary research stage.) Thus they followed principles of critical ethnography (Carspecke, 1996) with respect for decolonizing and indigenous methodologies (Tuhivai Smith, 2002; Chandler and Lalonde, 2004; Denzin et al., 2008). The principal goal was for the study to be responsive to local needs and concerns and useful for informing future intervention. A local youth was hired as research assistant. The researchers continued to consult the community and share research ideas

and emerging findings throughout the study and upon its formal completion.

Data Analysis

Forty qualitative documents (554 pages) were uploaded into a hermeneutic unit of Atlas.ti for detailed data analysis. The researchers coded each document initially with first-order codes through a process of constant comparison, as outlined by Glaser and Strauss (1967). To start, each researcher independently coded three transcripts and then a coding framework was developed in collaboration. Further coding was done by the first author, with frequent discussions and consensus sessions with the second author about emerging or evolving codes. This approach, termed “triangulation of researchers,” is used to greatly enhance the rigour of the analysis in qualitative studies (Patton, 2003). Among the first-order codes were “mention of mining” and “potential links to mining.” All data (quotations) linked to these first-order codes were then brought together for further analysis. These cumulative documents were re-coded with higher or second-order codes that represented patterns and more specific emerging themes (for example, positive impacts, negative impacts, and other ideas about how mining is influencing young people). Since data collection and analysis were concurrent, findings from early stages of data analysis informed ongoing data collection. The research was flexible enough to allow this to happen. This type of analysis has been described previously by LeCompte and Shensul (1999) and others.

RESULTS

Six themes related to the interplay between diamond mining and the lives and pathways of Tłı̄chò youth emerged: diamond mine development has 1) led to an increase in the transience of the population, 2) created some tension between work and education, 3) meant that diamond mines exist as a community resource, 4) created some inequities in communities, 5) supported a particular view of schooling, and 6) generally supported a positive vision of the community and its future (Table 1).

Increase in Transience of the Population

The mine requires most workers to be on two-week rotational shifts. This means that workers are in camp for 14 days (typically working 12-hour shifts) and then out of camp for 14 days. With more members of the community working, there is also more discretionary income for vehicles and for traveling.

[There is a] more transient population now, working at the mine, having more money to travel. People [are] moving around even in small remote communities.

(School Administrator, interview)

TABLE 1. Summary of impacts of diamond mining on youth in Behchokò.

Generally negative impacts	Generally positive impacts
Increase in transience of the population decreases presence of adult figures in the home, leaving youth more autonomous and less supervised.	Increase in monetary income through wage employment contributes to obtaining appropriate housing and adequate food.
Increase in discretionary income is negative for some (spending on travel to large centres, gambling, alcohol, and drugs). Material goods and gifts are replacing appropriate parenting.	Increase in discretionary income is positive for some (reduced stress levels, better nutrition, higher participation in community and extracurricular events).
Some young people are leaving school to work.	Training and other educational programs are increasing community and individual capacity.
Inequitable distribution of resources in the community is creating haves and have-nots.	Influx of financial resources into the community is producing opportunities (e.g., scholarship program from IBA transfers; programs and services provided in response to proposals to mines).
Focus of schooling on career preparation (especially in mining and trades) may leave out other program focal points such as the arts.	Mining supports a particular male/female and community profile of wage earners: young males work at the mine, and females and youth have opportunities to work in the community.
The increase in transience of the population is associated with an increase in sexually transmitted diseases.	Mining positively affects the community narrative about its own situation (the glass is half full, not half empty). Diamond mining brings positive national attention.
	Other resources, such as teaching packages, tours of the mines, public talks, and career days, are made available in the community.
	Employment produces more positive adult role models (workers, those taking on responsibilities).
	Employment of community members has inherent individual and collective benefits, such as self-esteem, confidence, and pride.
	Development provides an opportunity for youth to learn more about industry, economics, and politics.

They are away from the homes for two weeks, yeah, but now[a]days it is consuming, eh? It's Walmart, it's Extra Foods, it's Edmonton. They go to Edmonton—they just pick up and go to Edmonton...every weekend.

(Elder, interview)

The two-week schedule and the increase in financial resources have led to a number of changes at family and community levels that affect the lives of youth. Most notable is an overall decreased presence of adults in the home. The mine is by far not the only factor affecting the presence or absence of adults in the home, but it is a contributing factor. The disruption to the family unit caused by some men and women from the parent generation being away for shifts at the mine can be additional to family-level disruptions associated with alcohol or drugs, cycles of abuse, and societal marginalization. All of these factors combined make it harder for some parents to provide positive family situations for their children.

...the kids really run the show. I think that there is more money in town, because of the mine, but now parents are hardly ever at home... They have replaced parenting and guidance and caring with money.

(Elder, interview)

There is a lack of guidance. Some of the kids are really raising themselves.

(School Staff, interview)

The presence of the mine, by increasing reliance on the grandparent generation for childcare, has contributed to intergenerational mixing of children and grandparents. Grandparents were generally still living on the land when they were young people, and some went to residential school. Many have very limited experience with the current style of primary and secondary education. Grandparents may be less able to empathize and connect with a grandchild as a young person and student. Their ability to assist with homework in English or their ability to communicate with the school about the student's work and progress may be limited. This type of intergenerational mixing has distinct social implications and may be of some benefit for the maintenance of the Tłıchq language. The grandparent generation comprises the majority of fluent Tłıchq speakers, and youth in many such homes are exposed to daily immersion in the spoken language.

Experienced health care workers in the region commented that the increase in transience appears to be associated with an increase in sexually transmitted diseases (STD). The health care workers reported that rates of STDs among youth in the community have risen in the past decade.

Tension between Work and Education

For a small number of young people, there is tension between work, in the immediate time frame, and education and work over the longer term. Some students find more immediate gratification in earning a salary (even if it is from a labourer position):

A bunch of those guys who were just hanging around were hired for underground digging at the mine. It was horrible work underground, and the pay wasn't that great, but some did it for a while...some young people decide to drive a truck or whatever and get paid \$70,000 a year (and you don't need a grade 12 for that), especially if they already have kids at home they have to support.

(School Administrator, interview)

The temptation in grade 10, you know, you might land a little job, but you can buy a car, you can be free, you know. That's the temptation, but then after a while, you start to realize uh oh, my grade 10 is nothing. [Question: Right. So then what?] Some go back to school, uh, some, well, they suffer. [The] temptation [is] to go into alcohol to forget.

(Elder, interview)

In general, however, it is felt that this pathway is not taken by many youth at present. The mines do not directly encourage young people to leave school to work: they would much rather their employees achieve at least a grade 12 education, and they push college or university as the gold standards. But a few students have chosen to leave school knowing that there may be work and good wages available in labourer or service support positions at the mine. The mines offer on-the-job training and literacy supports as well. In some cases, young people return to school or decide to do something else after realizing how difficult and often repetitive the tasks are, and how limited the chances for advancement, for those in the mines with less than a grade 12 education.

She was a chambermaid at [the mine] but recently quit because she said she was getting tired of the work and there was never an increase in pay.

(Band Council Representative, interview)

Even if technically jobs might be available for those with little skill or experience, not just any person can fill these positions. Often, the skills that are required to complete high school are the same ones employers are looking for in their workers. The opportunity to work at the mine is not a realistic possibility for all young people in the region, with or without a high school diploma:

The mine has been good but only for those people who can hold it together; people who leave school usually aren't them.

(School Administrator, interview)

Diamond Mines as Community Resources

Although not all positive, the diamond mines exist as significant resources for communities in the region. The mines provide financial resources for school activities by way of transfers from IBA negotiated benefits and through direct funding in response to proposals and applications (third-party funding):

We also get [money] from the Band through the [IBA] money that the community is given from the mine.

(School Staff, interview)

The proposal [money] is all bonus—that is all extra. Yes, it helps to pay for [the instructor's] salary, it helps to pay for equipment. Like two years ago,...we got brand new skidoos... we were able to buy gear for the students.

(School Administrator, interview)

In addition to financial resources, the mine also provides non-financial resources, or makes them available. For example, mining representatives visit schools to teach students about the industry, mining companies offer mine tours for local people, and the mine provides educational resources about the industry for use in the community:

Sometimes the mine, and other companies, they come and they have meetings...they come to our school to sometimes explain to students... what their job is and what they do.

(School Staff, interview)

The school has a small greenhouse funded by a diamond mine company. One of the mines provided mineral samples and geological maps for teaching purposes.

Inequities in Communities

The fourth theme brought out in the data is that mining does not affect all members of the community equally. Employment at the mine is essentially broken into three types: professional work, which is done by highly trained staff such as mining engineers and tradespeople; manual labour and other positions that require less training, such as driving a truck or unloading vehicles when materials are delivered to the mine by road; and service positions that support the function of the setting, such as catering and housekeeping. For example, the impact of mining on men

and women is unequal. Most commonly, local young men (some with less than a grade 12 education) work as labourers at the mine, while local young women, if they chose to work at the mine, do the catering, housekeeping, and administrative support tasks.

Women are taking more of the supporting roles at the mine. Men won't even make their own beds; there is housekeeping, and there is cooking and cleaning.

(Elder, interview)

Men have the opportunity to be the main breadwinners for their families. Women and other extended family members are relied on for childcare. The two-week shift rotation at the mine is very difficult for those who have dependents at home. Women who choose to work outside the home often take positions in the community in social services, government, or retail. Women have higher rates of high school completion, education, and labour market participation than men in the region. But these trends do not necessarily speak to the types of jobs women are doing or the wages they are earning:

Educational completion rates and labour market participation rates for women are higher, but this is not reflected in the type of employment they get.

(NWT Government Representative, interview)

One Particular View of Schooling

In general, school is highly valued in Tłı̄ch̄q society:

That's why they have got to try hard and finish their high school. I mean it for their own good, if they made it, their grade 12, you don't have to worry about a thing. You are going to make good money, you are going to get a good house, you are going to have a good vehicle..., they might be Chief, they might be a game warden, they might be a lawyer. We don't know, whatever they want.

(Elder, public presentation)

That mainstream style schooling is so valued is an important characteristic of the community. As early as the 1930s, then Chief Jimmy Bruneau was canvassing the government for the establishment of a school (Tłı̄ch̄q Government, 2010). The mines and the change in the local labour market have had some impact on the focus and purpose of schooling in communities like Behchok̄. For example, mining careers are featured at school events:

Person 1: "Career days... used to have a nursing booth, but now it's just the mine. The mine had a laser light show!" Person 2: "Yes, the mine is luring them away from professional fields like nursing and teaching, those that could be sustainable...the mine should not be the end goal of education."

(Health worker, Focus group)

The overall increase in regional employment opportunities has put pressure on schools to offer programs that will prepare local young people to take advantage of the strong labour market. The school is very focused on preparing students for higher education (in hopes that they will move on to gainful employment). This means college, apprenticeships in the trades, and more recently, university:

There is much more emphasis...in the trades, and there is a big push in the trades that they have to have academic... in English, in Math and often in one or two of the Sciences and Social Studies. [The] school is preparing for that...it is a slow progress, but we need to be a school that offers both routes, not only to be able to get a regular high school diploma for a college-level entry course. But, we also need to be able to offer a wide variety of Science, Math and English Language Arts classes [for trades and university]

(Administrator, interview)

The purpose for schooling in this context is largely career preparation. It is generally recognized that there are jobs available, particularly in resource development, and thus, the mine is highlighted as a good option for young people. One Elder noted, "Mining is a solution: [a] good wage and security."

In the summer of 2005, a regional trades and technology training centre was established to facilitate modular courses that would train local people in essential job-related skills, particularly those applicable in the mining industry. The program was funded partially by a Mining Skills Development Strategy grant from the federal government and partially through a large donation from local diamond mines. Locating the centre within the region has greatly reduced the geographic barriers that had previously prevented local people from training. Today there is an overall need for skilled labour in the NWT. Young people who complete high school and some kind of post-secondary training can have many opportunities.

A Positive Vision of the Community and Its Future

Diamond mining in northern Canada seems to be having an impact on the way people in the region view themselves and the future of their communities. In response to the question, "What do you think will happen when the mines close down?" one youth in a focus group responded, "Maybe we will all be poor again." This reflects an undertone of marginalization. At the same focus group, however, another young person responded: "Maybe they will find gold under those diamonds."

Coupled with the bolstered labour market and local economy resulting from diamond mining are governance changes in the region, and this has been a powerful combination to shift perceptions about the current and future situation of these communities. When another interviewee was asked what he thought might happen after the mines

closed, he said that developing the human resource through training and the opportunity to work was most important. He felt that people from the region could travel by plane to other areas of Canada to work after the mines closed. They could be in northern Alberta in two hours, for example, and there would be work there. Once people got used to the two-week rotations and long-distance commute, he felt it would not really matter where they went to work. His was an optimistic, long-term vision: a vision that spoke of hope and potential.

DISCUSSION

This ethnographic exploration of the impact of diamond mining on Tłı̄ch̄o Aboriginal youth in Behchokò NWT, is one of the few examples of such works to focus on a northern Aboriginal group, and it is the first to focus specifically on the impacts of mining on Tłı̄ch̄o youth. There have already been both positive and negative impacts of mine development for young people in Behchokò. Diamond mining companies have been resources for Tłı̄ch̄o communities, helping to support educational and cultural activities, and the mines have been places of employment. For some families, the increase in personal incomes has translated into better quality of life. However, mining has also affected the level and type of supervision provided for young people and the identity and role of family caregivers. A small number of young people are working in the mine without finishing high school. For others, available jobs in the mining sector have become strong incentives for finishing high school. Increases in gambling have been observed, and there continue to be concerns over substance abuse in the community. It is difficult to ascertain whether these changes are a result of the booming mining sector, as mine development is happening in a context of rapid and dramatic change on all fronts in the North, but mining appears to be a contributing factor.

To ground a detailed discussion of these findings, three points need to be highlighted. First, the study of mining impacts remains a complex and contested field, with various perspectives and methods for how impacts should be identified, planned for, measured, and monitored. Second, the impacts of mining are not experienced the same way by all people across a community or a population, and mining can serve to create or compound inequities within and between communities. Finally, any discussion or interpretation of the impacts of mining must carefully consider the context in which they occur.

The study of mining impacts is inherently complex and contested. The various stakeholders disagree about what impacts to measure and how and when to measure them, and already different studies have produced contradictory results.

In Behchokò discussions of mining reflected a broad and long-term vision of potential impacts. In general the air was optimistic, but views of current and potential impacts were

varied. People spoke of physical and mental health issues, addictions, jobs and schooling implications, but they also spoke about self-esteem, changes in social structures and culture, language, and relationships to the land. Mining had the potential for positively influencing young people and the community through training, employment, and helping people gain or maintain a sense of purpose and esteem, but community members were aware and wary of negative impacts as well. They discussed worries and observations related to increases in substance use, gambling, more time spent outside the community, and less supervision for young people.

What became increasingly obvious over the course of the study, however, was that mining was only one change and influence among a great many that are affecting Tłı̄ch̄o society and that its impacts were not viewed uniformly by local people. Change is happening so rapidly that anyone returning to the community after even a brief time away must go through a period of re-orientation. What new institutions or projects have been introduced? Who has arrived and who has left? What major events have occurred (accidents, deaths, births, marriages, important visitors or celebrations, major crimes) that affect the whole community? These changes are always significant. During the time of this study, for example, there was the formal passing of the Tłı̄ch̄o Agreement, with subsequent celebrations and the many changes in government structure and institutions; the community formally changed its name (from Rae-Edzo to Behchokò); and even the name of the First Nations group was changing in common conversations from the previously more common Dogrib to Tłı̄ch̄o. The Governor General visited and was acknowledged with a large community feast; a new mine training program opened at the high school; the residence at the school closed, meaning that students from outlying communities were now billeted with local families; the community hosted a large international conference on Arctic research; school leadership changed after more than 10 years; a youth centre opened and then closed after vandalism; and there were a number of births and deaths, including the sudden death of a school staff member. These are just a few of the major changes noted. Discussions of the impacts of mining among the people in the study were rarely separated from discussions of how the Tłı̄ch̄o people are navigating, and will continue to navigate, in this context. The researchers were certainly joining an ongoing conversation, rather than starting a new one. Talking, reviewing, reflecting, and listening to each others' viewpoints is part of Tłı̄ch̄o culture and of the community's constant adjustment process.

The things the Tłı̄ch̄o identified as important, and important to protect, are consistent with the healing and community health model put forward by Parlee and Marlowe (2002) and Parlee et al. (2007). In this model, health is a broad concept and includes such things as community and family well-being, quality and type of community services, child wellness (including happiness and future possibilities for young people), and demonstration of traditional values

and language use. This kind of conceptualization of individual and community health needs to be reflected in any discussion of mining impacts on indigenous people today.

Contradictory findings from previous studies suggest that the impact of mining is neither easy to predict nor simple to reveal. Previous research notes, for example, that divorce and separation will be a common outcome of remote (fly-in fly-out) mining (Forsyth and Gramling, 1987). However, recent studies suggest that this type of work may attract more divorced and separated individuals in the first place and provide little evidence to support the idea that long-distance commuting or shift work causes marriages to break down (Shrimpton and Storey, 2001). Barker (2008), who examined impacts and issues associated with indigenous employment in mining, found that, as in Behchokò, while indigenous employment in mining projects is often heralded, one must critically examine the nature of employment effects because they are not only beneficial.

Measuring, monitoring, and reporting the impacts and benefits of mining is further complicated by the fact that there is currently no “standard” or single list of variables to study or standard time-frame in which to study them (nor will there be). This field continues to evolve, with many lists of indicators and methods and time-frames for assessment (Tsetta et al., 2005). The mine life cycle typically includes exploration and feasibility, planning and construction, operations (mineral extraction and refinement), and closure and reclamation (Environment Canada, 2010). Impacts can differ with each of these stages and over time. Hobart (1989) determined that in Kugluktuk, an initial 29% increase in alcoholism among Gulf Oil’s Inuit workers subsided after a few years. Long-term follow-up on these kinds of impacts is essential. While employment opportunities are numerous for the Tłı̄chò people now, in the early stages of mine development and operation, employment and income levels are projected to fall with the closures of Ekati in 2023 and Diavik after 2020. Extreme variability in employment is expected after these closures, and the life cycles of other developments such as the Mackenzie Gas Project may add further complexity (GNWT Department of Finance, 2006). How will impacts change over this period? In addition, for many indigenous communities near large-scale mineral developments, including the Tłı̄chò, the reality is that they are affected by more than one development at any time. They must contend with cumulative effects of activities across mining and other development sectors (Whiteman and Mamen, 2002).

Although the focus of this paper is not to outline and critique the history and development of IBAs between mining companies and indigenous communities such as the Tłı̄chò (this has been done elsewhere, e.g., Kennett, 1999; Dreyer, 2002; O’Faircheallaigh, 2006; Shanks, 2006; Prno, 2007), we do note that the development and use of IBAs may represent a potential avenue for improving mining impacts on indigenous people. However, the history and use of IBAs is also contentious. For example, indicators chosen to measure and monitor impacts for IBAs do not always reflect

community values and experience (Parlee and Marlowe, 2002; Paci and Villebrun, 2005; Tsetta et al., 2005). In addition, the impacts or benefits predicted at the beginning of a project do not always come to fruition. In discussing the impacts of megaprojects (specifically the Red Dog Mine in Alaska and Hibernia oilfield off Newfoundland), Storey and Hamilton (2003) note that many impacts and benefits that were proposed in the planning stage and at the outset failed to materialize. Since the study of mining impacts is complex and contested, any discussion and reporting of these impacts should be undertaken and interpreted with caution. Such reporting and discussion does, however, open many doors for further investigation and action by stakeholders.

The impacts of mining are not experienced in the same way by all people. Mining can serve to create or compound inequities in communities. The differential impacts of mining across populations make the reporting of overall experiences largely inaccurate and impossible. At best, trends among sub-groups of the population could be reported, such as the finding that young Tłı̄chò women are generally taking different employment positions than men in the mining sector. Findings can also be reported with both sides presented or with cautionary notes included. A small number of Tłı̄chò young people have pursued mine work as an alternative to finishing school, for example, but most have stayed in school as an avenue to obtaining jobs that will likely be available to them if they graduate. Unfortunately, current models for mining impact monitoring in the NWT do not sufficiently investigate sub-groups, such as women, elders, or youth (Gibson, 2008). With respect to gender, there appear to be differences in the way mining is impacting men and women and also young men and young women in Behchokò. Previous studies have also noted such differential effects, showing, for example, that in mining-impacted communities, women have higher rates of depression (Burvill and Kidd, 1975), higher STD incidence, and lower levels of participation in development decisions compared to men (Macdonald and Rowland, 2002).

Shimpo and Struthers (1991) noted that industrial development in the North has created social stratification and an unequal distribution of power, wealth, and social prestige. Industrial development in the North has created some haves and some have-nots. This pattern is evident in the Tłı̄chò communities as well.

Most importantly, the findings of this study have to be considered with some understanding of culture, geography, and the indigenous group involved; the policy frameworks that exist or do not exist; industrial and development pressures; and the history of colonial and paternalistic relationships, not only between the state and indigenous communities, but also between developers and indigenous communities. The impacts presented here are intricately linked to the specific temporal and political context in which the study was undertaken, as well as to the historical and current cultural context of the Tłı̄chò people. Many examples show that the Tłı̄chò are a strong group with active leadership. They have often led the way in

establishing structures and institutions to express and give operation to their leadership. The Tłı̨ch̨q had the first Aboriginal community-run school board (1969), were the first formal hamlet in the NWT (1971), were the first “dry” community in the NWT (1976), were leaders in establishing an integrated institution for education, health, and social services (1989), and negotiated the first comprehensive land-claim and self-governance agreement in the NWT (2005). In the face of myriad impacts, external forces, and changes, they have actively sought ways to ensure best outcomes possible for their people and communities. This search has meant examining what “best outcomes” means to them, and what methods they might use and what potential compromises they might be willing to make to get there. They have sought ways to ensure that mining happened with them rather than happening to them. This was very purposeful work and not taken for granted. The vision of the Tłı̨ch̨q Community Services Agency is Tłı̨ch̨q being “strong like two people.” This vision is for Tłı̨ch̨q to be strong in traditional Tłı̨ch̨q and current mainstream ways, so discussions of impacts and of best ways forward must reflect these values.

As mentioned in the introduction, the signing of the Tłı̨ch̨q Agreement was a significant event in the Tłı̨ch̨q’s struggle to regain self-governance and land rights. Unfortunately, however, regardless of the strength of the community or the importance of this Agreement, dramatic diamond land staking occurred in the early 1990s, before the Tłı̨ch̨q Agreement was formalized. Sections of land claimed as traditional area for the Tłı̨ch̨q could not be included in the formal Agreement because of “pre-existing mineral interests” (Gibson, 2008:56). These interests included claims by Diavik, Ekati, De Beers, and Fortune Minerals. In past and current federal policy, mineral development is given precedence over other claims on the land (Campbell, 2004). These key land withdrawals serve to highlight the political, policy, and contextual reality facing mining-affected communities. First Nations land claims are not given precedence, and thus the benefits of resource development in traditional indigenous areas, for indigenous people, have been tempered. In finding ways to move forward in this environment of inadequate or inappropriate policy, the Tłı̨ch̨q have exhibited resilience, innovation, and strength of community. They have also had to agree to a number of compromises, such as these land-claim modifications, in order for the process to move forward now.

Other communities might not make the same decisions, and so might journey through this post-colonial period in different ways and with different current realities. Certainly, as Paci and Villebrun (2005:72) point out, “There is no single Dene perspective on mining: some call for greater involvement of Dene [in] mine development; some for a greater share in the resource royalties and other benefits; some could be characterized as preservationists (of both lands and cultures).” These authors discuss the need for, and potential evolution of, a “more regulated industrial development regime” (Paci and Villebrun, 2005:77). Today,

the signing of lands claims, self-governance agreements, and impact and benefit agreements, while still not perfect, does seem to indicate a turn of the tide.

LIMITATIONS

The findings of this ethnographic study are not largely generalizable beyond the immediate setting. Instead, the data should be taken as specific to Behchokò but used to inform and advance similar work in other places. However, the key findings are relevant to other Aboriginal communities, specifically those in the North or other areas rich in natural resources.

Significant discussion exists in the scientific literature of types of consensual processes with Aboriginal people and people from other minority groups (Piquemal, 2001; Marshall and Batten, 2003; Nakkash et al., 2009), as well as the potential research limitations associated with requiring active parental consent (Scherer et al., 2007; Rojas et al., 2008; Horn et al., 2009). While we are confident that the insights gained by the immersion in the community are valid, we would have liked to do more formal interviews with young people (under age 19) and feel this omission may have somewhat limited our results.

As one part of our approach to ensuring ethical conduct of this research, we stated at the outset of the study that we would obtain parental consent to interview anyone under 19 years of age and developed a consent form for this purpose. The University of Calgary Conjoint Health Research Ethics Board and the Aurora Research Institute gave guidance and support for this approach. However, in the field, relationships were built between the researcher and youth, and young people were hesitant to obtain parental consent in order to participate in formal interviews. Questions arose about what constituted informed consent, when it was necessary, how consent should be obtained, and from whom. Indeed, when we introduced the forms and asked the young people to discuss the project with their parents or guardians and have them sign to indicate it was all right for them to be involved, no forms were returned. A few parents provided verbal approval for their child’s participation.

Once this issue arose, rather than revisiting our ethical protocol entirely, given the limited time frame for the fieldwork, we compensated by undertaking more work with youth from 19 to 25 years of age and collecting other data that were available publicly for those under the age of 19 (i.e., public presentations, public writing, artwork, reports from other research, and school improvement projects). Field notes and archival documents were also collected and were a key source of data in this study. In future work of this nature, we would recommend further discussions and consideration of individual consent being possible for younger adolescents. Indeed, the World Health Organization defines an adolescent as a person between the ages of 10 and 19 years and says that adolescents may provide consent (in this case for medical treatment) independently

of their parents if they are designated as either mature or emancipated minors (WHO, 1993). Many of the young people involved in this study would fall into one of these two categories. Kaufert et al. (1999) note differing perceptions of the nature of informed consent across cultures; peoples and institutions can create real ethical dilemmas as investigators strive to engage meaningfully in research with communities and to respect self-determination. We certainly experienced these kinds of dilemmas (see Davison et al., 2006), and we feel it is important to continue to engage in discussions of appropriate research consent processes with young Aboriginal people.

CONCLUSION

We echo previous calls (O'Neil et al., 1998; Parlee and Marlowe, 2002; Davison, 2004) to challenge the deficit framing of the Aboriginal "situation" in Canada and elsewhere. Instead of continuing to describe problems, we encourage all who have a stake in these concerns to look towards studying solutions. What is working? Where can positive impacts be maximized? And how can we give prominent focus to positive examples of young people succeeding in this evolving environment, so that we and others can learn from them?

During this study, and after its completion, findings were shared and discussed with those who had participated in the work and with the broader community, including the Tłı̨ch̨ Community Services Agency, the Tłı̨ch̨ Government, the study school, and the NWT Department of Education, Culture and Employment. The results of this study are a small contribution to continued efforts by the Tłı̨ch̨ Community Services Agency and the Tłı̨ch̨ Government as they continue to explore issues related to mining impacts, health, and youth in this region—a formidable but important challenge in this rapidly changing northern environment.

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