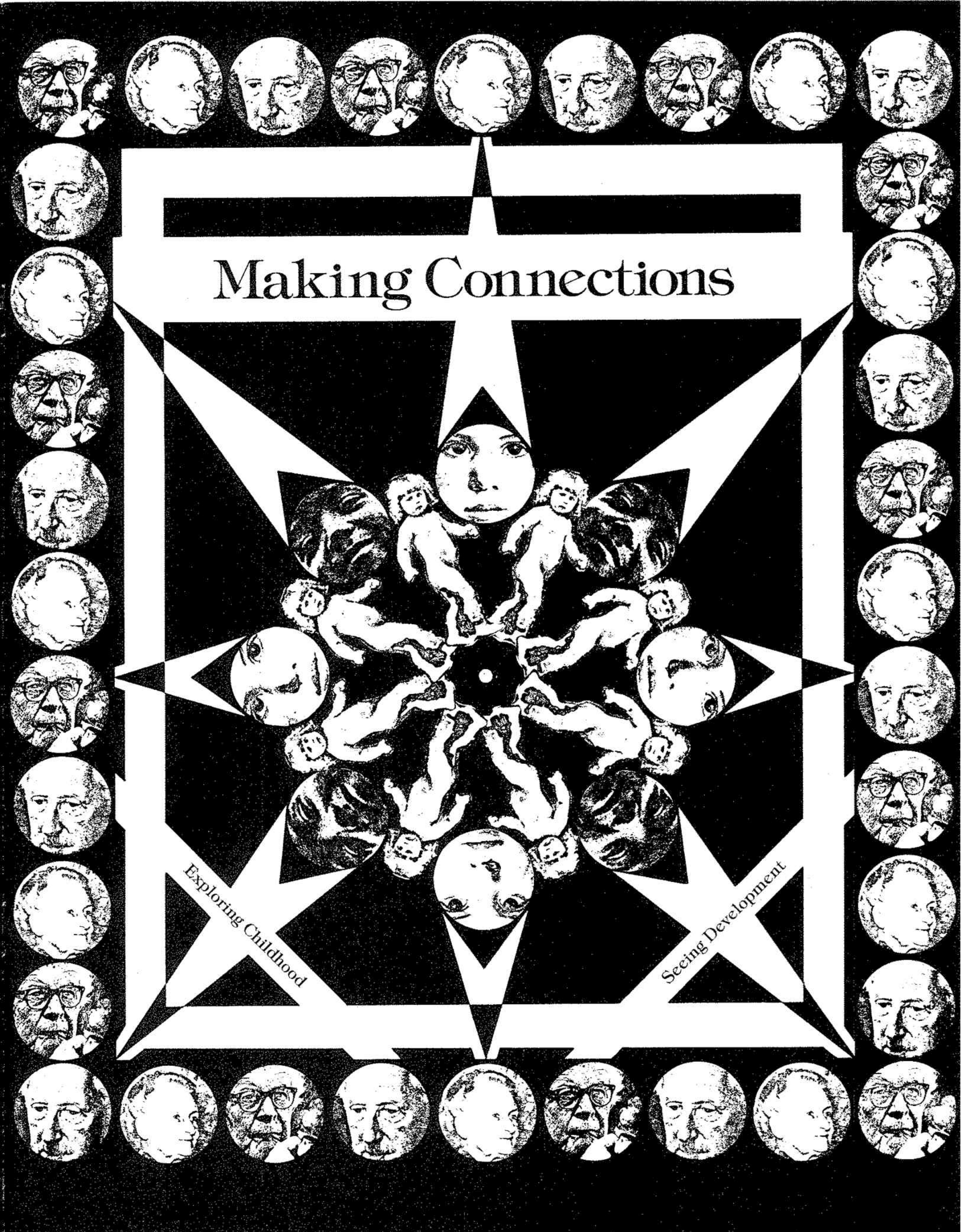
Making Connections



MAKING CONNECTIONS

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Making Connections

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Patterns in Growth

Now that you have been working with children for several months . . .

What changes have you noticed in any of the children?

What changes have you noticed in yourself?

Do you think the way change comes about is at all similar for you and for the children? Is it different?

Afterward, share your observations with your classmates.

Did any of you observe the same changes in different children?

Did any of you observe different changes in the same child?

Does the conversation give you any more ideas about why the child you described has changed?

Do you think the child you described could have changed in the same way a year earlier? several years later?

One Child's Growth

At your fieldsite, is there one particular child who you feel has changed a great deal since you first arrived? There are many kinds of change you may have noticed:

- body control and movement
- ability to pay attention and follow directions
- ways of playing with other children
- sensitivity to other people's feelings
- emotional control

In your journal describe some of these changes in detail, using words, drawings, or photographs. What do you think made changes take place?

Earlier in the year I noticed that Lee...

But lately I've noticed that Lee...

There are a lot of things that I think helped Lee to grow. First...

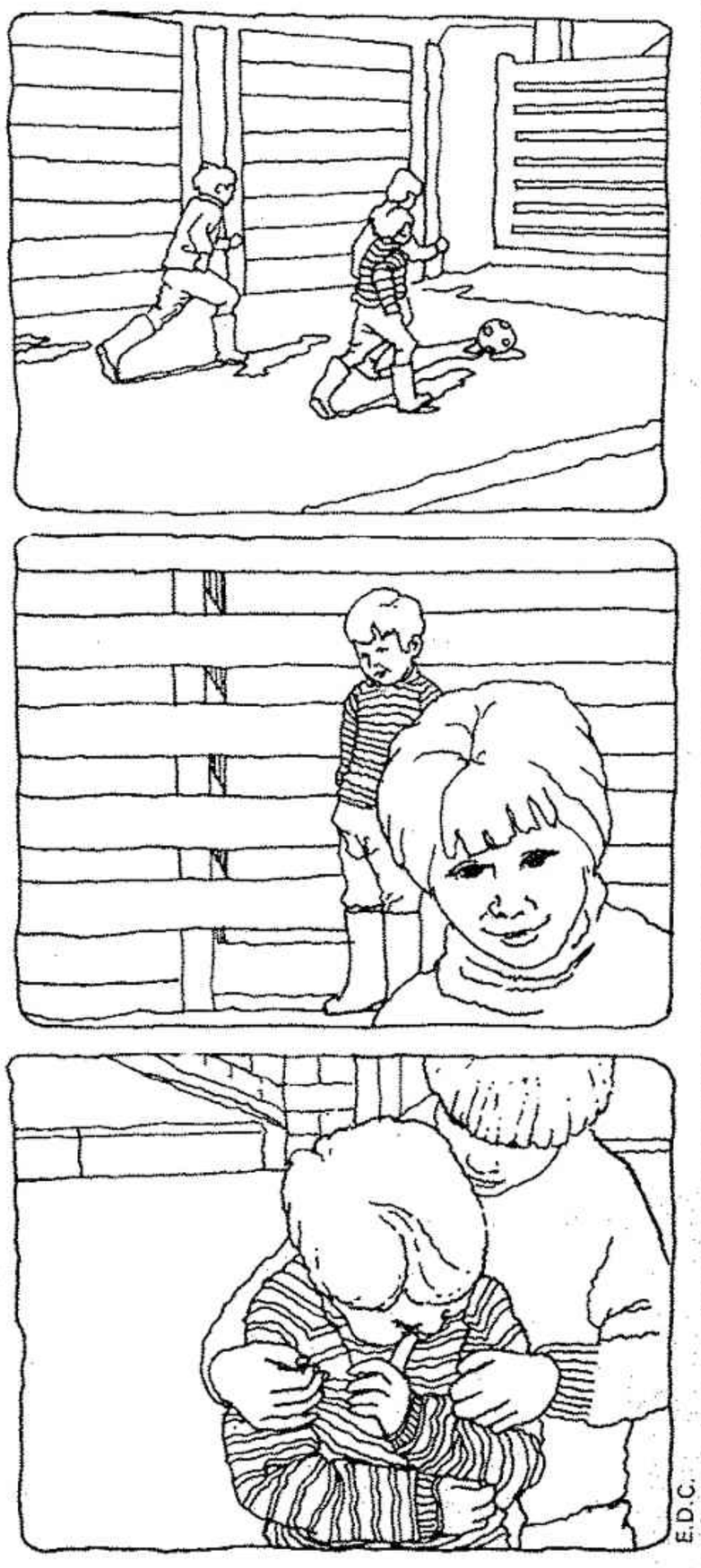
Hsiao-Ti Falcone

Observing Through Film: "All in the Game"

When children develop a new ability in one area, they usually change in other ways as well. This is easy to observe in play. The English film "All in the Game" suggests how "all" of a child — body, mind, feelings — is involved in play and changed by the learning that goes on. For example, Luke, the boy who appears in the first section of the film, has recently learned to kick a soccer ball. Even though Luke's control of his body is better than ever before, he is still clumsy and slow compared to his brothers. When he tries to join their game he is bumped aside, outrun, ignored.

Think about what this means to Luke. He has to settle a conflict between his feelings: he wants to cry, but also to appear big and tough enough to play the game. He's not included in the game, but he gets a chance to watch. He learns about cooperation and strategy among teammates. At the same time he hears them argue and joke with each other. Altogether, Luke has learned much more than how to kick a soccer ball.

As you watch the film, look for other instances in which learning in one area of the child's life might spark development in others. Can you recall similar experiences in your own life?



Development Is . . .

Infants learn to capture objects with their hands. Toddlers master speaking. By age seven a child may be struggling to read as well as his or her age-mates. Older children learn team sports and some do better than others. Teenagers try to come to terms with who they will be later in life. Throughout life, everyone is challenged to stretch and change. What changes do you think young adults, parents whose children have grown up, and old people must face?

What does it feel like to be involved in growth? In your journal, under the title "Development Is . . .," list words that express this experience for you. Afterward, look at the statements that follow in which adults describe recent changes in their lives.

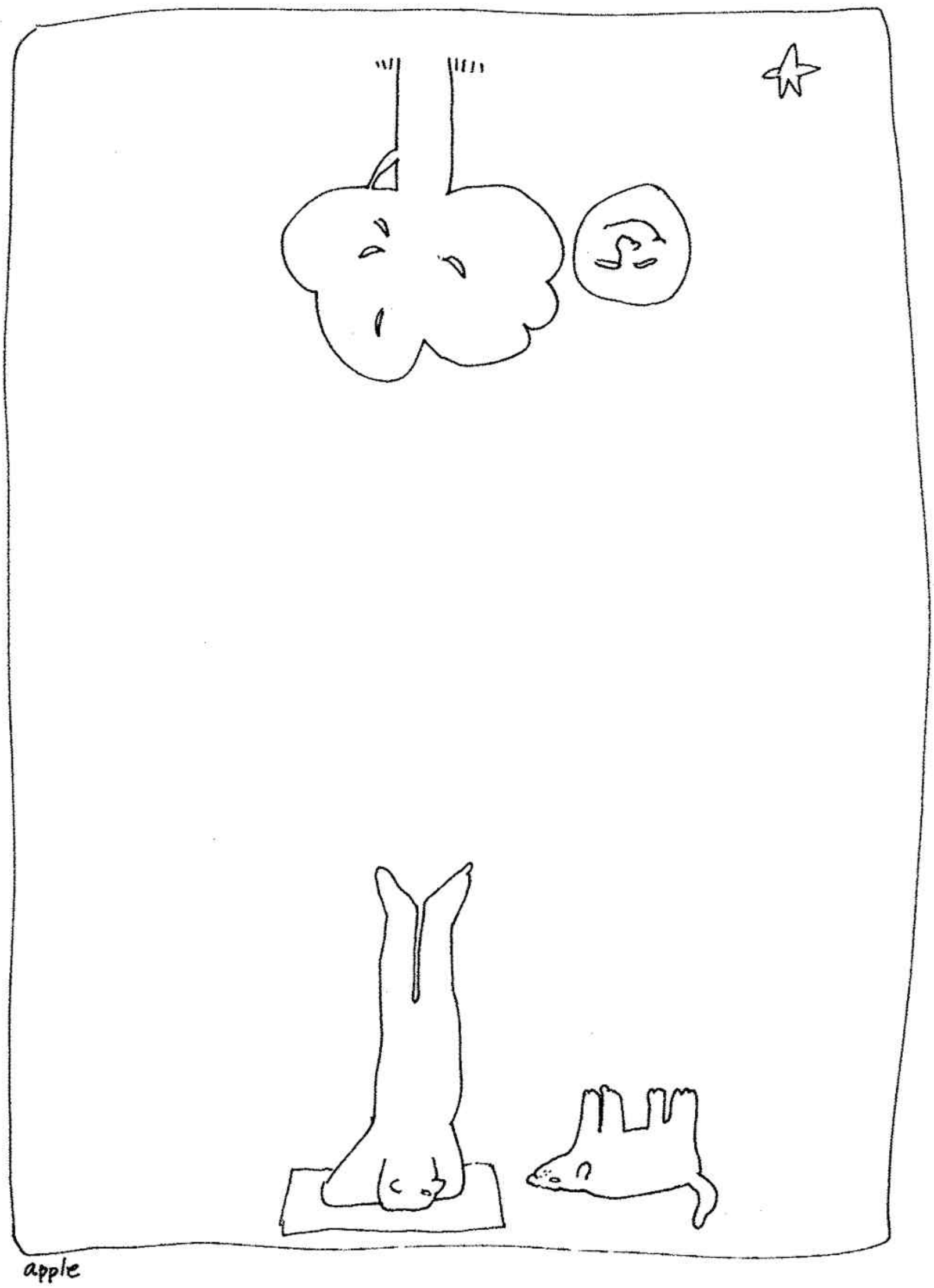
Development at thirty . . .

I have been studying Yoga. Most of the exercises and positions can be done, to some degree, by learning where to put your limbs and how to twist your back, by concentrating on balance and breathing, and by repeating the postures regularly so that your body limbers up. But the headstand is different. To do it you have to take leave of your senses.

It sounds straightforward enough: Kneel down, fold your hands on the floor, rest your head on your hands. Arch your body to form an upside-down "v," walk your feet toward your hands. When your feet are practically in your mouth, bend your knees, rotate your hips, and lift. Lift! If my instructor hadn't grabbed my feet as they kicked the air, that first time, and hoisted them over my head, I would have turned over faster than a falling cat. Instead, I found myself a prisoner, my feet bound, my body pressing painfully into my neck and head. Since I was upside-down and facing in the opposite direction from where I started, all sense of balance, direction, and space evaporated. I could not tell right from left, front from back, or even up from down in this crazy, topsy-turvy world.

I can do the headstand now, and I love it. But what amazes me is that all the visual and spatial information I had stored up over the years—all my experience in moving my body—was of no help to me. I had to start all over—I had to re-orient my body in space, and learn, step by step, how to move it. I also know that I could have learned this more easily when I was about ten years old—a time when I learned to do back dives off a springboard. Somewhere, in growing up, I lost my fearlessness.

A.G.



Henri Cartier-Bresson

. . . at thirty-five . . .

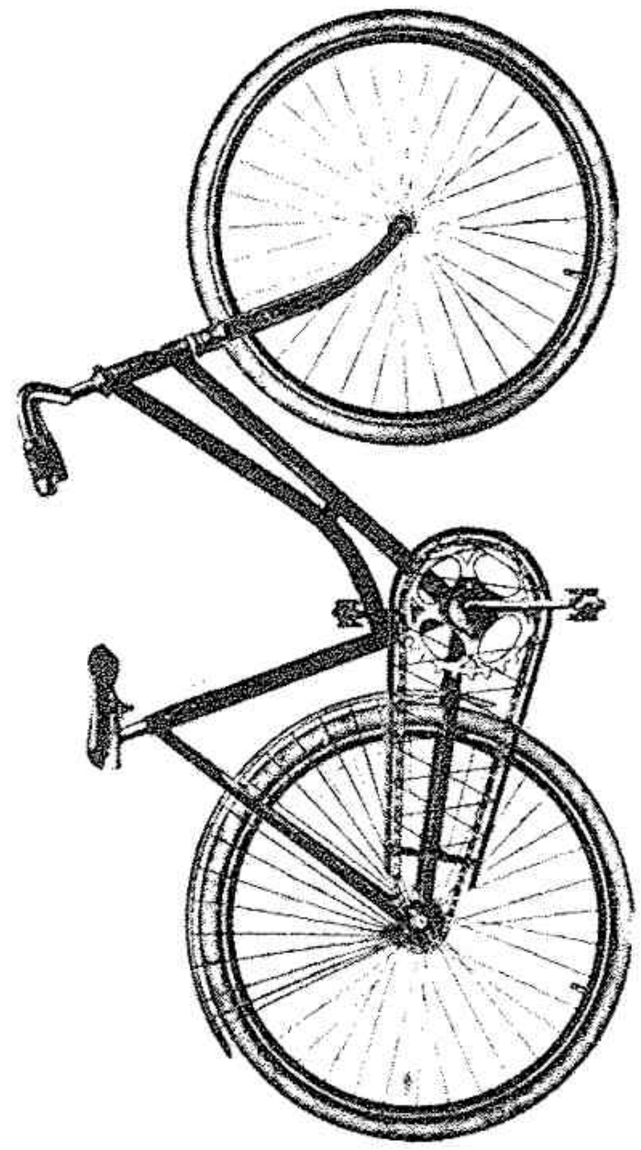
I have finally learned to ride a two-wheel bike, and I feel more confident, now, that I'm a member of the same species as everyone else.

After many tries in earlier years, I started this time in a large, flat, parking lot. I waited until evenings or weekends when it was empty. The first problem was to build up enough momentum to be able to ride without falling over—but not so much that I felt out of control. Then I had to learn to start up on my own, without having a friend hold the seat of my bike; at first I could only do it if the pedal was in "exactly the right place." I would place it there each time before starting. A big challenge came when I pretended that a parked car was on a busy street and I tried to pass it without swinging out too far. My steering was too wobbly, and just as I approached the side of the car I panicked, veered, and fell.

I am beginning to feel more in control, though, and the greatest thrill is being able to ride down a small slope, feeling the wind against me. I still avoid pedaling, in desperate hope that the speed will stay low. And it's hard to trust the brakes to do as well as my feet in stopping the bike.

This spring I hope to be able to go on picnics with my fifteen-year-old daughter. My six-year-old son has asked if I can get him a seat so he can ride behind me. That may still be a long way off. At the rate he's learning to ride his own bike, he'll probably be giving me rides first.

M.C.



. . . and at twenty-nine

My first serious attempt at learning to drive a car began in high school with a few Driver's Ed. lessons in a car with an automatic transmission. It ended a week later when, with my mother beside me in the family car, I stalled at an intersection (due to the Mysteries of the Clutch), panicked, and lunged through a red light. My mother, having glimpsed sure death, was screaming. I was stunned, not knowing what I had done wrong. Neither of us cared if I ever drove again, so I didn't. Many years later, though, when a friend said for the tenth time at least, "If you'd only learn to drive!" it occurred to me that I could. I could even buy a small used car. I called a driving school that same day and made an appointment to begin lessons.

The lessons were easy, as driving schools only trust their students in automatic cars. I felt I could have been driving all these years, it was so simple. I even got my license without any difficulty. But the hardest part was yet to come: The car I wanted had a standard shift. Memories of that awful day in high school did battle with my new-found, shaky confidence behind the wheel. Still, I managed to get a few hours' practice with a shift, enough to discover I had an uncanny ability to stall, particularly if people behind me were impatient.

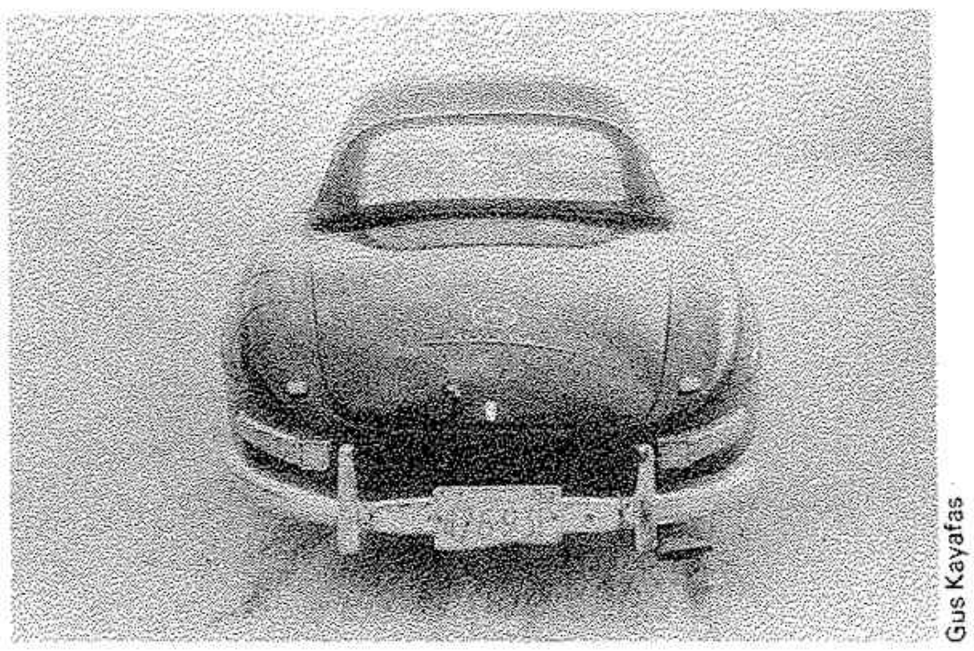
It got worse. A friend helped me buy the car, took me home, and left me alone with it. I backed into the middle of the street and froze—I couldn't move that car in any direction. I hated it. I cried for hours. But why?

It seemed odd to me, but I really wasn't frightened of the car or of traffic, or of possible accidents. It was a terror of the unknown that gripped me.

never truly felt in spite of being 29 and a parent. Somehow, a whole area of my self had remained undeveloped because I had avoided taking that responsibility.

Based on observations of myself and others, I think that, after a certain point, chronological age has very little to do with stages of growth.

A.W.



Gus Kayafas

Over the next few weeks more and more became clear to me. I realized I had not learned to drive at sixteen like other people because the whole idea of "driving" had become invested with enormous symbolic power for me. It meant "drive" literally—ambition, responsibility, independence, growing up. Sitting behind the wheel, I did in fact suddenly feel "grown-up," something I had

Finding patterns in growth

Looking over your lists of words describing development, what do you find in common with the adult experiences you have just read? What is different for these adults and the children you work with?

Development Is . . .

Universal	Development normally follows the same general patterns in all human beings—growth in many directions, increasing control, greater awareness of others and of the outside world.	For example, Helen has recently mastered tying her own shoes. The seven principles could be illustrated by that small (but important to Helen) instance. All children start life with almost no motor control, but within a few years they gain enough to tie their shoes.
Individual	Each person's development is unique in pace, style, and specific content.	Helen doesn't like to be treated "like a baby"; she likes to be an example to other children; she is the first in her preschool class to learn to tie her own shoes.
All Together	For example, physical growth is related to a child's emotions, social interactions, and intellectual development; and growth in physical abilities will in turn create new opportunities for emotional, social and intellectual growth.	Helen's eye-focus, control of fingers, understanding of the sequence of actions required, desire to do what older children can do, willingness to be instructed and corrected, patience and will, pride in new shoes, need to show off her abilities to her peers, are all part of learning this skill.
Regulated by Maturation	The schedule of changes that the human body follows makes new behaviors possible.	Development of eye, nervous system, muscles, and brain make her ready.
Shaped by Experience	Daily experiences in the physical world and with other people provide opportunities for growth and act to shape that growth.	Helen's new shoes, a beloved older brother who taught her, being youngest in a family that calls her "baby," being praised at school for self-reliance, being part of a family that stresses neatness, all contribute to her growth.
Cumulative	A person is the total of his or her experience and growth; development builds upon earlier development.	In order to tie her shoes, Helen had to learn how laces should be handled, how to put one loop through another, how to ask for and get help, how to interpret language and demonstration, and how to translate these into her own actions.
Continuous	Development continues throughout life.	Helen will go on. She will tie her laces tighter and more quickly. She will be able to tie as she focuses her attention elsewhere, and to explain how she does it. Throughout life, Helen will be able to teach the skill to others.

Eileen Friedenreich

Being and Becoming

Being

Working together in small groups, try to build up a picture of where the children you work with are right now in their development. Look through your information for clues about:

- what children can do
- what is still beyond them
- what interests them
- what doesn't interest them
- how they think
- how they relate to others
- how they express their feelings

Compare your group's findings with those of other groups.

Becoming

The children you have described won't stay at one point for long. Where will development take them? Working in small groups once again, look through your journals for evidence that change is taking place. For example, have you noticed a child:

- asking questions that show he or she is trying to figure something out for the first time?
- becoming brave enough to face something that was upsetting?

Many directions

On the chart below, under the title "Being," are some ways of describing where young children are in their development. Where are they going? Working together, brainstorm as many directions for development as you can. Make a chart like the one below, adding to it your "becoming" ideas and also any other observations you have about "being."

Beyond seven

By adding two more columns to the Data Poster, it is possible to show where adolescents and adults are and what they can do. After you draw in the columns, label one "Adolescent" and the other "Adult." Using yourselves for information, fill in the areas of language, motor skills, and relating to others in the "Adolescent" column. Then collect information that describes the skills and abilities of people around thirty or forty years of age, and fill in the column marked "Adult." Compare the information on the chart about children, yourselves, and adults. Now look back at the directions for development suggested on your "Being and Becoming" charts.

Have all these directions been taken?

Are there areas where growth stops? Why?

Are there areas where growth seems to taper off?

Does development always mean "getting better"?

Being . . .	**Becoming . . .**
fully occupied with the "here and now"	
concerned with self, with satisfying his or her own strong needs, wishes, curiosities	
focused on just one thing at a time	
certain that others see things from his or her point of view	

A Development Project

Choosing a form of expression that you enjoy, make something that reflects some of your ideas about growth and change. Suggest development over a period of time, describe what a child is like developmentally at a particular age, or explore one aspect of development that interests you. Here are a few ideas for projects:

- write and/or illustrate a story for children
- plan a TV show
- make a collage
- make a scrapbook
- perform a mime
- tape conversations with children, or children telling stories, and explain what the recording tells you about development
- make a movie
- select or shoot a series of photographs
- make a slide tape
- write a teen's book of advice for working with children
- write a child's book of advice for working with teenagers
- draw a comic strip
- present several points of view about one situation (parent, teenager, teacher, child)
- select or design clothing for children and give reasons for your choices
- select or design toys and play materials for children
- make up a song for children
- select songs for children and give reasons for your choices
- do a dance showing development
- create a dance to be taught to children at different ages
- design a center for children
- make up a game for children
- design a bedroom for one or two children

Explaining Children: Your Own Observations

In Exploring Childhood you have been observing children a great deal and trying to respond to their needs. No doubt working with children has raised for you many questions about children in general, such as: Why can't children be more patient? Why are they always testing the limits? Why do children want to do some things over and over? Why can't they respect each other's feelings? And no doubt you have been forming your own explanations of children — building on ideas you have heard this year as well as ideas you have heard since you were a small child. Like all of us, you can put some of your explanations into words, but not others. Yet your ideas about why children are the way they are influence the way you act and react to children.

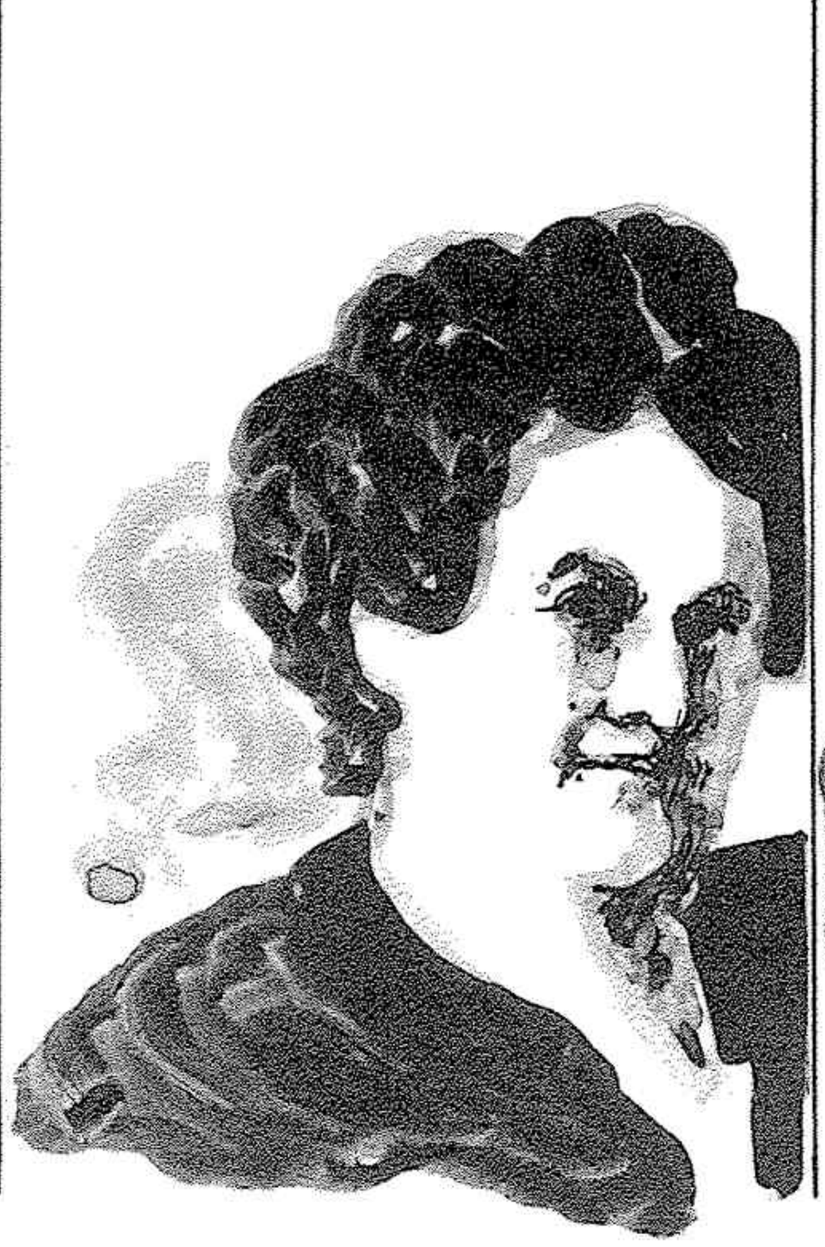
Some people have taken for their life work the task of studying children, to explain just how they are different from adults. They have described the changes children go through in becoming adults and the kinds of help they need along the way. In the following pages, we present the ideas of three such people.

Explaining Children:

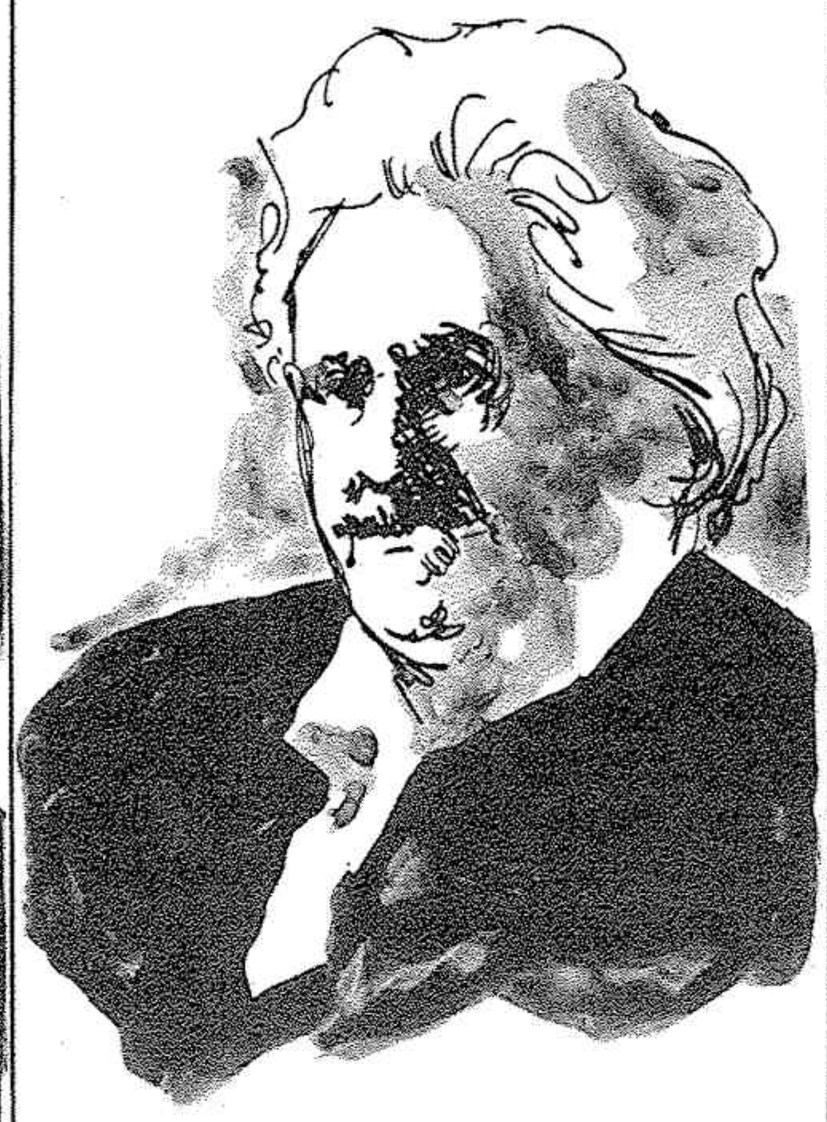
Three Theories of Development

Introduction

Maria Montessori, Erik Erikson, and Jean Piaget — each offer an understanding of how children differ from adults and of the ways development unfolds. In the crowded wards of insane asylums, Maria Montessori found children diagnosed as "simple" or retarded. She watched them play with bread crumbs saved from their meals. Deeply impressed by their desire to play, to create, to touch and handle, Montessori went on to explore how children can learn in just these ways.



Erik Erikson's own childhood was filled with change and conflict about who he was: the son of Scandinavian parents, whose father left before he was born, Erikson grew up in Germany in the home of his stepfather. Both physically and nationally he felt apart from the people around him. This experience made him particularly sensitive to the question of how children come to understand who they are. As an adult he devoted himself to trying to understand and explain how a sense of identity develops.



Jean Piaget has studied everything from shellfish to young children in search of explanations about the ways in which living creatures adapt to their environment. Starting with his own children, he noticed that as their world changed so did their reasoning. After years of observing children carefully, he developed a theory to explain how the ability to think develops.

The following pages sketch the life and work of each of these people who built theories about the way development unfolds in children. As you read the biographies, consider whether any of their observations about preschoolers correspond to your own.

Emily McCully

Emily McCully

Maria Montessori

In 1870, when Maria Montessori was born in Italy, children were not really taken into account until they grew up. Until then, life was a struggle to live up to adults.

During her life, Montessori struggled against this attitude. Children, she argued, are different from adults. Children are in the process of becoming, of growing, whereas adults are already set in their habits and abilities. When laughed at or ignored, Montessori would point to a child playing and say, "He is always playing at something. He is *working* out and making conscious something that his mind absorbed earlier." For her, it was the way children learned that made them different from, but sure to become, adults.

Montessori's fierce defense of her ideas was practically a life habit. She was an only child with a powerful, inquiring mind. As a young woman she made what was a daring decision at that time: She decided to become a doctor. Her father and the medical authorities opposed her bitterly, but she would not be discouraged. She argued her way into the classes of a medical school, only to find that the struggle had just begun. Her teachers declared that it was improper for a woman to attend dissections with male students. She was forced to learn anatomy alone, late at night in the dissecting rooms.

At twenty-six, Montessori graduated from medical school and became the first woman doctor in Italy. Her first job was in a psychiatric clinic, where one of her duties was to visit insane asylums. Here Montessori met not only people with serious mental illnesses but also young children who had been diagnosed as retarded. Montessori challenged the idea that these children should be locked in an institution and given no training. She was convinced they could learn.

But how? Montessori thought about this question for a long time, and developed some ideas. When she was appointed director of a new school for retarded children in 1899, she got her first opportunity to try them out.

Learning through doing

Montessori had a hunch that these children could only learn by using their hands and working with concrete objects. She brought them frames for buttoning and tying, blocks of different colors and sizes, and puzzles that demonstrated shape differences. Her success was astounding: "I succeeded in teaching a number of the idiots from the asylums both to read and write so well that I was able to present them at a public school for an examination together with normal children."

People were amazed. But while they praised her work with the "idiots," Montessori wrestled with another question: "I was searching for the reasons which would keep happy, healthy children on so low a plane

"The child is in a continual state of growth, whereas the adult has reached the norm of the species."

that they could be equalled by my unfortunate pupils. How would those very same direct methods affect normal children?"

About this time a project was underway in Rome to improve the living conditions of poor people. Buildings unfit to live in were torn down and new housing built. But housing was not the only problem. Since both parents in many families worked, the streets were filled with wandering, unfed children, too young for school. For them, the Children's House was built, with Montessori as its director.

Montessori saw this new job as a chance to improve the lives of both children and their mothers. When a woman could be free to work, she believed, happy in the knowledge that her children were well cared for, a new era for women would begin: "The new woman . . . shall be liberated . . . . She shall be, like man, an individual and a free human being."

A special environment for work

Children, too, would find a new freedom — at Children's House. The furniture was small, and light enough that even a three-year-old could sit comfortably and move chairs and tables to suit himself or herself. Sinks and door handles were low, within a small child's reach. Montessori believed that freedom, for children, meant being able to do things on their own, in an environment prepared to make that possible.

At Children's House, the teacher did not stand in front of a class, lecturing and directing the whole group. Instead, as in Montessori's school for the retarded, each child worked alone with special materials that Montessori designed.

Montessori firmly believed that work was the natural occupation of the young child. By "work" she meant handling and exploring concrete objects repeatedly. Far from finding this a burden, Montessori believed, the preschool child desired to spend most of his or her time working. Children who spent their time pretending or giving way to emotional outbursts of anger or destructiveness were acting "abnormally." The reason they behaved this way was because they were forced to live in an unsuitable adult world. Children would behave "normally" — working hard, being quiet, courteous, and attentive — if they were in a proper environment and given properly designed materials that made work possible and enjoyable.

Montessori's teaching materials

What are these "properly designed" teaching materials of a Montessori school? They are all *solid objects* — blocks, jigsaw puzzles, child-sized house-cleaning tools, counting beads in a frame — that can be manipulated. They are all *self-teaching.* For example, a child who is supposed to be learning about geometric shapes works with wooden cutouts of triangles and circles that fit into openings in a board. If the child does not see that the circle fits into the circular opening because it has the same shape, and tries instead to put the circle through the triangular opening, it will not fit. The material itself shows the child his or her mistake. Finally, all materials are designed to simplify the characteristics of the real world by isolating *one quality at a time* — color, shape, or weight. The ten wooden blocks children use when learning how to arrange objects from smallest to biggest are all cubes, and all the same color. There was little risk that a child might explore something other than what was intended.

The education of the senses

Most of the materials for younger children are devoted to what Montessori called the "education of the senses" — learning to make distinctions of size, shape, color, weight, musical pitch, and so on. The materials children use at first make large distinctions, such as strongly contrasting colors. Gradually the materials lead children to make finer distinctions, until finally they work with such materials as a set of 64 finely shaded, color tablets, and learn to grade, match, and name them all.

Montessori believed she was making use of a particular characteristic of the young child's mind. As children develop, she said, they pass through several "sensitive periods" when they are open to certain kinds of learning. Toddlers learn to talk effortlessly because they are in the sensitive period for language. The children to whom she offered the "education of the senses" were in the sensitive period for sensory learning. A proper education system should use each sensitive period at the time it occurred; otherwise, full development of a child's potential might never take place. Montessori compared the failure to use a sensitive period fully to dropping a stitch in knitting; the clothing may be finished, but the flaw will always remain.

Montessori's education of the senses starts with prepared materials, but does not remain tied to these forever. Eventually a day comes when the child who can recognize and name the blue color tablet will say, "The sky is blue"; when the child who has worked with the cylinders of graded heights will say, "I am taller than John, and John is taller than Mary." By isolating such confusing qualities of the world as color, size, and shape, Montessori believed she helped children come to understand these qualities as concepts. In time, when the child is ready, he or she would think logically and apply these concepts to the complicated world outside the Children's House.

Montessori's view of children

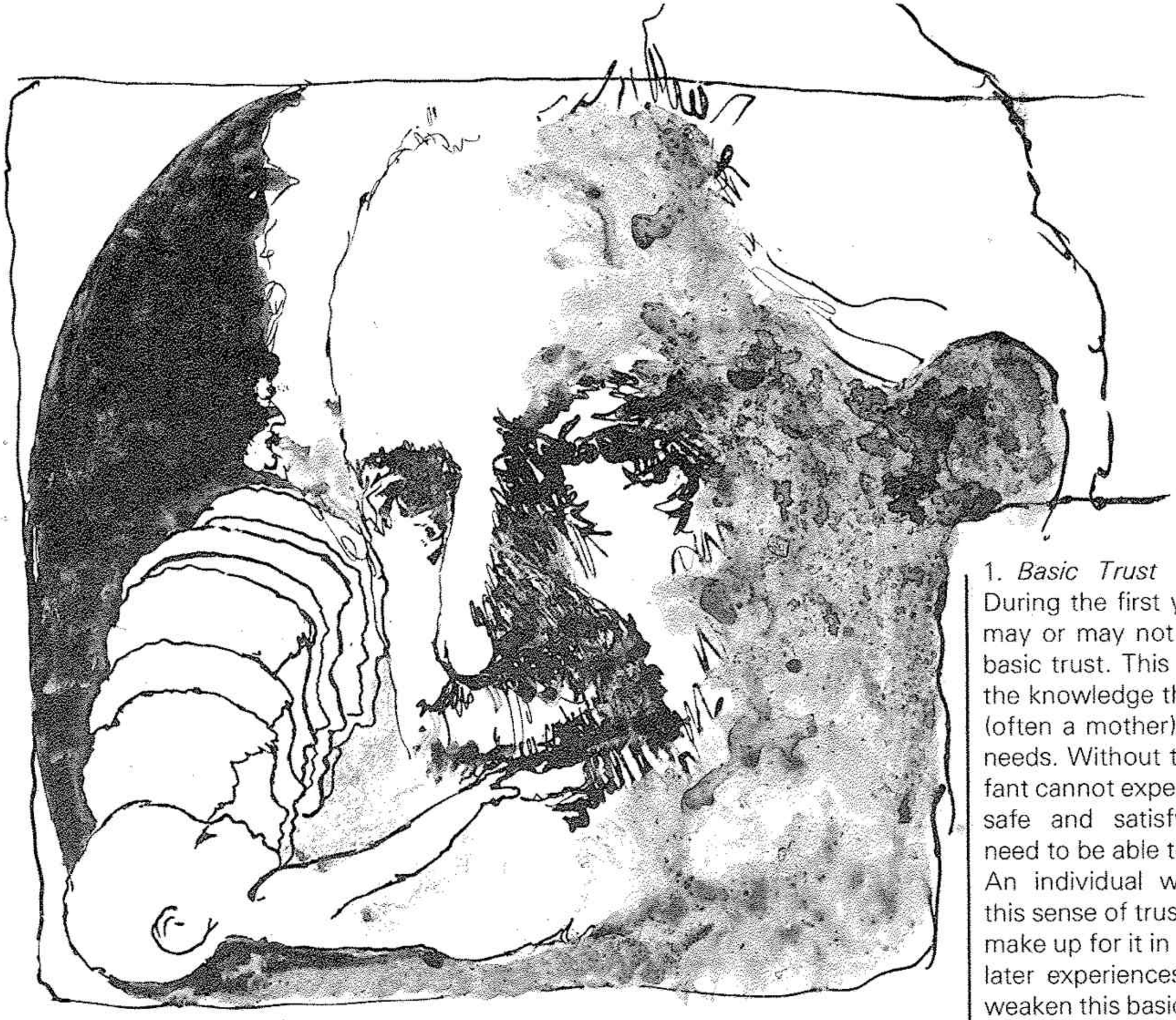
What does Montessori's method tell us about her picture of what children are like and how they learn? Clearly, she expected children to be hard-working, intellectually curious, unselfish, and quietly behaved. Also, she saw children as having the *capacity* to learn, but needing direction: they could not be trusted to learn on their own, but had to be taught. The way they were taught had to be based on the special way children learn — repeatedly manipulating concrete objects designed especially for teaching. Finally, she perceived freedom for children to mean freedom to do the work they were naturally inclined to do within a specially constructed children's world.

Erik Erikson

In his work, Erik Erikson has looked at the way children develop a sense of identity: through knowing their own bodies and gaining physical ability, and through establishing secure relationships within their families and in the larger social world. Erikson views this identity-making process as something that continues throughout life, although the important issues of identity may change from one age to the next.

Erikson's special interest in questions of identity arose partly from his own history. The son of a Danish mother and a Norwegian father, his father left before he was born. His mother later married a German doctor, and the family settled in Germany. Erikson looked and felt different from the people he grew up with. When he was eighteen he decided he had had enough of school, so he set out to see the world, with the idea of becoming an artist.

Erikson's wandering lasted until he was 25, when he took a job teaching art at a private school in Vienna, Austria. At this school he met the family of Sigmund Freud, whose ideas about human development were just becoming popular. Erikson was fascinated by Freud's theory, and he decided to be psychoanalyzed by Freud's daughter Anna. In analysis he sought both a deeper understanding of himself and the



beginning of a new career that might combine his interest in psychology with his talent for working with children.

Erikson's career plans were thrown into confusion, however, when Adolf Hitler and the Nazi party rose to power in 1933. Along with many of his colleagues, Erikson fled to the United States. He settled on the West Coast, then lived with the Sioux Indians in South Dakota, and later with the Yurok in California. More recently he has visited India to collect information on the life of Mahatma Gandhi. In his career he has done play therapy with emotionally disturbed children and lectured to college students about the human life cycle. Now he is particularly interested in the question of how people may grow and change in the later years of their lives.

Out of Erikson's varied experiences has come a view of human development that may be summarized by the following description:

> Life unfolds in an observable sequence. At various points in time there are critical events. Achievements are won or failures occur and the future is to some extent better or worse for it. What is won can later be lost — and rewon. The mind is not irrevocably set or determined by any one thing — genes, the mother's behavior, the environment — but by a combination of everything and everyone, both within and outside the flesh.

The eight ages of man

Erikson divides this process of development into eight basic stages. At each stage people learn something more about "who" they are in relation to others and the world around them.

1. *Basic Trust vs. Basic Mistrust.* During the first year of life an infant may or may not develop a sense of basic trust. This sense comes out of the knowledge that there is a person (often a mother) who can supply all needs. Without this certainty, the infant cannot experience the world as a safe and satisfying place. People need to be able to trust other people. An individual whose infancy lacks this sense of trust may not be able to make up for it in later years, although later experiences can strengthen or weaken this basic perspective.

2. *Autonomy vs. Shame and Doubt.* People need to be able to trust themselves as well. During their second two years, children's energy centers on learning to control their own body and "do things for themselves." During this period, children's growing physical and mental abilities contribute to the times when being allowed to do what they want comes into question. They are able to toddle about and to use the toilet successfully; they begin to be able to understand language and to remember. These abilities enable them to rule their own life more but also mean that other people expect more of them and try to direct their behavior.

Erikson says that when adults are too strict in forcing children to do things — or in not letting them do things — that they are capable of, children may lose confidence in their own will and be burdened by shame and self-doubt.

"There is in every child at every stage a new miracle of vigorous unfolding, which constitutes a new hope and a new responsibility for all."

3. *Initiative vs. Guilt.* In the preschool years children develop a drive to learn all kinds of new things — to branch out and explore, to feel brave enough to set out on their own for the first time. Children's consciences and imaginations both develop rapidly during this period. This may cause conflicts, even nightmares, because now children can imagine doing things they know they shouldn't do.

As children develop initiative, they want to try all kinds of new things. The child becomes a young scientist, experimenting with reality. If experimentation wins approval and encouragement, the child will flourish. If it is squelched or judged too harshly by adults, the child may learn to feel guilty about frequent "errors" or wrongdoing.

4. *Industry vs. Inferiority.* Between the ages of six and eleven children work hard at practicing newly acquired skills. Erikson says that a person who can work hard and whose work is recognized will develop feelings of success. Repeated defeats breed a view of oneself as inferior and unworthy.

5. *Identity vs. Role Diffusion.* Adolescence brings with it a renewed concern with identity. Adolescents have already acquired many of the necessary skills for getting along on their own. A great anxiety during this period is, "What does it all add up to? What will be my place in the larger social world?" This is a time of upheaval, because all the old concerns about trust of others and oneself, of success and failure, come up again in more complicated forms.

6. *Intimacy vs. Isolation.* Early adulthood brings the opportunity to make a deep, loving commitment to someone else. Whether or not people can make such a commitment depends very much on the outcome of the earlier stages of development. If these have not been fruitful, the individuals may turn to isolation, unable to trust themselves to love and be loved.

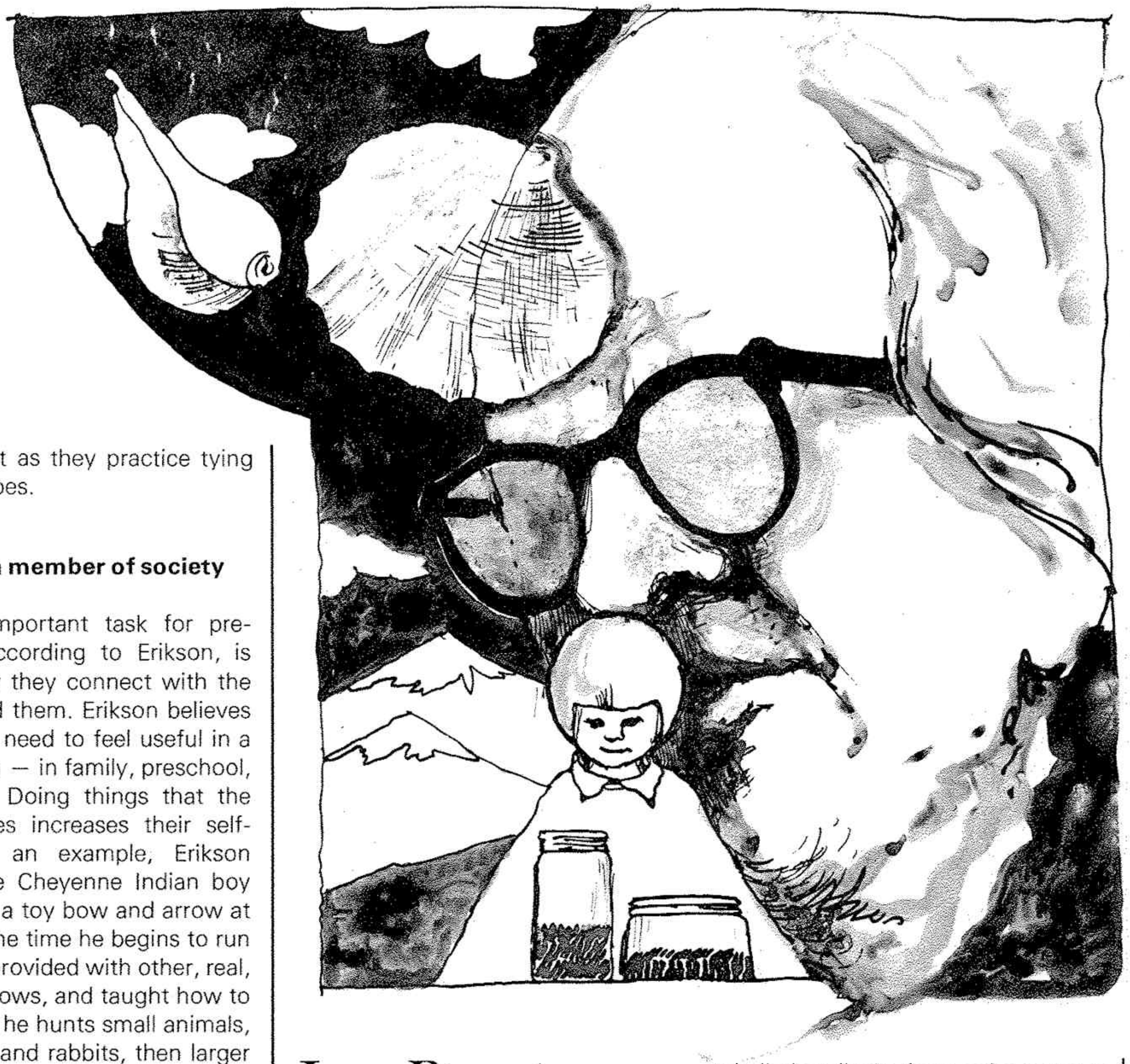
7. *Generativity vs. Stagnation.* Middle life is the time for "making" things, of having a career or raising a family, or both. Through work that is satisfying to the individual and useful to others an individual develops a sense of fulfillment. Being unable to carry out these desires leads people to feel stuck and purposeless.

8. *Integrity vs. Despair.* If the older person can look back at his or her life with a sense of satisfaction and wholeness, he or she will not fear death. If the earlier stages were more unsatisfying than meaningful, the older person may feel more despair than wholeness.

Play as practice

Reconsidering Erikson's third stage — the stage when a child develops initiative — we see the child hard at work, seeking to master all that life demands. Rather than trying to meet reality head on, the child re-creates pieces of the world on a scale he or she can manage. The child experiments with toys, with fantasy play, with other children. To Erikson, a play situation may be equally useful in providing skill mastery and in helping children express their feelings. Erikson quotes Freud's example of a boy who repeatedly made a toy disappear and reappear in order to master his feelings about being left by his mother. Thus, the "pretend" aspect of play can be valuable in learning to "do."

Erikson says that children of this age need to "play out" important feelings, in part because they cannot explain those feelings adequately. Adults may release tension by "talking it out"; children cannot always depend on words to make them feel better. In fact, words often fail a child just when he or she is trying to explain a critical feeling. The necessary connections between experience, feeling, and language are too difficult. Here, says Erikson, play may allow the child to express feelings and work out new solutions to a troublesome situation. Children thus have the chance to practice ways of



behaving just as they practice tying their own shoes.

Identity as a member of society

A second important task for preschoolers, according to Erikson, is learning how they connect with the world around them. Erikson believes that children need to feel useful in a social system — in family, preschool, and culture. Doing things that the society values increases their self-esteem. As an example, Erikson describes the Cheyenne Indian boy who is given a toy bow and arrow at birth. From the time he begins to run about, he is provided with other, real, bows and arrows, and taught how to hunt. At first he hunts small animals, like squirrels and rabbits, then larger animals. When he is finally able to shoot a buffalo, he is considered a man, a full-fledged member of his society.

Erikson notes that this pattern of participating in the culture differs from that of most modern industrial societies, where children's play is considered to be entirely separate from adult responsibilities: play is not seen as preparation for adult roles but as a world apart. Erikson believes that this view of childhood can make growing up a difficult, disjointed experience. He emphasizes that play ought to provide a way of "trying things on for size," of walking in grown-up shoes to see how they feel.

Jean Piaget

Jean Piaget was born in 1896, in the Swiss university town of Neuchatel, where his father taught medieval history. Growing up in an academic environment, he developed an early interest in intellectual pursuits. He loved to make careful, detailed observations of birds, seashells, and fossils. As a teenager he did his first piece of independent research: he decided to find out how certain mollusks (animals like clams and mussels) react to changes in environment.

Piaget discovered that when he moved certain kinds of long skinny-shelled mollusks from quiet water to a river with strong currents, the animals' shells changed shape. The elongated shells became round, globe-like, and stayed that way even after they were returned to their original home.

Adaptation

As a young scientist, Piaget's interest shifted from animal adaptation to human adaptation. By "adaptation" Piaget meant the same biological process that had fascinated him in the mollusks — the way an animal changes through meeting the demands of its surroundings.

For example, when a baby is about six months old he is no longer totally helpless. He can now turn over and hold his head up well. Sometimes his mother puts him down on the floor and leaves him there. When he wants or needs his mother, the baby must then make an effort to get to her as best he can. At the same time, the baby's muscles and coordination are developing, providing him with the physical ability to move around. He discovers not only that he wants to crawl, but that he *can* crawl if he puts his mind to it. Environmental circumstance, giving the needed "push" to his mind and body, leads to a new adaptive behavior: crawling. Without any one of the necessary ingredients — mental perception, physical readiness, environmental "push" — the infant would probably delay learning to crawl. But when all three are present, the new ability always emerges, and always about the same time in an infant's life.

Piaget believes that human intelligence is also subject to the laws of adaptation. In other words, people's behavior, which is governed by their minds (intelligence), can be viewed as a way of learning from and coping with their environment.

When Piaget was ready to explore this new field of human behavior, he went to Paris, where psychological innovation was flourishing. There he worked in a psychiatric clinic and studied with Alfred Binet, a psychologist who was developing standard ways of measuring intelligence in children.

The riddle of wrong answers

Like Binet, Piaget also wanted to study intelligence. He focused on one particular question: Why did children of certain ages commonly give "wrong answers" to certain kinds of questions? For example, if a five-year-old were shown blocks of different weights and sizes, and asked, "Which is heaviest?" he or she might do several things:

- Point to the largest block.
- Pick up one block and call it heaviest.
- Pick up several blocks in one hand and "weigh" them.

The child would not think, as an adult would, to find the correct answer through a process of elimination:

- Pick up two blocks, one in each hand.
- Set aside the lighter block and pick up another.
- Set aside the lighter block, and so on, until all blocks have been weighed.

What was there, Piaget wondered, that apparently made it impossible for the average four- or five-year-old to understand such concepts as weight, time, and magnetism?

Starting with his own children, Piaget undertook to solve this riddle. First he made detailed observations of his children's behavior as infants. Then he formed some hypotheses. He tested these by designing small experiments, such as hiding his infant son's bottle from view, then making it reappear, and noting the baby's reaction. In these family experiments he demonstrated the following points:

1. Infants rely entirely on their five senses. They know only through the immediate, active experience of seeing, touching, tasting, smelling, hearing. They cannot rely on memory or logic for information. For the infant, what cannot be seen does not exist.

2. As infants begin to move about on their own, they learn that objects may still exist even though they are out of sight at the moment. Thus, the toddler delights in playing peek-a-boo; he or she is playing with a new idea.

3. Young children move gradually from an active, external search for out-of-sight objects or people to an internal mental image of those objects. This new ability comes after much experimentation and discovery. It is at this point that the child can begin to develop and use memory, language, and symbolic play to "stand for" the thing itself — the child can talk about "chair" without actually seeing one. He or she is now free to "pretend" a situation instead of being bound by what is happening at the moment.

Given that preschoolers move freely and use language, memory, and fantasy in their thinking, why are they still not capable of thinking like grown-ups? How does their world continue to be different from ours?

It differs in several important ways, says Piaget. Children have not yet developed the mental equipment to do complicated intellectual exercises; therefore they are bound to give "wrong answers" to questions requiring these mental abilities.

Piaget gives the following examples as evidence that preschoolers are still unable to do grown-up thinking:

1. If you show preschoolers two jars — one tall and thin, the other short and wide — containing the same number of jelly beans, they will guess that the tall jar contains more jelly beans. To them, the taller appearance of one jar is the dominant fact. They cannot do the two-part figuring (short plus wide equals tall plus thin) necessary to understand the equality.

2. Just as preschoolers' thinking is bound in some ways by the external appearances of things, so is their understanding limited by personal experience. Reality is the world as *they* see it — which, they believe, is how everyone else sees it too. A four-year-old becomes impatient when someone doesn't immediately and easily take his or her perspective. Similarly, he or she cannot easily accept ideas that are beyond the realm of personal experience. The child bases all ideas and explanations of the world at large on his or her own experience.

Egocentrism

This tendency to make sweeping generalizations based just on personal experience Piaget calls egocentrism. He offers several "proofs" to support his theory that preschoolers are egocentric.

1. *Language.* Preschoolers will apply a word with a special meaning to a whole category of things or experiences: "All men in uniforms are policemen." "All grown-up ladies are mommies." "My daddy is also my mommy's daddy."

2. *Explanations of the way things work.* Since they are alive, children assume everything else is alive too: "If I get hungry or tired, so must the sun and the moon." "The earth must feel cold in the winter because I do." "God [a person like them] makes the waves in the ocean and the wind in the sky." "Nothing goes unless a person makes it move." Everything must find its parallels in the child's own experience.

   One of the most common sources of information for the child is his or her own body, and many preschoolers' notions are based on this knowledge. A boy turns on a water faucet and thinks of it as "peeing" into the sink. Preschoolers see rain falling from clouds and imagine that the clouds are crying. They are sometimes afraid of things that appear to want to "eat them up" — like vacuum cleaners — and they may feel sorry for the family's car when it becomes "worn out" after a long day of running around.

3. *Inability to respond to the experience of others.* Preschoolers can often be heard talking "at" each other, but they are not really having a two-way conversation. Sometimes a child will give both a statement and the other child's imagined response: "I got a new truck for Christmas and you didn't." The speaker doesn't know whether or not the other child was given a truck, but is making the conversation come out the way he or she wants it to by supplying both voices. The other child's presence is hardly necessary.

Piaget says the reason young children cannot have a real conversation is because they have not yet learned to take another person's perspective. They are not yet able to solve problems that involve imagining how another person sees things. In one experiment, Piaget put a child on one side of a model of a mountain and a doll on the other. He asked the child to tell him what the doll saw. Always the child described his or her view of the mountains, rather than the doll's.

4. *Inability to follow rules or use logic in games.* A four-year-old isn't interested in competitive sports. It doesn't seem fair to have only one throw of the dice or one chance to pin the tail on the donkey. The four-year-old wants to keep taking turns until he or she has attained some private goal. Not until much later will the pleasure of teamwork, strategy, and competition in play replace the child's own private games.

Only in adolescence, says Piaget, do people fully acquire the ability to see the world from a number of points of view. At this stage of development, a person is able to imagine all the possible factors to be taken into account in solving a problem. One way of demonstrating adolescents' mental flexibility is to ask them to group a collection of seashells in as many different ways as they can think of. Adolescents are likely to find many ways to arrange the shells: attractive/unattractive; large/small; curved/straight; rough/smooth; dark/light. A preschooler given the same task may come up with a single type of classification — "big/small," "the ones I want/don't want" — and will be unable to think of others. The idea that there may be more than one way of doing things is something for the grown-up mind to understand. As far as the preschooler is concerned, his or her way is the right and only way.

For Discussion

Each of the people you have read about recognizes the preschool years as a time when children exhibit a new sense of self and a strong push to master new skills. But each of them has selected a particular aspect of growth to study: Montessori, children's learning style; Erikson, children's sense of self; Piaget, children's mental abilities. Each has a point of view that contributes to understanding "what childhood is about."

Look at the film "Racing Cars" again. As you watch Enroue struggling to paint his "number 5 Car," imagine what Montessori, Erikson, or Piaget might make of that experience.

What do you think each theorist would say is going on for Enroue? To what extent do you agree or disagree with each point of view?

What is your own point of view?