

---

# **Children's Pastimes and Play in Sixteen Nations**

## Is Free-Play Declining?



DOROTHY G. SINGER, JEROME L. SINGER,  
HEIDI D'AGOSTINO, AND RAEKA DELONG

This article is based on a study of the role of play and experiential-learning activities beyond formal schooling in sixteen nations. The study, supported by Unilever PLC, gathered information from the mothers of twenty-four hundred children in countries in North America, South America, Africa, Europe, and Asia who described and rated their children's daily activities in telephone interviews or face-to-face conversations. They answered questions about their beliefs and attitudes concerning experiential learning, about their worries for the safety and health of their children, and about the general values of their children's various pastimes, including the use of electronic media. The study concerned children of comparable socioeconomic status in each country and looked at equal numbers of boys and girls and an equal distribution of children's ages ranging from one to twelve. The study's findings indicate surprising similarities of children's play in all nations. The mothers interviewed agreed, for example, that a lack of free-play and experiential-learning opportunities was eroding childhood. The study indicates that children's major free-time activity is watching television. In analyzing the data collected in the study, the authors discuss detailed cross-national comparisons and differences in play activities by degrees of industrial development.

### **Introduction**

HOW DO YOUNG CHILDREN spend their leisure time? Although there have been surveys conducted exploring the nature of children's pastimes (Clements 2004; Gryfe 2005; LEGO Learning Institute 2002, 2003a, 2003b), none to our knowledge encompasses both so large a number of participants and such diverse nations as does ours. We surveyed mothers in sixteen countries using telephone or face-to-face interviews to determine how their children spent their time when

they were not attending school or daycare. The study focused on children aged one to twelve. We chose mothers for interviews according to their availability and to their familiarity with their children's daily activities. The participating mothers were young enough to recall their own childhood play experiences and to contrast them with those of their children.

The study included children in Argentina, Brazil, China, France, India, Indonesia, Ireland, Morocco, Pakistan, Portugal, South Africa, Thailand, Turkey, the United Kingdom, the United States, and Vietnam. For analysis, we later grouped the countries by degree of economic development and analyzed differences and similarities in children's leisure activities and in mothers' observations, attitudes, and values. Given the variety in culture, customs, languages, and religions, we expected to find differences in how children spent their free time when not in school, and in the attitudes of mothers about their children's experiences.

Countries such as France, the United Kingdom, and the United States have much longer histories of industrialization and more advanced educational opportunities, especially in the sciences than, for example, Morocco, Pakistan, Thailand, or Vietnam. However, one of the implications of expanding globalization, especially in the use of electronic media, may be the increase of similarities in information and entertainment sources for children, and a possible result is more homogenization of children's activities and parents' attitudes.

An important way for a child to confront, to understand, and to form new information into a concept is to "learn by doing." This method or process of learning can also be interpreted as experiential learning. In contrast to the formal didactic atmosphere of most classrooms and home teaching by parents using drill cards and exercises, experiential learning generally takes place with limited adult guidance. Such learning is fostered by a child's curiosity, urge to explore, and emerging self-awareness, which are often associated with various forms of play. Through play, a child begins to develop a concept of self ("who I am"), including self-control and identification with adults as role models (Berk 2006; Singer and Singer 2005; Vygotskiï 1978). Experiential learning tends to be a natural process most likely to use all of the senses in pretend play; in creative expression through drama, art, music, and dance; in unstructured sports; and in exploration of indoor and outdoor surroundings.

In the last two decades, children's participation in spontaneous activities and play has diminished as a result of many factors. These include the popularity of television programs, computer games, and other technological products; the competition for children's time from organized sports and other after-school activities; parents' fears about children's physical safety; parents' lack of aware-

ness about the benefits of unstructured activity and play; the shortage of quality play spaces near children's homes; and the reduction in recess time at school (Singer and Singer 2005; Singer, Golinkoff, and Hirsh-Pasek 2006).

Government educational policy has also played a role. In the United States, the No Child Left Behind Act has emphasized early academic achievement, often at the expense of activities that foster social and emotional learning, such as sociodramatic play and hands-on, experiential activities, including art and music (Hirsh-Pasek et al. 2008; Zigler and Bishop-Josef 2004). While most pediatricians and child-development experts agree that unstructured activities and play are important to children's health and adaptive socialization, the emphasis on academic-test performance has resulted in severe cutbacks in children's free-play time and in recess during the school day. A survey of pediatricians found that nearly all (96 percent) believed that unstructured play helps build children's social skills and confidence. The survey also indicated that 89 percent believed that it helps prevent children from becoming overweight, and 82 percent believed play helps children improve problem-solving skills (Farley 2005).

Jean Piaget conducted extensive research into play and concluded that play was a vital component to children's normal intellectual and social development. Piaget also found that physical, outdoor activity not only stretched children's imaginations and social interactions, but also gave them a chance to exercise their muscles and lungs and learn about their physical limitations (Piaget 1962). The American Academy of Pediatrics indicated in its most recent clinical report that "play allows children to use their creativity while developing their imagination, dexterity, and physical, cognitive, and emotional strength" (2006, 3). Despite the apparent decrease in both indoor and outdoor play, children's playtime, regardless of form, remains essential for long-term development. "In play the child is always behaving beyond his age, above his usual everyday behavior; in play he is, as it were, a head above himself" (Vygotskiï 1978, 74).

## Literature Review

The literature review that follows is related to play in general and to the five questions we raise in this study that bear on the results we found.

### *Cognitive Development*

Researchers and educators have often stressed the importance of incorporating play-related activities that promote learning. Parents, who—in their effort to

help their children succeed academically—often confuse memorization with achievement, also need to recognize the educational value of various forms of play (Hirsh-Pasek, Golinkoff, and Eyer 2003; Samuelsson, Pramling, and Johansson 2006; Singer, Golinkoff, and Hirsh-Pasek 2006).

Past studies demonstrate the many benefits of playing. Play, for example, affords children practice in problem solving and subsistence activities, like food preparation and child care; practice in social skills, such as sharing, taking turns, helping others, and cooperating with peers and adults; and practice in cognitive skills such as developing a theory of mind or making distinctions between reality and fantasy. Play continues on into adulthood in more ritualized forms (Henderson, Marshall, Fox, and Rubin 2004; Hirsh-Pasek, Golinkoff, Berk, and Singer 2008; Schwebel, Rosen, and Singer 1999; Singer and Singer 2005; Smith 2004; and Zigler, Singer, and Bishop-Josef 2004).

Children under the age of three explore play through physical actions such as taste and touch. Older, preschool-aged children advance to representational play or dramatic play that incorporates speech and body language. Neurologist Frank Wilson (1998) has presented a critical analysis of the early significance of experiential movement and its role in cognitive and social development. Wilson points out that the brain of early man known as *Homo habilis* indicated a level of development suggestive of the beginnings of imagination, dreaming, and curiosity.

Pretend play also enhances cognitive and emotional development (Russ 2004; Singer and Singer 2005). Make-believe games have been shown to help a child expand vocabulary and link objects with actions, develop object constancy, form event schemas and scripts, learn strategies for problem solving, develop divergent thinking ability, and develop a flexibility in shifting between different types of thought—for example, between narrative and logical thought.

A number of researchers have explored the relationship between imaginative play and a child's development of language and communication skills. One recent study among preschool children—four- and five-year-olds—found that children talked significantly more often, spoke more multiword utterances and interrogative and negative clauses, and used their language more complexly in symbolic functions when they were involved in free play than when they were engaged in routine or guided cognitive activities (Fekonja, Umek, and Kranjc 2005). Singer and Singer (1981) found that preschoolers participating in make-believe play used the future tense, conditional verbs, and descriptive adjectives more often than children who were not playing pretend games. Make-believe play encourages children to communicate with their peers to create pretend scenarios,

and it provides children opportunities to adopt multiple themes and multiple roles (Bodrova and Leong 2005). A survey of how teachers use play for language enrichment carried out by Singer and Lythcott (2002) indicated that the incorporation of sociodramatic play in the school curricula for six- to eleven-year-olds encouraged a variety of adaptive language uses and creative expression.

Another way in which children can express their creativity is through art. Indeed, art has been deemed especially important for younger children who are not yet able to write (DeBord 1997; Russ 1993, 2004). Music is also a fundamental way of learning and a fundamental form of creative expression (Thompson 2004). Recent research suggests that musical interaction—singing simple songs—enhances children’s speech development. The rhythm of music also helps children learn mathematics. One study showed that inner-city second graders dramatically increased their standardized math scores when teachers used musical teaching methods. In fact, the second graders performed at the same level on advanced math concepts as fourth graders from a higher socioeconomic school (Shaw 2000).

### *Gender and Play*

One report investigating differences in the play patterns of boys and girls found that nine-year-old boys enjoyed playing with other boys while eight- to ten-year-old girls tended to prefer playing by themselves. Time for girls from nine to twelve years of age is more tightly scheduled than the time of boys of the same age (LEGO Learning Institute 2002, 2003b). A review by Smith underscores gender differences in physical play: “[N]ormal exposure to androgens during fetal development predisposes males, more than females, towards physical activity generally, and exercise play and rough-and-tumble play more specifically” (2004, 13). Research conducted with preschool children suggested that girls engage in more make-believe play at a younger age than boys but that boys catch up in imaginative activity by the age of five (Singer and Singer 1981). Seventy-three mothers and forty fathers, queried about their children’s pretend play and their attitudes toward pretending, claimed that girls engaged more often in pretend play than boys. In the same study, mothers perceived pretend play more positively than fathers did (Gleason 2005).

### *Time and Play*

Researchers have studied children’s play patterns worldwide, and their findings suggest that children spend less time out-of-doors in such countries as England, Canada, and Japan (Clements 2004; Dietze and Crossley 2000). When

children play in natural environments, their play is more diverse and includes imaginative and creative play. This, in turn, fosters language and collaborative skills and can improve children's awareness and reasoning (Cobb 1977; Louv 1991; Moore and Wong 1997; Pyle 2002). Furthermore, because young children tend to learn through hands-on experiences, they are better taught about the outdoors through direct contact with nature than through books or videos on the topic (R. Wilson 1995). In a study comparing France, Germany, Japan, the United Kingdom, and the United States, parents either slightly or strongly agreed that time spent playing was also time spent learning (LEGO Learning Institute 2002). A study involving English school systems in Leeds, Sheffield, and York reported that time for play had been cut as a result of curriculum changes. Hands-on activities are commonly being replaced with standard curriculum (BBC News 2003).

In one survey in the United States pertaining to children's playtime, 95 percent of the mothers surveyed thought it important that their children spend time playing each day (Gryfe 2005). When they discussed time set aside for free play at the elementary school level, only 61 percent of the mothers hoped enough time was allotted for their children's free play, compared to a much larger percentage of experts in the field (92 percent). Likewise, more experts than mothers agreed that having time each day to do nothing in particular is critical to a child's development (95 percent and 77 percent, respectively). Research on recess in schools suggests that providing recess periods within the school day actually facilitates children's attention to classroom tasks. Studies have shown that elementary school children became progressively inattentive when recess was delayed. Recess and playgrounds also have an important role in social development, helping children learn to make choices, develop rules for play, and resolve conflicts. Recess also benefits classroom learning and children's health and behavior, improving both fitness and test scores (Bishop and Curtis 2001; Jarrett 2003; Pellegrini 2005; Pellegrini and Holmes 2006).

### *Space*

Space for play can sometimes seem a luxury. Research from the Economic and Social Research Council (ESRC) program on London children aged five through sixteen revealed that children of ethnic minorities were more restricted in their use of open space and in opportunities for free, unsupervised play than those from more mainstream communities (Voce 2003, citing the LEGO Learning Institute Web site). These days, parents fear for their children's safety when they leave the house alone. Many children no longer roam their neighborhoods

or even their own yards unless accompanied by adults (White and Stoecklin 1998). Parents' fears of traffic, strangers, Lyme disease, West Nile virus, and other concerns such as teachers' emphasis on more homework, and more structured schedules in general, limit children's access to and time for play spaces (Louv 2005).

### *Organized Sports*

Today's children begin participating in structured sports at a younger age than in past generations. Children under the age of seven commonly engage in unstructured physical play either alone or with their peers. Such play usually occurs in their backyards, at parks, at playgrounds, or even in daycare centers or kindergarten classrooms—at locations where they can be supervised. These physical activities help develop large motor skills as well as promote a sense of cooperation through taking turns and sharing. Playing on swings and slides, climbing rock walls and jungle gyms, riding a tricycle, and playing ball introduce children to simple rules regarding safety while avoiding the problems and pressures of formal competition and team sports. A report from the American Academy of Pediatrics recommended that young athletes avoid specializing in a single sport at an early age. The report emphasized that children who participate in a variety of sports then specialize in one at the age of puberty tend to be more consistent performers, have fewer injuries, and play sports longer than those who specialize early (Gerber 2003).

### *Health Issues*

Because children of today engage in less daily physical activity, they increase their risk of obesity. One study showed that the prevalence of obesity in twelve- to seventeen-year-olds increased as the number of hours of television watched per day increased (Gortmaker et al. 1996). Children with obesity are less likely to participate in exercise and formal sports clubs, thus increasing the likelihood they will remain overweight. (Steinbeck 2001). In 2001 Former Surgeon General David Satcher issued a call to action because type 2 diabetes—linked to being overweight and to obesity—has increased dramatically among children and adolescents (Almon 2003).

### *Electronic Media*

Over the last decade, play has changed dramatically. No longer engaged in active, outdoor activities, children have given up active, outdoor endeavors for more sedentary, small-screen entertainment activities such as watching television,



playing video games, and using computers (Louv 2005; Popkin 2001). Children in the United States in the age group comparable to our study watch television for more than 3 hours each day. They spend another 1.24 hours watching videos and movies, one hour listening to audio, a little over one hour playing video games, and 37 minutes using computers (Roberts and Foehr 2008). Internationally, “TV is still the most used media (*sic*), but the internet and mobile phones are rapidly increasing as communication tools among children. . .” (Ekstrom and Tufte 2007, 14). Some observers suggest that children today seek in a variety of new media and toys—iPods, cell phones, Game Boys, and others—novel play outlets to replace the free play, outdoor play, and less structured activities more common to earlier generations (LEGO Learning Institute 2003a).

Electronic media in moderation can enrich children’s creativity and play and actually promote school readiness (Singer and Singer 2001). However, electronic games need to be built on earlier hands-on experiences. Not all games enhance school readiness. Parents should select games for their children that best foster language and imagination, avoiding especially games with a narrow range of perceptual motor skills like those in some violent video games. Numerous studies point to significant hazards for children who watch violence on television or who play violent video games like *Grand Theft Auto*, but Singer and Singer (2001) believe that “there are many potentially constructive uses of television . . . when judicious TV viewing is combined with the exploration of learning materials especially prepared for the computer” (724).

A study of the attitudes, beliefs, and values of more than three thousand parents and their children under age twelve in the United States, Great Britain, France, Germany, and Japan suggested that video games, television and, most prominently, the Internet have become standard in most households and are frequently viewed as play products. The study showed that 86 percent of Japanese parents consider the use of video games to be play activities. Further, both Japanese and French parents characterized shopping as play, 58 percent and 53 percent, respectively (LEGO Learning Institute 2002). Another survey examined fifth- and sixth-graders at six elementary schools in both rural and metropolitan settings in Tokyo. Of the 492 students, 40 percent preferred playing indoors to playing outdoors, and 70 percent reported watching television as a popular pastime (Benesse Corporation 1999). A study that asked 830 U.S. mothers about their own childhood play and their children’s play indicated that their children played outdoors considerably less than they did as children. Ninety-six percent of their children watch television regularly, and 85 percent of them identified



their children's television viewing and computer-game playing as the primary reason for the growing absence of outdoor play (Clements 2004).

### Questions Raised in this Study

Guided by the issues discussed in this review, this study examined what children do when they are not in school or daycare settings and how much of their time they spend engaged in activities that offer enjoyable and developmentally useful experiential learning. We questioned mothers of these children to describe their children's play activities, and we asked the mothers about their own attitudes, beliefs, and perceptions about their children's play, and their concerns about their children's well-being and futures. The questions posed in the study and dealt with in the results section include:

What free-play activities do children of different countries take part in that provide or limit opportunities for experiential learning?

What is the perceived level of enjoyment of children engaged in experiential learning?

What fears and concerns do mothers report about the safety, security, and health risks associated with outdoor play that may discourage experiential learning?

To what extent do mothers in various countries report serious concerns that children are losing out on the enjoyments and social learning opportunities of childhood?

What are the wishes that mothers express and would like to see fulfilled in the future in order to foster a healthy childhood?

### Method

#### *Participants*

Interviews were conducted among a sample of twenty-four hundred mothers in sixteen countries: North America: the United States (USA); South America: Argentina (ARG), Brazil (BRA); Europe: the United Kingdom (GBR), France (FRA), Ireland (IRL), Portugal (PRT); Asia: India (IND), Thailand (THA), China (CHN), Pakistan (PAK) Indonesia (IDN), Vietnam (VNM); Africa:

South Africa (ZAF), Morocco, (MAR). We had included Turkey (TUR) but separated it in this listing by continents since it overlaps Asia and Europe. We also analyzed the data using the following country classifications. In a category of developed countries, we included the United States, the United Kingdom, France, Ireland, and Portugal. Newly industrialized countries included India, China, Brazil, Argentina, South Africa, and Turkey. We classified Thailand, Pakistan, Indonesia, Vietnam, and Morocco as developing countries.

The inclusion of data from each country was determined primarily by the willingness of mothers to participate, the availability of translators to translate the questionnaires, and the availability of trained interpreters to conduct either telephone or face-to-face interviews. The interviewers were trained to present the original questions, to respond to queries about meanings, and also to elicit examples or additional thoughts from mothers concerning each item on the questionnaire. Interpreters were cautioned about leading questions or suggestions that might bias the responses. Data were weighted to ensure that the sample reflected the gender of each child as well as the socioeconomic status of the mother in each country. The participants were drawn from urban, suburban, and rural areas in each country. We determined the distribution for a number of independent variables. With regard to socioeconomic status, for instance, approximately 33 percent were lower class, 43 percent were middle class, and 24 percent were upper class. Fifty percent were boys, 50 percent were girls. Fifty percent of the interviewees were working mothers, 49 percent were nonworking mothers. Eighty-two percent of the mothers were married, 18 percent were not married. On average, each family of the survey had two children. Further, we used secondary research to determine if the crime rates in a country and the number of hours children spent in school were factors that could affect the mothers' responses.

We used a variety of methods to select participants. Irish and U.S. respondents were drawn from an existing sample panel obtained from a marketing research company. We began with a purchased sample list for participants in Portugal; for France, China, Thailand, and United Kingdom we used random digit dialing determined by the telephone penetration in the country. If a country had a particularly low telephone penetration, as in Argentina, Brazil, India, Indonesia, Morocco, Pakistan, and South Africa, we conducted face-to-face interviews, skipping a predetermined number of houses between each completed interview. Participants did not receive any material incentives to participate in this study. We conducted 150 interviews in each of the countries

with mothers of children between ages of one and twelve. Table 1 presents the data by age and gender within each country.

### *Questionnaire*

The questionnaire consisted of forty-nine items relating to how children spend their time each day. Possible activities included sports, arts and crafts, television and computer use, pretend play, and playground visits. We also asked mothers about their perceptions of activities associated with healthy child development, of children's enjoyment of different activities, and of their own parental roles. Mothers also reported their concerns about safety and space and time for play. Finally, we asked mothers about their hopes for their children's futures.

### *Statistical Analyses*

All responses were coded to preserve anonymity. Independent sample Z-Tests were used to determine statistically significant differences at the 95 percent confidence level. Further, the margin of sampling error at the 95 percent level of confidence is  $\pm 2.0$  for total respondents (2400) and  $\pm 8.0$  for each country sample (150). Data were presented using either percentages or mean numbers of responses to each question. The use of percentages in this report may make it easier for a broad audience to comprehend the findings.

## **Results**

We present the findings of the study to address the five questions we have asked about children and play.

### *Children's Activities Outside of School*

With the influx of technology in countries across the globe, it is no surprise that children from every nation in our study watch television regularly. We did not

*Table 1.* Genders and Ages of Children Per Country

Ages	1-3	4-6	7-9	10-12
Mothers of Boys	19	19	19	18
Mothers of Girls	18	19	19	19
<b>Total</b>	<b>37</b>	<b>38</b>	<b>38</b>	<b>37</b>

expect, however, that watching television as reported by the mothers would be the most common activity equally among boys and girls across so many different countries, while outdoor play was less often reported (see figure 1). As Figure 2 demonstrates, watching television was significantly more common than playing outside the home. When we grouped countries into those that are developed (France, the United Kingdom, Ireland, Portugal, and the United States), newly industrialized (Argentina, Brazil, China, India, Turkey, and South Africa), and developing (Indonesia, Morocco, Pakistan, Thailand, and Vietnam), we found children spend less time with television in the developed countries compared to the latter two groups. When we compared urban, suburban, and rural mothers, urban mothers—significantly more than the other two groups—reported that television provides them opportunities to bond with their children and encourages healthy child development.

When we considered the sixteen countries individually, we found that in five of them (Vietnam, India, Indonesia, Thailand, Brazil, and Argentina), more than 80 percent of mothers report that children watch television often; in Vietnam, the figure is 91 percent; in India it is 88 percent. The United States has the lowest percentage (46 percent). This may reflect that U.S. children have many other activities that occupy them after school compared to the children of the other fifteen countries. Boys, significantly more than girls, in all countries use electronic games (34 percent to 22 percent). More than 50 percent of all the children surveyed also play with toys, and nearly half paint, draw, and play music. Only about one fourth (27 percent) of the total sample of children engage in imaginative or pretend play. (See table 2 and figure 1.)

The frequency of television viewing varied depending on the age of the child. Specifically, mothers of older children (seven to twelve years) were significantly more likely than mothers of younger children (one to six years) to report that their child watches television often.

With respect to playing outside, an activity that we associate more with experiential learning, we found that the developed and newly industrialized countries report similar results. By comparison, developing countries showed not only the highest rate of television watching, but also a considerably lower rate of outdoor play (See Figure 2.) According to the survey, significantly more boys in all countries played outside or on a playground than girls (63 percent compared to 53 percent), and more boys than girls took part in organized sports (25 percent to 21 percent).

The size of the family played a role in the activities children chose. Interest-

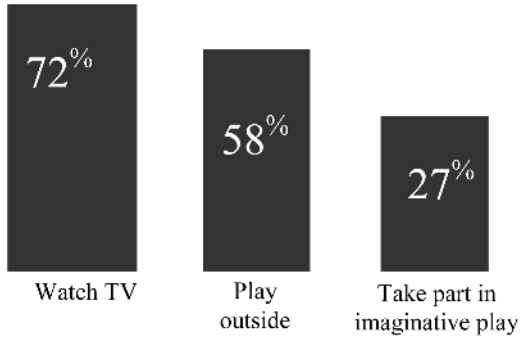


Figure 1. Percentage of Mothers Who Report Specific Activities of Their Children

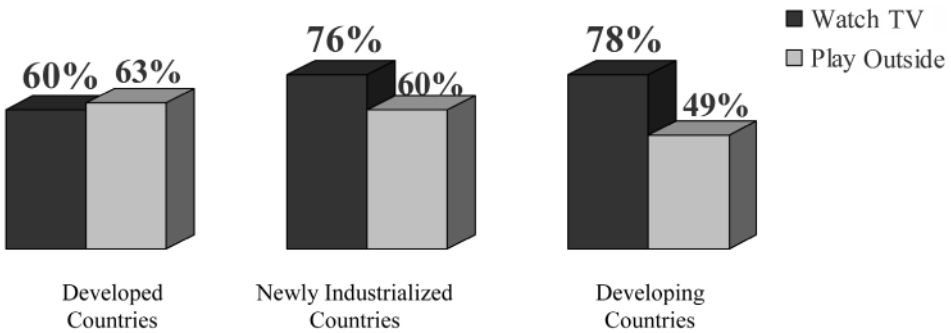


Figure 2. Television Viewing and Outdoor Play by Countries' Economic Development

Table 2. Activities Children Participate in Often

	US	UK	FRA	PRT	IRL	ARG	BRA	TUR
1	School (84%)	School (89%)	School (89%)	Play with toys (88%)	School (92%)	Watch TV (80%)	School (87%)	School (81%)
2	Play with toys (73%)	Play with toys (75%)	Play with toys (75%)	School (82%)	Outdoor free play (73%)	Outdoor free play (76%)	Watch TV (82%)	Watch TV (69%)
3	Outdoor free play (59%)	Outdoor free play (60%)	Outdoor free play (60%)	Paint/draw/play with clay (77%)	Play with toys (72%)	Play with toys (73%)	Play with toys (80%)	Play with toys (62%)
4	Imaginative play (51%)	Watch TV (71%)	Watch TV (55%)	Watch TV (72%)	Imaginative play (66%)	School (73%)	Sing/dance/music (66%)	Paint/draw/play with clay (42%)
5	Sing/dance/music (47%)	Paint/draw/play with clay (60%)	Paint/draw/play with clay (53%)	Sing/dance/music (55%)	Paint/draw/play with clay (61%)	Paint/draw/play with clay (69%)	Outdoor free play (66%)	Sing/dance/music (39%)
6	Watch TV (46%)	Imaginative play (57%)	Unorganized sports (52%)	Imaginative play (53%)	Sing/dance/music (59%)	Unorganized sports (65%)	Paint/draw/play with clay (66%)	Outdoor free play (28%)
7	Paint/draw/play with clay (45%)	Electronic games (52%)	Organized sports (51%)	Outdoor free play (51%)	Watch TV (58%)	Sing/dance/music (59%)	Unorganized sports (53%)	Electronic games (21%)
8	Rough and tumble play (42%)	Sing/dance/music (48%)	Explore nature (45%)	Organized sports (40%)	Rough and tumble play (56%)	Imaginative play (52%)	Electronic games (35%)	Imaginative play (20%)
9	Explore nature (33%)	Rough and tumble play (43%)	Rough and tumble play (26%)	Electronic games (38%)	Organized sports (47%)	Explore nature (49%)	Organized sports (25%)	Unorganized sports (16%)
10	Unorganized sports (31%)	Unorganized sports (36%)	Electronic games (23%)	Explore nature (30%)	Unorganized sports (46%)	Electronic games (44%)	Explore nature (18%)	Explore nature (10%)
11	Electronic games (30%)	Organized sports (34%)	Imaginative play (23%)	Unorganized sports (26%)	Electronic games (37%)	Rough and tumble play (41%)	Imaginative play (13%)	Organized sports (9%)
12	Organized sports (28%)	Explore nature (25%)	Sing/dance/music (15%)	Extracurricular activities (7%)	Explore nature (22%)	Organized sports (37%)	Extracurricular activities (9%)	Rough and tumble play (6%)
13	Extracurricular activities (5%)	Extracurricular activities (14%)	Extracurricular activities (7%)	Rough and tumble play (16%)	Extracurricular activities (15%)	Extracurricular activities (23%)	Rough and tumble play (6%)	Extracurricular activities (5%)

Table 2. (cont.)

	IND	CHN	PAK	IDN	THA	VNM	ZAF	MAR
1	Watch TV (88%)	School (95%)	School (93%)	School (89%)	Watch TV (84%)	Watch TV (91%)	School (92%)	School (70%)
2	School (85%)	Watch TV (64%)	Watch TV (65%)	Watch TV (85%)	School (89%)	School (63%)	Watch TV (72%)	Watch TV (67%)
3	Outdoor free play (70%)	Play with toys (56%)	Play with toys (52%)	Outdoor free play (74%)	Paint/draw/play with clay (65%)	Play with toys (62%)	Outdoor free play (68%)	Play with toys (50%)
4	Play with toys (58%)	Outdoor free play (55%)	Paint/draw/play with clay (31%)	Play with toys (49%)	Play with toys (64%)	Outdoor free play (53%)	Play with toys (67%)	Outdoor free play (46%)
5	Sing/dance/music (53%)	Sing/dance/music (47%)	Imaginative play (26%)	Sing/dance/music (35%)	Sing/dance/music (61%)	Sing/dance/music (34%)	Paint/draw/play with clay (46%)	Unorganized sports (22%)
6	Paint/draw/play with clay (37%)	Extracurricular activities (36%)	Outdoor free play (25%)	Unorganized sports (32%)	Unorganized sports (60%)	Unorganized sports (30%)	Sing/dance/music (32%)	Sing/dance/music (14%)
7	Electronic games (23%)	Organized sports (30%)	Electronic games (25%)	Paint/draw/play with clay (25%)	Outdoor free play (48%)	Paint/draw/play with clay (30%)	Unorganized sports (29%)	Electronic games (10%)
8	Unorganized sports (19%)	Paint/draw/play with clay (29%)	Unorganized sports (23%)	Electronic games (25%)	Electronic games (32%)	Electronic games (23%)	Organized sports (22%)	Paint/draw/play with clay (10%)
9	Extracurricular activities (18%)	Imaginative play (19%)	Explore nature (22%)	Extracurricular activities (21%)	Extracurricular activities (25%)	Extracurricular activities (18%)	Rough and tumble play (22%)	Rough and tumble play (7%)
10	Explore nature (18%)	Rough and tumble play (14%)	Rough and tumble play (22%)	Organized sports (10%)	Rough and tumble play (21%)	Organized sports (11%)	Electronic games (20%)	Explore nature (7%)
11	Imaginative play (13%)	Electronic games (14%)	Extracurricular activities (9%)	Explore nature (7%)	Explore nature (16%)	Imaginative play (6%)	Explore nature (18%)	Imaginative play (5%)
12	Organized sports (10%)	Unorganized sports (14%)	Sing/dance/music (9%)	Rough and tumble play (5%)	Imaginative play (14%)	Explore nature (5%)	Imaginative play (16%)	Extracurricular activities (4%)
13	Rough and tumble play (4%)	Explore nature (5%)	Organized sports (5%)	Imaginative play (4%)	Organized sports (8%)	Rough and tumble play (4%)	Extracurricular activities (7%)	Organized sports (4%)



ingly, the larger the family, the more frequently children played outside. Specifically, mothers with three to four children in the household were significantly more likely than mothers with one to two children to report that their children frequently played outside, at playgrounds, and at parks. In contrast, mothers with one to two children were significantly more likely than mothers with three to four children to report that their children often watched television, films, or videos. It may be that in larger families, older children took responsibility for younger siblings playing outdoors. In addition, suburban and rural mothers were significantly more likely to report that their children often played with toys, played outside, and undertook more artistic activities.

### *Mothers' Reports of Children's Enjoyment of Activities*

A full 85 percent of mothers reported that their children attended school and did schoolwork, but according to the mothers, this is among the least enjoyable of their children's activities (13 percent). Although children watched television more than they engaged in any other activity but attending school, there was considerable agreement among mothers in the sixteen countries that playing outside was their children's most enjoyable activity (54 percent of the children). The mothers also said children enjoyed playing with toys (42 percent) and watching television (41 percent). (See figure 3.)

Younger children were significantly more likely to enjoy playing with toys compared to their older counterparts (57 percent vs. 27 percent), while girls were more likely to play with toys compared to boys (44 percent vs. 39 percent). Mothers, in general, believed that creative pursuits foster bonding, but they tended to rank specific activities such as painting, drawing, and singing as more enjoyable for their children, higher than the more open-ended imaginative or pretend play (see figure 3). Rural mothers, significantly more than urban or suburban mothers, reported that their children appeared happiest when taking part in imaginative play.

Mothers (over 80 percent) in Vietnam, India, Indonesia, Thailand, Brazil, and Argentina reported that their children often watch television. For the total sample the average is 72 percent. Vietnam, India, and South Africa reported the highest levels of children's enjoyment of television (67 percent, 64 percent, and 63 percent) respectively. By contrast, the mothers in Great Britain, the United States, and Ireland (20 percent, 19 percent, and 16 percent) less often reported children's enjoyment of television viewing.

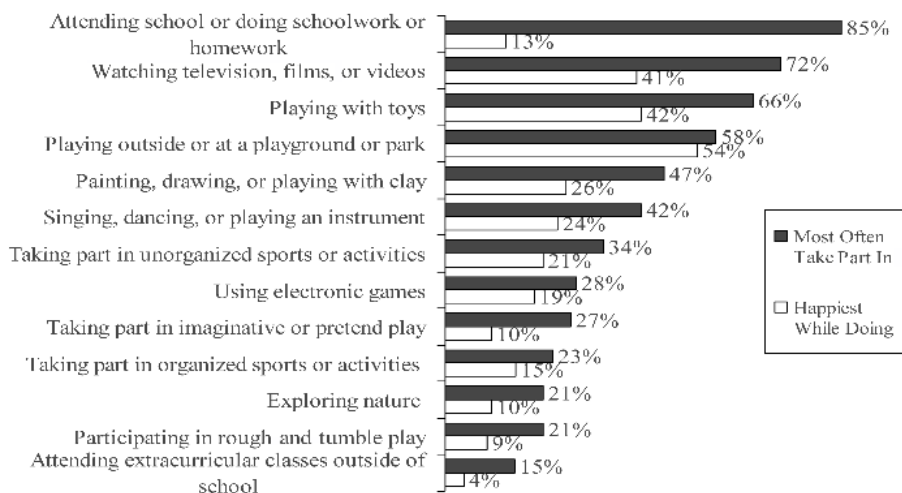


Figure 3. Mothers' Reports of Children's Activity Frequency and Enjoyment

While children most often watch television, mothers place more value on outdoor play and believe that their children are happiest when playing outside, at playgrounds, or at parks. In the mothers' views, this activity far outranked all others in encouraging healthy child development. Mothers from rural areas significantly more often than those from cities and suburbs reported that their children often took part in rough and tumble play or explored nature. Rural mothers were also significantly more likely than suburban or urban mothers to state that they bonded with their children when they explored nature.

There is a striking linear effect in which 62 percent of mothers in developing countries reported that watching television offers the best opportunity to bond with their children compared with 45 percent asserting such bonding from newly industrialized countries, and only 19 percent from developed countries. (See figure 4.) It is clear that mothers in newly industrialized countries—and to a somewhat lesser extent, those in developing countries—were more likely to believe that both watching television and playing outside were beneficial in contrast to parents from the developed countries who most often did not see the value in their children's watching television.

Data from Morocco, Pakistan, and Vietnam in figure 5 concerning television ownership were not available. Of the countries cited, however, Indonesia had by far the lowest television ownership (43 percent) but the highest instance of mother-child bonding in watching television (74 percent). (See Figures 5 and 6.) France, the United States, and Ireland reported the lowest percentages of such bonding (14 percent, 13 percent, and 12 percent respectively). (See Figure 6.) Interestingly, nonworking mothers were significantly more likely than working mothers to believe that watching television helped them bond with their children. This may be because nonworking mothers are more likely to live in developing countries than in developed and newly industrialized countries.

#### *Perceived Risks about Outdoor Play*

Mothers believed that play can have physical benefits. Specifically, 93 percent of mothers agreed that play is key to children's health and fitness. Many mothers also understand the importance of their giving children periods of unrestricted time: 61 percent agreed that happy, well-developed children are often free from strict schedules. Mothers also indicated that their child's getting dirty during play is beneficial. More than half of the mothers (52 percent) agreed that getting dirty and being exposed to germs can actually be good for a child's health. When asked specifically about outdoor play, many mothers believed that it is a pastime children value. More than seven in ten mothers (73 percent) stated

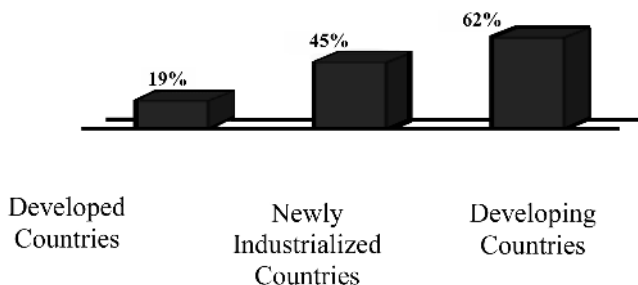


Figure 4. Mothers' Reports That Watching TV Fosters Bonding with Their Children

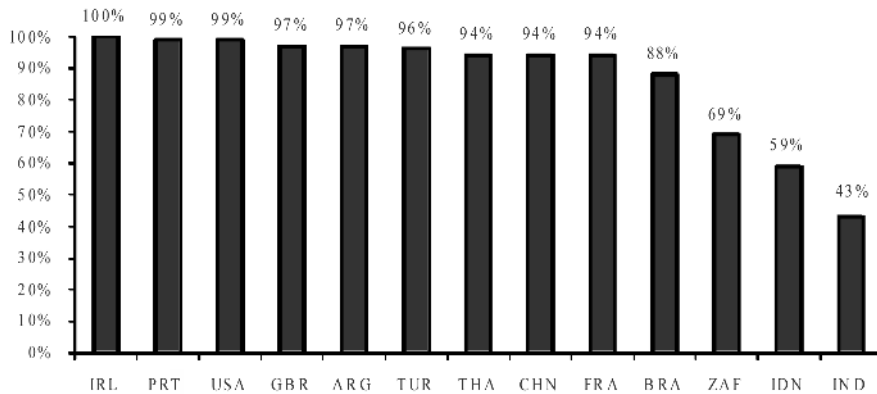


Figure 5. Percent of Households with Television Sets in Participating Countries. Data not available for MAR, VNM, and PAK. Source: Zenith Media, 2002

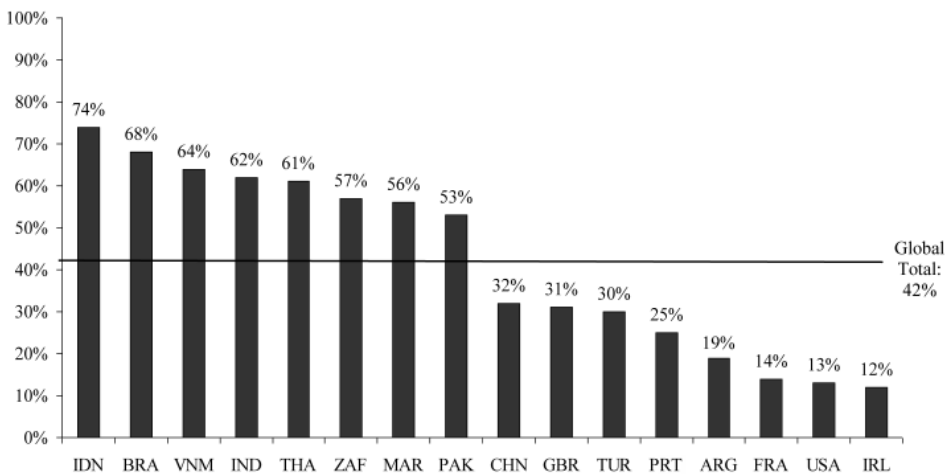


Figure 6. Percentage of Mothers Reporting Bonding Opportunities with Children Through Watching Television, Films, or Videos

that given the choice, their child would choose to play outside rather than inside. The study revealed a marked difference, however, in how these parents from different national backgrounds regarded the likelihood of their children getting dirty or being exposed to germs. In developed countries, 75 percent of mothers reported that getting dirty and being exposed to germs may be good for their children's health, while in newly industrialized countries, only 52 percent thought so; in developing countries, 29 percent agreed that getting dirty and being exposed to germs can be good for a child's health. Mothers in developed countries were more comfortable about their children getting dirty when playing outside or when painting or drawing (see figure 7). Suburban and rural children played organized sports more than city children.

Regionally, mothers in Asia and Africa were highly concerned that their children got dirty or soiled their clothes while playing outdoors. Mothers in Morocco and Vietnam were least likely to believe that dirt and germs (21 percent and 19 percent respectively) could be good for a child's health. Mothers in Ireland and the United States believed that exposure to dirt and germs (93 percent and 87 percent respectively) can be beneficial for a child's health. Many mothers kept

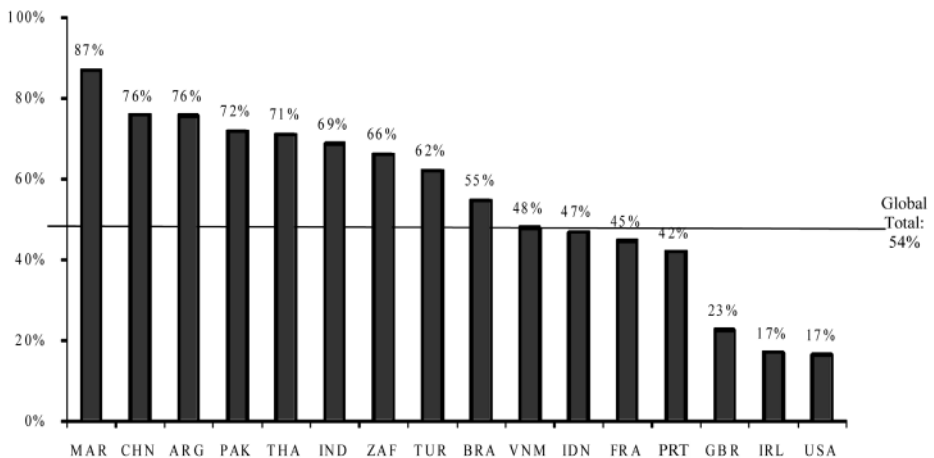


Figure 7. Percentage of Mothers Wishing to be More Comfortable When Children Get Dirty While Engaged in Playing, Painting, or Related Activities

their children indoors because of worries about dirtiness. According to mothers' reports in all countries, significantly more boys (26 percent) than girls (15 percent) engaged in rough and tumble play, which is apt to soil clothes.

More than six in ten mothers (64 percent) reported that it is no surprise that children without enough time to play are overweight today. Regionally, mothers in the United States (90 percent) were far more concerned about obesity than were mothers in other countries. Mothers in Asian countries were the least concerned about lack of playtime and obesity (52 percent). Most mothers globally were concerned about the relationship between play and a child's general health. An average of 42 percent of mothers in the sample reported that they worry that their children do not play enough to be healthy: Brazil ranked the highest (69 percent), and the United States and France ranked the lowest (12 percent and 9 percent respectively).

Globally, mothers face an internal struggle over play and experiential learning, most frequently citing safety issues and time constraints as barriers to their children taking part in these experiences. Mothers in developed countries (51 percent) were significantly more likely than those in newly industrialized (43 percent) or developing countries (30 percent) to report that time was a major challenge. Further, although not surprisingly, working mothers were significantly more likely than nonworking mothers to report that time was the greatest obstacle to their taking part in these activities.

On the other hand, mothers in developing and newly industrialized countries more frequently cited safety as a concern compared to mothers in developed countries. Further, single mothers were more likely than their married counterparts to report that safety was a challenge. Perhaps anxious single parents feel that their children are safer when there is structure and supervision. Two parents may have more flexibility, and the greater income they enjoy might make child care more affordable.

Nearly half (47 percent) of mothers globally worried that their children spend too little time playing outside. Mothers in developing (76 percent) and newly industrialized countries (64 percent) worried about safety more frequently than mothers in developed countries (43 percent). Safety concerns reflected real risks according to the crime records we obtained. In South America, for example, more parents expressed fear about their children playing outside. Nevertheless, mothers in Argentina reported the highest percentage (76 percent) of children who often played in playgrounds or parks. We may assume that these children are accompanied by adults.

Fears about traffic may be another reason parents don't allow children to play outside. Concerns about outdoor play also depended on the working status of the mother. Single-income mothers were significantly more likely to worry about their children getting hurt—and getting dirty—than mothers in dual-income households. In our urban, suburban, and rural groups, urban mothers were significantly less likely to report their children played outdoors, and they stressed their concerns about safety.

### *Mothers Concerns about the Loss of Childhood*

Globally, mothers expressed a firm belief that their children often benefited from experiential learning and play. Although they most frequently reported that experiential learning and play can develop social skills, increase confidence, and increase happiness, they believed less that experiential learning fostered emotional development. It may be that the mothers do not perceive confidence and happiness as reflections of emotional well-being. We did find, however, that as many as 30 percent of the mothers believe that intellectual development is an outcome of experiential learning.

One of the most interesting findings of the study was the high degree of agreement among mothers from practically all countries that “childhood as they know it is over.” This finding is significant as reported by urban mothers. In all countries, an average of 57 percent of mothers agreed with this statement. Mothers from Brazil (93 percent), Argentina (89 percent), and Morocco (87 percent) seemed particularly concerned about this issue. Even more striking in degree of agreement is the response to the question about children growing up too quickly today. An average of 72 percent of all mothers agreed with this statement. More mothers in the United States (95 percent) and Ireland (92 percent) agreed with the statement that children are growing up too quickly, while mothers in Vietnam (45 percent) and Morocco (39 percent) showed the lowest percentages of agreement. As readers can see from figure 8, we found the greatest concern about the loss of childhood in the developed and newly industrialized countries, but mothers from all over the world expressed this worry.

When all countries were compared, 77 percent of mothers wished their children had more opportunities to interact with other children. In addition, 87 percent of all mothers wished for more time to play and interact with their children, while in developing countries, 94 percent of mothers expressed this desire. Mothers globally (67 percent) worried that without enough social play, their children's generation will not fully learn how to form relationships. When look-



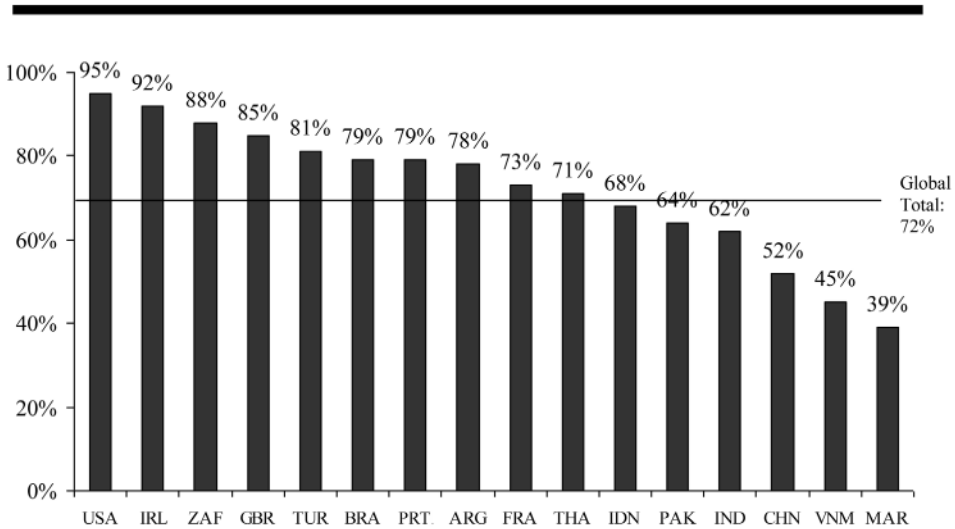


Figure 8. Percentage of Mothers Concerned That Children Are Growing Up Too Quickly

ing at playtime in general, 66 percent of mothers agreed that without enough time for play, their children were unhappy and difficult. Mothers in Turkey and Africa were significantly more likely to concur with the sentiment compared to all of the other regions. When examining differences among urban, suburban, and rural mothers, we found that mothers from cities significantly more often wished that they could spend more time interacting and playing with their children. Significantly more urban mothers also wished that their children had more playtime with other children.

*Mothers’ Wishes for the Future of a Healthy Child*

Many mothers have hopes and desires for their children’s futures and their own parental roles. More than anything else, mothers wished they had more time to spend with their children. Nearly eight in ten mothers globally wished that their children had more opportunities to interact with other children, a huge percentage of them (above 90 percent) in countries such as Morocco, China, Indonesia, Thailand, and Turkey. These mothers wished that they could have more time to play with their children. At the same time, mothers globally expressed the wish that they could be more comfortable with their child getting dirty while playing, painting, or doing other activities (see figure 7). Mothers

indicated a hope for greater safety for their children. They wanted more access to outdoor play areas and to nature for their children. As many as one third of the parents listed as their greatest hope “a focus on recess or break during the school day.”

## Discussion

We began this investigation anticipating a great diversity of mothers' reports from sixteen nations. We were surprised to find so much agreement among mothers—despite well-known differences in language, geography, culture, history and religion—in their descriptions of their children's activities and in their own concerns about play and experiential learning opportunities outside of school. Can such similarities be attributed only to a response style evoked by the questionnaire? When we looked more closely and examined the responses in detail, we found this unlikely because the answers reflected more disquiet than they do some pattern of social desirability. And the differences we did find when we separated countries by degree of industrial development were largely consistent with what is known about economic effects on lifestyles. We regularly took into account such variables as age, gender, socioeconomic status of families, residence in urban, suburban, or rural areas, number of children in the family, and whether or not mothers were working or nonworking and were from single- or dual-income families.

Our results suggest that across this array of countries, the most common activity for children not in school was watching television even when age and sex are taken into account. Studies show television viewing in individual countries such as Argentina, Brazil, India, South Africa (included in our study) was high among elementary school children (Groebel 2001; Feilitzen and Carlsson 2002), and among children under age six in the United States (Rideout, Vandewater, and Wartella 2003). As Groebel reports, based on his UNESCO study of the television usage among 5,500 children in 25 countries, “Whether it is the favelas, a South Pacific island, or a skyscraper in Asia, television is omnipresent. . . . This result justifies the assumption that TV still is the most powerful source of information and entertainment outside face-to-face communication” (262).

In our study, mothers regarded television viewing as a way to bond with their children, even though they did not think their children derived much enjoyment from television. Over 80 percent of mothers in Vietnam, India, Indo-

nesia, Thailand, Brazil, and Argentina reported that their children often watch television when not in school. In our total sample, 72 percent of all children watch television. While we did not ask what programs children of this study viewed, we know from research that children mostly watch programs imported from the United States or other foreign countries (Groebel 2001; Feilitzen and Carlsson 2002). Some of these programs may be more adult oriented, frightening, and even suggestive of adult clothing, hairstyles, and sexual interest than is appropriate for the young children in this study. Such exposure by children in several countries of the survey may account for the commonalities of mothers' beliefs that childhood is eroding and ending too early.

Because mothers worry about the lack of play spaces and about the safety of their children facing real or imagined dangers, they are inclined to allow their children to stay indoors and watch television. One of the well-studied results of frequent television viewing has been termed the "mean and scary world effect." Regardless of age, sex, ethnicity, socioeconomic status, and intelligence, frequent viewers of television tend to overestimate the amount of danger in their neighborhoods (Gerbner et al. 1994). The effect has also appeared in research about young children (Singer, Singer, and Rapaczynski 1984). It seems likely that one reason parents are reluctant to allow their children outdoors may be a result of fears generated from the violent content of both television news and the medium's fictional programming.

Other concerns that parents report may not be related to the commonality of television experience but to the lack of safe play spaces in their neighborhoods. We did find that when children were given the opportunity to play and get dirty, mothers in most countries accepted it. Mothers in the developing countries, however, expressed the greatest concern about dirt and germs. This fear about outdoor play may be realistic in these countries but may also reflect the disease-prevention messages that are aimed particularly at developing countries.

What we found of special interest is the low percentage of mothers who reported that their children engaged in imaginative or pretend play. Only 15 percent of mothers viewed this kind of activity as *necessary* for a healthy child, but 30 percent of mothers saw the development of imagination and originality as a *benefit*. On the other hand, 48 percent of mothers stated that playing in a park or playground is valuable for their child's health. Mothers did not seem fully to recognize the cognitive or social benefits of pretend play. Mothers in only three countries—the United States, Great Britain, and Ireland—mentioned imagi-

native and pretend play as a frequent activity of their children. We found that children in rural and suburban areas, however, were more involved in creative activities such as imaginative play, toy play, painting, and drawing than city children. Indeed, rural mothers were most likely to report that their children were happiest when taking part in make-believe play. One can speculate that children in the sixteen countries may actually be doing more creative play than mothers recognize. Imaginative play may be reflected in artwork and even in the games children play outdoors at playgrounds and parks. Thus, one of the shortcomings of the questionnaire imposed by the time limits of this study was the difficulty in determining what the children actually were doing when engaged in the array of activities we asked their mothers about. Direct observation of children at play would have yielded more detailed information about their pretend play. We know from the many studies of imaginative play cited in this article that such play is often integrated into the physical activities of playground games. As a result of this study, we see a need to inform parents that their children would benefit from opportunities to integrate role playing and sociodramatic narratives into their play. This is important because so many mothers cited the need for more interaction between children and wished them to learn social skills.

Repeatedly, mothers referred to the loss of childhood, to the fact that their children are growing up too quickly. They also wished they had more time to play with their children. In the United States, thoughtful observers of child development have lamented the “disappearance of childhood,” that children are being “hurried” to grow up, and that children are “without childhood” (Elkind 1988; Postman 1982; Winn 1983). What had happened in the United States in the 1980s—the immense influence of different print and electronic media and their advertising, the increased participation of mothers in the workplace, the increase in divorce, and the fewer opportunities for children to play—has now spread round the globe. This may explain the high percentage of mothers from North America (95 percent), Europe (82 percent), South America (79 percent), Africa (64 percent), and Asia (60 percent) who are concerned that their children are growing up too quickly. Mothers consistently said that they compared their children’s experiences with their remembrances of their own childhoods. The reduction of recess time in schools in the United States and in Great Britain may also contribute to the reduction of playtime.

Through two years of interviewing, we hear the voices of mothers from around the world calling out in Spanish, Portuguese, Turkish, Thai, and other languages. They seem to agree in expressing both their fears and their wishes for

their children. As the primary protectors of their sons and daughters, mothers are deeply concerned that their youngsters are somehow missing out on the joys of childhood and experiential learning opportunities of free play and natural exploration. Children seem to be rushed too rapidly into the rigors of adult life. For lack of safe outdoor play spaces and unstructured free time, children are deprived of the excitement and social interactions of a healthy youth.

#### REFERENCES

- Almon, Joan. 2003. The vital role of play in early childhood education. In *All work and no play . . . How educational reforms are harming our schools*, ed. Sharna Olfman, 17–41.
- American Academy of Pediatrics. 2006. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. <http://www.app.org/pressroom/playFINAL.pdf>.
- BBC News. 2003. Pupils 'need far more' play time. December 23. <http://news.bbc.co.uk/1/low/education/3328823.stm>.
- Benesse Educational Research Corporation. 1999. Kodomo tachi no asobi [Children's play in elementary grade schools]. *Monogurafu Shogakusei Nau* 19.
- Berk, Laura E., Trisha D. Mann, and Amy T. Ogan. 2006. Make-believe play: Wellspring for development of self-regulation. In *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth*, ed. Dorothy G. Singer, Roberta Michnick Golinkoff, and Kathy Hirsh-Pasek, 74–100.
- Bishop, Julia C., and Mavis Curtis, eds. 2001. *Play today in the primary school playground: Life, learning, and creativity*.
- Bodrova, Elena, and Deborah J. Leong. 2005. The importance of play: Why children need to play. *Early Childhood Today* 20:6–7.
- Clements, Rhonda. 2004. An investigation of the status of outdoor play. *Contemporary Issues in Early Childhood* 5:68–80.
- Cobb, Edith. 1977. *The ecology of imagination in childhood*.
- DeBord, Karen. 1997. *Child development: Creativity in young children*.
- Dietze, Beverlie, and Barbara Crossley. 2000. *Young children and outdoor play*.
- Ekstrom, Karin M., and Birgitte Tufte. 2007. Introduction. In *Children, media and consumption: On the front edge*, ed. Karin M. Ekstrom, Birgitte Tufte, and International Clearinghouse on Children, Youth and Media, 11–30.
- Elkind, Daniel. 1988, first published 1981. *The hurried child: Growing up too fast too soon*.
- Farley, Alison. 2005. Child and adolescent obesity: Nationwide pediatric healthcare provider practices and their role in treatment and prevention of the obesity epidemic. [http://www.martin.uky.edu/~web/programs/mpp/Capstones\\_2005/Farley.pdf](http://www.martin.uky.edu/~web/programs/mpp/Capstones_2005/Farley.pdf).

- Feilitzen, Cecilia von, and Ulla Carlsson, eds. 2002. *Children, young people, and media globalisation*.
- Fekonja, Urška, Ljubica Marjanovič Umek, and Simona Kranjc. 2005. Free play and other daily preschool activities as a context for child's language development. *Studia Psychologica* 47:103–17.
- Gerber, Robin. 2003. Sports craze cuts out chance to discover other talents. *USA Today*, August 4. [http://www.usatoday.com/news/opinion/editorials/2003-08-04-gerber\\_x.htm](http://www.usatoday.com/news/opinion/editorials/2003-08-04-gerber_x.htm).
- Gerbner, George, Larry Gross, Michael Morgan, and Nancy Signorielli. 1994. Growing up with television: The cultivation perspective. In *Media effects: Advances in theory and research*, ed. Jennings Bryant and Dolf Zillmann, 17–41.
- Ginsburg, Kenneth R., Committee on Communications, and Committee on Psychological Aspects of Child and Family Health. 2007. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics* 119:183–91. <http://www.aap.org/pressroom/playFINAL.pdf>.
- Gleason, Tracy R. 2005. Mothers' and fathers' attitudes regarding pretend play in the context of imaginary companions and child gender. *Merrill-Palmer Quarterly* 51:412–36.
- Gortmaker, Steven L., Aviva Must, Arthur M. Sobol, Karen Peterson, Graham A. Colditz, and William H. Dietz. 1996. Television viewing as a cause of increasing obesity among children in the United States, 1986–1990. *Archives of Pediatric Adolescent Medicine* 150:356–62.
- Groebel, Jo. 2001. Media violence in cross-cultural perspective: A global study of children's media behavior and some educational implications. In *Handbook of children and the media*, ed. Dorothy G. Singer and Jerome L. Singer, 255–68.
- Gryfe, Shelly G. 2005. The power of play: How to change conversation. Study conducted for Fisher-Price by Daniel Yankelovich.
- Henderson, Heather A., Peter J. Marshall, Nathan A. Fox, and Kenneth H. Rubin. 2004. Psychophysiological and behavioral evidence for varying forms and functions of nonsocial behavior in preschoolers. *Child Development* 75:251–63.
- Hirsh-Pasek, Kathy, Roberta M. Golinkoff, and Diane E. Eyer. 2003. *Einstein never used flash cards: How our children really learn—and why they need to play more and memorize less*.
- Hirsh-Pasek, Kathy, Roberta M. Golinkoff, Laura E. Berk, and Dorothy G. Singer. Forthcoming. *A mandate for playful learning in preschool: Presenting the evidence*. New York: Oxford University Press.
- Jarrett, Olga S. 2003. Recess in elementary schools: What does the research say? ERIC Digest. <http://www.ericdigests.org/2003-2/recess.html>.
- LEGO Learning Institute. 2002. Time for playful learning? A cross-cultural study of parental values and attitudes toward children's time for play. [http://legolearning.net/download/The\\_LEGO\\_Time\\_Study\\_Report.pdf](http://legolearning.net/download/The_LEGO_Time_Study_Report.pdf).
- LEGO Learning Institute. 2003a. The changing face of children's play culture: Children's

- play, learning, and communication in a technology driven world. [http://www.legolearning.net/download/Play\\_Culture.pdf](http://www.legolearning.net/download/Play_Culture.pdf).
- LEGO Learning Institute. 2003b. Time for playful learning? An internet survey among children aged 1–8 in Germany and USA. <http://www.legolearning.net/eng/default.asp?menu=whatsnew&pagename=whatsnew>.
- Louv, Richard. 1991, first published 1990. *Childhood's future*.
- Louv, Richard. 2005. *Last child in the woods: Saving our children from nature-deficit disorder*.
- Moore, Robin C., and Herbert H. Wong. 1997. *Natural learning: the life history of an environmental schoolyard: Creating environments for rediscovering nature's way of teaching*.
- Pellegrini, Anthony D. 2005. *Recess: Its role in education and development*.
- Pellegrini, Anthony D., and Robyn M. Holmes. 2006. The role of recess in primary school. In *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth*, ed. Dorothy G. Singer, Roberta Michnick Golinkoff, and Kathy Hirsh-Pasek, 36–53.
- Piaget, Jean. 1962, first published 1951. *Play, dreams and imitation in childhood*.
- Popkin, Barry M. 2001. The nutrition transition and obesity in the developing world. *Journal of Nutrition* 131:871S–73S.
- Postman, Neil. 1982. *The disappearance of childhood*.
- Pyle, Robert Michael. 2002. Eden in a vacant lot: Special places, species, and kids in the neighborhood of life. In *Children and nature: Psychological, sociocultural, and evolutionary investigations*, ed. Peter H. Kahn, Jr., and Stephen R. Kellert, 305–27.
- Rideout, Victoria J., Elizabeth A. Vandewater, and Ellen A. Wartella. 2003. *Zero to six: Electronic media in the lives of infants, toddlers and preschoolers*.
- Roberts, Donald F., and Ulla G. Foehr. 2008. Trends in media use. In *Children and electronic media*, ed. Jeanne Brooks-Gunn and Elisabeth Hirschhorn Donahue, 11–37.
- Roberts, Donald F., Ulla G. Foehr, and Victoria J. Rideout. 2005. *Generation M: Media in the lives of 8–18 year-olds*.
- Russ, Sandra Walker. 1993. *Affect and creativity: The role of affect and play in the creative process*.
- Russ, Sandra Walker. 2004. *Play in child development and psychotherapy: Toward empirically supported practice*.
- Samuelsson, Ingrid Pramling, and Eva Johansson. 2006. Play and learning—inseparable dimensions in preschool practice. *Early Child Development and Care* 176:47–65.
- Schwebel, David C., Craig S. Rosen, and Jerome L. Singer. 1999. Preschoolers' pretend play and theory of mind: The role of jointly constructed pretense. *British Journal of Developmental Psychology* 17:333–48.
- Shaw, Gordon L. 2000. *Keeping Mozart in mind*.
- Singer, Dorothy G., and Jerome L. Singer, eds. 2001. *Handbook of children and the media*.



- Singer, Dorothy G., and Jerome L. Singer. 2005. *Imagination and play in the electronic age*.
- Singer, Dorothy G., Roberta Michnick Golinkoff, and Kathy Hirsh-Pasek, eds. 2006. *Play = learning: How play motivates and enhances children's cognitive and social-emotional growth*.
- Singer, Jerome L., and Dorothy G. Singer. 1981. *Television, imagination, and aggression: A study of preschoolers*.
- Singer, Jerome L., and Mawiyah A. Lythcott. 2002. Fostering school achievement and creativity through sociodramatic play in the classroom. *Research in the Schools* 9:43–52.
- Singer, Jerome L., Dorothy G. Singer, and Wanda Rapaczynski. 1984. Family patterns and television viewing as predictors of children's belief and aggression. *Journal of Communication* 34:73–89.
- Smith, Peter K. 2004. Play: Types and functions in human development. In *Origins of the social mind: Evolutionary psychology and child development*, ed. Bruce J. Ellis and David F. Bjorklund, 271–91.
- Steinbeck, Kate S. 2001. The importance of physical activity in the prevention of overweight and obesity in childhood: A review and an opinion. *Obesity Reviews* 2:117–30.
- Thompson, Ross A. 2004. Development in the first years of life. In *Children's play: The roots of reading*, ed. Edward F. Zigler, Dorothy G. Singer, and Sandra J. Bishop-Josef, 15–32.
- Voce, Adrian. 2003. Outdoor play and learning: The state of play in London. *London Play News* 20. [http://www.legolearning.net/download/Playful\\_Learning\\_SeptOct03.pdf](http://www.legolearning.net/download/Playful_Learning_SeptOct03.pdf).
- Vygotskii, Lev S. 1978. *Mind in society: The development of higher psychological processes*.
- White, Randy, and Vicki Stoecklin. 1998. Children's outdoor play and learning environments: Returning to nature. *Early Childhood News* 10:24–30.
- Wilson, Frank R. 1998. *The hand: How its use shapes the brain, language, and human culture*.
- Wilson, Ruth. 1995. Let nature be your teacher. *Day Care and Early Education* 22:31–4.
- Winn, Marie. 1983. *Children without childhood*.
- Zigler, Edward F., and Sandra J. Bishop-Josef. 2004. Play under siege: A historical overview. In *Children's play: The roots of reading*, ed. Edward F. Zigler, Dorothy G. Singer, and Sandra J. Bishop-Josef, 1–14.
- Zigler, Edward F., Dorothy G. Singer, and Sandra J. Bishop-Josef, eds. 2004. *Children's play: The roots of reading*.