CHILDREN’S ETHNOBIOLOGICAL KNOWLEDGE: AN INTRODUCTION

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BY THE TURN of the 21st century, several anthropologists have insistently been denouncing a global disinterest for anthropology of child (see for instance Corsaro 2003; Friedl 2004; Gottlieb 2000; Hirschfeld 2002; Panther-Brick & Smith 2000). Since then, and especially over the past decade, anthropological research pertaining to children and childhood has made significant progress (Lancy 2008, 2012; Lancy et al. 2010; Montgomery 2009; Qvortrup et al. 2011). Anthropology of child is even becoming a trendy domain of research that is now investigated by a growing number of disciplines, including archaeology. The birth of AnthropoChildren journal in 2012 is one of the most salient expressions of this renewed interest, pursuing the work of many pioneer scholars – Langness 1975 and Whiting 1963 to name a few – who, following the pathway opened by M. Mead (1930), have prominently contributed to set up the foundations of this multilayered discipline. Nevertheless, research efforts are not equally conducted between developed and developing countries and studies dedicated to children among the most nature-dependent peoples have for long remained marginal. Earliest concerns about hunter-gatherer children have principally focused on childrearing and socialization practices (Jelliffe et al. 1962; Draper 1976; Guemple 1979; Konner 1976) until the outstanding works carried out by B. Hewlett in the 1990s and pursued with his collaborators (A.H. Boyette, S.J. Dira, C.L. Meehan, C. Roulette and others). They combined evolutionary and biocultural approaches to analyze how the cultures of contemporary hunter-gatherers, with particular emphasis on their socio-political egalitarianism and their exacerbated sense of individual autonomy, shape infant and child development and inflect teaching processes (see for instance Boyette & Hewlett 2017).

In a context of global change drastically impeding the resilience of traditional livelihoods, the emic point of view of children who, for long, have been only considered as research subjects, is increasingly taken into consideration, assuming the implications of children’s creativity and agency in the future development of their societies (Buhler-Niederberger & van Krieken 2008; Corsaro 2003; Cole & Durham 2008; Morelli 2015, 2017; Thompson 2012). However, grabbing children’s aspirations and motivations regarding the fate of their fragilized culture requires beforehand a better understanding of their knowledge and related modalities of transmission. One the few research topics that have so far received only superficial

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1 The 24th Annual Meeting of the European Association of Archaeologists (Barcelona, September 2018) is dedicating a session pertaining to “Children at work”. 
concern is that of the children’s knowledge and know-how vis-à-vis their natural environment (Barry et al. 1959; Bird & Bliege Bird 2002; Bird-David 2005; Blarton Jones et al. 1994a, 1994b; Briggs 1970; Hawkes et al. 1995; Mignot 2001). The study of the entangled relationships between societies and their environment is a vast research domain that embeds overlapping “disciplines” like ethnobiology, ethnoecology and ecological anthropology, which explore the diversity of biocultural interactions.

The purpose of this volume is to look at the corpus of knowledge, practices and beliefs that children acquire, hold, manipulate, and share about their surrounding natural environment. This corpus that is commonly referred to as indigenous and local knowledge (ILK)\(^2\), is the major focus of researchers who are dedicated to folk/traditional/indigenous sciences elaborated locally through a constant interaction with the environment. Many recent studies concur that childhood is an extensive life period that is critically important for the acquisition of ILK (Demps et al. 2012; Gurven et al. 2006; Reyes-Garcia et al. 2009; Ruiz-Mallén et al. 2013; Setalaphruck & Price 2007; Zarger & Stepp 2004). But in addition to the acquisition of skills that are required prior to the passage into adolescence, children also “produce” knowledge to be shared among themselves with their peers, a knowledge that is now commonly referred to as “children’s culture” (Gallois this issue; Gallois et al. 2017).

Standing aside from the mainstream anthropological research that seeks to draw universal patterns of child’s behavior and development, the overarching goal of this volume is to point out key questions to address through the description of locally-based case studies taken from a broad diversity of indigenous peoples, traditional societies and local communities (IPLCs) throughout the inter-tropical regions and the Mediterranean belt. Whether they belong to post-forager, herder or small-scale farmer societies, the various children’s culture introduced here are meant to provide insights into the ramified schemes of knowledge transmission inside which children play an active yet ambivalent role as recipients, producers and keepers.

Children from IPLCs have a specific access to a specific range of presumably “wild” resources that are generally of lesser importance for adults. As almost exclusive harvesters of these resources, children detain their own sphere of knowledge and know-how – embedded in specific forms of communication – with two utmost consequences: (1) they coordinate among them an independent and horizontal educational channel, in which adults seldom intervene; and (2) they are actively involved into a reciprocal transmission process along the vertical educational channel that interconnects them with adults: they are depositories of traditional ecological knowledge that adults no longer mobilize.

As a result of their intimate interactions with nature, children are acknowledged for their rich food habits in various IPLCs for which childhood is not perceived as an

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\(^2\) We consider ILK as more encompassing than local ecological knowledge (LEK), traditional ecological knowledge (TEK) or ethnobiological knowledge (EK) that can be however considered as synonyms.
“at” risk step, but rather as a "without” risk one. In that respect, elders and children have a lot in common and are key players for knowledge transmission processes that are deeply integrated into social structures, values and cosmologies, and in the subsistence strategies of the community. As sexually non-reproductive and no-longer reproductive individuals, children and elders have access to a much broader range of potentially edible forest resources than the adults of reproductive age, because they are less exposed to food prohibitions and taboos. In their large majority, these proscriptions are driven by childbearing considerations and solely concern reproductive adults.

In a context of dramatic global change and induced food insecurity, IPLCs are inclined to diversify their diets and to further pick out resources from various anthropogenic ecosystems that operate as safety nets. Children and elders also share knowledge on how to collect these resources and how to properly prepare and cook them (Dounias 2017). Occasionally foraged resources are gaining value and interest, and so are the related knowledge and know-how usually left in the hands of children. In periods of social crisis, children are also likely to develop solidarity and exchange systems to help each other, while adults thrive to tackle broader economic or political issues.

While IPLCs undoubtedly view their children as full actors among households and not just as “adults to be”, this perception still meets some resistance in the western world and in the arena of international decision makers. This discrepancy is a major source of misapprehension between, on one hand, the valued role of children as socio-economic actors within socially driven contexts in a large majority of IPLCs and, on the other hand, the international child rights that insist on access to education and on the ban of child-forced labor the latter mostly relating to abuse of children’s working force. It is not our intention to contest the necessity to reinforce the international children’s rights mechanisms and to eradicate child-forced labor. Nevertheless, these rights that are sustained by a western hegemonic way of positioning children within the society, should not be consolidated at the expense of the integrity of the household economy and of the local expertise that is in the exclusive hands of children within IPLCs where strong internal regulatory processes highly value children well-being. There is an obvious discomfort from the international arena for admitting the substantial economic role endorsed by children in local livelihoods and the fact that the resilience of local knowledge and practices also depends partly on children’s engagement in subsistence economies.

From 1 to 7 August 2016, The Makere University of Kampala, Uganda, hosted the fifteenth Congress of the International Society of Ethnobiology. During this congress, the two guest editors of this special issue convened a session on children’s

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3 For instance, a recent ODI report decrypting child poverty through the lens of the SDGs does not say a word on “children’s culture” (Watkins & Quattri 2016).
ethnobiological knowledge. The goal of this session was to provide greater credence to children: (1) as hidden and neglected harvesters; (2) as possessors of ecological knowledge – inherited from the past as well newly created on their own – that offer promising opportunities of valorization in the near future; and (3) as social actors, engaged in knowledge transmission and exchange networks. In the margins of mainstream research and conventional development, the session was open to a community of scientists who are specialized in working with children in the fields of ethnobiology, human ecology, ethnolinguistics, and law. The majority of the papers assembled in this special issue stemmed from the Kampala session.

The first paper by V. Ninkova & J. Hays is entitled “Walking in your grandfather’s footsteps”: kinship and knowledge transmission among the Jul’hoansi (Namibia). Focusing on kin association and social organization among the Namibian Jul’hoansi, the authors take a fresh look at the broad understanding of knowledge transmission processes among post-forager societies. In a context of increased institutionalization and bureaucratization that is heavily altering the subsistence systems of all modern-day hunter-gatherers across the globe, Ninkova & Hays question the resilience of the Jul’hoan-specific realities and values. The authors make a firm distinction between, on one hand, a passive transmission of practical skills that are progressively assimilated over prolonged periods of time in continuous contact with accompanying adults and, on the other hand, a much more active acquisition of social norms that children learn through their extensive kinship network, a central organizational principle that binds people together across vast territories. Jul’hoan kinship system is maintained through naming: non-genealogical persons who bear the names of genealogical kin members can also establish privileged kin relations. Ninkova & Hays insist on the autonomy and free will of children to decide the social pathways that will take their learning. The capacity of the Jul’hoan children to navigate through this network as self-motivated learners is made possible by a still vivid egalitarian and autonomous forager identity that persists despite the enormous disruption of associated subsistence patterns.

After the desert areas of Namibia, the second paper by N. Revel, H. Xhausflair & N. Colili leads us to the evergreen rainforest of Philippines. Their paper, entitled Childhood in Pala’wan Highlands Forest, the Kânakan (Philippines), echoes the conclusions of Ninkova & Hays on the dual yet complementary passive/active learning processes. Revel & collaborators introduce us to the world of a 3-to-12 year old group of children of the Pala’wan egalitarian society that dwells in the highland forests of Pala’wan Island. The reader progresses in the life experience and the shared values of the children through a lyric and narrative description of their daytime physical and cognitive activities, in the houses and their surroundings, in the forest and wilderness, by the river, and in the upland fields. Using excerpts from the childhood memories of close Pala’wan collaborators, the authors emphasize on the social learning process during the daytime cognitive activities of the children regardless of whether they forage on their own in the natural environment or they
assist their parents in their farming and domestic daily tasks. At nighttime, the children are impregnated by the conversations and storytelling conducted by adults. They are allowed to assist to events like giving birth, *de jure* discussions or marriage negotiations during which they are initiated to the subtleties of their mother tongue and cultural tradition during this nighttime exposure.

The third paper by S.M. Carrière, C. Sabinot & H. Pagezy is entitled *Children’s ecological knowledge: drawings as a tool for ethnoecologists (Gabon, Madagascar)*. Carrière & Sabinot make a plea for the relevance of child-made drawings for exploring children’s ethnoecological knowledge. Arguing that few tools are so far available to date to investigate the EKs and representations of nature of the children and to question how children build their own traditions and skills and contribute to reshaping the social bounds of the whole society – visual anthropology is one of them (Thomson 2008; Gearhart 2013) –, the authors advocate for a more extensive use of children’s drawings by ethnoecologists who are expressing a growing interest to the study of children’s world. In 2010, Carrière & Sabinot co-published the remarkable book in French, *Nature du monde, dessins d’enfants* with our dearly remembered colleague and friend Hélène Pagezy (1945-2013) who is granted posthumously as co-author of this paper. Notwithstanding that a drawing is a singular channel of communication since, as stated earlier by Dounias (2007: 353), “a drawing is a message that speaks, narrates, explains, much of what children do not yet know how to express verbally”, the authors base their argument on their respective experience of asking children in Gabon and Madagascar to draw their environment. They discuss the practical and heuristic interest of children’s drawing to analyze the dual attributes of children as producers and repositories of ecological knowledge and societal values.

In perfect resonance with the advocacy of Carrière and collaborators, the fourth paper by R. Simenel, Y. Aumeeruddy-Thomas, M. Salzard & L. Amzil provides sounding illustrations of the use of child-made drawings as a means to approach the perception and understanding that the children of southwestern Morocco have acquired of the bee world and the related traditional beekeeping activities. Entitled *From the solitary bee to the social bee. The inventiveness of children in the acquisition of beekeeping skills (southwestern Morocco)*, the paper of Simenel & collaborators aims to restore the role of children as significant contributors in the acquisition and learning of their beekeeping skills. The children entertain a relationship of tenderness with a wild solitary bee that is antithetic with the domesticated social bees. Children’s games involving the solitary bee nurtures their fondness for beekeeping, a risky activity that they cannot yet afford to practice and can only observe through accompanying adult beekeepers. In return, adults take advantage of children’s expertise of the territory during swarming seasons, revealing here the complementarity between adults and children respective skills. By mimicking beekeeping activities through their attempts to take care of their trapped solitary
bees, the children cultivate their affection for apiculture and prepare themselves to acquire the necessary beekeeper skills.

The fifth paper by X. Tian is entitled *Ethnobiological knowledge generation during herding game in pastoral Maasai society (southern Kenya)*. A distinctive feature of herding from other forms of subsistence economies is that children’s culture is intimately related to the livestock that they contribute to manage. Herder children develop their skills and values while growing up with their animals. Tian analyzes herding games as a determining medium to explore the livestock-related ethnobiological knowledge of children in Maasai communities in Southern Kenya. From an early age, Maasai children are keen to play a prominent role in livestock tending in the chores that are still managed communally. The regular herding games that pace their daily activities in continuous contact with cattle are favorable occasions for children to set their livestock-related skills into practice and to communicate and transmit these skills with their peers. Most importantly, the author brings new insights to the numerous studies already published on pastoralist children by convincingly arguing that, through their herding games and without formal requests or instructions from adults, the children constantly enrich the human/livestock/biota relations of the overall Maasai society.

The life ways of the great majority of nature-dependent peoples are nowadays jeopardized by radical ecological, social, cultural, political changes. As integral actors of their society, children are not spared from the changes affecting their socio-ecological system. Considering that cultural knowledge is generally acquired before adolescence (Hewlett & Lamb 2005; Zarger 2002), what an individual experiences during childhood largely shapes what it will become in the future and will consequently impact the fate of the society as a whole (Zarger & Stepp 2004). Post-forager societies are particularly revealing in that respect because they are probably the most exposed to drastic changes of their social and ecological environment in a very short time lapse. The incidence of such changes is the guiding thread of the sixth and last paper by S. Gallois, entitled *Growing up in a changing world. A case study among Baka children (southeastern Cameroon)* in which the author adopts a child-centered view to address social change. Like other African Pygmy hunter-gatherers throughout the Congo Basin, the Baka of southeastern Cameroon have been facing severe conversions of their forest environment over the past fifty years. Gallois shared Baka children’s daily life and analyzed their perceptions of the Baka’s evolving culture and their expectations as future adults. Pointing out indicators that suggest an increasing marginalization of this now sedentary society, the author stresses the contradiction between an extractive cash economy constantly grasping over forest resources and the uncontested depletion of forest wildlife that only few Baka deplore. In this context, the expectations of Baka children are increasingly turning their back from the original forager way of life of their grandparents, thus impeding the integrity of the Baka culture in the very short run.
The papers of this special issue all address children’s ethnobiological knowledge among IPLCs of the intertropical areas and of the Mediterranean region. The livelihoods of the oral-tradition societies considered in this volume – Ju’hoansi of Namibia, Pala’wan of Philippines, Highlanders of Madagascar, coastal fishermen of Gabon, the Haha, the Ida Outanan and the Aït Ba’amaran of Morocco, Baka of Cameroon – highly depend on the surrounding natural environment that constitutes the prominent source for learning. Without naming it, almost all the papers implicitly suggest a strong influence of “biophilia” on children’s environmental reasoning and values. This innate tendency of human beings to seek connections with nature and other forms was popularized by Wilson (1984) and was further analyzed by Kahn & Kellert 2013 as a means to understand the propensity of children to develop a nurturing relationship with nature from early and middle childhood. Without necessarily adhering to the hypothesis of a possible genetic origin of this phenomenon nor to its evolutionary consequences raised by the defenders of the sociobiology mindset, this recurrent role of nature in the development of children’s ecological knowledge might provide food for thought in analyzing the sociocultural ontogenesis of the child before it enters adolescence, taking into account altruistic behaviors that most children exhibit in many post-forager societies (Crittenden & Zes 2015). The beneficial role of nature on children’s well-being is further supported by the fact that urban children who spend little or almost no time playing in nature are less able to cope with stress, attention deficit, and other hyperactivity disorders that may impair their cognitive functioning. This suggests a universal benefit for individuals to connect with nature during childhood, whatever the type of society they belong to (Adams et al. 2016).

Another topic that is underlaid by the conclusions of all the papers is the challenging relations between formal education on one hand, and traditional educational and knowledge-transmission processes among nature-dependent peoples on the other hand. While formal education is broadly brandished as a consensual solution for many IPLCs to escape from chronic marginalization, it appears that the stigmatization of nature-dependent peoples as culturally regressive societies is strongly reflected in their disastrous schooling experience (Barreau et al. 2016; Hays 2016; Ninkova 2017). The recurrent observation throughout many contrasted ecoregions that formal educational facilities violates indigenous rights and severely impairs the traditional forms of knowledge transmission, constitutes the acute concern of the newly created Hunter-Gatherer Education Research and Advocacy Group. This group, hosted by the International Society of Hunter-Gatherer Research (Internet website of the International Society of Hunter-Gatherer Research) and led by J. Hays from the Arctic University of Norway in Tromsø is going to launch its activities during the twelfth International Conference on Hunting and Gathering Societies (CHAGS 12) that will take place on July 2018 in Penang (Malaysia).
We would like to conclude this introduction by reproducing in extenso the Kampala statement regarding children’s ethnobiological knowledge and education that was written by Dounias et al. (2016) and that was delivered to the decision makers who took part in the closing ceremony of the fifteenth ISE Congress:

“At the just ended 15th Congress of the International Society of Ethnobiology held at Makerere University, Kampala, Uganda (1-7 August 2016), the session’s organizers and participants came up with the following recommendations for improved education planning and practice with regard to children’s rights in different cultural settings.

The Kampala Statement was adopted by the congress participants at the closing ceremony on 7 August 2016.

“Transmission of knowledge — whether academic or traditional — is a complex process where children (ranging from early childhood to adolescence) take an active part in acquiring, reshaping and reformulating the culture of the society in which they live.

Nobody contests the importance of formal education to be provided by state educational bodies in national official language to the children populations of Indigenous Peoples, Traditional Societies and Local Communities (hereafter called IPTSLCs). Nevertheless, both ethnobiologists and IPTSLCs recognize the crucial need to pursue the acquisition of local knowledge by children and to encourage the practice of their mother tongues that are vital carriers of the cultural diversity of each country. Any attempt to replace one education system by the other is counterproductive in essence and will inevitably penalize the personal development of IPTSLC children, as well as impair the fate of local knowledge and related cultural heritage. Children should not be forced to choose between having access to formal education versus being the gatekeepers of local knowledge. They would instead gain in benefiting from both systems.

Based on the foregoing, the following recommendations are made:

1. There is an urgent need to put an end to the classical opposition between formal and informal education.

2. There is an urgent need to admit that formal schooling is not the only means for the acquisition of valid and valuable life skills and knowledge.

3. There is an urgent need to consider the paramount value of horizontal transmission among children as a means to preserve a corpus of local knowledge that adults no longer possess.

4. There is an urgent need to rethink communication and foster mutual respect between those who are in charge of teaching academic knowledge (teaching staff and state academic bodies) and those who hold local knowledge within the various IPTSLCs in order to strengthen the complementarity and synergies between the two
educational systems.

5. There is an urgent need to acknowledge that children are accomplished household actors as resource providers and keepers. Their contribution to the domestic economy elicits an undeniable expertise that mediates their interactions with their natural and social environment.

6. There is an urgent need to stop considering children just as adults in preparation: they engage actively with their surrounding world. Children’s perceptions, knowledge and practices should be better understood and incorporated into international and state policies.

7. There is an urgent need to assess the involvement of children in the domestic economy on a culturally-specific basis.

8. There is an urgent need to recognize the difference between children’s contribution to the domestic economy and child labor. The reinforcement of international children’s rights mechanisms and the eradication of child-forced labor are an absolute and uncontested necessity. Nevertheless, these rights should not be reinforced at the expense of the integrity of the domestic economy and of the local expertise that is in the exclusive hands of children.

Emerging from the above recommendations, there is an urgent need to foster research on children’s ethnobiological knowledge and to encourage aspiring ethnobiologists to further explore this overlooked issue.

‘Together keeping continuity from our roots’

Kampala, 7 August 2016” (Dounias et al. 2016)

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