Culture as a Problem in Linking Material Inequality to Health: On residential crowding in the Arctic

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ABSTRACT

Two problems are noted in the process of measuring material inequality and linking it to health across cultural boundaries. First, comparative measurements may be used as the basis for policy making which ends up disciplining cultural minorities. In this way, policies intended to relieve disparities can actually have the effect of extending the power of the dominant group to define the appropriate cultural understanding of the world for the minority group. Second, comparative measurements may inaccurately inform theories of how inequality works to influence health and wellbeing. To the extent that culture mediates the relationship between inequality and outcomes of interest to researchers, those ignoring cultural differences will fail to adequately assess the impact and significance of material inequality. In this paper we discuss and illustrate these problems with reference to the study and measurement of overcrowding and its effects on health and wellbeing for Inuit communities in Nunavut, Canada.

The documentation of inequality and its consequences is a particularly important task for social researchers. Establishing comparative measurements of material living conditions, especially living conditions understood to be linked to health, is crucial for this task. Comparative measurements create a baseline by which we can document material inequality across various populations. At the same time, comparative measures allow us to test whether evidence supports hypotheses linking material inequalities to social and health outcomes of interest. However, cultural difference presents a real challenge for the judicious application of comparative measures. Culture predisposes people to understand and interact with the material world differently. This creates two problems. First, the application of comparative measurements of material inequality may push policy towards the disciplining of minority communities, extending the power of the dominant culture to define appropriate relationships to the material world. In effect, measures used to gauge material inequality may further promote the cultural marginalization of minorities, both by design, and as an unintended consequence of their application. Second, comparative measures often fail to take into account the cultural mediation of relationships between health and material circumstances, resulting in poor theory when they are used in analysis of the determinants of health. Together these problems also suggest that poor health resulting from cultural marginalization may be mistaken as resulting from material inequality.

In this paper, we consider these two problems with reference to two comparative measures of residential overcrowding as developed in the United States and Canada. First we consider how the concepts of residential crowding and overcrowding are meant to reflect objective measures of material circumstances. We discuss two specific measures in depth, detailing how a

consideration of culture creates problems in their application. Finally, we provide a case study of the application of overcrowding measures to Inuit communities in the Canadian Arctic, illustrating the problems discussed.

MEASURING RESIDENTIAL OVERCROWDING

As a concept, residential crowding seems intuitively clear. Residential crowding relates individuals to the other people sharing the spatial environment of their living quarters. High levels of crowding mean that many people share the same, limited set of living quarters. The related concept of residential overcrowding implies that there is a threshold across which residential crowding becomes problematic and somehow pathological, inducing stress, reducing health, or otherwise poisoning the wellbeing of those people sharing the same, limited set of living quarters. Differences in levels of residential overcrowding, however measured, would seem to reflect material inequality between groups.

In North America, the concept of residential crowding and the threshold for overcrowding have been operationalized in two prominent ways, resulting in two official standards for overcrowding. In the United States, the crowding standard, set at one person per room (PPR), treats all individuals and all rooms alike, and seemingly has its roots in a universal, biologically-ingrained understanding of residential crowding as a concept. In Canada, while PPR is sometimes used in official reporting (Tait, 2008), the crowding standard more often implemented is further socially contextualized (CMHC, 1991). The Canadian National Occupancy Standard (CNOS), based on bedroom availability, treats individuals as having different needs based upon the social context of the household. In particular, the age, sex and familial relationships of

household members are used to differentiate between housing needs. We consider the history and assumptions behind these measurements in further depth below.

PPR: A universal, biologically ingrained definition of crowding

The most common measurement of residential crowding in the United States has historically been persons per room (or PPR) (Beeghley & Donnelly, 1989; Myers & Lee, 1996). Currently, households with more than one person per room are considered overcrowded (Myers & Lee 1996). In this measure, all people are treated the same, and all interactions between people are treated the same, corresponding to a universal, biologically-based definition where everybody experiences crowding in similar fashion. With respect to defining living quarters, functional rooms (rather than square meters or feet) establish the basis for how space is shared. Rooms are assumed to be spatially separated (or separable) in some way which reduces the necessity for sharing space or interacting, and allows for physical separation of people. All rooms are treated the same, except for washrooms, storage spaces and closets, which are not typically included in the definition. Beeghley and Donnelly (1989) argue that this measurement was created as much by government officials and professional associations as by academics, who have nevertheless tended to uncritically accept the measure as objectively valid.

To the extent that theory has developed behind the use of PPR as a measurement of crowding, it seems to rely primarily upon the research of Calhoun (1962), who studied the reactions of rats to high density environments (Booth & Edwards, 1976; Beeghley & Donnelly, 1989; Fuller, et al, 1996; Solari & Mare, 2006). Researchers imagined that biological mechanisms accounted for Calhoun's findings, linking the density of rats in enclosed spaces to anti-social behaviors ranging

from cannibalism to infanticide, and that these biological mechanisms were also likely to be at work governing human interactions (Fuller, et al, 1996). A related and earlier strain of thought notes that crowding could simply lead to cognitive overstimulation (Fuller, et al, 1996). As early theorists understood crowding, stress was the inevitable result of the sheer onslaught of interactions to be negotiated under conditions of high density (Wirth, 1938). In this way, Fuller argues, concerns about residential crowding have historically been linked to concerns about cognitive overstimulation brought on by urban density (Fuller, et al, 1996). In either case, the mechanism relating residential crowding to stress, poor health, and social pathology is conceived of in universal terms, as a biologically ingrained reaction to social density[1].

The theory that we are biologically ingrained in our reactions to crowding leaves little to no room for cultural interpretation. The irony of this ignorance of culture is evident foremost in the history of the cut-off point used to label a household overcrowded in the United States. The official cut-off point determining overcrowding moved from 2 persons per room in 1940 to 1.5 persons per room by 1950 and 1 person per room by 1960, as crowding declined in the population as a whole (Myers & Lee, 1996). The historical trend has been toward downwardly redefining the PPR threshold for overcrowding, though it seems unlikely that any biologically ingrained response to crowding would be growing stronger with time (Myers & Lee, 1996; Fuller, et al, 1996). This suggests that policy makers have reconsidered housing "needs" in conjunction with a rising standard of living, an implicitly cultural change. Moreover, in

[1] Along with general claims assuming that crowding leads to biological and/or related cognitive stress, more specific claims linking crowding to various communicable diseases, especially air-borne respiratory infections, have received significant medical attention. In particular, tuberculosis has long been linked to residential crowding in the health literature, with recent ecological studies confirming this link using aggregate level data from Sao Paolo, Brazil (Antunes & Waldman 2001), and the UK (Elender, et al, 1998; Hawker, et al, 1999). In the Arctic, tuberculosis outbreaks and lower respiratory infections have also repeatedly been associated with the residential crowding of Inuit (Clark, et al, 2002; Kovesi, et al, 2007; Orr, 2007; Young & Mollins, 1996).

international comparisons, it becomes clear that the North American average (approximately 0.5 persons per room) is the exception rather than the rule. Fuller, et al (1996) note that many other locations, like Hong Kong and Thailand, average closer to 2 PPR, indicating that defining 1 PPR as a universally problematic threshold might be at least somewhat parochial.

Nevertheless, the use of a measurement rooted in a biologically ingrained notion of overcrowding offers many advantages to researchers, to policy makers, and to reformers. Such a theory of overcrowding offers researchers a model that might be generalized to fit everyone, enabling analysts to avoid dealing with the messiness of culture and the possibility of variation in the subjective experience of crowding. For similar reasons, policy makers often also look for similar, one-size fits all notions of crowding, allowing for easy accounting of the social world. For reformers, a definition of overcrowding framed in terms of biological needs is likely to provoke a more immediate moral response than alternatives. Unmet biological needs seem more pressing than unmet aspirations or residential preferences. Moreover, a biologically ingrained notion of minimum housing needs seems likely to have universal application, corresponding to the idea that all persons are created equal. If everyone has the same biologically defined needs, then a single, universalized measurement of overcrowding has the potential to reveal social inequality by treating everyone the same.

CNOS: A socially contextualized definition of crowding

The measurement standards most often used by Canadian officials and researchers have tended to follow a slightly different conceptualization of crowding and overcrowding. The Canadian National Occupancy Standards (CNOS) were constructed during the 1980s, cobbling together

common elements of provincial standards, on the assumption that age, sex, and relationship matter with respect to determining residential crowding (CMHC, 1991; City of Calgary, 2008). Important social divisions are established by gender (male or female), by family relationship (couple or non-couple, sibling or non-sibling), and by age (under 5, 5-17, or 18+). Living space is assigned across social divisions with reference to bedrooms. It is assumed that every couple (18+) requires a separate bedroom. Every non-coupled individual 18+ also requires a separate bedroom. Those under age 5 can share a bedroom with any other sibling under age 5. Those age 5-17 can only share a bedroom with a same-gender sibling. In such a way, a household comprised of an adult couple with two sons age 4 and 6, would require housing with a minimum of two bedrooms to avoid being considered overcrowded. Change the 6 year old son to a daughter, or age the 6 year old son to 19, and a minimum of three bedrooms would be required.

Where PPR promotes an understanding of overcrowding as a biologically ingrained social problem, overcrowding measured by CNOS is implicitly conceived of as relating to the successful staging of key social performances (by age, gender, and relationship) within the family household. Hence, the theory behind the Canadian measure is inherently dramaturgical, with housing space divided into front stage (common areas) and backstage (bedrooms) (Goffman, 1959). As discussed in Gove, et al (1979), household members are seen to require a reliable backstage space, separated from audiences, in order to prepare the social performances they wish to perform in various front stage spaces. Overcrowding might be thought of as occurring when one lacks the means of creating a backstage space in order to put together important social performances. Dramaturgically, we might conceptualize the social performances constructed by household members within the context of households (often

assumed to contain nuclear families) as crucially dependent upon relationship, or social role, which in turn is conditioned by age and gender. Those under a certain age are not expected to prepare much in the way of social performances. As such, they have little need for a backstage space to preserve privacy or bedroom of their own. Yet as children age, socialization quickly casts gender as an aspect of social performances salient to establishing one's identity. When performing gender becomes important, household members seem likely to seek a backstage that is, at minimum, separate from those not of the same gender. As individuals continue to age, the roles they perform become increasingly complicated, requiring further backstage preparation, and ultimately a bedroom (if not a residence) of their own. Those lacking adequate backstage space are more likely to experience stress and poor health (Gove, et al, 1979).

In the above discussion, the key social roles requiring backstage preparation break down along the lines of age, sex, and family relationship, neatly mirroring the construction of the CNOS. Overall, these standards presuppose a socially contextual definition of crowding at odds with the idea that people and rooms are interchangeable. Gender and age matter in key ways. Yet cultural difference remains ignored, and as a result a specific cultural context comes to dominate decisions about which performances are important and how those performances should be carried out. In the Canadian case, the specific cultural context of those tasked with administering the country became universalized. In effect, the cultural standards of white, middle class Canada (Gillis, 1996; Ward, 2000) became imposed on the country as a whole, and beyond (Batten, 1999; Clark, 2000), through the adoption of the Canadian National Occupancy Standards.

PROBLEMS WITH MEASURING RESIDENTIAL CROWDING

Unfortunately, using either PPR or CNOS as a comparative measure of overcrowding creates two problems rooted in the ignorance of culture. First, these measures of crowding can easily be transformed into standards used to discipline minorities into forming proper households, as defined by dominant cultural standards. In particular, apartment managers can and do use crowding standards to set maximum occupancy rules. Households violating maximum occupancy for a unit face the possibility of eviction. Ironically, Batten (1999) notes that the importation of the CNOS to Australia also resulted in policies against violating a minimum occupancy for units, after Australian officials misread Canadian standards to include both maximums and minimums. Similarly, Clark (2000) uses CNOS to study both what he terms "underconsumption" and "overconsumption" of housing in the USA.

With respect to PPR, evidence suggests that Hispanic households in the United States are more likely than others to exceed one person per room (Myers & Lee, 1996). As a result, the imposition of 1 PPR occupancy standards might force Hispanic households to alter cultural understandings of the appropriate use of space, and would certainly create new economic hardships. Yet the suggestion of Myers and Lee (1996) that the United States consider changing the definition of crowding to allow Hispanic households to densify to 1.5 persons per room without being considered overcrowded could easily spark accusations of racism. Of note, human rights laws in both the US and Canada expressly forbid discrimination in the provision of housing on the basis of race, ethnic origin, religion, and similar cultural categories, but allow maximum occupancy restrictions to remain intact. This creates a real and continuing potential for cultural minorities to be disciplined for failing to conform to the prescribed use of housing.

The failure to incorporate a theoretically informed consideration of culture as relevant to subjective feelings of crowdedness and their relationship to health is the second problem in using comparative measurements of crowding. This results in clouded interpretations of the data linking crowding measures to health and wellbeing. Aside from research focused narrowly on the association between respiratory diseases and PPR (see footnote one), findings linking population per room to health and wellbeing have been, at best, unclear (Baldassare, 1979; Booth & Edwards, 1976; Gove, et al, 1979; Beeghley & Donnelly, 1989; Edwards, et al, 1994; Fuller, et al, 1996). Yet multiple researchers note the importance of subjective crowding as opposed to what they deem more 'objective' crowding measures. In short, feeling like one is crowded seems to have significant effects on health and wellbeing[2], but the effect of measurements like persons per room seems to be limited (Beeghley & Donnelly, 1989; Booth & Edwards, 1976; Edwards, et al, 1994; Galle, et al, 1972; Gove, et al 1979). Moreover, feeling like one is crowded is only weakly correlated with persons per room (Edwards, et al, 1994).

As with PPR, the relationship between crowding, as measured by the CNOS, and health and wellbeing is also obscured by the failure to ground the measure in culturally specific understandings of housing. It makes sense that an inability to prepare and perform roles important to one's sense of self would have negative effects on health and wellbeing (Goffman, 1959). The match between housing and households could clearly create conditions where an individual is likely to face perpetually "spoiled performances," due to inadequate staging space. In the context of southern, "white" Canada, the CNOS measure of crowding might provide a

[2] This is an effect which many researchers have noted may be spurious. Stress, the result of life events or conditions experienced elsewhere, may lead to both feeling overcrowded and to poor overall health and wellbeing.

better understanding of when housing situations would not allow individuals the backstage and front stage space to prepare the performances that are important to them. For example, mothers may not feel like they have space to properly prepare the performances of motherhood which correspond to the way southern Canadians think the role should be performed (Edwards, et al, 1994; Hays, 1996; Lauster, forthcoming). At the same time, as noted by Aragonés (2002), the backstage space most in demand is often the bathroom rather than the bedroom. In short, while a dramaturgical approach linking health to culturally specific backstage needs might be promising, there has been little research on the connections between CNOS measures of crowding and health or wellbeing in southern Canada.

Connecting CNOS measures to health and wellbeing in the cultural context in which they were developed might make theoretical and empirical sense, but researchers clearly run into theoretically and substantively important roadblocks in meaningfully applying these same measures to other cultural contexts. A related problem is that not everyone within a household seems to experience crowding the same way. Beeghley & Donnelly (1989) note that crowding seems likely related to power and position within a given residence. Those able to exercise power (especially adults and men) should be able to use that power to obtain privacy more easily than those unable to do so. Fuller, Edwards, Vorakiphokatorn, and Semsri note that gender and power might influence feelings of crowdedness in situations where many people share the same living space (Fuller, et al, 1996; Edwards, et al, 1994). Since power, gender, and familial roles all play out in different ways depending upon cultural context, it seems altogether likely that culture mediates the relationship between persons per room and the subjective feeling of being

overcrowded, which in turn influences a variety of health outcomes. As such, both the way crowding works and who is affected vary by cultural context and are subject to cultural change.

ILLUSTRATION – MEASURING OVERCROWDING IN THE EASTERN ARCTIC

In the sections that follow, we attempt to illustrate the problems associated with the comparative measurement of overcrowding as applied to the case of Inuit households in the Eastern Arctic. Methodologically, we draw upon data from a variety of sources to understand how policy has been applied in the Eastern Arctic, including fieldwork from over thirty years of visiting the Arctic, qualitative interviews with dozens of policy makers and service providers, and the study of archival materials housed in the Prince of Wales Heritage Centre, Yellowknife, Nunavut Housing Corporation District Offices (especially in Arviat), and Library and Archives Canada in Ottawa. We draw upon a similar range of data materials to understand how crowding works in the context of the Arctic, including a similar number of discussions with Inuit community members, anthropological observations from the literature, and an innovative survey created and carried out by trained youth workers within the community of Kinngait, Nunavut. We expand upon survey details below (For full description, see Tester & The Harvest Society, 2006). We provide a 'close reading' of this data here, intended to substantively illustrate the problems we describe and provoke further exploration (Shapiro, 1991).

Drawing upon the comparative measurements of overcrowding described above, a Statistics Canada report estimates that 31% of Inuit in Canada lived in housing containing more than one person per room in 2006, approaching 40% for Inuit living in the Arctic, compared to just 3% for

Canada as a whole (Tait, 2008). The most recent report applying CNOS measures to Nunavut (also using 2006 census data) also highlights housing inequality, resulting in an estimate of 31.3% of households in Nunavut as overcrowded (up from 26.7% in 2001), compared with an estimate of 6% for Canada as a whole (Canadian Mortgage and Housing Corporation, 2009). The CNOS measure seems to indicate that overcrowding is on the rise in Nunavut and both measures offer striking evidence of material inequality, with Inuit far more likely to live in housing officially designated as overcrowded than residents of Canada as a whole[3]. Yet the measures are not equivalent, and the degree of inequality estimated varies sharply by measure. Using PPR figures, Inuit are more than thirteen times more likely to be overcrowded than Canadians as a whole. Using CNOS figures, residents of Nunavut are just five times more likely to be overcrowded than Canadians as a whole. More troubling remains the lack of clarity, as we discuss below, about what these measurements might actually mean in the context of the Eastern Arctic.

Figures documenting material inequality are important as tools for reformers to press the federal government for improvements to the quality of life in the North. But they also necessarily become attached to ideas about how quality of life should be measured and just what this quality should mean. As these ideas are applied, they represent a form of cultural disciplining, encouraging Inuit to accept southern notions about how the world should operate in lieu of Inuit notions, often in coercive ways. These measures also implicitly promote the idea that crowding influences health the same way for Inuit households as it might in southern Canada. This, too, is

[3] Notably, these figures obscure the way that Inuit households tend to be more crowded than resident non-Inuit households (especially concentrated in the most populated centers of Iqaluit, Rankin Inlet, and Ikaluktutiak) within the Eastern Arctic as well.

a problematic assumption. In order to demonstrate these problems, we first introduce a brief history of Inuit relationships to housing and policy interventions.

Until the mid to late 1950s, almost all Inuit lived in extended family-based hunting camps. Being semi-nomadic, Inuit would move to skin tents during the summer months and inland to hunt caribou. In the late fall and winter, with the exception of small groups of inland Inuit, they built igloos along the Arctic coast from which they could hunt sea mammals at the flow edge where ice met open water. Igloos were built by Inuit with exceptional skill, extended families often being accommodated by a series of tunnels connecting several igloos together. Widespread adoption practices extended family connections further (Briggs, 1970; Wachowich, 1999). Families shared sleeping quarters, often sleeping together on a snow bench inside the igloo, with each family member having her or his designated place on the platform (Dawson, 1994). Women tended the kudlik, a stone basin with a cotton grass wick and seal oil or other fat as fuel. While some tasks were clearly gendered, others were shared. Inuit souls (as opposed to bodies) were not considered to have a fixed gender, but could be raised as male or female (Briggs, 1995). Age categories were also flexible, with children allowed to learn and take up responsibilities at their own pace. Trial marriages and extramarital relations coexisted with arranged marriages (Stern & Condon, 1995). Overall the ways power, gender, and familial roles played out in the Arctic differed from how they played out in southern Canada.

Commencing in the mid 1950s, especially with the construction of the radar stations comprising the Distant Early Warning (DEW) Line, Inuit increasingly relocated or, in some cases, were removed, to fledgling communities. The reasons for these relocations were many, including;

increased attention to compulsory schooling, the collapse of the fox fur trade, epidemics of contagious disease that made it desirable to relocate to the vicinity of newly built nursing stations, and relocation by the government in the face of several incidents of starvation and the fear of more of the same. Claims have been made that Canadian sovereignty concerns over the Arctic played a role as well. In some cases, Inuit were threatened with loss of family allowances or eligibility for social assistance when needed if children were not sent to school. Many families followed their children to town (Tester & Kulchyski, 1994)

During this time, Inuit were overtly 'disciplined' to behave like southern Canadians. Children were forbidden to speak Inuktitut at school. Inuit women were taught to cook, clean and sew using the accoutrements of domesticity commonly associated with life in southern Canada (Wachowich, 1999). Inuit hunters were expected to abide by new game laws designed to curtail what was claimed to be their 'wanton slaughter' of the animals upon which they depended (Kulchyski & Tester, 2008).

A policy of providing Inuit with wood frame housing was introduced in 1959. Inuit moved from tents, igloos and qamaqs (sod homes) to settlements where they often built their own accommodation using scrap materials from dump sites. The small (in most cases, less than 400 square feet) plywood homes with which they were provided could not be extended to accommodate more people (Tester & the Harvest Society, 2006). They were poorly insulated and heated with space heaters. Poor ventilation meant that they were often humid. Children crawling on icy floors were susceptible to pneumonia and other diseases. Money was required for fuel and (where available) electricity. Families found themselves living together with other families they

may have known, but with whom they had never lived at close quarters. Sled dogs, important for venturing out on the land or back to familiar hunting areas, were not easily accommodated in settlements, and were often shot by the Royal Canadian Mounted Police (RCMP) when found running at large (Kulchyski & Tester, 2008).

Administrative concerns about overcrowding led to new investment in housing in Inuit communities in the 1960s. Documentation of crowded conditions and suggestions of connections between crowding and health, especially tuberculosis outbreaks, were important in bringing funding for a new rental housing program to the Arctic (Department of Indian Affairs and Northern Development, 1968). Yet these concerns also led to further disciplining of Inuit households. Education of the Inuit was deemed an essential part of the new rental housing policy announced in 1965, and in 1966 the Canadian Central Mortgage and Housing Corporation provided a grant of $169,000 for the educational component of the program (McKay, 1966). Materials from an adult education program meant to educate Inuit about new rental housing in the Frobisher Region contain explanations about how households should be organized, and how the new housing should be used. Worksheets informed the Inuit that, "a family is a man and his wife," or "a family is a man and his wife and children," or "a single adult man or woman may be called a family," followed by a clear statement that while two or more families might be currently living in a small house, the government wanted each family to have a house (McKay, 1966, p. 6.66.10). In this way, Inuit families were educated to reorganize themselves along southern Canadian lines.

Another worksheet explained, "a small house is for a small family," and "a large house is for a large family" (McKay, 1966, p. 6.66.9). Accompanying figures provided visual instruction of how households and housing ought to fit together. One example is provided in figure one below (McKay, 1966, p. 6.66.4A). The similarity to the Canadian National Occupancy Standards constructed in the 1980s is striking. As in the CNOS, the important distinctions are between couples and single adults, children above or below age 12 (the age at which individuals could presumably no longer share bedrooms with those of the same gender also over age 12), and the distinction between children and infants, who could presumably room with parents.

[Insert figure one about here]

For Inuit used to sharing common sleeping quarters, distinctions regarding the proper fit between household and housing as defined by bedroom needs made little sense. Similarly, the obsessive preservation of separate sleeping quarters by gender and age did not fit with Inuit understandings. Inuit often recognized the new housing as warmer and better lit than cold, dark igloos, but they also felt disempowered by it, and even associated it with poorer health. As one elder notes:

> We sometimes get sick from the houses—young people and old get respiratory diseases. They do not get enough fresh air. When I was a girl we lived in tents and igloos. We lived in the cold. But now we live in modern houses. We live like modern people. All of a sudden when we moved into the houses we became like white people. And then we would throw away the much warmer clothing we had. Those of us who grew up in tents were very capable people. When we moved into houses we became helpless. (Cecilia Angutialuk, in Tester & Irniq, 2008)

Respiratory disease, of course, is the health condition most closely associated with measures like PPR. In this sense, more housing should reduce crowding and alleviate respiratory illness. Yet the elder blames the settlement of Inuit into new housing for introducing respiratory diseases in the first place. She asserts an important connection between the disempowering 'modernization' of Inuit and poorer health outcomes.

The combination of new quarters and disciplining in new standards of cleanliness also meant that Inuit began to develop new understandings of privacy. Anthropologist Jean Briggs notes with particular interest the arrival and halting acceptance of previously foreign door-knocking customs amongst Inuit communities in the early 1960s. By 1964, she was told by an Inuit informant in Gjoa Haven that, "people are beginning to be shy about having others see them when they're sitting on the urine pot; and if people knock before they come in, one can get ready." (Briggs, 1970, p. 58). In this sense, Inuit began to consider backstage space as a new necessity, connected to new understandings of proper hygiene and manners and etiquette. The division of the world into front stage and backstage space mirrored the cultural changes that occurred in the south during the 19th and early 20th centuries (Gillis, 1996; Ward, 2000). In effect, the world grows more crowded for the Inuit as they accept "modern" southern cultural norms.

Rapid cultural change in Inuit communities creates divisions. Elders remain venerated, but they often inhabit different symbolic universes (in many cases speaking entirely different languages) from the young (Wachowich, 1999). The adult roles young Inuit are taught to perform in schools and through media often do not match the adult roles the young see enacted by their parents and

grandparents, uncles, aunts and other assorted familial role models. Furthermore, the manners and hygienic rituals taught to young Inuit in schools, churches, and through media require backstage spaces that are often unavailable at home. If overcrowding is, indeed, the result of not having the backstage space necessary to prepare one's performances of important social roles and develop the proper demeanor (Goffman, 1956), then having to adjust to multiple and conflicting powerful audiences (e.g. families and schools) may add important challenges for social actors, especially young actors, tasked with integrating their various social performances into a reasonably coherent sense of identity.

In this way, the crowding experienced by Inuit, as with the cultural change experienced by Inuit, is perhaps most likely to become visible across generational lines. In qualitative interviews, Inuit community members repeatedly suggested the real housing crisis was for the young adults of the community. Parents discussed how the young needed spaces of their own. Young adults are those most exposed to the cultural dislocations of being Inuit and Canadian, and likewise most exposed to the unequal opportunities available in the Arctic (Condon & Stern, 1993). The social performances they are asked to put on for teachers and employers from southern Canada often differ from the expectations of parents and grandparents, which differ again from the performances they put on for peers. The cultural dislocation of being young and Inuit implies a profound need for backstage space.

A youth-led community survey developed in conjunction with researcher Frank Tester and the Harvest Society of Kinngait, Nunavut, provides further evidence of how young adults, in particular, feel the effects of crowding. A stratified sample of 91 residents representing different

households in the hamlet of Kinngait (population 1,236 in 2006) were surveyed in English or Inuktitut to gain a better understanding of crowding (Tester & The Harvest Society, 2006). Residents were asked about the number of bedrooms in their households, the number of total occupants, and the number of occupants in various age categories. They were also asked about their subjective feelings of being crowded. Overall, some 47% of residents described feeling crowded sometimes or all the time. In comparing respondents subjective feelings, crowding seemed to be most strongly felt for those living in households with young adults (age 16-25). Within these households, crowding seemed particularly acute when young adults were unlikely to have their own rooms (averaging two or more persons per bedroom). For residents from these households, an astonishing 74% felt crowded.

Inuit respondents felt that crowding was taking a toll on their health and well-being. Nearly half of cases of influenza, coughs and colds, and general stress were attributed to feeling crowded. Anger and depression were also common responses to feelings of crowding. This is notable given that suicide is endemic amongst young adults in Nunavut (Tester & McNicoll, 2006), and assault rates are about nine times the Canadian average (Tester & The Harvest Society, 2006). Crowding may be a powerful force explaining violence in the Arctic. Altogether this suggests that the ramifications of failing to find housing solutions for young adults extend outward to their families and ultimately to the Arctic community as a whole.

In Kinngait, residents were asked if it might be time for someone in their house to find a place of their own. Thirty-seven percent of respondents reported that it might be time for someone to move out. When asked why, respondents most commonly suggested a cultural and social reason

(the person or people in question are old enough to be 'out on their own'). Other reasons commonly provided related to the behavior of those in question, suggesting that respondents (primarily older adults in this case) were frustrated by interactions with young adults, leading to accusations that young adults were lazy, noisy, and disrespectful.

Overall, the cursory examination of the cultural contexts of crowding for Inuit communities carried out in this paper suggests that further research on the association between crowding and health should focus on young adults. Discussions with Inuit community members and the survey in Kinngait suggest that issues of crowding might best be addressed by building more young adult oriented housing. Yet as measured by standard crowding measures, CNOS and PPR, households with young children often seem the most crowded. Some 40% of Inuit households with children under 15 lived in housing with more than one person per room in 2006, higher than the 31% of Inuit households overall (Statistics Canada, 2006). Addressing disparities as measured by PPR and CNOS would suggest the construction of more family housing rather than housing for young adults. Similarly, when asked about the position of Inuit community members that more youth housing was needed, different service providers independently suggested to both authors that young adults were best housed with their parents, who could keep better control over their behavior. These well-meaning non-Inuit community members explained that the development of separate housing for young adults was viewed as a potential nightmare for the Royal Canadian Mounted Police.

DISCUSSION

In the foregoing sections, we have illustrated the two problems we see as stemming from the application of comparative measures of inequality without careful consideration of culture. First, comparative measurements may be used as the basis for policy making which ends up disciplining cultural minorities. Assumptions about proper relationships to the material world arising in one cultural context become applied to the policies governing another. Attempts to educate Inuit in proper hygiene and use of housing followed this trajectory, and Inuit felt disempowered by the marginalization of indigenous ways of relating to the material world. The second problem is that the application of comparative measures to document inequality tends to obscure the important ways in which culture mediates the relationship linking material conditions to health outcomes of interest. CNOS and PPR measures provide support for local beliefs in an overcrowding crisis taking place within Inuit communities. However, the understanding of the overcrowding problem promoted by measurements of crowding seems at odds with local understandings of the problem. The subjective feeling of crowding for the Inuit is especially connected to young adults feeling the need for more backstage space.

The two problems of using comparative measurements without considering culture build off each other. Overall, the rising feelings of crowdedness among Inuit since the 1950s cannot be disentangled from the disciplining of Inuit households. The attempt to impose southern manners and cultural understandings of housing on the Inuit led to the development of a subjective sense of crowding. As discussed earlier, this subjective sense of crowding is the one most clearly linked to most health outcomes in the literature (Beeghley & Donnelly, 1989; Edwards, et al, 1994). The disempowerment of Inuit reflects a profound sort of cultural inequality that must be taken into account alongside material inequality. Since the 1950s, southern Canadians

determined what languages were spoken in northern schools, what curriculum was taught, and what manners should be emulated, as well as what measurements should be used to gauge material inequality. At the same time, Inuit were denied the material resources and work opportunities to live like southern Canadians. In effect, cultural domination and material inequality worked together to produce the sensation of crowding. The measures which were taken as pointing towards solely material solutions to health problems for the Inuit could also be understood as part of the problem.

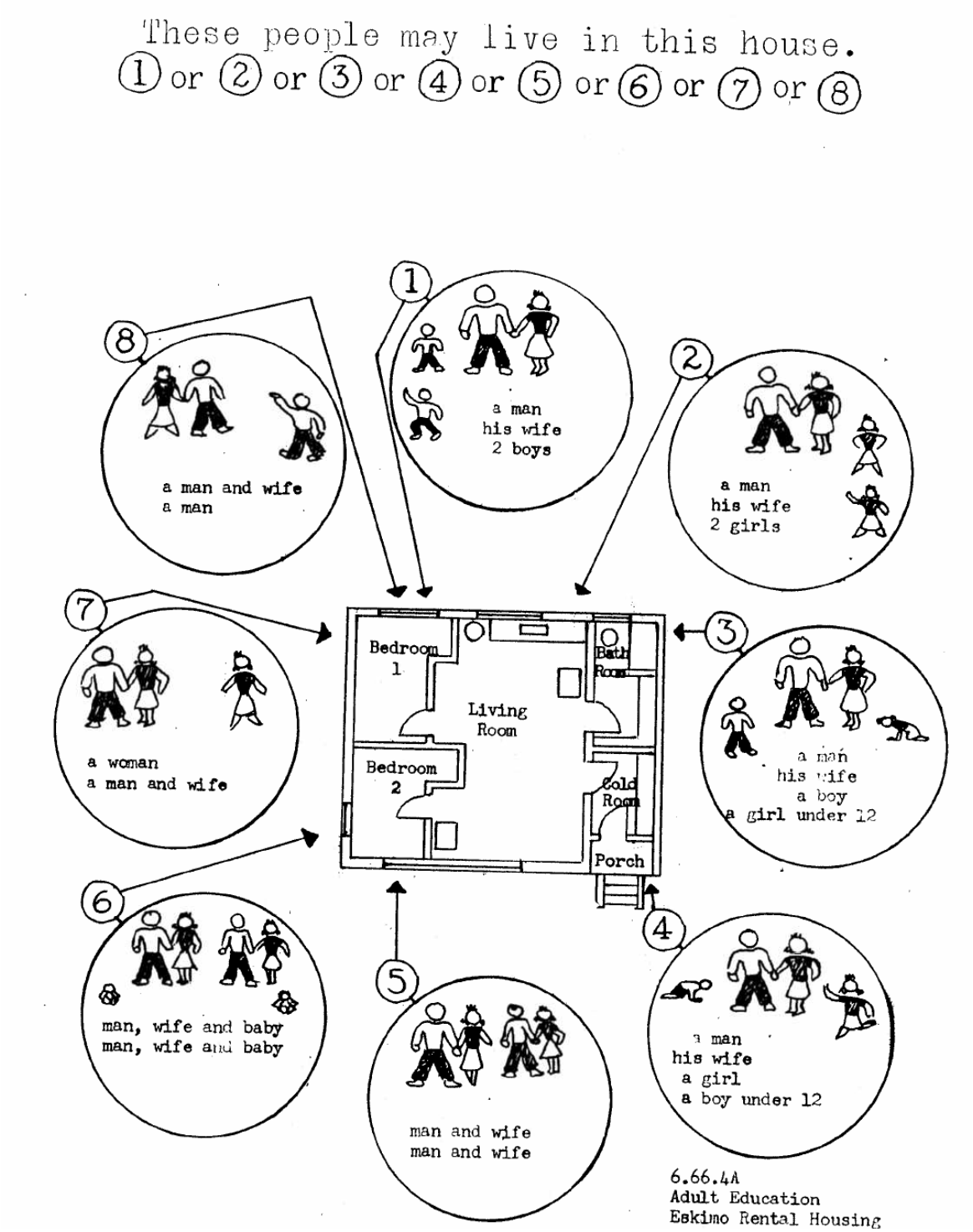
The work of aboriginal social movements, the expansion of a multicultural understanding of the Canadian nation, and the creation of Nunavut as a distinct territory have all softened, and in some instances reversed the once overt efforts to culturally discipline the Inuit. Federal funds, for instance, now support efforts to preserve Inuit language and traditions. Yet southern measurements of material living circumstances remain in force, and are still used to gauge need and direct funding. In effect, these measures continue to marginalize indigenous understandings of the proper relationship to be maintained with the material world. Ignorance of culture allows disciplining of cultural minorities to automatically be viewed as socioeconomic improvement rather than forced cultural assimilation. In this way, interpretation of measurement data by policy makers may result in solutions to perceived problems that fit within the ideology of the dominant culture but are blind to more culturally appropriate alternatives.

Contrary to the assumptions behind the construction of the PPR measure, there does not appear to be a ready biological process by which material conditions translate into a subject sense of crowding. Since feelings of crowding are mediated by culture, it is exceedingly difficult to come

up with adequate comparative measures of crowding. Measures of crowding constructed from specific cultural understandings of the world, like CNOS, are unlikely to make sense in the context of different cultural understandings. We illustrate the problem here for Inuit in the Arctic, but any time cultural differences exist (as with Hispanic populations in the USA), researchers should be wary of how they use comparative measurements of inequality.

At the same time as we criticize the use of comparative measures, we do not mean to ignore their importance. Comparative measures, including both CNOS and PPR, draw attention to very real inequalities in resources. Inuit communities are hard-pressed for building materials to construct housing in a fashion which would meet locally defined needs. The tasks of coming up with comparative measurements remain of fundamental importance to social scientists and policy makers, and the use of these measurements should, at the very least, inform questions of equity in the distribution of government funds. Yet the use of these measurements without careful consideration of culture and cultural difference creates real problems and dilemmas. Further discussion of the dilemmas at hand could only help the cause of creating both more just policy and better theory regarding health outcomes.

Figure One. Educational Materials Meant to Acquaint Inuit with Social Housing



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