Ethnographic Perspectives on Cultural Transmission/Acquisition

“Much culturally transmitted knowledge seems to be passed on in ways unknown to us (Bloch 1988: 7).”

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MULTIPLE PERSPECTIVES ON THE EVOLUTION OF CHILDHOOD
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Introduction

The construct “cultural transmission” can take on several meanings. It might refer to “the spread of ideas.” For example, we might ask whether the horse was domesticated in a single region and then diffused to neighboring societies from that point or whether domestication occurred multiple times in different regions. Or it could mean the process whereby culture is preserved from one generation to the next. This is the conceptualization that attached itself to me in grad school:

“It is possible to regard all culture as information and to view any single culture as an “information economy” in which information is received or created, stored, retrieved, transmitted, utilized, and even lost...information is stored in the minds of...members and...artifacts...[In this view, children are seen as]...storage units [which] must be added to the system...as older members of the society disappear (Roberts 1964: 438-9).”

Among the issues that have motivated students of cultural transmission have been: the nature of culture, its stability and change; its role in human evolution; but also questions about the development of the young—the storage units! And most importantly, how is culture as a dynamic process adapted to the biology and psychology of the developing individual and vice-versa. For example, how is culture enabled by the human capacity for speech? What role does language play in the learning of culture? The time scale employed in discussions of cultural transmission may vary widely from millennia (the relationship between culture, language and brain) to hours (child learning to wind thread on a bobbin). The data sources range from complex mathematical modeling of large-scale processes of cultural evolution (Strimling et al 2009) to micro-analyses of film footage of Balinese children learning to dance (Jacknis 1988). This chapter will focus on the developing child in the context of specific cultural institutions and practices (culture not Culture). The time scale of interest is birth to adulthood and the primary database will be the accumulated archive of ethnographic descriptions of discrete cultures. In reviewing the ethnographic record to tease out broad patterns in childhood, my analytical approach is largely inductive (e.g. Lancy 2007, 2008, 2010a, 2012a, 2012b).

Problems in the Study of Cultural Transmission

The study of cultural transmission has, in my view, been stuck in neutral at least in part because of a peculiar territorial division in the academic landscape (Tooby and Cosmides 1992: 41). “Culture” has been the almost exclusive domain of anthropology while “transmission,” taken to mean the processes of teaching and learning whereby culture gets passed down the generations, belongs to psychology. Anthropologists have, therefore assumed that this process is as variable and open as culture. They “…have relied on a view of the mind…as an unbounded and unbiased learning machine, equally open to any kind of cultural content (Sperber and Hirschfeld 2004: 40).” Further, “anthropologists seem to take teaching in humans for granted (King 1994: 111).” Psychologists, on the other hand, tend to treat the dominant culture (Western, Educated, Industrialized, Rich and Democratic [WEIRD]) as normative vis-à-vis all theoretical considerations. This certainly includes theories of cultural transmission, when, in fact, on most attributes important to an understanding of childhood, the WEIRD culture is just that, a weird or anomalous outlier (Henrich et al, 2010; Lancy 2007, 2010b; Ross 2004: 24). Discussions of cultural transmission tend to be located in psychology’s territory and share many assumptions that are tenets of WEIRD society but not found elsewhere.
For example, as I started this chapter, a colleague sent me a link to a recent *New York Times* piece titled “Raising Successful Children” (Levine 2012) This Opinion piece is one among thousands to grace contemporary newspapers, websites, blogs, best seller lists and so forth. The foundation concept in this literature is the centrality of parents in children’s (un) successful adaptation to the demands of society. It is paralleled by an even greater volume of scholarly articles on child psychology that share this key assumption. While there are psychologists who challenge this assumption (e.g. Harris 1998; Gray 2013), these parenting skeptics seem to have little impact on popular “wisdom” (e.g. Rakoczy et al 2005: 71).

To provide a specific instance of how this bias affects our thinking about cultural transmission I will briefly critique a very typical study. In this study, the authors compared the performance of two participants in a learning task. One participant was an “overhearer,” able only to listen to the discussion, the other was an active participant who could seek feedback from the speaker via questioning. Subjects in the latter role performed better on the task (Schober and Clark 1989). Citing this study specifically, Tan and Fay claim it represents universal principles of cultural transmission (2011: 402). But subjects in the study were from psychologists’ tribe of choice—US undergraduates. These individuals have had upwards of 16 years of experience with interchange and verbal instruction from a teacher—starting with their parents. By contrast, teaching is extremely rare in the ethnographic record (Lancy 2010a). Rogoff reports of the Highland Maya: “…of the 1708 observations of 9-year-olds, native observers could identify only 6 occasions as teaching situations (Rogoff 1981: 32).” Bruner, in viewing hundreds of hours of ethnographic film shot among !Kung and Netsilik foraging bands, was struck by the total absence of teaching episodes (1966: 59). Many societies sanction children who are “forward” and ask questions of adults (Lancy and Grove 2011a: 285). Even in the apprenticeship, novices are expected to learn entirely from observation of the master and systematic practice, verbal interchange—except when the master berates the inattentive apprentice—is almost unknown (Lancy 2012b). de León (2012, see also Campbell 1964: 157; Sliva, et al 2011) describes the “overhearer” as one of the cornerstones of traditional Zinacantecan child rearing. Older family members critically discuss the child’s behavior when it is present but is not otherwise interacting with them. The child, who is expected, at all times, to pay attention to those older, is expected to listen and reflect upon his or her actions—a nice example of what Kline et al refer to as “subtle, low cost teaching (in press: 3). Direct instruction would be considered an infringement of the child’s autonomy and an unwarranted assertion of rank. In sum, if you’ve spent your entire childhood learning by observing and overhearing perhaps you might not find opportunities to interrogate the person you’re trying to learn from very helpful.

Anthropologists and cross-cultural psychologists have not been immune from adopting the WEIRD perspective as commonly used terms such as “socialization,” “enculturation,” “child-rearing” and “parental acceptance/rejection” suggest. In all these terms there is the strong presumption of a process whereby the older generation actively shapes the younger generation (Schönpflug and Bilz 2009: 213). As examples: “The central concern has been with how infants and children are taught to "think, act, and feel appropriately" [as they] are recruited to be members of a culture (Pelissier 1991: 82, emphasis added).” [Socialization is] “a process applied ‘from above’ by older animals to originally asocial infants until they conform to some standard known as ‘adulthood’ (Rowell 1975: 126).” This view is compatible with Locke’s *tabula rasa* and with the idea that the child is an empty vessel (“storage unit”) that is filled with culture by parents, kin, religious authorities and educators. Cultural transmission is seen primarily as a top-down process with the parent playing a key role as organizer, mentor and instructor for the recipient of cultural knowledge—usually a child.

**Dissecting a Classic Study**

The ethnographic record, particularly in the last two decades, is replete with instances of children learning aspects of their culture. One particularly rich area I have labeled the “chore curriculum” (Lancy 1996). The chore curriculum reflects the complex interplay among: the developing child and her growing strength, maturity and repertoire of cognitive, motor and social skills and; the domestic economy. Juveniles are and probably always have been an integral part of the domestic economy in all but a few societies and they reliably acquire the skills necessary to be helpful and, ultimately, succeed as competent adults. The Yukaghir (Siberian foragers) view is representative. Their “…model of knowledge transferal could be described as ‘doing is learning and learning is doing’ (Willerslev 2007: 162).” But this robust literature has
not been extensively drawn on in theorizing about cultural transmission. Rather, theoreticians have relied heavily on a classic study published in 1986 that would seem to validate the WEIRD model as universal.

In that study the authors reported on the results of an interview study of the distribution of 50 distinct and common skills among the Aka—forest foragers from central Africa commonly referred to as pygmies. The sample consisted of 40 adults, 16 children aged 7-12 and 16 unmarried adolescents. When asked who had shown them how to perform a skill, 81% of respondents identified a parent (Hewlett and Cavalli-Sforza 1986). But the Aka may be no better an archetype7 than the WEIRD society. They are extremely egalitarian and child-centered, in contrast, for example, to Hadza (Tanzanian) foragers (Marlowe 2010). They hunt cooperatively and welcome children on the hunt, in contrast, for example, to Hauorani (Ecuadorian) foragers whose “…rich natural environment is tapped using individualized modes of procurement…hunting is performed more efficiently alone (Rival 2002: 102).”

Another problem with the heavily cited study (e.g. Takahashi and Kenichi 1995) is that there’s little control for response bias. If Aka individuals picked up skills over a period of time and in the presence of a mixture of individuals8 (Aka are constantly in the presence of others, to the point of sleeping together in a mass of bodies) it is unlikely that they can accurately reconstruct the learning experience, the easiest response to “Who showed you how…” is to name the parent of the same sex. This must be the default answer. Further, an answer of “my father” to “Who showed you…?” could mean: “My father first demonstrated….then explained…then guided my fledgling efforts…corrected me verbally.” Or it could mean: “I watched my father do X and, from that observation, and practice, I was able to master the skill.” In using a multi-method approach to the study of knowledge acquisition and transmission, Zarger (2012) warns of the perils of exclusive reliance on interview-based elicitation data. She notes that in skill inventory elicitation interviews, Q’eqchi’ Maya men disavow any ability to make tortillas—women’s work—and yet she has often observed these same informants making tortillas—unaided by women. Other researchers studying indigenous knowledge and its transmission also caution against reliance on interview data as any coherent, system of knowledge (e.g. ethnomedicine) identified may be entirely an artifact of the elicitation methods (Moritz et al 2012).

Additionally, the very high mortality rate for parents, particularly mothers (Crawford 1999: 130; Dentan 1978: 111) would mitigate against children being exclusively dependent on their parents for survival in both the short and long-run—that is to transmit to them the skills they will use to survive. A multi-directional position on how children come to share their parent’s culture can be found among the Zafmaniry whose folk model holds that “children come to resemble their parents, in great part, because of the house they grew up in, the environment in which they live, and the people with whom they have interacted (Bloch, et al 2001: 50).” A more formal theoretical statement of this phenomenon—that children know what their parents know because of genes and propinquity—is available (Latané 19969; see also Boyd and Richerson 1985: 53). Children can acquire the skills exhibited by their parents in a variety of ways other than direct or vertical transmission (Cavalli-Sforza and Feldman 1981: 349).

I have grown profoundly skeptical of the few cases in the literature10 where parents are identified as playing prominent roles as teachers of their children, without any supporting evidence—as contrasted with the extremely large number of cases where this behavior is dis-avowed by informants and outside observers (Lancy 2010a; see also Gosselain 2008: 153). When parents are asked how their children came to learn particular skills, again, response compliance is possible. For example, among the Asabano of Papua New Guinea:

“…numerous explanations of the learning process from informants suggest that individuals consider unidirectional knowledge transfer to be the primary means of education. When asked how their children learn anything, elders will unanimously answer that they explicitly ‘show’ children in a step-by-step process. Even though they very clearly do no such thing, (emphasis added)...Such a seeming contradiction needs to be seen in light of the influence of Christian theology… [where Asabano] parishioners are instructed that…they must teach their children life skills and Christian values…[The pastor] would lecture parents about how to teach children… by, for instance, mimicking the act of planting sweet potato vines and telling parishioners to tell their
children to ‘do the same.’ This message is certainly well understood by Asabano, as...parents...indicate...that this is how they teach (Little 2011: 152).”

Biased thinking may affect the handling of the data. In a study of crafts skill transmission among the Maya, the authors eliminated from their analysis anyone who claimed to have learned without a teacher and “in cases of self-teaching where individuals also indicated that their parents knew specific crafts, we assumed that they learned from their parents (Hayden and Cannon 1984: 343).”

Setting aside these specific studies, Parental Investment Theory (Trivers 1972) should make us wary of ascribing to parents any “non-essential” investment in their offspring—such as teaching them.

“Teaching will be favored by selection only where the costs to teachers of facilitating learning are outweighed by the long-term fitness benefits they accrue once pupils have learned, and these benefits will be scaled by the ease with which pupils could learn without teaching (emphasis added, Thornton and Raihani 2008: 1823; see also King 1994: 125).”

The argument I will attempt to make throughout this chapter is that, in our thinking about cultural transmission, we have privileged the parent-centered, top-down view of this process and have neglected the bottom-up, child-centered perspective. To quote Alan Fiske, in the ethnographic record, there is “…much less child-rearing than there is culture-seeking (Fiske nd).” Goody says the same thing but more formally: “Culture is learned less because of the pedagogical efforts of the adults than because of the predispositions, agency and intentionality of the children (Goody 2006: 11).” “Culture seeking” begins in infancy.

**Infant Studies**

Human infants can be distinguished from the young of mammals, generally, because while their brains are large and growing rapidly, representing over half of their metabolism, yet they remain virtually helpless and in an immature state for a very long time. Both folk and scientific theories of infancy failed (until very recently) to wrestle with this paradox. Indeed, most would agree with the !Kung:

“A child who is nursing has no awareness of things. Milk, that's all she knows. Otherwise, she has no sense. Even when she learns to sit, she still doesn't think about anything because her intelligence hasn't come to her yet. Where could she be taking her thoughts from? The only thought is nursing (Shostak 1981: 113).”

In the last thirty years, there has been a revolution in research on infants with the invention of very clever paradigms to study what would earlier have been called an oxymoron—infant cognition (Gopnik, et al 2000). Among the extraordinary intellectual capacities of the young:

“Babies as young as 4 months already possess a ‘theory of physics,’ having a notion of what counts as a solid object, and assuming, for example, that an object cannot be in different places at the same time, or that a solid object cannot pass through another solid object. Similarly, preschoolers and adults in most cultures known to anthropologists have a ‘theory of biology’ that dictates that species have biological ‘essences’ and that superficial transformations performed on an animal do not alter its species-specific essence (Norenzayan and Atran 2004: 151).”

This laundry list of capacities can also be mined for evidence of core knowledge (Carey and Spelke 1996) systems that function as “learning devices (Baillargeon and Carey 2012: 58).” As an alternative to the empty vessel waiting patiently to be filled, evolutionarily-inclined scholars posit the untutored emergence of key concepts and modules that facilitate learning about the world (MacDonald and Hershberger 2005: 25; but see Ingold 2001 for a contrarian perspective). Bloch, et al (2001) enumerate several domains of core knowledge including intuitive psychology, with the intentional agent at its center; intuitive mechanics, with the physical object at its center (Spelke 1994), and intuitive mathematics (Bonatti et al 2002), with number at its center (Dehaene 1997: 62; but see Everett 2012; 261 for a contrary view). Pending further work with infants, it is likely that intuitive biology can be added to core knowledge (Atran and Medin 2008: 255; Inagaki and Hatano 2002; 187) as well.
Infants not only deploy these domain-specific modules that help them make sense of particular aspects of the world but also reveal more general abilities such as the “Goldilocks Effect” where 7-8-month-olds carefully attune their attention to stimuli that are neither too simple nor too complex “…and avoid wasting cognitive resources on overly simple or overly complex events (Kidd et al 2012).” Among the infant’s suite of capacities for learning the culture, “parsing” is getting increased attention. The most obvious application is in language acquisition.

“One task faced by all language learners is the segmentation of fluent speech into words. This process is particularly difficult because word boundaries…are marked inconsistently …8-month-old infants can segment words from fluent speech and subsequently recognize them when presented in isolation (Saffran et al 1996: 1927).”

Infant cognition researcher Elizabeth Spelke extends the infant’s segmentation or parsing capacity to the realm of physical objects. The infant can pick out discreet objects within a visual array because he can “apprehend physical objects as persisting bodies with internal unity and stable boundaries (Spelke 1990: 54).” Infants may parse the behavior of their companions. The young seem to apply a parsing strategy to “see below the surface” of behavior, and detect the logical organization that produced it (Byrne 2006: 494).” This, according to Byrne, may account for children’s evident ability to acquire complex skills via social learning. Laboratory studies with older children indicate that they can extract the rules that generated the behavior (Bandura 1977) such as non-standard grammar (Rosenthal and Zimmerman 1978). I’ll discuss this in terms of learning complex tasks shortly. These capacities and tools for learning give the lie to the tabula rasa. The infant isn’t patiently waiting for its parents to teach it about the physical environment, she’s busy doing that on her own.

Aside from decoding their physical world, babies must also be busy decoding their social world and learning their native language must be seen as the keystone of this effort (Flinn and Ward 2005: 27). It might be argued that the first widely (but not universally) accepted pre-wired “module” was Chomsky’s (1965) iconic Language Acquisition Device (LAD). Flinn argues that the social world is far more challenging than the physical: “The primary mental chess game was with other intelligent hominid competitors and cooperators, not with fruits, tools, prey, or snow (2005: 74; see also Geary 2005).” In short, instead of a “scientist in the crib” (title of the Gopnik, et al 2000 volume), we may have a “Machiavellian in the crib (Lancy 2010a: 97).”

However, well before language develops, studies document the child’s early understanding of social relations (Callaghan et al 2011). By three months they can distinguish faces, familiar vs unfamiliar individuals, they can detect various facial expressions and by 5 months decode them; at 7 months they discriminate between more and less emotional expressions and respond appropriately (LaFreniere 2005: 192). At 12-months, they attend to and follow their mother’s gaze (Okamoto-Barth et al 2011), beginning the “education of [the child’s] attention” (Ingold 2001: 139. At a year they can respond, appropriately, with pride or shame (Trevarthen 2005). By 18 months, infants reliably use other’s facial expressions as a guide to their own behavior, reacting appropriately to expressions showing fear, joy, or indifference (Klinnert, et al 1983). As one example of the ingenious research designs that have teased out these capacities, Hamlin, et al (2007) put on puppet shows for six- and ten-month-old infants in which a climbing puppet tries to get up a hill. This puppet is sometimes aided by a puppet from below, at other times it is thwarted by a puppet on top of the hill who drives the climber back down. In a second scene, the infant watches as the climber cozies up to either the helpful or the harmful puppet. The second, counterintuitive, case attracts far more attention from the infant than the expected alternative. Further, when the helpful and harmful puppets are set out in front of the infant, she inevitably seizes the helpful one. “…by six months of age, infants are watching how people behave toward other people, and they are developing a preference for those who are nice (Haidt 2012: 64).” Indeed, Hrdy suggests that the child’s emerging character may be shaped by impressions formed in infancy re whether she is “wanted” by her mother (2005a: 183). Based on their ability to read the quality of care likely to be available in childhood, the infant may well launch early on a career as an “artful dodger,” figuring out how to survive without benefit of parents12.
Another aspect of the infant’s need for “self-education” is that, in most societies, they will generally be nursed to sleep at the first sign of wakefulness or ignored if they are not suffering evident distress. Even in societies like the Aka and the Trobriands where infants are treated with great affection, played with and, generally, stimulated, their interests take a back seat to those of older individuals. The Yucatec Maya are not untypical. “Infants have the cultural right to influence only those events that are directly related to [their] own internal experience and well-being (Gaskins 2006: 284).”

The bias inherent in WEIRD society can distort our understanding of the infant cognition research. Drawing on studies of infant cognition that seemed to indicate that infants prefer to gaze directly at others, Hungarian scholars have argued for the primacy of parental teaching in the transmission of culture.

“Humans are adapted to spontaneously transfer (fast and efficiently p. 145) of relevant cultural knowledge to conspecifics and to fast-learn the contents of such teaching through a human-specific social learning system called ‘pedagogy.’ Pedagogical knowledge transfer is triggered by specific communicative cues (such as eye-contact, contingent reactivity, the prosodic pattern of ‘motherese’, and being addressed by one’s own name). Infants show special sensitivity to such ‘ostensive’ cues that signal the teacher’s communicative intention to manifest new and relevant knowledge about a referent object. Pedagogy offers a novel functional perspective to interpret a variety of early emerging triadic communicative interactions between adults and infants about novel objects they are jointly attending to (Gergely, et al 2007: 139).”

This argument is built on a mountain of weak assumptions. Outside the WEIRD society, this suite of parent-infant interaction patterns is rare. Mothers don’t often engage cognitively with infants, they respond contingently to only their distress cues, they may not gaze at them or engage in shared attention to novel objects (de León, 2011: 100; Lancy 2008: 161; LeVine 2004: 161). Motherese and baby-talk are not found universally (Ochs and Schieffelin 1984; Pye 1991). This is true in part because mothers are working (Meehan 2009: 389) and also, because rest and quietude are considered essential for the infant’s growth and survival (Lancy and Grove 2010: 147). In many societies, perhaps the majority, infants don’t receive a name until their viability is assured and they are considered “ripe” (Conklin and Morgan 1996: 672) or ready to “become persons” (Lancy 2013). Also, there is little evidence in the ethnographic literature that adults feel any urgency to transfer knowledge to children “fast and efficiently.” The primary examples of adults shaping the behavior of infants occurs in the acceleration of motor development and self-management skills to render the children easier to take care of. In other words, whatever “pedagogy” we might see applied to the very young is done for the benefit of caretakers, not children. And, within the cadre of infant cognition scholars, skepticism has been expressed re the Gergely et al (2004) interpretation of experimental results. In societies—likely the majority—where infants are not held en face as a rule but attached to the mother’s body or held facing away from the caretaker (e.g. Field and Widmayer 1981; Jay 1969: 99) “infants are more attuned to their caregivers’ postural positions than to their caregivers’ gaze direction (Akhtar and Gernsbacher 2008: 61).”

Brazleton published what amounts to a succinct rebuttal to Gergely’s theory thirty-five years ago. Based on field research carried out in 1966-69, he wrote:

“Differences in the stimulation provided by mother-infant interaction in the U.S. and Zinacantecan cultures are dramatic. Zinacantecan infants are not reinforced contingently for vocalizing, smiling and motor development; yet, they continue to develop, as reflected in the results of the Bayley scales… These findings suggest that the imitative mode for learning…may serve well [and] may be activated by stimuli that seem non-contingent and are not directed through the usual visual and verbal channels (Brazelton 1977: 177).”

Contra Gergely et al (2004), I think the infant cognition studies are far more congenial to a child-initiated acquisition of culture rather than an adult-directed “transfer of cultural knowledge.” Studies which reveal infants as social learners also reinforce this view. Children are born imitators and enabled to learn without instruction. Andrew Meltzoff and colleagues have demonstrated, via a series of studies, that very young infants have no difficulty imitating facial expressions and gestures (Meltzoff and Moore 1999). Older
children not only imitate adults but will “repair” a procedure the adult has done incorrectly. Toddlers can internalize observed procedures and replicate them at another place and/or a later time (Meltzoff and Williamson, 2009). Another infant imitation researcher has written: “Parents do not spend much of their time trying to engage their newborn child in imitative games (at least not before this [practice] became popularized). Instead, I believe that mothers and fathers are unaware of neonatal imitation in their daily interactions with their child (Heimann 2002: 79).”

**Accelerating Development**

In spite of assiduous efforts to observe teaching by mammals in the wild or stimulate teaching in the laboratory, it is unequivocally (using the Caro and Hauser 1992 definition) found only in meerkats (Thornton and McAuliffe 2006) and maybe Golden Lion tamarins (Rapaport 2011: 752). Teaching is virtually unknown among the non-human apes (Barnett 1968: 749), in spite of the fact that many chimp “cultures” incorporate unique food gathering traditions that can be extremely difficult to learn. For example, a chimpanzee mother living in the Tai Forest of the Ivory Coast might well teach her offspring how to use stones to open hard-shelled but extremely nutritious Panda nuts (Boesch 1991)—a phenomenon noted only twice in fifty years of observation (Thornton and Raihani 2008: 1828). Juvenile chimps learn to open nuts largely on their own and can take 14 years to become proficient.

An exception to this generalization appears to be the occasional practice among both chimp and gorilla mothers of facilitating the “…development of independent locomotion by assisting their infants’ early movements (Thornton and Raihani 2008:1828).” Essentially, they’re getting the kid off their back (or chest)! Somewhat ironically, I believe my argument re the primacy of culture acquisition is fortified by a consideration of occasions in the ethnographic record where parents (and alloparents) are observed actively teaching (by the Kruger and Tomasello 1996 definition) or what we refer to as “acceleration”(Lancy and Grove 2010: 146).

The human mother’s emancipation may be fostered by direct action to hasten the child’s independence (Super 1976: 290) and/or integration into a wider social circle. Several strategies—none common—are employed. First, the child’s motor development may be accelerated (Remorini 2011). “Kogi children are prodded and continuously encouraged to accelerate their sensory–motor development (Reichel–Dolmatoff 1976: 277).” Older infants may be placed in a bucket or hole in the ground to facilitate sitting (Keller 2007: 120). A Ugandan baby’s training begins at three months. It is bundled in a cloth and placed in a hole in the ground to support its spine “for about fifteen minutes a day, until able to sit unsupported” (Ainsworth 1967: 321). !Kung foragers accelerate sitting, standing and walking because “in the traditional mobile subsistence pattern…children who cannot walk constitute major burdens (Konner 1976: 290).” More severe measures include: the Zulu practice of placing the child on an ant’s nest to motivate it to stand and walk (Krige 1965); Gau islanders giving a 14 month old that is still not walking a chili-pepper enema (Toren 1990) and; Baka foragers encouraging toddlers to keep trudging along the forest trail by pricking them on the behind with a prickly seed-pod (Higgens 1985: 101).

Infants are held under the arms and “walked” until they can walk or at least stand on their own. “A standing baby…makes less work for the mother” (Keller 2007: 124). Anthropologists also note the practice of adults “dandling” the baby on their lap while it pushes off (Takada 2005). Activating this “stepping” reflex leads to the child walking at an earlier age (Zelazo et al. 1972)

Weaning constitutes a second area of acceleration. While allowing the child to self-wean is not uncommon, “early” —long before the child might wean itself—weaning is widely reported. Commonly, weaning is accelerated when the mother applies hot pepper to her nipples and this is reported to be quite effective (Culwick 1935; Whittemore 1989; Fouts 2004). Teasing and shaming are also commonly utilized to discourage nursing (Schiefelin 1986).

These are examples of mothers “teaching” children skills that will emerge eventually without instruction, much like we “teach” our babies to talk. Clearly the teachers are serving their own ends but the very rarity of any sort of behavioral manipulation suggest there may be an important life’s lesson embedded in this
activity, namely, that the child must embrace independence and that its opposite will be strenuously discouraged.

A third area of acceleration occurs in the social domain and is designed to protect the social standing of the family by insuring the child conforms to rules of etiquette and deference. These cases are rare examples of formal instruction or teaching, referred to more specifically as “Guided Learning” and “Designed Learning” (Kruger and Tomasello 1996: 377). In an interview study with Fijian parents, the only components of the culture that parents felt compelled to “teach” were rituals, respectful behavior and proper dress (Kline et al in press: 11). However, in these areas as well children might well learn the rules without intervention (e.g. kinship: Read 1991: 559).

- “The Rotuman child is subtly instructed in kin relations: ‘Why don’t you go outside and play with Fatiaki, he is your sasigi’ or ‘You must show respect to Samuela, he is your o’fa’ (Howard 1970: 37).”
- [Kwara’ae caregivers use]…repeating routines…telling the child what to say, line by line…Encoded in [these] routines is information on kin terms and relationships and on polite ways of conversing…important goal[s]…in a society where enoenoanga (delicacy) and aroaroanga (peacefulness) are key values…for maintaining harmony in the extended family and descent group…[the child is led through] repeating routines until at about age 5 years [they] have gained mastery over adult interactional forms. (Watson-Gegeo and Gegeo 1989: 62).”
- “[Melanesian Arunta children] “are informed repeatedly by adults who individuals are and how they should act toward them” (Williams 1983: 202).”
- “[The Javanese mother repeats “polite” kin terms over and over and corrects her child’s mistakes, urging it to observe proper etiquette. Hence] children little more than a year old…go through a polite bow and say an approximation of the high word for good-by…a prijadi (aristocrat) child of five or six already has an extensive repertoire of graceful phrases and actions (Geertz 1961:100).”

A number of societies intervene early to promote sharing (Guemple 1979; Hogbin 1969; Lutz 1983; Reed 1960). For example, Papel infants are given something desirable, such as a snack, then, immediately told to pass it on to another, particularly a sibling (Einarsdottir 2004:94). The Kwara’ae also do this and “…infants who cry or resist sharing are gently chided, teased, or laughed at, and told to share because ‘he or she is your older or younger sibling’ (Watson-Gegeo and Gegeo 1989: 61).” Among !Kung foragers, the grandmother most often takes on the task of teaching hxaro, their quite formal system of exchange and mutual support. The very young child is given beads and told which kinsmen to pass them on to (Bakeman et al 1990: 796). It is certainly the case that sharing—especially of food—is a core value in many societies and children are hastened into compliance. But a related goal for lessons of this type is to make the child as attractive as possible to alloparents or foster parents.

“Good manners constituted the most important attribute when describing a good child. For all Nso mothers, the concept of good manners includes learning to greet others and showing obedience and respect for elders…mothers spoke of vigorous training sessions in order to habituate their children to others: ‘I will not like it [when he clings to me]. I will try to at least make him to know people around me and make them close to him by forcing him to them’ (Otto and Keller in press p. 16, 17).”

As with the earlier examples of acceleration, there’s no suggestion that children won’t learn the appropriate pro-social behaviors with time (D’Andrade 1984: 97; Fehr et al 2008). There are many societies that value sharing highly without engaging in this kind of enforced compliance and training. As noted below, the success of the species has rested on voluntary compliance with social norms.
“Cultural evolution created cooperative groups. Such environments favored the evolution of a suite of new social instincts suited to life in such groups including a psychology that “expects” life to be structured by moral norms, and that is designed to learn and internalize such norms. New emotions evolved, like shame and guilt, which increase the chance that norms are followed. Individuals lacking the new social instincts more often violated prevailing norms and experienced adverse selection (Boyd and Richerson 2006: 469).”

Characteristically, in societies that explicitly promote pro-social behavior, the child is encouraged to behave “correctly” vis-à-vis the very individuals—older siblings, grandmothers and other close kin—who are also likely recruits to serve as substitute care-takers (Weisner and Gallimore 1977)\textsuperscript{14}. Willing and helpful alloparents free the mother to pursue other goals including, prominently, another pregnancy and birth (Hrdy 2005b). Children who are mobile, can control their elimination (Gottlieb 2000: 86), their emotions (Schieffelin 1986) and respond warmly to others all can be marketed as desirable charges. I am suggesting here that what appear, at first glance, as prime examples of cultural transmission, may be better read as the functional equivalent of a cradle-board (Chisholm 1983: 72) or a stroller for infants. Even if the secondary goal might be to transmit cultural knowledge, the primary goal is to “package” the child in order to reduce the burden of its care.

**Learning Through Play**

An important component of the care package is play, especially within an on-going peer group (Konner 1975: 116). As eloquently expressed by the Mandinka:

> With the arrival of the next sibling, *dénanola* (infancy) is over. “Now, play begins…and membership in a social group of peers is taken to be critical to…the forgetting of the breast to which the toddler has had free access for nearly two years or more. As one mother put it, ‘Now she must turn to play’” (Whittemore 1989:92).

With a small number of exceptions (e.g. Fajans 1997: 92), early childhood is a time for play. Parents may vary in how positively they view this activity but, at a minimum, they see its value for keeping kids busy and out of the way. Toddlers are supervised during play by explicitly delegated sib-caretakers but also, often, they are confined to playing on the “mother-ground” where they can be more casually supervised by those older (Lancy 1996). However, virtually all scholars who’ve observed children at play in village settings cite a wealth of opportunities for the acquisition of culture (Schwartzman 1978). And many would agree that play is a “form of buffered learning through which the child can make…step-by-step progress towards adult behavior (Roberts and Sutton-Smith 1962: 184).” I argued that learning through play was more efficient than learning from instruction for several reasons, not least because the latter is rather boring to the young while play is arousing and because the latter “…requires an investment by a second party, the teacher (Lancy 1980a: 482).”

**Play With Objects**

Three forms of play occur with great regularity: object play, make-believe and rule-governed play such as games. The object play of toddlers seems to be a continuation of the infant’s visual exploration of objects. Now the child can explore the properties of objects with its hands; its mouth; it can throw them; use them as hammers; toss them into puddles and so on. But, more to the point, the child will inevitably lay hands on objects that are tools. These may be rough replicas made by an older sibling (Peters 1998: 90); they may be broken or cast-off tools (Ruddle and Chesterfield 1977: 34); they may be miniatures or scaled down versions of the real thing (Hewlett et al 2011: 1174) or they may be adult tools, perhaps “borrowed” (Odden and Rochat 2004: 44).

A “tool” may be an outrigger canoe. Ifaty village in SW Madagascar depends, primarily, on marine resources and a modest-sized outrigger sailing canoe is the primary means of accessing such resources as well as marketing them. Virtually all adult males use such canoes almost daily. On the beach and in the shallows, I observed: (almost simultaneously): a. A 2-year-old splashing alone in a tide-pool, learning
about water; b. 3 boys around 5 clambering over a beached canoe, learning an agile dance from thwart to gunwale; c. two boys about 7, independently, preparing and then sailing model canoes, making appropriate adjustments to sail angle and rudder; d. 2 boys of 8 playing with an abandoned outrigger in the shallows. They climbed on, paddled it, capsized it, took turns as captain and mate; e. When two young men began to rig and prepare to launch a full-size outrigger, the two boys paddled over to watch this unfold; f. shortly after they sailed away, a boy of about 10 came paddling in to shore in a half-size canoe (Lancy 2012a: 26-7). Extrapolating from more thorough studies of children learning to use canoes, I am confident that these experiences prepare Ifaty boys to become mariners with little need for any formal instruction (Pomponio 1992: 72; Wilbert 1976: 318).

As noted by Donald (1991: 309) and others (Flinn 2005: 78) one attribute of culture that can facilitate transmission is that human artifacts, including tools, houses (Winzeler 2004: 70-1) and villages (Strathern 1988)—the “stuff” of culture—serve as a form of external storage. This point is obvious when we consider writing, books, computer programs and the like (Goody 1977) but information is also embedded in the simplest artifact (Renfrew 1988). When a Bamana child plays with the characteristic short-handled hoe (Polak 2011: 103), there are only so many ways it can be effectively grasped. If he uses it to pierce the soil—as he’s observed his siblings doing—the number of possibilities is further reduced. Neither the grasping end of the handle nor the top side of the head makes much impression on the earth compared to the bottom edge. This proposition was supported in an experiment derived from Köhler’s study of thought in apes. Children aged 18-36 months were given a range of tools of varying utility to pull a desired object within reach. Nearly all quickly eliminated the unlikely candidates and succeeded on the task (Brown 1990: 121). And, of course, children at play have an almost inexhaustible reservoir of curiosity and energy to apply to the task of decoding the information embedded in objects.

The literature is replete with instances of children transitioning from scaled versions of tools to potent, usable versions as they transition, seamlessly, from playing to working (Lancy 2012a). Perhaps the most persuasive evidence regarding the attitude of adults towards children acquiring culture through play—which without the need for adult guidance—comes from widespread reports of parents’ indifference and even encouragement of toddlers playing with machetes and other sharp and dangerous tools (Little 2008: 51).

- “I once saw Suw with the blade of a twelve-inch bush knife in his mouth and the [Kwoma] adults present paid no attention to him (Whiting 1941: 25).
- “[A Hadza] infant may grab a sharp knife, put it in its mouth, and suck on it without adults showing the least bit of concern until they need the knife again (Marlowe 2010: 198).”
- “[On Vanatinai Island] children…manipulate firebrands and sharp knives without remonstrance…one four year old girl had accidentally amputated parts of several fingers on her right hand by playing with a bush knife (Lepowsky 1987: 79).
- “Three-year-old [Matsigenka] frequently practice cutting wood and grass with machetes and knives. When three-year-old Julio wandered too close to a cliff and rolled several feet down the ravine, his mother washing clothes nearby scolded him for being careless.” (Ochs and Izquierdo 2009: 395).”

By indulging their curiosity about the environment and the things in it, parents insure that children are learning useful information without the necessity of instructing them. Of course, “…efficiency comes at [the risk of] occasional damage to or loss of one’s offspring (Lancy 2008: 161).”

Make-Believe Play

In “Becoming a blacksmith in Gbarngasukwelle,” I described Kpelle children’s amazingly detailed and faithful replication of the blacksmith’s forge in an episode of make-believe. The blacksmith’s compound was a happening place in the village, consistently attracting a crowd of enthralled spectators and gossip, young and old. Children could watch the action of the smiths and eavesdrop as village affairs were retailed. They thus built up a stock of script material that could be woven into their make-believe play.
playing the smith, in particular, had, obviously absorbed a great deal of the processes, both technical—he constructed reasonable replicas of bellows, anvil, tongs—and social—assigning the roles of novice, wives and helpers to his playmates. The terminology for tools, actions and relationships used in the “script” was also a faithful rendition (Lancy 1980b). It’s impossible to say whether this boy will actually become a blacksmith, although, in studies of apprenticeship, this evidence of early interest is sometimes cited in accounting for the decision to place a child with a master craftsperson (Lancy 2012b). This level of verisimilitude and the effort invested has been recorded in other societies such as Katz’s account of Sudanese boys carefully replicating—at great detail—their farming systems (Katz 1986: 47-8).

Ethnographic descriptions of make-believe play are rich and varied. “Dhebar boys…using camel and sheep droppings to practice herding sheep and lambs (Dyer and Choksi 2006: 170).” Goody (1992) describes a continuum from make-believe to “for real” food preparation in which older children model for younger ones, real but scaled down pots may substitute for toy pots and, if mother’s willing, edible ingredients go into the pot rather than grass. Franz Boas describes Baffin Inuit boys “play-hunting” seal using miniature harpoons fashioned by their parents (Boas 1901: 111). While the everyday work activities of adults provide a common theme, we also see the processes involved in carrying out trance-induced shamanism (Katz 1981), simulated marriage, including copulation (Gorer 1967: 310); and religious rituals (Fortes 1938: 68).

As noted above, parents are generally supportive of children’s learning through make-believe as evidenced by the wide-spread practice of supporting such play through the donation of appropriate objects and materials as props.

- “[Aka] parents place fabric slings on toddlers, sometimes placing a bottle or corncob in it to represent an infant (Hewlett et al 2011: 1175).”
- “When a small [Sisala] boy first goes to the farm with his father, he is told to sit in the shade of a tree and observe what his elders are doing. When he asks to help, someone gives him a hoe with which to play (Grindal 1972: 29).”
- “[Inuit] girls make dolls out of scraps of skin, and clothe them like real men and women. Their mothers encourage them, for it is in this way that they learn to sew and cut out patterns (Jenness 1922: 219).”
- “Little [Tlinglit] girls learned how to cook, not only from helping their mothers, but also because they were given toy pots and dishes to use (De Laguna 1965: 14).”

In contrast to WEIRD society, village children draw primarily on scenes from their direct experience (Power 2000: 272). Unlike bourgeoisie children, they don’t have access to manufactured toys, storybooks, videos and other sources to launch them into more inventive fantasies (Gaskins, in press). Similarly, where WEIRD parents engage with and encourage their child’s fantasy play (Lancy 2008; 225-8; Lancy and Grove 2011b: 496), villagers do not engage directly in children’s play (Paradise 1996: 382)17.

In order for children to take the initiative and get a head start on learning their culture it must be an open book. The public nature of most adult activity facilitates children’s engagement at a safe distance where they are not interfering (Lancy 2008: 155-6). Anthropologists often note adult awareness and sympathy towards children’s mimicry. “When adults are asked about children’s mimetic play they reply: ‘That is how they learn’” (Fortes 1938: 23). Biyaka parents [say] the primary duty of young play is to play. In fact [if] children do not play, they will fail to learn anything (Neuwelt-Truntzer 1981: 106).” And this presumption on the part of both anthropologists and parents was supported in a series of empirical tests carried out among several groups in Botswana (Bock 2001, 2004; Bock and Johnson 2004).

The idea that make-believe play may have an important role in the child’s acquisition of culture (Barber calls it “vocational kindergarten” 1994: 85) has also received theoretical support. The importance of children acquiring useful skills from those older and more expert via imitation is widely acknowledged. “…we are such a thorough-going cultural species that it pays children, as a kind of default strategy, to copy willy-nilly much of the behavioral repertoire they see enacted before them (Hopper, et al 2012: 105).”
Donald argues that *memesis* adds a representational dimension to imitation…[and] mimetic skill results in the sharing of knowledge, without every member of a group having to reinvent that knowledge (Donald 1991: 169, 173).” And, of course, among humans, the quintessential display of mimesis occurs in make-believe play (Harris 1998). Children’s make-believe may closely replicate the scenes of village life but does not do so slavishly. There is invention in the roles assigned, in the props used, in the script followed but, importantly, children may “twist” the tale. That is, we do have a limited number of examples of children behaving like young social critics in their sometimes ribald and irreverent portrayals (Goldman 1998; Gregor 1988: 113; Hogbin 1970: 138). This certainly suggests a very rich interplay between what children see, how they represent that information and their reenactments.

Gamesmanship

Games are also ubiquitous cross-culturally but demonstrate, in their fundamental structure, great variation. Anthropologists have long speculated that core cultural values are transmitted to the young through games (Roberts, Art and Bush 1959). Within-culture studies illustrate this variability. Marquesan (but true broadly in Polynesia) children’s awareness of social rank leads them to *avoid* play that requires leaders or lengthy negotiation of rules or roles. Children who attempt to assert their authority are rejected in favor of consensus decisions (Martini 1994: 80). In small-scale, band societies, the play group, necessarily of mixed ages, must allow all players, no matter how inept, to participate so the playing field is always level, so to speak and supports the prevailing egalitarian ethos (Lancy 1984). Among the Tangu of Papua New Guinea, children in teams play a game called *taketak*. *Taketak* is designed—in keeping with local values—to end in a tie (Burridge 1957). Aymara boys in the Andes play marbles (girls play jacks) while herding their flocks far from the village. Smith’s (2010) careful description of these games completes his in-depth analyses of speech and social interaction patterns during play. He illuminates the importance of *qhinch* (bad luck) in marbles. By confronting and enduring *qhinch* in the game, boys successfully fend off accusations of being feminine or homosexual. By implication, a boy who keeps his cool when something goes wrong (a pebble in the path deflecting his shot, a toddler trampling through the play area) demonstrates “*chacha*-ness” or “toughness” which represent masculinity.

In the Brazilian rainforest where, until recently, intergroup warfare was endemic, Xavante boys’ games/sports extract and ritualize many aspects of fighting.

“[In the game] *Jawari*, one of the participants throws his spear towards a fence made of poles…other players are lined up behind the fence and are not allowed to leave. As the “*pitcher*” knocks the poles down, the other players become easy targets and must then divert the spears, without moving their feet (Gosso et al. 2005: 232).”

In contrast, we have Semai farming villages in Malaysia where children rarely see aggression.

“two children…put their hands on each other’s shoulders and wrestle, giggling, but never quite knocking each other over . . . [and] pairs of children in the 2 to 12-year age range flail at each other with sticks, but stop just before hitting each other” (Fry 2005: 68).”

One prominent perspective on games has been that they provide opportunities to contest one’s rank in the dominance hierarchy (Weisfeld 1999: 55). For example, “Among [Pashtu] nomad boys…whenever a new household pitched their tent…boy(s) of the new household were invited to wrestle, and very soon, everybody knew the position of the new boy(s) in the rank order of the peer group (Casimir 2010: 50).” However, I believe that a broader, more general utility of games lies in what I call “gamesmanship” (Lancy 2008: 201-5; Lancy and Grove 2011b: 491-2). If the growth of the human brain has been driven by the need to adapt and survive within fairly large social groups, successful individuals will be those who act Machiavellian: maintaining social ties to (and benefitting from) the group while also taking advantage of group members to gain disproportionate resources including mating opportunities.

“The essence of the Machiavellian intelligence hypothesis is that intelligence evolved in social circumstances. Individuals would be favored who were able to use and exploit others in their social group, without causing the disruption and potential group fission liable to result from naked
aggression. Their manipulations might as easily involve co-operation as conflict, [and] sharing as hoarding (Byrne 1995: 196).”

Extrapolating from this argument, if children have social brains and, further, that brains need to be exercised to fully develop, games would be the perfect mental gym. Comparing across 15 species of primates, observers found a statistically reliable relationship between cerebellum size and time devoted to social play (Lewis and Barton 2004; see also Fisher 1992). Still, humans have a more pronounced predilection for gaming than other primates.

“[18-24 month-old] children…engaged more spontaneously in all of the tasks, most especially in the social games whose primary goal was the interaction itself, whereas the chimpanzees had little interest in social games without a concrete goal. Related to this…children seemed to form a conception of how the game ‘ought’ to be played…children were so engaged socially that sometimes they even turned the tasks aimed at retrieving an object into a game…when the adult partner ceased participating in the middle of the activity, the human children quite often attempted to reengage him (Tomasello and Carpenter, 2005: 659-60).”

The key elements of the game experience are rule-governed play, flexibility in applying the rules, and an absence of adult umpires. That is, children must be free to construct successful gaming sessions without adult guidance or interference (in contrast to contemporary Little League baseball: Fine 1987). In this way rules can be bent, for example, to lower the threshold for participation by younger or less able players, or renegotiated so that play can continue even if one player wins consistently. A common strategy is to “self-handicap” (Boulton and Smith 1992: 436). Plentiful opportunities of this sort will nurture children’s gamesmanship or the ability to negotiate the complex social world faced by adults—Polynesia being an apparent exception to a more general pattern.

**Learning in the Peer Group**

In the previous section I noted the case of a Mandinka mother shooing her toddler away to join the playgroup. This pattern of behavior is so common, it has a name: “toddler rejection” (Weisner and Gallimore 1977:176). Obviously, it is a complement to weaning in that, where infants are weaned relatively early, their displeasure can lead to an escalating battle where others—grandmothers and older siblings particularly—come to the mother’s aid (Leavitt 1989: 147). Native Hawaiian mothers closely attend their infants but, following the birth of a new child, the toddler’s “…overtures are increasingly punished and he is forced to rely on older children (Gallimore, et al 1969: 393).”

Under ideal circumstances, the rejected toddler will be afforded opportunities to overcome her feeling of rejection. The playgroup serves as a distraction from one’s personal tragedies. Second, the toddler may well receive more than adequate attention and comfort from mother substitutes (Barnett 1979: 6; Casimir 2010: 24), particularly older sisters. Across the primate order, juvenile females show great interest in infants (Hrdy 1999: 157) and it not hard to sustain an argument that their supervised interaction with younger siblings prepares them for the task of motherhood (Fairbanks 1990; Riesman 1992: 111). The weanling’s need for mothering corresponds to the allomother’s need to mother. Another benefit for the toddler is that it is exposed to new opportunities for learning.

In the process of becoming initiated into the peer group, the toddler must shape up or suffer the consequences. It must “fit in.” Teasing, being made the brunt of pranks and, other forms of correction are to be expected (Broch 1990: 81) except where parents’ exercise close oversight (Gaskins et al 2007). This is a familiar scene to those studying village childhood:

“When [Hadza] children are 1 to 3 years of age, they often throw tantrums, during which they may pick up a branch and repeatedly whack people over the head. The parents and other adults merely fend off the blows by covering their heads, laughing all the time. They do not even take the stick away. When the child hits another child who is a little older, however, that child often grabs the stick and hits the little one back. This is the way young children learn they cannot get their way;
older children train them. Thus, it is not necessary for adults to discipline them (Marlowe 2010: 197).”

On the positive side, children consigned to the company of older siblings and their friends have joined a cadre of excellent role models.

- “Little [Bengali] girls accompany older girls in gathering, and they gradually learn the needed skills (Rohner and Chaki-Sircar 1988: 33).”

- “Martu…adults recall a childhood spent foraging with other children to keep themselves fed…Women hunt on foot with digging stick, and they often remark that children are too slow to keep pace while they are searching and tracking. (Bird D. W. and Bird, R. B. 2005: 135).”

- “[By imitating their sib-caretakers Marquesan] toddlers learn to run, feed and dress themselves, go outside to urinate and defecate, and help with household chores (Martini and Kirkpatrick 1992: 124).”

- “Fore children are expected to focus their attention as learners on older children, not adults. “If, for example, an older boy climbed a vine, a younger would tend to copy his movements in an attempt to do likewise (Sorenson 1976: 198).”

As mentioned earlier, children are placed under the care of older siblings who introduce them into the neighborhood playgroup (e.g. “Mayan toddlers learn primarily by observing and interacting with their sibling caretakers” cf. Maynard 2002: 978). Excepting the Aka and other pygmy groups (Hewlett et al, 2011: 1172), children are far more likely to be in the company of peers than parents. Weisner argues that “children care for other children [under a mother’s or other adults’ management] within indirect chains of support” (1996: 308, emphasis added; see also Rogoff 1981: 31). That is toddlers are managed by slightly older siblings who are, in turn, guided by adolescents while adults serve as rather distant “foremen” for the activity, concentrating, primarily, on their own more productive or profitable activity. This phenomenon is well illustrated in Polak’s study of Bamana families engaged in bean cultivation (2003; 2011).

Siblings can be more patient and sympathetic teachers than adults (Maynard and Tovote 2010). A contrasting pair of anecdotes is illustrative. Raum observed a Chaga mother and her little daughter cutting grass to take home to feed the cattle. Tying the stalks into a bundle is difficult but the “…mother refuses requests for help by saying: 'Haven't you got hands like me?' (1940: 199).” Now consider a vignette of Pushtun children gathering and bundling shrubs (buti) to bring home.

Khodaydad, aged about ten years, showed and explained to his younger brother Walidad (ages about two and a half years) how to put buti together: He made up a small pile while Walidad squatted next to him and watched. Tying them together, he explained how to do it. Then he untied the bundle and bound it up again to show how it was done. Walidad then wanted to carry it home. His elder brother helped him shoulder it and his sister guided him home, and it was obvious that little Walidad was very proud of being able to accomplish the work (Casimir 2010: 54).

**What Motivates Culture Acquisition?**

Walidad’s pride in his accomplishment is consistent with an early and enduring theory of child development. White proposed that, from birth, humans are motivated to act on the environment in every way open to them in order to develop competence. Humans find such mastery rewarding and experience a “feeling of efficacy” (White 1959: 329). According to Weisfeld and Linkey this drive transitions at age 3 or 4 into a more general motive to “strive for success” (1985: 110). They argue that even the young are able to translate practical accomplishments, such as successful foraging or carrying home some firewood, into social capital. A great deal of what one needs to master can be learned through observing and emulating conspecifics.
Humans share with most primates the ability to learn from others even when the models aren’t intending to demonstrate or instruct. It is patently less costly for an individual to observe and attempt to replicate the proficient behavior of an expert, rather than operate in a social vacuum or “learn individually” (Richerson and Boyd 1992: 70). But, aside from offering a pathway to competence, imitation is also the highest form of flattery (Henrich and Gil-White 2001: 167). The child who tracks and attempts to replicate the purposeful behavior of others is, inevitably, appreciated by them and by others.

- “[Murik] children’s initial efforts at subsistence work are recognized by giving them food. Such recognition is extended by enthusiastic praise and by calling other people’s attention to a child’s effort (Barlow 2001: 86).”

- “The acquisition of any new skill by a young [Netsilik] is always celebrated. Whenever a girl catches her first salmon or sews her first pair of socks, and whenever a young boy kills his first goose or traps his first fox, the community is given notice of the growing competence of the child (Balikci 1970: 45).”

- ”[A Tallensi father expresses a common sentiment] Whatever I do (my son) also sits and listens. Will he not get to know it thus? (Fortes 1970, 22).”

Lang argues that culture is sustained over time because “humans tend to conform (1998: 8)” We pay attention to and emulate those who can do things we can’t and with whom we have ties of emotion and propinquity. Primatologist de Waal explains:

“…primate social learning stems from conformism—an urge to belong and fit in. To give this process a name and emphasize that it favors certain social models, such as mothers and peers, I will use the acronym BIOL, which stands for Bonding- and Identification-based Observational Learning. Instead of being dependent on tangible benefits, such as food, BIOL is a form of learning born out of the desire to be like others (de Waal 2001: 230).”

Reviewing these various “drives” across a spectrum from psychology to primatology might seem like the proverbial five blind men describing an elephant. Summing up, it seems to me that children learning their culture are demonstrating at least two powerful drives, one to acquire the skills to survive and, two to affiliate securely to a group. It is likely that, in evolutionary terms, the latter drive appeared more recently (Boyd and Richerson 2006: 469). Happily for the child, the domestic world or culture is usually organized in a way that facilitates these goals. We now consider cases where the twin drives are quite evident as children attempt to “fit in.”

**Fitting in to the Family Circle**

In a pattern that must be very old, humans conduct their business in a public setting with multiple participants and onlookers including, especially, children. Numerous studies of the stone scatter from sites where stone tool production occurred show incomplete tools and debris consistent with a mixture of skill levels, including beginners (Dugstad 2008: 70; Shennan and Steele 1999: 375). Iban children observe their parents working in the fields from an early age and “…both boys and girls begin to join in tasks which lie within their powers, and soon come to make valuable contributions to the working of the family farm (Freeman 1970: 231-2).” Ingold defines the essence of this dynamic as the “education of attention” (2001: 139). This idea applies to most primates as juveniles remain in proximity to adults as they forage: “drawing the juvenile’s attention to a specific object or location in the environment that it otherwise would not have noticed (Tomasello et al 1993: 496).” Ingold continues:

“In the passage of human generations, each one contributes to the knowledgeability of the next not by handing down a corpus of disembodied, context-free information, but by setting up, through their activities, the environmental contexts within which successors develop their own…skills (Ingold 2001: 142).”
Here follows a small sample of cases illustrating the atmosphere of one such environment—the family circle.

- “[Matsigenka] Infants and young children are embedded in the middle of quotidian activities where they are positioned to quietly observe and learn what others are doing.” (Ochs and Izquierdo 2009: 395).

- “At the age of three he chooses his own place at the [Wolof] family meal, and here he is encouraged to acquire social norms only gradually (Zempleni-Rabain 1973: 222).”

- “[Tlingit] children learned a great deal by listening to the older people talk, especially when the old men gathered in the sweathouse to bathe and chat. Then the children might sit outside and listen to their stories (De Laguna 1965: 15).”

- “[Vlach] children…[of] all ages are tolerated on almost all family occasions and no topic of discussion is considered unfit for their ears. They hear their elders interminably discussing and criticizing the behaviour of adults and children in other unrelated families.” (Campbell 1964: 157)

- “[Biyaka] children are almost consistently in the presence of at least one adult and have therefore almost ubiquitous opportunity for observational learning of adult subsistence behaviors. Furthermore, ‘watching,’ a behavior that is necessarily the commencing act of any visual observational learning, was a very high-frequency activity across all age groups (Neuwelt-Truntzer 1981: 109).”

- “[Ganda] children over two years of age…sit politely, with their feet tucked under them out of sight, listening to the talk of their elders and speaking only when spoken to. If any young child becomes rambunctious and draws attention to himself, he is told to sit properly [and] be silent (Ainsworth 1967, 12).”

- “[Warm Springs Indian children] are present at many adult interactions as silent but attentive observers (Phillips 1972: 385).”

- “No one would inhibit his conversation or actions because children are present, or withhold information upon which adequate social adjustment depends from a child because it is thought to be too young. Tallensi, therefore are not surprised at the comprehensive and accurate sexual knowledge of a 6-year-old (Fortes 1938: 37).”

The child does not remain as a passive observer for long. As a “legitimate peripheral participant” (Lave and Wenger 1991) she will “pitch in” and help with ongoing activity such as food preparation, crafts, and housework as soon as she can do so without damaging resources or interfering with those who are more productive (Krause 1985: 95). Children can expect some attention from family members as long as they are focused on the task at hand (Weisner 1989: 78). The general philosophy is: “An individual does not learn from another but through another (Schönpflug 2009: 466).”

“[Mazahua] children participate in…family…activities [and] conversation and questions…usually occur for the sake of sharing necessary information…Talk supports and is integral to the endeavor at hand rather than becoming the focus of a lesson (Paradise and Rogoff 2009: 118).”

Indeed, were the Mazahua children to ask questions it would be considered immature and rude (Paradise and Rogoff 2009: 121) an attitude widely characteristic of traditional societies (Lancy and Grove 2010: 153). Contrast this with WEIRD society where a mother may totally restructure a domestic task, inviting the son’s participation, so that she can construct a lesson for him (Gauvain 2001: 3).
One of the better-described areas of childhood is children’s work. I think that one reason for this is that anthropologists are often shocked by the sight of very young children carrying out vital work for the family, Margaret Mead offered one of the earliest descriptions of a phenomenon often recorded since.

“[On Samoa] the tiniest little staggerer has tasks to perform—to carry water, to borrow fire brands, to fetch leaves to stuff the pig….learning to run errands tactfully is one of the first lessons of childhood…(Mead 1928: 633).”

In spite of her use of the term “lessons,” these undertakings are typically initiated by the child, e.g. the “assumption of work and responsibility comes about gradually, and largely on the child’s own initiative (Edel 1958: 178).” “[Mayan children] are eager to participate in the economic activities of the household (Rogoff 1981: 31).” Such (frequent) claims were supported by a study that simulated a home environment where mothers and fathers were carrying out various tasks with young children in attendance (and more recently replicated: Warneken and Tomasello 2006: 1301). Children as young as 18 months of age:

“….spontaneously and promptly assisted the adults in a majority of the tasks they performed. Furthermore, the children accompanied their assistance by relevant verbalizations and by evidence that they knew the goals of the tasks, even adding appropriate behaviors not modeled by the adults (Rheingold 1982: 114).”

An illustrative case from the study of Hadza foragers:

“Five-year-olds fetch anything adults want. Sometimes they fetch things they see the adult will need before they are even asked. For example, when seeing a man getting out his pipe and tobacco, a child may grab an ember from the fire and take it to the man to light the pipe. They never complain. In fact, they seem to enjoy being helpful (Marlowe 2010: 198)23.”

The “family circle” can be set in motion as family clusters go on foraging expeditions. Among the Cree,

We might say that the extraordinary capacity for social learning of the very young is exercised to its fullest extent in the family circle. Children can create a kind of mental Rolodex of the behavior and needs of other family members. They can create a blue-print of activities within the domestic sphere, fitting themselves into the flow of events, and attempting to help out or mimic the actions of those older “as if” they were helping out.

From Making Nice to Making a Contribution

Ideally, the child’s desire to be helpful and their level of competence—like gear wheels—mesh with the needs of the family. Two areas where this intricate process is readily observed—even among the very young—are in the relationship between a sib-caretaker and her baby sister or brother and in the task of errand–running.

A survey of the Human Relations Area Files (HRAF) archive found that, in hundreds of accounts of childcare, 40% of infants and 80% of toddlers were cared for primarily by someone other than their mother, most commonly, older sisters (Weisner and Gallimore 1977: 170). A 3 year old will seek to hold her newborn brother and be permitted to do so, usually under supervision, for short periods (Ottenberg 1968: 80). As the two grow older, she will become responsible for longer periods of care and meet a wider array of needs including dressing, feeding, delousing and, above all, entertaining (Rindstedt and Aronsson 2003: 8). At 7, we might find her caring for several children, out of sight of their mother, perhaps taking them to a pond to bath them and clean off any urine or excrement (Rohner and Chaki-Sircar 1988: 70-1). At 9 she could be simultaneously tending her charges and foraging for edibles that she’ll share with them, thereby meeting a significant portion of her own and their caloric needs (Crittenden and Marlow 2010). Years later, she may be “proudly possessive of the achievements and exploits of younger brothers and sisters who had been [her] special responsibility (Elmendorf 1976: 94).” Note, however, that, among more mobile foraging populations such as the !Kung and Aka, expectations for infant care by older siblings is lowered (!Konner
2012, this volume). These expectations rise as the foragers become more sedentary and shift to agriculture (Baka pygmies-Hirasawa, 2005; !Kung-Draper and Cashdan 1988).

The first chore for boys will probably be errand-running. “Between eighteen and thirty months of age…the Guara child begins to act independently as a messenger …Carrying water and firewood are the first daily chores regularly performed (Ruddle and Chesterfield 1977:31).” Fetching and carrying is inherently staged or laddered. “Very young children (age 3) may start with one or two sticks of wood, or yams in a carry net, but by age 8 they are carrying firewood, water, produce and messages (Zeller 1987: 544).” A barely-mobile toddler may be asked to carry a cup from its mother across an evening family circle to its father. The same toddler will tag along as an older sibling makes a longer delivery excursion, in effect, serving as an understudy. Errands can vary by length and territory (Nerlove and Roberts 1974: 276), between close kin and strangers, can involve loads of varying size and fragility, can include an exchange of some kind including a market transaction. Adults match their assignments to the child’s level of skill and size and each new assignment ratifies (and motivates) the child’s growing competence (Lancy 1996: 146).

A third case illustrating the graded nature of the chore curriculum comes from Polak’s meticulous description and analysis of the education of Bamana bean farmers. Note that at every age level mentioned in the quotation, the “task” is somewhat different. Just as an array of siblings going off to fetch water from the stream are given appropriately-sized vessels (Lancy 1996: 144), bean farming can be partitioned to match the skill and endurance levels of the worker-learners.

“[At harvest] three-year-old Daole…begins to pluck beans from the tendrils. After he has filled the lid with a handful of beans, his interest fades. [He] carelessly leaves the lid with the beans lying on the ground and goes looking for some other occupation…Five year old Suma`ela…looks out for a corner not yet harvested and picks as many beans as will fill his calabash…[he] keeps on doing this for more than one and a half hours…Eleven year old Fase has been busy harvesting beans…since morning. He works as fast as…his father and grown-up brother…and only takes a rest when they [do]…Fase is a fully competent…with regard to harvesting beans. He even takes on the role of supervising his younger brothers and checks their performance from time to time (Polak 2003: 130-2).”

We learn from her work that children are given worn hoes to practice with and, while hoeing, they are gently nudged by older siblings to work an area not already cultivated to avoid damaging the work of others (Polak 2011: 104-5).

Hunting can be more challenging (MacDonald 2007: 391) than bean farming but the acquisition process is similar. Older siblings again serve as models, typically a boy isn’t permitted to accompany adults on the hunt until he is in his teens and fairly proficient (Peters 1998: 90–1; Puri 2005: 233-4). There is graduated movement (Goodwin and Goodwin 1942: 475) from toy to child-scaled, to full-size weapons or, from sling-shot to spear to blow-gun. Boys roam playfully but purposefully through the forest with peers gradually learning to read the “signs…of bent leaves, twigs, and shrubs that the Ache call a kuere...[enabling them to undertake] hunting forays without getting lost (Hill and Hurtado 1996: 223).” As the nascent hunter gets more proficient and more serious (and less playful) his catch may range from grasshoppers to birds to rodents to a “real” kill (Turnbull 1965: 257) that can be proudly shared with the family. But full proficiency may not occur until the hunter is in his third decade.

The last case in this section focuses on the acquisition of craft skill (Lancy 2012b). It features boys who will be weavers but an entirely parallel case could be made for girls becoming potters (Bowser and Patton 2008; Wallaert 2001).

“Infants and young children play by the loom. Little [Daboya] boys are incorporated into the weaving fellowship by being asked to run simple errands, and through the toy looms their older brothers make for them…Boys of this age delight in constructing toy looms from sticks and bits of thread the men save for them, and weaving lamp wicks. Occasionally boys will make a more substantial loom and spend hours trying to warp it and weave ‘real cloth.’ …When a boy is judged ready to settle down and work on a regular basis, he is assigned to, or chooses, a weaver to work
with and learn from... Apprentices, or bobbin boys, divide their time between weaving and doing chores like laying warp and winding bobbins...Gradually he spends more of his time weaving, and carries out more of the stages in the production of the cloth he weaves, until his master can hand him a basket of sticks of thread and expect him to be fully responsible for producing the finished cloth (Goody 1982: 70-1).”

There are, of course, exceptional circumstances when there’s a stage missing. That is, the step up from one level of skill to the next is too great for the child to manage and an adult will intervene to show the child how to circumvent this roadblock. For example, Bamana boys master the tasks of farming largely on their own but one distinct challenge occurs in planting millet seeds. They must, in one fluid motion, open a hole in the soil with their hoe, tilt a gourd filled with seed attached to their wrist just enough to deposit 2-3 seeds in the hole and, then, cover up the hole again. Adults explicitly demonstrate this process for boys who have been unsuccessful (Polak 2011: 85).

The Economic Value of Children’s Work

Another issue that concerns us is child’s level of productivity, as a function of age. As the child gets older it is gaining both knowledge and strength. Bock carried out systematic measurements of production as a function of strength and skill in several groups in Botswana. For some tasks, experience is the best predictor of proficiency; for others, strength is critical. Processing baobab fruits requires neither great strength nor skill and can be undertaken by four-year-olds. Mongongo nut processing requires both, and Bock finds that the most proficient women are twenty-five to fifty-five years old (Bock 2002). Researchers have also looked at this question among Tsimane hunters. What they found was that strength related proficiency (accuracy and distance in archery) peaked several years before experience related skill reached its peak (Gurven, et al 2006).

A related factor is demand. How productive the child is will depend as well on the expectations of family for assistance. Kramer compared gross levels of productivity as a function of age among Mayan farming children and their counterparts in two South American foraging groups. The Mayan children reached an equilibrium of producing as much as they consumed by 13, whereas foraging children took 5 to 10 years longer (Kramer 2005: 135). However, these differences may in part be due to expectations of family members. Hewlett and colleagues’ (2011) long-term study of neighboring Ituri groups—Aka foragers and Ngandu farmers—illustrates this well. Ngandu children are expected to contribute to the domestic economy from an early age and they are able to do this, in part, because the skills they will need are readily learned by the onset of adolescence. Ngandu subsistence relies heavily on children’s desire to be compliant, less on their desire to achieve. This pattern is very typical in farming and herding communities (Hames and Draper 2004: 334). By contrast, the Aka—like the !Kung but unlike another pygmy band, the Biyaka (Neuwelt-Truntzer 1981: 138, 147)—do not expect children to contribute greatly to the domestic economy and do not resent their relative freedom. In a word, they are indulgent. Nevertheless, by age ten, both boys and girls have mastered a large repertoire of, sometimes complex, foraging skills. “If need be...Aka 10-year-olds have the skills to make a living in the forest (Hewlett and Cavalli-Sforza 1986: 930).” Learning to make a living for Aka children seems to be less driven by the need to conform to family requirements than by the desire to achieve competence.

This gap between the age at which children achieve adequate levels of competence in the local subsistence system and, separately, the age at which they achieve significant production levels has theoretical significance. Many evolutionary theorists consider the prolonged period of semi-dependency and the long-delayed onset of puberty and mating as providing a sheltered learning environment. They reason that the human adaptive model requires the gradual acquisition of an entire array of increasingly more challenging skills (Kaplan et al 2000: 156). However, there have been a rapidly accumulating series of studies (Lancy 2008: 245-50)—of child foragers in particular—that show what we might call precocity in learning to forage. These studies include: young Martu children hunt (and survive on) goanna lizards (Bird and Bird 2005); Hadza 4-year-olds gather (and eat) quantities of baobab fruits (Blurton-Jones et al 1997); 6-year-old reef foragers on Mer Island are fully proficient (D. Bird and R. Bird 2002); Zapotec children have an excellent command of ethnobotany (Hunn 2002); Ache female foragers match adult women’s foraging returns by the age of 10 to 12 (Hill and Hurtado 1996: 223); Chewong foragers don’t teach anything to their
children because there is no need, they readily master the necessary skills to make a living by the age of marriage (Howell 1988: 160); Samoan 10-year-olds fish successfully using a variety of methods (Odden and Rochat 2004: 45) and; Kutenai boys at 10 are able to bring down a bison calf with bow and arrow (Turney-High 1978: 117). These studies cast considerable doubt on the necessity of a lengthened childhood to learn subsistence skills (Blurton-Jones and Marlowe 2002: 199).

I believe that the solution to this apparent paradox lies in the elastic nature of human ontogeny. It is very clear from the literature, as just discussed, that children can acquire subsistence skills quite early. It is also the case that their application of those skills in a significant way to support themselves and close kin may occur early or very late in childhood (Kramer and Greaves 2011: 308). Under adverse circumstances: such as the death of a parent (Polak 2011: 142); a drastic change in the food supply; the loss of males from the community to distant opportunities like trade, warfare, herding and hunting or fishing; unstable or unsupportive family or; the arrival of a new baby, children “can ratchet up their productivity quickly and execute efficiently those skills they’ve been perfecting through playful work (Lancy 2008: 250).” Kin selection theory might also suggest that the child will increase production in order to aid and maintain his/her family. The family has nurtured the child in the past and may well aid his/her survival and reproductive efforts in the future. Piel has documented an extraordinary example of this in the behavior of rural and urban Japanese children during and after WWII. They taught themselves and their younger siblings how to forage for foodstuffs (acorns, nuts, aquatic plants, shellfish, etc) to provision their families and forestall starvation (Piel 2012). An alternative to provisioning self and kin may be to accelerate the process of mating and family formation, reproducing early and often (Belsky, et al 1991: 507).” Lastly, it is likely that Pleistocene foragers enjoyed much better nutrition than contemporary hunter-gathers. The juvenile period may have been shorter (Blurton-Jones 2006: 252), hence children would have had a greater incentive to capitalize on their skill set at an earlier age.

**Underlying Processes in Skill Acquisition**

Children take advantage of opportunities to observe and emulate the more competent in order to achieve competence themselves and to be helpful and accepted. They bring innate gifts to this process, as discussed earlier. At around 4-6 years-of-age children begin to display something called Theory of Mind (TOM) (Wellman et al 2001). TOM allows an individual to get inside the head of another person. The child can now read other’s intentions and can construct the other’s trajectory and goals. The terms “intersubjectivity” and “perspective taking” are also applied in discussions of this phenomenon (Tomasello et al 1993).

Anthropologists have noted such a concept in a number of parental ethnotheories. The child has reached a point in their development where they start to “get noticed” (Lancy and Grove 2011a) due to their evident intelligence or common sense, referred to, among the Kipsigis, as *ng‘omnotet; Ayoreo= aiyeketaotiguei; Sisala= wijima and; Ifaluk Island= repiy to name a few (Lancy 2012a: 34). Many of the qualities that are attached to folk definitions of sense or intelligence suggest that the child is much better at perspective taking and can better anticipate another’s intentions and desires. They contribute appropriately without bidding or guidance (Lancy 2008: 168).

Another innate capacity, parsing, discussed earlier, may be related to TOM. It seems very important in this context as it allows children to “see below the surface’ of behavior, and detect the logical organization that produced it” (Byrne 2006: 494).” As the challenge level of the chore curriculum increases, this ability must be activated in the absence of explicit lessons from a teacher, printed instructions or a How-To video.

One of the key mental tools according to most theories of cognition is a schema or plan in one’s mind that guides action (Mandler 1984). But anthropologist Tim Ingold rejects the idea. He sees the skilled performance of a task “not as the discharge of representations in the mind but as an achievement of the whole person in an environment” (Ingold 2001: 135; see also Aunger 2000: 448; Hutchins 2006: 380). This view was supported in an unusual study in which positron emission tomography was conducted while six novices learned to make Oldowan tools. The results failed to show brain activity in regions associated with higher order thinking skills such as working memory. Other areas associated with visual control of action and perception of objects were activated (Stout and Chaminade 2007). Studies of this question in the
field are scarce but one relevant study was carried out with Siberian reindeer herders who must learn wayfinding. In a study of expert wayfinders they appeared to rely on both a mental map analogous to a bird’s eye view of the territory as well as on the end product of years of interaction between the wayfinder and a specific migration route. And this latter knowledge cannot be extracted from the action of migration and its stream of images and experiences. The herder’s knowledge is almost impossible to convey to another (Istomin and Dwyer 2009), unlike, for example, ocean navigation in the Carolines (Gladwin 1970).

The wayfinder’s ability to take in and process information from the environment suggests an unlearned capacity for what Gaskins and Paradise call “open attention” which can be deployed to good effect in social settings as well as in the natural environment (2010: 104). Hilger was impressed by Araucanian children’s keen eyesight, hearing and powers of observation (1957: 50). I was similarly impressed by Kpelle children’s ability to parse the environment:

“I was led into the bush on a mushroom-hunting expedition by a group of children barely out of toddler-hood. The atmosphere was entirely playful, yet the children were able to locate and gather [edible] mushrooms that were completely invisible to me (Lancy 1996: 156).”

Gaskins and Paradise describe open attention as wide-angled and abiding. The first means that the individual is aware of and attends to a great deal of the environment at one time—rather than attending to only one stimulus such as the teacher. The second means that attention is sustained rather than episodic or short-term (2010: 99-100). They cite a study, which found that children and adults from the WEIRD society displayed short, fleeting attention (think of a teenager on the living room floor doing homework with the TV on and listening to music through ear-phones) whereas Mayan mothers and children displayed open attention (Chavajay and Rogoff 1999; see also Sliva, et al 2011). It may well be that open attention is subject to a critical period during which, if it is not exercised (because, for example, WEIRD parents spend so much time focusing the infant/child’s attention on them as a teacher, on educational toys and the like), it will be extinguished.

Models for Culture Learning

I would like to spend a little time on the models from whom children learn their culture. The most likely models for the child are the individuals with whom they live (Euler, et al 2009: 85), parents, in particular (Cavalli-Sforza and Feldman 1981). From the ethnographic record we learn that girls are far more likely to attach to their mothers as “apprentices” than boys are to their fathers. Among the reasons for this gender bias is that tasks tend to be gender specific, indeed any blurring of this boundary in childhood is discouraged (Lancy 2012a: 33). Girls—because of their service as “helpers-at-the-nest” (Crognier and Hilali 2001)—remain firmly in their mother’s orbit as they mature whereas boys are usually free to roam more widely (Lancy and Grove 2011a: 288). Fathers distance themselves from children, generally, to preserve their dignity and they are often absent from the community or otherwise preoccupied. Even in cases where the father has a skill set that he’d like to see transmitted to his son, he will find another male for his son to apprentice to because he can’t bear to administer the necessary punishment that learning a trade requires (Ames 1973: 153; Lancy 2012 b: ??). But, as the child grows older and moves out into the community at large, new role models become available (Aunger 2000: 471; Tehrani and Collard 2009). The child may attend to a large sample of possible models and follow the crowd as a conformist or attend to a model with high status or popularity (Henrich 2001: 997; Flynn and Whiten 2012: 922).

As Henrich points out, however, these biases in attention are not accompanied by careful cost-benefit analysis or the consideration of alternate and better procedures (2001: 1008).

“To get the benefits of social learning, humans have to be credulous…accepting the ways that they observe in their society as sensible and proper, and such credulity open up human minds to the spread of maladaptive beliefs (Boyd and Richerson 2006: 468).”

A classic example of a maladaptive belief that is faithfully passed on through the generations is the Datoga (but common elsewhere) practice of delaying the onset of breast-feeding by 2-3 days believing that the colostrum is “too heavy” for the child to digest (Sellen 1998: 486). Aunger (1994) studied the effect of food
taboos in four societies in the Ituri forest and found a significant decrement in their nutrition as a result. Ironically, in at least one of the 4, Auenger describes one of the few cases of adults actively teaching their offspring—what foods to avoid (2000: 453). Edgerton (1992) devotes an entire book to cataloging persistent practices that are harmful or counter-productive and perhaps the most robust category encompasses practices related to child-birth and child and maternal health. During an epidemic or when a child is ill, the Dusun insure that it becomes dirty and unkempt reasoning that “a dirty child is safer from harm by…souls of the dead than he would be if he were clean (Williams 1969: 92).”

However, as discussed under make-believe play, children exhibit considerable deviation from the model as they learn socially. Theorists speculate that language change (Bickerton 1981; O’Shannessy 2011: 131) or culture change—such as adaptation to climate alteration or the introduction of literacy—may be led by children who are in some sense deviant or more open to change (D’Andrade 1990: 67; Nisbett and Ross 1980: 91). Additionally, there is a critical period in language learning (Heine and Lehman 2004: 310) and some evidence for a similar critical period (perhaps early adolescence) after which it is difficult to acquire a new “cultural meaning system” (Minoura 1992). Immigrant children are noted as adapting faster than their parents to a new culture and they employ their newly learned skills to aid their families (Orellana 2001). Some children are not as bound by the model and their varied practice invites discovery (Nerds come to mind). Strauss draws a contrast between learning via well-defined procedures (instruction by a teacher) and ill-defined procedures (observation and imitation). The former is more effective for transmitting information but the latter “promotes originality and the ability to apply one’s skill or knowledge in a wide variety of contexts (Strauss 1984: 209).”

If the learner’s innovations are successful and diffuse to contemporaries, and to the subsequent generation, the culture will have evolved (Boyd and Richerson 1985: 82). In Rogers’ (1989) model, challenges to the culture such as environmental variability will result in an increase in the number of individuals who are innovators versus social learners. This changed ratio will increase the likelihood of adaptive change via new variants for selection to operate on (Pagel 2012: 240). This may arise when expertise becomes obsolete, like the designs of traditional Iranian weavers, who no longer attract apprentices (Friedl 1997: 4). It is likely that the relative distribution of the individual/social learner archetypes is also influenced by the nature of subsistence. Yukaghir insist that, while you can learn by observing others, to become a really proficient hunter you must hunt on your own: “Only then do you really start noticing the myriad of details around you (Willerslev 2007: 169).”

Thinking is Overrated

When scholars speculate on the forces driving human evolution, a great deal of attention is paid to our brain size relative to other close primate relatives and, indeed, to other hominins. But as Mark Pagel notes, in the last 30,000 years cranial capacity has shrunk by about 10%. He notes further that our bodies are less robust, more gracile. These changes parallel changes that occur in wild animals as they are domesticated. It’s like living in a protective bubble where others model practical solutions to the problems of survival in a particular environment and take care of you until you’ve learned them. Living within the bubble of the culture-sharing group, your brain is not taxed over-much by the challenges of surviving and you can afford to lose a significant amount of this costly organ (Pagel 2012: 255). One implication of this view might be that the acquisition of culture can be a pretty casual affair, not particularly taxing on the young or their parents—unlike the extreme angst re child development characteristic of WEIRD society.

Western models of learning and cognition don’t travel well—much of Piaget’s stage theory has not stood up to cross-cultural replication. This may be because both our folk (Kusserow 2004) and scientific notions of child development and the ancillary pedagogy are based on the view that humans are consistently rational optimizers seeking the best, most efficient information and/or means to reach a goal. On the contrary, as Nobel laureate Herb Simon (1956; see also Edgerton 1992: 201; Sober and Wilson 1998: 241) brilliantly deduced, we are more often “satisficers” than optimizers. We muddle along, like Levi-Strauss’ (1966) bricoleur doing a good enough job to get by. Humans are also disposed to seek “cognitive closure” because of the “drive to attain group consensus in order to reduce insistencies, ambiguities, and uncertainties in beliefs (Richtner and Kruglanski 2004: 117).” Most of the time we don’t think at all about what we’re doing, we’re on auto-pilot (Bargh and Chartrand 1999: 464). This admission of fallibility helps
us understand the persistence of maladaptive practices and why culture change is rare (Boyd and Richerson 1996). For example, Efe archers eschew borrowing net hunting from their fellow pygmies who practice it, even though they know it would lead to larger catches of game. Their territory in the Ituri forest is conducive but they feel the effort of making the nets would be too great (Bailey and Aunger 1989).

A second reason that our theories don’t stand up to cross-cultural scrutiny (Cole et al 1971; Lancy 1983) is that in WEIRD society the “curriculum” or knowledge we expect our young to acquire is largely composed of declarative information whereas in traditional societies the information of importance is procedural—how to do things27. The critical tests we use to measure children’s cognitive development are more a measure of exposure to western-style school curricula than of the emergence of innate information processing skills. The distinction between declarative and procedural information has implications for determining the default mechanism underlying children’s learning of culture (Thornton and Raihani 2008:1823). Declarative information may be best conveyed by teaching or other top-down, highly-structured process, whereas, procedural skills may be best acquired through a bottom-up, learner-initiated process.

Adolescent Initiation

The pervasiveness of religion also provides fertile ground for ideas regarding the relative unimportance of rational thought in culture acquisition. The bulk of what people are asked to believe in in order to demonstrate competence in the religious practices of their society includes tenets that are patently false (Mithen 1998: 101), easily disproven or, untestable. Religion demands self-mortifying acts, painful—even life-threatening—hardship (Shostak 1981: 239), self-denial, and the donation of valuable resources, with no tangible or certain pay-off. However, “…it is the utter recklessness and costliness of adhering to religious beliefs that makes them a believable way of advertising your commitment to a group, and thereby of attracting altruism from others” (Pagel 2012: 156; see also Atran and Henrich 2010). Religion establishes a moral order that aids community leaders in controlling members (Krebs and Janicki 2004: 128).

Contemporary religious experience has been tamed and children can gradually gain adherence to the community’s belief system through a series of Sunday School lessons. There is an emphasis on declarative over procedural knowledge. The Yukaghir are far more typical of what one finds in the ethnographic record:

“I hardly ever saw children having things explained to them, especially with regard to spirits and ritual practices. The transmission of such knowledge consists largely of hands-on training in specific ritual techniques (Willerslev 2007: 161)…very little knowledge about spiritual beings is explicitly transmitted between generations (Willerslev 2007: 173).”

Critical aspects of religion that must be learned by adherents are conveyed through carefully prescribed rituals and through iconic representations—both forms of external storage. “Religious ideas… represented in material form gain survival value for the process of cultural transmission (Mithen 1998: 103; see also Atran and Sperber 1991: 41).” In many societies the core religious beliefs emphasize the very individual and visceral nature of the acquisition of spiritual knowledge.

“… nonverbal communication in ritual performances is certainly dominant among the Dene. Their notions of secrecy and power derived from animal helpers encountered in the [personal] vision quest inhibit public verbalization of experiences (Goulet 1998: xxxi).”

In many societies, children’s initial indoctrination is through an initiation rite. Initiation rites—primarily at adolescence—are widespread (Schlegel and Barry 1979). These rites were sometimes seen as similar to schooling, hence the popular name “Bush Schools.” However, an early survey argued that the pedagogy of the initiation rite resembled indoctrination rather than education (Lancy 1975).

“Formal education in the initiations is minimal, as it is only occasionally desirable in everyday Afikpo life. There really is no ‘school in the bush,’ the specific knowledge that the boys acquire is not extensive (Ottenberg 1989: 237).”
Although detailed descriptions of initiation rites are rare, a set of pedagogical principles can be extracted from cases in the ethnographic record. First, all initiation rites involve some element of body mutilation ranging, mildly, from tattooing (Markstrom 2008: 132) to scarification (Wagley 1977: 163) to the excision of the genitalia (Arnold 2006: 50). The PNG Highlands are particularly noted for the pain and utter terror associated with the process (Herdt 1990: 376). Typically, the child is symbolically killed by a monstrous figure and then resurrected or reborn (Higgsens 1985: 103).

In addition to painful injury, other anxiety–inducing treatments include forcible removal from one’s home (Dorjahn 1982: 40), confinement or seclusion in a strange place for an extended period (De Laguna 1965: 21) and, physical ordeals such as bathing in ice–water and running until exhausted (Markstrom 2008: 131–2). “The dominant theme of the initiation is that of an ordeal—trial and proof of maturity (Goldschmidt 1986: 95–6).” Consequently, as in the apprenticeship (Lancy 2012b), parents tend not to be involved in their child’s initiation.

A second common element is that the rites constitute an induction into the prevailing social order (Markstrom 2008: 262).

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…during [Bonerate] circumcision rituals the novices are formally introduced to the ideal standards of conduct to which adults should conform. … An aspect of *malu* behavior involves shame and respect for others…Individuals therefore must know their social position (Broch 1990: 137-8).”

Rites for girls emphasize subservience to senior women and obedience to one’s future husband (Richards 1956: 103) and those for boys, subservience to senior men and dominance over women (Tuzin 1980: 26). The youth is forcibly weaned from the “bad influence” of the peer group (Rao 2006: 59). Didactic instruction in the “lore” of the society is not evident. On the contrary, the initiation rite is an opportunity to impress upon young people their ignorance and powerlessness. “In Kpelle society secrecy…supports the elders’ political and economic control of the youth (Murphy 1980: 193).”

One of the most thoroughly described of male initiation rituals has been provided for the Baktaman of Papua New Guinea. There are seven initiation stages stretching over the entire period of adolescence and adulthood. Barth’s analysis reveals that the initiation rites aren’t so much about transmitting cultural knowledge as senior males controlling those more junior. Where the youth has, to this point, been able to learn from overhearing or observation in relative autonomy, the information conveyed in the initiation is secret and tightly controlled. “Much of the more highly valued information is cast in codes known only to a few members of the community (Barth 1975: 18).” Shore comments: “We can assume from the available evidence that what they experience of the narrative at any given moment in their initiation is puzzling and disjointed at best (1996: 248).”

Especially in the initial stages, boys are subjected to a stressful ordeal:

“Water and fire are also used for torture, reinforcing the basic messages of earlier initiation: that those forces are powerful and dangerous; sacred knowledge is costly and must be paid for with hardship and its value thus confirmed (Barth 1975: 66).”

As information is transmitted to the initiates they are warned, on pain of death, to maintain the secrets but then, at a later stage, they learn they’ve been deceived.

“Sometimes, statements and promises have been made that were immediately exposed as lies by the next ritual act; sometimes information was made vaguely suspect by hints or evidence that it was rendered false or grossly incomplete by further secrets. Even the central revelation of one initiation—e.g. the showing of the bones to 2nd degree novices—was shown to be largely a hoax in a latter initiation (Barth 1975: 81).”

The primary point of these exercises seems to be to maintain and enhance the power of senior men over women and younger men. The knowledge conveyed has no practical purpose and the process of conveying
that knowledge is done with “a view to retaining privilege for the seniors (Barth 1975: 219).” The youth is clearly not acquiring much declarative knowledge, nor learning practical skills in these religious experiences.

“The Bemba criterion of intelligence is not originality, but familiarity with the tradition. Compliance with the traditional wisdom enshrined in the formal songs and dances of the elders is a sure sign that one ‘understands’ (Maxwell 1983:58).”

Procedural skills in carrying out rites and handling sacred objects are learned. But I believe these rites have much the same function as the earlier discussed training of children in kin terms and elimination control. Adolescents also need a degree of “packaging” to reorient them from the peer group to the larger community, to reinforce their respect for authority (Edel 1957/1996: 183) and to ready them for the responsibility of marriage (Marlowe 2010: 56).

In my analysis of traditional apprenticeship, I found several parallels to the initiation rite. As discussed in earlier sections of the chapter dealing with chores and crafts, children learn informally. They observe and participate in the flow of work as they are motivated and able. This remains true for most skilled work such as weaving and pottery but, occasionally, these skills will be transmitted via an apprenticeship. In the apprenticeship, youth continue to learn through a step-wise, observation/imitation procedure, there is very little explicit instruction by a master and almost no verbal interchange. But a formal apprenticeship adds new elements. The master is not usually a parent; the apprentice must demonstrate his obeisance through his demeanor and through willingly doing menial work, often unrelated to the craft and; the master treats the apprentice harshly offering both physical and verbal abuse. Lastly, the master closely guards secrets and lore specific to the craft so as to maintain an edge over a completed apprentice who has only mastered the technical requirements. I argued that the apprenticeship was less about transmitting a suite of skills than about maintaining the master craftsman’s economic monopoly and high status (Lancy 2012b). In short, the apprenticeship uses many of the same tactics employed in the initiation rite to achieve similar ends (Lancy 1975).

Parents willingly contribute their children to initiation and apprenticeship, indeed, preparing for an initiation can be costly (Broch 1990: 130) and an apprenticeship usually requires an admission fee (Lloyd 1953: 38). I believe that the predominant, *laissez faire* child rearing model is perceived by parents as inadequate to turn adolescents into adults and to acquire the highly valued status of master. After parents have successfully raised a child, they must turn their concern to the child’s own reproductive prospects. Being accepted into the company of senior men—who control resources, including a potential bride—and learning a valuable trade will enhance the likelihood of grandchildren.

**Emic or Folk Models of Culture Acquisition**

One of the most critical areas of culture that youth must learn is the child-rearing system. Obviously, the child is an understudy to adult masters from birth so will have ample opportunity to utilize its ability as a social learner. But, it is a complex system as most societies divide the life span into semi-distinct stages and alter their treatment of the child accordingly. I will endeavor, in this last section, to enumerate some of the prominent themes in the ethnographic literature.

A core concept in the cultural model (D’Andrade and Strauss 1992) of parenting in most societies is that infants and even toddlers aren’t learning anything about the culture that has great import. As discussed earlier, the child may not even be recognized as human until near the end of its first year or later, it may kept in seclusion for quite a while and go unnamed. The post-partum period may be viewed as an extension of the womb with the child kept quiet, well-fed and warm at all times. Only a few societies go to the trouble of shaping the very young to enhance their acceptability and these changes are largely cosmetic. On the other hand, children “who display a precocious fund of knowledge are either ignored or regarded with acute suspicion in Mende society (Bledsoe 1992: 192).”

Toddlers may be explicitly “rejected” during weaning but this also suggests that the parent isn’t overly concerned about what the child may be learning because they are being placed in the care of only slightly
older siblings or an elderly grandparent. In fact, the main concern at this time seems to be impose limits on the child for its own protection and to prevent it from interfering with adult work. To this end the majority of cultural models include both frightening the child and corporeal punishment (Ember and Ember 2005) as legitimate tools to control its behavior.

- “Even before they attain to physical independence Lepcha children know about devils and nearly all their fears are centered round them. They are quite unscrupulously threatened with devils whenever they are naughty (Gorer 1967: 312).”
- “The beating constitutes a lesson in [Pukapukan] social relations (Borofsky 1987: 97).”
- “Children ideally should be stuck on the backs of their legs [with a bamboo stick] to keep them from ‘wandering into trouble,’ and on the hands ‘to keep from stealing’…Dusun parents regularly use fear of the supernatural as a means of insuring that children conform (Williams 1969: 94, 114).”
- “Little [aboriginal] children are also kept from wandering…away from the camp by the fear of the woldjo…A nocturnal bird (Hernandez 1941: 130).”
- I have seen a [Bumbita] mother or an older sibling run up to a child who has wandered to the toilet alone and scream that sorcerers are lurking in the bush, causing the child to run, tripping and falling, back to its house in terror (Leavitt 1989: 150).”

Since cultural models have “directive force” (Harkness et al. 1992), a parent will be ostracized for failing to manage a child (Einarsdottir 2004: 95). The Kpelle say: “You can’t go among your friends with a bad child because you will be ashamed (Lancy 1996: 96).” Earlier I discussed play and its role in culture learning. In only a few societies do parents openly acknowledge this function. Part of the reason may be the fear that the child will become addicted to play and not be willing to help out.

- “The ideal [Zinacantecan] child is hardworking, obedient, and responsible; he does not waste his time in play (Modiano 1973: 55).”
- “A Giriama mother who demands obedience and hard work from her children earns the community’s respect (Wenger 1989: 93).”
- “Nothing is more cheering for a Huaorani parent than a three-year-old’s decision to join a food gathering expedition. The young child…is praised for carrying his/her own oto …and bringing it back to the longhouse filled with forest food…to share with co-residents.” (Rival 2000:116).”

As this last example illustrates, children are given encouragement at the first sign that they are trying to emulate older workers. While children are discouraged from behaving in a way that impedes activity, they are almost always welcome as spectators (Lancy2008; 155-6). There is an implicit view that children must be allowed to learn chores at their own pace and that the very young cannot be held fully accountable for their actions.

“The child before he is five or six is said to be durung djawa…not yet Javanese…not yet civilized, not yet able to control emotions…not yet able to speak with the proper respectful circumlocutions…he does not yet understand…there is no point in forcing him to be what he is not (Geertz 1961, 105).”

After the child acquires “sense” at the outset of middle childhood (Lancy and Grove 2011a) expectations change. Play work becomes real work. Even among foragers, where children are more indulged, there is an expectation that they’ll share the domestic burden. For example, Aka children who evade responsibility are denied food by their mothers (Boyette 2008).
Emic notions of intelligence capture much more than IQ. It includes evidence that the child pays attention to the right things, properly emulating the more competent. The child is a self-starter who doesn’t have to be prodded and can anticipate a parent’s or young charge’s needs. The child contributes without complaining (Lancy 1996: 76). Of course, initiative on the child’s part may not always be welcome. For foragers, children may be more of a burden than an aid on long foraging treks (Draper and Cashdan 1988: 348). And, more generally, children may as likely be discouraged in attempting certain tasks if their fledgling efforts demand any significant effort by a potential teacher or use up or destroy costly materials (Lancy and Grove 2010: 153-4).

While parents may accelerate an infant’s development to render it easier to care for, one sees no comparable acceleration as children learn the routine and specialized tasks of village life. Aside from the more evident reason that this is viewed as unnecessary (Guemple 1979: 50), other ideas emerge. In egalitarian societies, such as the Huaorani, parents:

- “…do not command, coerce, or exercise…physical or moral pressure, but simply suggest…[because] harmonious social life should be based on the full respect of personal expression and free choice to act (Rival 2000: 115-6).”

- “Deciding what another person should do, no matter what his age, is outside the Yequana vocabulary of behaviors. There is…no impulse to influence—let alone coerce—anyone. The child’s will is his motive force (Gray 2009: 507).”

In summary, the archetypal folk model of children’s development emphasizes bottom-up rather than top-down processes, at least until the initiation cycle begins. Children cannot rely on being taught in carefully orchestrated lessons, they must learn on their own initiative, which includes finding good role models to copy. Adults take a direct part in cultural transmission to package or shape the child to conform to social expectations. This happens particularly at the end of infancy and the end of adolescence. Otherwise, adults and older siblings serve as passive role models while encouraging children to learn on their own.

Additionally, adults and older siblings are often (but not always) willing to take younger children on as helpers so a great deal of the culture is acquired during collaborative activity. However, the parent’s needs and those of the household generally trump the child’s need to learn new skills. The eager learner may be thwarted from undertaking a new task and redirected to a more essential task that it has already learned well, such as fetching water and firewood. Parents “exercise a considerable amount of coercive control over children’s time (Bock 2002: 211).”

Placing the onus of culture acquisition squarely on the child works extremely well for her and her parents but can also lead to the breakdown of cultural transmission.

**Children’s Role in Cultural Devolution**

Cultural devolution, has been attributed to children’s exposure to schooling—part of a broader process of acculturation. Schooling, like the initiation rite, changes the self-perception of students who envision a future that may not involve farm work or the practice of unique local rites and retention of ancestral taboos (Aunger 2002: 140). I argued that, where schooling has been but recently introduced, it serves more as indoctrination than education. Students (and their parents, typically) envision children as becoming transformed into members of a new society, which obviates the need for them to learn the traditional culture (Lancy 1975; Pomponio and Lancy 1986).

Schooling has another effect on cultural transmission that is less often discussed. And that is the reduction in time that young children spend with sibling caretakers as the latter are attending school for a significant portion of the day. After school, girls resume their duties as sib-caretakers but they utilize the directive, verbal style of teaching found in school rather than the modeling/collaborative practices inherent in traditional Mayan society. This approach fails in its objective (Maynard 2004: 530).

But schooling effects are most evident in the loss of knowledge of the local ecology (Lizarralde 2001: 276; Zent 2001: 195) and the skills needed to exploit its resources. A relatively recent in-depth study of culture
loss is available for the forest-foraging Cree of sub-Arctic Canada. Like most of the societies reviewed in this chapter (and virtually all native North Americans), the Cree pointedly eschew teaching children in favor of learning through play, imitation, and participation in subsistence activities (Ohmagari and Berkes 1997: 206). Schooling exerted a particularly negative impact on children’s acquisition of Cree culture because the children attended boarding schools run by missionaries. Children were kept from parents during critical foraging periods such as the annual “bush camp.”

“By the time they finished their schooling, they had become foreigners to Cree tradition, not only by failing to acquire skills and knowledge of the land, but also by lacking an appropriate attitude for life on the land (Ohmagari and Berkes 1997: 207).”

The authors find that the very large skill inventory mastered by older Cree is rapidly being lost or acquired much later. While they deeply regret that this is happening, they are bound by their folk model, which requires that children initiate learning sessions. The novice must decide to accompany those more expert, observe and emulate their actions. Failing that, the experts are unable to coerce learners or insist on conducting lessons when the children are available for tutelage (Ohmagari and Berkes 1997: 215).

Aside from the irrevocable loss of core cultural practices, there is little evidence that educated Cree are better off than previous generations. For children of the Shipibo tribe in Peru, for example, schooling leads them into a kind of twilight zone because it keeps “them from learning their environment and own culture, [yet gives] them only minimal skills for life in town (Hern 1992: 36).”

Conclusion

I have endeavored to weave together various strands of evidence to make a case that, children learn their culture via informal processes, largely at their own pace and initiative. Those older and more expert serve as role models, not always willingly. Less often, they may adjust their behavior in response to cues provided by the learner (Thornton and Raihani 2008:1826). Verbal instruction is rarer still and the construction of lessons where the practice is reorganized completely to optimize learning rather than production is almost unheard of.

Formal processes of cultural transmission include accelerating the child’s motor and social development and the transmission of religion. However, these occasions are largely about socializing the child to adapt to community standards rather than the transmission of declarative or procedural knowledge per se.

Children bring a suite of innate tools to the process of culture acquisition, chiefly among these are predispositions to fit in and this, in turn, facilitates language acquisition, which then enables social learning. Important arenas for children’s acquisition of culture include several kinds of play, participating as an observer at family gatherings, helping with household tasks, carrying out chores, and participating in various activities with peers. The initiation rite also conveys profound clues about how to successfully adapt to one’s society.

I have also offered a critique of arguments that stress the importance of adult-centered top down processes of cultural transmission. I believe that this approach very well characterizes the contemporary elite or WEIRD society but applies very little elsewhere.

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record as a whole. And, in as yet unpublished work drawing on observational data, Boyette finds that 87% of Aka learning episodes are observational while teaching occurs in 5% of the episodes (Boyette 2012).

1173) present a picture of the Aka—how children learn and from whom—that is more consistent with the ethnographic

buried tubers or large mammals—may be much more accessible to child foragers (D. Bird and R. Bird 2002).

They spend enormous resources to insure that their game-playing is properly supervised and coached. Children are often forbidden to “go out and play” or to “play with the neighborhood kids” out of (greatly exaggerated) fear for their safety. (Lancy 2007; Lancy and Grove 2011b; Gray in

Another reason a mother might promote sharing among siblings is to temper the competition that arises because—according to kin selection theory—they’re rivals for their parents’ support (Alexander 1975: 340).

13Recent laboratory studies underscore that human children exhibit pro-social behavior spontaneously from the age of three or earlier and are more readily pro-social than juvenile chimps (House et al 2012).

14Another reason a mother might promote sharing among siblings is to temper the competition that arises because—according to kin selection theory—they’re rivals for their parents’ support (Alexander 1975: 340).

15This is one area where the WEIRD society lies at the extreme edge of the distribution. Contemporary parents in the dominant society play with their children from birth and carefully teach them how to play with objects, how to do make-believe play and, how to play with their peers. They spend enormous resources to insure that their game-playing is properly supervised and coached. Children are often forbidden to “go out and play” or to “play with the neighborhood kids” out of (greatly exaggerated) fear for their safety. (Lancy 2007; Lancy and Grove 2011b; Gray in press).

These views are seen as the prime reason for the poor performance of indigenous children in schools. The parents’ laissez-faire approach is incompatible with the demands of contemporary schooling (Lancy 2008: 333; Willerslev 2007: 162).

17This contrast in childhood experiences may illuminate the classic case of child animism. One cornerstone of Piaget’s (1929) theory of cognitive development posited that children are animists before achieving a fully grounded, rational understanding of the distinction between animate/inanimate. Margaret Mead (1932) tested this theory on Manus Island and found—neither in her observations of children at play nor in focused test queries—any evidence of animism among
Manus children. On the other hand, the world of adults seems permeated by the actions of ghosts and other manifestations of animistic thought. Perhaps Piaget’s children (his subjects) were animists because of the nature of their fantasy experiences with storybooks, toys and the ensuing make-believe.

For a longer and more detailed explication of how these processes unfold in the game of marbles (Lancy and Grove 2011b: 490-1).

Aside from the loss of the breast, a comfortable ride, and the mother’s comforting body, the toddler’s displeasure may arise from a fear of rejection, which “…probably evolved as an adaptation to [the] prolonged immaturity and helplessness outside the womb (Rochat 2009: 25).”

There are exceptions—cases where certain skills are so highly valued that to try and emulate an expert without his or her blessing is treated as theft (Coast Salish-Barnett 1955: 110)

In fact, outright praise for children’s work efforts is fairly rare, the “reward” is subtle signs that one fits in: fed regularly and adequately, for example. By contrast, in WEIRD society, children are often praised excessively and indiscriminately, undermining their success striving (Boyd and Richerson 1985: 43; Mueller and Dweck 1998).

Original=“Der Mensch neigt zur Konformität.”

There have been a flood of studies from WEIRD societies in the US and Europe documenting how extraordinarily unhelpful children have become (Lancy 2012a: 44-5). WEIRD parents in protecting and cherishing their toddlers extinguish their drive to “fit in.” It disappears at least in the family context and increasingly in more public settings such as schools. It is preserved in the peer group.

Evidence for plasticity and “reserve capacity” is readily noted in primates as “orangutans, gorillas and bonobos use tools with dexterity and sophistication in captivity but rarely use them in the wild (King 1994: 121).”

I believe that it is possible to explain some aspects of the extended juvenile period in our species by reference to the idea of children as a “reserve labor supply.” Also that parents can deploy either a “survivorship” strategy—invest heavily in kids to insure they exit puberty healthy, physically robust (Charnov 2001) and brainy (Bogin and Smith 1996: 27) so they will have a long period of high completed fertility—or a “production” strategy where the objective is to produce many young, a few of whom may survive to reproduce (Blurton-Jones: 1993). In fact, a recent article argues that “early growth periods can be truncated or extended through alterations in the timing of adrenal gland zonation and maturation (Bernstein, et al 2012: 398). I will discuss this proposal in another paper.

I don’t know if TOM researchers have pursued this but from my reading of the ethnographic literature on child herders, I believe that successful animal husbandry requires one to get inside the head of one’s livestock. A TOM study done outside WEIRD society with MoJu children affirmed the theory although the transition to TOM occurred 2-3 years later than in Western samples (Vinden 2002).

Exceptions to this generalization may occur in highly stratified societies. For example, the elite echelon of Northwest Coast Indian society passed on sn̓ew to the next generation. This consisted of genealogies and a family narrative exemplifying the family’s wealth, greatness and justification for its exalted social position (Suttles 1987).

There is a strong suggestion in the research on neurological changes in adolescence that the brain is shifting gears from task mastery to mastering the complexities of adult interpersonal relationships (Blakemore 2008).

Another important factor, of course, is structural change in the means of making a living. Most drastic is the shift from foraging to agriculture as the skill set is so different (Draper and Cashdan 1988). Even a change in the tools used leads to loss: “As modern hunting techniques are introduced, especially dogs and flashlights, the effects of skill seem to diminish (Gurven, et al 2006: 464).” Craft traditions are imperiled by cheap, machine made substitutes: “Consequently, most Dii girls born into the potter caste’ do not...become potters (Wallaert 2008: 187; see also Kenny 2007: 113).”

The landmark study of culture devolution describes change over time among Tasmanians (Edgerton 1992: 47-52).