

## **Introduction**

It was Einstein who said that imagination was more important than knowledge. He understood that our greatest discoveries and most profound works of art have come to us through imagination and play. Far from being idle day dreaming, the fantasies of childhood build the foundation for all higher learning. We are about to explore *Imagination and Play* with Joseph Chilton Pearce. He is the author of numerous books, including *Crack in the Cosmic Egg*, his national best seller *The Magical Child*, and most recently, *Evolution's End*. Joe considers play to be one of nature's highest achievements. Play is the freedom and safety to move beyond the limitations we have accepted for ourselves and discover and develop something new about ourselves. Please join Joseph Chilton Pearce and a group of parents, educators and health care professionals as they examine *Imagination and Play*.

## **Joseph Chilton Pearce**

The dictionary defines imagination as the ability to create images not present to the sensory system. Literally. What does that mean? Let's go back to that trying brain again. The sensory system brings in its messages about the physical world and sends them on up to the emotional-cognitive system.

Now, if the image is not presented through the physical-world process of our senses, it can be created internally. A medical doctor named Richard Restock said, "You can come in higher up the evolutionary stream and the whole image process is there. If it's not present to the eyes here, it's present to the inner eyes of the mind, and that's the great capacity of imagination." If we knew the critical nature of imagination, how it's the very core, the very foundation of all higher stages of learning and intellectual life, we would certainly look at the child differently.

Let's try to approach this from, starting from the beginning. I would say, first of all, that play is the major intelligence of the first seven and even eleven years of life. Birth and ages one, four, seven, and eleven—and we will go ahead and include fifteen for now—are our major developmental stages. Whether one agrees with all their Piaget content, it is accepted fact that biological unfolding is occurring at these stages.

Then, let's go back and look at the effect on the brain's sensory motor-body system. Before a child is born what happens? From the seventh month in utero, every time the mother uses a word—and we are talking about vibrations, a word is just a vibration of sound, or *phoneme*—a muscular response is brought about in the infant.

So, from the very beginning, there is an intimate connection between body, body movement, the brain, and its word structure and formation of word structures. By the time the child is born into the world, this is *myelinated*, locked in as a permanent thing. We then have a cessation of real verbal action for quite awhile.

In the first few months, what we call the in-arms period, the eyes have it. Things aren't auditory half so much as they are visual in those first few months. Why? Because vision couldn't develop in utero, during the first few months everything is visual. Children are looking, looking, looking, absorbing enormous amounts of information about their visual world. At around six to twelve months, what Piaget called object constancy occurs. He was wrong about what was happening, but he was right that it does take place. The child's visual world, simply, suddenly stabilizes. We know this is brought about by myelination of the axons involved in all sorts of other maturation processes.

The sensory fields of the brain stabilize somewhere around the first year of life and this total entrainment—focus—on the visual process is no longer needed. That's when we shift into the great limbic structure and the emotional child appears, along with language, walking and so on.

Now let's look at the growth of language itself, and the relationship between word and thing. I love the work Tenbergen did with Blurton Jones\*, the Nobel laureate, in the cross-cultural study of the pointing syndrome. When the little child is in their own nest, they think anything is safe to interact with. Just watch it: a child in a house will jump right in on anything. They want to taste it, touch it, smell it, feel it, and immediately say, "What is that, mamma, what is that, daddy?" They are asking for a name label for the object.

When you give them a name, the word and the thing build into the brain as a single neural pattern, a neural field network. The brain does not build a neural network of the thing, its taste, touch, smell, feel, and all of that, and then in addition, add its name as a separate item. The name is built in as an integral part of the whole *structure of knowledge*, as Piaget calls it. A structure of knowledge is a neural pattern that results from the child's inner action with an object or event from his physical world—the brain responds by creating neural fields that can handle that kind of phenomena and the way their fields interact with all the other fields. In essence, the name and the thing build as a single unit.

This is concrete language, where the word doesn't stand for the thing. Semanticists are quite right about much later speech, but here, the word doesn't stand for the thing; the word and the thing are the same to the early child. Ask a two-year old child to say the word hand, they move their hand when they say it. Why? Because hand means something very tangible, something very concrete. They can't deal with abstractions at all.

Now, when taken out in the open, away from the nest, all mammalian children respond the same way. I think this is fascinating. When a child is taken out in the open—Jones did cross-cultural studies of this—and spots an object they've never seen, the child will stop, point toward it, and silently turn around and stare at the caretaker, whoever it is, and wait for some kind of a signal. Getting that, the child interacts with the object: tastes it, touches it, smells it, feels it, talks to it, and so on, and builds a sensory motor structure of knowledge of that object. And of course, the child immediately wants to know what it is, unless told ahead of time.

Now, let's suppose that it's a dirty, nasty, awful-looking, old mongrel dog—my favorite example. Mama says, "Don't you dare touch that dirty, nasty, old dog." But her acknowledgment of the dog is all the child needs. This is the model imperative, again. The child perceives some kind of verification that the mother is interacting and perceiving this object, and immediately child rushes over to interact with the dirty, nasty, old dog. Mama saying "don't" has nothing to do with it. The child is impelled. They are driven, by nature, to interact with the object and build a structure of knowledge of it.

Now, the mother's emotional state—her horror, alarm, and so on—is built into the structure of knowledge as an integral part. Her name for the object—dirty, nasty, old dog—is built into the structure of knowledge. All that is without any evaluation on the part of the child. If it's a beautiful flower and the mother smiles and the child rushes over to pull it off its stem, stuff it in his mouth, taste it, touch it, smell it, feel it, and so on, then it builds the mother's emotional state of approval into the structure of knowledge along with the word flower.

Now, this might seem extreme. Let me interject one of the most interesting phenomena that \*Blurton Jones found in his observations over years, all over the world, what he called "the hallucinatory capacity of the early child." He found hundreds of cases in which the child would point towards an object that he couldn't see and that, apparently, the mother couldn't see either. And the child would keep pointing and pointing, silently looking back, trying to get some response from the mother to allow interaction. But the mother couldn't make any response, positive nor negative, because she was not perceiving that object.

This is part of the brain's selectivity. It selects those phenomena which are shared by the parent out of an infinite realm of possibility; the high degree of selectivity by which we know the brain certainly does operate, partly geared by the model imperative. So what we perceive will be what the child perceives, and when that child grows up and its child wants to interact with a certain categorical phenomena, that will not be part of that parent's perceptual system, and they won't give a response, and so we find that a culture or a tradition will screen from infinite possibilities, leaving those which then make up that cultural world view.

This phenomena of word and thing as a single unit in the brain is unique to us as humans, so far as we know. And this is its value. It is the most profound discovery, I believe, of all evolutionary process. Why? What does the integration of word and thing in the sensory map of the brain mean? Well, at age two, the child will move a hand when they say the word hand and automatically sit down when they say "sit down." But, suppose the word is used in absence of the thing—the thing is not coming in through the sensory system, but the word is. Again, here is a vibration which is going to resonate with a previously established vibratory set of responses in the brain pattern. Just the name itself will activate those patterns, and in absence of the thing, what does the brain do? It creates a facsimile. It creates the best substitute it can and we come up with what?

The inner image. The inner image in the absence of the exterior image. This is where words can stimulate the highest cortical systems of the brain—not the sensory motor system, not the emotional cognitive system—in coordination with the other two brains to create, out of its own processes, an image. Do you see the profound difference? This not simply processing—something the reptilian and all the other animal brains can do—but creating an image that doesn't exist at all in response to a name of that thing as it does exist.

There are several things about this that will lead us into play and imagination. As adults use these words, what starts happening in the child's mind? It starts responding with internal imagery whenever it can. And that leads us to storytelling. Take a look at how the early child relates to table talk. We had eight children in my family and nearly always a lot of guests; we had a great big table that would always be, it seemed to me, filled with people and adult table talk. I loved it. I didn't understand any of it, but I loved it and I would see all these worlds form inside as my adults would talk around me.

This is because their descriptions triggered internal images in my mind, images of what they were talking about.

Let's look at storytelling. The child responds to storytelling very early, even before they can talk. The word comes in as a vibration: sensory input. And that challenges the whole brain, not just to create an image in keeping with each word, but to create moving imagery, fluid imagery that follows the flow of the words. It sets up an inner-world scenario, a whole inner-world scene in which the scene is constantly shifting according to the shifting of the words themselves.

This has been found to be a major challenge of the brain. The job is so enormous that the child goes into total entrainment. That is, all of the energy moves into this visual process of the inner world. The child goes catatonic: body movement ceases, the jaw drops, eyes get great big and wide. They are literally not in this world. Their eyes are wide open, but they are not looking at anything outwardly. They are looking at the marvelous world forming within them.

I have heard people say, "Oh, I can't think in imagery at all, I have no capacity for internal images." Believe me, your brain thinks in imagery. One of the most interesting discoveries made recently—still hypothetical—is that the capacity of the brain to operate depends entirely on imagery. It's imagery transfer, primarily, that goes on in the brain. The discovery that even congenitally blind children think in images is interesting. They find that congenitally blind teenagers can solve spatial, geometric organizational problems far better than seeing children. Why? Because they have developed such an acutely accurate, internal visual process. It's just a matter of accessing it.

So, we find that the telling of the story challenges the brain into entirely new routing every time. Each new story necessitates the forming of new neural connections between all the fields involved in imagery; a reworking of the sensory maps of the brain involving the establishment of new fields and connections between them. The brain has to continually expand its neural connections. And it's the neural connections that count, not simply the number of neurons. We have already covered that. And since each new story demands a complete new, re-routing of the neural patterns themselves, the brain has to continually expand—operations, auditory, visual, sensory fields, and all the rest of it—with each one.

Then why does the child want to hear the same story over and over? Because anytime a field establishes long-range connections with other fields it requires long-range axons. And it's those that must be myelinated to lock in a pattern and preserve the activities of that particular neural field and its capacities.

Once a story and its related fluid imagery stabilizes and the connections become firm, the repetition of the story is no longer so necessary. Do they want to hear the same story over and over and over because they want to learn the story? They know it perfectly after one hearing. They will correct you if you get one word wrong the second time. No, it's to establish this enormous challenge to the brain and all these new neural connections that are demanded.

The next step—once the neural fields are stabilized—is that the child will want to act out the imagery, act out the inner world they have created. This completes the circuitry. We have put the stimulus in, they have created the internal world, now they want to take the internal world and project it back out onto their external world. As Vykotsky, the brilliant Russian developmentalist who died, I believe, at thirty-two, said, "They want to modify the external world by the internal world and play in a world of their own creation."

I give this example over and over, my favorite with my last family. Our little toddler was very precocious at fourteen months. We would tell her the three bears story over and over until I was sick of it. And then one evening as we sat at the table to eat she took a bite and said, "Oh, it's too hot, we must go for a walk in the forest." Now, immediately, she has represented her plate of food as a bowl of porridge, and immediately, I am papa bear, here is mama bear, and she is baby bear, and we are going for a walk in the forest. Now, what has she done? She has created an internal world and stabilized it, and now she wants to take the internal and project it back out and change her external world according to the dictates of her own inner construction.

To the extent that we are willing to go along with this and interrupt the meal—which I got sick of doing, she wanted to play it over and over—this little tiny thing has discovered a great secret: her internal capacities of creation can modify and make a profound difference in her external world.

The Swedish Pediatrics Institute came out with a study showing that a child with imagination was far less prone to violence than a child without imagination. Why? Because the child without imagination is subject to bombardment by their immediate sensory environment without any alternatives. So, if that sensory environment is unpleasant, demeaning, insulting, or threatening, their survival drive dictates that they immediately lash out against it and try to change it.

Whereas, the child with imagination will immediately create an alternate, better inner scenario; they can sift through alternate modes of response and find one that doesn't react to violence with more violence, or whatever it might be, but reacts with much higher cortical structures. The child without imagination is operating out of purely ancient, reptilian sensory motor kind of response patterns of defense against a hostile world while the child with imagination is using much higher evolutionary cortical structures. To do what? Create an inner world in which this is not the case; in which something else is taking place. Don't forget this when we look at the massive rise of violence today.

Let's look at imitative play. This is what occupies the whole child's first few years of life; it's what they are totally centered around, all they want to do. They passionately want to play or be told stories 100 percent of the time. That's what makes up their life. What is imitative play? Monkey see, monkey do—the model imperative. If a toddler sees her mama making cookies, immediately she wants to do the same. But she can't. Too big a bowl, too big a spoon, she can't manage. So, what does she do? She sees the outer model image, creates her own internal scenario where she is the model, and then looks for some way to project the imagery onto her external world and act it out. She picks up a little jar top, a little stick, finds some mud or sand, or maybe play dough, throws it in, all the while talking away at a blue streak, because all early child play is verbal. So, talking away, she acts out this role. What is this?

Well, it's where one object, the jar top, stands for another object, the great big mixing bowl. Where the little stick stands for the great spoon, where she, the little tiny shrimp, stands for the great big, magnificent mother. The Greek word *metapherein* gives us our word, metaphor, which means literally “transference of meaning.” And it refers to one object standing for another object. This metaphoric and then symbolic thinking, which is an elaboration on the former, is the ability to use one object to represent something else. This is the foundation of all higher learning. There is no exception to this. It is iron clad. From here to eternity, these marks on paper—writing—brought in through the sensory motor system, have no meaning. They are utterly meaningless to this system.

To a person not trained and schooled in them, these marks will have no meaning, whatsoever. In order to give them meaning they must be transferred from the sensory motor system, primarily, through the emotional cognitive system, up to the higher regions that grant meaning to those objects. So, it's a transference process. Imagery transference is the way it takes place.

Let's take this one step further. Our ability, later on, to understand marks like two plus two equals four, and so on, depends on metaphoric transference in the brain system, the ability of the brain to take this kind of imagery and turn it into the imagery of pure abstract thought.

Let's look at the most famous equation in history. Even I know what it means.  $E = MC^2$ , pure metaphor, or if you want to say, symbol. It stands for energy. This stands for the quality of equality. This stands for the mass of a particle, this stands for the speed of light squared, all just a series of metaphors, but, you can blow up the world with it, you can tear everything apart with that equation. It has tremendous power as it's translated from its simple sensory input up to the great regions of the causal mind.

A young person's ability to move into those disciplines necessitating metaphoric, symbolic thinking is critically dependent on what happens in the development of internal imagery in the early years of life. I use one final example, and that's my little boy who saw a road roller running down the street, mashing everything flat, making roads. And of course, he didn't have a road roller and he wanted a road roller. That was the most impressive thing he had ever seen, so he finds a little spool of thread in his mother's sewing cabinet and he shouts, "A road roller, a road roller!" And for hours he's lost to the world, playing, making all the appropriate sounds, speaking all the appropriate words. He has taken his image of the road roller, created his own internal scenario, himself in charge, projects it on to something he can handle, and fills in the gaps with his own internal imagery. As \*Vikotsky said, he modifies the spool into his internal image of the road roller and plays in a modified reality. All children want to do is play in worlds they create and project on their external world.

If allowed to do that, they are constantly building new neural structures for creating internal worlds and projecting them on their external world. And they build up an enormous self-esteem and feeling of power over the external world through their own capacities. And actually, it is the capacity of the highest brain structure to change effects in the sensory motor brain.

Piaget spoke of concrete, operational thinking that opens at the age of seven. Some people argue that point, but he makes a strong case for when we can operate on a concrete object and change it according to an abstract idea. This means that the part of the mind that deals in abstractions, possibilities, and ideas can change physical objects by its own actions. That's what the child is after, and it depends on the foundation formed in the first seven years of life: the ability to build internal images. This is one of the aspects of early child play that we want to talk about.



Storytelling in this period, with its emphasis on animals, fairy tales, and all that kind of thing, is critical to the child's development. This also leads to Howard Gardner's observation, that play with the parent is critically important. If the parent doesn't play with the child, if siblings don't play with the child, the child will never be able to play. Play is not learned. It's a basic intelligence, a basic way of all other learning and will simply be awakened in the child by playing with them. But the child not played with cannot play. That's an extreme statement, but it's a pretty good shot that they will never learn to play. So what happens if they don't learn to play?

You won't get any of this internal image structuring going. A child not told stories, not played with or told "let's pretend" won't build the capacity for internal imagery. Later on, when it's time for them to deal with symbolic, metaphoric structures, like alphabets and numbers and formulas in chemistry and physics and so on, forget it. They will have no neural structures to do that.

Now, we then turn around and condemn them for their in-educability and consider them kind of morally corrupt for not responding to all of our wonderful educational systems, when neurological—biologically—they have been damaged to the point of in-educability.

At any rate, talking about this first seven years devoted to the development of this capacity for creating the internal image through which we can change the external world—and that leads to all of the higher operations of mind, metaphoric symbolic thinking and so on—we find World War II to be the watershed of a number of radical changes in our society.

Hospital technological childbirth brought about its own disruptions of the natural unfolding system and within about ten years after that we invented a device which eliminated family talk, that talk around the table that fascinates children. We eliminated the sitting around the fireside where parents tell their childhood stories. Carol Gilligan at Harvard talks about the critical importance of grandmother tales. She thought of it as important to the grandmother to kind of round out her life. Well, believe me, it's critically important to the children who hear those grandmother tales and parents' tales of their own childhood and so forth. This device eliminated, for a long time, radio. It eliminated radio permanently as a storyteller and turned it into a music box, as Michael Toms called it. We used to sit around, as a family, listening to stories on radio, and the imagery going on in my mind was totally captivating.

I'll never forget when some of the characters we would hear on radio shows would appear in real life in a magazine or newspaper and we were offended to the core. "But that's not what they look like at all!" We all had our own idea of what they looked like because we had created our own internal world. This new device did its grave damage by eliminating play and storytelling between parents and their children in about, I would estimate, 70 percent of American homes. The device is, of course, television.

The neurological damage caused by of television has nothing to do with content. For years and years, the debate over television was over content. Jerry Mander, years ago, recognized in his four arguments against television that content was not the whole issue at all. The device itself was doing something. And years ago I started saying that content was not the perpetrator of the chief damage television it was doing. It was the machine, the device itself. There have been serious recent medical, scientific studies in Australia, Europe, England, and the United States that look not at content, but at the device itself and the damage it does.

The way a television works must, first of all, be contrasted with storytelling. In storytelling, here comes that vibration we call a word, which creates an entire vibrational response of the brain that forms a flow of imagery in keeping with it. The little girl who said she loved radio so much more than television because the pictures on radio were so much more beautiful has given an apt description. But instead of the words of the story and the great internal challenge to the brain to create the flow of imagery we came along with a device which gave both stimulus *and* response as a paired stimulus coming into the sensory motor system. What does this pairing of the auditory stimulus with the visual stimulus as a single input into the sensory motor system do to the early child? Within about three minutes the brain habituates.

That's not a very good term but I don't know any better one. The brain habituates to this stimulus because none of the higher creative cortical structures are called upon. There is no challenge to the brain to create the flow of imagery. The flow of imagery is coming in through the sensory system, through the environment, and flooding the brain with a synthetic counterfeit of what it is supposed to produce in response to the imagery. That is, what's coming in through the lower brain at the bottom of the system is flooding the high brain with a counterfeit of what the high brain is supposed to create in response to certain stimuli from the low brain. Therein lies the major damage done.

There is no possibility of content given in the first seven years of life that will not to some extent undermine the capacity of this internal image process. Let me say very quickly that lots of people will come up and say, "I'm outraged. My child watched television and they're a leading A-1 student, and they're brilliant and they're creative..." and so forth. Yes, and we'll find in every case that in addition to television their parents read to them, played with them, told them stories, played the "let's pretend" and so on that every child needs and has had throughout history.

And that brings about the very ironic situation—again hypothetical on my part—that these children look at television and respond to it entirely differently than the children who don't get the play, the internal image construction, and so on. So we find that the damage of television is in its substitution for all of the signals the child must have in this early period to learn to create the internal world that is the foundation of metaphor and symbol, and, in turn, metaphoric and symbolic thinking. It substitutes for those stimuli and floods the brain with a synthetic counterfeit of its own processes.

The average American child sees 5,000 hours of television before age 5, at which point we take them, slap them into kindergarten, and hit them with the highly abstract metaphoric symbolic material that we call the reading readiness workbooks. And I promise you that the average American child, probably 70 percent of them, cannot cope with this. It's a form of response that they can't make. They cannot interpret abstract symbolic figures into meaningful structures because they have no metaphoric system created. It's a biological breakdown. It's a neurological deficiency on their part, but we interpret it in all sorts of other ways.

Now let's look at what happens in such cases as *Mr. Rogers*, or *Sesame Street*. In the majority of cases where children see these, their parents are limiting and their monitoring television and they're seeing only that sort of programs. Meanwhile, they're being read to; they're being stimulated. Two of my children, in my first family, learned to read spontaneously somewhere between four and five, simply because we read to them all the time. Children brought up in an environment that is literary will take to it like ducks to water. You don't teach them to read; they just spontaneously pick it up. And so if you have that kind of an environment and then in addition they see something like *Mr. Rogers* or *Sesame Street*, it will work with them pretty well. For the rest of the children it's not going to work in the same way. We pick on the few successes these programs produce and ignore all the massive failures.

Then of course we have the critics of these programs who point out the very short attention spans that are demanded. Children are trained with short little sound bites and constantly changing imagery and scenarios and so forth. Now consider the child's total absorption in storytelling: they will sit spellbound for hours and hours as the storytelling goes on. They exhibit some of this catatonic spellbound entrancement in front of television because it's substituting and affecting some of the same brain structures. And so we find their response is the same entrainment, but of course none of the higher cortical structure is called upon.

In the brain's great economy of energy, this paired audio-visual imagery coming in requires no response, so it maps out the most economical route to follow, you might say, in making a response and follows exactly that same route every time.

Now contrast that with storytelling, in which the great challenge to the brain was that with every new story it has to have had come up with a whole new routing, continually establishing new neural structures in response to the challenge of the stories. Television, exactly the opposite. The same neural structure is used to translate the same paired response every time.

So much for all the brilliant information they're going to receive from those 5,000 hours of television watching before age five. Now they continue that. So we find that content has nothing to do with this. Not only that, 80 percent of the child's viewing is generally of adult programming. Only about 20 percent is of children's programming because it simply isn't there. My objection to television is primarily due to neural deprivation: if these higher neural structures are not activated and established, then the child is behind the eight ball. They're neurally deficient. But the content of television *does* affect behavior. The issue is different, but content affects behavior. We've known that.

In 1963 they came out with all sorts of studies that showed that the content children saw on television profoundly affected their behavior and there is all sorts of research to prove this. By the time the average child hits his/her teens, they've seen an average of 18,000 violent murders on television. The affect of this on behavior is obvious. They simply cannot treat life in the same way they would have had they not seen that. They think of themselves as expendable to an uncaring violent world, as victimized by that violent world, as facing forces and powers far greater than they have any capacity to deal with or make a response to.

Why? No internal imagery. They can't come up with an internal image that's an alternate to that kind of scenario. They have no capacity to hope or to dream. And so we have a cycle again, an escalating cycle of young people who feel victimized by a world over which they have no control and in which they have no say in what's happening. And this victim mentality does in itself breed great violence. Look at the situation: 135,000 American school children carry guns to school everyday, thirty kids are hit with bullets everyday, and ten of them die everyday in the United States. And that's just one of the indications of this violence. I was listening to the radio the other day when I was at my sister's in North Carolina and I heard the statistics on massive rise of violence in their public schools. Here is a stable old southern state—it's not just California, the same thing is true in Virginia—experiencing a massive rise of violence. They had some 1,500 suspensions for using guns in the schools. A couple thousand more for bringing guns to school. Five hundred suspensions for violence done with them. They had 1,500 cases of violent attacks against school teachers, a certain number of school teachers were killed, and so on. Now believe me, this is a new phenomena in human history. And one of the causes is the violent scene on their major source, their major criteria of reality, which is television. Their major model; what they're following.

The other major source of that violence is technological childbirth and the damage done to the infant in that earliest development stage. Now this issue of television is a painful thing and nearly always the defense of people is, "I watched television and I'm all right." Okay. I just ask you to look at the national scene as a whole.

Statistically we are not "all right." Statistically the violence increases constantly and the violence is caused by people who are neurologically damaged. I say that the principle cause of the collapse of the American schools, and believe me our schools are in severe troubles, serious troubles, is not because of a bad educational system. We've never had a good one, seriously. If you think schools are bad now you should have been to school with me back in the mountains of Virginia in the thirties. We were beaten right and left every day, constantly. They were harsh. They were cruel. They were mean. We learned in spite of it and we did pretty well, considering. The schools were not much good. They're still faulty in many respects, but they have fallen apart not because of a bad educational system, but because we have neurologically damaged a majority of our children past the point of educability.

Childbirth, abandonment, and television play a critical role. But there are other factors as well. Let's look at play. We want to move on briefly to other forms of play. What about play in the seven to eleven year period? The interesting thing about play is that it changes continually. The nature of play changes. The four-year-old is playing quite differently than the earlier child. And the seven to eleven-year-old is going to play entirely differently yet again. But "let's pretend" play that opens at seven becomes far more fantastic, the child is playing at being the adult and plays all these roles out, but it's magical play.

Piaget speaks of this magical thinking that seizes the child and of the child being able to conceive any and all possibilities as equally valid, limited only by the nature of the models that present the possibilities to him.

Children can conceive any and all possibilities as equally valid because they have a neural structure that is absolutely open-ended and infinite. They can respond to any and all possible models and build a corresponding structure of knowledge about it according to the nature of the models. If they're not given the models for these possibilities, nothing happens, and age eleven they'll be left with only the neural feelers that have been stabilized, activated, and put to use. At that point we find an 80 percent reduction in the brain's capacity.

This huge loss comes from the failure of our model structures. It's the only thing I can figure—you can come up with your own idea. The brain is always redundant. Nature is always redundant, she always produces far more than she needs and then has periods of cutback, we know that, but not as extensive as happens at age eleven. What is child's play at this period? It's playing at "let's pretend," at being every incredible thing imaginable. Dungeons and dragons, those sorts of things begin to crop up and become intense during this time. And they like playing groups much more than the earlier child. The early child doesn't need groups much. You don't find interaction in child play in the early years. They might occupy the same stage, but they're playing according to totally different scripts.

Now they'll begin to join in their scripts. A lot of this imaginative play is "let's pretend" and a lot of it is group play, playing together. But you will find during this period that highly structured winning games are really inappropriate to the child. I think of that little nine-year-old saying, "Is this a fun game or one of those winning games?" when some adult was trying to inaugurate him into some game. They want to play fun games.

Bruno Bettelheim, who knew a lot, said that during this period the child doesn't need structured games at all and above all can't deal with rules and regulations. Their games are free and wide open. They make up the rules and regulations as they go along, and they'll make them up and change them constantly so they always win. The child in this period cannot comprehend not winning. When any and all possibilities are equally valid I should win all the time. That's the most equal of all things. That's the most valid. And so Bruno Bettelheim pointed out that if you set up rigid rules and regulations, they'll cheat up a storm. Why should they not cheat when any and all propositions are equally valid? It's as valid to cheat as not; the rule is made only to be broken or gotten around somehow. If they carry that over into the formal operational stages later on, you're in trouble, but it certainly is the case from seven to about age eleven.

There are all sorts of other things about this period from seven to eleven. In the case of my daughter, who at almost nine had never had a chance to go to school because we'd traveled every year of her life. We said, "You're gonna have to go to school some day" and she answered, "That's fine, if they'll let me do what has to be done." And we said, "What is that?" And she said, "Make things and sing." That's the perfect expression of the seven to eleven period. And play to a child is making things. Making things is a critical point of play.

Carol Gilligan speaks of the eleven-year-old girl as coming into a period of utter clarity and tremendous security within herself. Surety of her own powers and a great sense of justice. A great sense of righteousness. Exactly the same thing happens for little boys at around about age eleven. A great sense of justice and rightness and the clarity of how things are and how they should be, a perceiving of injustice, a terrible pain. My daughter currently expresses great pain that anyone would be cruel to someone else. That someone would be cruel to animals. That we would hurt the earth in any way. This sense of righteousness, this sense of justice and order and all that comes in at age eleven. Why? Because we've cleaned house. We've removed all the alternate possibilities down to those structures of knowledge that we have received models for and built in our brain system. This housecleaning, this tidying up and bringing of the house to order causes a radical change of behavior to take place in the child.

Around age eleven we often want group play under stringent rules and regulations that we make ourselves and don't break once they're made. This is when boys develop the passion for sandlot football and baseball and the like. We live to get out there and play those ball games over and over. And it seemed we spent the first hour of this critically precious time dividing up sides because they had to be divided up fairly.

They had to be equal. "Who gets Pearce the shrimp" became a big issue. It really did, and I felt it too. We had to divide up so that things would be equal and fair and then we hammered out the rules and regulations of how we would play. And then we would start playing and immediately there would be an interruption and great heated passionate arguments over some infringement of the rules. "You were out." "I was not out, I touched." "You did not." And the whole group would gathering and spend long precious hours of our play period doing what? Arguing over the rules. An adult would come along and say "why don't you kids play and stop arguing all the time" but they didn't realize, we were giving up our unrestricted freedom of the magical years and learning to undergo strict self-restraint, self-discipline, on behalf of a larger group-organized activity.

This was our first real major socialization, when we learned to give up personal freedom on behalf of the freedom of a larger group; personal magical thinking on behalf of the needs of the larger group. And we were willing to do it provided we could set up the rules and regulations and passionately argue their infringements. And so we spent half our time arguing, half the time in what an adult would consider play, and through that we hammered out the self-restraint needed to enter into society as a supporting member of that society. That really is what went on during that period.

One of the things we did might have started in a very minor area, but it took on full steam during the Post-World War II watershed period. And that was adult-supervised child play. All of a sudden streets were filled with speeding automobiles, there are no longer sidewalks in planned communities, and we planned and built areas for children to play in. In order to keep them from hurting themselves we had college-trained adult supervisors, play supervisors, of the children during play times. And along with that came an adult always making the decisions, always overseeing the whole operation; along with that came things like little league and the other organized child sports. And little league began to move into childhood itself, earlier and earlier and earlier. No longer were we out on the sandlot slugging it out in these passionate arguments, we were marching out dutifully in our beautiful uniforms with their advertisements of companies on the back, under the supervision of adults who had organized it all, and with our parents lining the sidelines, screaming "kill them, get them!" Win at all costs—the poor child grimly facing the enemy and the adults making every decision, calling the strikes, calling the balls, and it was a closed issue. Now believe me, this seriously undermines the natural native capacity for adopting social restriction from about eleven through fifteen, to becoming a parent, to entering and becoming a functioning part of society.



All of these things have been inroads of the adult intellect into the naturally unfolding intelligence of the child. Does that make any sense? Is it just the carping and complaint of an old man? Perhaps. But, I only want to say that in our day, when a nickel was a huge sum of money and we would work all week trying to earn ten cents to go to the Saturday afternoon movies, the standard of living was low but the quality of life was high. We had hope. We might have been in a temporary depression, but just wait till we, the next generation, got out there on the stage. We would change everything. We felt absolutely that we could control the whole situation, that we would have dominion over the world, we'd make that change. A lot of that took place in our play itself and how we played. And suddenly we speak now of the disappearance of childhood in America. Lots of books have been written about it. It's not just a figure of speech.

So if some of this sounds like carping criticism, I just ask you and invite you to look at it carefully and see what we have done with intellectual interference into the natural intelligence of the system. We're back to that simple factor.

End