THE TEACHING INSTINCT

Explorations Into What Makes Us Human

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of her young, hoping they will catch on. If the young fail to copy, they will likely die, evidence of evolution taking its deadly toll.

But unlike sea otters and chimpanzees, humans won't develop in this "imitate me" fashion. We need carefully planned demonstrations, we need to be watched during learning, and we need feedback of all kinds. I thought to name what my algebra teacher did as "animal teaching" but then realized that the term would disparage our fellow species.

Notes

1. With regard to his overall research, his "elevator pitch" probably doesn't come as much of a surprise: Sea otter populations have become more stressed as a consequence of diminishing food supplies.
2. Tool use is quite convincing of intelligence in other animals, but human tool creation is really something else. As Jacob Bronowski observed, no termite-fishing chimp spends free time in the evening making a supply of sticks for the next day's work (Calvin, 1994).
3 E. O. Wilson is a Harvard professor whose accomplishments cannot be underestimated. He received the U.S. National Medal of Science in 1976, won the Pulitzer Prize for *On Human Nature* in 1979, and in 1990 won the Crafoord Prize awarded by the Royal Swedish Academy of Sciences in certain sciences not covered by the Nobel Prize, and therefore considered by many to be the highest award given in the field of ecology.
4. Bubble cloud feeding is a strategy that humpback whales use to encircle their prey. The whales form a large circle under a school of fish and then begin to exhale, creating a wall of bubbles through which the fish are afraid to swim. The whales then swim up the bubble column and eat the fish, which are formed into a tightly packed ball.
5. This finding should not be too surprising. Maestripieri (1995) noted that maternal encouragement of infant locomotion in nonhuman primates is highly variable. Even within the same social group, only certain individuals engage in such encouragement. Maestripieri also suggested that multiparous mothers (i.e. those who have raised more than one offspring) tend to teach more, indicating either that these mothers learned to teach locomotion better or were more successful in doing so as a consequence of instinct. Either hypothesis makes sense.

3

WHEN DO WE KNOW HOW TO TEACH?

Divination and perception, not psychological pedagogics or theoretic strategy, are the only helpers here.

William James, *Talks to Teachers on Psychology* (1899)

"Please show your sister how to turn on the TV!" I yelled from the kitchen. One daughter was 4, the other 2. And when something—anything—comes between a 2-year-old and a favorite television show, any measures seem justified to solve the problem. Partly the consequence of my wife being in bed with a nasty flu, I was in the middle of making pancakes, a job that presented significant learning challenges of my own, but for that day the Saturday morning tasks were mine. I knew our 4-year-old could use the remote to turn on the television and navigate to the channels the girls liked. I don't remember the exact show, but its absence had quickly resulted in tears. "What is the problem?" I thought. "Why can't she show her?" Leaving pancakes on the stove to burn most likely, I rushed to the living room and asked the 4-year-old why she didn't show her sister how to turn on the TV. She had, she claimed. Twice. Determined to get to the bottom of this, I told her to show her little sister again—this time, I would make sure she did it. As I watched her, it struck me that my otherwise smart 4-year-old had no idea how to teach.

Our exploration of animal teaching has shed some light on whether teaching is unique to humans and perhaps on whether there is an instinctual component. But this is only one of the tools available in the search for instinct. The other

strategy is to examine if infants or young children engage in the behavior in advance of any cultural experiences. And although this chapter draws us into some interesting psychological theories, we can begin with an easy enough observation. We've all seen a 5-year-old "teach" a younger child—to play a game, to use an electronic device, maybe even to read—tasks that could not have been accomplished at, say, the age of 2. Language is the same. So it's entirely obvious that a 5-year-old can teach more effectively than the same child at 2. Of course, a 5-year-old can do many things that a 2-year-old cannot, and developmental psychologists and others have cataloged these skills with a remarkable enthusiasm. The most famous of these is Jean Piaget, who in fact did not call himself a psychologist at all, instead referring to his work as genetic epistemology—that is, the origins of thought and learning. In fact, Piaget's goal was not to find human developmental sequences; he was after a larger question about the origins of human thought (Koops, 2015). And finding no early humans nearby to serve as his subjects, he decided to study the development of infants' and children's thought on the belief that the way children think mirrors the development of human thought in the species. So, for example, if young children take several years to develop the capacity for abstract thinking, so it must have been that our ancestors took many thousands of years to develop this capacity. This idea of the development of an individual of the species tracking the development of the species as a whole is known as *recapitulation*. By suggesting that ontology (the development of an individual member of a species) *recapitulates* phylogeny (the development of the species as a whole), one could examine an infant or child for clues to how our species developed. Although recapitulation theory has fallen out of favor as a serious biology, it still makes sense. The important idea for us is that Piaget and most developmentalists regard cognitive growth as a consequence of environment, of course, but also as clearly driven by our genetic programming.

Piaget certainly believed this and grew frustrated when educators asked him how to speed up children's acquisition of conservation of mass, for instance. You can't control it, he would argue. It's a process of biological maturation as a consequence of living in the world. It will happen when it happens.

The most prominent—and studied—aspect of human cognition is the development of language, which we've addressed here and there. Today, nearly all linguists agree that language is linked to our biological development and therefore primarily instinctual. Again, one needs to be among speakers of language, but our biological growth is what drives language.

In my experience, most people can agree that language, and a few other cognitive landmarks, are driven by biology, but most of us generally believe

that just about everything else a child learns is drawn from culture and the specific environment (e.g. learned from parents). Yet a vast body of developmental research has shown that there is much more instinctual about our cognition than previously thought. For instance, the work of Elizabeth Spelke and her colleagues has shown that infants as young as 6 months old have a capacity to understand numerosity—that is, they seem to be able to count (Starkey, Spelke & Gelman, 1990).

Could teaching be the same? Are we preprogrammed to teach? This is our fundamental question, and, fortunately, several developmental psychologists are studying young children teaching and, like their predecessors, are venturing into the topic more or less convinced that the development of teaching must be related to biological processes. For example, if teaching is yoked to language, and language is a biological process, then learning to teach is, by extension, maturational.

For those of us who work in teacher development and education, the developmental view of teaching will be familiar. After all, educational researchers and teacher educators have long been concerned with the development of the learning-to-teach process. Some of the earliest work in this area came from Lillian Katz (1972), who described the learning-to-teach process as beginning with survival (just making it to the next day), proceeding through consolidation (linking teaching competencies together) and renewal (new efforts generated when teaching is no longer terrifying), and ending with maturity (the capacity to see student learning at the center of teaching). Veteran teachers recognize this sequence immediately and admit that "survival" is a very apt term for those first years. But the developmental psychologists and cognitive scientists working on this topic are instead after the answers to more basic questions about learning to teach. And like Piaget before them, they begin with children, as young as possible, to investigate if teaching might demonstrate a predictable growth pattern and thus prove its own inheritability.

Their central theory turns on the development of a child's *theory of mind,* or TOM, a term first used by Premack (whose work we again find useful) in his efforts to learn if chimpanzees could impute mental states to themselves and others (Premack & Woodruff, 1978). Premack wisely pointed out that a TOM is a very useful system, allowing us to infer other people's intentions, knowledge, and beliefs, among other internal states. If you know what someone else is thinking, you probably have a distinct evolutionary advantage. Today, the debate about whether chimpanzees have a TOM is ongoing (e.g. Call & Tomasello, 2008); research has also addressed if those with autism (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001) or schizophrenia (Brüne, 2005) develop the capacity.

But we know that all normally functioning humans develop a TOM, so the research needed only to find out when and how a TOM developed in our species. Our interest in the topic is obvious: One cannot teach without this fundamental understanding. In other words, if the "teacher" cannot understand that the "student" could have a different or missing understanding of some clear fact that the teacher possesses, how could teaching happen? Thus the prevailing view on a TOM suggests that a child has a TOM if he or she understands that others might have their own thoughts or intentions that may not concur with the child's own. Psychologists have developed several ways to test TOM (Wimmer & Perner, 1983). One strategy is known as the change-of-location false-belief task. In this test of TOM, the researcher invites the child to watch a brief video in which an object is moved from one location to another, while the story's protagonist is away from the scene (e.g. the character's—call her Jilly—candy is moved from a box to a drawer). When Jilly returns to the scene, children are asked where *she* thinks the object is, or more simply, where she will look for it (e.g. "Where does Jilly think the candy is?" or "Where will Jilly look for her candy?"). Children without a developed TOM will say that Jilly should look in the new location, oblivious to the fact that although they know that the candy has been moved, Jilly does not.

TOM follows the developmental arc of other cognitive landmarks, giving it the appearance that it is driven by neurobiological determinants—that is, no amount of "teaching" a pre-TOM to understand that the character does not know what you know will help. Until they are about 4 years of age, children appear unable to take the perspective of the character, and no amount of practice or training will help, just as it is argued that no amount of practice will help the preoperational child gain an understanding of concrete logic. Although a child needs experience in the world, these are biological developments.

A second research strategy is the unexpected-identity false-belief task, sometimes used because children don't have to follow a story. The researcher shows a familiar container, asks what is inside, and then opens it to show unexpected contents (e.g. shoes inside a toy box). The child is then asked what another person will think is inside the box when the person first sees the closed box (e.g. "What will your friend think is in the box?"). Sometimes the child is also asked what he or she thought was inside the box before it was opened. Whereas results from various studies differ, it appears that children aged about 4 years or younger (these studies can begin around the age of 2 years, when children have developed enough language to understand their task) will typically report what *they* know about the location of the candy or what's in the box and are unable to take the perspective of another person.

It is easy to see that a child without a clear TOM is going to struggle to teach. How can teaching happen if the teacher can't understand how another person, by virtue of circumstances, doesn't know something he or she does? This fact is self-evident. As Olson and Bruner (1996) pointed out, "assumptions about the mind of the learner underlie attempts to teach. No ascription of ignorance, no effort to teach" (p. 12).

But it is quite a bridge between the results of TOM research and whether someone understands how to teach. Nevertheless, TOM research has led to some interesting discoveries about the development of teaching in children. In particular, the work of Strauss (2005) has suggested that teaching is largely a developmental process, much like other features of human cognitive growth, such as language. He does not use the term *instinct* but instead calls it "natural cognition."

First, Strauss argues that no species other than humans teach by engaging a TOM. This is not surprising. Second, he argues that every normally developing human has been taught or will teach; teaching is a universal activity. Third, and here Strauss is worth quoting,

> teaching is an extraordinarily complex enterprise that has much to do with mind, emotions, and motivation-reading. The richness of the kinds of knowledge needed to teach is impressive. As a miniscule sampling, consider this: in order to teach, one needs to know when knowledge, beliefs, skills, etc. are missing, incomplete, or distorted, as well as how people learn. One also knows about others' emotions and motivation. (p. 1476)

Fourth in the list suggests that much of teaching is invisible to the eye, and these features, such as the teacher's intention and the many inferences that must be made about learners, suggest that much about teaching does not require rehearsal or even to be put into words to be acted on. Teaching, therefore, is a consequence of natural cognition. Fifth, Strauss reminds us that we are wired for language, and one of the primary purposes of language is to encourage social interaction. Therefore, social interaction is likely instinctual (e.g. natural cognition). Sixth, teaching is "unschooled cognition" (p. 1477). By this Strauss means that although few of us have been taught how to teach, we all seem to know how to do it. Seventh, Straus and his colleagues have found that children as young as 3.5 years of age appear to be capable of rudimentary teaching. If we can find children this young performing something that looks like teaching, then instinct might be the right word for what we find.

I am indebted to Strauss's thinking on the topic, and his work has helped to sharpen my own, but I needed to do some independent research, so I arrived at another test of early teaching, this time with a new age group and a different type of teaching task (Téllez, 2011).

We have learned from Strauss and others that teaching may be the result of natural cognition, but the tasks used to demonstrate this phenomenon appeared to me less cognitively challenging than what counts for what we call teaching in modern industrial cultures, where teaching is typically conceptual in nature. In other words, it's one thing to ask a child to teach how to operate a toy or play a game (these are the tasks Strauss used in his studies), but it's quite another to invite the child to teach something less concrete, more conceptual. This was my goal when I engaged in a study of six third-grade (8 to 9 years old) "teachers" and asked them each to teach a school-based task to their own kindergartner "student."

For my experiment, I developed two separate sets of materials based on the kindergarten state standards in California. The first was found in the mathematics objectives: A knowledge of various shapes, including recognition of simple shapes (e.g. square, rectangle, triangle) as well as noticing the differences among the shapes. Naming a rhombus is not part of the kindergarten state standards, but I included an example to explore whether these third-grade "teachers" could enhance their kindergarten student beyond what might be expected (see Figure 3.1).

For the second task, I created 20 cards with rhyming words, ranging from very simple (cat–mat; top–mop; man–can) to more complex (cow–how; show–blow). The kindergarten teaching standards include goals for the easier rhyming words, but the more difficult pairs are expected in later grades. Again, I added the more challenging pairs to see how the third-grade teachers would respond.

The six third-graders (average age 8.6 years; two boys) were chosen from an ethnically diverse school in the San Jose, California, area. Each had scored above average on tests of reading and mathematics, but none would be considered superior.

The third-grade teachers were told that the school was interested in beginning a tutoring "buddy" program and that we wanted to learn how third-graders would teach kindergartners. (The school principal and some of the teachers were genuinely interested in the results in advance of implementing a tutoring program.) The six kindergarten students (average age 5.5 years) were chosen by their teacher as having similar language and mathematics skills, at slightly above the average for the class. The third-grade teachers were assured

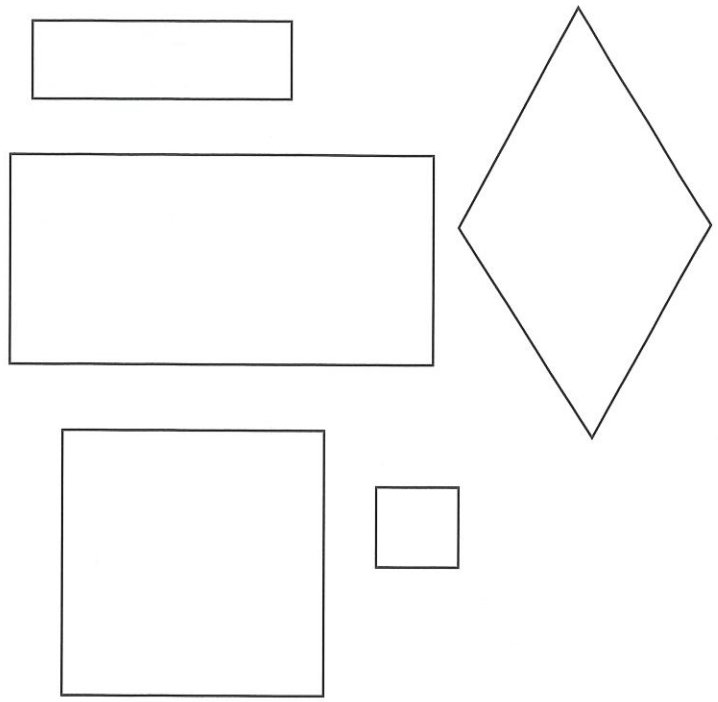

FIGURE 3.1 The shapes (i.e. curriculum) offered to three of the third-grade teachers

that this task would not be graded and that they should just do their best to teach the kindergarten student. They were randomly given one of the two stimulus materials (rhyming words or shapes) and allowed up to 5 minutes to consider how they might use the materials to teach their kindergarten learner. Each teaching episode was audio recorded. I remained in the room with the students the entire time, giving scripted directions and prompting only when necessary.

As I developed the study, I was surprised that I had never conducted such an experiment before. As a classroom teacher, I had participated in many cross-age tutoring programs, but I'd never paid close attention to how well the older students taught. I suppose that my colleagues and I believed that the social benefits were reason enough for tutor buddy programs. But the results of this study were quite surprising.

What was most striking was the range of the teaching instinct exhibited by these young teachers. I had not expected so much variability. Table 2.1 shows the results.

TABLE 2.1 Summary of results from third-grade "teachers"

Task	*Time spent*	*Notes*
Shapes	5:49	Showed the cards to student, asking questions; discussed each card and attempted to teach the concept of a rhombus.
Shapes	4:35	Described the shapes by talking about them; shapes were kept in the lap so that the kindergarten student could not see them.
Shapes	2:00	Showed shapes and stopped when it was clear the student knew the concept of square.
Rhyming words	0:50	Read the cards to herself; asked no questions; looked up and said she was done.
Rhyming words	4:57	Showed only the simple rhyming cards; when student showed proficiency on the most simple patterns, abruptly ended lesson.
Rhyming words	14:57	Explicit instruction; multiple opportunities for practice; returned to the most difficult rhyming patterns at three points in lesson; reviewed easier items, which seemed designed to build confidence.

One of the third-grade teachers (a girl) took no time preparing her lesson then simply read the rhyming cards, stopped, and looked back at me. I even asked her if she was done, letting her know that she could take more time if she wished. The entire session took 50 seconds. Contrast this response to that of another teacher, Marina,[1] who spent nearly 15 minutes helping her student, using all her effort to make sure he understood the difference between rhyming words ending in "ow."

Following is part of the transcript of the interaction, with my notes in italics:

Marina takes about 3 minutes before the teaching session to read over the cards very carefully. She sorts them by rhyming patterns, saying each out loud to herself. I bring in the kindergarten student, and she announces the lesson:

MARINA: So I'm going to show you some rhyming words.

She begins by going over the easier pairs (man–can), which the kindergartner masters. But she then moves on to the exceptional cases (i.e. words that end in the same letters but do not rhyme, such as show–how).

MARINA: Now, when we look at the sounds at the end, you have to read the word to know if they rhyme. It's kind of tricky because the letters can be the same, like *wow* and *show*. *Show* makes the *o* sound. So it's tricky because "ow" makes different sounds like *ou* and *o*. So would we say *shou* for this word [points to "show"]?

KINDERGARTNER: Yes.

MARINA: Hmm, not quite. Because *shou* is not really a word. What about *glow* and *grow*?

KINDERGARTNER: Yes, they rhyme.

MARINA: Good.

But Marina is still not convinced that her student understands the underlying concept of rhyming. She repeats:

MARINA: *Glow,* with *o* sound, makes sense. If you think it doesn't make sense with the *ou* sound, so then say the *o* sound and then you know if they rhyme.

The kindergartner is still confused, mostly because she doesn't have the reading skills to follow what Marina is trying to teach. Marina understands this, too, because she has pulled out the easier rhymes, likely to go back over the essential concept.

At this point, I had to stop Marina's teaching because it had already been 15 minutes and her kindergartner had to go to recess.

I was shocked at what I'd found: One teacher was not teaching at all and another was staying with the task until the kindergartner grew a bit exasperated.

The results of teaching the shapes task were also varied, but less so. Following is part of the transcript from the session with James, who had spent about 2 minutes preparing for his lesson:

James begins with the easier examples.

JAMES: What shape is this?

KINDERGARTNER: Square.

JAMES: Are the sides the same?

KINDERGARTNER: Yes.

James shows a rectangle.

JAMES: Look at this one. Which side is bigger? This one or this one? This is a rectangle. These two sides are same, and then these two. So this is called a . . .

KINDERGARTNER: Rectangle.

After confirming that the kindergartner knows the names of the easier shapes, James picks the rhombus.

JAMES: This is called a rhombus. Even though the sides are different, they're still the same size. A rhombus has four corners. These two sides are the same and it looks like a diamond shape. And you half it, it will look like two triangles.

James then goes a bit further, asking the kindergarten student if she knows the characteristics of the shapes.

JAMES: How can you tell this is a rectangle?

KINDERGARTNER: Because the sides are different. Some are longer and some are short.

JAMES: Good. How can you tell this is rhombus?

KINDERGARTNER: Because it's a . . . triangle.

Even though the kindergarten student wasn't quite able to describe the features of a rhombus, at this point James looked at me and said he was finished teaching.

Contrast James's teaching to the methods of another teacher of the shapes task, a third-grader who simply described the shapes to herself. Although she was very thorough in describing the shapes, noting their features and unique properties, the kindergarten student couldn't even see what she was doing because she kept the shapes in her lap! Similarly, consider the rhyming words teacher who read the words to herself and matter-of-factly declared that she was finished teaching.

Overall, these results demonstrate that children can teach, which corroborates Strauss's and others' findings, but in addition, I was able to find wide variability in the execution of the task, something earlier research had not discovered, or at least had not reported. But what do the results mean? Of course, I had changed the task from teaching how to play games or operate a toy to a more conceptual teaching simulation. My teachers did not have a specific object to manipulate and thus had to rely on language far more than teachers in earlier studies. Furthermore, the teachers in my investigation were older, and we might find that teaching capacity widens, or at least differentiates, as children grow, which is exactly what we find when examining other kinds of knowledge.

Since completing this research, I have shared the results with many educators, and I often hear a version of the following comment: "Well, the third-graders were just imitating their teachers." I should point out that all the third-grade teachers came from the same classroom, and because the school was relatively small, most of them had had the same teachers since kindergarten. If they were

truly imitating their teachers, their teaching "styles" would have been more similar. In a study completed some years ago, Ellis and Rogoff (1982) investigated differences in child versus adult teaching. Using a "home" teaching task and a "school" teaching task, they found that adults were better teachers (i.e. their students performed better on tests measuring recall of the tasks). Of course, this research was conducted some years ago, but it seems odd to me that anyone would even consider testing this hypothesis. Of course, adults will be better teachers than 5-year-olds, but such is the faith we place in children and their capacities. And I don't know why it didn't occur to Ellis and Rogoff to explore variability of teaching within the children in her study. Based on my findings, the children/teachers could not have all performed similarly. They also found that the adult teachers used more language than the child teachers did, also not surprisingly. Interestingly, they found that the child teachers appeared better at what the authors called "imitating their classroom teachers," especially in the school task. But I call into question how much imitation we find when children are asked to teach. One simple reason is that imitation demands recall, and remembering specific ideas or practices is very difficult, especially when we don't know ahead of time what we will be asked to remember.

It seems clear to me that the third-graders in my study approached the task using resources gained by virtue of their specific histories as well as something we could call natural cognition, natural pedagogy, or even, dare I say, instinct. After all, none of the third-grade teachers in my study reported that they couldn't do it; they all tried to teach and, from my perspective, put forth their best effort. In fact, I wondered if the claims about the children just imitating were akin to the way most people think about language. If we ask nonlinguists how children learn to talk, many say that they imitate their parents, which has been shown time and again not to be the case. I wonder if it's the same for teaching? If teaching had the same innate mechanism as language (although this is very unlikely), then we should find children generating teaching "speech" and strategies they've never heard or experienced before. This question will have to wait for another study.

An additional comment suggests that the "good" teachers all had younger siblings and that the teachers' variation in performance, or at least their variation in depth of teaching, is a consequence of being an older or younger child in the family. This conclusion makes good intuitive sense, but the data don't support it. The students were mostly middle children; James is the oldest sibling, whereas Marina is the second of four children in her family. The impulse to think that teaching capacity is a consequence of birth order is contradicted in other research

studies. Howe and Recchia (2009) explored differences in first-born and second-born teachers and found that the age difference between teacher and learner influenced the instruction (e.g. a larger age gap between the two siblings resulted in the teacher [older sibling] offering more positive feedback) but found no differences between first- and second-born siblings. A related comment regards the gender of the students; some have argued that girls are going to be better teachers by virtue of a host of factors we explore in a later chapter. A girl produced the longest and most developed lesson, but a girl was responsible for the shortest and least developed as well.

The final comment I often hear in response to the study is that I'm somehow suggesting that we identify third-graders such as Marina and James, and encourage them to become teachers. This comment really misses the point, because I am not saying anything about these children's potential for teaching, good or otherwise. Who knows? They were in the third grade—maybe one of them had a bad day. Conversely, it is folly to assume that all children would develop teaching skills equally. Just as some children begin to talk earlier than others, if teaching is a consequence of natural cognitive development, then it will develop at varying rates. From my view, having watched these children and many others teach, I am convinced that Marina and James were the best teachers in the group. I also think that they enjoyed the task more than the others, but I have no systematic way of proving this.

If you are a teacher or thinking about becoming one, it is tempting to believe that you would have performed as Marina or James did—carefully planning the lesson, engaging your student, checking for understanding, pushing for conceptual knowledge—but there is really no way to tell. And if you are already an excellent teacher (by whatever definition you wish to use), you have already arrived, so it doesn't matter if you were a good teacher in the third grade. But if we can reliably identify precocious teachers in elementary school, what harm would it do to tell them so? Parents and teachers alike encourage children who show a talent for, say, art, engineering, or writing and plant in the child's mind the idea that talents can be matched to careers. And if you believe, as most of the public does, that teachers are born with their capacities, then identifying good teachers in the third grade is entirely logical.

But no matter whether we identify good teachers in elementary school or later, someone, at some point, decides who will become a *professional* teacher. In some cases, this is a highly competitive process; therefore sound, valid strategies must be used. How teachers are chosen is the topic for Chapter 5.

If we find variability in children teachers, is there anything that can be said regarding variability in adults who teach? We find wide variability among adults

on all cognitive tasks. Reading skills, for instance (Bell & Perfetti, 1994), vary greatly: Some adults are preliterate, unable to read at all; others are highly accomplished. So, if we were to sample the adult population at large, there is no question that we would find variability in their teaching skills. It may not be as wide as what I found in third-graders, but it would be present. I would even suspect that some adults would refuse to engage in the teaching task outright, which none of the third-graders did. We even find variability in adult teachers when we do our very best to select people who have a capacity for teaching as well as some experience teaching or tutoring, and then do everything possible to help them reach their teaching potential. Educators will recognize this effort as teacher education, where we still find substantial variation among teacher candidates. And as for practicing teachers, those who work in schools, economists (whose conclusions we must temper because they use only student test scores when they study variability in teachers) find that some teachers' students, in a single year, gain more than a year's worth of learning, whereas others' students fall behind. The economists Hanushek and Rivkin (2006) argue that we find wide variation in what they call teacher "quality," even when education and experience are held constant, but they don't know where the variation comes from. Being economists who favor free markets, they blame hiring and retention practices—really a jab at teachers unions—and other school system practices that allow poor teachers to remain on the job.

How quickly we have moved from child teachers to potential policy changes in school systems to keep a good teacher. I have vowed not to tread into the territory of what makes good teaching or teachers, and yet what the third-grade teachers demonstrated raises an important point about the TOM and teaching.

The third-graders in the study had developed, more or less, a TOM sufficient to allow them to realize that everyone doesn't know what they do. Based on their age and cognitive growth, this is predictable. But a few of them showed a more developed TOM, as if they were able to split their consciousness into two spheres: one paying attention to what's going on in their own mind and the other inhabiting the mind of their student.

In my role as a university teacher educator, I've observed thousands of lessons, mostly by teachers at the beginning of their careers. And although most of the lessons I've observed were successes, every so often an attempt failed. In some cases, the teacher made a "rookie" mistake, such as never getting the students' attention; in others, the culprit was external—for example, too many interruptions from the office. But sometimes after watching a lesson, I have thought, "The student teacher taught the lesson to himself. It was as though the students weren't even there." I had the same reaction to one of

the third-grader's lessons. But when lessons are successful, the teacher's knowledge of the students seems almost preternatural. Could it be that superior teachers have an exquisitely developed TOM?

Note

1. Pseudonyms are used for all third-grade "teachers."

4

IS TEACHING UNIVERSAL IN HUMAN CULTURES?

> *. . . one could say that cultures are like trains moving each on its own track, at its own speed, and in its own direction. The trains rolling alongside ours are permanently present for us; through the windows of our compartments. We can observe at our leisure the various kinds of car, the faces and gestures of the passengers. But if, on an oblique or a parallel track, a train passes in the other direction, we perceive only a vague, fleeting, barely identifiable image, usually just a momentary blur in our visual field, supplying no information about the event itself and merely irritating us because it interrupts our placid contemplation of the landscape which serves as the backdrop to our daydreaming.*
>
> Claude Lévi-Strauss, *The View from Afar* (1985)

Thorstein Veblen was an odd but influential figure in the early 1900s. Born in Wisconsin, his parents were immigrants from Norway, and, like many immigrants and their children, he was able to take a fresh look at America, noticing patterns and contradictions in the development of the great democratic experiment. It may seem strange to us now, but he was instrumental in offering a scathing critique of capitalism without relying on Marxism. Instead, he argued that class differences in modern economies were the result of several basic human instincts that required modulating so that a "leisure" class would not develop (Veblen, 2005). The leisure class are those allowed to get by without working, a consequence that horrified Veblen. By viewing modern societies through a lens that recalled our prehistoric past, he argued that examining these instincts—predation, workmanship, idle curiosity, emulation, and a parental bent[1]—could explain our collective behavior in modern cultures. The latter two instincts are, of course, our interest.