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Measuring Patterns of Fantasy Behavior in Children

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The Children's Fantasy Inventory was developed and refined on a large sample of first- and third-grade children ($N = 748$). Within the limits of a 45-item instrument, appropriate to the children's attention span, a wide range of fantasy activity was tapped. The nine empirically derived, nonorthogonal scales had good internal consistency, as measured by coefficient alpha, and good test-retest reliabilities. The scales on the Children's Fantasy Inventory were found to be related to other previously used measures of fantasy in children and to previously derived adult scales. Differences in styles of fantasy were found between boys and girls and between first and third graders, but there were no significant differences in overall frequency of fantasy. Retesting after a year's lag indicated that fantasy behaviors have significant stability over time.

Current theoretical models of fantasy activity have focused on both affective and cognitive components. Singer (1975) sees mental activity as "involving ever-reverberating content from long-term storage and almost continuous processing of input material from our physical and social environment" (p. 728). Long-term memory activity in Singer's model represents a stimulus source that competes with the environmental stimuli that have to be processed. During times in which the environmental material is either minimal or highly redundant, one is more likely to pay attention to the continuous memory mentation. Klinger (1971) has used the term *baseline mentation* to denote this process. He has defined fantasy as "all mental activity as we come to know it through a subject's verbal reports except instrumental problem solving and except for processes involved in scanning stimuli" (p. 347). Klinger (1971) has also emphasized that fantasies tend to reflect "current concerns": either goals that have not yet been attained but that are capable of eliciting strong emotion or instrumental activity that is interrupted. Singer (1970) has speculated that people who attend to their internal stimulation by increasing the replay and rehearsal of experiences also increase the probability of these stimuli recurring, sharpening, and being retrieved. In other words, people learn to daydream. It seems that one can view the various kinds of mental activity as lying on a continuum according to how directly they resemble either instrumental, goal-directed behavior or purely associational behavior. Directed problem-solving cognition would be at one extreme and bizarre dreams at the other.

In both psychoanalytic and cognitive developmental theories, children's play is seen as a functional equivalent of fantasy mentation in adults. However, the cognitive view of fantasy development (Klinger, 1971; Piaget, 1962; Singer, 1973) is that daydreaming evolves out of make-believe play rather than play evolving from daydreaming or primary process thought, as in psychoanalytic theory. More precisely, play and daydreaming are considered manifestations of the same mental activity, with play taking an earlier developmental form.

Studying Fantasy in Adults

There are some obvious difficulties in devising an adequate method for studying a

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covert, internalized phenomenon such as fantasy. Since physiological correlates of daytime fantasy segments have not been established as they have been with dreams, one must rely primarily on verbal reports of one sort or another, third person rating scales, or, as in the case of fantasy play in children, observational measures. Until the last 20 years, the study of daydreaming in adults has relied primarily on individual case reports, literary interpretations, and analysis of projective techniques such as the Rorschach and the Thematic Apperception Test (TAT). It was generally assumed that subjects would be too defensive about revealing their fantasy life to place any faith in their responses to a direct inquiry about daydreams. However, over the last 20 years, both laboratory techniques and questionnaires have been utilized successfully in measuring adults' fantasy behaviors.

Klinger (1971, 1974, 1978–79) has utilized both a "thinking out loud" technique and a thought-sampling technique whereby subjects are interrupted randomly during a task to report their thoughts. Using these methods, he has identified five dimensions of thought flow: (a) respondentness (lack of control and goal directedness), (b) stimulus-independence (unrelatedness to current stimulus situation), (c) fancifulness (implausibility), (d) degeneratedness (bizarre transformations, more like dreams), and (e) ego relatedness (absorption or amount of separation between oneself and the images, Klinger, 1978–79).

Singer and his colleagues have developed an extensive questionnaire (The Imaginal Processes Inventory or IPI) to tap different types of content and structural characteristics of daydreaming, and they have collected a substantial amount of normative data through using the questionnaire (Giambra, 1974, 1980; Hariton & Singer, 1974; Singer, 1966; Singer & Antrobus, 1963, 1972; Singer & McCraven, 1961; Singer & Schonbar, 1961; Starker, 1974). The IPI (Singer & Antrobus, 1972) is made up of 28 scales of 12 items each. Internal consistency of these scales, as measured by Cronbach's alpha, is at least .80 and is much higher for many of the scales (Singer & Antrobus, 1972).

In general, studies utilizing the IPI have found that most adults report some daydreaming almost every day; however, the range and content of daydreams vary widely. In addition, subjects can be trained to increase their daydreaming (Gold & Curdiff, 1980). Several factor-analytic studies of the IPI scales, either alone or in conjunction with personality measures, have identified three major styles of daydreaming (Giambra, 1974, 1977; Segal, Huba, & Singer, 1980; Segal & Singer, 1976; Singer & Antrobus, 1963, 1972). Factor I (Singer & Antrobus, 1972), is named Guilty–Obsessional Emotional Daydreaming. Singer (1975) describes subjects who score high on this factor as "persons given to a greater deal of tortured self-examination, driven toward achievement and heroic accomplishment, and characterized by a generally negatively toned fantasy life" (p. 730). Factor II, was called Neuroticism–Anxious Absorption in Daydreaming, and subjects who scored high on this factor seem to be "anxious, self-doubting, fearful individuals, disorganized in thought, lacking in clear and elaborate daydreams except those that are oriented around possible failure fantasies, very little oriented toward achievement and persistence, and primarily seeking to maximize the possibility of some form of external reinforcement" (p. 730). Factor III, was labeled Positive–Vivid Daydreaming. Some studies (Giambra, 1974; Singer & Antrobus, 1972) have found that this third factor includes the dimensions of Controlled Thoughtfulness, Problem Solving, and Vivid Imagery. The components of this factor are all characterized by a generally positive attitude toward inner experience.

Studying Fantasy in Children

Early studies of children's fantasy involved either detailed observation of individual children's play (Griffiths, 1935; Piaget, 1962) or normative analysis of children's stories, daydreams, and reported play activities (Ames, 1966; Aron, 1949; Green, 1923; Jersild, Markey, & Jersild, 1933; Pitcher & Prelinger, 1963). More recent studies of fantasy in children (Singer, 1973) have emphasized imaginative predisposition assessed in a variety of ways, some of which overlap with tests of creativity.

One scale that has been used to score play

and stories was a transcendence index based on a measure devised by Weisskopf (1950) for use with the TAT. This index measures the number of elements that a subject includes, which goes beyond what is actually presented in the cue. Several authors (Freyberg, 1973; Pulaski, 1973; Singer, 1973) have also used the Barron movement threshold inkblots (Barron, 1955), a set of 26 blots that show increasing tendency to evoke movement (M) responses. Rorschach M responses have been found to correlate positively with daydreaming (Page, 1957), imaginativeness (Singer, 1960), transcendence (Schonbar, 1965), and numerous other related behaviors (Singer, 1973). Both the transcendence index and Barron technique have also successfully differentiated high- and low-fantasy predisposition in children.

A few other behavioral rating scales have also been used with some success, for example, Singer's (1973) Imaginative Play Predisposition interview (IPP). The IPP is a simple, four-question interview (What's your favorite game? What do you do when alone? Do you have an imaginary playmate? Do you ever see pictures in your head?) Each question receives a score of 1 if it contains any element of make-believe. The four questions represent essentially a 5-point scale from 0 to 4. Singer (1973) found that by dividing subjects into groups comprising those who score 0 or 1 and those who score 2 and above, he got clear differences in imaginativeness and make-believe play, as measured by direct observations of children's play. Gottlieb (1973) also used a forced-choice activity preference task with older children to assess preference for motor or ideational activities, as well as the inkblot and Torrance Just Suppose tests of creativity. In addition, Gottlieb (1973) and Freyberg (1973) found that children can be taught to increase their imaginativeness.

Although imaginative predisposition has been found to be a useful concept, it treats fantasy behavior as a unidimensional construct. Yet it is quite possible that fantasy in children, like daydreaming in adults, can be factored into several styles. These may reflect the same factors as found in the adult studies or they may be different factors. They may reflect enduring styles, learned early and continued into similar adult styles, or they may reflect children's current concerns—either individual concerns or concerns common to certain psychosocial stages.

The current study examines several questions related to children's behaviors. First, can a reliable and valid measure be devised that will reveal children's differing styles of daydreaming and imaginative play? Such a measure would have to survey the content (i.e., aggressive themes, heroic themes, etc.), the affective tone (scary, happy, etc.), and the structural aspects (distractibility, absorption, etc.) of children's daydreams. Such a measure would also need to be validated, using some of the measures previously employed successfully to evaluate imaginativeness and creativity in fantasy production. Second, given such a measure, one would want to know whether the structure and content of childhood fantasy activity are similar to adult fantasy activity? Finally, one should ask how styles of children's fantasy vary with sex and age. To pursue these questions, we must adopt several assumptions about fantasy that seem justified by previous work:

1. Fantasy activity is universal and represents on-going baseline mentation.
2. Different styles and frequency of daydreaming among individuals can be identified and can represent different current concerns as well as different experiences in attending to this internal mentation.
3. Attending to this internal mentation is a behavior learned in childhood.

In Study 1 of this investigation, we derive a questionnaire for children, which yields scores on several meaningful dimensions of fantasy behavior. Two samples of children in the first through fourth grade are used in the construction of the scale, and the children's styles of fantasy are compared with adults' styles. In Study 2 we validate the fantasy measure, using a subsample of the children tested who perform some other tasks of fantasy production. Finally, in Study 3, differences on the derived fantasy scales and styles due to age and gender are measured.

Study 1: Development of the Fantasy Scales

Two samples of subjects were used in the construction of the scales. The first sample

of 55 subjects (the scale-construction sample) was used to derive a set of 45 questions that seemed to measure reliably the dimensions of children's fantasy. The second sample of 713 (the test sample) was used to cross-validate and refine the questionnaire's scale structure, to determine more accurately the scale's reliabilities, and to measure the stability of fantasy behavior over the course of a year.

Method

Subjects. The subjects were school children who were participating in the first wave of a 3-year study of the development of aggression in children. The pool from which these subjects were drawn consisted of all the children in the first and third grades of the Oak Park, Illinois public schools and two parochial schools located in Chicago. The parochial schools were added to increase the ethnic and socioeconomic heterogeneity of the sample, although Oak Park is by no means uniformly middle class. In 1977 it ranked 110 in median family income ($19,820) among Chicago's 201 largest suburbs. Minority enrollment in the public schools ranged from 5% to 18%, with an average of 14%. Of the two parochial schools, one comprised a predominantly lower-middle-class Hispanic population and the other a predominantly lower-middle-class integrated population. One of the Oak Park schools was dropped from the study before any data were collected because the principal felt the study would be too disruptive.

Having selected the schools, we compiled class lists of all first and third grade children and solicited their parents' permission for them to participate in the study. Through repeated written and personal contacts, we raised the final permission rate to 76%.[1] Of the remaining subjects, 14.8% declined to participate, and 9.2% never responded. The response rates were similar in all schools. This procedure gave us a final pool of 841 children from which samples could be selected.

From this pool 62 children (all the subjects who were present at one randomly selected school on the first day of testing) were selected for the scale-construction sample. Of these children, 55 also attended the retesting session 1 month later. These 55 constitute our scale-construction sample. The test sample consisted of the remaining subjects who were present on the testing day for their class. This amounted to 713 children. One year later all of the children in the test sample who could be located were retested. Five hundred forty such subjects were found and retested.

Initial fantasy items. The Singer–Antrobus (1970) Imaginal Processes Inventory was used as a guide for constructing questions that would cover a range of daydream and fantasy content. Several adult scales were eliminated as inappropriate (e.g., Sexual Daydreams), and others were combined (Auditory Imagery and Visual Imagery; Past Orientation, Present Orientation, and Future Orientation; Daydream Frequency and Nightdream Frequency; Impersonal Curiosity and Interpersonal Curiosity). A pool of items reflecting 20 content and structural areas of fantasy activity, with approximately three questions per area, was administered to a pilot group of 10 children. The items were then reworded for greater understanding by children. A few were dropped and replaced by easier items. With the resulting 60-item pool, the formal scale construction process began.

Procedure. The 55 children in the scale-construction sample were given the initial 60-item questionnaire in a group session. One month later they were retested on a subset of 45 items. Shortly after that, the 713 children of the test sample were given the 45-item questionnaire. Finally, 1 year later, 540 children of the test sample were retested.

Although some minor details of administration procedure and instructions were improved over the course of the three sessions, the basic procedure remained the same. Each child was tested in a group consisting of all their classmates who were in the study. Several other questionnaires were presented during each session as part of a larger study. At least two experimenters were present for first-grade classes. Each session began with a brief explanation of "what daydreaming is" and a word about why the questions were being asked.

> We would like to ask you all some questions because we really want to know what boys and girls your age think about and what kinds of things you play. Your answers will be very helpful to us and will make it possible for us to help other boys and girls; so we really want to thank you for helping us.
>
> You know how sometimes when you're by yourself, or before you fall asleep at night, or when you're just not doing anything special, you start to think about something just for fun or because it just pops into your head? Well this happens to everybody—adults as well as boys and girls. Sometimes these thoughts are big, long, make-believe stories, and sometimes they are just quick little thoughts. We call these make-believe thoughts daydreams. You know, also, how sometimes you play (by yourself, or with friends) and you pretend that you're somebody or something else? Or you pretend that a toy is really something besides the toy? Well, I would like very much to know about your daydreams and about the pretend games that you play.
>
> I am going to ask you some questions. Some of the things I ask you about you will say yes to, and some things you will say no to. Everybody has daydreams, but we all think about different kinds of things. There are no right or wrong answers. This is not a test. Try to remember which things you did think about *a lot*, which things you did think about *a little*, and which things you *never* think about.

[1] The response rate to our original letter sent in the mail was 55%. Telephone follow-ups only raised the rate to about 65%. Then, a few days before testing was to begin, we gave a prize to each child for whom a letter had been returned regardless of the decision on the letter. The other children were given another copy of the permission letter to take home and were told that they would receive the same prize if they returned the letter on the next day no matter how it was signed. This procedure raised our final response rate to about 91% and our permission rate to 76%.

The questions were then read out loud to groups of subjects, and the children recorded their answers to the first 39 by placing an X in a large, medium, or small box marked respectively "A Lot," "A Little," or "No." This represented a 3-point scale, with "A Lot" = 2, "A Little" = 1, and "No" = 0 points. The last six questions dealing with frequency of fantasy activity were answered on a 4-point scale: "Many times a day" = 3, "One time a day" = 2, "Sometimes, not every day" = 1, and "Never" = 0. Simple designs (e.g., a flower) were printed on each line along the left-hand margin of the answer sheets so that the young children could more easily keep their place and so that proctors could easily see if all children were answering the correct question. The time required for testing varied from 40 minutes for the initial longer version of the questionnaire (with first-grade subjects) to 20 minutes for the final 45-item version, administered by experienced assistants.

Results

Scale-construction sample. Frequency distributions and interitem correlations were computed for the 60 items given initially to the scale-construction sample. Dropped were those items that did not correlate significantly ($r < .26$) with any other item (5 items) or that had extremely peaked distributions (4 items with more than 75% of subjects giving a single response). The remaining items were factor analyzed. Since there were only a few more subjects ($N = 55$) than items, a principal-components solution without iterations was derived and used heuristically to guide scale construction. Eleven factors with eigenvalues greater than 1, which together accounted for 68% of the variance, were rotated to a varimax criterion. Using these factors and the Singer–Antrobus adult scales as guides, the items were categorized into 11 overlapping scales. Item-total correlations for these scales were computed, and items with low item-total correlations were eliminated, leaving 41 items. However, three deleted items were reinserted on the basis of their face validity: A question about an imaginary playmate was put back in because it had been used by Singer (1973) in his Imaginative Play Predisposition interview and has been related to adult and adolescent creativity; a question concerning fairy tales was included to assess use of traditional fantasy material; and the frequency of nightdreams question was retained to reflect the range of fantasy mentation discussed in relation to theories of fantasy. In addition, one new question, frequency of daydreams before sleep, was added because both Singer (1970) and Klinger (1971) contend that most adults report their most frequent daydreaming occurs just before sleep. The resulting 45-item questionnaire was readministered to the same sample of 55 subjects after a lag of 1 month. Item-total and test–retest correlations were again computed. Four more items were eliminated because they did not correlate significantly with any scale. Then the scale memberships were readjusted using an interactive computer program to maximize internal consistancies (coefficient alpha). The remaining 41 items fell into 11 scales, with coefficient alpha ranging from .53 (3-item scale) to .76 (8-item scale). Coefficient alphas higher than these are unusual for children of this age. The items are shown in Table 1.

Test sample. Before giving the fantasy questionnaire to the test sample of 713 children, four new items were added to restore the total number of items to 45. Three questions (6, 8, and 38) that dealt with fear of bodily harm to self and family were added to measure conflictual areas of concern that might be prevalent in this age group. One question (40) was included to assess the effect television themes might have on dream content.

The data from the 713 subjects in the test sample on these 45 items were factor analyzed, using a principal-components method with iterations. The initial communality estimates were multiple correlations. Thirteen factors having an eigenvalue of at least 1 were rotated to a varimax solution. These thirteen factors were then compared to the 11 fantasy scales derived with the scale construction sample.

Table 2 shows each factor loading over .20 for the thirteen rotated factors. Loadings over .10 are also shown for items that fell on the factor corresponding to their original scale. One can see that the first five factors explain 20% of the variance and closely replicate five of the scales created with the scale-construction sample: Frequency of Fantasy (Factor I), Intellectual Fantasy (Factor II), Scary Fantasy (Factor III), Aggressive Fantasy (Factor IV), and Vividness of Fantasy (Factor V). The clear replication of these scales on a new sample serves as a cross-validation of a part of the scale structure.

Table 1
Children's Fantasy Inventory Items and Their Final Scale Assignments[a]

Item	Final scale assignment
1. Did you ever have a whole special pretend world with lots of people or animals that you thought about or played with?	Intellectual
2. Did you ever have a make-believe friend who you talked to and who went places with you?	Fanciful
3. Do you have a special daydream that you like to think about over and over?	Absorption
4. When you are by yourself, do you like to sit and just be very quiet?	Absorption
5. Do you keep right on playing or reading, even when its noisy in the room?	Absorption
6. Do you sometimes dream about falling or getting hurt?	Dysphoric
7. Do you find that even if you try real hard to pay attention to what you're doing or to your teacher, that you sometimes start to think of something else?	Absorption
8. Do you sometimes dream about someone in your family getting hurt?	Dysphoric
9. Do your daydreams sometimes seem so real to you that you almost forget it is just pretend and really think that it happened?	Vividness
10. Have you ever wondered about things like how a bird can fly or how a fish can live in water?	Intellectual
11. When you get mad, sometimes, do you think about the things you would like to do to the person you're mad at—like hitting, or breaking his toys or telling on him?	Aggressive
12. When you are daydreaming, do you think about being the winner in a game that you like to play?	Intellectual, Active-Heroic
13. Are your daydreams about things and people that could never really happen like monsters or fairies or men from outer space?	Scary
14. When you're daydreaming, do you think about how to make or build something or how to put together a real hard puzzle?	Intellectual
15. Do you sometimes daydream about what would happen if you did real bad in school—even when this didn't really happen?	Aggresive, Dysphoric
16. Do you have daydreams about how the world will be and what you are going to be many years from now when you're all grown up?	Intellectual, Absorption
17. Do the people and things that you daydream about sometimes seem so real that you think you can almost see or hear them in front of you?	Vividness
18. When you are daydreaming, do you think about being a great astronaut, or scientist, or singer, or somebody like that who is very famous?	Intellectual, Active-Heroic
19. Do you sometimes have daydreams about hitting or hurting somebody that you don't like?	Aggressive
20. Do you sometimes have daydreams or nightdreams about running away from somebody who is trying to catch you and punish you—even when you weren't really bad?	Aggressive, Dysphoric
21. Do you have daydreams about people in other far away countries—where they live, what they wear and eat, or what they do every day?	Intellectual
22. Do you have daydreams about things that can work by magic and have all kinds of magic wishes?	Intellectual
23. Do you sometimes think about something bad that you did, that nobody knows about but you?	Aggressive, Dysphoric
24. Does your Mother or Father or someone else, read fairy tales to you, (3rd grade—do you read . . .)—like *Hansel and Gretel* or *Snow White*?	Fanciful
25. When you play pretend games, do you feel like you can really see the pretend places and people in the room with you?	Vividness
26. Do you play pretend games about how things used to be when you were much younger—before you started going to school?	Fanciful
27. Do you sometimes pretend that you are a brave hero who saves somebody or who captures a bad guy?	Active-Heroic
28. Do you play games where you pretend to fight with somebody?	Aggressive, Active—Heroic
29. Do you play pretend games about things that don't ever really happen in real life?	Intellectual, Vividness
30. Do you play scary pretend games—like ghost or monsters or something like that?	Scary, Active-Heroic
31. Sometimes when you play pretend things, do you feel so happy that you don't ever want the game to end?	Vividness, Fanciful
32. When you are playing checkers or cards or other games like that, do your	Absorption

Table 1 (*continued*)

Item	Final scale assignment
friends sometimes have to tell you that it's your turn because you were thinking about something else?	
33. Do you sometimes feel like you don't want to think about anything and wish that someone would tell you a story or that you could turn on the TV?	Scary, Vividness
34. Are your daydreams sometimes so scary that you try real hard not to think about them anymore?	Scary
35. Do you daydream about very happy things?	Fanciful
36. If someone asks what you're thinking or doing when you're daydreaming, does it make you feel silly?	Dysphoric
37. Do you sometimes think about very sad things when you are daydreaming?	Scary, Dysphoric
38. Do you sometimes dream about accidents or fires or crashes?	Dysphoric, Active-Heroic
39. Do you get real scared because of something that you daydream about?	Scary
40. How often do you dream about things that you see on television?	Frequency
41. Counting all the different kinds of daydreams—when you are by yourself, how much do you daydream?	Frequency
42. Counting all the different kinds of daydreams—when you are sitting in classroom, how much do you daydream?	Frequency
43. Counting all the different kinds of pretend games—when you are alone, how much do you play pretend games?	Frequency
44. Counting all the different kinds of pretend games—when you are with your friends, how much do you play pretend games?	Frequency
45. Do you have dreams at night or early in the morning just before you get up?	Frequency

[a] Each item was scored "a lot" = 2, "a little" = 1, "no" = 0 except for frequency items (40–45), which were scored on a scale from 3 for "every night," "many times a day," or "many times a night," to 0 for "never."

Two scales, Play and Unreal, could not be identified at all in this factor analysis. Three scales, Achievement, Regressive, and Absorption, were found only in part. The Achievement Fantasy scale, which had correlated .80 with the Intellectual Fantasy scale in the first sample, was partially represented in an Intellectual factor and partially in an Active-Heroic factor. The questions that seem to reflect a more sedentary kind of achievement (question, 14, "Building something," question 16, "How the world will be when you're grown up," and question 21, "People in far away countries") loaded strongly on Factor 2, but the items that include an action content loaded on Factor 7. Regressive scale items were mostly split between Factor 12 and Factor 13, except for items 4, "Do you like to be very quiet?" and 15, "Doing badly in school," which loaded on neither. Absorption items were scattered between Factors 8, 9, and 10. Since the original Absorption in Fantasy and Regressive Fantasy scales had low reliabilities and only moderate face validities, it was not considered surprising that single factors were not found for these scales.

On the basis of the factor analysis, we reduced the number of fantasy scales to nine: Frequency of Imaginative Activity, Aggressive Fantasy, Fanciful Fantasy, Absorption in Fantasy, Scary Fantasy, Vividness of Fantasy, Intellectual Fantasy, Active-Heroic Fantasy, and Dysphoric Fantasy. Five of these were clear replications of scales defined with the first sample's data, two were new scales, and two were revisions and recombinations of earlier scales. Having settled on these nine scales, we again adjusted each scale, using an interactive computer program that maximized internal consistencies (coefficient alpha) and face validities while reducing scale intercorrelations. No item was allowed to appear on more than two scales, and no two scales were allowed to overlap by more than three items. The final scale structure is denoted in Table 2 by the underlined items.

The reliability and stability information on the new scales are presented in Table 3. Coefficient alphas ranged from .42 (Absorption) to .70 (Frequency). All scales except the Absorption in Fantasy scale had coefficient alphas of .59 or better. One month

Table 2
Rotated Factor Loadings for the Final 45-Item Fantasy Inventory[a] (N = 713)

	Factors												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Item	Freq.	Intel.	Scary	Agg.	Vivid	Dysphoric	Active-Heroic	Absorption				Fanciful	
1.	.29	.26											
2.	.26												.47
3.									.51				
4.								.32					
5.										.50			
6.						.41							
7.				.25				.30					
8.						.43							
9.					.39								
10.		.49											
11.				.54						.23			
12.		.38					.21		.22				
13.											.57		
14.		.57											
15.				.27		.26							
16.		.29								.23			
17.					.42			.24					
18.		.32					.22						
19.				.54									
20.				.33		.27		.21					
21.	.21	.36											
22.		.51											
23.				.52		.22							
24.			.24					.33				.20	.13
25.	.34	.31			.35								

Table 2 (*continued*)

	Factors												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Item	Freq.	Intel.	Scary	Agg.	Vivid	Dysphoric	Active–Heroic	Absorption				Fanciful	
26.	.24	.28		−.20								.19	.17
27.		.26			.23		.51						
28.				.32			.52						
29.	.29	.19			.30								
30.			.22				.33						
31.		.20			.21							.49	
32.			.32					.23		.25			
33.			.21		.36								
34.			.49		.26						.25		
35.		.29									−.24	.23	.15
36.			.30			.16							
37.			.44			.20							
38.						.47	.31						
39.			.64										
40.	.41												
41.	.57												
42.	.35												
43.	.60												
44.	.47												
45.	.36												
% of var.	.05	.05	.04	.03	.03	.03	.03		.05		.02	.03	

Note. Freq. = frequency. Intel. = intellectual. Agg. = aggressive. Var. = variable.
[a] The items used on the final scales are underlined.

Table 3
Reliabilities for the Final Nine Fantasy Scales[a]

Scales	Items	Item-total correlation	Coefficient alpha (N = 713)	1-month test–retest correlation	1-year stability (N = 540)	Scale M	Scale SD
Frequency	40.	.498	.7004	.5873	.335	7.69	4.07
	41.	.572					
	42.	.496					
	43.	.572					
	44.	.483					
	45.	.477					
Aggressive	11.	.393	.6410	.4411	.362	5.11	2.82
	15.	.462					
	19.	.579					
	20.	.462					
	23.	.534					
	28	.412					
Fanciful	2.	.462	.5923	.5902	.425	5.02	2.43
	24.	.502					
	26.	.505					
	31.	.452					
	35.	.411					
Absorption	3.	.378	.4166	.3943	.283	6.28	2.40
	4.	.296					
	5.	.308					
	7.	.403					
	16.	.382					
	32.	.409					
Scary	30.	.364	.6096	.6291	.352	4.74	2.46
	33.	.408					
	34.	.529					
	37.	.506					
	39.	.583					
Vividness	9.	.461	.6600	.5281	.367	5.72	2.88
	17.	.491					
	25.	.557					
	29.	.512					
	31.	.407					
	33.	.469					
Intellectual	1.	.441	.6920	.6767	.359	8.88	3.87
	10.	.444					
	12.	.426					
	14.	.506					
	16.	.393					
	18.	.410					
	21.	.481					
	22.	.529					
	29.	.422					
Active–Heroic	12.	.401	.6071	.6192	.406	5.94	2.84
	18.	.408					
	27.	.585					
	28.	.476					
	30.	.422					
	38.	.420					
Dysphoric	6.	.452	.6677	.4637 (without items 6, 8, 38)	.330	6.74	3.41
	8.	.413					
	15.	.502					
	20.	.503					
	23.	.468					
	36.	.494					
	37.	.439					
	38.	.445					

[a] Each item was scored "a lot" = 2, "a little" = 1, and "no" = 0 except for frequency items (40–45), which were scored on a scale from 3 for "every night," "many times a day," or "many times a night," to 0 for "never."

test–retest correlations were computed for these nine fantasy scales, using the data from the scale-construction sample ($N = 55$). The test–retest correlation for the Dysphoric–Aggressive Style scale does not include the three fear-of-harm questions, which were added subsequent to the first testing. Test–retest correlations ranged from .39 (Absorption) to .67 (Intellectual). It should be pointed out that for children between 6 and 8 years of age, 1-month test–retest reliabilities are not expected to be as high as adult reliabilities, and .50 is frequently reported as an acceptable coefficient (Johnson, 1976).

Over 75% of the children in the test sample (540) were reinterviewed 1 year after the original measurements; thus, the stability of their fantasy behaviors over the course of a year can be computed. These correlations are shown in Table 3. One can see that the children's fantasy behaviors remained moderately stable over the course of a year. Individual differences in children's fantasy behaviors do not appear to be transitory differences.

The intercorrelations of the fantasy scales are shown in Table 4. Although factor analysis yielded orthogonal factors, the composition of the scales was allowed to deviate from factor structure so that internal consistencies could be maximized. Also, items were not weighted by their loadings, and scales were allowed to overlap by up to two items. As a result, correlated scales were expected. However, only three scales correlated above .60 (Fanciful Fantasy with Vividness of Fantasy, Intellectual with Action, and Dysphoric Fantasy with Aggressive Fantasy). The average intercorrelation was .43, indicating that the scales represent fairly independent dimensions of fantasy behavior. Furthermore, much of the interdependency of the scales appears to be due to the correlations of all scales with frequency, as can be seen from the partial correlations shown in parentheses.

Response bias. All of the 45 items in the final fantasy questionnaire were written so that the more positively toned response, for example, "a lot," indicated more fantasizing. We had attempted to include some reverse-scored items, but these were all eliminated before the final questionnaire was determined. Such items were very difficult for the children to process. As a result one must be concerned about how a positive response bias might have affected the scales. In addition, since the positive response "a lot" was the first alternative encountered for each question, impulsivity in responding would have biased the results. To measure such bias, we repeated at the end of the questionnaire five of the items with a reversed order of response alternatives. The difference between the mean score on the five items, as they were originally presented, and the mean score with the reversed ordering was +.104 on a scale from −2.0 to +2.0, indicating a slight but significant overall bias toward the first alternative offered. Surprisingly, however, the bias score did not correlate consistently with item scores. The correlations of bias with item scores were negligible for the items at the beginning of the questionnaire and negligible or slightly negative (up to −.18) for most items at the end. These results suggest that response bias was not an important factor, and the overall positive bias mostly reflects children's tendency to respond less positively as the testing proceeded. This is confirmed by the fact that a highly significant correlation was obtained between an item's position in the questionnaire and the score on the item (−.249). Apparently, the children had less tendency to select the first alternative offered ("a lot") as the testing proceeded. The amount the children changed over the course of testing was reflected by their bias scores. These scores did not correlate significantly with any subject variable except grade. Older children scored significantly higher on bias, indicating a greater change in responding over the course of testing. To assess the impact of these changes in response tendencies during testing, intercorrelations were recomputed for the fantasy scales, with the bias score partialed out. None of the intercorrelations changed significantly, and the largest change was only .036.

The intercorrelations of the scales and the correlations of the scales with other variables do not seem to be affected significantly by any of the factors mentioned above. However, the order of presentation of items is a significant factor and should be kept constant across subjects. Subjects' scores on the scales should be standardized before the dif-

Table 4
Intercorrelations of Nine Scales Based on Data from the Test Sample (N = 713)[a] (Partial correlations controlling for frequency are in parentheses)

Scale name	1	2	3	4	5	6	7	8	9
1. Frequency	1.0000								
2. Aggressive	.2855	1.0000							
3. Fanciful	.5005	.1554 (.0151)	1.0000						
4. Absorption	.3746	.4092 (.3402)	.3205 (.1657)	1.0000					
5. Scary	.4460	.3087 (.2115)	.4443 (.2853)	.3488 (.2190)	1.0000				
6. Vivid	.5268	.3395 (.2322)	.6155 (.4781)	.4266 (.2909)	.5926 (.4701)	1.0000			
7. Intellectual	.5058	.2966 (.1840)	.5112 (.3455)	.4326 (.3040)	.4104 (.2393)	.5685 (.4119)	1.0000		
8. Action	.4778	.4576 (.3819)	.3265 (.1185)	.3129 (.1659)	.4655 (.3255)	.4326 (.2446)	.6129 (.4915)	1.0000	
9. Negative	.4244	.7002 (.6673)	.4219 (.1397)	.4688 (.3691)	.5377 (.4299)	.4517 (.2964)	.4174 (.2596)	.4750 (.3436)	1.0000

[a] Although an orthogonal factor structure guided the construction of the scales, scales were allowed to deviate from the factor structure to increase their internal consistency and meaningfulness.

ferent scales are compared, since position in the questionnaire may affect the means. Furthermore, it is impossible to measure the extent to which a child's overall score reflects a preference for checking "a lot." Therefore, the pattern of scores a child obtains on the nine scales should be given more attention than the overall level of the profile.

Patterns of fantasy. To determine if the dependencies between the scales reflect patterns of fantasy in children, which are comparable to the Singer–Antrobus (1972) styles of daydreaming in adults, we factor analyzed the intercorrelations of the nine scales. The first factor extracted accounted for over 50% of the variance. Every scale loaded above .50 on this factor, with frequency loading the highest. Since we wished to examine fantasy patterns independently of frequency of fantasy, we recomputed the factor analysis on the matrix of partial correlations between the eight substantive scales, with frequency controlled. Using a principal-components method with iterations, three factors were rotated to an orthogonal varimax solution. The resulting three factors with their loadings can be found in Table 5. Factor I represents a dysphoric style, including the Aggressive Fantasy, Dysphoric Fantasy, and Absorption in Fantasy scales. Factor II represents a fanciful, high intensity style including the Fanciful Fantasy, Vividness of Fantasy, and Scary Fantasy scales. The Intellectual Fantasy scale also loaded strongly on this factor, indicating that this intense-childish kind of fantasy is also associated with curiosity. Factor III represents a positive, active-intellectual style of fantasy, including the Intellectual Fantasy and Active-Heroic Fantasy scales. The Intellectual Fantasy scale loaded more strongly on this factor than on Factor II.

To represent each subject's pattern of fantasizing, three "style" scores were computed. Each subject's style scores were computed by simply adding the scales that loaded heaviest on the three factors. The components of each style score are underlined in Table 5.

Study 2: Validation of the Scales

The purpose of this part of the study was to validate the derived fantasy questionnaire by relating the questionnaire scale scores to other measures of fantasy production. The two other measures of fantasy production used for this part of the study were: Singer's (1973) Imaginative Play Predisposition interview (IPP) and the child's report of a daydream, either one frequently dreamed or one made up on the spot. Singer's IPP was scored according to his instructions for the presence of make-believe in the children's responses. The "Tell-me-a-daydream" task was rated by judges for fluency, fantasy quality, and use of affect.

Method

Subjects. A sample of 73 children was selected for this part of the investigation. Children from two first-grade and two third-grade classes in Oak Park, who had previously completed our Children's Fantasy Inventory, participated. The sample comprised 13 first-grade girls, 16 third-grade girls, 20 first-grade boys, and 24 third-grade boys.

Procedure. Each of the 73 children in the validity subsample was interviewed individually within 2 months after taking the Children's Fantasy Inventory. Their responses were tape-recorded for later scoring. The children were given the "Tell-me-a-daydream" task first. Each child received preliminary instructions, similar to those presented earlier with the Children's Fantasy Inventory, and then was told:

> I would like you to tell me a daydream. If you want, you can make one up right now, or you can tell me one that you have had.

If a child said that he or she did not daydream, he or she was encouraged to make up a daydream. While the child recited the daydream, he or she was repeatedly prompted with the phrase "anything more?" until he or she responded "no." Each child was then asked the four questions from Singer's (1973) Imaginative Play Predisposition interview.

> 1. What is your favorite game? What do you like to play the most?
> 2. What game do you like to play best when you are alone? What do you like to do best when you're all aone? Do you ever think things up?
> 3. Do you ever have pictures in your head? Do you ever see make-believe things or pictures in your mind and think about them? What sorts of things?
> 4. Do you have a make-believe friend? Do you have an animal or toy or make-believe person you talk to or take along places with you?

Scoring of responses. Singer's IPP was scored according to his instructions. Each child received a score of 0 to 1 on each of the four IPP questions as well as a total IPP score, which ranged from 0 to 4. Daydreams

were scored on four dimensions: affect, richness of fantasy, unreality, and fluency.[2]

One rater scored all of the daydreams for each of the 73 subjects. A random sample of 10 first-grade subjects and 10 third-grade subjects was also scored by a second rater for the richness of fantasy, affect, and unreality dimensions. Interrater reliability was .90 for the richness of fantasy measure, .89 for use of affect, and .94 for unreality. Because reliability was so high, only the first rater's scores are reported.

Results

In this section, the two validating measures (the IPP, and "Tell-me-a-daydream") are discussed separately. First, the results of a canonical correlation analysis between each validating measure and our Children's Fantasy Inventory are described. Second, correlations between the individual fantasy scales and the components of each validating measure are reported. Whereas the canonical correlation provides an overall assessment of the relation between two sets of variables, the individual correlations provide a closer look at the precise nature of the relation. Partial correlations controlling for fantasy frequency and verbal fluency (number of words in response to "tell-me-a-daydream") are reported in order to minimize spurious relations.

Imaginative play predisposition interview. Table 6 shows the results of a canonical correlation computed between the predisposition questions and the Children's Fantasy Inventory scales and reveals that a significant canonical correlation exists between the two sets of variables, with Fanciful Fantasy and Intellectual Fantasy scales relating most strongly in a positive direction and the absorption in fantasy scale relating in a negative direction to the first two predisposition questions. A second analysis shows a significant relation between the set of predisposition questions and the fantasy inventory styles, with the Fanciful–Intense Style relating most strongly in a positive direction with the first two predisposition questions.

Partial correlations, controlling for both fantasy frequency and verbal fluency, were computed between the Imaginative Play Predisposition questions and the Children's Fantasy Inventory scales and styles. Table 7 shows these partial correlations. There was a strong positive relation between the Fanciful–Intense Style and all of the predisposition questions. In addition, children who reported imaginative activities when alone scored significantly higher on the Active–Intellectual Style than those who did not report such activities. Of the individual scales, Fanciful Fantasy related more positively than any other to the predisposition questions. Generally, the other scales also related positively to the predisposition questions, with three important exceptions. The components of the Dysphoric–Aggressive Style (Aggressive, Absorption, and Dysphoric scales) correlated negatively or not at all with the predispositions questions.

"Tell-me-a-daydream." The canonical correlation between the fantasy scales and the daydream ratings (fluency, richness of fantasy, affect, and unreality) was .59. Although not significant, this correlation suggests a positive relation between use of affect and the Fanciful Fantasy scale, as the canonical coefficients in Table 8 reveal.

To assess more specifically the relation between the daydream ratings and the Children's Fantasy Inventory, partial correlations, controlling for verbal fluency and for fantasy frequency, were computed. Table 7 shows these correlations. As the canonical analysis suggested, children who tell daydreams that are rated high in use of affect score higher on the Fanciful Fantasy and

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[2] Daydreams were scored as follows:

1. Affect: 0 = no use of affective words (e.g., happy, scared) or excitement; 1 = some affect that is not elaborated or made explicit (e.g., I was captured but someone saved me); 2 = affect that is elaborated or made specific (e.g., the monster came, and I was really scared).

2. Richness of fantasy (Pulaski, 1973): 0 = anything likely to be part of a child's daily experience; 1 = that which exists in reality but most likely has been experienced by the child only indirectly through conversation, books, or television; 2 = that which exists largely in the emotions: silly aggressive fantasy of the television cartoon type; 3 = fantasy that gives a new twist to familiar realities (e.g., an umbrella is used as an air conditioner; 4 = addition of fantasy details to a reality stimulus (e.g., a snowman is magically able to talk and grants wishes).

3. Unreality: 0 = conceptual, everyday themes; 1 = descriptive imagery, everyday theme; 2 = minimal descriptive imagery, but not everyday theme; 3 = descriptive imagery, not everyday theme, but not bizarre or fantastic; 4 = vivid imagery, fantastic content.

4. Verbal fluency: number of words in a daydream.

Table 5
Factor Analysis of Eight Fantasy Scales Based on Partial Intercorrelations Controlling for Frequency[a] (Test Sample: N = 713)

Scale	Factor I (Dysphoric–Aggressive Style)	Factor II (Fanciful–Intense Style)	Factor III (Active–Intellectual Style)
Aggressive	.849[a]	−.075	.221
Fanciful	.076	.821	.104
Absorption	.564	.314	.018
Scary	.397	.559	.130
Vivid	.234	.779	.178
Intellectual	.058	.395	.766
Action	.272	.021	.868
Negative	.852	.151	.163
% of variance	26	23	18

[a] Scales whose loadings are underlined were added to yield three "style" scores for each subject.

Intellectual Fantasy scales of the Children's Fantasy Inventory than do those children who do not use affect. Interestingly, children who score high on the Dysphoric–Aggressive Style tell daydreams that are rated lower in richness of fantasy and are more realistic. This pattern of positive relations between an Active–Intellectual Style, Fanciful–Intense Style, and daydream affect, coupled with negative relations between daydream richness of fantasy, daydream unreality, and a Dysphoric-Aggressive Style, is very similar to the pattern reported above for the predisposition questions.

Study 3: Grade and Gender Differences

In this part of the investigation, we looked at grade and gender differences on the Children's Fantasy Inventory for the test sample of 713 subjects. A multivariate analysis of variance revealed no grade by gender inter-

Table 6
Canonical Correlations of Imaginative Play Predisposition Questions with the Children's Fantasy Inventory[a] (N = 73)

Imaginative play predisposition questions	Canonical coefficients	Children's Fantasy Inventory	Canonical coefficients	Canonical correlation
Canonical validation of the Childrens Fantasy Inventory's nine scales				
Game	.428	Frequency of Fantasy	.139	.594
Alone	.619	Intellectual Fantasy	.460	χ^2 (36) = 54.3
Pictures	.378	Scary Fantasy	.276	$p < .02$
Playmate	.103	Fanciful Fantasy	.708	
		Aggressive Fantasy	.017	
		Absorption in Fantasy	−.663	
		Vividness of Fantasy	−.034	
		Active-Heroic Fantasy	.279	
		Dysphoric Fantasy	.144	
Canonical validation of the three major "styles" (factors) found in the nine scales				
Game	.547	Dysphoric–Aggressive Style	−.365	.493
Alone	.466	Fanciful–Intense Style	.967	χ^2 (12) = 22.1
Pictures	.344	Active–Intellectual Style	.233	$p < .03$
Playmate	.219			

[a] For both the analyses none of the higher order canonical correlations were significant.

Table 7
Partial Correlations, Controlling for Verbal Fluency and Fantasy Frequency, Between Fantasy Scales and the Imaginative Play Predisposition Interview and Daydream Ratings (N = 73)

Fantasy styles and scales	Imaginative play predisposition interview					Daydream ratings		
	Game	Alone	Pictures	Playmate	Total	Richness of fantasy	Unreality	Use of affect
Styles								
Dysphoric–Aggressive	−.07	−.01	−.06	−.04	−.07	−.28*	−.26*	−.04
Fanciful–Intense	.23*	.29*	.18	.25*	.39*	.01	.04	.27*
Active–Intellectual	.16	.28*	−.03	.05	.17	.01	−.01	.22*
Scales								
Intellectual	.08	.30*	−.01	.05	.16	.02	.03	.23*
Scary	.21*	.09	.24*	.08	.24*	−.10	−.02	.02
Fanciful	.21*	.37	.06	.23*	.36*	.07	.08	.43*
Aggressive	.06	−.06	−.13	−.19	−.16	−.27*	−.26*	−.07
Absorption	−.17	−.10	−.11	−.06	−.17	−.26*	−.22*	.04
Vivid	.17	.19	.07	.21*	.27*	−.06	−.02	.13
Action	.21	.12	−.15	−.02	.04	−.01	−.02	.15
Negative	.02	.00	.01	.01	.02	−.19	−.25*	−.02

* $p < .05$.

action on the fantasy scale or factors. Therefore, to understand the differences in fantasy behavior better, we performed separate discriminant analyses for grade and gender effects. The results are shown in Tables 9 and 10.

The scales that discriminate best between girls and boys are the Active–Heroic Fantasy scale, on which boys scored higher, and the Fanciful, Dysphoric and Scary fantasy scales, on which girls scored higher. The overall discriminant function was signficant beyond the .001 level. The scales that discriminate best between subjects in the first and third grades are Fanciful Fantasy, Intellectual Fantasy, and Scary Fantasy, on which younger children scored higher, and Aggressive Fantasy and Absorption in Fan-

Table 8
Canonical Correlations of Daydream Ratings with the Children's Fantasy Inventory[a] (N = 73)

Daydream ratings	Canonical coefficients	Children's Fantasy Inventory	Canonical coefficients	Canonical correlation
Canonical validation of the Childrens Fantasy Inventory's nine scales				
Fluency	.091	Frequency of Fantasy	.142	.589
Richness of fantasy	−.213	Intellectual Fantasy	.171	χ^2 (36) = 42.1
Use of affect	1.364	Scary Fantasy	−.260	$p < .20$
Unreality	−.508	Fanciful Fantasy	.957	
		Aggressive Fantasy	.192	
		Absorption in Fantasy	−.032	
		Vividness of Fantasy	−.086	
		Active-Heroic Fantasy	−.034	
		Dysphoric Fantasy	.003	
Canonical validation of the three major "styles" (factors) found in the nine scales				
Fluency	.114	Dysphoric–Aggressive Style	.253	.440
Richness of fantasy	−.608	Fanciful–Intense Style	.603	χ^2 (12) = 19.4
Use of affect	1.399	Active–Intellectual Style	.322	$p < .07$
Unreality	−.351			

[a] For both the analyses, none of the higher order canonical correlations were significant.

Table 9
Discriminant Analysis of Fantasy Scales by Gender

Scales	*M* Girls (*N* = 366)	*M* Boys (*N* = 347)	Univariate *F* (1, 711)	Discriminant function coefficients	*F* (1, 703) to remove
Frequency	7.80	7.58	.51	−.03	1.09
Aggressive	4.98	5.27	1.88	−.06	2.32
Fanciful	5.59	4.41	44.45***	+.28	38.71***
Absorption	6.50	6.05	6.17*	+.04	.97
Scary	5.03	4.45	10.03**	+.12	6.85**
Vivid	6.02	5.40	8.34**	−.03	.65
Intellectual	8.96	8.80	.32	+.05	2.88
Active-Heroic	5.28	6.64	43.31***	−.40	101.07***
Dysphoric	7.09	6.39	7.61**	+.15	15.00***

Note. $F(9, 703) = 22.4$, $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

tasy, on which older children scored higher. The overall discriminant function was significant beyond the .001 level.

Univariate significance tests were computed for grade and gender differences on the three fantasy styles and for two individual items of particular interest. Table 11 presents the significant differences between boys and girls on these variables. Girls scored higher on the Fanciful–Intense Style, and boys scored higher on the Active–Intellectual Style. Only one of the single items discriminated between boys and girls, with girls reporting more exposure to fairy tales. Table 11 also shows the grade differences. Third graders reported more dysphoric–aggressive fantasies, while first graders reported more fanciful–intense fantasies and active–intellectual fantasies. The younger children also reported more frequent exposure to fairy tales and more dreaming about TV.

Factor analyses were also computed separately for each grade and gender. Although the amount of variance explained by each factor varied considerably in these analyses, the nine major scales were identifiable in all the subsamples.

Discussion

The Children's Fantasy Inventory was developed and refined on a large sample of first- and third-grade children. Within the limits of a 45-item instrument, appropriate to the children's attention span, a wide range

Table 10
Discriminant Analysis of Fantasy Scales by Grade

Scales	*M* 1st (*N* = 377)	*M* 3rd (*N* = 336)	Univariate *F*(1, 711)	Discriminant function coefficients	*F*(1,703) To remove
Frequency	8.19	7.14	11.97***	+.04	1.40
Aggressive	4.74	5.54	14.69***	−.12	5.72*
Fanciful	5.51	4.46	34.47***	+.19	12.67***
Absorption	5.94	6.66	16.00***	−.29	37.31***
Scary	5.08	4.36	15.58***	+.17	9.57**
Vivid	6.03	5.37	9.49**	−.03	.39
Intellectual	9.52	8.16	22.53***	+.12	11.47***
Active-Heroic	6.25	5.60	9.36**	+.05	1.14
Dysphoric	6.55	6.96	2.61	−.07	2.68

Note. $F(9, 703) = 14.79$, $p < .001$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 11
Gender and Grade Differences on Fantasy Styles and on Two Individual Fantasy Items

Styles and items	*M* Girls (N = 367)	*M* Boys (N = 346)	$F(1, 711)$	*M* 1st grade (N = 377)	*M* 3rd grade (N = 336)	$F(1, 711)$
Dysphoric–Aggressive Style	16.08	15.26	3.23	14.91	16.57	19.91***
Fanciful–Intense Style	14.31	12.11	28.04***	14.22	12.16	24.47***
Active–Intellectual Style	12.11	12.94	4.74*	13.31	11.62	14.45***
Fairy tale item (24)	1.01	.65	34.10***	.99	.66	29.28***
Dream about TV item (40)	.134	1.33	.03	1.52	1.13	27.33***

* $p < .05$. ** $p < .01$. *** $p < .001$.

of fantasy activity was tapped. The nine empirically derived, nonorthogonal scales had good internal consistency, as measured by coefficient alphas, and good test–retest reliabilities. The Children's Fantasy Inventory was also found to be related to other previously used measures of fantasy in children. Although cross-validation with a multitrait, multimethod procedure is an obvious next step, at present it appears that the Children's Fantasy Inventory is a reliable and valid measure of children's fantasy behaviors.

The three children's fantasy styles that emerged from a factor analysis of the fantasy scales are remarkably equivalent to the adult factors of day-dreaming found both by Singer and Antrobus (1972) and Giambra (1974). The children's Active–Intellectual Style, which included the Action and Intellectual Fantasy scales, is similar to the Singer–Antrobus Positive-Controlled Thoughtfulness factor and to the Giambra Positive–Attractive Controlled Thoughtfulness factor. This children's style contained elements of many of the adult scales that loaded on the above factors: Problem Solving, Achievement, Heroic, Curiosity, and Need for Stimulation.

The children's Dysphoric–Aggressive Style is most similar to the Guilty–Obsessional Daydreaming factor of the Singer–Antrobus study, on which the Guilt, Fear of Failure, Hostile, Absorption, and Frightened scales loaded most strongly. However, the Dysphoric–Aggressive Style also resembles the Singer–Antrobus Neuroticism factor (Mindwandering, Absorption, Hostile and Frightened scales).

The third children's style, Fanciful–Intense, is closest to the Positive–Vivid dimension of the Singer–Antrobus Positive-Controlled Thoughtfulness factor, on which the Visual and Auditory Imagery, Hallucinatory–Vividness, and Positive Reactions scales load strongly. This Fanciful–Intense Style also resembles Giambra's Imaginal–Vivid factor, which is probably the closest adult factor to a "child-like" fantasy factor. The adult Absorption in Fantasy scale, which loads on the Imaginal–Vivid factor, for instance, contains several questions referring to daydreaming as a child (e.g., "When a child, I would often create a great fantasy world for myself"). However, some items on the children's Fanciful–Intense Style are unique to the Children's Fantasy Inventory (such as ghosts and fairy tales), and some items are closer to the Bizarre–Improbable scale, which for adults loaded with Guilty–Obsessional daydreams. In other words, bizarre daydreams for children do not seem to have the same negative connotation as they do for adults.

Since no sex or grade differences were found on the Frequency of Fantasy scale, it appears that those differences that do exist on the Childrens Fantasy Inventory are in specific content, type, or mood of fantasy activity, but not in overall amount. The Fanciful Fantasy scale, on which first graders scored higher than third, certainly represents the most childlike and conflict-free type of fantasy behavior. The Fanciful Fantasy scale includes the imaginary playmate question, and both Jersild et al. (1933) and Green (1923) found a decrease in imaginary playmates from ages 6 to 12. The Intellectual Fantasy scale also reflects fantasy behavior

and curiosity interests that are more characteristic of younger children—for instance, having a special pretend world, putting together a puzzle or building something, and magic wishes. These items also represent conflict-free fantasy. Scheffler's (1975) longitudinal study of children's TAT-type stories found that the stories showed less conflict at age 6 than they had at age 5. It would also appear from the current data that 6-year-olds report more happy fantasies than 8-year-olds; however, they also report more scary fantasies of the exciting, monster type. The first graders do not, on the other hand, report more dysphoric fantasies than the third graders. The scary fantasies in which the first graders engage may not be of a sort that is threatening to their self-concept.

The third graders engage in more aggressive fantasy and score higher on absorption. Both Ames (1966) and Pitcher & Prelinger (1963) found an increase from 2 to 5 years old, of violent themes in children's stories. Although our Childrens Fantasy Inventory measures a different kind of fantasy, using a different kind of instrument, a higher score on the Aggressive Fantasy scale for third graders may indicate a progressive increase in violent fantasy from 2 to 8 years of age. This would parallel the increase in manifest aggressive behavior observed by some researchers over these years (Eron, Huesmann, et al., Note 1). The increase in absorption in fantasy with age probably reflects the child's lessened distractibility and increased capacity for internalizing imaginative activities. There are no "pretend play" items on this scale, and the higher score by third graders is consistent with the evidence in other studies of a decrease in pretend play after age 6 (Eiferman, 1971; Opie & Opie, 1969; Piaget, 1962; Sutton-Smith & Rosenberg, 1960).

Looking at the sex differences, boys score higher than girls on the Active-Heroic Fantasy scale, which one would have predicted by the male sex typed activities prevalent on that scale. The Fanciful Fantasy scale, on which girls score higher than boys, is not only "child-like" but contains items that could be interpreted as feminine activities, such as reading fairy tales and playing pretend games about when you were younger (playing house). Sutton-Smith & Rosenberg (1960) indicated that girls continue to play make-believe to an older age than do boys. In addition, the other items on the Fanciful Fantasy scale reflect happy affect, which, along with the girl's higher scores on the Scary and Negative scales, suggests that girls either express more emotion in their fantasy activity or are more willing to admit affect of both a positive and negative quality. Girls in the Pitcher & Prelinger (1963) study, in fact, used more affect in their stories. In both the Ames (1966) and Pitcher & Prelinger (1963) studies, violent themes were expressed by both the older boys and girls, but for girls the themes took the form of punishment and harm to people more than did the themes for boys. In the present study, a comparable result was found: There was no sex difference on the Aggressive Fantasy scale, but girls scored higher than boys on the Dysphoric Fantasy scale, which contains items about fear of harm and punishment.

In conclusion, then, children's styles of daydreaming seem to parallel closely adult styles. Nevertheless, there are some unique aspects of children's fantasy behavior. The Fanciful Fantasy scale would appear to measure fantasy behavior that is mostly unique to children. Interestingly, it was this scale that correlated most strongly with other measures of children's fantasy behavior. Although no substantial differences in fantasy frequency were found between boys and girls or between first and third graders, there were significant differences in styles of fantasy.

Reference Note

1. Eron, L. D., Huesmann, L. R., Brice, P., Fischer, P., Klein, R., and Mermelstein, R. A combined laboratory and field study of the reduction of aggressive behavior. Paper presented at meetings of the International Society for Research in Aggression, Haren, Netherlands, July 1980.

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