Who, Being Loved, is Poor? Poverty, Marriage, and Changing Family Structures in the Canadian Arctic

Human Organization, Vol. 77, No. 2, 2018, 122–134.

Elspeth Ready

In Kangiqsujuaq, Nunavik, household composition has changed drastically over the past half-century. Although the cooperative division of labor between married couples was a cornerstone of the traditional Inuit economy, a large proportion of households in Kangiqsujuaq today are headed by single women with dependents. Examination of factors associated with marriage at the individual level and of patterns of wage labor participation within households shows that economic cooperation between married or common-law partners is associated with considerable advantages in the mixed cash/subsistence economy, particularly for households where both partners have steady, well-paying jobs. Married households have lower rates of food insecurity and are more invested in traditional harvesting and sharing than the households of unmarried individuals. Despite these benefits, there are significant challenges to forming successful households based on economic cooperation between men and women. The lower economic status of married households with only one primary wage earner, particularly in terms of per capita income, suggests that a domestic partnership may not provide any economic benefit if a prospective spouse or common-law partner is unemployed. In the current context of high unemployment in Kangiqsujuaq, this tradeoff may help explain the high prevalence of unmarried household heads and has important consequences for cultural transmission and mental health in Inuit communities.

Key words: marriage, Inuit, poverty, mixed economy, gender division of labor, bargaining theory

Elspeth Ready is a postdoctoral research associate in the Research, Evaluation, and Analysis for Community Health (REACH) Lab at the University of Nebraska Lincoln. *Funding for this research was provided in part by a grant from the National Science Foundation Office of Polar Programs (1303874), a doctoral fellowship from the Social Sci- ences and Humanities Research Council of Canada (752-2010-1089), a grant from the National Science Foundation program for Enhancing Access to Radio Spectrum (1443985 and 1638618), and a grant from the National Institutes of Health (R01DA037117). The content is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health or the National Science Foundation. Rebecca Bird and James Holland Jones provided helpful comments on earlier drafts of this paper.*

Introduction

In Kangiqsujuaq, an Inuit settlement on the west coast of the Hudson Strait, in unavik, Canada, 33 percent of households today are headed by single women, most of whom are single mothers.

This pattern is a relatively recent phenomenon, as economic cooperation between married men and women was foundational to the traditional Inuit economy (Graburn 1969). Research in sociology suggests that variation in marriage rates is often shaped by the broader socioeconomic environment in which individuals live; in particular, that a lack of economic opportunities and/or high economic inequality may lower marriage rates. In this article, I ask how economic considerations, in both the cash economy and the traditional subsistence sector, may shape marriage patterns in Kangiqsujuaq. This investigation allows me to explore the consequences of economic conditions in contemporary Arctic settlements for Inuit family life and well-being.

Marriage and Partner Quality

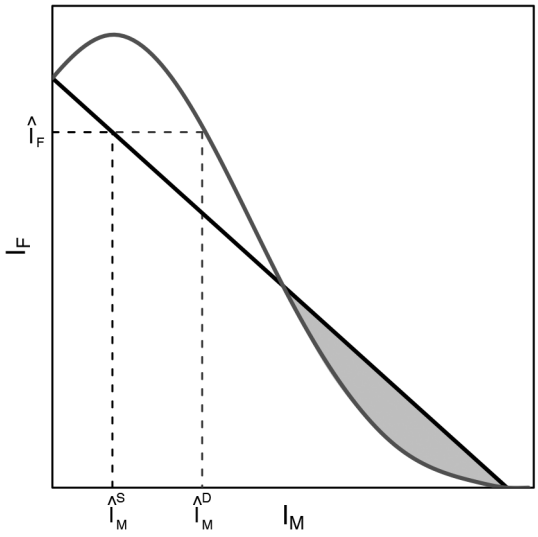
Within anthropology, human behavioral ecologists have been particularly interested in the role of economic status in reproductive strategies and, to a lesser extent, marital decisions. Previous research on marriage in human behavioral ecology generally focused on the cooperative division of labor—or lack thereof—among men and women for the purpose of provisioning children (e.g., Gurven and Hill 2009; Gurven and von Rueden 2006; Hawkes, O'Connell, and Coxworth 2010), or on partner choice, particularly in contexts where polygyny is prevalent (e.g., Borgerhoff Mulder 1990; Gibson and Mace 2007). Although some recent research focuses on alternative cooperative and reproductive arrangements, such as societies where strong cooperative ties among matrilineal kin are associated with reduced paternal investment (e.g., Mattison, Scelza, and Blumenfield 2014), relatively little attention has been paid to the broader role that socioecological conditions may play in favoring or disfavoring marriage (although see Cronk 1989; Pollet and Nettle 2008, 2009). Here, I briefly review sociological research that has offered explanations for variability in marriage rates and suggest how the theory contained in this work can be used to extend evolutionary approaches to marriage.

Wilson (1987) sought to explain why poverty among African Americans increased during the 1970s and 1980s, despite the success of the civil rights movement and the expansion of the welfare state through the mid-20th century. He suggested that spatial patterning in economic changes, namely the decline of the manufacturing industry and the shift of service jobs to the suburbs, had disproportionately affected African Americans living in inner cities, leading to the emergence of an urban "underclass." Wilson observed that the high rates of poverty in these areas were partially attributable to high frequencies of households headed by women. He suggested that considerations related to the economic contribution of men—not cultural factors or welfare payments—were the cause of this pattern. Wilson argued that women considered unemployed men to be unsuitable marriage partners and found that, indeed, marriage rates were negatively correlated with the male joblessness rate. Subsequent research has broadly supported Wilson's argument that economic conditions, including poor job markets (e.g., Lichter et al. 1992), high levels of income inequality (e.g., Carbone and Cahn 2014; Gould and Paserman 2003; Loughran 2002), and economic instability (e.g., Oppenheimer 2002) shape marriage rates and timing because they affect the economic payoffs of marriage.

Economic approaches to marriage generally rely on the idea that there are non-linear gains from pooling of resources and labor between partners (Becker 1981). However, the underlying concept shared in analyses of the role of poverty in marriage rates, such as that of Wilson, is that returns to marriage are not necessarily always positive. Here, I illustrate this concept using an indifference curve approach, which shows how different inputs of variables can combine to produce equal payoffs, or "utility," for an individual. Figure 1 shows indifference curves for an individual *F* for variable inputs to marriage by two partners (*F* and *M*). If *F* and *M*'s contributions to the marriage are perfectly substitutable (shown by the black line in Figure 1), then if *M* increases their input, *F* can decrease theirs, while the utility derived from the marriage by *F* remains constant. In this case, marriage with *M* may have a negative impact on *F*, for instance, if *M* does not produce enough to compensate for his/her own consumption, requiring *F* to contribute more than he or she would if single. If *F*'s required input for equal payoff when remaining single is $\bar{I}_F$, the minimum acceptable input for *M* in a substitutable regime is therefore I^S_M.

If the relationship between *F* and *M*'s inputs is not entirely substitutable, then the indifference curve will be non- linear, as suggested by the gray line in Figure 1. The shaded section in the right lower corner of Figure 1 shows what is expected in classic economic treatments of marriage (e.g., Becker 1981; Manser and Brown 1980) and of cooperative divisions of labor (e.g., Chase 1980; Gurven and Hill 2009): non-linear gains to cooperation or marriage due to the non-substitutability of partner inputs (e.g., *M*'s inputs allow *F* to invest in another activity that requires less input but provides high returns). Of course, if both partners are willing to con-tribute high inputs, their optimal allocation of inputs would lie on a higher isofitness line (not shown). I extend this approach to explicitly consider the possibility that a partner's inputs might have negative non-linear consequences, not just positive ones. The curve above the black line in the left upper portion of Figure 1 shows how low inputs from *M* might be disruptive and therefore actually require greater compensatory inputs from *F* in order to maintain the same payoff. This leads to the situation where *F* should prefer to remain single (and contribute input level $\bar{I}_F$) rather than be in a marriage with any partner *M* whose input would be less than I^D_M. Thus, "disruptive" partner contributions can shift *F*'s threshold for *M*'s input to marriage (called the "threat point" in bargaining theory literature) to the right.

Figure 1. Isofitness Curves for Substituable(Black) and Non-substitutable (Grey) Partner Inputs (I_M and $\bar{I}_F$) to Marriage, showing that in Both Regimes, Low Inputs from *M* Could Require Greater Inputs from *F* than *F* Would Have to Put in to Obtain Equal Returns Outside of Marriage ($\bar{I}_F$). I^S_M: minimum level of input from *M* for *F* to be able to put in less effort within than outside of marriage in a substitutable regime; I^D_M: minimum level of input from *M* for *F* to be able to put in less effort within than out- side of marriage in a substitutable regime. Shaded region shows non-linear gains to marriage in non-substitutable regime.



The model described above provides an economic explanation for why marriage with a particular partner may be undesirable; and in the following sections, I examine the relevance of economic trade-offs for marriage patterns in Inuit settlements today. Critically, however, the key insight into marriage patterns made by Wilson (1987) is not just that particular individuals may not be able to contribute sufficiently to be considered "marriageable." Rather, it is that the relationship between marriage and economic status may exacerbate poverty because the cooperative benefits of marriage will be more rarely achieved under local conditions of constrained economic opportunity.

The classic economic approach to marriage (Becker 1981) relies on certain kinds of specialization of labor be- tween men and women in order to produce the non-linear benefits described above (i.e., men work outside the home and women do domestic labor), and much research on the sexual division of labor in evolutionary anthropology relies on a similar argument (e.g., Gurven and Hill 2009). However, while particular forms of a sexual division of labor may be more efficient in many socioecological contexts, the benefits to marriage can hold regardless of a fixed sexual division of labor (Oppenheimer 1997). As will be shown below, a specialized division of labor between men and women has been suggested to be relevant to household economic success and to the maintenance of traditional harvesting among Inuit; but it is not the same division of labor envisaged by Becker (1981) and others.

Changing Inuit Gender Roles

Changing marriage patterns in Inuit settlements over the past century have occurred concomitantly with sweeping economic, social, and cultural changes that have greatly impacted the livelihood opportunities available to Inuit. Anthropologists typically considered traditional Inuit marriage to have been an economic arrangement, based on the specialized division of labor between husbands (who provided food and raw materials) and wives (who sewed clothing,

prepared food, and took care of the iglu) (e.g., Condon 1987; Graburn 1969). Nearly all individuals, then, were married at some point in their lives. Briggs' (1974) review of marriage roles in traditional Inuit camps also notes the distinction and complementarity between men's and women's adult roles, emphasizing profound interdependence—rather than hierarchy—among Inuit men and women. Briggs also highlighted the predominantly practical approach to the division of labor among Inuit; for instance, a young girl in a family of daughters might be taught men's skills, or vice versa.

Throughout the Canadian Arctic, traditional Inuit mar-iage was primarily patrilocal, although young couples sometimes lived with the bride's family for the first few years (Damas 1975), with a transition to a permanent pair bond or "marriage" generally marked by pregnancy. In the Kangiqsujuaq region, as in many other regions, polygynous marriage was permitted, although rare, and in Kangiqsujuaq specifically, it occurred until at least 1899 (Saladin d'Anglure 1967). On the whole, however, Inuit social organization was flexible, and polyandry is also known to have occasionally occurred among several Inuit populations (Starkweather and Hames 2013). Traditionally, marriages were often arranged by family members, but young Inuit today, like most Canadians, seek partnerships based on mutual attraction (Stern and Condon 1995).

Graburn (1960, 1969) was among the first to examine broader shifts in marriage patterns and gender roles as a result of settlement. He argued that in Salluit (Nunavik), sedentism and increased contact with Euro-Canadian institutions during the late 1950s and 1960s acted to increase the economic independence of women. Store-bought foods, manufactured clothing, and permanent housing reduced the need for women to rely on husbands to supply them with food and raw materials, and women had access to the cash economy through government allowances, sales of handmade clothing and crafts, and various forms of employment. Graburn suggested that while single women were not generally "better-off" than married women, they were nevertheless able to support children without marrying, which would have been very difficult prior to settled life. Consequently, women (and their parents) were able to exert increasing selectivity in marriage. Thus, for young Inuit women in the settlement context, the decision to avoid or delay marriage may have been linked to changing economic constraints.

These changes did not imply a delay in childbearing, however. Young women in Salluit bore children, and many were able to support them through new sources of income. Some appear to have defrayed the cost of single parenthood by giving their children up for adoption more often than in the past (based on data in Graburn 1960). A dramatic increase in pregnancies occurring without the concomitant development of long-term pair bonds was also a feature of the settlement period in the early 1960s in Ulukhaktok, in the Northwest Territories (Condon 1990). Condon attributed this pattern to the abandonment of arranged marriage and increased interaction between adolescent peers; although he also noted that while traditional arranged marriages tended to occur early, in the settlement, young adults were not required to take on adult roles (i.e., economic productivity) as quickly as in the past.

The economic changes related to settlement also had differential impacts on the values and expectations of young Inuit men and women. McElroy (1975) found that in Iqaluit and Pangnirtung, although all Inuit children were raised with the expectation that they should make economic contributions to their families, young men were still expected to hunt because of persisting social obligations, while there was little pressure for young women to pursue traditional activities such as sewing. These changing norms were reflected in the stated job preferences of young Inuit. Young women desired to work outside the home in wage-earning jobs and showed little interest in traditional women's activities. In contrast, although young men also wanted well-paying work, they still considered hunting to be a highly desirable occupation. Condon (1987) and Dahl (2000) observed similar changes in men's and women's economic roles in Ulukhaktok and in Saqqaq (Greenland) during the 1980s, with many women holding wage-earning positions in these settlements. Both authors suggested that this pattern reflected a transformation of the traditional cooperative division of labor between men and women, whereby money earned by women was redirected to support the hunting and trapping activities of their husbands. Condon (1987) attributed this new economic arrangement to rises in the cost of harvest production.

Despite historical research emphasizing gender complementarity, more recent research suggests that the economic, social, and reproductive goals of young Inuit men and women may be poorly aligned in modern settlements. Collings (2014) argues that for men in Ulukhaktok, being *inummarik* (a "real Inuk") continues to be defined in terms of hunting knowledge and harvest production. However, many young Inuit women are able to support themselves, raise children on their own, obtain traditional harvested foods from relatives, and live an otherwise complete life without the "hassles" of a domestic partnership, which may include providing labor for harvest processing, subsidizing hunting equipment, or simply supporting an economically unproductive partner (Collings 2014).

In summary, settlement resulted in a broad suite of transformations to Inuit gender roles and relations, including: (1) an increase in births occurring outside of marriage and a decline in marriage rates for young Inuit; (2) changes in the gender division of labor, including a tendency for women in particular to shift away from traditional economic activities towards participation in the wage economy; and, (3) in some cases, for women's income to be redirected towards men's harvest production. Several researchers have suggested that the increase in single female-headed households that has been part of these transformations can be attributed to changes in women's economic motives and opportunities (Collings 2014; Graburn 1969; Stern and Condon 1995).

Research throughout the North American Arctic suggests that higher income households tend to invest more heavily in harvesting and food sharing (e.g., BurnSilver et al. 2016); and, in Kangiqsujuaq, such investment is also associated with political influence in the settlement (Ready and Power 2018). Unemployment rates are also very high in many Inuit communities. In

Kangiqsujuaq, 26 percent of women and 29 percent of men aged eighteen to sixty-five reported no formal employment at all in the twelve months preceding data collection for this study. With these problems in mind, I take Wilson's argument about the importance of economic conditions in marriage rates as a basis for investigating contemporary Inuit marriage patterns. By examining if married households are more likely to comprise individuals of higher economic status, I consider how marriage pat- terns might contribute to socioeconomic inequality in the community. I investigate not only whether the probability of marriage in Kangiqsujuaq is impacted by employment but also by harvest participation, in order to establish whether a specialized division of labor between husbands and wives remains critical to supporting household success in the traditional economy. The results lead me to explore the possible consequences of current economic conditions and marriage patterns for Inuit well-being and for future sociocultural change.

Data and Methods

The data analyzed here were collected as part of a survey conducted by the author, with the help of local re- search assistants in Kangiqsujuaq, between July 2013 and July 2014, within a framework of extended ethnographic research in the village. One hundred ten of 146 Inuit house- holds in the settlement responded to the survey, leading to a sample of 296 Inuit individuals over the age of eighteen: 145 women and 151 men. The demographic composition of the sample is similar to that of the 2011 census (Statistics Canada 2012a). Fifty-seven percent of women over fifteen years are unmarried, divorced, or widowed in Kangiqsu- juaq, as compared to 44 percent of women in Canada as a whole (Milan 2015, data from 2011). A more pronounced difference between Kangiqsujuaq and the broader Canadian population is that all single female household heads in Kangiqsujuaq manage households that include children and/or grandchildren (minor or adult), whereas single person households are a large proportion of households in Canada generally (27.6%; Statistics Canada 2012b). Only seven households in the sample consisted of individuals living alone, and these were all men.

Current marriage practice in Kangiqsujuaq is generally informal and shows considerable continuity with the past: partners will move in together, often in the home of one of the partner's parents, and the birth of children follows on quickly (or, frequently, is the impetus for cohabitation). Formal religious marriages usually occur considerably later, if at all. Consequently, the definition of marriage used here focuses on the pooling of a couple's resources and labor within a household. In the analyses conducted here, common-law partnerships and "boyfriend/girlfriend" couples living and raising children together, in addition to legally/religiously married couples, are considered "married," while couples that were not co-resident are not.

Most married persons were heads or co-heads of a household. At the time of data collection, young single adults without children generally lived with parents, or occasion- ally with siblings,

due to housing constraints. Nevertheless, households with multiple nuclear families are relatively rare in Kangiqsujuaq. Only five of 110 households had more than one married couple under the same roof, and in all cases, this involved a young couple living with the parents of one of the partners. In two additional households, a young couple lived with one parent or grandparent. Eighteen households reported three or more generations living together (not counting adoptions of grandchildren by grandparents); besides including five of the seven households just mentioned, most of these involved a young single woman and her children living with her parents. In most households with married household heads, the primary harvester of traditional foods is the male household head. Only fifteen households had more than one male seal hunter aged fourteen years or older; and only eighteen households had more than one male fourteen years or older who participated in fishing. In nearly all cases, additional harvesters in the household were teenage or young adult sons of the household head(s).

To examine patterns of wage labor participation and marriage rates among Kangiqsujuarmiut, information on individual employment histories and government benefits recorded in the survey were used to calculate each adult household head's income during the twelve months prior to the survey. Income data for Inuit male and female household heads is compared in Figure 2. The average employment income of male household heads is somewhat greater than those of female household heads (women's mean=$27,149; men's mean=$31,592; individuals with no reported employment excluded). This is also true for total incomes, including employment and benefits (women's mean=$24,697; men's mean=$28,250), even though women are more likely to be the recipients of child-related benefits such as family allowance. For the analysis of marital status and employment, data on employment patterns from the survey were used to calculate the number of months of full-time work each adult individual in the sample had in the previous year. This is a less than ideal measure of individual participation in the cash economy, and consequently, the analysis is coarse. However, this measure has the advantage of being inclusive: respondents had little difficulty recalling what jobs household members had held in the past twelve months, but detailed income data often could not be obtained for individuals without stable employment. Months on paid maternity or sick leave from a job were included in months of full-time employment.

Figure 2. Distribution of (a) Employment Income and (b) Total Income for Adult Men and Women in Kangiqsujuaq. Includes all individuals who were reported as household (co-) heads and for whom income data could be obtained, excluding non-Inuit. Individuals with no jobs reported in the twelve months prior to the survey are not included in (a).

Using the income data, households were classified according to the gender and relationship status of the primary wage earner in the household (Table 1). Households where both husbands and wives earned regular incomes from employment (or pensions, for elders) were considered to be dual income households, while households where the primary wage earner was either the husband or the wife were considered to be male- and female-headed, respectively. Only in one case did neither spouse report any employment or pension income; in this case, the household was classified as female-headed because benefits received by the wife appeared to be the household's main income. Five households with Inuit/*qallunaat* (White) married couples are included, as these households participate in harvesting, sharing networks, and other aspects of local affairs no less than other households; however, it should be noted that all of these are dual income households. Households that did not have a co-resident couple as household heads are mostly classified as "single female" or "single male" house- holds. Five households could not be classified by wage pattern because they were composite households with no clear house- hold head(s) or because their incomes were unknown. Single female-headed households are the largest single category of household (33% of all households), while single male-headed households are relatively uncommon (13%). This discrepancy can be explained by the fact that young single men more often live with parents or other relatives because they do not have dependents and therefore are a lower priority in the social housing system. Among single female-headed households, eight of thirty-six were headed by widows, the others being never married or divorced/separated.

Table 1. Distribution of Household Types Used to Examine Patterning in Economic Strategies. Five households could not be classified by wage earning pattern.

Code	Description	N
D	Dual income married household	31
F	Married household, wife primary wage earner	16
M	Married household, husband primary wage earner	8
SF	Single female headed household	36
SM	Single-male headed household	14

Finally, a number of variables calculated from the survey data are used to examine the socioeconomic status of individuals and households in the sample. Household food security status is represented by a binary variable that signals whether the household experienced at least one episode of food short- age that resulted in adults cutting or skipping meals in the twelve months preceding the assessment. By this measure, 38 percent of households in the sample are food insecure. Food insecurity in Kangiqsujuaq is associated with other measures of economic status including per capita income and the number of hunting vehicles owned (Ready 2016). Household subsistence harvests are the household's reported catch of caribou, beluga, geese, and ringed seal during the twelve months prior to the survey, converted to kilocalories using data from Smith (1991). Harvest production was then categorized into three groups: low-producers (households that did not harvest any of four species mentioned in the past year), mid-producers (those who did some harvesting), and super-producers, de- fined as households in the top 30 percent of harvests (Wolfe 1987). Super-households harvested approximately 80 percent of all calories represented in the harvest data. The food sharing data refers to the sharing of harvested foods, and two measures of household food sharing network size are used here: "in-degree," the total number of incoming food-sharing ties for each household, and "out-degree," the total number of outgoing food-sharing ties for each household (see Ready and Power 2018 for more details on the sharing network data).

To examine whether employment status or harvest productivity are important factors in marriage in Kangiqsujuaq, I use two multiple regressions, one for men and one for women, to examine the relationship between the probability of marriage and three potential predictors of marital status: (1) age, along with age squared to control for increased probability of death or divorce with age; (2) a measure of participation in the cash economy, indicated by the number of months of full-time employment held by each individual in the twelve months prior to the survey; and (3), for men, a coarse-grained measure of participation in the subsistence economy: whether the individual had gone seal hunting within the last year. Seal hunting is a technically difficult activity that requires a greater level of investment than other kinds of harvesting, such as caribou or beluga hunting, as both of the latter activities can more easily be undertaken opportunistically. Harvesting activities primarily undertaken by women, such as fishing and mussel picking on the shoreline or berry picking in the summer, can often be undertaken with minimal skill and equipment, and so participation in these activities is therefore not a sensitive indicator of women's investment in traditional activities.. Participation in these activities in the past twelve months (and not time invested) was recorded in the survey; consequently, the regression for women considers only participation in the cash economy. All Inuit men and women in the survey sample aged eighteen or older at the time of the study are included, regardless of whether they were household heads.

Analyses were conducted in R (R Core Team 2017). Regression analyses use the glm function

with a binomial (logit) link, and functions from the "car" package (Fox and Weisberg 2011) were used to examine model diagnostics. The analysis of the socioeconomic characteristics of different household types is mostly based on the comparison of between-group means using Games-Howell tests. Games-Howell tests are an appropriate procedure for multiple *post hoc* comparisons of groups with unequal variances, with small and unequal sample sizes, and are also robust to non-normality (Games and Howell 1976). The method is implemented in the "user-friendlyscience" package in R (Peters 2016).

Results

Employment and Marriage

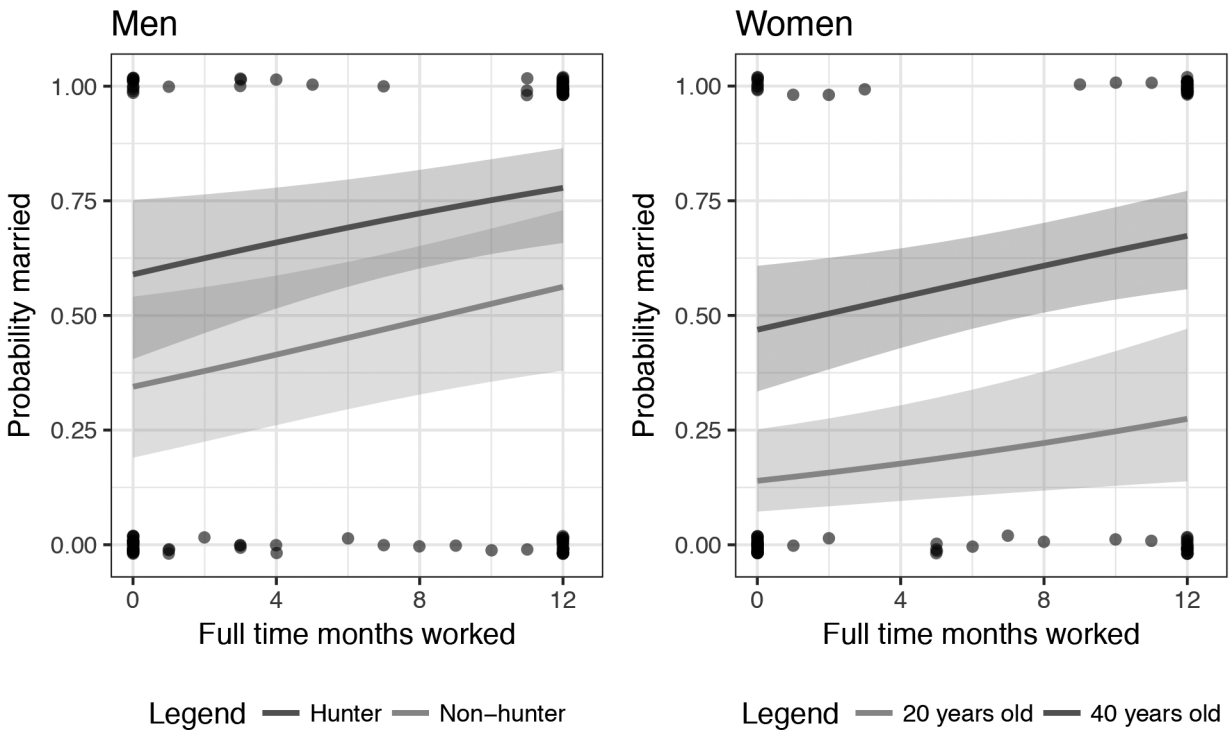
The regression results for men, shown in Table 2 and in the left panel of Figure 3, indicate that both months of full-time employment and participation in seal hunting have positive effects on the probability of a man being married. For women, full-time employment has a similar effect on the probability of marriage as it does for men (right panel of Figure 3). The average number of months of full-time work held by unmarried individuals was 3.6 for both men and women, while for married individuals, the average was 7.5 for men and 6.9 for women.

Table 2. Regression Results for Probability of Marriage for Men and Women

Model	Odds-ratio	Estimate	S.E.	*p*-value
Men				
Intercept	0.000	-8.333	2.122	<0.001
Age	1.344	0.296	0.108	0.006
Age squared	0.997	-0.003	0.001	0.042
Full-time months worked	1.077	0.074	0.039	0.057
Seal hunter	2.730	1.004	0.435	0.021
Null deviance 198.44, *df* = 145				
Residual deviance 140.31, *df* = 141				
Women				
Intercept	0.004	-5.619	1.620	<0.001
Age	1.274	0.243	0.084	0.004
Age squared	0.997	-0.003	0.001	0.007
Full-time months worked	1.073	0.071	0.033	0.034
Null deviance 197.35, *df* = 144				
Residual deviance 175.03, *df* = 141				

Figure 3. Regression Results for the Probability of an Individual Being Married as a Function of Months of Full-time Employment. The panel on the left shows the probability of a 40-year-old man being married based on whether he went seal hunting in the

previous twelve months (top) or not (bottom). The panel on the left shows the results for two hypothetical women: a 20-year-old (bottom) and a 40-year-old (top). Shaded areas represent 90 percent confidence intervals.



Household Economic Status

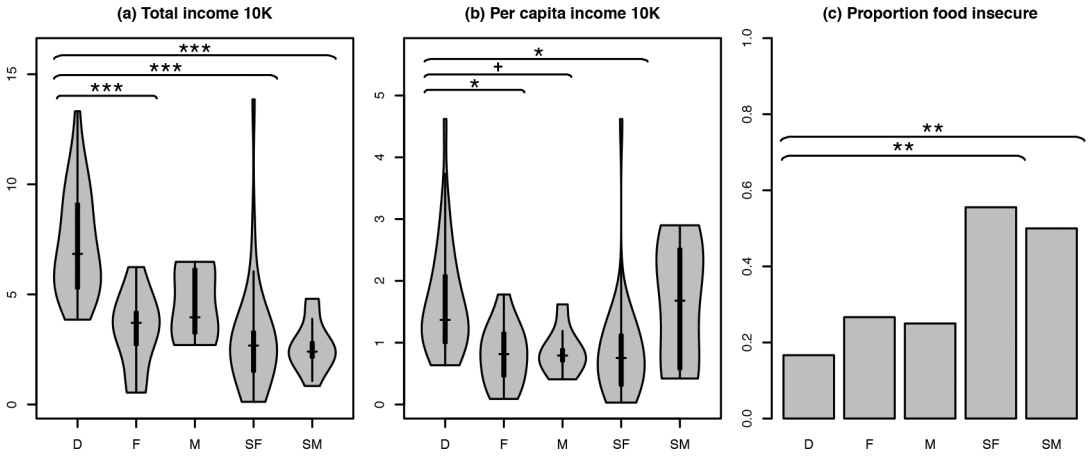
Figure 4 compares households with different wage- earning and marital patterns along two measures of economic status: income and food insecurity. The total incomes used here include the incomes of all adults living in and making financial contributions to the household. It should be noted that there are only eight married households where the husband is the primary wage earner (group *M* in the figures), and so comparisons with this group have low power. Predictably, dual income households earn more than other household types (Figure 4a), while households headed by unmarried individuals have the lowest total incomes. More importantly, dual income households also have high per capita incomes (Figure 4b), but single-earner married households have lower per capita incomes that are not significantly different from the per capita income distributions of single female-headed households. In contrast, single male-headed households have a high median per capita income, which reflects the fact that unmarried male household heads are more likely to live without dependents. The final panel (Figure 4c) shows the proportion of food insecure households in each category. Single female-headed households have the highest rates of food insecurity, which is expected given the number of households in this group with very low incomes. Interestingly, despite their apparently higher median per capita incomes, the households of single men also have a high rate of food insecurity, which may reflect relatively high inequality in this group (also suggested by the wide income distribution in Figure 4b). All

married households have greater rates of food security than unmarried households, and unmarried households are significantly less likely to be food secure than dual income married households.

Table 3. Number of Households with Each Combination of Harvest Production Level and Marriage Income Pattern. Household types coded as in Table 1.

	Income pattern					
Harvest level	D	F	M	SF	SM	Total
Low	3	5	2	23	3	36
Mid	15	6	2	11	7	41
Super	13	5	4	2	4	28
Total	31	16	8	36	14	105

Figure 4. Economic Characteristics of Households by Wage-earning Patterns.(a)Total twelve-month income of household; (b) Per capita twelve-month income of household; (c) Proportion of food insecure households in each category. Braces show significant *p*-values for between-group comparisons, + <0.1, ∗ <0.05, ∗∗ <0.01, ∗∗∗ <0.001. Results of Games-Howell pairwise comparisons shown for panels (a) and (b); binomial regression result with dual income households as the reference category shown in panel (c). Household types coded as in Table 1.

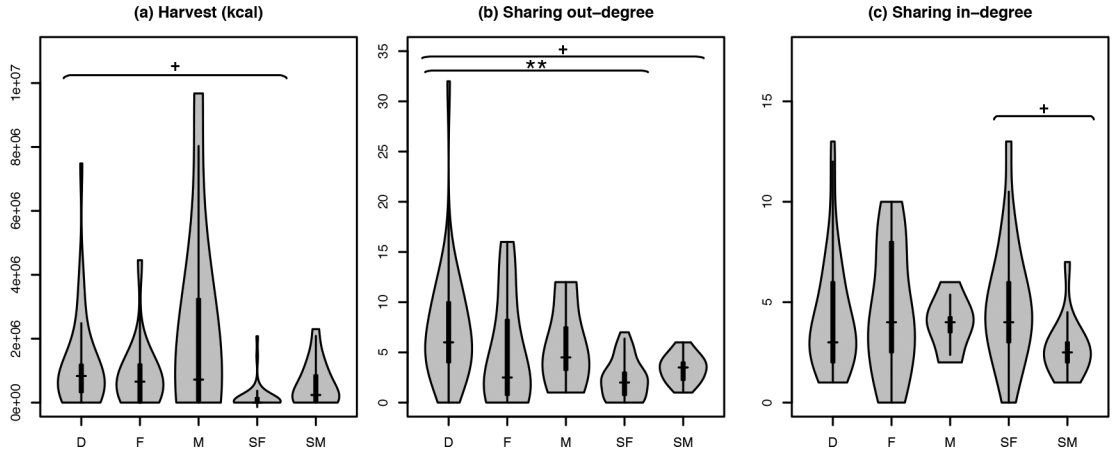


Household Productivity in the Traditional Economy

Figure 5a shows that married households have higher median harvests than unmarried households, although the only pairwise comparison that approaches significance is between single female-headed and dual income households. Clearly, however, the harvest production of households where wives are the primary wage earners is not on average any greater than that of

households where the husband is more involved in wage labor. Patterns of country food giving largely echo the results for harvest production (Figure 5b). Dual income households share significantly more than both single female- and single male-headed households. Again, married households where wives are the primary wage earner do not appear to share more than other married household types. Sharing in-degree (Figure 5c) is largely consistent across household types.

Figure 5. Participation of Households in the Traditional Economy. (a) Household harvest, in kilocalories; (b) Household out-degree in the country food-sharing network; (c) Household in-degree in the country food sharing network. Household types coded as in Table 1 and *p*-values of Games-Howell pairwise tests labeled as in Figure 4.



Discussion

In summary, full-time employment increases the probability of being married for both men and women in Kangiqsujuaq. Active male harvesters are also more likely to be in a domestic partnership. However, the comparable per capita incomes of single female households and female-headed married households suggest that single women, especially those with higher incomes, may wish to avoid becoming the only wage earner in a married household; and the same holds for men. Indeed, among married households, dual income couples outnumber those with only one income earner (Table 1). These results suggest that differences in income may make single wage earner married households less likely to form and/or to persist than dual income house- holds, setting a broader platform for inequality in incomes and in access to traditional resources between households in the settlement.

Contrary to the suggestions of Condon (1987) and Dahl (2000), the importance of husbands and wives undertaking complementary, specialized roles in the traditional and cash economic sectors (respectively) for sustaining harvest production appears to be limited. In fact, the participation of married men in wage labor does not appear to negatively affect household harvest production: compared to dual income or male-headed married households, female-headed married households do not appear to have any advantage in the traditional economy. On the contrary,

there is a high proportion of super households among dual income and male-headed married households, and dual income households also have the lowest proportion of low-producing households (Table 3). Thus, while a division of labor persists in the sense that harvesting is still mainly a men's activity, it appears that having a dual income—where both husband and wife have steady, well-paying jobs—is the major contributor to socioeconomic status in the settlement. Dual income married households have the highest per capita incomes, the lowest rates of food insecurity, and high levels of participation in the traditional economy.

The main limitations of this study relate to the cross-sectional nature of the data, which make it impossible to more precisely determine the relationship between marriage status and individual economic activity. One important consideration related to this fact is that it often takes considerable time for Inuit men to grow into the role of a hunter who provides for others (Collings 2014) and that, consequently, hunting might be better considered as an effect of marriage than as a cause of it. Indeed, changes in participation in seal hunting and in marital status are pronounced through early to mid-adulthood in Kangiqsujuaq, and these processes appear to operate in concert. For example, the majority of men between twenty and thirty years old in the sample are unmarried men who did not go seal hunting in the past year; but, among thirty to forty-year-olds, married men who did go seal hunting are the majority. However, the highest rate of participation in seal hunting is among men thirty to thirty-five years old, while the proportion of married men steadily increases until thirty-five to forty years. Thus, while sometimes hunting may come after marriage, I suspect that in most cases, a reorientation of men's priorities (as described by Collings 2014), that may include more hunting, often likely occurs first. From a qualitative perspective, from the considerable time I spent with women in Kangiqsujuaq, young and old, there is no doubt that hunting ability is perceived as a highly desirable quality among men. As one elderly woman stated: "Some men don't go hunting well, so they're not real men," and young women, especially those who grew up in hunting households, often had similar attitudes.

Overall, the results presented here show that cooperation between cohabitating, married, or common-law partners in the settlement today can result in considerable economic advantages, while also suggesting that economic trade-offs impact Inuit decisions about cohabitation. The results also contradict the notion that it is primarily women's "choosiness" that drives these patterns (see also Brown, Laland, and Borgerhoff Mulder 2011); rather, it appears that both men's and women's preferences drive marriage pat- terns in Kangiqsujuaq. Nevertheless, because of economic conditions in the settlement, there are significant challenges to forming successful households based on cooperation between men and women. For both men and women, the likelihood of being married increases with months of full- time employment, but, as mentioned at the outset of the article, unemployment rates are very high in Kangiqsujuaq. Consequently, it may be difficult for individuals to find a suitable partner, or for individuals without employment, a willing one. In the rest of the discussion, I first explore some additional social and cultural factors that shape individual economic status and the payoffs to marriage in Kangiqsujuaq. I then consider the applied implications of the research for Inuit well-being.

Social and Economic Barriers to Marriage

The trade-offs involved in marriage are, of course, not simply about income and the opportunities it provides. Previous analyses of the sharing network data from Kangiqsujuaq indicate that single women tend to have a slightly higher number of incoming sharing ties than other households, even when controlling for household size, because they are more likely to be recipients of one-way (as opposed to reciprocal) giving (Ready 2018). Consequently, the households of single women occupy a relatively privileged position in the sharing network, an advantage they lose if they have a male partner, because married couples are expected to be net producers rather than consumers of country food. Problems of substance abuse and/or avoidance of domestic violence may be additional motivating factors in young Inuit women's marriage decisions (Dahl 2000; Stern and Condon 1995).

While the observed patterns support Collings' (2014) suggestion that young Inuit women prefer a partner with a steady job, the results also show that many women seek a partner who is also a hunter; the kind of individual that would enable them to form a high-status, high-harvest production household. Unfortunately, many young men not only face limited employment opportunities but also considerable obstacles in becoming productive hunters. As one respondent put it: "Now it's just a few privileged people who enjoy the benefits [of our land]. Most able-bodied men can't afford to go out, so they become needy, and we have to provide for them if we can or if we want." For reasons that are beyond their control, such as lack of access to equipment and men- tors during childhood and adolescence, many young men cannot fully participate in hunting. Yet, married men are still generally expected to take on the responsibility of pro- viding traditional food for their household, and young men experience considerable disapproval if they fail to become productive hunters.

At the same time, many single men would have less disposable income available personally were they to enter into a domestic partnership. Young women often have children from past relationships, and men may also be averse to becoming responsible for children that are not their own (Collings 2014). The possibility for some young adults to continue to live in their natal households—and perhaps to be supported as a hunter by working parents—may also provide a disincentive to form a marital household. Consequently, individuals of both sexes, especially those with full-time employment, may fare better by avoiding marriage or cohabitation except with partners who fit a restrictive set of criteria. In a context where full-time employment is limited and the population is small, partners fitting these desired criteria are scarce. This matching dynamic, linked to high rates of unemployment, is likely an important driving factor in the high proportion of unmarried individuals in Kangiqsujuaq today.

Implications for Inuit Well-being

As innumerable hackneyed jokes tell us, marriage is no guarantee of happiness. However,

poverty and food insecurity indisputably have negative impacts on Inuit well-being (e.g., CCA 2014). This research highlights another important social dimension of poverty in Inuit communities: economic factors appear to impinge on the ability of individuals to form and maintain mutually supportive conjugal relationships. This process undeniably increases the degree of economic disparity across households in Kangiqsujuaq, particularly between unmarried and married households. The consequences of this binding of economic conditions with romantic and family life are of critical concern.

Stern (2005) argues that young Inuit often internalize the lack of economic opportunities in Arctic settlements as personal failures. In this view, the lack of economic opportunity for young Inuit should be considered as a form of structural and symbolic violence (cf. Bourdieu 2000; Bourgois 2001). The analyses conducted here show that difficulties in securing employment may often be coupled with difficulty in pursuing and maintaining personal relationships, suggesting a potential extension of feelings of personal inadequacy from the economic to the conjugal sphere. In fact, the violence engendered by these circumstances is not just symbolic but literal: the link between suicide attempts and failed relationships, especially among young men, is openly acknowledged by Inuit in Kangiqsujuaq and has been confirmed by research elsewhere in the Canadian Arctic (Kirmayer 1994; Kral 2012). Thus, while Kral (2012) emphasizes the importance of strong family relationships and community initiatives in suicide prevention among Inuit, the underlying importance of economic factors in shaping emotional well-being and interpersonal relation- ships should not be disregarded.

Unmarried individuals may also face a lack of opportunities for fulfilling their cultural goals. Harvesting, sharing, and consuming traditional foods remain important to Inuit social and cultural well-being (Searles 2002; Wenzel 1995); yet, the households of single women tend to have low harvest production. During my fieldwork, I found that the young women I spent time with sometimes expressed frustration that they did not have a boyfriend or husband to take them and their children out camping or fishing. Although some women had gained considerable expertise through the outdoor survival training provided by the Canadian Rangers, they nevertheless often had to rely on brothers and other male relatives to provide opportunities to go out camping and to help with equipment construction and repairs. Some young women who owned snowmobiles would pay close attention to other people's plans for fishing trips so that they could opportunistically join groups of people leaving from the settlement. Despite these efforts, there was a sense among some young women—most pronounced in the springtime—that being a single mother meant that they often missed out on the best parts of life (cf. Condon, Collings, and Wenzel 1995). Unfortunately, the difficult marriage market faced by adult men and women today may exacerbate the problems discussed here because children from single mother households may have less opportunity to learn traditional skills. Research in other Inuit settlements has found that the presence of a father figure is critical for the transmission of land skills among young Inuit men (Pearce et al. 2011).

While previous research has focused on the role of housing, formal schooling, and settlement in structuring recent change in Inuit families (Collings 2005; Condon 1990; Dawson 2006; Stern 2005), little attention has been paid to the role of economic trade-offs. The results presented here indicate that the high proportion of unmarried household heads observed in Kangiqsujuaq today is partly conditioned by patterns of employment in the settlement. The ongoing effects of economic conditions on Inuit family life constitutes important evidence of how profoundly the legacies of colonialism continue to impact indigenous people in Canada. The applied importance of the conclusions drawn here is clear: initiatives to address problems such as suicide or intergenerational knowledge transmission need to be designed to account for the fact that these issues are deeply intertwined with broader socioeconomic conditions and their effect on personal relationships. Unfortunately, this complexity also means that solutions to these issues are neither simple nor obvious. While it is true that suicide interventions focusing on building individual resilience by strengthening social ties and cultural identity have proven more effective than Euro-Canadian government mental health programs (Kral et al. 2014), the evidence presented here suggests that, without resolving the underlying economic issues that face Inuit communities, at least one of the roots of the suicide problem will persist. Clearly, increased employment opportunities in Arctic settlements are necessary to help address this issue; but, critically, employment opportunities need to be compatible with Inuit desires to be close to family. Recent economic developments in Nunavik, mainly "fly-in, fly-out" mining jobs, have failed to meet this criterion. Further, initiatives to improve economic and social well-being in Inuit settlements also need to better account for the reality of inequalities within local communities. More effectively incorporating traditional skills education into the public school system is one example of how the potential positive intergenerational feedbacks resulting from differential access to traditional knowledge between households might be addressed.

References Cited

Becker, Gary S. 1981. A Treatise on the Family. Cambridge, MA: Harvard University Press.

Borgerhoff Mulder, Monique 1990. Kipsigis Women's Preferences for Wealthy Men: Evidence of Female Choice in Mammals? Behavioral Ecology and Sociobiology 27(4):255-264.

Bourdieu, Pierre. 2000. Pascalian Meditations. Stanford, CA: Stanford University Press.

Bourgois, Philippe. 2001. The Power of Violence in War and Peace: Post-Cold War Lessons from El Salvador. Ethnography 2(1):5-34.

Briggs, Jean L. 1974. Eskimo Women: Makers of Men. *In* Many Sisters: Women in Cross-cultural Perspective. Carolyn J. Matthiasson, ed. Pp. 261-304. New York: The Free Press.

Brown, Gillian R., Kevin N. Laland, and Monique Borgerhoff Mulder. 2011. Bateman's Principles and Human Sex Roles. Trends in Ecology and Evolution 24(6):297-304.

BurnSilver, Shauna, James Magdanz, Rhian Stotts, Matthew Berman, and Gary Kofinas. 2016. Are Mixed Economies Persistent or Transitional? Evidence Using Social Networks from Arctic Alaska. American Anthropologist 118(1):121-129.

Carbone, June, and Naomi Cahn. 2014. Marriage Markets: How Inequality is Remaking the American Family. Oxford, United Kingdom: Oxford University Press.

Chase, Ivan D. 1980. Cooperative and Non-cooperative Behavior in Animals. The

American Naturalist 115(6):827-857.
Collings, Peter. 2005. Housing Policy, Aging, and Life Course Construction in a Canadian Inuit Community. Arctic Anthropology 42(2):50-65.
Collings, Peter. 2014. Becoming Inummarik: Men's Lives in an Inuit Community.
Montreal, Canada: McGill-Queen's University Press.
Condon, Richard G. 1987. Inuit Youth: Growth and Change in the Canadian Arctic. New
Brunswick, NJ: Rutgers University Press.
Condon, Richard G. 1990. Adolescence and Changing Family Relations in the Canadian Arctic. Arctic Medical Research 49(2):81-92.
Condon, Richard G., Peter Collings, and George Wenzel. 1995. The Best Part of Life: Subsistence Hunting, Ethnicity, and Economic Adaptation among Young Adult Inuit Males. Arctic 48(1):31-46.
Council of Canadian Academies (CCA). 2014. Aboriginal Food Security in Northern Canada: An Assessment of the State of Knowledge. Ottawa: Council of Canadian Academies Expert Panel on the State of Knowledge of Food Security in Northern Canada.
Cronk, Lee. 1989. From Hunters to Herders: Subsistence Change as a Reproductive Strategy among the Mukogodo. Current Anthropology 30(2):224-234.
Dahl, Jens. 2000. Saqqaq: An Inuit Hunting Community in the Modern World. Toronto, Canada: University of Toronto Press.
Damas, David. 1975. Demographic Aspects of Central Eskimo Marriage Patterns. American Ethnologist 2(3):409-418.
Dawson, Peter C. 2006. Seeing Like an Inuit Family: The Relationship between House Form and Culture in Northern Canada. Inuit Studies 30(2):113- 135.
Fox, John, and Sanford Weisberg. 2011. An R Companion to Applied Regression. Thousand Oaks, CA: SAGE Publications.
Games, Paul A., and Howell, John F. 1976. Pairwise Multiple Comparison Procedures with Unequal N's and/or Variances: A Monte Carlo Study. Journal of Educational Statistics 1(2):113-125.
Gibson, Mhairi A., and Ruth Mace. 2007. Polygyny, Reproductive Success, and Child Health in Rural Ethiopia: Why Marry a Married Man? Journal of Biosocial Science 39(2):287-300.
Gould, Eric D., and D. Michelle Paserman. 2003. Waiting for Mr. Right: Rising Inequality and Declining Marriage Rates. Journal of Urban Economics 53(2):257-281.
Graburn, Nelson H. H. 1960. The Social Organisation of an Eskimo Community. MA thesis, McGill University. 1969 Eskimos without Igloos. Social and Economic Development in Sugluk. Boston, MA: Little, Brown and Company.
Gurven, Michael, and Kim Hill. 2009. Why Do Men Hunt? A Reevaluation of "Man the Hunter" and the Sexual Division of Labor. Current Anthropology 50(1):51-74.
Gurven, Michael, and Christopher von Rueden. 2006. Hunting, Social Status and Biological Fitness. Social Biology 53(1-2):81-99.
Hawkes, Kristen, James F. O'Connell, and James E. Coxworth. 2010. Family Provisioning is Not the Only Reason Men Hunt. Current Anthropology 51(2):259-264.
Kirmayer, Laurence J. 1994. Suicide among Canadian Aboriginal Peoples. Transcultural Psychiatric Research Review 31(1):3-58.
Kral, Michael J. 2012 .Postcolonial Suicide among Inuit in Arctic Canada. Culture, Medicine, and Psychiatry 36(2):306-325.
Kral, Michael J., Lori Idlout, J. Bruce Minore, Ronald J. Dyck, and Laurence J. Kirmayer.

2014. Unikkaartuit: Meanings and Experiences of Suicide among Inuit in Nunavut, Canada. International Journal of Indigenous Health 10(1):55-67.
Lichter, Daniel T., Diane K. McLaughlin, George Kephart, and David J. Landry.1992 Race and the Retreat from Marriage: A Shortage of Marriageable Men? American Sociological Review 57(6):781- 799.
Loughran, David S. 2002. The Effect of Male Wage Inequality on Female Age at First Marriage. The Review of Economics and Statistics 84(2):237-250.
Manser, Marilyn, and Murray Brown. 1980. Marriage and Household Decision-making: A Bargaining Analysis. International Economic Review 23(21):31-44.
Mattison, Siobhán M., Brooke Scelza, and Tami Blumenfield. 2014 .Paternal Investment and the Positive Effects of Fathers among the Matrilineal Mosuo of Southwest China. American Anthropologist 116(3):591-610.
McElroy, Ann. 1975. Canadian Arctic Modernization and Change in Female Role Identification. American Ethnologist 2(4):662-686.
Milan, Anne. 2015. Women in Canada: A Gender-based Statistical Report. Statistics Canada Catalogue No. 89-503-X. Ottawa, Canada: Minister of Industry.
Oppenheimer, Valerie Kincade. 1997. Women's Employment and the Gain to Marriage: The Specialization and Trading Model. Annual Review of Sociology 23(1):431-453.
Oppenheimer, Valerie Kincade. 2002. The Continuing Importance of Men's Economic Position in Marriage Formation. *In* The Ties that Bind: Perspectives on Marriage and Cohabitation. Linda J. Waite, Christine Bachrach, Michelle Hindin, Elizabeth Thomson, and Arland Thornton, eds. Pp. 283-301. New York: Aldine de Gruyter.
Pearce, Tristan, Harold Wright, Roland Notaina, Adam Kudlak, Barry Smit, James D. Ford, and Christopher Furgal. 2011. Transmission of Environmental Knowledge and Land Skills among Inuit Men in Ulukhaktok, Northwest Territories, Canada. Human Ecology 39(3):271-288.
Peters, Gjalt-Jorn Ygram. 2016. Userfriendlyscience: Quantitative Analysis Made Accessible. R Package Version 0.5-2. URL:<http://userfriendlyscience.com>
Pollet, Thomas V., and Daniel Nettle .2008. Driving a Hard Bargain: Sex Ratio and Male Marriage Success in a Historical US Population. Biology Letters 2008(4):31-33.
Pollet, Thomas V., and Daniel Nettle. 2008. Market Forces Affect Patterns of Polygyny in Uganda. Proceedings of the National Academy of Sciences 106(7):2114-2117.
R Core Team. 2017. R: A Language and Environment for Statistical Computing. Vienna, Austria: R Foundation for Statistical Computing.
Ready, Elspeth. 2016. Challenges in the Assessment of Inuit Food Security. Arctic 69(3):266-280.
Ready, Elspeth. 2018. Sharing-based Social Capital Associated with Harvest Production and Wealth in the Canadian Arctic. PLOS ONE 13(3):e0193759.
Ready, Elspeth, and Eleanor A. Power. 2018. Why Wage-earners Hunt: Food Sharing, Social Structure, and Influence in an Arctic Mixed Economy. Current Anthropology 59(1):74-97.
Saladin d'Anglure, Bernard. 1967. L'organisation sociale traditionnelle des esquimaux de Kangirsujuaaq. Québec, Canada: Centre d'Études Nordiques.
Searles, Edmund. 2002. Food and the Making of Modern Inuit Identities. Food & Foodways 10(1-2):55-78.
Smith, Eric A. 1991. Inujjuamiut Foraging Strategies. Evolutionary Ecology of an Arctic Hunting Economy. New York: Aldine de Gruyter.
Starkweather, Katherine E., and Raymond Hames. 2013. A Survey of Non-classical Polyandry.

Human Nature 23(2):149-172.
Statistics Canada 2012a. Census Profile, 2011 Census. Statistics Canada Catalogue No. 98-316-XWE. Ottawa, Canada: Minister of Industry.
Statistics Canada. 2012b. Portrait of Families and Living Arrangements in Canada. Families, Households and Marital Status, 2011 Census of Population. Statistics Canada Catalogue No. 98-312-x2011001. Ottawa, Canada: Minister of Industry.
Stern, Pamela R. 2005. Wage Labor, Housing Policy, and the Nucleation of Inuit Households. Arctic Anthropology 42(2):66-81.
Stern, Pamela R., and Richard G. Condon. 1995. A Good Spouse is Hard to Find: Marriage, Spouse Exchange, and Infatuation among the Copper Inuit. *In* Romantic Passion: A Universal Experience? William Jankowiak, ed. Pp. 196-218. New York: Columbia University Press.
Wenzel, George W. 1995. Ningiqtuq: Resource Sharing and Generalized Reciprocity in Clyde River, Nunavut. Arctic Anthropology 32(2):43-60.
Wilson, William Julius. 1987. The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy. Chicago, IL: The University of Chicago Press.
Wolfe, Robert J. 1987. The Super-household: Specialization in Subsistence Economies. Paper presented at the 14th annual meeting of the Alaska Anthropological Association, Anchorage.