

ARE WE ALL NATURAL DUALISTS? A COGNITIVE DEVELOPMENTAL APPROACH*

RITA ASTUTI

London School of Economics & Political Science

The article takes to task the well-established anthropological claim that non-Western peoples are free from the traps of dualistic thinking. Although Vezo informants in Madagascar produce statements that could be used to support such a claim, experimental procedures that target their inferential reasoning reveal that they systematically differentiate between mind and body, between the biological processes that determine the organism and the social processes that shape personhood. This suggests that there is a significant discrepancy between people's explicit linguistic statements and their implicit theoretical knowledge. Moreover, developmental data show that such implicit theoretical presuppositions are essential to the production and transmission of cultural knowledge. Thus, Vezo children, who do not as yet differentiate between the biological mechanism of birth and the social mechanism of nurture, are still unable to grasp a salient aspect of Vezo culture, namely the causally integrated set of ideas that guide the way adults classify the social world. These findings have significant theoretical and methodological implications for the constitution of anthropological knowledge.

In an essay written to commemorate the Malinowski centennial year in 1984, Firth (1985: 37) remarked that 'cognitive anthropology is essentially an inferential study', since anthropologists infer informants' ways of thinking from linguistic expressions. Anthropological inferences are supported by the common and not entirely implausible assumption that 'language provides clues to thought'. However, having noted the complexity of the relations between thought and language, Firth argued that anthropological 'assertions about cognition ... should be treated as tentative, not tested summations of mental process'. Since anthropologists work with 'gross, crude analytical tools involving wholesale inference, much speculation, and some introspective analogy', he concluded that their 'generalisations should be accordingly modest'.

Anthropologists cannot be said to have heeded this advice, as they routinely infer patterns of thought from patterns of speech, and make generalizations that can hardly be described as modest. Here, I will address one of anthropologists' favourite assertions about cognition: the ubiquitous claim that non-Western peoples are free from the traps of dualistic thinking, that their way of reasoning and of representing the world is not cast within the Cartesian dichotomy of mind and body.

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It has been remarked that social science theorizing has a widespread tendency to vilify Cartesian dualism as a kind of moral abjection (Csordas 1994: 7). There is also confusion about what exactly the domain for dualism is, as discussions freely shift from the domain of mind vs. body proper to other domains, such as conscious vs. unconscious, thought vs. emotion, object vs. subject. In anthropology, of course, the mind-body dichotomy has been cast in terms of a dichotomy between culture and biology, and the many derivatives of this, such as the distinction between sex and gender, person and organism, individual and society. There are, therefore, as many anthropological claims of 'monism' as there are versions of dualistic reasoning.¹

The specific one I will consider here has emerged in the field of kinship and gender studies, and is arguably one of the most robust and uncompromising versions of the widespread anthropological claim that non-Western peoples are *not* dualists. The claim, more precisely, is that non-Western peoples do not draw the distinction between the biological facts of procreation and their cultural interpretation, between biological and social parenthood, between the natural body and its cultural meanings, between nature and culture, sex and gender.

The battle in support of this form of non-Western 'monism' has been fought on many grounds, theoretical as well as empirical. On the theoretical front, anthropologists (e.g. Bouquet 2000; Strathern 1996) appear recently to have found comfort in Latour's (1993) revelation that *we*, Western peoples, have actually never been modern, and that we have worked as hard at creating hybrids of nature and culture as we have at separating the two. On the empirical front, many have followed in Schneider's (1984) footsteps and have argued that non-Western understandings of relatedness and of gender identities are *not* predicated on the distinction between the biological and the social (e.g. Carsten 1995; 1997; Yanagisako & Collier 1987). It is fair to say that this idea has become one of the most guarded assets of the discipline, giving its practitioners an edge in a number of philosophical and political debates (for dissenting positions, see e.g. Astuti 1998; Lambek 1998; Middleton 2000; Ortner 1996). By way of illustration, let me quote a passage from an influential essay by Ingold.

In the context of a general philosophical argument against various dualistic fallacies that besiege the social sciences and, more specifically, against the foundational separation between social and biological domains in kinship theory, Ingold (1991: 362) notes that 'many (if not most) non-Western peoples ... simply do not recognize anything comparable to the social/biological distinction as articulated in western discourse'.

If given a weak interpretation, this claim is both true and trivial. That the distinction between the social and the biological, like that between nature and culture or mind and body, is not articulated in other cultural traditions as it is in the Western one is granted, and has been repeatedly proven. But the claim is far stronger, and is far from trivial: namely that

for them, the human being is not a two-part entity – half organism, half person – but a single, undivided and embodied centre of action and awareness, an organism-person, that neither simply 'grows' of its own accord, nor is 'made' like an artefact, but is rather grown through the active contributions of many people, including those who may be designated as 'parents' (1991: 362).

The claim is that most, if not all, non-Western peoples do not distinguish between the biological and bodily processes that make an organism grow and the social and mental processes that shape personhood, between the biological processes of reproduction and the social processes of nurture, between biological and social parenthood.

In this article I shall challenge this idea. I shall do so in the same spirit in which Gell (1998: 126–7) has argued that ordinary human beings, whether Western or not, are ‘natural dualists’, naturally predisposed to split the person into two: the mind inside, the body outside. Like many of the anthropologists who have argued the opposite, Gell was more than aware of the philosophical pitfalls of dualism. However, he reminded us that the task of anthropology is not to prescribe notions that are philosophically defensible, but ‘to describe forms of thought which could not stand up to much philosophical scrutiny, but which are nonetheless socially and cognitively practicable’ (1998: 17). It follows that *describing* ‘natural dualism’ as a socially and cognitively practicable form of thought does not amount to *endorsing* its philosophical validity. Similarly, describing how ‘ordinary human beings’ distinguish between organism and person, between birth and nurture, between the biological and the social, does not amount to endorsing the philosophical or metaphysical validity of any of these distinctions. The issues of description and of philosophical validity are separate and should be kept separate. Indeed, as I see it, the real challenge for anthropologists is not to collect examples of sound philosophical thinking among the people they study, but to establish less crude analytical tools to generalize about the way ordinary human beings think.

I shall thus endeavour to describe how one group of non-Western peoples, the Vezo of Madagascar, reason about the distinction between birth and nurture, organism and person, mind and body. Vezo ethnography provides plenty of evidence that could be used to support the anthropological claim that non-Western peoples do *not* draw such distinctions. For example, Vezo find the suggestion that birth parents have exclusive claims over their children morally problematic, and they express this view in a variety of ways. Thus, they seemingly do not ‘see’ resemblances between parents and their offspring. Instead, they invoke a variety of mechanisms other than birth to explain the way babies come to resemble people other than their biological parents. For example, if a pregnant woman spends a lot of time talking to a friend, the friend is said to ‘steal’ some of the baby’s facial traits; if she takes a strong dislike to someone, her baby will look like the disliked person. The expectation that babies will come to resemble people other than their parents, has the effect of socializing parenthood,² and of extending the child’s bodily connections beyond those with its birth parents.

On the basis of this kind of evidence, it would be an easy task to show that Vezo do not distinguish between organism and person, birth and nurture, biological and social parenthood. I shall argue, none the less, that the kind of evidence that I have just invoked – which is the kind of evidence routinely used by anthropologists – does not support the inference that Vezo have successfully escaped the traps of dualistic reasoning. By means of an empirical investigation of informants’ inferential reasoning, rather than relying on their explicit normative statements, I shall demonstrate that

Vezo adults in fact draw the distinction between the biological processes that determine the organism and the social processes that shape personhood. And although what I offer here is but one carefully examined case, the evidence that I present raises broader questions about the foundations of anthropological knowledge. However, I also aim to move the argument forward. I shall do so by extending the investigation to Vezo children in order to pursue new questions about the relationship between implicit and explicit knowledge.

The adoption task

The evidence that I shall be presenting is the result of the extensive use of an experimental technique borrowed from developmental psychology. What I shall describe below as the 'adoption task' was part of an investigation of North American children's intuitive understanding of birth and of the role that birth plays in the transmission of properties from parents to offspring (Solomon, Johnson, Zaitchik & Carey 1996). The task was originally devised to establish at what age children develop an adult-like understanding of the transmission of properties from parents to offspring. In agreement with previous studies (e.g. Springer 1992; Springer & Keil 1989; 1991), Solomon, Johnson, Zaitchik, and Carey noted that North American children as young as 3 or 4 years of age systematically predict that offspring resemble their parents – for example, that blond parents have blond children – and set out to probe children's understanding of the mechanisms responsible for the resemblance. In particular, they wanted to establish at what age North American children adopt the view, as adults do, that resemblance to parents involves two separate causal mechanisms for the transmission of two ontologically distinct traits of the person. In other words, at what age do children adopt the view that *birth* is the mechanism responsible for transmitting characteristics such as bodily traits, and that *nurture, learning, and habituation* are responsible for transmitting other characteristics such as mental traits?³

The adoption task they devised pitted biological against social parentage, and the transmission of bodily traits against the transmission of mental traits such as beliefs; that is, things that are held to be true. They found that, up to the age of 7, North American children are as likely to predict that birth transmits both bodily and mental traits, as they are to predict that nurture transmits both traits. These children, therefore, do not differentiate between birth and nurture, bodily and mental traits.

In Madagascar, I used an adapted version of this task to establish the presence or absence of dualistic reasoning among Vezo adults and children. In its simplest form, the Malagasy adoption task consisted in telling participants a story about a baby born to one set of parents and raised by another:

The birth parents – described in Vezo idiom as 'the father and mother who generated the child' (*baba sy neny niteraky azy*) – are travelling through the forest; they are attacked by bandits; they have time to hide the baby under a bush; the parents are killed but the baby survives and is found and raised by another set of parents; the adoptive parents – described as 'the father and mother who raised the child' (*baba sy neny niteza azy*) – nurture him with affection and love.⁴

The story was followed by questions which asked participants to decide whether the grown-up child would resemble the birth or the adoptive father on a number of different traits: bodily traits, beliefs, and skills. A control task was devised to establish whether participants might reason differently depending on whether the link of filiation in the questions was paternal or maternal; since, interestingly, there was no evidence of a systematic effect, in what follows I ignore this variable.

The questions were formulated as follows:

The father who *generated* the child had pointed ears, whereas the father who *raised* the child had roundish ears. In your opinion, when the child is fully grown up, will he have pointed ears like the father who *generated* him, or roundish ears like the father who *raised* him?

and

The father who *generated* the child believed that chameleons have 30 teeth, whereas the father who *raised* the child believed that chameleons have 20 teeth. In your opinion, when the child is fully grown up, will he believe that chameleons have 30 teeth like the father who *generated* him or will he believe that chameleons have 20 teeth like the father who *raised* him?⁵

Note that the task set out an artificial problem, a riddle, to which participants were asked to find a solution. The aim was to keep the riddle as culture-neutral as possible. For example, the story was devised in such a way that it did *not* evoke the social and moral setting in which adoption normally takes place among Vezo, and the traits for the resemblance questions were chosen because they were *not* culturally salient: for example, nobody knew or cared to know how many teeth chameleons have, if any. Overall, the task was designed to force participants, as it were, to put their thinking cap on and leave their cultural narratives to one side. Thus, the task did not require participants to articulate verbally their customary ways of explaining things, nor to provide an abstract account of how properties are transmitted from one generation to the next. In the case of children, this was a clear advantage, since they might have been unable to put their knowledge into words; in the case of adults, the advantage was that the riddles did not directly prime their stock cultural knowledge but required them to engage in inferential reasoning.

It could be argued that the adoption task imposes on the participants the ontological categories of the researcher, the dualisms of sociality and biology, of organism and person, of mind and body. However, even though the task is undoubtedly *constructed* around these distinctions, it does not force them on the participants. If participants do not distinguish between social and biological parenthood, between birth and nurture, between bodily and mental traits, they will sail through the task blissfully unaware of the distinctions being probed.

The adoption task has four possible outcomes, defined in terms of each participant's pattern of judgement. Participants are said to show a Differentiated Pattern if they judge that the adopted child would resemble the birth father on bodily traits and the adoptive father on beliefs. Their response implies a distinction between two chains of causal mechanisms, birth and nurture, which transmit two distinct traits of the person, bodily traits and beliefs.

Participants are said to show a Birth Parent Bias if they judge that the adopted child would resemble his birth parent on all or almost all traits; they are said to show an Adoptive Parent Bias if they judge that the adopted child would resemble his adoptive parent on all or almost all traits. Participants who show either a Birth Parent or an Adoptive Parent Bias draw no theoretically driven distinction between birth and nurture as separate mechanisms for the transmission of bodily and mental traits.

Finally, participants who judge the adopted child to resemble birth and adoptive parents in a random combination of traits are classified as showing a Mixed Pattern. They are most evidently clueless about the distinctions probed by the task. Their pattern of judgement reveals that they do not reason causally about the mechanisms of birth and of nurture; neither, of course, do they distinguish between the two.⁶

'Dualistic' adults and 'monistic' children

Let me now introduce the results of the adoption task used with male and female Vezo adults, aged 21 and above.⁷ Although most of them were initially bemused by my questions, mid-way through the task, when they realized that only half of my questions were about the boy's body (*vatany*), while the other half were about his mind (*sainy*), their faces would light up in recognition. This moment of recognition gave rise to the following results: an overwhelming 78 per cent of adult participants showed a Differentiated Pattern (Fig. 1). Of the remaining 22 per cent, 13 per cent showed a Mixed Pattern, 6 a Birth Parent Bias, 3 an Adoptive Parent Bias.

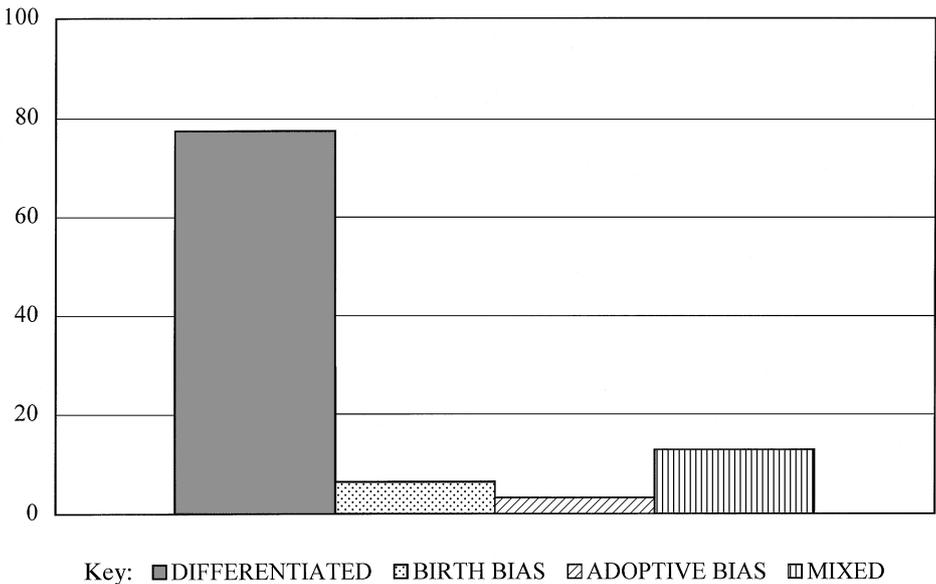


FIGURE 1. Adults' patterns of judgement.

The overwhelming majority of Vezo adults, therefore, drew the distinction between birth and nurture. They reasoned that birth is the mechanism responsible for the transmission of bodily traits, whereas nurture is the mechanism responsible for the transmission of mental traits. Their inferences – for example, that the adopted boy will resemble his birth father in the shape of his ears, but will resemble his adoptive father in the belief about chameleons' teeth – were guided by a theory about the different character of mind and body, and about the distinctive causal mechanisms affecting them. By contrast, Vezo adults did not invoke the 'monism' that informs their explicit cultural statements, such as the explanations used to account for babies' physiognomy. Had they done so, they would have reasoned that nurturing relations mould every trait of the person, mental as well as bodily.

The first conclusion to be drawn from these findings, which converge with those of Bloch's (Bloch, Solomon & Carey 2001) investigation among the Zafimaniry, is that there is a significant discrepancy between what Vezo adults say, the enunciations that get transmitted and are part of what anthropologists would identify as 'Vezo culture', and the theoretical presuppositions that people mobilize to reason inferentially, irrespective of their cultural narratives. In other words, there is a discrepancy between explicit linguistic statements and implicit theoretical knowledge.

This finding gives support to the argument that informants' ontological commitments cannot be inferred from their explicit discourse: it follows that anthropologists cannot advance claims about the absence of dualistic reasoning in non-Western societies based on the interpretation of explicit enunciations, as is most commonly done. The result has far-reaching methodological implications and casts doubt on some of the most attention-demanding claims made by anthropologists about personhood, gender, kinship, the body, subjectivity, and so on. My aim, however, is to put forward a rather more challenging proposition for anthropologists: we cannot understand what our informants explicitly tell us (let me loosely call it 'culture') if we ignore the theoretical cognitive underlay of their statements.

There is an obvious, logical reason for this. If it is true that what people say and enshrine in their explicit cultural statements can diverge from the implicit theories that they mobilize to reason inferentially, it follows that one cannot correctly understand their statements without knowing how these articulate with their implicit theories. For example, statements that appear to blur the distinction between birth and nurture, body and mind (let me call them 'monistic statements'), would reflect people's ontological commitments if they are uttered in the context of a monistic ontology. The same statements, however, would have to be interpreted and understood differently if they are uttered in the context of a dualistic ontology, in which case they contradict people's ontological commitments. Needless to say, the meaning of an utterance will be seriously misjudged if contradictions are interpreted as reflections.

The logical reason why anthropologists need to take into account the implicit cognitive underpinning of their informants' statements has been noted before (e.g. Bloch 1998; Boyer 1994; Sperber 1985; 1997). There is, however, a separate developmental reason which has remained unexplored, and to which I now turn.

The hypothesis that I shall pursue below is that the production and transmission of the conceptual systems that anthropologists deduce from their informants' explicit cultural enunciations and describe in their monographs – about personhood, relatedness, identity – presuppose the emergence of the theoretical differentiation between birth and nurture, mind and body found among Vezo adults.

I shall explore this hypothesis by means of a research strategy pioneered by Toren (1990; 1999a; 1999b), which consists in turning one's attention to children, to ask how they come to make sense of the way adults conceptualize the world in which they live. The specific question I shall ask is this: do Vezo children distinguish, like Vezo adults, between birth and nurture, body and mind? The answer, in short, is that they do not; and this discovery makes it possible to compare, within the same population, a group that does not have a dualistic ontology (the children) and one that does (the adults).

The comparison allows me to pursue a more general question about the relationship between adults' implicit ontological distinctions and the explicit cultural statements that get transmitted to their children. As we shall see, in the absence of a dualistic ontology, children not only fail to understand, and are unable coherently to reproduce, such statements, but they also fail to understand why and how they have come to be what they are.

I shall begin by examining the results of the adoption task carried out with Vezo children of both sexes aged 6 to 13.⁸ As illustrated in Figure 2, children performed very differently from adults.

An overall 88 per cent did not show a Differentiated Pattern of judgements. Of these, 40 per cent showed a Mixed Pattern, 30 per cent a Birth Parent Bias, and 18 per cent an Adoptive Parent Bias. The Differentiated Pattern, which was 78 per cent among adults, was instead a mere 12 per cent among the children. Children were thus as likely to judge that either birth, or nurture, or both affect the way people appear in both their bodily and their mental traits. Unlike adults' inferences, those of children were not guided by the theoretically driven differentiation between birth and nurture. Therefore, each

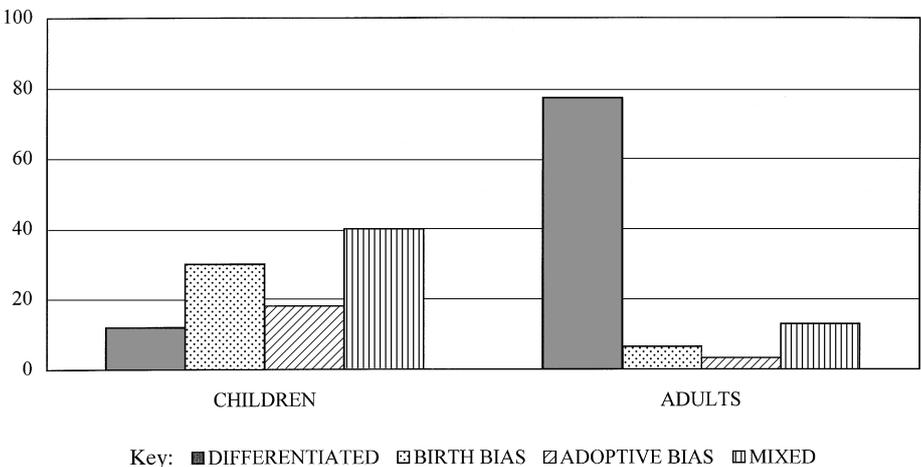


FIGURE 2. Children's and adults' patterns of judgement.

answer was settled on the basis of a variety of *ad hoc* reasons: simple guess, preference for one set of parents over the other, preference for individual traits, and so on. In short, Vezo children did not see the distinctions drawn by the task. They thereby fulfil the anthropological dream of a population with a non-dualistic ontology.

The hypothesis I raised earlier is that the capacity of Vezo adults to differentiate between birth and nurture, body and mind, is a prerequisite for the production and transmission of their cultural knowledge. To test this hypothesis, I now turn to a particularly salient cultural trait: the set of ideas that specify what it means to be Vezo, and how some people come to be 'us' while others come to be 'them'. I do this to explore whether children, who do not differentiate like adults, are able to understand and reproduce what their parents teach them about their social surroundings.

Vezo social classification

The criteria Vezo adults use for classifying people are explicit and can be summarized as follows: people are what they are because of the place where they live, which in turn determines the activities they perform; group affiliation, as well as the difference between 'us' and 'them', are established through the actions that different people perform in their physical and social environment. This way of classifying the social world is typically articulated by adults in a variety of informal contexts which portray the contrast between Vezo people and their immediate neighbours, the Masikoro. Adults constantly and consistently invoke the principle that being Vezo is to live on the coast and do Vezo things, such as fishing, sailing, and eating fish, whereas being Masikoro is to live inland and do Masikoro things, such as cultivating, raising cattle, and – so Vezo say – eating 'grass' (for a detailed ethnographic account, see Astuti 1995a; 1995b).

This definition of what it means to be Vezo or Masikoro, and the fact that people who are Vezo can become Masikoro and vice versa, implies that the process of social classification is not mediated by birth. Birth is *not* the mechanism that transmits group affiliation between generations: one does not need to be *born* Vezo or Masikoro to be one; all one needs is to learn to do Vezo or Masikoro things.

Vezo social classification is thus based on activity criteria: Vezo use the performance of certain activities as the criterion for classifying people. However, before extending this conclusion to the classification of other social groups, I must pre-empt a potential source of confusion. It could be that Vezo use activity criteria to distinguish Vezo and Masikoro people only because they regard both groups as sub-units of the same super-ordinate ancestral group. In other words, they might be invoking occupation as a criterion for identification and they might be disregarding people's ancestral origins because they assume that Vezo and Masikoro people share the same origins to begin with.⁹ Thus, to establish that Vezo use activity criteria to classify other social groups, one must be able to show that Vezo informants extend that way of reasoning to people of unquestionably separate ancestral origins. The counterpart I chose for testing the hypothesis were the Karany. Karany are immigrants of

Indo-Pakistani descent. They are town dwellers; they are wealthy and well educated; they are shopkeepers and moneylenders. They are predominantly Muslim, and although fluent in Malagasy, they speak their own language among themselves. Somatically, they differ from the Vezo in that their skin is light and their hair straight. In Western folk-sociology, Vezo and Karany would be regarded as separate racial groups.

The preliminary issue that needed to be established was therefore this: do Vezo adults reason about Karany in the way they reason about Masikoro? Do they classify Karany in terms of what they do rather than in terms of their ancestral origins? In sum, do the activity criteria for social classification extend to ancestrally unrelated social groups?

To explore this question, I used a new version of the adoption task in which the adoption occurs across the Vezo-Karany divide: a boy is born to one set of parents, either Vezo or Karany, and is adopted by parents of the opposite group. Participants were asked the standard set of resemblance questions about bodily traits, beliefs, and skills, but were also asked about a number of contrastive traits that are considered typical of Vezo or Karany people, such as their occupation and religious beliefs. For example: will the adopted boy know how to fish (Vezo typical) or to keep shop (Karany typical)? Will he believe that corpses must be kept overnight in the village (Vezo typical) or will he believe that one has to bury them straight away (Karany typical)? Finally, I asked the crucial question about the child's identification: would he be Vezo or Karany? As a control, I also ran an identical task in which adoption occurred across the Vezo-Masikoro divide.¹⁰

The adults' results from the two versions of the task are presented in Figure 3. The performance on the Vezo-Masikoro version was unsurprising: as expected, 87 per cent of adult participants judged that the adopted child, irrespective of birth origins, would grow up to be Vezo if raised by Vezo parents in a Vezo village, and Masikoro if raised by Masikoro parents in a Masikoro

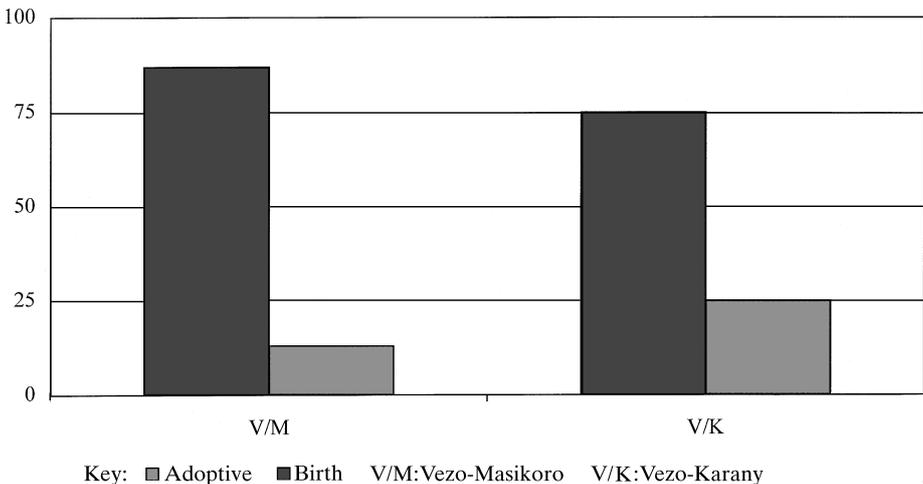


FIGURE 3. Judgements of social classification by adults.

village. The child was judged to have acquired all the traits typical of his adoptive group.

Similarly, if more strikingly, 75 per cent of adult participants in the Vezo-Karany version of the task also judged that the adopted child, irrespective of birth origins, would grow up to be Karany if raised by Karany, and Vezo if raised by Vezo (Fig. 3). As before, on virtually all traits, the child was judged to resemble his adoptive father.

This is a remarkable result. The fact that adults reasoned about Karany in the same way in which they reasoned about Masikoro vindicates the general claim that Vezo make use of activity criteria to classify people into social groups. More importantly, it shows that Vezo adults reason about social categories coherently, drawing on a consistent, integrated theory of social classification. The cross-over along the Vezo-Karany divide is not an occurrence that my informants have ever experienced in real life, nor do they ever contemplate it in their conversations. Thus, unlike participants in the Vezo-Masikoro task whose replies came spontaneously and without effort, participants in the Vezo-Karany task had to respond to an entirely novel question. They did so by asking themselves: is the adopted boy going to acquire the traits typical of the people he grows up with? The answer to this question was straightforward because they knew that traits such as occupational skills or religious beliefs are acquired by living in a certain environment. It followed that the boy would be Vezo or Karany like his adoptive father, because what people turn out to be is determined by the typical traits that they acquire through practice. In other words, adult participants abstracted a set of theoretical principles from a set of known circumstances, and extended such principles to make predictions about as yet uncharted social territories.

It is precisely this ability to mobilize implicit theoretical knowledge to make novel inferences that children still lack. Children who grow up in Vezo villages are bombarded with messages that people are either Vezo or Masikoro because of what they do. Children hear adults discuss how Vezo ways differ from Masikoro ways; they are frequently told that they are Masikoro when they fail to act in Vezo fashion, and that they are becoming Vezo when they succeed. The idea that being Vezo or Masikoro depends on what people do is thus 'in the air'; it is therefore to be expected that Vezo children will absorb it and be able to reproduce it.

To establish this fact and, more significantly, to establish whether children can apply the abstract theoretical principles underlying this idea to unexpected circumstances, I extended the two adult tasks to the children.

The most striking finding is that children, unlike adults, performed very differently in the two versions of the task. Thus, 65 per cent of the children judged, like adults, that the adopted child will be Vezo or Masikoro like his adoptive father, irrespective of birth origins (Fig. 4). By contrast, in the Vezo-Karany task only 27 per cent of the children gave adoptive judgements; 73 per cent of them reasoned instead that the child will be like his birth father, irrespective of where he grew up. In this case, the overwhelming majority of children reasoned very differently from adults.

Let me first turn to the task in which children were asked to reason about the Vezo-Masikoro cross-over, where 65 per cent of them gave adoptive judgements. One might conclude from this that the majority of Vezo

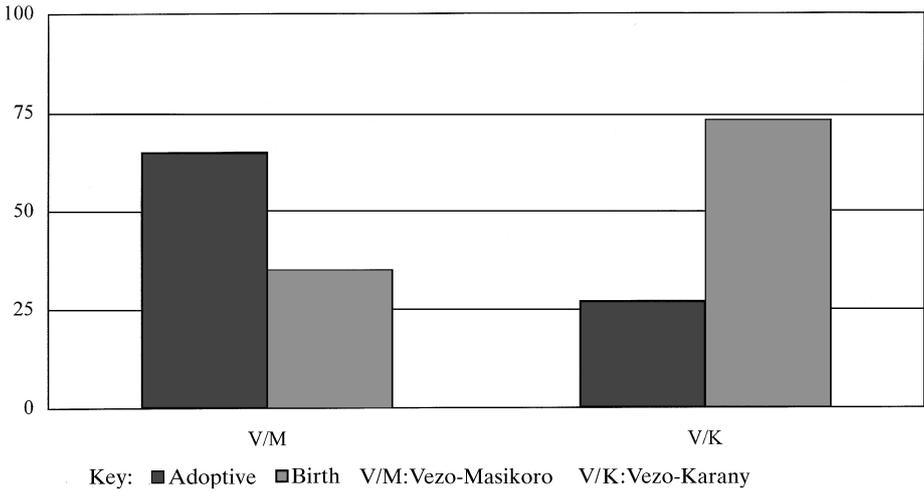


FIGURE 4. Judgements of social classification by children.

children have an adult-like understanding of how to classify people. However, two aspects of their performance indicate that this is not so. Both relate to forms of logical inconsistency.

In the first place, children who judged that the boy would be Vezo or Masikoro like his adoptive father did not extend this judgement consistently to typical traits, such as occupational skills and religious beliefs. Having stated that the boy would be Masikoro like his adoptive father, for example, the same children stated that he would know how to sail and fish like his birth father. They thus failed to comprehend the chain of causal mechanisms (i.e. place of residence and specialized activities) that underlies the adults' theory of social classification.¹¹

Secondly, children applied the standard adult explanations, that people are Vezo or Masikoro because of where they live and because of what they do, to justify both adoptive and birth judgements. Thus, for example, children who judged that the boy would be Vezo like his birth father, explained that this is because the boy knows how to fish and sail, despite the fact that he was raised in the interior surrounded by cattle and cornfields.¹²

In sum, these inconsistencies suggest that children, irrespective of their judgements, were simply mimicking statements that they did not fully comprehend. Thus, even children who appeared to give the 'right' sort of answer – that is, the same answer as that given by adults – display no understanding of the theoretical underpinnings implied by their judgements. Because they grow up hearing that people are Vezo if they fish or Masikoro if they cultivate, they are able to reproduce these statements when primed by familiar questions. But children's grasp of the adult theory stops here, well short of the consistency that characterizes the way adults classify the social world.

Indeed, children's inconsistency is the key to understanding their response to the Vezo-Karany task. In this task an overwhelming 73 per cent of children judged that the adopted boy will be Vezo or Karany like his *birth* father.

Thus, unlike adults, children did not extend to Karany the same activity criteria for social classification normally applied to Vezo and Masikoro people. This confirms that such principles are still beyond their grasp. Children did not mobilize and extend their knowledge of how people come to be Vezo or Masikoro, because their knowledge is still atheoretical and dependent on specific statements they have heard in specific contexts. Children were unable to resort to theoretical principles and to reason analogically about Karany, because, as yet, they do not have a causally integrated theory of social classification to underpin what they say.¹³

To summarize the argument so far: first, I used the adoption task with Vezo adults and children to establish the presence or absence of dualistic reasoning. The results showed that adults differentiate between birth and nurture, biological and social parenthood, body and mind; children do not. Secondly, I examined a salient cultural trait, namely the way adults and children classify people, and thereby establish the criteria that make 'us' different from 'them'. The comparison between adults' and children's performance in two tasks, one that targeted familiar social distinctions and one that targeted entirely novel ones, revealed that Vezo adults rely on a coherent and integrated theory. By contrast, children do not.

And so, what makes adults' classification consistent and children's inconsistent? Or, to ask the same question from a developmental, rather than static, perspective: how is the adults' coherent, integrated theory of social classification constituted and acquired by children? The standard anthropological answer to questions such as 'How do children become competent adults?' and 'How do they acquire their culture?' is that this occurs as children gradually learn to see things the adult way, as a result of growing up in their cultural environment. For example, as they grow up, Vezo children are exposed to a culturally specific way of classifying people, and they gradually assimilate it and learn to reproduce it. There is clearly some truth in this. Were Vezo children to grow up in a different cultural environment, they would undoubtedly come to classify people very differently; for example, by assuming that social identity is fixed at birth as people inherit from their forebears the essence that makes them what they are.

The comparative perspective I have adopted here, however, enables me to ask rather different questions and to suggest different answers. The questions are: what is it that adults have and children do not that allows 'the adult way of seeing things' to emerge? Or, to put it the other way around: what do children not have that would allow them to compose the fragments of knowledge that are 'in the air' into an integrated set of consistent propositions?

The results of the Vezo-Masikoro task have shown that there is quite a lot that Vezo children learn directly from adults' statements, and learn relatively early. When they are teased because they are Masikoro or praised because they are becoming Vezo, they learn that being Vezo and Masikoro has something to do with what they do. Anecdotal evidence suggests that children who are actively engaged in Vezo activities, such as fishing or trading fish, are in fact more likely to answer the question 'Why are *you* Vezo?' in typical adult fashion by showing the scars that the fishing line has left on their hands, or by boasting about the profits they have made at the market, rather than by saying, as less experienced children do, that they are Vezo because their parents are. There

is, however, a limit to how much children can learn in this direct way. The limit, set by what they do not know, stops them from composing into a theory the fragments of knowledge that they absorb from Vezo adults.

The coherence and predictive potential of Vezo adults' theory rests on a chain of causal mechanisms linking place of residence and activity to social classification. At a more abstract and foundational level, what guides and gives coherence to adults' social classification is the theoretically driven differentiation between two separate causal mechanisms, birth and nurture, for the transmission of ontologically distinct traits of the person. Adults have a general rule of thumb for classifying people: where people live and what they do will tell you who they are. However, they extend this simple rule by adding the capacity to differentiate between traits that are fixed at birth and traits that are transmitted through nurture, learning, and habituation. It is this differentiation that allows them to classify people by systematically disregarding the former traits (for example, skin colour), and focusing solely on the latter (for example, occupational skills).

By contrast, children have, at best, learnt some isolated facts: that certain people are Vezo because they live on the coast and fish, and others are Masikoro because they live in the interior and cultivate. Because children's factual knowledge is not yet integrated with the theoretical presuppositions that underpin the way adults classify people, this knowledge is applied randomly and inconsistently; consequently, it has neither explanatory nor predictive power. Children do not appreciate the difference between birth and nurture as causal mechanisms for the transmission of ontologically distinct traits of the person. Therefore, from the fact that people are Vezo because they fish, children are unable to infer the general conclusion that people must be classified into social kinds by means of traits transmitted through nurture.

This inference is beyond children's conceptual understanding, because it presupposes prior dualistic ontological commitments that they, as yet, do not make. Only once they make such commitments does their knowledge of certain isolated facts about the social world become a coherent and predictive theory of the social world.

Conclusion

Vezo children have taught us a few general lessons. I have shown that their ability to produce and reproduce coherent cultural knowledge (such as the Vezo system of social classification) depends on implicit theoretical presuppositions (such as the differentiation between birth and nurture). This conclusion has important implications for our discipline.

Anthropologists routinely deduce their informants' conceptual systems (concepts of the person, of the self, of relatedness) and their ontological commitments (the absence of the social-biological distinction) from knowledge that their informants communicate to them and that ostensibly contains everything that anthropologists need to know. In so doing, however, anthropologists are in danger of grasping only fragments, like children, and of missing out on the presuppositions that underpin adult knowledge and that reconstitute those fragments as coherent, predictive theories.

Independent support for the argument that comprehension of much of what is communicated, to children and anthropologists alike, relies on implicit theoretical assumptions, comes from pragmatics, the study of how speech utterances are interpreted by the hearer. Just as the comprehension of the simplest linguistic behaviour relies critically on non-linguistic presuppositions, so cultural communication, which involves fantastically complex utterances, must do the same.

Vezo children, therefore, have taught us that Malinowski was right relentlessly to search for a new scientific method that would free the trained researcher from the deceptions of what he called the question-and-answer method. Malinowski was mainly concerned about the fact that this method elicited informants' normative statements and therefore distorted the understanding of practical social life. He seemed less concerned about its effect on the understanding of cognitive processes, perhaps because he assumed that they were universal, and because he knew no existing method that would satisfactorily reveal them. Participant observation, great linguistic proficiency, a systematic method for recording ethnographic data, are some of the methodological tools that we have inherited from Malinowski.

As I have shown, these tools are essential but not sufficient to describe our informants' forms of thought. If we wish to provide such descriptions accurately, we should be prepared to advance our methodology by co-operating with other disciplines such as cognitive psychology, thereby keeping to the innovative spirit with which Malinowski created our discipline.

NOTES

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¹For example, anthropologists working on emotions have claimed that non-Western ethnopsychologies do not separate emotion from thought (Lutz 1988); others have described dividual constructs of the person (Marriot 1976; Strathern 1988) that dissolve the dualism of individual and society; many others have documented a variety of sociocentric or multiple conceptions of the self which have provided the ethnographic backing for theorizing the new epistemology and metaphysics of the 'mindful body' (Scheper-Hughes & Lock 1987).

²On the significance of such process of socialization, see Astuti (2000).

³This question was raised in response to other researchers' conclusion that Western children as young as 3 or 4 have a biological understanding of the transmission of properties from parents to offspring; in other words, that they understand that offspring inherit from their biological

parents the innate potential to develop certain traits rather than others (e.g. Springer 1992; Springer & Keil 1989; 1991). A dissenting voice (Carey 1995) pointed out that this conclusion was not granted, since to claim that pre-schoolers have a biological understanding of inheritance is to claim that they know, at a minimum, that birth is the causal mechanism implicated in the resemblance. That birth causes resemblance is certainly part of Western adults' understanding of inheritance, but the evidence does not grant the inference that this is also the case for young children. Indeed, the latter may have no causal explanation at all for outcomes that they are none the less able to predict, such as the fact that blond parents have blond children; or they may invoke alternative causal mechanisms (such as love or the simple desire to be like their parents) that have nothing to do with birth. To conclude that children understand the transmission of properties from parents to children as a biological phenomenon, one would need to demonstrate that the children themselves explain the resemblance between parents and their offspring by invoking causal mechanisms that are uniquely biological. The adoption task was devised with this aim in mind.

⁴The story was composed so as to avoid the conflation of the birth-nurture contrast targeted by the task. For example, the story emphasized that the two sets of parents were unrelated and unknown to each other, and that the child grew up having no contact with the birth parents or with any of their relatives. The death of the birth parents reduced the likelihood that the participants would assume that the child had any further interaction with the birth parents. A further reason for introducing the death of the birth parents was to distinguish the story presented in the task from other, culturally salient stories about babies being abandoned in dangerous locations in the forest because they had been born on days that are inauspicious according to local divination systems. If such abandoned children are found alive, their inauspiciousness is thought to have no effect on their adoptive parents. When Vezo informants tell stories of such instances, they point out that once the child is grown-up and ready to be of help, the birth parents will claim the child back (and the child typically refuses to follow them). The story used in the task was thus devised to reduce the likelihood that participants would understand the birth parents as having any lingering claim over the child.

⁵The study was balanced across participants according to a Latin-Square design in order to control for the potential confounding factors of whether the bodily traits were presented before or after the beliefs (skills were always introduced last), and which value of a pair of features was attributed to the birth parent. Preliminary analyses conducted on these factors revealed no significant effects on the results discussed here.

⁶The results presented are based on the administration of a version of the task in which the adoption occurs between two sets of Vezo parents. In this version, participants were presented with a total of twelve traits: four bodily traits, four beliefs, and four skills. Participants were said to have shown a Differentiated Pattern if they judged the boy to resemble the birth father on at least three of the four bodily traits and on none of the four beliefs, or on all four bodily traits and on not more than one of the four beliefs. A participant has a probability of .04 of showing such a pattern by chance. As, according to Western folk biology, there is no reason that skills should be considered a priori to be biologically inherited or not, they were not considered in determining the Differentiated Pattern. Participants were considered to have shown a Birth Parent Bias if they judged the boy to resemble the birth father on at least ten of the twelve features, and to have shown an Adoptive Parent Bias if they judged the boy to resemble the adoptive father on at least ten of the twelve features ($p=.02$).

⁷The version of the task on which the following results are based was administered to a total of 31 adults (mean age=42 years, range=22-70).

⁸The adoption task used with children was the same as that used with adults, except for the fact that, to make the task easier, I used photographs of two different villages: one was the village where the child in the story was born, and the other where he was raised. Throughout the telling of the story and the questioning, I pointed to the relevant picture in turn. In turn, children could answer by simply pointing to the picture associated with the trait or parent of their choice, without having to remember any of the specific traits; this made the task much less taxing on their memory and verbal skills than might at first appear. Before proceeding with the resemblance questions, children were asked a few comprehension questions to make sure that they had understood the story. If they failed, the story was repeated a second time; if they failed a second time, they were dropped from the study. As I piloted the task, it became obvious that children younger than 6 or 7 would not be able to pass the compre-

hension questions. From the start, Vezo adults expressed the view that I would be wasting my time with such children, since they are not yet 'wise' (*mbo tsy mahihitsy*) and do not know anything at all (*tsy misy raha hainy*). In fact, these younger children were simply too shy and too intimidated by the testing procedure. Vezo children are hardly used to being asked genuine questions, questions to which they are expected to have independent answers, and their response to my questioning was total passivity. The fact that the sample only includes children of both sexes aged 6 to 13 ($n=40$; mean age=9 years, range=6-13) raises an important issue, namely that the Vezo sample is very different from that of Solomon, Johnson, Zaitchik, and Carey's studies, which recruited North American children as young as 4. This difference is a crucial factor in the comparison between Vezo and North American children's performance. However, the older age of the children in my sample does not affect the comparison between Vezo children and Vezo adults, which is what I am pursuing here. I shall therefore set this issue to one side.

⁹This is the interpretation typically found in the colonial and ethnographic literature on the Vezo, as discussed in Astuti (1995a; 1995b).

¹⁰All participants were set two tasks: the previously described task in which adoption occurred across two sets of Vezo parents, and one of the tasks in which adoption occurs across the Vezo-Karany or the Vezo-Masikoro divide (i.e. V-V and V-M or V-V and V-K). The two combined studies were balanced across participants according to a Latin-Square design in order to control not only for the potential confounding factors described already (note 5), but also of whether the Vezo-Vezo task was administered before or after the Vezo-Karany or the Vezo-Masikoro task and of whether the birth parent was Vezo or Karany (in the case of the Vezo-Karany version), and of whether the birth parent was Vezo or Masikoro (in the case of the Vezo-Masikoro version). Preliminary analyses conducted on these factors revealed no significant effects on the results discussed below.

¹¹Thus, 80 per cent of children who judged that the boy will be Vezo or Masikoro like his adoptive father also judged that the boy will resemble his birth father in at least some of the traits that are typical of his group, with a mean attribution of 3.6 traits out of a total of 6. By contrast, no adult participant ever judged that the adopted boy will resemble his birth father in any of the typical traits.

¹²One can speculate that the reason for such bizarre performance is that these children first judged the boy to be Vezo or Masikoro like his birth father, and that, when asked to justify their choice, they simply fell back on the stock explanation, heard many times before, that people are Vezo or Masikoro because of what they do, the sort of explanation that is 'in the air'.

¹³Children's performance on the Vezo-Karany task suggests that they might have been guided by a default assumption about social identity, that people are what they are because their birth parents are that way. This finding gives partial support to a modified version of Hirschfeld's (1996) claim that there are innately supported specific competencies that underlie how humans reason about social kinds, what he terms the 'human kind competence'. I intend to discuss Hirschfeld's claim in greater detail in a forthcoming publication.

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Sommes-nous tous dualistes par nature? Une démarche cognitive portant sur le développement

Résumé

Cet article prend à parti la position anthropologique bien établie selon laquelle les peuples non-occidentaux ne sont pas piégés par la pensée dualiste. Bien que les informants Vezo de Madagascar tiennent des propos qui pourraient servir à soutenir une telle position, l'application de procédés expérimentaux à leurs raisonnements par inférence révèle qu'ils font une différence systématique entre l'esprit et le corps, entre les phénomènes biologiques qui déterminent l'organisme et les phénomènes sociaux qui donnent forme aux personnes. Cela donne à penser qu'il y a une différence notable entre les déclarations linguistiques explicites des gens et leur savoir théorique implicite. De plus, les données sur le développement démontrent que de telles présuppositions théoriques sont essentielles pour la production et la transmission du savoir culturel. Ainsi les enfants Vezo qui ne différencient pas encore le mécanisme biologique de la naissance et le mécanisme social par lequel ils sont élevés sont encore incapables de comprendre un aspect dominant de la culture Vezo, à savoir l'ensemble des idées, reliées entre elles par des relations de cause à effet, selon lesquelles les adultes classifient le monde social. Ces découvertes ont des implications théoriques et méthodologiques considérables en ce qui concerne la constitution du savoir anthropologique.

Dept. of Social Anthropology, London School of Economics & Political Science, Houghton Street, London WC2A 2AE. R.Astuti@lse.ac.uk