

Hunter-gatherers and education

Towards a recognition of extreme local diversity and common global challenges

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Abstract: This article provides an overview of some of the main themes that have emerged in the research on hunter gatherers and education. The term 'education' refers both to schooling, and to the traditional pedagogical modes of knowledge transmission that hunter-gatherer communities have developed and maintained over millennia. Formal education plays a crucial, yet complicated role for contemporary hunter-gatherers; it is considered to be a foundational element for economic and social development, yet also continues to be a tool of assimilation. Participation in schooling can also conflict with local livelihood strategies, culture and knowledge. While this is the case for many marginalised groups, hunter-gatherers are one of the most marginalised and most vulnerable groups, and face some of the most challenging problems with formal education. This paper examines these issues from a human rights perspective, and within a global context. We describe the main challenges that hunter-gatherers face regarding participation in formal education, including physical, financial, social, cultural and structural barriers, and highlight issues of both inclusion and assimilation. We also examine traditional knowledge and educational approaches among hunter-gatherer communities, calling for a much greater appreciation of the importance and relevance to current global concerns.

Keywords: hunter-gatherers, education, schooling, knowledge transmission, human rights

Introduction

Education plays a crucial, yet complicated and paradoxical role for contemporary hunter-gatherers. On the one hand, formal education – or schooling – is considered to be a foundational element for economic and social development, and is connected with many other positive indicators relating to health, equality, peace and human rights. It is also considered necessary for informed participation in national and international politics and other decision-making arenas. From this perspective, ensuring access to formal education is critical and lack of access to it results in political and social exclusion. On the other hand, formal education continues to be a tool of nationalism, assimilation, religious conversion and, for mobile groups, forced sedentarisation. Participation in schooling can also conflict with local livelihood strategies, culture and knowledge, and undermine their integrity among younger generations. Access to educational institutions – broadly viewed as a necessity and generally implemented as compulsory – can undermine local cultures, value systems and social structures. Furthermore, a growing body of educational research shows that simple access to schooling does not directly alleviate poverty or empower people on a local level; on the contrary, it can have negative effects unless people take ownership of their development or undergo a sociopolitical emancipation.

This double-edged character of education is a recurrent problem that all minorities face, in particular indigenous minorities. In many parts of the world, historical experiences of colonial violence included the forced removal of children from their communities and placement in boarding schools, where they were often severely mistreated and taught that their own ways were backwards or morally wrong; in some places, versions of this story are still being played out (Woodman 2019). Today, indigenous peoples are among the most marginalised populations in the world – educationally and in general. Hunter-gatherers are a small but important sector of this category, and they are at the far end of the spectrum of marginalisation and the most vulnerable to its pernicious effects. Almost everywhere, today they experience rapid dispossession, forced sedentarisation and targeted assimilation processes. They also face some of the most challenging problems with formal education.

In this article, we provide an overview of some of the main themes that have emerged in our own research and in the literature on hunter-gatherers and education, including the articles in this collection. We use the term *education* in its broadest sense to denote both the historically recent phenomenon of schooling and the traditional pedagogical modes of inter- and intra-generational

knowledge transmission that hunter-gatherer communities have developed and maintained over millennia. The tension between the two is particularly pertinent now, as hunter-gatherers are increasingly faced with threats related to accelerated globalisation and climatic, environmental and man-made crises – including the Covid-19 pandemic, which is ongoing at the time of writing.

Examining these issues through the lens of human rights helps to pinpoint the fundamental issues and to bring forth the social justice aspects. The following section will highlight some relevant aspects of the indigenous peoples' rights framework as it informs educational policy and practice for hunter-gatherers globally. We then present some of the main challenges and barriers that hunter-gatherer children experience in formal education, and end with an overview of the traditional pedagogical practices for knowledge transmission. In conclusion, we consider alternatives to the present situation and point to areas where research could identify possibilities for, and support, effective advocacy. Although it is easy to portray hunter-gatherers as 'victims' – of land grabs, exploitation, stigma and of exclusionary and assimilative education systems – we would also like to emphasise the agency with which hunter-gatherer children, youth, parents and communities are approaching their situation. They are indeed vulnerable and support is needed. But they are also actively responding to the challenges they face. Educational initiatives of any kind will have positive results only if they have at their core recognition and understanding of the communities' needs, values, priorities and strategies.

Hunter-gatherer education and indigenous peoples' rights

For hunter-gatherer communities today, questions related to education are inseparable from their broader struggles for survival and recognition of their rights. Despite the considerable advances of the indigenous peoples' rights movement over the past few decades, the current social, economic and political conditions of indigenous peoples remain unsatisfactory in nation-states the world over – and are in many cases extremely dire. A recent report on the situation of the world's indigenous peoples indicates that some of the most imminent threats to their livelihoods include climate change and environmental deterioration, extractive industries, land insecurity and social unrest (Mamo 2020). Hunter-gatherers comprise a tiny but highly diverse percentage of the global indigenous population. The majority of these groups have undergone, or are currently undergoing, massive changes to all aspects of their lives. They are pushed away, or forcibly removed, from territories deemed suitable for agricultural or industrial

development, and are either sedentarised or forced to move to rural, semi-urban and in some cases, urban centres. They seldom have secure access to land and resources or the freedom to make decisions regarding their own development and future. All of this puts them in an extremely vulnerable situation, and the actions taken by governments, NGOs, researchers and communities themselves will have important implications for their future survival.

Although the picture overall looks bleak, it is also important to recognise that the combined efforts of indigenous leaders, activists and communities have propelled the advancement of the indigenous peoples' agenda on global, national and local levels, and have led to seminal court case wins, an increased awareness of indigenous women's rights, and focus on indigenous languages through the UNESCO Decade of Indigenous Languages (2022–2032) (UNESCO 2020). International indigenous peoples' rights documents set important standards for social justice norms, providing governments and other social actors with a set of ideals and a guide for how to move towards them.

Indigenous peoples' rights are most clearly laid out in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (UNGA 2007) and the International Labor Organization Convention No. 169 on Indigenous and Tribal Peoples' Rights (C169) (ILO 1989). Both of these documents explicitly outline the right of indigenous peoples to *self-determination* – a fundamental principle within international law that refers to the right of all individuals and groups to 'freely determine their political status and to freely pursue their own economic, social, and cultural development' (see for example the International Covenant on Economic, Social and Cultural Rights, UNGA 1966). For indigenous peoples, including hunter-gatherers, this right is clearly understood to be both – and inseparably – an individual *and* a collective right, guaranteeing the right of the group as a whole to continue to exist and thrive, in the interest of the individuals that form it.

The right of the group, and its individuals, to determine their educational options is central to collective self-determination – but also extremely complicated. Both the UNDRIP and ILO C169 explicitly outline the right of indigenous peoples to a) establish and control their own educational systems in their own language and b) access all levels of education provided by the state, without discrimination (UNDRIP Article 14; ILO C169 Part VI). Self-determination requires that both of these are in place; denial of access to mainstream education is a form of exclusion, while insistence on participation in mainstream education without recognition of the validity of indigenous systems is assimilation. Ensuring this balance is not easy. There is tension between the collective aspect of these rights (to establish and control community-based education,

for example) and the rights of the individual (who experiences the assimilation or exclusion, and the advantages or disadvantages of formal education). This tension between individual and collective self-determination is a part of the challenge that all hunter-gatherers face.

Most hunter-gatherer societies are no longer able to survive solely from their traditional subsistence practices. Many also need to, or aspire to, engage in diversified economic activities, and access to formal education is generally considered a prerequisite for gaining the knowledge and skills necessary for participation in the wider society. At the same time, for many hunter-gatherer communities, local knowledge and practices still form a central part of their identity and are the foundations of their food systems – and can be severely undermined by formal education. Hunter-gatherer communities themselves have repeatedly expressed concerns about the erosion of their lifeworlds, and determination to preserve their cultures for future generations. They also connect this with a desire for relevant and culturally appropriate education. In short, they articulate their right to educational self-determination.

Unfortunately, most hunter-gatherer communities currently confront both exclusion and assimilation simultaneously. Access to mainstream education systems is severely limited. At the same time, the lack of recognition of their traditional forms of education – compounded by factors such as land loss, forced sedentarisation, proselytism and severe stigma – restrict possibilities to practice traditional knowledge transmission. Although their educational rights are clearly stated in international documents, this is not enough to ensure their fulfilment. Modern hunter-gatherers live – almost universally – in postcolonial states that are trying to overcome their own historical oppression while pursuing development and/or nation-building. Fulfilling the rights or aspirations of tiny groups of people is hardly on anyone's agenda. Other approaches and arguments are needed, and determining what will be the most effective at international, national and local levels requires understanding of the dynamics at multiple levels.

Hunter-gatherer communities do not respond passively to the many challenges facing them. The literature on hunter-gatherer education, including the articles in this issue, depict people who are actively negotiating their educational participation, articulating their concerns and desires, arguing for their rights, and adapting to new situations while simultaneously emphasising the value of their own skills and knowledge and their desire to maintain them. These tensions between hunter-gatherer traditional ways of being, and their active engagement with encroaching states – including through formal education – is an important area of concern and an ongoing focus of research.

Hunter-gatherers in a global perspective

Although – as will be discussed below – there are some clear social patterns that characterise hunter-gatherer communities around the world, these groups are in fact extremely diverse. This diversity is accompanied by small group size – many hunter-gatherer communities number only in the tens or hundreds; even larger groups generally number only a few thousand. Bird-David (2017a, 2017b) has pointed out that even for apparently more numerous groups, hunter-gatherers' primary identity is usually not with a broad ethnicity (which is often externally defined) but within a small compound or hamlet, rarely exceeding 30–40 people. This phenomenon of small numbers, combined with high diversity, leads to several challenges in theory and practice. For one, the provision of culturally appropriate education in the mother tongue requires an extremely local approach, sometimes specific to a very small number of people. When it comes to providing formal education, justifying to governments and donors the expense and difficulty of (for example) training and employing teachers who speak the language, or creating materials that are culturally relevant, becomes extremely challenging – financially, practically and politically.

The very small numbers of hunter-gatherer groups can make it difficult to 'see' them statistically; they are sometimes lumped into larger categories, or not recognised at all. In most places hunter-gatherer groups also tend to be highly mobile – despite the fact that in many situations they have been forcibly settled. Seasonal and other opportunity-driven mobility is not compatible with schooling programmes that require regular attendance and thus sedentarism. Seasonal absenteeism is a major cause of school failure among many hunter-gatherer societies and creates a logistical problem for school authorities seeking to incorporate these communities (see Shahu, this issue). Obligatory school attendance forces students to choose between school, on the one hand, and their own culture and subsistence or other economic activities on the other. Such a forced choice is problematic for many reasons, as we will examine further below.

Although in some cases, hunter-gatherers may outnumber other ethnic groups in the areas where they live, their small group size and in some cases high mobility, combined with social stigma (see also below) make them invisible to the state and sometimes to neighbouring groups. Where they are counted, their tiny numbers often make it difficult to argue for the special measures or resources needed to address their situation, especially in the face of other national economic and population challenges. Globally, vast numbers of displaced and otherwise marginalised peoples – including much larger

indigenous groups and national minorities – dwarf the small populations of hunter-gatherers. In a global system in which development and human rights initiatives are often measured and evaluated in terms of economic costs and numbers of people that benefit, efforts that reach much larger populations are given priority.

We aim to challenge these priorities, with the argument that these diverse and small groups of hunter-gatherers comprise an extremely important global group – exactly because of their diversity. It is difficult to describe this diversity numerically, but some general statistics provide an indication of their numbers in relation to the wider population, the extent of the human diversity they represent and the relevance of this to biodiversity. Indigenous peoples as an overarching group make up about 5% of the world's population. Several studies converge to indicate that the stewardship of natural ecosystems is better ensured in landscapes that are managed by indigenous peoples and that the lands they own are particularly reliable for biodiversity conservation (Garnett et al 2018; Sobrevila 2008; see also IPBES 2019). There are no exact figures stating what proportion of indigenous peoples today are hunter-gatherers. However, based on recent estimates (Burger & Fristoe 2018; ILO 2020), around 10 million people worldwide are in this category – approximately 2.1% of the total of indigenous peoples, or 0.12% of the global population. However, this tiny percentage does not reflect their linguistic and cultural diversity. According to Binford's (2001) estimates, hunter-gatherers speak nearly 5% of the remaining 7,700 human languages, with language also serving as an indicator of cultural difference. Considered together, these estimates provide an indication of the astonishing variation among these groups. Even more importantly, they illustrate the extent to which hunter-gatherer communities maintain a critical repository of human cultural and linguistic diversity, and simultaneously play an important role in maintaining the biodiversity of the lands that they live on, despite their proportionately small numbers.

This perspective is important. Many hunter-gatherer communities live in hotspots of biodiversity. It is increasingly recognised that these communities, with their knowledge and adaptive strategies honed over countless generations, have much to contribute to our search for more sustainable ways to live on this planet. With this in mind, we argue that their expertise should be valorised through their active involvement in sustainable management. When hunter-gatherer communities are forced to change their lifestyles in order to adapt to modern institutions, we lose the irreplaceable skills of these 'landscape sentinels' (Dounias 2009). Unfortunately, the institution of school plays an important, though complex, role in the undermining of traditional skills and

knowledge, partly through the imposition of the dominant languages, forms of knowledge and value systems and the rigid restructuring of life patterns. Encouraging participation in education systems without sacrificing these critical knowledge systems will require a reconceptualisation of what is meant by 'education'.

There are sound pedagogical arguments in favour of such a rethinking. Hunters and gatherers may have much to contribute to our understanding of, and development of, effective education strategies. The sociopolitical commonalities that tend to characterise small hunter-gatherer groups include: egalitarian social structures; an emphasis on individual autonomy; and a non-coercive approach to the learning process. These characteristics tend to contrast sharply with surrounding cultures and with the approaches of the educational systems imposed upon them – which are inherently hierarchical, and often rely upon conformity, control and discipline – not uncommonly corporal punishment. As will be discussed in the following section, educational research indicates that social characteristics associated with hunter-gatherer groups have been shown to facilitate effective learning. Part of our argument, therefore, is that forcing hunter-gatherer children to participate in mainstream schools deprives them not only of their culture, language, knowledge and so on – but also of these effective learning techniques, and environmental and social conditions. The flip side of this is a recognition that *all* children could benefit if schools instead chose to incorporate and adapt learning approaches inherent in hunter-gatherer educational strategies.

Some aspects of addressing these educational concerns call for global strategies, and international indigenous peoples' rights mechanisms provide a guide based on a clear recognition of global patterns. Above we have argued that hunter-gatherer communities hold value for all of humanity and offer models for alternative ways of interacting with the environment, and of teaching and learning. Although small, highly diverse and locally situated, together these communities make up a group that is large, defined by important similarities and globally important. A focus on hunter-gatherers and their current circumstances as a global phenomenon could perhaps lead to more recognition and respect, increased access to land and territory, and ultimately higher levels of self-determination.

At the same time, the extreme diversity of hunter-gatherers means that blanket solutions will not work. Hunter-gatherer communities have specific cultural and linguistic characteristics, are enmeshed in particular local relationships, and live in unique ecosystems. They have experienced different historical circumstances and are today encompassed in very different regional

and national situations. Meaningful advocacy requires an understanding of this complexity, and a deep awareness of all of these dynamics and of at what level they need to be addressed. Even more importantly, we must ensure that we are working towards goals that the communities themselves define. This means that they must be directly involved in – ideally initiating and leading – decision-making processes.

Hunter-gatherer groups are not internally homogenous either, and differences of opinion among families or individuals must be recognised – particularly when they are lumped into categories that are much larger than their traditional kinship-based groups. Each case must thus be situated within the broad international context, and informed by a human rights perspective and an awareness of the structural issues that affect hunter-gatherers globally. But the specific measures taken to support any particular community must be defined locally, with a clear emphasis on local self-determination at the both the individual and community levels. Making these arguments, and achieving this balance, is a major challenge.

In the sections that follow, we highlight some overarching findings of the existing ethnographic research relevant to these issues, and indicate areas where there are gaps.

Formal education and hunter-gatherers

Education – or schooling – is often presented as the solution for marginalised groups, as a way of being included, of gaining access to employment and to decision-making processes that affect the community. It is a favoured approach of governments and international donors, which are, in most cases, the initiators of education projects aimed at hunter-gatherer groups. These projects almost always focus on getting more children into schools and on getting them to stay there.

Major religions also play an important role. In many remote areas, missionaries have long preceded governmental authorities in education initiatives, legitimising their establishment through social development actions. As surrogates of state obligations, religious organisations appear to offer a refuge through the provision of (among other goods and services) schooling and school-related materials. Many reliable lexicons and dictionaries of hunter-gatherer languages have been published by individuals or institutions dedicated to the translation of religious texts into local languages, and these have been important for the creation of mother-tongue educational materials in many places. However,

the efforts of missionaries to study, learn and record indigenous languages are primarily driven by the goal of evangelisation in the native tongue; these efforts are often accompanied by a denigration or outright forbidding of traditional cultural practices. Strongly associated with European colonial history, religious proselytism is now revived by flourishing sectarian and extremist groups that proliferate in marginal areas neglected by the state and which are generally occupied by hunter-gatherer groups.

Schooling is purported to provide equal opportunity to all. In general, however, formal education systems explicitly or implicitly reproduce the hierarchies that organise the social, political, racial and class relations in the wider society. The extreme marginalisation of hunter-gatherers in modern societies is mirrored in their schooling experience; hunter-gatherer children participate in formal education systems at rates far lower than other groups, including other indigenous groups. Reliable figures are difficult to obtain; understanding the extent to which hunter-gatherers have access to, and participate in, mainstream education systems worldwide is an area in need of further research. However, extensive data based on case studies show that they participate at extremely low rates in comparison to other groups in their countries (Ninkova et al 2022).

As traditional livelihoods and resources are increasingly narrowed, hunter-gatherer communities are seeking other options. Formal education is one route to increased economic opportunities and ideally provides access to dominant languages and other skills needed to negotiate for their rights. However, cultural disparities and enormous structural barriers make successful participation in formal schools extremely challenging. The encounters of hunter-gatherer children with formal education almost always occur in a foreign language and are defined by the norms, values and knowledge systems of the state and society's more dominant groups. Formal education systems and strategies are generally developed to suit the needs and contexts of urban and peri-urban environments and favour children from those environments. These inherent biases ultimately exacerbate the inequalities experienced by students from rural and remote areas (see for example Corbett 2007). Simultaneously, participation in formal education often means separation from their family and community for extended periods of time. When available, for most hunter-gatherer communities, schooling is simultaneously difficult to access, of poor quality, culturally insensitive and disconnected from communities' immediate realities. Furthermore, in many areas, the available schools do not prepare hunter-gatherers for realistic livelihood options in their areas.

Many hunter-gatherer communities clearly express a desire to develop approaches that match their particular cultural needs and economic options,

and that provide access to the skills, knowledge and languages that they need in order to advocate for their rights, to participate in economic transactions, to set their own development agendas and to gain access to the resources and opportunities available to their fellow citizens. Alternative education projects have been developed in some communities, with varying degrees of success (see Desjardins, 2016; Hays 2016a; Sanglir this issue; Woodman 2019). However, there are often huge barriers to creating these types of approaches. Educationally, most hunter-gatherer communities experience a lack of appropriate educational facilities near their homes and a lack of mother-tongue educational materials in their languages which in turn means that the only options for formal education are highly assimilative and separate children from their families, which is in fact a violation of indigenous rights.

Inclusion or assimilation?

Access to formal education is almost always equated with physical access to schools and measured by enrolment rates – both of which can be misleading. Physical access to a school, as will be discussed below, is both problematic and insufficient. Obtaining reliable counts of hunter-gatherers attending formal schools is also complicated by a number of factors, ranging from their small numbers and resultant lack of visibility in national censuses to some states' reluctance to identify or count their citizens according to ethnic group. Furthermore, educational statistics provide a snapshot of educational attendance at a particular point in time but hunter-gatherers often attend school erratically (because of seasonal and subsistence activities that conflict with the school schedule, personal or family situations, practical issues like transport, and numerous other reasons). Lavi (this issue) illustrates how misleading statistics can be; she notes of the Nayaka that 'at any given point, roughly 50 percent of the children between the ages of 5–12 were attending school and 50 percent were at home, but it is important to remember that those were not always the same children'. The time of year that counts are taken, and how ethnic or language groups are defined (both by schools and by people themselves), also affect such estimates.

Although the numbers do not fully reflect the situation, they do nonetheless provide insights into enrolment patterns and challenges on a global level. Where they are available, educational statistics clearly show that hunter-gatherers enrol in schools at rates far lower than children from other groups and drop out at rates disproportionately higher than others, and in lower school grades. This is in part an issue of 'access', which we have broadly divided into three overarching

and intersecting categories: physical, financial and social. The sections below highlight some of the common patterns observed among hunter-gatherer communities globally, in terms of the barriers that they face when they try to access formal education. Understanding how these take shape at the local level is one area in which fruitful research could lead to better understanding of the fundamental problems and at what level they should be addressed, and all of the authors in this special issue contribute to this effort.

Physical barriers

Hunter-gatherer communities that still exist as such in the world today live primarily in areas that were, until recently, relatively isolated – indeed, this is part of the reason that they have been able to maintain their subsistence lifestyles. Deserts, rainforests, the arctic, the seacoasts and other remote areas were difficult to access, not suited for farming or other livelihood strategies, and were thus not deemed valuable for economic development. Increasingly, however, processes including technological development, the growing search for extractable resources, population expansion, climate change, tourism and environmental preservation efforts mean that these communities are facing increasing incursion onto their territories, reduced access to resources they formerly used and/or assimilation into national economies (see for example Sanglir this issue). These changes are accompanied by increased participation of children in schools – but not at the same rate as other sections of the population and usually not up to the levels needed to obtain qualifications.

Because of their remoteness, many hunter-gatherer groups have faced less direct pressure by authorities to exchange their current lifestyle for school attendance. This level of self-determination, however, is accompanied by one of the most problematic aspects of physical access to formal schooling – existing schools are simply far away from where they are. The low population density of hunter-gatherer groups makes it difficult to justify the provision of education in all of the areas where they live. Governments simply do not have the resources (or the political motivation) to construct, supply, monitor and staff schools in every village or hamlet. When available, government schools in remote areas are usually of poor quality and understaffed.

The result is that for most hunter-gatherer communities attending school means travelling long distances from their home villages which is problematic in several ways. For communities where the schools are within possible walking distance, children may travel back and forth daily, or weekly, in order to attend school. In some places, this could be dangerous. Natural obstacles (like rivers

or steep slopes) and human or animal encounters may pose threats for children commuting long distances to school. For children from settlements too far to reach by foot daily, this means staying in hostels either during the week, or, often, for several weeks or months at a time.

Residence in hostels entails multiple serious problems. Children experience separation from parents and families for long periods of time, which can both cause intense psychological stress and reduce transmission of culture, language and knowledge. They are cared for by staff that are most often from cultures other than their own, and many of whom look down upon the communities that the children come from (see also below). In many places, reports of verbal, physical and sexual abuse by hostel staff, other students or local residents are common. Hostels, therefore, while meant to increase access for children from remote areas, often instead become a barrier to education, or in the worst cases, a prison-like institution where children are abused, neglected and learn to be ashamed of their culture (see Hays 2011; Mokibelo 2014; Ninkova 2017; Shahu this issue; Woodman 2019).

Financial barriers

Even for children that live in urban or peri-urban settlements or within a distance that is accessible by walking or transport, other barriers to school attendance exist. There are many monetary costs, both direct and indirect, associated with schooling. Poverty is not unique to hunter-gatherer children – this is a barrier for many children from marginalised and minority communities around the world. However, it is worth briefly noting the ways that this particularly affects hunter-gatherer communities, and how financial barriers intersect with social stigma.

In many countries, school fees are required; parents from hunter-gatherer communities generally do not have the money to pay these. With the intent to alleviate this economic barrier, governments may waive the requirement of school fees. However, schools may sometimes still turn children away, or require ‘in-kind’ payment from the parents, such as working at the school. Any of these arrangements – insistence on fees, waivers or in-kind payment – can contribute to the severe social stigma that hunter-gatherers often face (see the following section). Students from these communities are either prohibited from attending, thus perpetuating their exclusion, or identified as those who ‘do not contribute’ (see for example Ninkova 2009, 2017).

Transportation, if it is necessary, also costs money, leading to erratic attendance. The material items associated with school attendance, and that

are deemed necessary for participation in schools are often inaccessible. These include books, paper, writing implements and other ‘school supplies’; although these may be supplied by donations, they are often quickly used up, lost or stolen, leaving children without the necessary items to participate in formal schooling. Schools often require uniforms, or have a dress code that is not easy for children to meet. Clothes may be donated but they quickly wear out or get lost. Shoes are often an important item, which many children may not have. Not being able to conform to a dress code, whether formally required or not, can be a major reason that children drop out, especially when they are attending schools with students from other groups.

An important and easily overlooked necessary school item is toiletries, and this intersects with social stigma, described below. Not having adequate supplies is a major reason for children dropping out of school; especially girls once they reach the age of menstruation. Children who come to school without bathing or with unwashed clothes are often taunted about being dirty or smelling bad – often with racist associations (see Kiema 2010; Ninkova 2017). This is also something that is particularly problematic when children attend schools with other ethnic groups; teachers and hostel caretakers can also perpetuate this. Furthermore, the requirement for a particular type of clothes (often made of synthetic fabrics that may be unsuited to the local climate and environment), coupled with a general lack of washing and hygiene facilities, may also result in disease (Dounias and Froment 2011). This both creates health problems and lends an apparent legitimacy to stigma.

Social and cultural barriers

This stigma is so profound that even when the (sometimes enormous) physical and economic barriers can be overcome, many students from hunter-gatherer communities still experience extreme social and cultural barriers to school attendance. Stigma towards hunter-gatherer communities remains one of the biggest barriers to their inclusion in education and in society at large – the schooling experience tends to perpetuate this stigma and, in some cases, to exacerbate it. In many parts of the world, hunter-gatherers are perceived as occupying the liminal space between nature and society; in some places, they are still considered to live ‘like animals’. The stigma of ‘belonging to the bush’ (or the forest, or the sea) accompanies hunter-gatherer children in schools and colours their experiences with other learners and school staff. Research from Namibia, for example, illustrates how teachers conceive of ‘San culture’ or knowledge and the associated practices as ahistorical and rooted

in the bush; when enacted in a classroom setting, such stereotypes alienate San learners, and create an environment in which they struggle to fit in and engage with others on an equal footing (Ninkova 2020, see also Paksi, this issue). It is important to note that this stereotypical association with the ‘bush’ or the ‘forest’ is not necessarily taken as an insult by hunter-gatherer youth themselves, who usually also characterise themselves this way. In some cases, this association is embraced with pride by hunter-gatherers – but it may still lead them to reject the school that does not understand or respect them (see Shahu, this issue).

Hunter-gatherer children grow up with a high degree of personal autonomy and freedom of movement and conduct, and experience harsh cultural clashes with strictly hierarchical education systems premised on student obedience and discipline. This leads not only to cultural alienation but to clashes between children and teachers and school staff which can result in coercion and physical or psychological violence.

Some hunter-gatherer children have access to schools attended only by others from their own language community (although they may not necessarily see each other as being from the same group) and sometimes they attend schools together with children from different language and cultural groups. When the schools are attended by children from other ethnic groups, stigma against hunter-gatherer groups or other sorts of conflict can exacerbate the other (numerous) problems related to poverty and language and cultural differences. The majority of hunter-gatherers live in contact zones, where multiple languages are spoken. An important observation in such settings is that the hunter-gatherer languages are never the dominant ones – on the contrary, hunter-gatherers often speak the languages of their surrounding groups; this situation is then mirrored in school (see Davids 2011; Sercombe 2010). These dynamics increase the invisibility of hunter-gatherer languages in a school setting and further hinder the development of these languages as languages of instruction.

In school, hunter-gather children are almost universally perceived as empty vessels that do not bring any valuable knowledge and that must be ‘filled’ with knowledge, values and skills. Parents are usually perceived as not having control over their children, as being ‘illiterate’ or as otherwise deficient. As we have argued above, however, hunter-gatherer communities in fact possess a deep and extensive knowledge of the local environment, engage in low-impact sustainable livelihoods and make valuable contributions to the maintenance of biodiversity, and their educational strategies are also highly effective and conducive to positive group dynamics. A lack of recognition of these differences, or of the potential value of the approaches, means that education is equated with

becoming like the dominant group and leaving their own culture, language, knowledge and values behind. We argue that, rather than being viewed as a barrier to participation in the education system, hunter-gatherer worldviews and the educational approaches that sustain them should be recognised as legitimate in themselves and promoted wherever possible (see also Gray 2011).

We will return below to a discussion about traditional knowledge and education. First, we briefly discuss the issue of the quality and relevance of educational options available to hunter-gatherer children. Above we have outlined some of the most important and common barriers that hunter-gatherer children experience in accessing formal education. An equally important question, however, is what is it, exactly, that they have access to? Even when schools are available, and students are able to overcome the numerous problems related to transportation, clothing, supplies, language problems and stigma (among others), does formal education provide children with skills and knowledge that will be useful to them?

Quality and relevance

Most often, the focus of efforts to improve education for hunter-gatherer communities is on providing physical access to schools, which, as we have seen, presents numerous challenges in itself. The quality and relevance of the education that they have access to, however, is less often discussed. One way to think about 'quality' is in terms of 'equality' – equal access to the same national curriculum, taught by well trained and competent teachers. A critical determinant of this aspect of educational quality is the commitment and skill of the teachers. For hunter-gatherer groups, their teachers are most often from other ethnic groups (though there are exceptions, this will be noted below). This means that teachers usually do not speak the language of the children, nor do they understand the culture – even well-meaning teachers are often insensitive to the ways that linguistic and cultural barriers affect children's participation in school. Furthermore, schools in remote areas are notoriously difficult to staff. While there are certainly committed individuals, very often being stationed to a rural school is seen as a temporary position at best – or in some cases is a punishment for bad behaviour elsewhere (Hays 2016b; Ninkova 2020; Sercombe 2010). The remote schools where hunter-gatherers are taught also are often lacking in terms of supplies, and buildings are poorly maintained.

Educational quality also depends upon the relevance of the teaching strategies and the curriculum to the students and their communities. Many national curriculums emphasise lifestyles, cultures and knowledge associated with urban

living, ignoring or devaluing rural livelihoods (see Sanglir and Paksi, both this issue, and Ninkova 2020). Even if the primary goal is for hunter-gatherer children to learn mainstream skills, the foreign-ness of the curriculum materials can interfere with the learning process. More important, however, is the fact that mainstream educational systems are generally preparing children for livelihoods that are not available in their area and that thus would require relocation to urban areas. While some individuals from hunter-gatherer societies might choose to do this, many express a desire to remain in their familiar surroundings with their families. In addition, even those who seek out mainstream employment often find that stigma and racism present enormous barriers to employment. For many, the skills and knowledge needed to live in their own areas and engage in available economic options are not accessible through formal education.

Furthermore, alphabetic literacy is central to formal education while for many hunter-gatherer societies the oral transmission of knowledge is predominant. Although they are often defined as 'illiterate' or otherwise lacking, in fact, such societies have a huge capacity to learn through oral methods. When knowledge acquisition is mainly based on skills associated with literacy, hunter-gatherer children are characterised as intellectually deficient, rather than building on the knowledge and skills that they do possess.

While equality is seen as a crucial step towards increased social justice, its application seems limited in societies with large socioeconomic disparities between different groups. Hunter-gatherer communities should have equal access to education; however, they also need access to *equitable* education, that is, education that is premised on their specific needs, learning styles, circumstances and aspirations. For hunter-gatherers, this includes recognition of their historical and contemporary exploitation and marginalisation as well as the insurmountable barriers they are expected to overcome in order to fit into the national plan for their development. It would also include awareness of their cultural context and of their traditional pedagogical philosophies and practices. These are outlined in the section below.

Traditional education approaches

By 'traditional education', we refer to the processes of teaching and learning new knowledge that predate the relatively recent phenomenon of formal education and which currently occur in settings other than school. Although hunter-gatherers must acquire large amount of ecological and cultural knowledge for their livelihoods, ethnographic accounts have highlighted a lack of structured

teaching, and some scholars have debated whether intentional teaching occurs among hunter-gatherers at all. Recently, there has been more attention to the knowledge transmission strategies of hunter-gatherer groups. Through meta-analysis of ethnographic records, Boyette and Hewlett (2018) have demonstrated that hunter-gatherers indeed actively teach their infants and children, though not to the same degree, or in the same way, as do societies associated with other subsistence patterns.

Teaching among hunter-gatherers is characterised by a number of methods, including, but not limited to, pointing, demonstration, verbal instruction and storytelling, negative and positive feedback, and opportunity scaffolding (Boyette & Hewlett 2018; Hewlett & Roulette 2016). The literature recognises that both related and non-related adults can serve as ‘teachers’ (this is also called ‘vertical’ and ‘oblique’ knowledge transmission; Boyette & Hewlett 2018). Children themselves have been also recognised as holders, and transmitters, of important ecological and cultural knowledge that is unique to them alone and that in some cases may be inaccessible to adults (Dounias & Aumeeruddy-Thomas 2017), and that they transmit among themselves (‘horizontal transmission’, Hewlett et al 2011; Lew-Levy et al 2020). The role of parents as ‘teachers’ is particularly pronounced in the first years of a child’s life, when infants are in constant physical proximity to their parents, are nursed on cue, and are engaged in most subsistence and social activities of their groups (Hewlett & Roulette 2016; Hewlett et al 2011; Konner 2005; Takada 2016). As children advance in age and in personal and physical autonomy, non-related adults and peers have an increasing role in the teaching of new knowledge (Hewlett & Roulette 2016; Lew-Levy et al 2020).

Learning, on the other hand, most commonly occurs within hunter-gatherer communities through processes such as observation, imitation, participation and innovation (Lew-Levy et al 2017). Play in mixed age and gender-groups has been recognised as an important aspect of children’s socialisation (Lew-Levy et al 2017, 2018; see also Gray 2011; Salali et al 2019). Due to small group size, and emphasis on personal autonomy and sociopolitical and gender egalitarianism, hunter-gatherer education has been characterised by little to no coercion on part of the parents, and by children’s active role in navigating the learning process, depending on their own motivation, interest and abilities (Boyette & Hewlett 2018; Lew-Levy et al 2017). Importantly, these characteristics – personal autonomy, strong sense of social belonging, self-motivation – form the foundation of successful educational practices according to recent meta-studies and comprehensive research (see for example Deci & Ryan 1987; Gallois et al 2017; Gray 2011; Ryan & Deci 2000, 2017).

Global environmental and sociopolitical instability, coupled with increased access to formal education, have led to considerable disruptions in children's access to and mastery of traditional knowledge and practices (Dounias & Aumeeruddy-Thomas 2017). Despite having to cope with ongoing changes, hunter-gatherer communities have exhibited great resilience and continuation of practices and institutions rooted in their local environmental knowledge, subsistence strategies and relationship with the environment and with each other. Kinship, egalitarianism and personal autonomy continue to permeate the lives of foragers and post-foragers in different parts of the globe. As we have described above, traditional education and socialisation practices diverge, sometimes dramatically, from the norms, values and practices of formal education. They also contribute to the stigma hunter-gatherer children experience in schools today. Part of this stigma is rooted in the perception that the ways of hunter-gatherer communities are backwards, belonging to the past, and without value for life in the 'modern world'. Does traditional hunter-gatherer education hold any value in the twenty-first century? And for whom?

Traditional knowledge and formal education

Formal education spearheads the global development agenda, attracting significant financial resources from international agencies and donors. Developing and recently developed nations prioritise the achievement of universal primary education and the eradication of illiteracy. Campaigns to alleviate poverty and to achieve gender equality, health and political emancipation and peace all point to the unquestionable role of education in reaching these goals.

We recognise the importance of formal education on an individual and societal level. Education can provide qualifications leading to employment and can provide basic skills for navigating local and national economies. Education can also raise awareness among communities about their rights and has the potential to equip them with the tools necessary to seek justice in the face of increasing threats. We have also described, however, how local encounters with national education systems have been extremely problematic for hunter-gatherers. Almost universally, hunter-gatherer children have been alienated and stigmatised in schools and their self-esteem and knowledge systems devalued and rejected. Therefore, we would like to suggest a more critical engagement with the theme of education in relation to contemporary hunter-gatherers.

What do hunter-gatherer communities themselves want? What is available to them? What educational approaches can bring value to their lives?

The communities with whom we ourselves work (Dounias 2017; Hays 2016a; Ninkova 2017) are clearly articulating a desire to maintain their own traditional knowledge and practices – though not necessarily at the expense of access to formal education; likewise, many also wish for better access to formal education, but not at the expense of their own cultural heritage. Different individuals within a community may have different aims (Paksi, this issue); or the same individuals may desire a combination of formal education along with access to the land and resources they need to practice traditional strategies. In some cases, children will attend formal education for a while before rejecting it in favour of their own lifestyle (Shahu, this issue) or communities may request that their traditional strategies and rhythms, in particular with regard to their seasonal mobility, be respected in the formal system. In many cases, as communities and as individuals, hunter-gatherers are strategically seeking access to a combination of skills and knowledge that they identify as relevant and useful to them in the situations in which they live (Hays 2016a). This requires some flexibility in the way formal system is implemented, but such flexibility is often seen by school officials as contradicting the principle of equality that is a foundational aspect of state-established formal systems.

There are many ways in which traditional knowledge and skills may be important to hunter-gatherer individuals and communities. They may be central to people's identity, their sense of 'who they are'. They may also provide access to crucial resources. Even when they are not able to survive only from wild foods, meat and plants obtained through hunting and gathering often provide needed supplements to otherwise insufficient diets, and in some places (or at some times) they make up a large part of food intake. Traditional skills and knowledge often provide access to cash, through their demonstration to tourists, or from craft production or the harvesting of medicinal or otherwise valuable plants for mainstream sale. In some cases, communities are recognised as having particular skills related to knowledge of the bush, such as tracking, and individuals are sought out and paid to provide these skills. Recognition by members of wider national and international society of the value of these skills thus can contribute to their maintenance through providing a context that recognises, values and remunerates them.

As we have noted above, there is an argument to be made globally that the knowledge of hunters-gatherers is valuable and contributes to human and biodiversity. Its maintenance, however, must be situated within the community. An enlightening example of the worldwide benefit of maintaining the traditional

knowledge of hunter-gatherers is related to the ‘zero hunger’ Sustainable Development Goal (SDG) of the 2030 UN Agenda. The UN Decade of Action on Nutrition (2016–2025) (UN nd) calls on the enhancement of sustainable food systems and on the importance of diversifying diets with nutritious foods while broadening the existing food base and preserving biodiversity. Many of the existing indigenous food systems have been doing this for hundreds of years and can contribute to the current debate on sustainable food systems and resilience (Kuhnlein et al 2013). Hunter-gatherer food systems rely more than any other on wild edibles that are not part of the mainstream food markets. These wild edibles are the genetic ancestors of many of the foods we consume today. They constitute a diverse and nutrient-rich reservoir for the diversification of the diets, thus can provide an important contribution to achieving this challenging SDG by 2030 (Dounias 2014). Similar arguments can be made for the relevance of hunter-gatherer knowledge and practices to other SDGs. They could also help us move towards better understanding of, and approaches to, climate change, biodiversity loss, zoonotic diseases and global pandemics, and other global concerns – including education.

Conclusion

The holistic environmental knowledge held by communities that depend upon their natural surroundings for survival cannot easily be produced out of context; it is alive in the minds of people and their interactions with the environment. When children participate in formal education, especially in systems that do not recognise or respect their home culture, it interferes with the multiple processes involved with the communication and learning of this knowledge. This happens when children are separated from their communities for significant lengths of time and when their cultures, languages, skills, and environmental knowledge are unrecognised, or actively denigrated, in the school systems. Given the importance of this knowledge (for communities themselves, and for efforts to address climate change, food shortages and other global concerns), this is extremely problematic.

At the same time, in order for hunter-gatherer communities to move towards greater self-determination, and to participate in national and international decision-making processes, gaining access to knowledge, skills, languages and other competencies associated with formal education is essential. Figuring out what approaches might achieve this difficult balance – without veering towards either assimilation or exclusion – requires understanding of the global issues

and also of the particular regional, national and local contexts. Ethnographically informed research has much to contribute to a fuller understanding of the impact of formal schooling on traditional knowledge transmission among hunter-gatherers and to recognition of the strategic responses that such communities are using to gain access to the knowledge, skills and resources that will best enable them to survive – and to thrive.

This article, and collection of papers in this special issue, are a contribution to this effort. In this issue, Lavi describes a situation in which Nayaka students that are adapting to formal methods of knowledge transmission in Indian schools exhibit noticeable changes in social behaviour. How do these changes affect social relations and the transmission of local knowledge? Shahu highlights the role of *resistance* in the Raute's lack of engagement with the Nepalese government school system. In what cases are hunter-gatherer responses deemed as 'failure' actually a refusal to participate in a system where the odds are stacked against them? Sanglir explores various alternatives to mainstream education for the Moken in Thailand. What sorts of educational approaches might serve the diverse needs of hunter-gatherer communities? Paksi describes how Khwe attending formal school in northern Namibia value traditional knowledge much less than those who are actively using such knowledge. Is it the schooling process that is de-valuing local knowledge or is the emphasis on schooling a response to declining availability of traditional resources – or both?

The answers to these, and related questions, are not singular or definitive – we must think of them as both *processual* and *relational*, embedded in evolving interactions among multiple factors, including knowledge content, transmission strategies, environmental circumstances, access to resources, cultural values, social structures, livelihood options, identity and social pressure – and surely many others. These processes and relations are highly complex and not easily defined; this is a major challenge for policy makers, educational authorities and government officials charged with finding 'solutions' to the challenges associated with providing formal education to hunter-gatherer communities. We do not know of any approach aimed at incorporating hunter-gatherer communities into mainstream systems that can be defined as an unqualified success.

Simultaneously, as we have argued in this paper, the current global situation – and its many ongoing and looming crises – calls for a much greater appreciation of the important knowledge and skills that hunter-gatherer communities possess, and their methods of transmitting it, and with a greater recognition of and respect for their culture, subsistence strategies and relationship with the

environment. We have also argued for a recognition of the important sector of human diversity that hunter-gatherer communities represent. Appreciation for and recognition of this diversity, and the communities themselves and their relationships with the environment, must serve as the foundation for any effort to improve the educational situation of hunter-gatherer communities. In fact, perhaps what is needed is to go beyond this, to an approach in which mainstream society seeks to also learn from hunter-gatherers and other local communities. Such an approach could also significantly contribute to our own educational systems, and to our possibilities for living sustainably on this planet.

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