The creative world of middle childhood

Creativity, imagination, and self-image from qualitative and quantitative perspectives

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Title   The Creative World of Middle Childhood: Creativity, Imagination, Self-Image from Qualitative and Quantitative Perspectives

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Abstract

Four studies on creativity, imagination and self-image in 10-year-old children constitute the basis of this dissertation. A total of 179 participants were involved. Study I investigated two new creativity measurements comprising *The Drawing Task*, which had its starting-point in a brief story, and *The Activity Questionnaire*, which included questions about the children's spare time activities. The hypothesis was that there would be a relationship between these tasks and an established test of creativity, *The Unusual Uses Test*. A qualitative perspective was also undertaken through the use of interviews. Study II aimed at describing aspects of the creative personality in middle childhood and at investigating the relationship between different tests of creativity. In addition to the tests mentioned above, *The Creative Functioning Test* and the self-image inventory *How I Think I Am* were also used. Study III scrutinized the relation between creativity, self-image and imaginary companions, and Study IV, using qualitative interviews, analyzed the forms and functions of imaginary companions.

As a whole, this project has contributed to the study of creativity in three ways. First, it has put a more general *emphasis on the creativity of middle childhood*. Creativity in middle childhood has received little attention in the literature. This project showed that children in middle childhood could be very imaginative and innovative. To learn more about creativity in this age group, creativity was related to self-image estimations and the occurrence of imaginary companions and drawing motifs. Among those children whose self-image was tested, it was difficult to discern one creative personality profile. Children who were well adjusted and accepted among peers as well as those who were maladapted and felt rejected by others were found among the highly creative participants. A relation between creativity and having imaginary companions was found. There was also a link between more elaborated companions and higher levels of creativity. Furthermore, children with imaginary companions had less positive self-images.

Second, *the complexity of the creativity concept* has been demonstrated. This was accomplished by relating different ways of measuring creativity to one another. These results showed that different measurements were moderately related and may to some extent capture different aspects of creativity.

Third, *through qualitative interviews* with children, creativity was embraced from a new perspective. The *children were given a voice* as regards their sources of inspiration, their notions of reality and imagination as well as the forms and functions of their imaginary companions. The invention of imaginary companions was scrutinized as an example of a natural creative phenomenon, in which children demonstrated great variation, elaboration and originality. The imaginary companions were found to provide important assistance to children in their identity formation process.

A fourth aim of the dissertation was to discern possible gender differences. However, the four studies demonstrated very few such differences.

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To Tobbe

/Creative insight/ requires that we be able to retire from a world that is 'too much with us,' that we be able to be quiet, that we let the solitude work for us and in us. It is a characteristic of our time that many people are afraid of solitude /.../. Often people living in our modern, hectic civilization, subjecting themselves to every kind of stimulation whether of the passive sort of TV or the more active sort of conversation, work, and activity /.../ find it exceedingly difficult to let insights from unconscious depths break through

Rollo May, 1975

❧ Acknowledgements ❧

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I –
I took the one less traveled by,
And that has made all the difference
Robert Frost, 1920

Sometimes during the six years that this project has been going on, I have felt that I have chosen the road "less traveled". Even if I, admittedly, at other times have traveled a well-trodden one.

There are several people who have never doubted my capacity to complete the dissertation and whose support has been of paramount importance.

In the research society, many "family members" have been of great significance. First of all, thank you Ingegerd Carlsson, my "scientific mother", for much reinforcement and unconditional regard. You have made me believe in myself. I have also much appreciated the support I have received from Gudmund Smith, my "grandfather". I am much obliged to all my fellow postgraduate students, my "siblings" and "cousins", some of whom have been my inner circle of advisors and have also become close friends: Per Alm, Maria Danielsson, Erica Fäldt Ciccolo, Anne-Li Hallin, Peter Jönsson, Gun Persson, Bim Riddersporre, Birgitta Wanek and Susanne Wiking.

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❧ Contents ❦

❧ List of Studies ❧

The present dissertation is based on the following four studies:

I. Hoff, E. (2000). A Painter's Mystery: A Story as Starting-Point to Study Creativity in 10-Year-Old Children. Published in Swedish in *Nordisk Psykologi, 52*, 37-77.

II. Hoff, E. V., & Carlsson, I. (2002). Shining Lights or Lone Wolves? Creativity and Self-Image in Primary School Children. *Journal of Creative Behavior, 36*, 17-41.

III. Hoff, E. V. (2003). Imaginary Companions, Creativity, and Self-Image in Middle Childhood. Manuscript submitted for publication.

IV. Hoff, E. V. (2003). A Friend Living Inside Me: The Forms and Functions of Imaginary Companions in Middle Childhood. Manuscript submitted for publication.

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❧ Introduction ❧

In a broad research field such as the study of creativity, there is a range of different approaches within many disciplines, among others, psychology, education, business and history. A great number of definitions, perspectives and measurements exist all elucidating a specific aspect of the phenomenon. For one single scholar it is probably impossible to embrace all these perspectives. Unfortunately, the necessity of limitation has also lead to some isolation for scholars studying creativity in different disciplines. Wehner, Csikszentmihalyi, and Magyari-Beck (1991) used the fable of the blind men and the elephant to describe the creativity research situation: "'The elephant is like a snake,' says the one who only holds its tail; 'The elephant is like a wall,' says the one who touches its flanks" (p. 270). Obviously, too strict boundaries between the disciplines limit the potential of the study of creativity. However, creativity as a phenomenon also requires borders in order to exist. Without limits, there is nothing to oppose.

> Creativity itself requires limits, for the creative act arises out of the struggle of human beings with and against that which limits them (p. 113). The limits are as necessary as those provided by the banks of a river, without which the water would be dispersed on the earth and there would be no river – that is, the river is constituted by the tension between the flowing water and the banks (May, 1975/1994, p. 115).

A scholar within the creativity field is soon confronted with the choice of discipline and the choice of scientific method, which together constitute the limits a scientist works within and sometimes struggles against. Another choice is between using existing theory and methods within the chosen discipline or attempting to develop something new – flooding the banks of the river or making a tributary. The advantage of using existing theory and methods is perhaps greater making comparisons possi-

ble, at least within the discipline. On the other hand, new perspectives on the phenomenon will not be explored if only established theories and methods are used.

The present dissertation constitutes an attempt to combine theories and scientific methods within the discipline of psychology. Both newly-developed and established tests of creativity have been employed as well as different research methods, including quantitative and qualitative approaches.

In this extended summary, the main approaches to the study of creativity are introduced at the outset, including an outline of the development of creativity. The research field of imagination and pretend play is then outlined, followed by a discussion of imaginary companions. Then a presentation of the developmental theories of middle childhood proceeds, also comprising a brief summary of research on self-image, theory of defense mechanisms and children as research participants. After this general introduction is an overview of the methodology and philosophy of science underlying the present dissertation, including a presentation of the interviews and quantitative measurements employed in the studies. Finally, the four studies of the dissertation are summarized and the summary is followed by a general discussion.

Creativity

Creativity has been studied from different perspectives within psychology and there are a number of different theories, each with their associated test methods and definitions (Parkhurst, 1999). Traditionally, creativity has been divided into four areas: *the creative product, the creative person, the creative process* and *the creative environment* (sometimes labeled *press*).

Nearly all definitions of creativity are concerned with originality and novelty. Parkhurst (1999) summarized and criticized some of them, including the one presented by the creativity research group at Lund University. According to Parkhurst, this group's definition lacked the novelty aspect. Hoff and Carlsson (2002) therefore altered the definition, resulting in the following: "a productive or generative *novel* way of experiencing reality –

including the perceiver's own self" (p. 22), which is the definition underlying the present dissertation. The definition focuses on *the creative process*.

The Creative Process

Many creativity scholars maintain that the creative process is dependent upon imagination and a rich inner life. There are many theories that explain this connection. As early as 1952, Kris claimed that regression – the ability to go back to earlier developmental stages – was a prerequisite of creativity. He perceived creativity as regression in the service of the ego. Later on, other scholars, such as Arieti (1976) and Rothenberg (1979), have further elaborated the mechanisms of the creative process, and asserted that the subjective features of creativity have to be guided by a conscious mental activity, that is, imagination and logical thinking need to interact. Smith and Carlsson (1990) argued that creativity consisted of reconstruction rather than regression, which implies that intentional rational thinking is required in order for creativity to arise. Regression, on the other hand, is dominated by symbolic and dreamlike thinking.

Another suggestion concerning what the creative process comprises was put forward by May (1975/1994). He described the creative process as a dedicated, intensified encounter between subjective experience and the surrounding world. Creative people avail themselves of their imagination, but in the creative act the subjective experience transforms into something, which more generally gives an illuminating description of our reality. In a similar way, according to Ayman-Nolley (1999), Piaget (1951/1967) proposed that an interaction between individual and environment through alternating assimilation and accommodation was the mechanism underlying the creative process.

It has also been emphasized that the creative process is more than a momentary insight. "What we call creativity is often merely the dramatic delivery, which is the result of a prolonged pregnancy, of a fetus's development" (Vygotskij, 1930/1995). Wallas (1926) asserted that the act of creativity included four stages: During the *preparation* stage, the creative individual de-

fines and collects required knowledge. During the *incubation* stage, less active time is spent working with the problem; the problem is put aside. The *illumination* stage refers to the moment at which a decisive idea is conceived, and finally, the *verification* stage involves realizing and elaborating the idea to create a useable product. Later Torrance (1965) suggested that there was also a fifth *communication* stage in the creative process, which involves presenting the result – in Sternberg and Lubart's (1999) words perhaps "selling the idea". In line with Wallas's phase theory, May (1975/1994) emphasized that individuals cannot sit and wait for the ideas to come. It is rather while taking a break after intensive work that a breakthrough may occur. Alternating between work and relaxation was his recipe for making unconscious processes come into play. He recommended other writers to do what Macaulay used to do, that is, write for two hours, pitch quoits for a while and then go back to the writing. The effect of incubation, or taking creative breaks, on the act of creation has also been demonstrated experimentally (Houtz & Frankel, 1992).

The most widely used creativity measure is probably Torrance's (1965) test battery, the Torrance Test of Creative Thinking (the TTCT), which includes among other things, the Unusual Uses Test (Guilford, 1967). In the Unusual Uses Test, the participants enumerate as many uses of a well-known object as they can. The TTCT measures divergent thinking, implying a cognitive process underlying creativity. However, this test has been criticized. There are, among other things, construct validity problems with this kind of test, given that it has been validated against other similar tests (Amabile, 1996). Amabile also claimed that paper-and-pencil tests are artificial, because the studied participants are asked to create on command, but also because these tests do not give rise to real-life creativity. She also criticized the test because divergent thinking as indicated by TTCT might be a prerequisite of creativity, but is not creativity *per se*.

Smith and Carlsson (1990/2001, 1990) have developed an alternative perceptually based test of the creative process: The Creative Functioning Test (CFT). It has been validated against the performance of professional artists and scientists (Smith & Carlsson, 1990) as well as architects (Schoon, 1992), as rated

by competent judges within each field.

One question under discussion is whether the creative process is experienced by all human beings or whether it is a talent predominantly sported by a few privileged individuals.

The Creative Person

Vygotskij (1930/1995) used a simile from a Russian scientist to demonstrate his view concerning whether all or merely a few should be deemed creative:

> Electricity is not only operating in and shown in powerful thunderstorms and dazzling lightning but also in the bulb of a small torch. Exactly in the same way, creativity does not only occur where it gives rise to historically important works, but also everywhere where a human being imagines, combines, alters and creates something new, whatever it might be (p. 14).

However, the study of the personality of creative individuals often concentrates on those who are richly "charged". When measuring *the creative person*, scholars generally use personality questionnaires and relate them to individuals' creativity scores, thereby producing the average self-features of particularly creative individuals (Barron, 1963, 1981; Eysenck, 1995; Martindale, 1989). In this kind of study, especially creative people are generally depicted as having a good deal of self-confidence, allowing them to trust their own ideas and to endure critical opinions (Martindale, 1989). Creative individuals are also described as being inventive, enthusiastic, tolerant of ambiguity and risk-taking, but also as gloomy, loud, labile, bitter, etc. (Barron, 1963, 1981; Sternberg & Lubart, 1999). Eysenck (1995) pointed out that there is considerable contradiction in the descriptions of creative persons. They are described as having social presence and poise, but are also said to be asocial and irritable. Furthermore, they are sometimes reported to be both dominant and introverted, despite the fact that dominance is generally considered a trait of extroversion. Many researchers, for example Götz and Götz (1979) who studied professional artists, have shown that introversion is related to creativity.

Artists also scored higher than did non-artists on measures of both neuroticism and psychoticism.

However, there are also scholars who have contradicted the alleged relationship between creativity and psychological fragility (Smith & Tegano, 1992; Workman & Stillion, 1974). In a sample of female college students, Smith and Tegano showed that creative individuals reported a more positive self-image than did the less creative. The more creative group exhibited better psychosocial adjustment, including more social competence and low scores on isolation and loneliness.

Workman and Stillion (1974) also found a positive relationship between ego development and creativity among college students: The more creative the students, the more advanced their ego development. Among Torrance's four dimensions of creativity, elaboration showed the strongest relationship to ego development and originality the lowest (with fluency and flexibility falling in between).

One question concerning these studies might be whether the participants were representative of the population or whether they constituted a selected group of well-adjusted creative individuals found among college students. Less conforming and less socially skilled creative individuals might not attend college.

The contradicting evidence concerning the nature of the creative person may cause us to reflect upon whether there are different creative personalities. Do, for instance, creative artists resemble creative scientists? Feist (1999) argued that there is some domain specificity regarding the creative personality. He showed that creative writers, painters and musicians were more often depicted as intuitive and emotional, but also as labile. They were more inclined toward intense affective experience than were creative scientists. Even if both groups contained nonconformists, creative artists scored below average on socialization and responsibility variables and were thought to be more actively nonconforming than were scientists. Scientists tended to be more conscientious and orderly than those in the artist group (Feist, 1999). Other scholars have also indicated that there are different types of creative personalities (Ryhammar, 1996; Carlsson, Amnér & Smith, 2000). Ryhammar (1996), for example, maintained that there is one introvert and one extrovert type of creative individual.

Gender Differences

Very little evidence has been produced supporting the notion of gender differences in creativity. Most gender comparisons have been performed with tests of divergent thinking. But these have led to few indications of differences as regards the creative process. Neither do creative women seem to be very different from creative men as regards their personality (Baer, 1999).

Another way of comparing the sexes is to count the number of individuals who have managed to produce substantial *creative products* within different domains in society. In this kind of comparison men tend to be favored. However, the fact that men are more represented among famous artists, writers, scientists and inventors does not prove that men are more creative. It may only show that the products acknowledged by the field – that is, by the people who impact the field through their evaluation and selection of new ideas – are predominantly produced by men. In addition, it is still more accepted for men to disregard their families in order to develop in a career, which might be a condition facilitating creative achievements (Baer, 1999; Reis, 1999). Another explanation given is that some creative women do not use their creativity in a profession but in their relationships with family and friends (Helson, 1999), thus producing less conspicuous creative imprints.

Few gender differences have been found among children (Baer, 1998, 1999; Rejskind, Rapagna, & Gold, 1992). Those differences detected are ambiguous. Tegano and Moran (1989) demonstrated that, by third grade, boys exhibited more *original thinking* than did girls.

Based on their overview of the literature, Rejskind and collaborators (1992) maintained that girls were somewhat more creative than were boys (see also Baer, 1999). However, Rejskind and associates' own investigation showed no gender differences. Torrance and Allioti (1969) contended that, by fourth grade, girls surpass boys on verbal tests and elaboration in figural tests, whereas boys surpass girls on figural originality. These conditions were supported by their empirical data.

Some scholars have indicated that there may be gender differences as regards the influence of the *context*. For example, Baer (1998) showed that particularly girls' creativity was nega-

tively affected by evaluation and competition, whereas boys' creativity increased in the presence of these kinds of extrinsic motivation.

The Creative Product

Another way of studying creativity is by looking at individuals' creative products. Creative products can be defined as useful, original products that actually come to use (Martindale, 1989). However, it is important to stress that the word product may be interpreted in its widest meaning. A therapy session (May, 1975/1994) or a playful interaction between an adult and a child can also constitute a creative product.

There are many ways of testing creative products, even if most scientific tests only give rise to products in a more limited sense, such as drawings or short stories produced in an experimental setting (Hennessey & Amabile, 1988; Torrance, 1965; Urban, 1991). Critique has been directed toward the kind of measurements that give artistically talented individuals an advantage over the non-artistic (Amabile, 1996). One way of coming to terms with this problem is to let the participants make collages from the same set of materials. Amabile has developed such a collage-making test for measuring creativity. Together with Hennessey she has also constructed another creativity test (Hennessey & Amabile, 1988), which has its starting-point in story-telling. In this test, participants were asked to finish a story.

Another issue to ponder about is whether destructive creativity also exists. Most scientific efforts have been aimed at capturing creative products with the goal of solving problems. But also creativity with a negative end, such as the intent of doing harm, can be original and useful for the individual. Clark and James (1999) described how an employee who had been fired retaliated. Before leaving the workplace, the man erased important information on magnetic tapes by walking past them with a powerful electromagnet hidden in a rucksack. His deed could never be proven. Negative creativity could also comprise ingenious ways of stealing from a company without being detected, or attempts made by companies at evading taxes or

regulations (Clark & James, 1999). Thus, one challenge for organizations and for society as a whole is to encourage creativity thought to have positive ends and to discourage creativity thought to have negative ends. By quoting Groos, Vygotskij (1930/1995) also accentuated the role of the environment by pointing out that if a teacher: "wants to develop the precious gift of creative imagination in a proper way, then he is brought up against the difficult task of domesticating a wild, easily scared thoroughbred horse and getting it into the habit of serving the good" (p. 45).

The Creative Environment

The study of the creative environment stresses the fact that "any inventor, even a genius, is always a plant growing in a certain time and environment /.../. In this way, strictly speaking, no single invention becomes individual, remnants of an anonymous cooperation will always be lingering in it" (Vygotskij, 1930/1995, p.37). Scholars within this field of creativity have identified stimulants and inhibitors of creativity. The modern society, for certain, is in great need of flexible and creative individuals. The environments of both schools and companies should hence be places where individuals' creative potentials are encouraged.

Workplaces that are perceived as creative are often distinguished by openness, freedom, support for ideas, liveliness, positive debate climate, and playfulness (Ekvall, Arvonen, & Waldenström-Lindblad, 1983). Amabile, Hill, Hennessey, and Tighe (1994) emphasized similar characteristics as being indicative of a creative workplace – characteristics such as freedom, challenge, adequate resources, appropriate supervising, recognition, cooperation and creative support. Amabile and collaborators also identified obstacles to creativity: time pressure, evaluation, status quo, and political problems.

Amabile and colleagues (1994) have also constructed the Work Preference Inventory, which measures the creative environment. Another well-known measurement of the creative environment, called GEFA, was constructed by Ekvall and associates (Ekvall et al., 1983).

Another type of research has investigated how the school environment influences creativity. Hennessey and Zbikowski (1993) asserted that intrinsic motivation is crucial for creativity, while extrinsic sources of motivation, such as rewards, often merely deteriorate the creative quality. Also, knowing that the products one is creating will be evaluated results in reduced creativity. Depending on how teachers encourage children, they can either become motivated or actually lose interest in creative tasks. However, extrinsic motivation can in some ways stimulate creativity, depending on how the reward is perceived. If the reward is appraised as a bonus and not a constraint, it can be part of encouraging creativity. Individuals must not feel forced to achieve, because if they do, the reward will have a negative effect. Other problematic environmental constraints are time limits, surveillance, and competition (Amabile, Hennessey, & Grossman, 1986). However, children can be taught to resist the negative effect of reward through "immunization training", which basically means helping a child to maintain intrinsic motivation and to ignore rewards (Hennessey & Zbikowski, 1993).

Many other scholars have identified fundamental aspects of a creative school environment (Cornelius & Casler, 1991; Torrance, 1965). Cornelius and Casler maintained that classrooms do not typically acknowledge children who have new ideas. Behaviors that can be associated with creative individuals, such as daydreaming and fantasizing, are frowned upon. But imagination can be used as a resource in school. Children need to be given time to manipulate information, ask questions, draw pictures, tell each other stories, and engage in dramatic play. In this manner, they will assimilate the information in a more meaningful and long lasting way. Imagination needs to be stimulated by questions that promote divergent thinking (Cornelius & Casler, 1991). However, most teaching is still designed to promote convergent modes of behavior. Teachers ask mostly factual convergent questions.

Teachers' notions of what constitutes creativity are not always in accordance with definitions generally used in creativity research. For instance, Westby and Dawson (1995) demonstrated that at least half of the teachers in their study did not consider a trait such as *divergent thinking* to be creative. If teachers do not recognize creativity, they certainly cannot en-

courage it. They might even unknowingly extinguish creative behavior, causing creative pupils to feel less confident.

Cornelius and Casler (1991) concluded that it is important to support and encourage children's own ideas and not to judge them. The classroom climate should be tolerant in nature.

Eclectic Models

Some theorists have attempted to broaden the concept of creativity by combining aspects of the four fields of creativity (Amabile, 1996; Csikszentmihalyi, 1990; Sternberg & Lubart, 1999). One example of such an eclectic theory is provided by Amabile (1996), who asserted that creativity is a combination of intrinsic motivation, domain-relevant knowledge and abilities, and creativity-relevant skills. Creativity-relevant skills involve coping with complexities, being able to generate ideas, and having the ability to focus on an issue for a long time.

Another example is Csikszentmihalyi's (1990) approach to creativity, which does not focus on the self-features of creative persons, but instead has its starting-point in their experience. He argued that flow could be experienced in tasks where individuals use their full capacity at the same time as they feel challenged by the task. Csikszentmihalyi (1990) also emphasized the interaction between the individual, the domain and the field. Individuals create within a special domain. The field comprises those people who influence the domain through their evaluation and selection of new ideas.

A third example of an eclectic approach is Sternberg and Lubart's (1999) *investment theory of creativity*, which uses an analogy from economics to explain creativity. In order to " 'buy low and sell high' in the realm of ideas" (Sternberg & Lubart, 1999, p. 10), that is, in order to believe in unpopular ideas and their potential for development, the creative person requires a combination of six different resources: (a) the intellectual ability to see problems in new ways and to convince others of the value of one's ideas, (b) appropriate knowledge, (c) different flexible styles of thinking, (d) a creative personality, (e) task motivation, and (f) an encouraging environment.

Development of Creativity

Many scholars have discussed the developmental course that underlies creative ability. Vygotskij (1930/1995) believed that creativity and imagination, or as he designated it the *creative imagination,* have a line of development of their own (see also Ayman-Nolley, 1992; Smolucha, 1992). Vygotskij asserted that the creative imagination is not at its most fertile in childhood, but that it gains increasingly higher potential the more experience we gain. Moreover, in order for us to use it creatively, we must have attained a certain level of intelligence. A balance between intelligence and the creative imagination is not reached until pre-puberty. However, there are individual differences. For some people, reason is developed at the expense of imagination, while for others reason and imagination coexist and influence each other. The last-mentioned relation between reason and imagination would then, according to Vygotskij, be a prerequisite of a more creative manner of functioning. School certainly has an important role in assisting children with not only the development of rational thinking, but also the development of imagination/creativity; such an approach would give children an opportunity to achieve a good balance between rationality and creativity.

Although Piaget's (1951/1967) main area was not creativity, Ayman-Nolley (1999) maintained that Piaget contributed to it. In some ways, the Piagetian conception of the development of creativity is similar to Vygotskij's (1930/1995) theory. Piaget also purported that creativity was not fully developed until it was integrated with other aspects of thought. However, Piaget distinguished symbolic thought from logical thought and saw symbolic play merely as a preparation for an imaginative aptitude, not for logical thinking. Today, imaginary play is considered to contribute to cognitive development in various ways (Singer & Singer, 1992); this notion will be discussed below.

According to Smith and Carlsson (1990), and as shown by test results from their perceptually based Creative Functioning Test, one of the prerequisites of creativity is the ability to distinguish between subjective imagination and the real world, that is, to have obtained what, in psychodynamic terms, has been called object constancy. The ability to recognize what the

stimulus picture represented when shown at a fairly long exposure time was the indication of object constancy. The authors asserted that most of their participants between four and five years of age did not give a correct report, and accordingly were not creative in their meaning of the term. However, much research has shown that construction of an internal representational world begins as early as at the age of two (Harris, 2000; Leslie, 1987; Singer & Singer, 1992), and that differentiation between reality and imagination is possible around the age of three (Flavell, Flavell & Green, 1987). Nevertheless, Smith and Carlsson's conclusion that the creativity of preschool children is not fully developed may still hold. Creativity probably requires cognitive abilities that are not fully developed in the early years. As discussed above, also Vygotskij (1930/1995) maintained that mature imagination is a prerequisite of the generation of creative products, something which occurs during adolescence. According to Smith and Carlsson, sufficient cognitive ability for achieving creativity detectable with CFT has been attained just before school start, which in Sweden at the time of their study took place at the age of seven. However, school entrance has a negative effect on creativity, which does not peak again until around the age of ten (Smith & Carlsson, 1990; Torrance, 1965). Johnson (1985), who propounded a U-shaped developmental curve for creativity, asserted that the decline depends on the shift between concrete and formal operational thinking and takes place at eight or nine. Smith and Carlsson's developmental line undulates, with a second slump during the chaotic early years of adolescence. This decline was suggested to depend on the energy demanding identity formation process. However, other scholars, for example Vygotskij, have argued that the creativity trajectory is continuously ascending, at least for those individuals who could combine logical reasoning and imagination.

Another aspect of creativity at the age of ten is the increasing self-awareness that makes children more critical of their own creative products (Vygotskij, 1930/1995; Singer & Singer, 1992). Gardner (1980) claimed that, at this age, there also occurs a shift from a stage where children have pictures as their main emotional mode of expression, to a stage where linguistic expressions in speech and writing prevail.

Some researchers have contributed to the study of creative development by examining the development of remarkable creative individuals, such as Martha Graham and Pablo Picasso (Gardner, 1983/1993). Gardner demonstrated the similarities, in different areas, of seven famous creators and identified some possible prerequisites of creative prodigies. For example, they had all shown early cognitive precocity within the domain they later excelled in. They grew up in neither rich nor poor families and had difficulties in establishing deep emotional relationships, even though they all had at least one significant person who helped and supported them in their work, but for this person the relationship was not equally beneficial. Feldman (1999) distinguished between universal development and nonuniversal development. There are some developmental steps that all humans take and other steps that perhaps are indicative of particularly creative individuals.

The Personality of Creative Children and Adolescents
As regards research on creativity and self-image in children and adolescents, the findings are, just as for those concerning creative adults, rather contradictory. On the one hand, according to the humanistic creativity concept, the creative individual is a healthy self-actualizing person with a positive self-image (Maslow, 1971; Yau, 1991). According to Yau (1991), only persons with genuine self-confidence have sufficient courage to delve into their subconscious to find material that will inspire their creative functioning. To nurture creativity in children, a true inner security must be developed, and this is accomplished through unconditional parental love. However, the humanistic psychological theory has been criticized for its one-sided view on motivation. Some frustration and deprivation can in fact motivate self-actualization and do not fly in the face of healthy psychological development (see Neher, 1991 for a discussion). Nevertheless, some creativity results have been presented that dispute the relationship between creativity and behavioral disorders. One study with 12- to 15-year-old children showed no relationship between creativity and social problems, aggressive behavior, or somatic complaints (Gallucci, Middleton & Kline, 1999). There are also studies showing that shy and socially less

competent children (so-called invisible children) are less creative than average children (Byrnes, 1983).

On the other hand, there are studies reporting that creativity is not associated with academic performance (del Pilar Gonzalez Fontao, 1997). There are also researchers that have presented a more complex picture of creative individuals. Creative high-school students are self-confident and autonomous, but they are also reported to be labile, exhibitionistic, and aggressive, as well as less orderly (Schaefer, 1969b). Moreover, they have less self-control and endurance as compared to the controls. In the school setting, characteristics such as these can make school-work complicated. Westby and Dawson (1995) explained why many creative children do not function well in school. First, they do not always solve school tasks as they are instructed to, but solve them in their own original way. Second, particularly imaginative children do not always pay attention to what their teachers say, but become absorbed in their fantasies. Finally, according to Westby and Dawson, these children, as compared to their peers, are more impulsive and critical of others.

Disadvantaged primary school children have been shown to be more creative in figural fluency but to score lower in verbal creativity as compared to their peers (Richmond & Norton, 1973; Dawson, D'Andrea, Affinito & Westby, 1999). Dawson and associates demonstrated that teachers mostly tend to recognize verbally creative children who also are described as more well functioning compared to the figuratively talented. Furthermore, it has also been proposed that imaginativeness, as a self-feature, is linked to creativity (Singer & Singer, 1992).

Imagination

Imagination is a human capacity that enhances our lives in many different ways. In the realm of imagination, we reconstruct our past, plan our present, and daydream about our future (Singer & Singer, 1992). "Imagination is casting off mooring ropes, taking one's chances that there will be new mooring posts in the vastness ahead" (May, 1975/1994, p. 120). Freud

(1911/1986) suggested that we are partially freed from drive pressure through this capacity, which he called trial action.

Many authors discuss the elements in early childhood that are necessary precursors of creativity and of the development of imagination. Singer and Singer (1992) proposed three kinds of important prerequisites of imaginativeness. First of all there is a need for an *imaginative special person* who sanctions children's curiosity to explore and elaborate the possibilities of fantasy play. This person could be a parent, sibling, aunt, uncle or teacher who tells fantastic stories or encourages imaginative play. Apart from a special person, children also need *a place* where they can play and *enough time* to indulge in their inner adventures. Some children construct hiding places for their imaginative purposes, such as tents made out of bedclothes at bedtime. Time spent alone is also necessary (Singer, 1961) – time during which the imaginative games can be repeated and elaborated into fantastic wholes. Finally, different kinds of props are often important for the development of fantasy. For most children, *books* read by a loving adult constitute such a prop. Through books, children conquer the world. Children who are acquainted with books discover places far away, mysterious events, history, myths, foreign cultures, and experiences far exceeding what is possible for a young child to have had. For other children a *pet* can inspire imaginary play. A pet is not only someone to care about, but may also be a good friend (Singer & Singer, 1992).

Imagination versus Logical Thought and Reality

Freud (1911/1986) assumed a hierarchical relation between imagination and rational thought. He labeled them *primary* and *secondary process thinking*, where primary process means direct expression of basic wishes and impulses found in dreams and daydreams, and secondary process involves orderly, rational and logical thought and is connected to the function of postponing drives in order to obtain long-term satisfaction. Primary process is more childlike and immature and adult cognition is, in Freud's view, generally characterized by secondary process thinking. Primary process thinking used by adults is considered

a regression and a maladaptive defense mechanism, unless in the service of artists and writers for whom primary process use is socially acceptable.

Several theorists (Bruner, 1986; Singer & Singer, 1992; Vygotskij, 1930/1995) have objected to the hierarchical ordering of these thought processes and suggested that they should be regarded as different but equal. Bruner (1986) termed the different processes *paradigmatic* and *narrative* modes of thought or understanding. The paradigmatic kind of thought is logical, sequential and often formulated in verbal forms. This mode seeks the truth and is in one way or another falsifiable. The narrative mode, on the other hand, might be communicated to others in a series of sequential statements, but is mostly experienced as bursts of images, usually visual or auditory. It is expressed as a story and emerges in fantasies and dreams, but also in the form of episodic or event memories. According to Bruner, the objective of narrative thought is not truth but verisimilitude or life-likeness. Both these modes of thinking are needed to organize our experiences into believable stories, even though in Western countries paradigmatic thought is emphasized over narrative thought.

Vygotskij (1930/1995) considered it a mistake to distinguish between imagination and reality because they are interdependent. All the elements that the imagination uses can be traced to reality. The elements are simply combined in ways not found in reality. Moreover, we may often be in need of imagination when we increase our bank of knowledge or experience (reality) by way of picturing things – in order to grasp abstract knowledge or historical events. Furthermore, according to Vygotskij, there is no opposition between imagination and science, since new hypotheses develop in the imagination.

Another way of partitioning cognitive processes is Winnicott's (1971/1995) tripartite model, which includes the inner sphere that comprises daydreams and the outer realistic sphere. The third sphere is the transitional sphere, which constitutes a combination of the two first. In the transitional sphere, play (and creativity) occurs. Winnicott maintained that we continue to play as adults as well, through appreciating the fine arts and in various creative expressions. Playing is therapeutic and the

transitional or play sphere is a resting place between one's internal and external world. Pruyser (1983) emphasized that all three spheres remain throughout life.

Imaginary Play

The role of imaginary play in helping children to develop harmoniously has been highlighted by many researchers (Singer & Singer, 1992; Vygotskij, 1930/1995; Watson, 1990, 1994). For example, scholars have shown a relationship between pretend play and creativity (Dansky & Silverman, 1975; Russ, 1993). Russ also contended that pretend play is important for the development of creativity because creativity and play have cognitive and affective processes in common.

Imaginative play appears toward the end of the child's second year of life (Fein, 1981). Earlier developmental scholars, such as Piaget, asserted that imagination was mostly indicative of the pre-operational phase of childhood, that is until six years of age, and that operational thought took over during the school years. Singer and Singer (1992) contended that imagination is partly submerged by increasing social pressure and the new demands put on children by school. However, the development of internal speech goes on. Make-believe play often continues as internalized fantasy activity. This internal world is no less imaginative than the external games of make-believe of younger children (see also Dilalla & Watson, 1988). On the contrary, it provides great opportunities to imagine situations, such as heroic deeds and secret romances, impossible in external reality (Singer & Singer, 1992). Even if the amount of time spent fantasizing decreases in adulthood, the urge for imaginative play may well continue throughout the life span.

In *Homo Ludens,* Huizinga (1950) described the historical importance of play in human society. Much in adults' behavior can be understood as a continuation of children's play, for example, game-like rituals and cultural activities, something also claimed by Winnicott (1971/1995).

Many assumptions about play have been called into question. Freud (1920/1986) interpreted children's delight in repeating the same play behavior over and over again as an in-

stance of repetition-compulsion. This play behavior is currently being explained in terms of Tomkins' (1962) affective and motivational model. Most kinds of play comprise situations of challenge, novelty, or incongruity. Play interactions between self and others often result in a, to some degree, reduced level of novelty or incongruity that evokes feelings of joy, which in its turn motivates a repetition of the behavior to experience further challenge and reduction of incongruity. Peekaboo or hide-and-seek are examples of games that create such a challenge at the moment someone disappears and joy when the person is visible or found again. In this way, children develop schemas for establishing the knowledge that temporarily disappearing objects will be available and intact again. Repetitive play helps other aspects of cognitive development besides perceptual-motor learning through the practice involved in repetition (Singer & Singer, 1992).

Piaget's (1951/1967) rather one-sided description of play has also been revised. He seldom mentioned the affective side of play. Piaget saw play as a base for adult knowledge and reasoning (Harris, 2000; Singer & Singer, 1992). Piaget contended that sensory-motor play involves practice of functions, such as reaching and grasping and differentiation between textures. Through rule play children practice mastery of operational thought and moral thinking. Piaget was of the opinion that mature (or operational) thought only involved formal sequential thought processes, similar to Bruner's (1986) concept *paradigmatic thought*. What Bruner called *narrative thought*, comprising pretend and symbolic play, did not, according to Piaget (1951/1967), have any significance for most individuals. Piaget even asserted that "in a general way it can be said that the more the child adapts himself to the natural and social world the less he indulges in symbolic distortions and transpositions, because instead of assimilating the external world to the ego he progressively subordinates the ego to reality" (p. 145). Moreover, in contrast to Piaget's assumption that pretend play is an expression of children's egocentricity, today's researchers show how pretend play is often collaborative, that is, a shared pretense (Harris, 2000). According to Sutton-Smith (1966) and Bretherton (1984), Piaget did not realize the importance of pretend play as a source of mature adult imagery and as a precursor of

playfulness in thought and of the fantasizing that also adorns adult experience and may lead to creativity. However, other scholars (e.g., Ayman-Nolley, 1999) have asserted that Piaget did have his own creativity theory.

Singer and Singer (1992) argued that imaginary play constitutes a cornerstone of healthy development. They maintained that "those who fail to infuse play with pretend or symbolic meaning may not only be missing some additional fun but may also be handicapping their growth in certain cognitive and social directions" (p. 43).

The Benefits of Pretend Play

Singer and Singer (1992) discussed how children can benefit from make-believe play in a multitude of areas and how adults can promote such play. They demonstrated how imaginative play may assist children in their maneuvering of three basic human motives: to organize and integrate schemas about the world, to develop motor skills, images, and feelings of autonomy, and to obtain a sense of trust and reception of love from caretakers. These motives drive children to explore and play.

Piaget (1951/1967) argued that imagination in itself could not be conceived of as a faculty that should be developed. He meant that when symbolic imagination decreases other more realistically adapted representational tools would replace it. Today, scholars are in agreement that the ability to represent is developed through imaginary play. For example, Leslie (1987; se also Taylor & Carlson, 1997) outlined the special role of pretend play in children's development of a *theory of mind*. Theory of mind implies that children have some understanding of their minds, such as the insight that mental entities are separated from physical. It also refers to the ability to understand other people's mental states. Leslie maintained that an important step of development is when the representations of actual objects and persons are distinguished from metarepresentations of the same objects and persons. Through pretense, the metarepresentations can be manipulated in different ways. In pretend play one object often represents another. A stick can become a horse. According to Leslie, children distinguish between what the object (a stick) really is and its pretense identity (horse). Theory of mind also means that individuals have the ability to

modify metarepresentations in order to draw conclusions about causality, to make predictions about the future and to distinguish reality from fantasy. Make-believe play is thus an early manifestation of a metarepresentational ability (Leslie, 1987).

Many *different cognitive skills* could be supported through make-believe play. Children learn not only to name objects, but also to form sentences by linking objects with actions. They create event schemas about what they may expect from others in different situations. They form schemas of being tucked into bed, going to the movies, having visitors and so on. In fantasy play children also practice how to solve problems - both in convergent and divergent ways (Singer & Singer, 1992). Some scholars have shown that pretend play contributes to the development of a richer and more complex language use (see Singer & Singer, 1992). There is also research evidence demonstrating that children's impulse control, waiting ability and emotional expressiveness are improved by pretend play (Singer, 1961; Singer & Singer, 1992). However, other scholars have not been able to show an effect of pretend play on cognitive development (see Fein, 1981 for a review). One reason for the lack of evidence is pointed out by Watson and Fischer (1977), namely that exact correspondence between play and other developmental domains is unlikely since development does not necessarily occur evenly across different task domains.

Many scholars have emphasized the link between imaginativeness or pretend play and creativity (Russ, 1993; Vygotskij, 1930/1995). Vygotskij asserted that children can experience creative processes early through their play, for example "the child who straddles a stick imagining that he is riding a horse" (p. 15). Vygotskij argued that even though instances of imitation are present in children's play, this is not simply a recollection of past experience but a creative reconstruction. The positive effects of pretend play on the development of creativity have been demonstrated by, among others, Dansky and Silverman (1975). They found that children scored higher on divergent thinking tasks if they had been given opportunities for pretend play before being tested. A relationship between having imaginary companions and being creative has also been demonstrated (Schaefer, 1969a).

There are studies showing that it is fairly easy to stimulate children to engage in make-believe play (Freyberg, 1973; Saltz & Brodie, 1982). Freyberg exposed disadvantaged kindergarten children to about two hours training in pretend and sociodramatic games led by an adult. After the training session, the experimental group doubled their spontaneous pretend play, whereas the control did not change their play behavior substantially. Although training results are easily obtained, little is known about the duration of pretend play training (Fein, 1981).

According to Singer and Singer (1992), television could be a source of inspiration for children's pretend play; however, they specified this to programs adapted to the needs of different age groups. In contrast to this, they have also demonstrated that indiscriminate television viewing may inhibit children's development of imagination. Furthermore, watching a filmed version of a story is less helpful in developing imagination than is reading the same story in a book, because little or no mental elaboration is required in a filmed version.

Imaginary Companions

Some imaginary companions have become world famous. For example, A. A. Milne's (1969) "Winnie the Pooh" and "Hobbes" in the cartoon Calvin and Hobbes by Bill Watterson. A third example is Piaget's (1951/1967) daughter's "Oiseaux", which is described in *Play, dreams, and imitation in childhood.* Additional examples comprise two entirely imaginary worlds, namely the countries of "Angria" and "Gondal" created by the Brontë children (Cohen & Mackeith, 1991). Charlotte and Branwell constructed "Angria". Anne and Emily had "Gondal". They documented their worlds in poems, fables and chronicles. It is not uncommon that writers and artists have had imaginary companions as children. Myers (1979) even argued that adult creative products may draw inspiration from imaginary companions in childhood.

However, ordinary children also create these fantastic companions and worlds. At some time during their childhood, about 60% of all children have had an imaginary companion (Singer & Singer, 1992; Taylor, 1999). There is a gender difference. Girls

are more likely to have imaginary companions. Many children have imaginary companions for some months as early as at the age of three, and may not remember them as adults. Others keep their companions for years, a small part even well into adolescence (Seiffge-Krenke, 1997). Most studies are based on either parental reports of preschoolers' companions or retrospective reports of adolescents' and adults' former companions. Very few studies have focused on middle childhood when investigating imaginary companions.

Investigating imaginary companions might be one way of learning more about the imaginativeness of different age-groups. A possible relationship between a creative disposition and having or having once had an imaginary companion has been discussed by several researchers (Myers, 1979; Somers & Yawkey, 1984). However, the relationship has only been systematically scrutinized in a few studies: In a study by Schaefer (1969a), high-school pupils who had once had imaginary companions were found to be more creative. No creativity differences were found in 5-year-old children with and without imaginary companions (Manosevitz, Fling, & Prentice, 1977).

Normal development includes the task of learning to distinguish between reality and imagination. The question of whether intense involvement with imaginary companions stimulates or inhibits this developmental task has been discussed for a long time. A recent study found no differences between preschool children with and without imaginary companions as regards their ability to maintain the boundary between reality and fantasy (Bouldin & Pratt, 2002). Other researchers have purported that imaginary play might promote the ability to distinguish fantasy from reality, that is, one aspect of theory of mind (Fraiberg, 1959; Taylor & Carlson, 1997). Fraiberg argued as follows:

> We can see that the imaginative play of children serves mental health by keeping the boundaries between fantasy and reality. /.../ There is great misunderstanding today about the place of fantasy in the small child's life. /.../ The notion has got around that imaginary companions are evidence of "insecurity," "withdrawal" and a latent neurosis. The imaginary companion is supposed to be a poor substitute for real companions and it is felt that the unfortunate child who possesses them should be strongly encouraged to abandon them in favor of real friends. Now, of course, if a child of any age abandons the real world

and cannot form human ties, /.../ we have some cause for concern. But we must not confuse the neurotic uses of imagination and the healthy, and the child who employs his imagination and the people of this imagination to solve his problems is a child who is working for his own mental health. /.../ Moreover, it can be demonstrated that the child's contact with the real world is *strengthened* by his periodic excursions into fantasy. It becomes easier to tolerate the frustrations of the real world and to accede to the demands of reality if one can restore himself at intervals in a world where the deepest wishes can achieve imaginary gratification (pp. 22-23).

In addition to providing mental health and helping children with the distinction between reality and imagination, imaginary companions may serve several important functions, such as, providing comfort or company as well as being "someone" to nurture, idealize, or project bad features onto (Harter & Chao, 1992; Nagera, 1969; Singer & Singer, 1992; Taylor, 1999).

Middle Childhood

Children's thinking in one age group is different from that of others and different from the thinking of adults. However, the situation in which the thinking occurs also affects the child, a fact emphasized more and more (Garbarino & Stott, 1992). It has been claimed that Piaget (1968) exaggerated the difference between children of different stages and that a gradual shift would be a better way of describing development (Donaldson, 1979; Harter, 1998). In addition, children's functioning at each level of development will vary across different domains (Harter, 1998), as well as across situations and depending on cultural context (Laboratory of Comparative Human Cognition, 1982). Still, there are some features more indicative of each age group, also of middle childhood, which signifies children between six and twelve.

Many psychologists have theorized about middle childhood. According to Freud (1905/1986; 1926/1986), psychosexual activity declines during this period, therefore the label latency. This term has lately been questioned as sexual curiosity does not decrease and development in other aspects, such as self, thinking and relationships to others, does not plateau (Havnesköld & Risholm Mothander, 2002).

Piaget (1968) termed the period the *concrete operational stage,* implying that a new level of thinking is reached that allows the child to make logical conclusions on a higher level and to appraise the perspectives of others – to abandon the egocentricity of preschoolers. However, Piaget's ideas on these matters have also been revised, as it has been demonstrated that children can both be logical and take the perspective of others in early years (Donaldson, 1979). Still, these aspects are more indicative of children in middle childhood than of younger children. Another feature that Piaget (1951/1969) highlighted was moral development, which is manifested in, among other things, rule play.

According to Kohlberg (1981), children in middle childhood have reached a level where authorities are obeyed and the rules of individuals considered powerful are often taken as definite and inviolable. This moral level also demands the ability to understand other individuals' opinions and perspectives. Children develop self-ideals and expectations of being capable of living up to these standards (Higgins, 1989).

Erikson (1950/1977, 1959/1980) pointed out that school plays an important role for children during this phase. Depending on how children perceive their competence, feelings of industry or inferiority will result. By this age, children begin to understand that people do not have equal opportunities in life. Erikson also mentioned the increasing social influence in middle childhood. Being accepted by the group and the significance of peer opinions have lately been accentuated by theorists who maintained that these aspects may give rise to a 9-year crisis, in particular for those children who feel different from other children for some reason (e.g., Högberg, Lagerheim & Sennerstam, 1986). In addition to age-mates, also non-parental adults become increasingly important during these years.

All these theories contribute to the description of the period. However, there are other aspects of middle childhood that these theorists did not emphasize. One example is the emotions of children. Children below six mostly experience basic affects, such as happiness, anger, fright, sadness and shame, whereas older children's emotional repertoires also include pride, envy, gratefulness, and guilt (Harris, 1995). By the age of ten, children can also appraise feelings such as respect, relief, and dis-

appointment. According to Harris, the social emotions developed in middle childhood are linked to the ability to understand personal responsibility, morals and social norms. Children are also more sensitive to the emotional states of others. They feel proud if they do good things and guilty when they have hurt someone. Another example of an aspect that older psychologists have ignored is that, during middle childhood, imaginary play is transformed into a less conspicuous internalized form (Singer & Singer, 1992), an issue dealt with in an earlier section. Sarnoff (1987) maintained that children go through a shift to a new level of symbolization, which comprises the use of imagination to regulate children's feelings concerning their selves.

The Self

Children between six and twelve years of age have more integrated self-images than do younger children, which implies, for example, that school children can appraise both positive and negative sides of themselves (Garbarino & Stott, 1992, Harter, 1998). They regulate their self-value more and more independently and they have become less vulnerable to minor slights. The impact of praise is selective, as the experienced value of the praise depends on what is being praised.

Self-representations (or self-image) and global self-evaluations (or self-esteem) may be distinguished such that self-representations constitute self-features that are consciously and linguistically appraised by the individual, that is, how one describes oneself (Harter, 1999). A global self-evaluation is defined as a "subjective value judgment that a person makes about his or her personal worth" (Garbarino & Stott, 1992, p. 20). It includes a combination of thoughts and feelings toward the self as well as the experience of coherence and well-being. The child with high self-esteem more often has positive feelings, such as pride, self-assurance and pleasure, whereas the child with low self-esteem is prone to doubt, shame and sadness.

There is, of course, a connection between self-image and self-esteem. In order to develop self-esteem, the individual must perceive that she or he succeeds frequently enough and must

regard her-/himself as a competent individual (Lidén & Hedenbro, 2000).

Harter (1998) maintained that it is not until middle childhood that children can make meaningful and reliable judgments about their self-worth, as this requires the cognitive ability to form higher-order concepts. These concepts enable children to ascribe trait labels to themselves, which implies an integration of different specific features of the self, such as the higher-order generalization that a child perceives herself or himself as smart, including being good both in Swedish and in History. In addition, from middle childhood and onward, the self-image concerning competence in a specific domain is much in accordance with actual performance in that domain, which also is an indication of the child's ability to see herself or himself from the perspective of others (Andersson & Linge, 1997; Ouvinen-Birgerstam, 1985/1999).

In the process of establishing a more stable self-concept, a new form of vulnerability may evolve (Kegan, 1982). Through the ability to appraise oneself in dispositional terms, an awareness of the permanence of one's problematic features also comes (Harter, 1998; Higgins, 1987). The fact that children begin to compare themselves with others also has some complications. Due to the importance of experiencing school competence, children with learning difficulties in particular, might have problems with self-esteem regulation during these years, something that may lead to depression, anxiety, and lowered self-esteem (Garbarino & Stott, 1992) – or a nine-year crisis (Högberg et al., 1986).

Kegan (1982) maintained that a new self-concept in relation to society develops in middle childhood. At around nine years, children realize that the core self-image they have created will have to be reconsidered constantly in the interaction with others. They also understand that not only do they themselves construct their worlds, but also others could construct their worlds from various perspectives (Havnesköld & Risholm Mothander, 2002).

A general fact concerning self-measurements is that positive self-evaluations or self-images are closely linked to psychological well-being. Individuals with poor psychological health sel-

dom feel contented with themselves and often express a negative attitude about their own person, thus have a negative self-image (Ouvinen-Birgerstam, 1985/1999).

Illusion, Coping and Defense

Coping involves children's efforts to handle problems, frustrations, threats, and challenges. Coping is used for managing the environment and inner tensions (Garbarino & Stott, 1992; Lazarus & Folkman, 1984). According to Garbarino and Stott, coping can be both conscious and unconscious. Unconscious coping is often denoted as defense mechanisms and exists to defend against anxiety, to enhance the self, or to make healthy adjustment in the service of maturation and growth (Cramer, 1991, 2000). According to some researchers, the distinction between conscious and unconscious defense is not justified (Erdelyi, 2001; Newman, 2001).

Some common defense mechanisms presented by Freud (1936/1961) were denial (refusing to admit), regression (going backwards in development), repression (forgetting), projection (ascribing one's bad self-features to someone else), sublimation (suppressing sexual impulses by engaging in activities such as work or hobbies) and identification (having a wish to be like someone else).

Some scholars have taken a developmental perspective on coping (Garbarino & Stott, 1992) and defense mechanisms (see overview in Cramer, 1991). During middle childhood, coping may involve focusing on the self (Garbarino & Stott, 1992). Research has shown that the use of denial decreases in middle childhood and that projection increases (Smith & Danielsson, 1982). Cramer demonstrated that the instances of identification also increased. Vaillant (1976) found that denial in fantasy was still actively used during middle childhood.

The classical opinion concerning whether defenses are adaptive was that, in adults, defenses such as sublimation, humor and altruism constituted healthy variants, whereas other defenses were considered maladaptive (Freud, 1936/1961).

However, the view of defenses as pathological has been dramatically changed. According to Cramer (1991), the defensive

manipulations of reality can help individuals move on in life. Temporary denial can alleviate the impact of negative experiences and make them more manageable. Throughout the life span, defense mechanisms can be a part of people's psychological well-being.

Recently, renewed interest in unconscious coping has arisen. Several of Freud's (1936/1961) defense mechanisms have been corroborated experimentally, however, under novel covers. Baumeister, Dale & Sommers (1998) related classical defense mechanisms with experiments within the field of social cognition. Cramer (2000) suggested that projection has been rephrased as attribution or the false consensus effect and denial as positive illusions.

Self-deceptive illusions have also been proposed to promote mental health (Taylor & Brown, 1999). Taylor and Brown enumerated three different kinds of such positive illusions: positive self-evaluation, exaggerated perceptions of control or mastery, and unrealistic optimism concerning one's possibilities (see also: Greenwald, 1980; Langer, 1975; Paulhus & Reid, 1991). These were considered to contribute to the ability to feel empathy, to be satisfied, and to engage in productive and creative work.

Children as Interview Informants

The reliability of children's self-reports is sometimes questioned. However, much research has emphasized that children can be trustworthy interviewees (see summary in Garbarino & Stott, 1992). Some scholars have argued that children at ten years of age have reached a developmental level where their verbal accounts are as reliable as adults'. Among other things, these children have developed the ability for logical and metacognitive thinking and have increasingly adult-like ways of communication (Andersson, 1998; Aronsson, 1996; Garbarino & Stott, 1992).

Younger children may have difficulties in answering truthfully. Expressed in Piagetian terms, 10-year-olds have acquired the concrete operational level of thinking and passed the preoperational period, in which children predominantly use practical

intuitive thinking (Piaget, 1968). However, with professional interviewers, children as young as three years of age can also provide credible accounts of their experiences (Aronsson, 1996; Garbarino & Stott, 1992). Piaget's notion that children have a confused conception of reality and pretense seems to be mistaken. Experiments have also demonstrated that children at the age of three are capable of distinguishing between what is real and what is pretense (Flavell, Flavell & Green, 1987; Taylor, 1999).

Concerning how to judge a child's capacity to give information, Garbarino and Stott (1992) considered that general age-specific knowledge could be used as a guide, but emphasized that children could either perform over or under their general ability depending on the situation. Some other factors that might also influence children's achievements are their self-esteem and motivation. An interviewer should try to motivate children without influencing the information they provide. The quality of the information is dependent on how children feel about themselves, for example, whether they feel competent. For an interviewer it is important to seek situations that maximize the child's opportunity to demonstrate competence. The more familiar the setting, the more valid the information. However, with more developed cognitive capacities and social consciousness, school-age children begin to resemble adults in the ways in which they function as informants. In middle childhood, children have become less likely to seek approval, are more capable of logical thinking and of using language for rational explanation. However, they have also become more competent at lying and at finding subtle reasons for doing so (Garbarino & Stott, 1992). Even so, Edelbrock, Costello, Dulcan, Kalas, and Calabro Conover (1985) found that the reliability of children's reports increased with age. 10-year-old children were trustworthier than 6- to 9-year-old children.

Aims of the Dissertation

The aims of the dissertation were:

(a) *To highlight creativity in middle childhood.* The dissertation aimed at acquiring more knowledge of this sparsely studied age-group by exploring 10-year-old children's solutions in a drawing task (Study I), their self-images (Study II), and the occurrence of imaginary companions (Study III) in relation to creativity. Imaginary companions were assumed to be a natural creative phenomenon. The intention was also to investigate the self-images of children with imaginary companions (Study III).

(b) *To compare different tests of creativity.* In Study I and II, the intention was to investigate whether different tests of creativity capture the same aspect of creativity.

(c) *To approach the study of creativity from children's point of view.* Study I included the intention to learn more about 10-year-old children's subjective notions in relation to a drawing task. Would it be possible to discern any intentionally used subjective features in the children's solutions (drawings) in a creative task by asking about their sources of information? The intention of Study IV was to explore the variation in imaginary companions in general and to identify different functions that imaginary companion may have for the child.

(d) *To detect possible gender differences.* All studies included an intention to investigate whether there were any gender differences.

❧ Method ❧

In this project, a variety of measurements and methods were employed. Established and newly developed quantitative measurements as well as a qualitative interview method were utilized to investigate creativity in middle childhood from different perspectives.

On what epistemological and ontological bases can qualitative and quantitative methods be combined? According to Guba and Lincoln (1994), four main paradigms can be discerned in social science: positivism, postpositivism, critical theory and constructivism. The positivists argue that there is one objective truth or reality to be sought (realism), while the critical theorists and constructivists claim that there are many truths depending on what kind of context individuals belong to (relativism). The postpositivists maintain that an absolute truth never can be captured, but scholars should try to come as close as possible (critical realism; Cook & Campbell, 1979).

There is a dispute between advocates of the different paradigms. Qualitative research embraces an underlying critique of positivistic claims of establishing a value-free objectivistic science (Carey, 1989), while positivists contend that qualitative efforts are subjective and do not stand up to their high standards of validity, reliability, and generalizability. Positivists consider qualitative projects as having pilot-study status at the best (Denzin & Lincoln, 1994). Another difference between the realist and the relativist standpoints is the way in which the relation between researcher and participants is perceived. The positivists claim that the scholar, by means of strict research methods, can uphold an objective and independent position, whereas the constructivists argue that a mutual influence between the researcher and the participants is inevitable and therefore should be taken into consideration as part of the research effort, among

other things through reflection on these matters (Guba & Lincoln, 1994).

Then perhaps the postpositivist view is preferable. This view constitutes a middle way through its idea of "critical multiplism", the use of many different methods and perspectives. Thus, the postpositivists salute the use of both quantitative and qualitative methods (Denzin & Lincoln, 1994; Guba & Lincoln, 1994). Moreover, the combination of different research methods may lead to greater validity.

Some constructivists, however, have refuted the suggestion that these different methods can be combined, as they maintain that the epistemological standpoints are incommensurable, that is, cannot be combined (Denzin & Lincoln, 1994; Guba & Lincoln, 1994). The view that there is one truth to be sought, which is objective and not influenced by the perceiving individual, is simply too distant from the view claiming that the process of perception or experiencing affects the concept of reality or even constructs reality. According to the constructivist view, people with different experiences will, on the basis of their social, cultural or historical context, believe in different realities and truths.

Furthermore, the traditional criteria for valid and reliable science predominantly rest on a realist (quantitative) ontology and are not accepted by all relativist (qualitative) methodologists, who propose other criteria for good science – criteria based on "verisimilitude, emotionality, personal responsibility, an ethic of caring, political praxis, multivoiced texts, and dialogues with subjects" (Denzin & Lincoln, 1994, p. 5). The idea of using various methods of investigation has also been proposed as a way to validate results (Huberman & Miles, 1994); this view is reminiscent of "critical multiplism". However, constructivists often argue that each community must have its own criteria for judging the adequacy of the interpretations made (Fish, 1980). Postmodern "sensibility" contradicts basic arguments that seek authority in terms such as those used in positivist research. Some constructivists even doubt the authority assigned to science on the whole (Denzin, 1994). However, even if social scientific writing is a construction like all other writing, it is possible to know something, to have so-called situated knowledge, that

is partial, historical, cultural and local knowledge (Richardson, 1994).

Even though "critical multiplism" has been called into question by some of the qualitative proponents, there are others who argue for the use of many different methods, just as the postpositivists do (Denzin & Lincoln, 1994, Richardson, 1994). Then the experimental (or quasiexperimental) result becomes one perspective together with perhaps interviews and observations. No perspective is considered more or less legitimate than the other (Richardson, 1994); all perspectives are simply different lenses through which to see the construction of a phenomenon, which together may give a richer picture than would the use of only one (Bryman, 1997; Denzin & Lincoln, 1994). This is one possible way to justify the combination of qualitative and quantitative research methods in one and the same dissertation. The different methods are thus combined so as to obtain "critical multiplism".

Furthermore, other scholars stress the similarities between qualitative and quantitative methods (Allwood, 1999; Bryman, 1997; Huberman & Miles, 1994). There are several procedural commonalities between the relativist and realist canons. In both cases, researchers shift between inductive and deductive data cycles. All researchers work with testing and verifying intermittently (Huberman & Miles, 1994). Most qualitative researchers quantify in some respect (e.g., through counting representatives in a qualitative category), and most quantitative scholars use qualitative judgment in some steps of their research (Allwood, 1999; Bryman, 1997). These points tend to make the arguments between the approaches superfluous.

Measures

Open Interviews

In this dissertation, two kinds of open interviews have been employed, *unstructured interviews* (in the pilot effort of Study II) and *semi-structured interviews* (main efforts of Study I and IV). In an unstructured interview no questions are decided in ad-

vance, only a main topic. The interviewer lets the informant influence the direction of the interview. A semi-structured interview has some main topics or questions presented in an interview guide (Patton, 1990). The informant is free to talk about the stipulated topics. The interviewer poses follow-up questions in order to encourage the respondent to develop her or his answers. In neither unstructured nor semi-structured interviews are there any hypotheses stated from the beginning. This allows the researcher to remain open to the topic. Unexpected findings could thus be discerned (Carlsson, 1991; Kruuse, 1998; Kvale, 1997; Patton, 1990). The open interview is a tool used to understand a phenomenon better – to embrace individuals' experiences and the meaning they have attributed to the phenomenon in their lives (Kvale, 1997).

Triangulation is a way of achieving validity and reliability (Denzin & Lincoln, 1994). First, it may imply using several different research methods so as to obtain different sources of evidence, for example by means of letting quantitative and qualitative methods or different qualitative methods, such as narratives and observations, complement each other. Second, triangulation also signifies that different scholars analyze and thematize the interviews independently (Huberman & Miles, 1994). Study I and IV in this dissertation were triangulated in the latter sense.

It is crucial that the interviewer reflect on how she or he influences the research setting and the informants in different ways. The researcher exerts control over the respondents. Alvesson (2003) advocated reflection on how the context, the informants, and language may affect the outcome of the interviews. As regards the *context*, there can be inequalities in age, gender, or class between the interviewer and the informants that limit the value of the interview. Concerning the *informants*, they may have personal reasons for participating in the interview. Their answers may be instances of impression management, because they feel like representatives of a certain profession or a certain organization. They may also wish to appear "normal" and allow their answers be governed by this. *Language* may also be a confounding factor. Reality is created through

language. For example, in the interview situation, the way a question is formulated may influence the answer (Alvesson, 2003).

Analyzing Interview Material

Different scholars inspired the qualitative analysis of Study I and IV (e.g., Carlsson, 1991; Huberman & Miles, 1994; Kvale, 1997; Patton, 1990). The first step of the procedure was to note patterns and themes intuitively; the second was to try to see connections between them. After this followed an attempt to make metaphors for what had been perceived. Then these tentative results were scrutinized, by checking and counting, to see whether the intuitive categories were reasonable. Another way of verifying or refuting the found themes was through the process of comparing and contrasting different examples. If necessary, prematurely grouped variables were partitioned. Then followed an attempt to group variables hypothetically. The relations between variables were explored in this manner. Finally, work was undertaken to construct a pattern of evidence to reach conceptual coherence concerning the studied phenomenon. The analysis was supported by referring to earlier theoretical and empirical studies in the field.

The Activity Questionnaire

The Activity Questionnaire (AQ) was developed for the present dissertation. AQ (used in Study I, II, and III) is a measure of *involvement in creative activities and hobbies* and concerns, among other things, whether the children engage in any creative hobbies (e.g., drawing and story-writing), whether they spend a great deal of time fantasizing, whether they remember their dreams, and whether they have had imaginary companions. The children also indicate whether they have invented their own games or built their own toys (see Appendix). Question 1 and 3 were included to give all children the opportunity to fill something out, but these questions were not scored. On question 2, a maximum of three points were possible. Some changes have been made on the questionnaire from Study I to Study II. In Study I, the first version of the questionnaire (Appendix B,

Study I) had 9 questions and a maximum score of 11 (after some alteration because the question concerning whether the child had a need to be alone was excluded since this question affected the Cronbach alpha negatively). The second version – used in Study II and III – had 10 questions and a maximum score of 12. One question concerning whether the children remembered any dreams from the past week was excluded. Two questions were added: first, whether the children liked playing on their own sometimes, and second, whether the children preferred doing things like other people do. The homogeneity test gave a Cronbach Alpha of .64.

The questions about creative activities and hobbies were shown to be related to the Creative Functioning Test (Smith & Carlsson, 1990/2001).

The Creative Functioning Test

The Creative Functioning Test (Smith & Carlsson, 1990/2001) is a measure of *cognitive flexibility* and *fluency of ideas*. In CFT, a picture stimulus depicting a black-and-white still life of a bottle and a bowl is shown in repeated rapid presentations on a computer. Shadings and diffuse contours build up the picture, making it fairly easy to imagine other contents (e.g., a body or a landscape). To begin with, in the *increasing series*, the stimulus is presented for a very short time (0.02 s), and for every other presentation the exposure time is prolonged until the participant describes the picture content correctly (the longest possible exposure time is 3.6 s). Along the way to perceiving the content objectively, a number of subjective interpretations are often reported. When the participant has described the actual content of the picture, the procedure is reversed. In the *decreasing series*, the picture is presented at shorter and shorter exposure times and the session is finished when the stimulus can no longer be discerned.

There are several scoring dimensions of CFT, of which two were used in this project. The first concerns the increasing series, and the number of different subjective themes (different "incorrect" interpretations of the picture). This is a measure of fluency of ideas. The second scoring focuses on the decreasing

series, where new interpretations or recollections of subjective themes from the increasing series are registered. This dimension captures an ability to shift from rational (objective) thought to more imaginative (subjective) cognition, an ability closely related to creativity (Smith & Carlsson, 1990/2001). In other words it measures cognitive flexibility.

Objective perception supposedly affects the viewer such that when correct recognition has been attained, a low creative person will inhibit subjective interpretations during the decreasing series (Carlsson, Wendt, & Risberg, 2000). On the other hand, a highly creative individual will be able to abandon rational thought and let the subjective representational world influence her/his perception to a considerable extent. The scoring involves six levels of creative functioning as defined in the manual (Smith & Carlsson, 1990/2001).

Below is an illustration of how a more creative participant described the picture at different exposure time steps (totally 18). The numbers refer to steps at which the answers were given.

Increasing series
5. It looks like branches lying on the ground.
10. A goblin and people.
10. The people run away and the goblin follows them.
16. It looks like a log lying down and beside it there is a pond.
17. It looks like the people come and jump into the pond.
18. And then the Goblin jumps down.
18. A jar and a bottle /the "actual" content of the picture/
Decreasing series
17. Then the bottle turns over and all the people come out.
16. Then the people who lived there came home and were angry.
15. Then they throw out all the people and clean up.
15. And then those people get angry, those who were thrown out.

The "story" continued all the way down to the shortest possible exposure time. This child scored 11 points on the *increasing series* and was deemed to belong to level 6, the highest level on the *decreasing series*. A less creative description of the picture is:

Increasing series
6. Some furniture.
8. It looks like a green bottle on a table.
10. Looked more blackish, not green.

11. Now it looked like a…it's a bottle but it also looks like a basket with berries in.
Decreasing series
10. The same.
9. The same.

This child scored 1 point on the *increasing series* and was found to belong to level 1 on the *decreasing* series.

The author and another rater scored CFT protocols independently, and in cases of disagreement, a third judge also made an assessment. According to the manual (Smith & Carlsson, 1990/2001), the test retest correlation was .71. CFT has been validated through correlation with other measures, e.g., researchers rated by independent judges on originality and richness of ideas (G = .67), school children's drawings rated by professional artists (G = .74).

The Drawing Task

The Drawing Task was developed for the present dissertation. A brief narrative, "The painter's Mystery" (Appendix A in Study I) is read out loud to the participants. The narrative is about an artist who paints a picture of a field during fall; on this scenery a mysterious phenomenon appears. A child first discovers the phenomenon on the field and points it out to the artist. The story ends in a drawing task; the children are asked to draw what they think the phenomenon could be. The mysterious phenomenon is never described in great detail, and the intention is that the children should, by means of their imagination, place themselves in the narrative and use something out of their own experience or world of make-believe in order to come up with a solution. Accomplishing this requires that the children have a generative or productive manner of perceiving their surroundings and themselves, and that they solve the task by reconstructing inner and outer experiences of their own.

The children are instructed that there is no correct answer, that all answers will be regarded as equally interesting, and that it does not matter how they draw as long as they are able to ex-

plain what they think it is that the artist sees. They are also told that they can put down their solution in writing. The children are asked to complete the task during a 45-minute lesson.

The Unusual Uses Test (UUT)

The Unusual Uses Test (Guilford, 1967) is regarded as a measure of *fluency of ideas* and *flexibility of ideas*. In UUT, the participant makes up as many alternative uses as possible for a well-known object, for example, a newspaper or a brick. In the present project, UUT was adapted to function as a test for children. Empty milk cartons are well-known objects for children and are therefore suitable. The children are asked to write down as many uses as they can think of in 15 minutes. There are two different scoring systems. First, the total number of uses is counted and every suggestion is given one point (fluency of ideas). Second, different categories of uses are counted (flexibility of ideas, a list of categories is presented in the Appendix of Study II). In order to think up many suggestions and break loose from traditional uses, a generative and productive way of perceiving reality is required.

An original use of milk cartons was presented by a boy who made a sketch and provided instructions for how to build a weight-lifting bar made of milk cartons (see Figure 1). He also suggested a boat, a house, a feeding apparatus for birds, and a telephone. Altogether he received five fluency and five flexibility points.

An example of a less creative answer was: "A nesting box and

Cut here   Weight-lifting bar

Milk carton

Figure 1. *"You fill up 2-10 cartons with sand and 5 cartons for the bar" was the instruction that accompanied the sketch.*

a mouse home", which received two fluency points but only one flexibility point, as both suggestions belonged to the same category, namely "accessories for pets".

The Self-Image Inventory: How I Think I Am

How I Think I Am is a Swedish self-image inventory for children (Ouvinen-Birgerstam, 1985/1999). It consists of five different subscales: (a) skills and abilities, for example, "I'm good at math", "Other people do things better than I do", (b) physical self-image, health and appearances, for example, "I don't care about my looks", "I often feel clumsy", (c) mental well-being, for example, "I easily get angry ", "I'm a happy person", (d) relationship with parents, for example, "My parents trust me", "In my family, we fight a lot", (e) relationships with peers and others, for example, "I have many friends", "I feel different from others".

There are 72 items in the inventory. Each item has four response alternatives, which were scored +2, +1, -1 and -2. The greater the sum, the better the self-image. Maximum score is 144 and minimum -144.

According to the manual (Ouvinen-Birgerstam, 1985/1999), homogeneity testing showed reliability of .91 - .93, and the test retest correlation was .74. The inventory has also been validated through comparison with an adjective list (r = .75) and a psychologist's assessment (p = .001, N = 250).

The Questionnaire about Imaginary Companions

This questionnaire (see Appendix of Study III) provides information about children and their imaginary companions. The information concerns, for example, appearances (shape, size, age), name and sex (and other characteristics) of the mates, the way they interact (whether they play in a fantasy world or with real toys) and whether they engage real peers in the play with their invisible mates.

The questionnaire items represent issues found to be meaningful for children with imaginary companions; the issues were identified through a pilot study with unstructured interviews.

❧ Results ❦

Main Features of Study I

The purpose of this study was to learn more about 10-year-old children's subjective notions in relation to the act of creation. Would it be possible to discern any intentionally used subjective features in the children's solutions (drawings) to the Drawing Task? What sources of inspiration influenced children's motifs; conventional drawing motifs, drawing habits, contextual factors, or their subjective inner world? Furthermore, it was hypothesized that there would be a relationship between the assessments of the Drawing Task and two creativity measures, as well as between the two creativity measures. There was also a question of whether any gender differences would be detectable. The study involved 110 10-year-old children (54 girls and 56 boys). Of these, 30 children (16 girls and 14 boys) were interviewed.

The measures compared in this study were the newly-developed Drawing Task (DT), a well-known creativity test, the Unusual Uses Test (UUT, Guilford, 1967), and another newly-developed test, the Activity Questionnaire (AQ).

Results

The drawings were categorized in two ways, owing to motif and creativity level. Two-thirds of the participants made concrete real-life motifs and one-third depicted imaginary phenomena. *Twenty-six percent* of the drawings were found to belong to a *higher creativity level* and seventy-four percent to a lower level.

Connections between all measurements were found: The newly developed tests were related to the established test, indi-

cating that AQ and the DT could function as creativity measures.

Moreover, the drawings with *imaginary motifs* were more often rated as *creative* (in DT). However, this connection was not significant in relation to UUT and AQ, that is, the children who made imaginary motifs did not score higher on the creativity measures. Some gender differences were detected. Girls' drawings were found to be more creative. No gender differences existed as regards content of motif (real versus imaginary).

In the analysis of the interviews, 12 qualitative themes were arrived at. These were distributed in two main categories. First, the qualitative analysis explored the *sources of inspiration* for the Drawing Task. The children were influenced by their own make-believe world, their experience, trends, and guided by logic and external reality. The interviews pointed in the same direction as the statistical comparisons in that the more creative children used more personal and subjective influences compared to their less creative peers. Second, in the analysis, several themes concerned with children's *notions of imagination and reality* were discerned: some themes regarded children's (a) notions of clouds, (b) their notions of air, wind and fog. Other themes (c) showed that some children believed that they have a unique perceptual ability, which adults lack, and (d) involved the notion that there was a difference between children and adults in terms of what they paid attention to. A further theme regarded (e) the notion that there is something in between reality and imagination. Some children related the task to (f) supernatural or spiritual phenomena. In the interview, a few children (h) made use of symbolism in the discussion of their motifs and finally several children (g) revealed an awareness of their imaginativeness.

Main Features of Study II

The study investigated the relationship between self-image and creativity in middle childhood and the relationships between different creativity tests. The assumption made was that there would be self-image differences between high and low creative

individuals. A second hypothesis was that there would be a relationship between the different creativity measures. No gender differences were expected. Altogether, 69 10-year-old children (35 girls and 34 boys) participated.

In addition to AQ and UUT, another perceptually based – perceptgenetic – creativity measure, namely the Creative Functioning Test (CFT), was utilized. CFT was scored in two dimensions, that is, in a fluency dimension from the increasing series and a flexible thinking dimension from the decreasing series. UUT was also scored in two dimensions, that is, in a fluency and a flexibility dimension (Guilford, 1967). Self-image was measured by How I think I Am (Ouvinen-Birgerstam, 1985/1999).

Results

As regards the self-images of creative children, no clear-cut results were obtained. There were, on the one hand, highly creative children giving reports of *positive self-images*, including confidence in school achievements and good relationships to friends and, on the other hand, highly creative children reporting *negative self-images*, comprising low achievement levels in school and bad relationships to friends. In a cluster analysis, seven different groups were found. These were collapsed into three profiles: One group was described as *Conformists*, implying that they had low creativity scores on all tests. Some individuals were labeled *Brainstormers*, owing to their being more creative with respect to verbal fluency (tapped by UUT), and others were designated *Flexible Thinkers*, owing to their being more creative in their ability to let their imagination influence their perception (measured by CFT).

Concerning the links between the five dimensions of the *creativity measurements*, nearly all (9 out of 10 possible comparisons) were *positively related*, but only half of the relationships were shown to correlate significantly.

Few gender differences were found. Girls were found to be more creative on AQ, a result not found in Study I. CFT and UUT did not show any gender differences.

Main Features of Study III

This study related creativity, self-image, and gender to the occurence of imaginary companions. A second aim was to discern whether some specific aspects of imaginary companions were linked to high levels of creativity. The participants were 69 10-year-old children (35 girls and 34 boys). Twenty-six participants (of totally thirty-six) who had imaginary companions (16 girls and 10 boys) were further questioned.

In this study, creativity was measured by AQ, CFT and UUT. One dimension of each test was used. Self-image was measured by How I think I Am. Moreover, a questionnaire about imaginary companions and one aspect dealing with character depth from an interview (reported on in Study IV) were also utilized in the analysis.

Results

This study demonstrated that *children with imaginary companions scored higher on the creativity measures* (significantly on AQ and UUT), but *lower on How I Think I Am* compared to children who had never had pretend companions. In addition to the overall self-image scale, two subscales showed a significant difference between the two groups, that is, those regarding psychological well-being and relationship to peers. Children with imaginary companions reported, for example, being unhappy and having fewer friends compared to children who did not have imaginary companions.

Some aspects of the imaginary companionship were shown to be particularly creative, among other things, keeping or acquiring companions after seven years of age, having more than one imaginary companion, having imaginary companions with elaborated characters (greater character depth), and involvement of actual friends in the play with the imaginary companions. No relationships between aspects of imaginary friendships and self-image were found.

Two significant gender differences were demonstrated: first, that *girls* more often *had imaginary companions,* second, that *girls involved actual playmates* in the play with the imaginary companion to a greater extent.

Main Features of Study IV

The intention of this study was, first, to explore the variations of the phenomenon imaginary companions in general. Second, the perceived functions of imaginary companions were scrutinized. Third, a new theoretical framework for the study of imaginary companions was presented by relating a psychoanalytic framework to modern self theories and social cognitive theory. The participants were 26 10-year-old children (16 girls and 10 boys).

Open semi-structured interviews in combination with a questionnaire about imaginary companions were the methods utilized.

Results

First, *greatly varied descriptions* of imaginary companions were obtained. There were individuals from the little people, wild animals and same-aged children represented among the flora of imaginary companions.

Figure 2. *Girl with a "spiny neck".*

An example of how an imaginary companion could appear is shown in Figure 2. This companion was a colorful girl with a "spiny neck", with whom one of the participants used to talk.

The children reported being inspired by siblings, playmates as well as by television to invent companions. Most companions were played with in the children's own rooms, but some were brought everywhere the children went, including school and to the research interview. The participants indicated some awkwardness as regards having fantasy friends; the interpretation of this was that they felt too old to have (or share) this kind of fantasy.

Second, imaginary companions were found to be *useful in many ways to assist identity formation* in middle childhood. Three categories of self-reinforcing functions were identified: (a) comfort or substitute for company, (b) motivation and self-regulation, including themes where the companion acted as a motivator for mischief and/or a conscience or someone to provide moral guidance to, and (c) self-enhancement, comprising themes where the imaginary companion was used as someone on whom to externalize negative characteristics, as a scapegoat, as a protégé, as a self-ideal and/or themes where the imaginary companion was described as better than real friends, where the companion was used for attention seeking purposes or where the companion functioned as a way to cope with tragic or horrifying events. In addition to these, there was another function, namely (d) experimentation with personality expansion including imaginary companions who appeared to sanction an extension of gender roles and experimentation with opposite characteristics. Finally, a function was depicted, where the companions simply (e) constituted life quality enhancement.

No gender differences were found in the forms and functions of imaginary companions.

❧ General Discussion ❧

In summary, this project has resulted in three main contributions to the study of creativity: First, a more general effort to accentuate *the creativity of middle childhood* has been made. Creativity in middle childhood has been studied very little. This is perhaps a lingering effect of Freud's (1905/1986, 1926/1986) assumption that this age group is of minor psychodynamic interest. In contrast to what is indicated by the paucity of literature on creativity in middle childhood, this project has shown that it is a topic well worth studying. More knowledge of creativity in this age group was acquired through exploring its relationships with a drawing task, self-image, and the acquisition of imaginary companions. The relationship between self-image and the occurrence of imaginary companions was also scrutinized.

Imaginative motifs represented higher levels of creativity as assessed by the solutions of the Drawing Task, which could be taken as an indication that intentionally utilized subjective features are an important part of creativity. However, there were no significant relationships between the motif content (real or imaginary) and the two other creativity measures, something which substantially limits the possibilities to draw any conclusions about intentionally used subjective features, which Smith and Carlsson (1990) claimed were part of the creative process. May (1975/1994) maintained that, in the creative act, artists' subjective experiences are transformed into a more general illuminating description of our reality. Through experimental designs, some researchers have found that children's scores on a creativity test increased when they were allowed to engage in pretend play prior to testing (e.g., Dansky & Silverman, 1975). Thus, supporting the production of the subjective features in pretend play influences creativity in a positive direction. How-

ever, Dansky and Silverman did not find that subjective features were necessary for the creative process.

As regards self-image, it was difficult to identify one type of creative personality of middle childhood. There were both highly creative children who perceived themselves as well-adapted and accepted among peers as well as those who regarded themselves as maladapted and rejected by others. Very few studies have investigated the self-image of 10-year-old children in relation to creativity. The only comparisons found concerned older children and adults. Schaefer (1969b) found that the self-concept of creative high-school pupils involved both favorable and unfavorable traits, such as self-confidence, independence, as well as lability and aggressiveness. In other samples of high-school pupils and college students, orderly, extraverted and psychologically healthy creative individuals have been found (Gallucci et al., 1999; Smith & Tegano, 1992). As opposed to this picture, samples of artists and writers depict creative individuals as introverted and less psychologically healthy (e.g., Götz & Götz, 1979). On the basis of these results, we speculated on whether there are empirical grounds for proposing *one* creative personality profile. Would not two or more different creative types be more in accordance with the mixed results obtained?

Having an imaginary companion was related to higher levels of creativity as compared with those children who did not have such a companion. No earlier studies were found that dealt with the relationship between imaginary companions and children's creativity in middle childhood. Schaefer (1969a) demonstrated a relationship between creativity and high-school pupils who had once had imaginary companions. Manosevitz et al. (1977) did not find a connection between creativity and imaginary companions in 5-year-olds.

Furthermore, the self-images of 10-year-old children with imaginary companions were less positive compared to those reported by children who did not have such companions. To the author's knowledge, no other study has compared self-images of children with and without imaginary companions in middle childhood. The finding was, however, in line with some other studies focused on samples of younger children (Bouldin & Pratt, 2002; Harter & Chao, 1992). Bouldin and Pratt showed that anxiety levels (judged from parental reports) were higher in

3- to 8-year-old children with imaginary companions as compared with those who did not have such companions. Harter and Chao (1992) demonstrated that 3- to 6-year-old children with imaginary companions were less competent and less socially accepted by peers, as judged from preschool teacher reports. However, there are also studies showing that children with and without imaginary companions do not differ as regards social competence (see Singer & Singer, 1992 for a review).

Second, *the complexity of the creativity concept* was demonstrated by relating different measurements of creativity to one another. Some of the tests were constructed for the present project and others were established tests of creativity. These results showed that different measurements were moderately correlated; this would seem to indicate that different tests capture different aspects of creativity. This result highlights the importance of using several tests of creativity so that the choice of test does not determine the outcome. With respect to testing creativity, Amabile (1996) argued in favor of using real-life products evaluated by professional raters rather than using so-called divergent thinking tests, for example, TTCT (Torrance, 1965). One of Amabile's critical standpoints was that different tests of divergent thinking have been validated against each other, without procuring tenable arguments to support the notion that divergent thinking is creativity *per se*. But collage-making and story-telling tasks may also have disadvantages, such as the fact that they might favor those who are spatially or verbally talented.

Third, *a qualitative approach captured creativity from a new perspective*. Creative children were given a voice through interviews concerning their sources of inspiration and their notions of reality and imagination. Only a handful of scholars within the creativity field have employed qualitative methods (e.g., Gardner, Csikszentmihalyi & Damon, 2001; Mace & Ward, 2002; Melrose,1988). Even rarer is the use of an interview method to capture children's voices and their thoughts on their creative endeavors. The author has not found any relevant empirical comparisons in earlier literature. However, May (1975/1994) argued that the creative act has its roots in subjective experience. Through interviews, the personal experiences and fantasies that inspired children were captured. As regards the reality

and imagination statements categorized, some could be related to Piagetian (1968) descriptions of the age group, such as children being concrete and reality focused, whereas other themes showed proof of how (as so many have done by now, e.g., Donaldson, 1979) the Piagetian stages do not apply to all individuals at a certain age. For example, some participants were formal operational in their symbol use. Vygotskij (1930/1995) assumed that creativity and reasoning had separate developmental lines. However, in many individuals from middle childhood and onward, reasoning comes to dominate and suppress creativity. This could be one explanation for why two-thirds of the children drew reality-bound motifs, despite the fantasy-oriented story.

The forms and functions of imaginary companions were also explored through interviews. Imaginary companions were studied as examples of a natural creative phenomenon, for which the children showed multitudinous, elaborated and original forms and functions. Imaginary companions were found to be useful assistants for children in their identity formation process. Earlier studies have pointed out several functions that imaginary companions may perform, such as providing comfort or company and moral guidance, as well as being "someone" to nurture, idealize, or project bad features onto (Harter & Chao, 1992; Nagera, 1969; Singer & Singer, 1992; Taylor, 1999). Apart from these functions, Study IV presented some functions not identified earlier, that is, children who had imaginary companions for attention seeking purposes and for personality expansion, such as gender role experimentation. Few scholars have attempted to systematize the functions. A suggestion for five main categories of functions was: (a) comfort and substitute for company, (b) motivation and self-regulation, (c) self-enhancement, (d) personality expansion, and (e) life quality enhancement.

Some ideas from modern self-theories and social cognitive theory were applied to the different functions of imaginary companions in order to provide a framework that complements the psychodynamic one. For example, instead of discussing imaginary companions in relation to the id, the ego, and the superego, concepts such as "a motivator for mischief", school and social motivation, and help-conscience were applied. As a com-

plement to the theory of defense mechanisms, adaptive illusions were discussed in relation to imaginary companions. The issue of whether the invention of an imaginary companion should be perceived as an adaptive or a maladaptive reaction may be seen differently depending on one's theoretical framework. Well-adjusted or not, the ability of these imaginative children to invent an inner device that provides them with the psychological and emotional support that their outer environment has failed to adequately provide is a remarkable phenomenon.

A fourth aim of the dissertation was to discern possible gender differences in creativity. However, the four studies demonstrated few such differences: First, one gender difference obtained was that girls' drawings were found to be more creative in DT. Second, in one of the studies, AQ showed a gender difference, also to the advantage of girls. However, this difference was not statistically significant (p = .06) when omitting the question concerning imaginary companion. Earlier research has not found many gender differences in creativity. Some researchers have maintained, however, that in middle childhood girls may outperform boys (Baer, 1999; Rejskind et al., 1992). Third, a further finding demonstrated that it was more common for girls to have imaginary companions; this has also been found by other researchers (e.g., Taylor, 1999)

Methodological Discussion

In this dissertation a broad range of tests and methods has been used, something which might have contributed to the breadth of results. However, there are some problematic aspects of the four studies that need to be considered.

Qualitative Interviews

Some aspects of the qualitative efforts could have been carried out differently. First, methodologists advocate the use of multiple methods and sources of information in order to enhance the validity of the results (Alvesson, 2003; Denzin & Lincoln, 1994;

Huberman & Miles, 1994). In Study I, both observations and interviews could have been employed. In Study IV, the methods could have involved a combination of reports from children and from their parents concerning the children's imaginary companions. Second, repeated meetings with participants are described as one way of reducing the influence of accidental occurrences (Strauss & Corbin, 1990). By letting the informants confirm and adjust the information given at several occasions, more reliable information would have been procured. This procedure was not utilized in the present project for reasons of time. In Study IV, two rounds of interviews with different participants were considered the best solution.

There is also a methodological issue concerning the combination of quantitative and qualitative research, which could have been solved differently. On the one hand, the selection process for the whole sample of Study I was random (for the results of drawing motives and creativity tests). On the other hand, the selection process for the interviews was made according to what Patton (1990) called maximum variation sampling. However, a paradigm clash occurred when comparing the results of the interviews with the quantitative results due to different selection procedures. Because the interviewer and the person who selected the children who were interviewed were the same person, namely the author, the interviewer/selector might have influenced the participants to express themselves more or less openly, thus producing the results that more creative children were more represented in imagination-oriented themes. To the author's defense, it could be added that it would have been difficult to keep track of the creativity results of 30 children, given the fact that the results were not present during the interviews, only an alphabetic list of the participants. Nevertheless, a better design would have been to let another researcher conduct the interviews. This would have ruled out a possible interviewer effect. Another way of avoiding the clash would have been by not making the comparison between quasiexperimental and interview results at all. Critical multiplism (as dicussed in the method section) should be employed, by all means, but selection policies need to be synchronized.

Quantitative Measurements

As regards the quantitative results, there is also a need to highlight some methodological issues. The dimensions utilized to assess the results of UUT could have been extended. In addition to the fluency and flexibility dimensions employed in the present project, Guilford (1967) also proposed one originality and one elaboration dimension. The example presented in the method section of the boy who made a sketch and an instruction of how to construct a weight-lifting bar of milk cartons constitutes an argument for both the originality and the elaboration dimensions. His answer was unique and elaborated, but in the fluency and flexibility dimensions it was only given one point, just as were other more frequent answers. A similar kind of argument could have been employed concerning CFT. Bear in mind the original example from the method section of the child who described people being chased by a goblin. This child would have received high originality and elaboration scores had such dimensions been used.

Another issue to discuss is the possible effect different test situations might have had on the outcome. One test, CFT, was administered individually, but the others were administered in the classroom. Some researchers have indicated that there is a gender difference such that boys outperform girls in classroom testing of creativity, whereas girls have the advantage in individual test situations (see Baer, 1998 for a review). However, based on the results of this dissertation, no such difference was discernable. Girls did not score higher on CFT, which was administered individually.

Future research

The results of the four studies have given birth to several possible research ideas, which could be addressed in the future.

It would be interesting to follow the creative processes of children while making drawings – solutions to the Drawing Task – by videotaping them. The participants could also be encouraged to relate their thoughts out loud during the process of

work. This would provide interesting data on children's creative process. Freeman (1972) asserted that an important aspect is lost when focusing on finished drawings; relevant information about the process is overlooked. The use of video could have documented similar processes of work that the present author witnessed by chance in one classroom. A girl dropped paint on the floor and fetched a sponge to wipe it up. When finished she put the sponge on the desk and continued with her drawing. However, she suddenly grabbed the sponge again and started to use it to spread the paint on her drawing, producing a dark cloud on it. The use of an original tool comprised a creative aspect of her drawing process (the front page drawing).

It would also be of relevance to acquire more knowledge of the development of the creative personality. Longitudinal studies have shown that relative levels of individual creativity are rather stable (Helson, 1999; Johnson, 1985). But few have studied the self-images of creative individuals longitudinally. Such an effort could address the question of what kind of influence experience in the schools has on particularly creative individuals. Some scholars have asserted that creative features fly in the face of disciplined school work, but others have maintained that high achievement levels in school and high creativity go hand in hand (Westby & Dawson, 1995; Cornelius & Casler, 1991). The proposition in Study II, that there are several creative personalities, is the most likely explanation for these opposite pictures of creative children. This could be investigated more thoroughly in a future effort.

Concerning the testing of the creative aspects of imaginary companions, use of a larger sample would have made the results more generalizable. In the future, studies with larger samples should address the relation between creativity and specific aspects of imaginary companions. Especially the result concerning character depth should be regarded with great caution, as the children's memory capacity might be a confounding factor. Children who had imaginary companions after school entrance were found to be more creative. These children might also have remembered more details concerning their imaginary companions compared to those children who had had companions in earlier years.

More longitudinal research on imaginary companions is also needed to see whether the multiple functions, the quality of the companionship and the characters of the companions change over time. Study IV should also be replicated to assess the stability of the identified functions.

Concluding Remarks

In addition to what has been suggested above, there are many other creativity areas of paramount importance. However, among all possible projects, those aimed at improving the environments of schools and workplaces may be among the most essential.

Few would contradict the fact that modern society is in great need of flexible and creative individuals and that schools should be places where individuals' creative potentials can be developed. Many have questioned the competence of the educational system as regards its ability to encourage creativity. Moreover, for adults, the companies and organizations in which they work are not always successful in providing workplaces where creativity can be encouraged.

There is a substantial knowledge base on how to stimulate creativity, something that has been demonstrated in the overview of the literature in this dissertation. For example, the importance of a motivating context has been proven (Amabile, 1996). Scholars have shown how rewards, time limits and the knowledge that one will be evaluated can be devastating for creativity. Amabile (1996) used a walk in a maze as a metaphor to illustrate the undermining effects of extrinsic demands, such as time pressure, on the act of solving a task creatively.

> Exiting the maze is equivalent to arriving at /.../ a satisfactory completion to the task. A straightforward algorithmic approach for /.../ doing the task is represented by a straight line in the maze going directly from entrance to exit. However, there are a number of alternative exits representing alternative problem solutions; these can only be reached by the more heuristic of deviating from the straight path by exploring the maze and by taking the risk of going into a dead end. (p. 121-122).

If individuals are mainly extrinsically motivated, for instance by tight deadlines, they will be more likely to use the solutions they have used earlier for a particular task. They will be more likely to exit the maze as quickly and safely as possible, and the solution is unlikely to be creative. However, if individuals are intrinsically motivated, they will enjoy the task and the process of searching for a new solution and they will be more likely to discover the maze, trying to find their way to a more novel exit.

Research has also demonstrated that imagination is crucial for creativity (Dansky & Silverman, 1975; Vygotskij, 1930/1995). Furthermore, the relevance of creative breaks, or time for pitching quoits as May (1975/1994) put it, has been discussed.

Despite what is already known, little change in schools and workplaces has come about. The research results have not been implemented. Why? One main problem might be that the ubiquitous time pressure in modern society is incompatible with the establishment of a creative environment for individuals. Neither adults at their workplaces nor children at school are given time for playing or fantasizing. This is considered a pleasure only to be enjoyed by preschoolers. Few individuals in our Western society have time for pitching quoits or time to deviate from their straight paths into other inspiring fields, even though we know that these things are crucial for the creative act. The latter issue was also found to concern the study of creativity itself, as mentioned in the introduction (Wehner, et al., 1991).

A question that must be addressed by applied research in the future is whether the pace of work both in schools and in adult workplaces has accelerated to such a level that the possibilities for creativity are diminished. The issue of implementing the already existing research results, and thus increasing the awareness of the necessary conditions for establishing a creative environment, is also of huge importance. Teachers and executives need to know that it is unlikely that the act of creation can be squeezed out of individuals by means of tight deadlines. Creativity appears to need its own time and space in order to flourish.

❧ Svensk sammanfattning ❧

Kreativitet kan definieras på många olika sätt. I denna avhandling definieras kreativitet som "ett generativt eller produktivt nytt sätt att uppleva verkligheten och sig själv på", vilket är en något modifierad version av Smith och Carlssons (1990) kreativitetsdefinition. Det produktiva sättet att se på verkligheten uppkommer just av att man kan rekonstruera erfarenheter och fantasifullt tänkande (från exempelvis barndomen) och återanvända dessa för att bryta loss från traditionella tankemönster.

Traditionellt brukar kreativitetsforskningen delas in i fyra olika områden: den kreativa processen, den kreativa personen, den kreativa produkten och den kreativa miljön. Den *kreativa processen* anses bestå av en kombination av rationellt tänkande och fantasifullt eller intuitivt tänkande (Arieti, 1976; Rothenberg, 1979; May, 1975/1994) där fantasin behöver styras intentionellt för att leda fram till kreativitet. Den *kreativa personen* beskrivs ofta som flexibel, entusiastisk, självsäker och som en person som är beredd att ta risker. Dessa positiva egenskaper åtföljs av mer negativa, såsom labilitet, neurotiskhet och introversion (Barron, 1963, 1981; Eysenck, 1995; Martindale, 1989). Värt att notera är att få könsskillnader har noterats när det gäller kreativa egenskaper. Den *kreativa produkten* definieras som användbar, originell och som något som verkligen kommer till användning (Martindale, 1989). Den *kreativa miljön* utmärks av öppenhet, positivt debattklimat, idéstöd, frihet och lekfullhet (Amabile, 1996).

Kreativitet kan mätas genom en rad olika instrument. Två etablerade test är tegelstenstestet (Guilford, 1967) och the Creative Functioning Test (CFT, Smith & Carlsson, 1990, 1990/2001). Tegelstenstestet går ut på att deltagarna får skriva ner så många olika användningssätt som möjligt för ett välkänt

föremål, till exempel en tegelsten. I mitt projekt användes ett mjölkpaket eftersom det är ett föremål som är välkänt för barn.

CFT är ett perceptuellt baserat kreativitetstest. En bild visas upprepade gånger snabbt för deltagarna på en skärm med successivt förlängd visningstid för varje visning. Deltagarna får beskriva vad de tycker att de ser. Kreativa personer antas på grund av sin större fantasifullhet ge fler beskrivningar som inte överensstämmer med den korrekta tolkningen jämfört med vad mindre kreativa gör.

Fantasi är enligt många en delaspekt av kreativitet. Fantasi kan också ses som en förmåga som kommer till användning på många olika sätt i livet. I fantasin utforskar människor det förflutna, planerar det nuvarande och dagdrömmer om framtiden. Ofta skiljs fantasi och verklighet eller fantasi och rationell tanke åt. Vygotskij (1930/1995) argumenterar dock för att distinktionen mellan fantasi och verklighet är godtycklig eftersom fantasin hämtar sitt stoff från verkligheten. I fantasin kombineras verkliga ting på nya sätt. Likaså hävdar han att vi tar användning av fantasin för att fungera i verkligheten och att inte ens forskningen är skild från fantasin, eftersom det är i fantasin hypoteser utarbetas. Winnicott (1971/1995) komplicerar bilden ytterligare genom att påstå att det inte bara finns fantasi och verklighet utan också ett mellanliggande upplevelseområde, nämligen leksfären. I leksfären kombineras fantasi och verklighet till lek och skapande verksamhet. Han hävdar att människan leker hela livet – hos vuxna tar det sig uttryck i bland annat kulturuppskattning.

Hos barn är fantasi- och låtsaslek betydelsefulla på många sätt för deras utveckling (Dansky & Silverman, 1975; Singer & Singer, 1992; Vygotskij, 1930/1995). Dansky och Silverman visar bland annat att barns kreativitet ökade genom att barnen uppmuntrades till att leka fantasilekar innan mätningen genomfördes. Man har också funnit att barn som har låtsaskompisar – en form av låtsaslek – är mer kreativa (Schaefer, 1969a). En diskussion förs också i litteraturen om huruvida låtsaskompisar finns hos välanpassade barn eller hos socialt mindre välfungerande (Harter & Chao, 1992; Singer & Singer, 1992; Taylor, 1999). Resultaten går i olika riktningar. Tidigare forskning om låtsaskompisar är till största delen psykodynamisk. Man har bland annat identifierat låtsaskompisar som

olika typer av försvarsmekanismer. Dessa mekanismer kan vara mer eller mindre adaptiva (Nagera, 1969; Sperling, 1954).

Smith och Carlsson (1990) visar i sin forskning att tioårsåldern är en kreativ höjdpunkt. Efter att kreativiteten har gått ner vid skolstarten ökar kreativiteten igen fram till ungefär tioårsåldern för att sedan gå ner under den kaotiska puberteten. Dock är inte denna åldersgrupp så välundersökt vad beträffar kreativitet och fantasi. Singer och Singer (1992) betonar att fantasin inte försvinner med mognaden utan att den internaliseras och blir en inre värld i denna ålder. Nu har barnen en större intellektuell kapacitet för att hålla isär en inre och yttre värld vilket gör att de har förmåga att hysa en inre fantasivärld. Denna inre värld är inte mindre fantasifull än de tidigare yttre låtsaslekarna. Det är till exempel fortfarande vanligt att barn har låtsaskompisar och ibland hela fantasivärldar under de tidiga skolåren.

Denna avhandling omfattar fyra studier som syftar till att nå mer kunskap om kreativitet och fantasi och om kreativitetens förhållande till självbild och låtsaskompisar hos barn i de tidiga skolåren. En annan avsikt är att se olika kreativitetsmåtts relation till varandra.

I avhandlingen har kvalitativ och kvantitativ metod kombinerats för att få en så bred bild som möjligt av de undersökta fenomenen.

Studie I – En målares gåta

Denna studie syftar dels till att undersöka om en teckningsuppgift kan användas som kreativitetstest, dels till att få mer kunskap om barns inspirationskällor. I studien fick etthundratio (54 flickor och 56 pojkar) tioåringar utföra teckningsuppgiften som utgick från berättelsen "En målares gåta" (se appendix). Barnen ritade sitt svar på uppgiften efter att de hade hört berättelsen. Barnen testades också med tegelstenstestet och ett nykonstruerat formulär om fritidsaktiviteter, benämnt aktivitetsformuläret. Aktivitetsformuläret utgick ifrån Smith och Carlssons (1990) tidigare studier som har visat att bland annat

barn som har hittat på egna spel och lekar och barn som ritar, dansar och spelar på fritiden är mer kreativa.

Teckningarna (lösningarna på uppgiften) kategoriseras på två olika sätt, dels efter motivtyp, dels efter en kreativitetsbedömning som gjordes av tre medbedömare. En tredjedel av barnen skapade fantasimotiv och två tredjedelar skapade verklighetsbaserade motiv.

Tjugosex procent av barnen bedömdes tillhöra de mer kreativa barnen. De två kreativitetsmåtten hade ett signifikant (statistiskt säkerställt) samband inbördes och till teckningsuppgiften. Slutsatsen drogs att teckningsuppgiften kunde användas som ett kreativitetstest. Flickornas teckningar bedömdes vara mer kreativa än pojkarnas. Tidigare forskning har beskrivit få könsskillnader i kreativitet. I de tidiga skolåren har dock några andra forskare också funnit en viss skillnad, till flickors fördel (se översikt hos Baer, 1999).

Trettio barn intervjuades om hur de hade tänkt när de gjorde sina teckningar. Intervjuanalysen gav upphov till olika teman, dels olika *inspirationskällor,* exempelvis fantasi, erfarenhet, trender och verklighet/logik, dels olika *föreställningar om fantasi och verklighet,* exempelvis uppfattningen att barn har en unik perceptionsförmåga och kan se saker som vuxna inte kan se (änglar, andar mm). Ett annat exempel på tema var några barns uppfattning att deras fantasifenomen varken var fantasi eller verklighet utan någonting mitt emellan. En jämförelse mellan intervjuer och mätresultat visade att de mer kreativa barnen oftare hämtade sina motiv från sin egen fantasivärld eller hade modifierat verkligheten på något fantasifullt sätt. De mindre kreativa ritade/beskrev mer konkreta och naturnära fenomen. Av detta drogs slutsatsen att subjektiv eller fantasimässig erfarenhet tyckts vara en del av barns skapande i enlighet med olika teoretiker (Arieti, 1976; May, 1975/1994; Rothenberg, 1979).

Studie II – Klassens ljus eller ensamvarg?

Denna studie syftar till att undersöka förhållandet mellan självbild och kreativitet hos sextionio tioåringar (35 flickor och 34 pojkar). Ett antagande var att självbilden hos de mer kreativa barnen skulle skilja sig mot den hos de mindre kreativa. Inga genusskillnader förväntades. Tre sätt att mäta kreativitet användes: tegelstenstestet, aktivitetsformuläret och CFT. För bedömning av självbild användes "Jag tycker jag är" (Ouvinen-Birgerstam, 1985/1999). Detta mäter fysisk självbild, psykologiskt välmående, talanger och förmågor, relationer till föräldrar och relationer till vänner.

Resultatet visade inga skillnader mellan mer eller mindre kreativa barn. Det fanns ungefär lika många kreativa barn som beskrev sig som populära och välmående som sådana som beskrev sig som ensamma och mindre välfungerande. De tre testen hade ett signifikant samband, men inte så starkt att det gick att utesluta att de inte i viss mån mätte olika aspekter av kreativitet. Som en konsekvens av detta visade det sig att inte samma individer hade högt på de olika kreativitetstesten. De som hade högt på tegelstenstestet, benämndes *brainstormare*, eftersom detta test speciellt mäter kreativt flöde, förmågan att snabbt komma på många alternativa användningssätt. De som hade högt på CFT benämndes *flexibla tänkare*, eftersom CFT framförallt mäter förmågan att kunna växla mellan subjektiva fantasifulla tankar och objektiva verklighetsnära. Resultaten på aktivitetsformuläret var mer spridda. Få könsskillnader fanns, en var att pojkar och flickor skiljde sig på aktivitetsformuläret (något som inte var fallet i studie I). Tidigare forskning om barns och tonåringars självbild går åt två håll. Där finns dels beskrivningar av kreativa barn som är välanpassade och som det går bra i skolan för (Gallucci et al., 1999; Smith & Tegano, 1992), dels bilder av mindre sociala och mindre skolanpassade barn (Dawson et al., 1999; Schaefer, 1969b). Från denna studies resultat drogs slutsatsen att det vore bättre att tala om olika kreativa personligheter, att det finns en extrovert och en introvert kreativ personlighet. Ett kreativt barn kan vara både klassens ljus och ensamvarg.

Studie III – Låtsaskompisar på gott och ont

Denna delstudie syftar till att beskriva sambandet mellan kreativitet, självbild och låtsaskompisar. Deltagarna i studien var sextionio barn (35 flickor och 34 pojkar) i tioårsåldern. De kreativitetstest som användes var tegelstenstestet, aktivitetsformuläret och CFT. Självbildsformuläret "Jag tycker jag är" (Birgerstam, 1985) användes.

Hälften av barnen hade eller hade haft låtsaskompisar. Resultaten visade att barn med låtsaskompisar var mer kreativa. Det säkerställdes statistiskt på två av tre test. Barn med låtsaskompisar visade också skillnader i självbild mot de som inte hade sådana. Barn med låtsaskompisar hade totalt sämre självbild. De rapporterade att de hade färre kompisar och mådde psykiskt sämre.

Schaefer (1969a) har tidigare visat att tonåringar som har haft låtsaskompisar är mer kreativa. Men ingen forskning har tidigare undersökt kreativitet hos tioåringar i förhållande till låtsaskompisar. Likaså finns ingen undersökning där självbild i denna åldersgrupp jämförs med förekomst av låtsaskompisar. I förskoleåldern har några forskare visat att barn med låtsaskompisar har högre ångestnivåer (Bouldin & Pratt, 2002) och lägre social kompetens (Harter & Chao, 1992).

Låtsaskompisar verkar uppfinnas i större utsträckning hos barn som har sociala svårigheter. Samtidigt har barn med låtsaskompisar större kreativ förmåga, det vill säga låtsaskompisar verkar finnas på gott och ont. Dock förefaller barnen kunna hantera sina sociala brister på ett konstruktivt och skapande vis tack vare sin kreativa förmåga.

Studie IV – "En kompis som bor hos en själv"

Denna studie syftar till att nå mer kunskap om låtsaskompisars egenskaper och funktioner. Metoder som användes var dels strukturerade frågeformulär, dels öppna intervjuer. Tjugosex tioåringar (16 flickor och 10 pojkar) deltog.

Resultatet visade en stor variation av låtsaskompisar: dessa kunde vara pysslingar, vilda djur och jämgamla barn. Barnen

inspirerades av syskon, kompisar och tv till att hitta på låtsaskompisar. Vad gäller funktioner, så visade sig låtsaskompisarna kunna ha en hel rad sådana. Fem huvudfunktioner identifierades, nämligen att låtsaskompisen fanns för (a) *tröst och sällskap,* (b) *motivation eller självreglering,* det vill säga låtsaskompisen motiverade barnen till skolprestationer, att bli sams med verkliga vänner och att följa eller bryta mot regler (självreglering), (c) *självförtroendeförstärkning,* till exempel genom att låtsaskompisen beskrevs som dum och liten kände barnet sig bättre, (d) *personlighetsutvidgning,* det vill säga att låtsaskompisens personlighet eller kön avvek från barnets, vilket kunde ses som ett sätt att experimentera med en alternativ personlighet och (e) *livskvalitetsförhöjning,* i vissa fall var låtsasleken ett sätt att ge livet lite extra färg genom till exempel besök i utopiska fantasivärldar.

Tidigare forskning om låtsaskompisar är till stor del psykodynamisk och har relaterat fenomenet till bland annat försvarsmekanismer. Dessa ses ibland som ett mindre adaptivt sätt att hantera verkligheten (Nagera, 1969; Sperling, 1954). Denna fjärde studie presenterar en kompletterande teoretisk referensram i form av modern självteori och social kognitiv teori. Där talar man om positiva illusioner som något som de flesta människor använder sig av för att göra livet mer drägligt (Taylor & Brown, 1999). Låtsaskompisar kan betraktas som ett kreativt sätt att se till att de behov som ens omgivning inte kan tillgodose faktiskt blir uppfyllda genom ens inre resurser. Det är som att ha "en kompis som bor hos en själv" som ett av de intervjuade barnen uttryckte saken.

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❧ Appendix ❧

Activity Questionnaire

Name...…………………Form.....................……. Age.......................

1. What do you do in your spare time?_____

2. Do you do any of the following things in your spare time? Mark with a cross
   (a) write poems ☐
   (b) write stories, make magazines ☐
   (c) act in or make up theater plays ☐
   (d) make drawings, cartoons ☐
   (e) make up tunes or write songs ☐
   (f) make up dances, dance steps ☐

3. Do you collect anything? What?
_____

4. Do you collect "good-to-have stuff", things you get or find and that you bring home although you don't quite know how they can come to use. Write down examples of such things.
_____

5. Have you ever made your own toys? If yes, describe what:
_____

6. Have you ever made up your own games or party games? If yes, describe what:
_____

7. How often do you fantasize? Seldom ☐ Sometimes ☐ Often ☐

8. Have you ever had a pretend playmate? Yes ☐ No ☐

9. Do you like playing on your own sometimes? Yes ☐ No ☐

10. How often do you remember your dreams? Seldom ☐ Sometimes ☐ Often ☐

11. What sentence is the best description of how you are?
   I prefer doing things like other people do. ☐
   I don't like doing things like other people do. ☐

12. How far back in life can you remember? Can you remember anything from the age of   two or three? ☐   four or five? ☐   six or seven? ☐

A Painter's Mystery - A Story as a Starting-Point to Study Creativity in Ten-Year-Old Children

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Ten-year-olds' creativity and notions about imagination and reality were studied with qualitative and quantitative methods. The main focus was a drawing-task with its starting-point in a story. 110 participants (54 girls and 56 boys) fulfilled the Drawing Task. A number of children also took Guilford's Unusual Uses Test and the Activity Questionnaire. 30 of the children (16 girls and 14 boys) were interviewed about their solutions to the task. The drawings were categorized in two ways, owing to motif and creativity level. As regards motif, two thirds of the participants made concrete things and one third made imaginary phenomena. 26 % were assessed to belong to a higher creativity level. The correlations between the three different creativity measures were significant. There was a significant gender difference concerning creativity level of the drawings. The interviews led to 12 qualitative themes. For example, one theme showed that some children believed in having a unique perceptual ability, which adults lack. Another theme was the notion that there is something in between reality and imagination. A third theme presented rational and reality-oriented statements about the task.

> I /must/ emphasize the special significance of cultivating the creative effort in the school age. The growing human being achieves everything by means of the creative imagination; to orient in the future world and to attain a behavior oriented toward this future /.../ is the most important function of the imagination. And to the extent that the most crucial task of education is to guide the school child's behavior so that the child is prepared for the future, development and practice of her or his fantasy are some of the most important aspects in the process of realizing this goal (Vygotskij, 1930/1995, p. 100).

Many psychologists and educationalists – among them Vygotskij – have emphasized the significance of imagination and play in order for children to develop harmoniously. Many scholars would agree on the fact that adult creativity originates and draws inspiration from pretend play and the games of child-

hood. Winnicott (1971/1981) was of the opinion that we continue to play in many respects as adults as well through appreciation of the fine arts and in various creative activities. Playing is therapeutic and when the play territory of different persons coincides, a more abundant exchange is able to take place between people. The transitional or play world is a resting place between the internal and the external worlds. Pruyser (1983) emphasized that our existence consists of all these three worlds, and that all three remain throughout life; with Pruyser's labels, the autistic, the realistic and the illusionistic or the fine arts world. The illusionistic world takes its material from both the internal and the external reality.

Vygotskij (1930/1995) considered that it is a mistake to distinguish between reality and imagination since they are interdependent. All elements that imagination uses are possible to trace to reality. Simultaneously, we often make use of imagination when we increase our bank of knowledge or experience by way of picturing things – in order to grasp abstract knowledge or historical events. Furthermore, according to Vygotskij, there is no opposition between imagination and science since new hypotheses develop in imagination.

Creativity

Most creativity scholars agree on creativity being dependent upon imagination and a rich inner life. There are many theories, which explain this connection. As early as 1952, Ernst Kris claimed that regression was a requisite constituent of creativity and hence, he described creativity as regression in the service of the ego. Later on, other scholars, such as Arieti (1976) and Rothenberg (1979) have elaborated the image of creativity further, and asserted that the subjective features of creativity have to be guided by a conscious mental activity, that is, primary and secondary process in interaction. Smith and Carlsson (1990b) argued that creativity rather consists of reconstruction than regression, which in that case demonstrates that an intentional secondary process is required in order for creativity to be brought about. Regression, on the other hand, is dominated by primary process, such as fantasy and dream. Simultaneously, Carlsson (1992) maintained that the cognitive regression is a prerequisite of the reconstruction of preconscious material.

Many scholars have discussed the process behind creative ability. Vygotskij (1930/1995) considered that creativity and imagination have a line of development of their own. He asserted that imagination is not at its most fertile in childhood but that it gains increasingly higher potential the more experience we gain, and also, in order for us to use it creatively, we must have obtained a certain level of intelligence. A balance between intelligence and imagination is not reached until pre-puberty. However, there are individual diversities. For some people logical thinking is developed at the expense of imagination, while in the case of others logical thinking and imagination coexist and influence each other. The last-mentioned relation between logical thinking and imagination would be a prerequisite of a more creative manner of functioning. Vygotskij was of the opinion that imagination splits in a subjective and an objective variant in adolescence, where the more objective imagination is the basis of adult creativity. The subjective imagination includes daydreams and personal fantasies. There are also scholars today who share Vygotskij's view. Ayman-Nolley (1992) stressed that creativity and imagination have a line of development of their own, which, she asserted, not only Vygotskij claimed, but also Piaget. According to her, Piaget described the development of creativity as alternately assimilation and accommodation.

Another suggestion of what the creative process comprises, was put forward by May (1975/1976). He described the creative process as a dedicated, intensified meeting between subjective experience and the surrounding world. Creative people avail themselves of their imagination, but in the creative act the subjective experience transforms into something which more generally gives an illuminating description of our reality.

Creativity can be defined in many different ways. This study is based on the definition of Smith and Carlsson (1990b), which focuses on the creative person's way of functioning and, by that on the creative process. Creativity is: "a generative or productive way of experiencing reality, including the perceiver's own self" (p. 5). The productive way of perceiving reality arises from the fact that we can reconstruct primitive experiences and thinking and reuse these in order to escape from traditional thinking patterns.

Research on Children in Middle Childhood

Many psychological thinkers have theorized about middle childhood. The psychodynamic theory labeled the period latency, which implies that it is a comparatively uneventful phase. Piaget (1964/1988) designated the period as the concrete operational stage and Erikson (1950/1977) pointed out that industry versus feelings of inferiority distinguish this phase. All three theories contribute to the description of the period.

But there is another aspect of this age which is not as thoroughly examined, namely the realm of imagination. Singer and Singer (1992), among others, have questioned the label latency and the alleged uneventfulness. They are also of the opinion that neither Freud (see e.g., 1911/1986) nor Piaget (see e.g., 1951/1967) took an interest in the development of imagination during middle childhood. Singer and Singer referred to Piaget's statement that "the more the child adapts himself to the natural and social world the less he indulges in symbolic distortions" (1951/1967, p. 145).

Singer and Singer (1992) considered, in accordance with Vygotskij (1930/1995) and many others, that Piaget must be revised. Imagination does not vanish with maturation, but it becomes internalized and turns into an inner world. The external games of make-believe are for the most part abandoned in the early school years. In middle childhood, children have a greater intellectual capacity for keeping the internal and the external worlds apart, which contributes to their having an ability to hold an inner world of make-believe. This inner world is no less imaginative than the outward pretend play. On the contrary, it provides unplumbed opportunities to experience things, for example, heroic deeds and romances, impossible in external reality (Singer & Singer, 1992).

Several scholars have pointed out that the age of ten is a creative culmination (Camp, 1994; Urban, 1991; Smith & Carlsson, 1990b; Torrance, 1965). Creativity decreases at seven years of age and increases again toward ten years of age after which it decreases again during the chaotic early adolescence. During puberty, there are other things that demand energy, and contrary to popular belief, adolescence is not a particularly creative period.

Another aspect of creativity in middle childhood is that the increasing awareness of the self results in children becoming more critical of their own creative work (Vygotskij, 1930/1995;

Singer & Singer, 1992). Gardner (1980) claimed that there also occurs a shift from a stage where children have pictures as their main emotional mode of expression, to a stage where linguistic expressions in speech and writing prevail.

Amabile (1983) has done research on the surrounding world's influence on creativity. Knowing that what one is creating will be evaluated, results in reduced creativity. Amabile (1983) suggested that an intrinsic motivation is crucial for creativity while extrinsic sources of motivation (competition or reward) often merely deteriorates the creative quality. Baer (1998) demonstrated that especially girls' creativity was negatively affected by evaluation. This result is one of few that point to a gender difference as regards creativity.

There are many different ways to study and measure creativity in children. Torrance (1965) has developed an extensive test battery, Torrance Tests of Creative Thinking (TTCT). This contains both a verbal and a figural element and measures some components which are essential for creativity; fluency, flexibility, originality, and elaboration. The test takes a large amount of time to accomplish in its entirety. The coding of TTCT requires special training. Smith and Carlsson (1990a) have developed another test, Creative Functioning Test (CFT). CFT measures creative functioning, which is generally believed to be a prerequisite of the creative process. CFT is less extensive but demands individual testing and special training. Another example of a measuring instrument has been designed by Urban (1991), Test for Creative Thinking – Drawing Production (TCT-DP), which compared with Torrance's test, is a less complex figural test. The list of tests could be extended much further. However, in my overview, no other study was found with a starting-point in a story to study and measure creativity.

In middle childhood, few gender differences in creativity have been found (Baer, 1998; Rejskind, Rapagna, & Gold, 1992), but the results are ambiguous. From their survey of the literature, Rejskind and associates asserted that girls tend to be somewhat more creative in comparison with boys, even though their own study did not display such results. Tegano and Moran (1989) came to the conclusion that girls evince less original thinking than do boys at this age. According to Singer and Singer (1992), there is a need for more research on this age group. We must find "ways of tapping the fantasies of children during this period as major clues to the origins of attitudes about self, goals and imagination itself" (p. 264).

Research on Drawings

This study uses drawings as a means of acquiring knowledge of psychological aspects of children. Goodnow (1977) claimed that children's drawings can be useful sources of psychological information. He said that children's drrawings "are often indicative of general aspects of development and skill. Drawings can tell us something not only about children but also about the nature of thought and problem-solving among both children and adults" (p. 10). The psychological development is clearly related to the way in which children draw and paint at various ages (Gardner, 1980). Ten-year-olds have in their development passed the age when they draw without any critical scrutiny. They compare themselves with others and strive for paintings as lifelike as possible (Gardner, 1980; Goodnow, 1977).

Aims of the Study

The purpose of this study was to gain more knowledge of ten-year-olds' subjective realm of imagination in relation to creativity. Is the intentionally guided subjectivity, which some scholars claim to be a vital aspect of creativity, possible to study by letting children work on a creative task? The point of departure for this study was the Drawing Task and a number of issues in connection with it: What distinguishes children's drawings? What guides children's choice of motif, conventional drawing motifs or are they inspired by their subjective world? Are they influenced by what and how they usually draw and by the colors they normally use? To what extent do trends or "the spirit of the times", such as television and computer games, affect children's drawings? How freely do children use their imagination? What age specific issues can be discerned in the interviews?

An assumption of this study was that the drawing motifs and the creativity assessments of the drawings would be related to other creativity measurements. Another question was whether there would be a gender difference as regards the solutions to the Drawing Task.

METHOD

Children at the age of ten have reached a sufficient cognitive capacity for conveying much information about themselves. Andersson (1998) was of the opinion that children far too often become objects instead of subjects in research on children. Therefore, the interview was considered a suitable research method for this study.

Apart form the interviews, 110 drawings were collected for quantitative analysis together with two creativity tests: The Unusual Uses Test and the Activity Questionnaire.

Participants in the Quantitative Substudy

A total of 110 pupils (54 girls and 56 boys) in their fourth school year, that is, at the age of ten, made drawings. They came from six various schools in southern Sweden. Out of the 110 pupils, there were 61 (from four classes) who took the Unusual Uses Test and of these there were 34 (from two classes) who, in addition, filled in the Activity Questionnaire. It was for practical reasons that not all children took all three tests. Different teachers had different amount of time to spare. All testing tasks were administered in those classes where the teachers were able to offer more time. The frequency of drop-outs was approximately five pupils per class, chiefly depending on parents not letting their children participate.

Measures

The Activity Questionnaire

In the Activity Questionnaire, questions were asked about different factors which, according to Smith and Carlsson (1990b), is associated with creativity. The questions deal with, for instance, whether the children are involved in creative hobbies, whether they fantasize a lot, whether they have recollections of dreams and whether they have (had) imaginary companions (Appendix B). The questionnaire was developed for the present study. Each question added one point, with the exception of creative hobbies, which could give a maximum of three points.

The total amount of points was 11. The questionnaire is related to creativity given the fact that through having, for example, creative hobbies the participants are assumed to experience reality in a generative or productive way. Through having invented imaginary companions the participants may also have a generative or productive way of perceiving their own selves.

The Drawing Task

The Drawing Task was developed for the present study. A brief narrative, "The painter's Mystery" (Appendix A) is read out loud to the participants. The narrative is about an artist who paints a picture of a field during fall; on this scenery a mysterious phenomenon appears. A child, named Adam, first discovers the phenomenon on the field and points it out to the artist. The story ends in a drawing task; the children are asked to draw what they think the phenomenon could be. The mysterious phenomenon is never described in great detail, and the intention is that the children should, by means of their imagination, place themselves in the narrative and use something out of their own experience or world of make-believe in order to come up with a solution. Accomplishing this requires that the children have a generative or productive manner of perceiving their surroundings and themselves, and that they solve the task by reconstructing inner and outer experiences of their own.

The children are instructed that there is no correct answer, that all answers will be regarded as equally interesting, and that it does not matter how they draw as long as they are able to explain what they think it is that the artist sees. They are also told that they can put down their solution in writing. The children are asked to complete the Drawing Task during a 45-minute lesson.

The Unusual Uses Test

In the Unusual Uses Test (Guilford, 1967), the participant makes up as many alternative uses as possible for a well-known object, for example, a newspaper or a brick. In the present project, UUT was adapted to function as a test for children. Empty milk cartons are well-known objects for children and are therefore suitable. The children are asked to write down as many uses as they can think of in 15 minutes. The total number of

uses is counted and every suggestion is given one point. The test measures fluency of ideas. In order to come up with many suggestions, a generative or productive way of experiencing reality is required.

The Participants in the Qualitative Substudy

Thirty 10-year-old children (16 girls and 14 boys), out of the total number of 110, took part in interviews. A number of particularly creative children and a number of less creative children were chosen in order to have a wide range of participants to provide the information on ten-year-olds' sources of inspiration.

In order to choose interviewees, the results of the Unusual Uses Test and the Activity Questionnaire were utilized. In this way, what Patton (1990) designated as "maximum variation sampling" was achieved (see table B2). The interviews were carried out individually in separate rooms.

The number of interviews was not decided in advance, but they were brought to a close when material of great variation had been collected. The term "saturation" is frequently used in connection with qualitative method to describe the state which occurs when no more new information appears (Lantz, 1993). Definitive saturation was not reached, but sufficient material was considered to have been collected.

Interview Procedure and Analysis

The children heard the story and afterwards they drew or described their solutions. Then, they were interviewed regarding four topics: (a) *Creative traits*, that is, background facts on, for instance, creative hobbies and other questions found in the Activity Questionnaire; (b) *The motif*: Why did they draw exactly that motif? Do they usually draw that motif? Was there something personal in the picture? Have they seen something like that themselves? Were the chosen colors their favourite colors or were the colors chosen for some other reason?; (c) *Feelings and thoughts when presented with the task*: Was it difficult, easy, interesting, exciting or meaningless and impossible?; (d) *The children's fantasies* more generally and concerning imaginary companions. Topic (b) constituted the main part of the interview material. Topic (d) will be reported on in a future study.

The interviews lasted between half an hour and an hour. The interview material was tape-recorded. Those parts of the interviews which were relevant to this study was transcribed in their entirety.

For the analysis, the transcriptions were read through thoroughly. Categories or themes were created when similar notions were found in many children. During the process of analysis, I also tried to remain open in order to make it possible to uncover possible unpredicted aspects.

After establishing a number of themes, I went through the material once again to check whether any interviews were inconsistent with the notions within a theme. The result of this was reported within the theme or in a theme of its own. The material was also supplemented and adjusted by a co-assessor.

RESULT

The Unusual Uses Test

The number of suggested uses of the 61 participants who took the Unusual Uses Test varied between 0 and 18. The mean was 4.7 (SD = 3.4), for girls 5.1 (n = 30, SD = 3.8) and for boys 4.3 (n = 31, SD = 3.0). Girls and boys did not differ significantly from one another.

The Activity Questionnaire

A homogeneity testing (Cronbach's alpha) warranted the exclusion of one question, namely the question concerned with whether the children had a need to be alone. The maximum score was, after the exclusion of this question, 10. The average result was 4.9 (n = 34, SD = 2.8), for girls 5.5 (n = 15, SD = 3.3) and for boys 4.5 (n = 19, SD = 2.4). A comparison of girls' and boys' results did not demonstrate any significant difference.

The Drawing Task

The 110 drawings showed great differences. Some were skilfully carried out, while others were drawn in a more naïve manner. A

small number of the children was uninhibited in their imagination and thus, without problems, they were able to draw "the unseen", while others remained more "down-to-earth" and depicted a natural phenomenon[1]. In order to get a general view of all the drawings, two different types of categorization were made. The first subdivision shows what motifs the children drew. The second is an assessment of the creativity level of the drawings. *Originality of motif concept* and *artistic quality* of the drawings were rated in order to decide its creativity level.

Motif Categories

Not surprisingly, most children drew natural phenomena, such as fog, rain, and the sun. Concrete objects, such as trees and birds, also occurred frequently. The most represented motif was fog (19 drawings) and after that rainbows (7 drawings).

The motifs of the drawings were divided into two different categories, *real-life motifs* and *imaginary motifs* (Table 1). Real-life motifs were drawings of weather and natural phenomena, as well as those who did not come up with an answer. These comprised 65 percent of the drawings (e.g., Figure 1c and Figure 3b). The others were imaginary motifs. The imaginary motifs were divided into five subcategories. They were drawings (1) inspired by fairy-tale characters, (2) drawings where the children had written "imagination" but not explained it further, (3) drawings of weather or natural phenomena transformed by imagination, (4) of imaginary phenomena, for instance, a "gateway to heaven" and a "funny man". One child drew a picture of light and air in a conical shaped, rainbow-colored form (Figure 1b). There were also drawings of (5) imaginary creations with an adhering elucidating text. For example, one pupil's drawing had a text saying "The devil and God meet in the fog" (Figure 2a). Another child made a drawing of "one dancing and one crying girl" (Figure 2b).

There was no significant gender difference between real-life and imaginary motifs, Fisher's Exact Test, p = .07. However, there was a tendency that girls used more imaginary themes (44.5%) in their drawings than did boys (26.8%).

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[1] During the collecting of the drawings, I tried to observe whether the children copied what their neighbor drew, but there were only a few who did so.

(a) "A cloud with something moving inside it", real-life motif, highly creative, belonging to category two.

(b) "A kind of huge imaginary thing", imaginary motif, highly creative, belonging to category one.

(c) "Heaven", real-life motif, less creative, belonging to category three.

Figure 1.

Tabel 1

The Motif Categories of the Drawing Task

	Girls	Boys	Total
Real-life motif	30 (54.5)	41 (73.2)	71 (64.5)
No response	1	3	4
Concrete objects	7	11	18
Natural & weather phenomena	22	27	49
Imaginary motif	24 (44.5)	15 (26.8)	39 (35.5)
Fairy-tale characters	3	5	8
Unexplained "imagination"	1	3	4
Natural phenomena imaginatively elaborated	4	1	5
An imaginary phenomenon	10	4	14
Written explantion to picture	6	2	8
Total	54	56	110

Note. Percentage within parenthesis

Assessment of Artistic Quality and Motif Concept

A creativity assessment of the drawings was also undertaken. After the first categorization of the drawings, it became clear that within each motif category (real-life or imaginary) there were differences as regards artistic quality and as regards originality of the motif concept. The real/imaginary motif categories were not always related to how creative the children who had made them were. The creativity assessment bore reference to two dimensions: *Artistic quality* (technique) and *motif concept* (what it represented). Artistic quality and motif concept were separated so that the raters of the drawings would pay attention to these two dimensions. This was chiefly done to avoid letting artistic quality decide whether the picture would be labeled "highly creative". The drawings were initially divided into four different categories depending on whether the motif concept was "original and/or imaginative" (category one and two, Table 2) or the opposite "concrete and/or stereotyped" (category three and four) and whether the artistic quality was found to be "elaborated and/or expressive" (category one and three) or the contrary "impersonal and/or simple" (category two and four, Table 2).

(a) *"The devil and God meet in the fog", imaginary motif, highly creative, belonging to category one.*

(b) "One crying and one dancing girl who are formed in the fog", imaginary motif, highly creative, belonging to category one.

Figure 2.

If a drawing conceptually was assessed to be both original (category one and two) and concrete (category three and four), it fell into the more creative group (Highly creative). The drawings found to be "original and/or imaginative" were to a greater ex-

tent presumed to be made by individuals with a generative or productive way of experiencing reality and themselves. Among the drawings with whirl motifs, there was one which was found to be both creative (having an original concept) and artistically skilful. The motif category was categorized as real-life. The girl who had drawn the picture was sometimes able to see the whirl, which served as moral guidance for her. It was depicted as a large, white spiral which occupied the whole sheet of paper (Figure 3a). As a contrast, this drawing can be compared with a picture of a whirl drawn by another child (Figure 3b). This boy had not seen the whirl himself. The drawing was composed of a smaller spiral on a field. The picture also displayed the painter

Table 2

The Creativity Categories of the Drawing Task

	Girls	*Boys*	*Total*
Highly creative: Original and/or imaginative concept	19 (35.3)	9 (16)	28 (26)
1) Highly artistic: elaborated and/or expressive drawings	9	5	14
2) Less artistic: impersonal and/or plain drawings	10	4	14
Less creative: concrete and/or stereotyped concept	35 (64.7)	47 (84)	82 (74)
3) Highly artistic: elaborated and/or expressive drawings	9	12	21
4) Less artistic: impersonal and/or plain drawings	26	35	61
Total	54	56	110

Note. Percentage within parenthesis

and a cottage. The moral guidance whirl was assessed to belong to creativity category one, whereas the other whirl drawing was placed in category four.

The key to the Drawing Task could also have been described in writing if a child had preferred that. However, no one did.

Two co-raters, save the author, scrutinized 30, at random

(a) "A good whirl", real-life motif, highly creative, belonging to category one.

(b) "Whirlwind", real-life motif, less creative, belonging to category four.

Figure 3.

chosen drawings, and the interrater reliability was significant, $p < .001$ (r_s = .66 - .83). An adjusted version of the author's assessment constitutes the results. Table 2 displays the distribution of the 110 drawings in the different creativity categories.

The majority of the drawings (74%) were found to belong to the third and fourth category consisting of concrete and stereo-

typed concepts. The imaginative and original concepts, which characterized both category one and two, jointly represented 26% of the drawings.

There was a significant difference between the creativity assessment of girls' and boys' drawings, z = -2.29, p = .02, Mann-Whitney U. The girls were assessed to belong to category one and two, that is, the highly creative group, to a greater extent than the boys.

Relation between the Creativity Measures

There were significant relationships between the different creativity measures. The creativity assessment of the drawings and the Unusual Uses Test demonstrated r_s (n = 61) = .26, p = .04. The correlation between the creativity assessments of the drawings and the Activity Questionnaire was r_s (n = 34) = .52, p < .01. The comparison between the Activity Questionnaire and the Unusual Uses Test was r (n = 34) = .34, p < .05.

Imaginary motifs were more common among the children who made highly creative concepts. However, no association was discerned between the motif categories (real-life/imaginary motifs) and the Unusual Uses Test, or in relation to the Activity Questionnaire.

Presentation of the Interviews

In the interview analysis, twelve different themes were arrived at: on the one hand, different factors that influenced the children's choices of motif, that is, their sources of inspiration, on the other hand, various notions related to the children's drawings. These themes, among other things, concerned the relation between imagination and reality.

(a) Sources of inspiration: *1) Inspiration from own make-believe world, 2) Inspiration from own experience or habit, 3) Influence by trends, 4) Guided by logic and external reality.*

(b) Notions of imagination and reality: *5) Notions of clouds, 6) Notions of air, wind, and fog, 7) Children see other things than adults, 8) Different degrees of attention, 9) A world in*

> *between imagination and reality, 10) God and supernatural beings, 11) Symbolism, and 12) Children's awareness of their imaginativeness*

The only difference between girls and boys that appeared was in "Influence by trends". Four boys contributed to this theme but only one girl (see Table 3).

Each child could be represented in several themes. Within each theme, some examples of the notion in question are presented. Appendix D displays all occurrences within each theme.

Sorces of Inspiration

Regarding the question concerning inspiration and influence, some children answered that they had just come up with the solution without thinking of anything special. Thus, all children were not conscious of the reason why they drew a certain motif. However, most children had some ideas of what had influenced and inspired them.

There were children who were inspired by the story in a concrete manner by drawing things that were mentioned in the story (rain, fog, field, tractor and farmer) and children who drew things, which appeared to be more traditional drawing motifs (tree, house, land and heaven). Another group of children was inspired by more personal experiences that they imagined to be the mysterious phenomenon in the story.

Inspiration from Own Make-Believe World
Several of the interviewed children utilized motif concepts for their drawings influenced by their own earlier fantasized world (for example see figures 1a and 2b). They had previously fantasized about something similar. When hearing the story about the painter, the children put their own imaginary creations in that context and used it for their drawings. They projected their own subjective experiences onto the narrative and thereby found a solution to the task.

Here a couple of examples follow of children whose fantasy world served as a source of inspiration. One girl drew a whirl on her drawing and told that she had used to see such a whirl herself (Figure 3a). The whirl functioned as moral guidance for her. The whirl indicated when she had achieved something good, and if her "goodness" decreased the whirl shrunk in front of her.

When she uttered spiteful remarks about friends the whirl turned black.

Interviewer: Is there anything else that you can tell about it?

Child: Yes, that sometimes I have done something good, but then maybe what I do is not as good anymore and then it /the whirl/ becomes smaller and smaller and then, I know, sort of, that it was not as good /.../.

Interviewer: Is it when you play or draw that it comes, or is it when you do mathematics?

Child: No, most of the time, it is when you are thinking...it comes when you are not thinking of it.

Interviewer: OK, then it turns up /.../

Child: Yes... and then sometimes when there is something, then the whirl may come, but then it is all black.

Interviewer: When is that?

Child: You see, when you think like that, /Albert/ is a not particularly nice pig-head.

Interviewer: How do you mean?

Child: You see, he is absolutely crazy. He calls me a skeleton person, and I don't like that. And sometimes when I think in that way, then he sits up there, and I think I would be glad if he fell down from up there, and then the black whirl comes and says – well, that's not good.

One boy drew a cloud or a shadow and described it as if something was moving inside it (Figure 1a). He had experienced something similar himself:

Child: Where my dad lives, in the wood, there are two fields next to his cottage and... sometimes I see... I always see something... just like a shadow, similar in some strange way, but I don't really pay much attention to it anyway.

Interviewer: But do you mean that this /the drawing/ is something similar to what you have seen yourself?

Child: In a way it is similar and in another way it isn't.

Interviewer: In what way is the shadow different from what you have seen?

Child: Well, that it, the shadow, sort of, passes by quickly and this /the drawn object/ is a thing a bit like a shadow which is moving all the time /.../ but you see, what is strange with the thing I've seen at my dad's /.../ it's that I think it's some, sort of, cloud that is blowing... but it's almost always at the same time and all.

Another child drew an imaginary character about whom she used to think. This girl had several similar make-believe figures. She described the creature in the drawing carefully:

> Child: It's like a little cloud, but it's a bit more transparent, well if you look really closely anyway... and it's like a little girl with a spiny neck and a bit like that, and then her hair is violet, her eyes are green and her nose and mouth, and then her head is blue and... well, then she's there, and you, sort of, see nothing but her, when you are really concentrating a lot, you see.

One boy drew a make-believe man and said that he often invented similar make-believe figures when he was drawing. But it also turned out that there was a link to his fantasies. He used to pretend that he met similar creatures:

> Interviewer: Do you pretend that you meet these characters, or is it only that you think about yourself that way?
> Child: Meet characters [embarrassed giggle].
> Interviewer: What sort of characters do you meet then? /.../
> Child: I don't know, but I suppose some are ordinary people, and then there are some fantasy figures, aliens...
> Interviewer: ...that you meet. Where do you usually daydream?
> Child: Sometimes on my bed and sometimes at school when we have boring subjects.

One girl drew a picture and told about the elf-king's treasure, which consisted of a collection of beautiful stones, guarded by elves. The girl reported that she had seen elves and she thought she might have seen the treasure on one occasion too.

A boy had drawn a colorful cloud on the ground, which he said was a creation of the painter's imagination. In the interview, the boy reported that he could see figures in clouds that contained both real colors and imaginary colors. On the whole, it did not seem that the pupils who drew their inspiration for their drawings from their own make-believe world did so consciously. They made their drawing, and only after a while into the interview, did it become clear that they had been fantasizing of something similar. However, the phenomena in children's fantasy often differed a little from what they drew, but it was still possible to perceive that their make-believe world had inspired the solution to the Drawing Task.

Influence by Own Experience or Habit
The assumption was made that personal taste and habit would influence the children's motifs, colors and painting techniques. But among the interviewed children this proved not to be accurate. Not one child used their favorite colors. Only one of them chose to draw the motif with only a pencil without coloring it, since he preferred that method. Another child drew her

make-believe objects in a special way (in perspective), since she had learnt that it looked less flat. Some pupils had been inspired by different personal experiences, that is, one boy had seen a flower shoot coming up in his mother's garden and drew the shoot in the field in front of the artist.

A girl tried to draw "reality" which was what she called the state of mind when you perceive something very clearly and intensely. She explained "reality" as what you see when you come to new places. She also exemplified it with an occasion when she drew a friend's face and then saw it with new eyes.

> Interviewer: Can you tell me about some occasion when you think you've experienced it?
>
> Child: No... not exactly, but I mean, you must... OK, we have had an arts class, and then we were asked to do each other's portraits without looking at the picture. Then you often catch the expression of the face.

Finally one boy revealed that he was interested in crystals, which he maintained was the reason why he had drawn a rainbow-colored cone (Figure 1b).

Influence by Trends

Little support was found for the assumption that trendy occupations and "the spirit of the time" would influence the drawings. Only a few aliens, role play characters and computer game figures were found among the motifs. Only one out of 30 interviewed children drew an alien.

Two of the 110 children described in a similar way how some science fiction character would fly round the earth several times in order to enter another dimension. This resembles the technique that the cartoon character Superman used in order to go back in time. A third boy drew a gateway into another dimension, which might have been influenced by science fiction stories. Otherwise the rural setting in the story did not seem to make the pupils associate to space and science fiction topics. The imaginary figures mentioned were more of a traditional type, such as trolls, spirits, ghosts and angels.

The interviews indicated that the children's dreams and hobbies to a certain degree were influenced by trendy occupations. Some spoke about their dreams of being good at skateboarding or about interviewing rappers or being kidnapped by "alien spaceships". One boy dreamt that he won money on the "bingo-lottery" on television. The boys' hobbies, in particular, were trendy occupations, like roller blades skating. As for crea-

tive hobbies, a number of children produced their own music, which was rap music. One boy also drew toy aliens from a computer game in his leisure time.

Guided by Logic and External Reality
A good deal of the children attempted to find a realistic solution to the Drawing Task and with such logic it had to be a weather or natural phenomenon of some kind (see Figure 1c and 3b), an animal, or a concrete thing. Several of those who drew real-life motifs also had logical explanations of why only certain characters in the story could see what they had drawn: "the farmer didn't see it because he had his cap over his eyes" or that you had to look "really, really carefully" to be able to see the fog. The pupils reasoned rationally about what the external reality looks like, but they ignored the more imaginary and irrational contents of the story. A girl explained why the farmer did not see the fog:

> Interviewer: Yes, and what do you imagine it looked like?
> Child: That it was kind of a bit darker... it's like it was blurred and then I think the trees were leaning.
> Interviewer: Was it ordinary fog then? [the girl is nodding] Why couldn't the artist see it from the beginning?
> Child: I don't know /.../ I thought in a way that he, the little boy, who kind of saw, who thought he felt it all the time, while the farmer and all, he didn't care, sort of. Just like sometimes I don't feel that I'm carrying my rucksack.

One child thought it was rain that the artist had forgotten to draw, since that is generally not represented in pictures.

> Interviewer: What did you think? Was it only the artist and that boy who...
> Child: Yeah, in a picture... and if it's raining and you're going to paint something, then, you usually don't, they usually don't paint the rain.
> Interviewer: No, but do you think that he wanted to do it then?
> Child: Yes.

Other ways of explaining why only the artist and Adam saw the phenomenon were that one "perhaps don't look exactly at that spot" with reference to the fact that only certain people saw a yellowish cloud and that "the farmer doesn't see the light, because it's in a story, so it's not in the real world".

Notions of Imagination and Reality

Notions of Air, Wind and Fog

A large number of the drawings (49 of the 110) represented natural phenomena. Also several of the 30 interviewees drew such motifs. Several children described different air phenomena that their drawings represented. One girl thought that air consisted of very small, white shiny particles that were moving around. She thought that was what the artist saw. Another girl maintained that the wind looks "a bit like water", and air is "a bit shiny and almost transparent."

A boy, who also thought that the phenomenon was air, said: "if you squint, things look a bit blurred and then you can imagine that you see the air, because I don't know what the blue of the sky is, the ozone layer or whatever."

Several others related how the air forms shapes in different ways. One child thought that "tiny dots" in the air helped to form these figures.

Interviewer:	Now, the air, what do you think it looks like?
Child:	It just looks like tiny, tiny dots.
Interviewer:	Yes, have you seen it yourself?
Child:	Yeah, if you squint, well, then you can see them.
Interviewer:	What do they look like, these tiny dots?
Child:	Shades and that sort of stuff.

A girl drew a picture representing "a veil of wind, power and air" in bright colors which also could be interpreted as some sort of air phenomenon. A boy drew a similar motif, a cone-shaped light or air phenomenon in the colors of the rainbow (Figure 1b).

Several of the 110 drew and described how shapes were formed in the fog, and one boy described how dust was blown up into the air and formed shapes.

Notions of Clouds

A number of children included cloud formations in their motifs, and during the interviews different notions of clouds appeared. Some children demonstrated a concept of clouds containing colors. In most cases it did not relate to the colors you see at sunrise or sunset, but to the fact that the children saw colors in the clouds in the daytime.

One boy had drawn a colorful cloud on the ground, which was described as a creation of the painter's imagination. The

boy used to see cloud shapes in the evenings, with those colors he had used for his drawing. He also maintained that clouds could have colors of their own too.

Interviewer: What colors are there in the clouds?
Child: There is blue and a bit of green in them.
Interviewer: Yes.
Child: Some very light green or almost turqoise, also grey and white.

One girl believed that there were colors in clouds and the figures of her drawing showed these.

Interviewer: Are there any specific colors that you are talking about?
Child: Blue and black.
Interviewer: Mainly blue and black?
Child: Clouds can be different colors, I think, but it was blue and black and then a little transparent, too.
Interviewer: And then, when you've seen such things, what colors have they been when you've really seen them?
Child: It has been yellow and blue, but not quite so much black and... a little transparent too.

One girl who had drawn a fantasy figure in green, violet and yellow said that she had seen the figure in the clouds with those colors.

Children See other Things than Adults
During the interviews, several children explained the story by saying that children and perhaps artists could see things that ordinary adults generally could not see. When a number of children had expressed the view that people differ in their perceptual ability - not their visual power - this question was included in the remaining interviews. Several similar notions appeared. In most cases, they concerned fantasy beings or supernatural phenomena, like trolls, spirits and elves. In some other cases, it was about different expressions of a landscape and colors of clouds that only certain people could see. One boy asserted that children have a different perceptual ability:

As I see it, it's like only children can see, because they have like a different kind of seeing, it's like they have when they are a bit younger... well... not like those scientists and those kinds... they haven't thought that children have a different way of seeing, you know.

One girl said that children perceive with more feeling:

Children can see things that adults can't see and with adults – they don't always paint the expression of the field, they don't have quite so much of a feeling in it, I don't know how to say it.

Another boy thought that something (possibly God) made children see in a specific way.

Several of the children maintained that a lot of imagination was needed to see the motif of their drawings, and it was because of this that Adam and the painter could see it, but not the farmer.

Some thought that it was not only children but certain people who could perceive things that others could not. One girl thought it was mainly a matter of attention, but that there might be something supernatural too:

There are things that are a bit unnatural, sometimes, but it isn't always. Sometimes, there may be a pink spot on a stone, which isn't from berries and, which doesn't come off, and there are some people who don't... who just go past that stone, and then there are some who stop.

One girl claimed that the phenomenon she described could not be perceived by people who possessed a certain quality, namely greed: "Yes, it's like something greedy people can't see."

Different Degrees of Attention
Several children contradicted the notions in the previous theme. These children reasoned more rationally about people's different perceptual abilities. These children said that it was not so much about being able to see but rather about wanting to perceive and about how much attention a person paid. This could apply to various things, often more concrete things like animals, plant shoots, clouds of fog. One child said that it could be a button that some discover because they are more attentive.

One girl said she had "x-ray" vision which made her see more details than others. Someone else says that: "perhaps you see what you want to see".

One boy put another meaning into being able to see what others cannot see. In a mature way of reasoning, he maintained that people experience colors and shapes differently, for example, the shape of a cloud.

Interviewer: What do you believe yourself, do you think there are things that some people can see and others can't?
Child: Yes.
Interviewer: What sort of things are they?

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Child: They're colors, perhaps shapes, different shapes, if it's an ordinary cloud perhaps I can make out a lion or something else, and then someone else makes out something completely different.

A World in between Imagination and Reality

Some of the children had a more flexible boundary between fantasy and reality. A few children talked about phenomena that they had experienced themselves as being something in between imagination and reality.

One girl who described a veil of wind, power and air said that "It's something unreal but still real". Another girl gave the following answer to the question whether she believed that the figures in her drawing existed in real life or in a make-believe world. "Both. The troll existed in a way in the heart and in imagination, and God also existed in the heart and in imagination". Another child had drawn a cloud with something moving inside (Figure1a), and when asked what it was he said:

Child: Not aliens, but almost like aliens, you know, it's difficult to explain.
Interviewer: Do you think it's something like supernatural beings or so, well, something you aren't quite sure whether it exists?
Child: Not quite like that, but also a bit like that.

God and Supernatural Beings

A number of children included religious or supernatural themes in their motifs, or said that the motif had a religious explanation. Some related that they had talked to God. Others were inspired by supernatural beings like ghosts, spirits, angels and elves that they had seen or heard on various occasions. In one case, a more general discussion about fantasies led to a discussion about God and supernatural phenomena, and this was also included in this theme.

One boy said that he had intended to draw God, because he thought that the artist had seen God, but then he drew "the wind. I was thinking of God or something like that... but then they say he's everywhere, so perhaps he /the painter/ saw him." A girl drew God in her picture and said that she had felt God's presence:

Child: Sometimes I've, sort of, felt that God has been somewhere nearby, but it isn't like I've seen anything, but when I was little I suppose I saw quite a lot, and I believed in it too. /.../ I believe in God quite a lot, although I don't be-

lieve he looks like an old man sitting in Heaven deciding everything and all that, not quite like the Bible says, but I suppose I believe in God.

Interviewer: But what do you think he looks like, if he doesn't look like...

Child: He doesn't look like anything, he just exists.

One boy believed in ghosts and claimed that he had heard them. One girl drew fairies, and she had seen both fairies and elves. She explained what elves are:

Child: Elves, they are like, they are difficult to explain, they look more or less like people, but they come from some other world, and then, at the beginning of time they descended from the sky in a thunderstorm, and then... people have been killing them for quite a long time, so now you can't see... before everybody could see them, but now you can't. They've become invisible.

Interviewer: But can you see them?

Child: Sometimes, sometimes not /.../

Interviewer: What do those elves do?

Child: Well, those I see most, they, You see there are many sorts or races, like those I see most are related to wolves, and they hunt and sing and... but they're very good friends and guardians too.

There were also several examples of supernatural themes in the drawings, which did not derive from the children's beliefs in supernatural phenomena.

One boy described how he used to imagine that he met aliens, who to a certain degree looked like the imaginary figure he had depicted in his drawing. However, he did not believe that those aliens existed in the real world.

One girl drew a picture of God and the devil (Figure 2a), but she was a little uncertain about God's existence:

First of all I think it would be a little strange if you would believe it, because, in that case it shouldn't look the way it does now, I think, but still, I don't know what to believe, there are so many things you can believe, I don't really know what I should believe.

Symbolism

Only two children – two girls – contributed to this theme. Still, it was considered an interesting theme to be included. During the interviews, it became apparent that these two girls had made motifs that were symbols of other phenomena. One drawing depicted a crying girl representing death, and a dancing girl representing life. This is what she said about her drawing (Figure 2b):

Child:	This is the troll then /to the left in the drawing/ and then this is a girl /to the right/, who's just standing like that, and perhaps she's dancing, and then there's a girl who is sad, or perhaps death /in the middle/
Interviewer:	But... to the right, the girl there, did you say she's dancing?
Child:	Yeah.
Interviewer:	So there's a girl who...?
Child:	... is crying, so perhaps it's death.
Interviewer:	Have you met it yourself, or is it something in your imagination or what?
Child:	Yes, I've kind of seen it in my imagination, seen it in clouds shaped like that.
Interviewer:	But did you then think that this was death? Have you thought like that some time? That you'd be able to see?
Child:	Yes.
Interviewer:	Can you tell me about it? /.../
Child:	It's supposed to be like sorrow or so, it isn't supposed to be dangerous but sad, and kind of almost no life in it, some gray and a little fiery or so.
Interviewer:	Gray but still a little fiery?
Child:	Yes, still a little red and yellow and that sort.
Interviewer:	Why do you think then there must be some, well, such strong colors too in it?
Child:	I think everything has got to have strong colors in it, you know.

The girl had lost a close relative at an early age, which had probably taught her how to cope with death.

The other girl had made a drawing which symbolized good and evil (Figure 2a). She drew a meeting between God and the devil, which represented good and evil that exist inside every human being.

Interviewer:	Can you tell what you were thinking then?
Child:	Perhaps I thought that, I don't believe in the devil or so... but all human beings are both good and friendly... oh, sorry, good and evil I meant to say... and then I thought that the red and yellow, I thought that was good, you know, and then everybody has both inside, so I thought it fits together, they meet by a tree too, that's more or less what I thought before. First it was like I thought there's a bit of yellow or so on the tree, but then I used this /color/ and then it turned into a different color/.../
Interviewer:	How did you come to think of the theme of good and evil?
Child:	Well, I suppose I think a lot, of course, most people do, I suppose, sometimes when I feel sad, but I think it's quite interesting with life and such things.

Children's Awareness of their Imaginativeness

Some of the children were aware of their own vivid imagination and referred to certain things they spoke of as only fantasies or daydreams. From the various ways they expressed themselves it was obvious that others had drawn their attention to the fact that they were fantasizing a great deal. All children seemed to be able to change between their own inner perspective and an external perspective when talking about their fantasy objects, as would be expected by children in middle childhood.

One boy related that he had seen what he had depicted in his drawing. Once he had tried to point the phenomenon out to his father. However, his father had not been able to see it, and he just told the boy he was imagining things. Thus, the boy showed that he was aware of what adults can think of children's experiences. Later, when answering the question whether his motif was real and could be seen by everybody, he said: "I don't know. I think it exists in my imagination". At that point, he had himself incorporated the adult way of regarding the relation between imagination and reality.

One girl talked about dots in photos that she could see but finished by an apologetic "but it's only dreams". Another girl explained why she could see many different fantasy figures: "Well, I'm just one of those with a very imaginative mind".

One boy was conscious of seeing some colors in the clouds in the real world and others in his imagination. He could discriminate between real colors and those he imagined.

> Interviewer: You named quite lot of colors, let's see now, red, yellow, blue, orange, green, are some of those colors especially in your imagination, and are some of them more real?
> Child: Green /is imagination/.

One girl proudly explained that her friends told her she was imaginative, which indicated that she highly valued having a vivid imagination.

Several children demonstrated that they knew that their inner experiences belonged to a less accepted world. They appeared to be concerned with what was socially acceptable to communicate and what should be kept to oneself. During the interviews, some children giggled intermittently while relating their experiences with fantasy figures. They seemed to realize that it was no longer quite accepted to talk about their inner world of fantasy.

The experiences of the inner world was perhaps particularly

incompatible with the school world. One girl said that she did not talk to her imaginary companions when at school, because it was embarrassing, and she was afraid someone would be able to tell by her looks that she was fantasizing. Another girl said that if her imaginary companion appeared she went into the wood so that she could be alone.

Relationship between Measures and Interview Themes

A summing-up of the interviewed children's creative activities resulted in a measure similar to that of the Activity Questionnaire. In the interview, there were somewhat fewer questions than in the Activity Questionnaire, and on creative hobbies the total number of them was counted, which was different from the

Table 3

Relationship between the Creativity Measures and the Interview Themes

Theme	Assessment of drawing		Motif category		Creative activities		Gender	
	Highly creative (13)[a]	Less creative (17)	Imagi-nary (12)	Real-life (18)	Highly creative =7 (19)	Less creative <7 (11)	Girls (16)	Boys (14)
Make-believe	8	0	6	2	8	0	5	3
Trends	3	3	3	3	2	4	1	5
Logic and reality	1	10	0	11	7	4	7	4
Clouds	5	0	3	2	5	0	3	2
Children see other things	7	2	5	4	5	4	4	5
In between fantasy & reality	5	0	4	1	5	0	3	2
Awareness of imaginativeness	5	1	3	3	6	0	4	2

Note. Every child may have contributed to several themes.
[a] Within parenthesis, total number of children in each subcategory.

questionnaire, where 3 was the maximum score. The scores varied between 2 and 13 (M = 7.2, SD = 2.4). The summing-up was correlated with the creativity assessment of the drawings and showed r_s (n = 30) = .37, p = .04. The summing-up of creative qualities did not correlate with the real-life/imaginary categories. All the interviewed children did not take the Unusual Uses Test.

Finally, a comparison was made between the measures of the interviewed children and the themes they had contributed to. In Table 3, those themes are shown where differences were noted.

Children, whose drawings were found to be highly creative (category 1 and 2 in Table 2), more often appeared to make use of their own world of make-believe (8 out of total 13 children). This is to be compared to none (out of 17 children) among those with less creative drawings (category 3 or 4, Table 2). Children with highly creative drawings also contributed more extensively to some other themes: "Children see other things than adults", "Notions of clouds", "A world in between imagination and reality", and "Children's awareness of their imaginativeness". Ten out of seventeen children with less creative drawings (category 3 and 4, Table 2) contributed to the theme "Guided by logic and external reality". Only one child with a drawing found to be highly creative (of 13) was represented in this theme.

The comparison between the number of creative activities (comparable with the Activity Questionnaire) and the interview themes, resulted in similar tendencies (see Table 3). The interview group was split at the median on the basis of their number of creative activities. More creative corresponded to a minimum of seven points and less creative to a maximum of six points. In relation to the creativity assessment of the drawings, the result differed in two instances: "Children see other things than adults" showed no differences, nor were the less creative children (with fewer creative activities) more widely represented within the theme "Guided by logic and external reality".

In the motif, categories there were some rather predictable relationships. Most of those children represented under the theme "Inspiration from own make-believe world" had drawn a imaginary motif, and all of those quoted in "Guided by logic and external reality" had produced a real-life motif. There was also one more theme demonstrating a difference; more of those with an imaginary motif had contributed to the theme "A world in between imagination and reality".

DISCUSSION

More or Less Creative

The Drawing Task turned out to be a useable measure of creativity. The creativity assessment of the drawings showed significant relationships to both the Unusual Uses Test and the Activity Questionnaire. The Unusual Uses Test and the Activity Questionnaire also correlated.

The creativity assessment of the drawings was made as simple as possible. The drawings were assessed as highly creative or less creative depending on whether the motif concept was "original and/or imaginative", or "concrete and/or stereotyped". The artistic quality of the drawings was also assessed in order to draw the raters' attention to the necessity of distinguishing between motif concept and artistic quality. A more complicated assessment system would of course have been possible, for instance, having each one of the eight adjectives (original, imaginative, elaborated, expressive, impersonal, simple, concrete and stereotyped) as separate categories of assessment. All four categories could also have been used (see Table 2). However, then artistic quality would have influenced the assessment, and drawing skill is not necessarily related to creativity.

The evaluation criteria could also be related to the two components elaboration and originality which, according to Torrance (1965), characterize creative thinking. These two components are essential elements for a drawing to be classified as creative.

The creative activities of the interviewed children (similar to AQ) also showed a significant relationship with the creativity assessment of the drawings, but not with the motif categories.

The classification of the drawings in motif categories of real-life motifs and imaginary motifs did not seem to work as a creativity measure, since no relationship was found to the creativity questionnaire or to the Unusual Uses Test. One possible explanation for this is that, for example, an angel is an imaginary motif, but the motif does not necessarily represent a creative concept, since it exists as a fairy tale being. Angels do not have to be original creations. They might be drawn in a stereotyped way.

However, the results are somewhat ambiguous. The creativity assessments of the drawings correlated with the motif categories (real-life/imaginary). The highly creative drawings had to

a greater extent imaginary motifs than real-life motifs. This leads to an assumption that there are also differences in what the different tests measure. The correlation was merely moderate – even though significant – between the tests (AQ, DT, and UUT). To some extent, the difference between the tests might regard the relationship between imagination and creativity. Imagination, meaning an inner world of thoughts and ideas, is one aspect of creativity. Perhaps the component imagination plays a greater part in the Drawing Task, than it does in the Unusual Uses Test and the Activity Questionnaire. The Unusual Uses Test deals with fluency of ideas, and the questionnaire concerns creative activities and inventiveness. This may explain why there is a correlation between the motif categories (real-life/imaginary) and the creativity assessment of the Drawing Task, but not between the motif categories and the creativity tests.

Amabile (1983) emphasized that creative tasks must not depend on drawing skills. Although the pupils in this investigation were offered to write down their answers if they thought they were not so good at drawing, they all chose to draw pictures, since the tests were carried out during their art class. This may have caused some to perform below their creative capability.

The Activity Questionnaire might need some revision. One question, concerning whether the children had a need to be alone sometimes, was excluded depending on the homogeneity test result. Perhaps the question rather ought to deal with whether the children like playing on their own. This would better coincide with what Smith and Carlsson (1990b) considered to be a creative correlate.

In addition to fluency, The Unusual Uses Test could also have been scored in terms of flexibility. Flexibility means that the suggestions are categorized so that similar suggestions (e.g., a nesting-box and a mouse home) only render one point. However, the existing category list for bricks is not transferable to the test with milk cartons. Developing such list of categories for milk cartons would have demanded an additional work effort. It is a task for future research.

Gender Differences

As for the creativity assessment of the drawings there was a significant difference between girls and boys to the advantage of girls. The girls also tended to use more imaginary motifs than the boys. Do these results mean that girls in middle childhood are more creative and imaginative? Are boys more guided by logic? If so, is this finding related to boys' later development? Have some of the girls reached the formal-operational stage, but few boys?

Some researchers state that there are few significant differences between girls and boys (Rejskind et al., 1992; Baer, 1998), while others have found boys to be somewhat more creative than girls (Carlsson, 1992).

In this study, only the Drawing Task showed a gender difference. Neither the Unusual Uses Test nor the Activity Questionnaire did so. Thus, we return to the question of what the creativity assessment of the Drawing Task captures that the Activity Questionnaire and the Unusual Uses Test do not. The idea that imagination plays a more important part in the Drawing Task than in the other creativity tests seems to be a credible explanation also as regards the difference between boys and girls, given the fact that the girls tended to use imaginary motifs more often.

The number of participants was lower for the Unusual Uses Test and the Activity Questionnaire than for the Drawing Task, which may be another part of the explanation. Yet another possible reason was that perhaps girls do more drawing than boys, which gives them an advantage in drawing tasks.

The difference between various test situation can also be discussed in the light of Baer's (1998) and Amabile's (1983) studies showing that girls perform better if they know they will not be assessed, while boys are challenged by having their performances evaluated. The task of the story was not competitive, but instead the value of each child's solution was stressed. The Unusual Uses Test could, however, be perceived as competitive, since the task implied finding the greatest number of alternative uses. But this does not explain the whole difference between boys and girls with regard to the Drawing Task, since there was no competitive element in the Activity Questionnaire.

Qualitative Differences

Through interviews, knowledge was acquired of children's different ways of functioning. Some lived partly in a fantasy world. They altered faces of people they had met according to pictures in their memory, they had imaginary companions who in some cases were more important than real friends, and they were "persecuted" by whirls and shadows. Some of the ten-year-olds had the idea that children to some degree experienced reality differently from adults (in the theme: "Children see other things than adults"). Perhaps this might be regarded as a way for children to compensate for adults' power over them. The children seemed to think that although adults could decide over them, children have a unique world of experience that adults neither controls nor have access to. The theme "A world in between imagination and reality" can be interpreted in a similar way. In order to make their fantasy phenomena more legitimate, the children claimed that the phenomena were neither imagination nor reality. In this way, they defended themselves against the adult opinion that imagination was something less important than external reality. They created a space of their own in between, which was outside the realm of adult knowledge and control.

However, not all the interviews were concentrated on children's imagination. Many children were typically concrete operational (Piaget, 1964/1988) and argued in a rational way also concerning the unrealistic phenomenon of the story. They were perfectly adjusted to school reality, where every task has a rational solution. For them this logic could also be applied to a drawing task. For these children subjective experiences did not appear to be of any use in school tasks. As a contrast, there were also children who showed signs of the next Piagetian stage, the formal-operational one, in so that these children used symbolism in their drawing motifs (in the theme "Symbolism").

The comparison between the interview themes and the quantitative measurements further elucidated the differences between various individuals. The highly creative children – as judged from the creativity assessment of the drawings and the number of creative qualities – appeared to use ideas related to their own imagination more often.

Thus, several of the highly creative children used subjective experiences when solving the task. This picture of creativity coincides with the theories of some creativity scholars. The crea-

tive process is claimed to be a mixture of imaginative and rational thinking (Arieti, 1976; Rothenberg, 1979). According to May (1975/1976), creative ideas emerge from subjective experiences, but through the creative process, the experiences become something more. In summary, children with creative drawings and more creative activities contributed predominantly to the themes dealing with phenomena related to a more imaginative ability and probably a more creative mind, that is, seeing colors in clouds or having a notion of a less strict boundary between imagination and reality.

Children with less creative drawings appeared to be more one-sidedly guided by logic and bound to external reality. They had logical explanations of why they had drawn their motifs and why only some of the characters in the story could see the phenomenon.

These differences can to a certain degree depend on whether the children used convergent or divergent thinking. Those who reasoned logically from a "external reality perspective" might think more convergent, while those who used their own subjective reality might have been more engaged in divergent thinking.

Even if the comparison might be interesting, these results need to be looked upon with some caution. Because the selection process was not random, there is a risk that I, as an interviewer, influenced the children's responses in the hypothesized direction, given the fact that I also was the administrator of the creativity tests. These test were used when selecting the interviewees. However, it would have been difficult to keep track of 30 records (the results were not present during the testing only a list of the selected).

In the interviews, the girls appeared to find it somewhat easier to talk about their fantasies. However, the girls did not contribute more to any of the themes compared to the boys. On the other hand, boys talked a little more about trendy occupations, such as street hockey and skateboard.

Relationship to Past Research

Many of the characteristics of the interviewed children could be recognized in past research. In the interviews, several examples demonstrated the self-consciousness that begins to develop in middle childhood (Vygotskij,1930/1995; Erikson, 1950/1977). In the theme "Children's awareness of their imaginativeness",

some children demonstrated that they could take a metacognitive perspective and describe themselves as imaginative, but also that they no longer thought it was natural to talk to others about their fantasies. The fantasies had become the children's private worlds. This can be related to the internalization of the open make-believe games into an inner world, which takes place at this age. (Singer & Singer, 1992)

The relationship between the development of imagination and the development of logical reasoning, as Vygotskij (1930 /1995) described it, can illustrate some of the differences between the children. From middle childhood and onward, imagination is suppressed by logical reasoning by many individuals, while for others, logical reasoning and imagination may coexist. Many of the children were dominated by the premises of external reality in their solutions, despite the fact that the task given to them was more likely to have inspired imaginary solutions. In order to achieve a more creative solution, the children had to leave the premises of external reality, and either manipulate real-life phenomena in an imaginative way or resort to their own make-believe world for inspiration. Perhaps those children who did so are the pupils who let imaginative thinking coexist with rational thinking, and hence have greater opportunities of being creative.

Vygotskij (1930/1995) maintained that imagination undergoes a development from being entirely subjective to also being objective and cooperating with reason (also in Ayman-Nolley, 1992; Smolucha, 1992a; 1992b).

If imagination has its own development, separate from logical development, by using Piaget's terms, one could possibly, conceive of a parallel development of imagination from a concrete to an abstract stage. Then the more creative children would have reached the formal-operational stage of imagination. Piaget (1951/1967), however, argued that the more imaginative way of reasoning, intuition, was an early and less adapted form of thinking, which was supposed to be replaced by logical reasoning in middle childhood.

Past research has shown that ten-year-olds in general are more creative than preadolescents. Smith and Carlson (1990b) assumed that the development of creativity is not entirely linear but has certain high and low points. Creativity is probably not fully developed until after adolescence. Only then, an objective or formal-operational stage of imagination/creativity could be attained. The kind of imagination/creativity that ten-year-olds demonstrate should then rather be called subjective in the

terms of Vygotskij and possibly be concrete-operational in the analogy with Piagetian terms.

Another way of explaining the differences between the children can be through the division of existence into three worlds: an internal, an external, and a transitional or play world (Winnicott, 1971/1981). People may have various ways of dividing their existence into these three worlds. Some individuals perhaps live more in the external world and find it difficult to step into the play world. More creative individuals would perhaps be more mobile between these three worlds, and less creative ones would be less flexible and/or be more dominated by the external reality. In the present study, one group of children – the eight from the theme "Inspiration from own make-believe world" (Table 3) –more clearly divided the world in their minds into three parts in the way Winnicott described. These children drew inspiration for the drawings from their own inner worlds, and projected these inner experiences onto the context of the story, which could be said to represent input from the external world. Thus, their solutions to the Drawing Task could be regarded as products of the play world, as it contained elements from both the internal and the external world.

Piaget (1964/1988) and Erikson (1950/1977) stressed the increased importance of group activities at this age, which to some degree was evident in the interviews. Trendy occupations were found, particularly among the boys. However, they did not influence the children's drawings to any large extent.

Another thing recognized from Piaget's (1964/1988) theory, was how children create causal relations. Among other things, he described how children were occupied with atomistic explanations by thinking that everything can be subdivided into smaller particles. This notion derives from the fact that flour and dust consist of basic particles. Piaget labeled this phenomenon "metaphysics of dust". There were examples of this way of thinking in the children's descriptions of the air and the fog. If you look "very, very carefully" or "if you squint" some of the children claimed that one could see dots, which then would be the particles of the air. One notion that Piaget did not deal with was found in the present study, namely that children imagined that clouds had colors – sometimes very imaginative. It did not appear to be sunset or sunrise coloring of the sky. The children imagined that the clouds themselves contained colors.

Drawings of ten-year-olds are considered to be less colorful and expressive than younger children's drawings (Gardner, 1980; Goodnow, 1977), and this coincided with the result of this

study. Only 14 out of 110 had, according to the assessment, produced "an elaborate and/or expressive" drawing (see Table 2). This also supported the assumption that it would be more appropriate to use the participants' motif concepts for the creativity assessment than relying on the artistic quality of the drawings.

A possible way of obtaining more information of the creative process would have been to video-film the children while they were drawing and ask them to speak out their thoughts aloud. Freeman (1972) claimed that by looking at a finished drawing, only the surface structure of the drawing is focused and important information about the drawing process is overlooked. In this study the emphasis was on the motif concept of the finished drawing (from a creative aspect) and what had inspired it. This approach also resulted in information about the process behind the drawing. If video-filming had been used, we would also have been able to see whether the children's initial intention changed during the process of drawing, and thus, we would have had more complete information about the process.

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APPENDIX A

The Story: A Painter's Mystery

The painter was called The Hawk, because he saw a lot that other people missed. The painter lived in a country far up in the Northern Hemisphere. In that country the summer is all too brief but more beautiful than any-where else. The autumn and winter are all the longer, and then the sky lowers itself over the landscape like a gray, wet wooly so that the farmer's fat, grayish-brown plough furrows and the sky seem to melt together.

Towards the end of the summer, the painter had built a big field easel in a field of beets. It had a roof over it to give protection from the rain. When the autumn came the painter started work on a big painting. The farmer gathered the beets with the help of his tractor and turned the soil over into fat, shiny furrows, while the painter was constantly gazing over the misty landscape and the days went by. The farmer and his five-year-old son, Adam, went up to the painter every day to look at his painting. The farmer thought it was a heck of a good painting. He wouldn't have guessed that there were so many colors in the landscape now in the gray autumn. In the picture, he saw colors he had never seen before in the field.

But the painter wasn't happy with it, something was missing in the picture. Something out there demanded his attention. He often bent forward and squinted over the misty landscape. He knew that what we see is to a great extent what we have learnt to see. Where most people only saw some ten color shades, he saw something like thirty or forty.

The painter asked Adam what he thought of the picture. "Well, it's fine", replied Adam, "but why don't you paint everything in the field?" "Do you see something that ought to be in the picture", asked the painter. "Yes", Adam said, "that big thing, that father can't see, and he drives right through it with his tractor". "But you can see it?", asked the painter. Adam nodded.

When four weeks had gone by, the painter was still standing there with his painting. He could feel with his whole body that there was something in the field that escaped him. It had been raining for three days, and the field had turned into a mess of mud and rotting beet leaves. "I'll soon give up", the painter thought. His hands were cold and he could hardly hold his brushes. What did Adam see in the ploughed field, that neither he himself nor the farmer could discover and that the farmer drove right through with his tractor?

In the afternoon, the rain stopped, but the air was still thick with moist fog. Again, the painter compared his motif with the painting. While he was gazing at the field he forced his eyes to close so that he could see his own nose and the field at the same time. Suddenly he got more and more excited as he saw something taking on a shape in front of him. First, it was difficult for him to keep sight of it. But then, the picture became clearer and clearer and at last it appeared as clearly as the plough furrows. There in the field was something he had never seen in his whole life.

This had been there in front of him all the time, and only Adam had been able to see it. Adam had really been right, he hadn't painted everything in the field. What was it that Adam saw?

By Leif Svensson

APPENDIX B

The Activity Questionnaire

Name..……………Form.................……. Age....................……

1. What do you do in your spare time? _____

2. Do you do any of the following things in your spare time? Mark with a cross

(a) write poems ☐

(b) write stories, make magazines ☐

(c) act in or make up theater plays ☐

(d) make drawings, cartoons ☐

(e) make up tunes or write songs ☐

(f) make up dances, dance steps ☐

3. Do you collect anything? What?

_____ __

4. Do you collect "good-to have-stuff", things you get or find and that you bring home although you don't quite not know how they can come to use. Write down examples of such things.

_____

5. Have you ever made your own toys? If yes, write describe what:

_____

6. Have you made up your own games or party games at any time? If yes, describe what?

_____

7. Do you fantasize often?   Yes ☐   No ☐

8. Have you ever had a pretend playmate?   Yes ☐   No ☐

9. Do you need to be alone sometimes?   Yes ☐   No ☐

10. Can you remember a dream you have had the past week?   Yes ☐   No ☐

11. How far back in life can you remember? Can you remember anything from the

age of   two or three? ☐   four or five? ☐   six or seven? ☐

APPENDIX C

Descriptives of the Interviewees

	Girls *n* = 16	Boys *n* = 14	Total *n* = 30
Motif category			
Real-life	9	9	18
Imaginary	7	5	12
Creativity assessment of drawings			
Highly creative	8	5	13
Less creative	8	9	17
Creative activities			
Highly creative	11	8	19
Less creative	5	6	11
Total	16	14	30

APPENDIX D

II

EVA V. HOFF
INGEGERD CARLSSON

Shining Lights or Lone Wolves? Creativity and Self-Image in Primary School Children

The relationship between self-image and creativity was studied in primary school children. Earlier research points in two directions. Some researchers describe the creative child as well adjusted. Others provide a more nuanced picture in which less well-behaved children can also be creative. Three diffe-rent measures of creativity were used in this study: the Unusual Uses Test, an activity questionnaire and a perceptual test (the Creative Functioning Test). A self-image inventory was used to measure participants' perceptions of their own skills, physical self, psychological health and relationships to others. The results showed no self-image differences between children with high and low creativity. The creativity measures were significantly related, with the exception of the flexibility dimension of CFT. One possible explanation is that CFT measured another aspect of creativity. This was illustrated in a cluster analysis in relation to self-image.

This study concerns the self-image of creative children, but for the sake of comparison we begin with a very brief review of the literature on adult creative personality. Creative adults are generally depicted as having a good deal of self-confidence, allowing them to trust their own ideas and to endure critical opinions (Martindale, 1989). Creative people are also described as being inventive, enthusiastic and risk-taking, but also as gloomy, loud, labile, bitter, etc. (Barron, 1963, 1981). Eysenck (1995) pointed out that there is considerable contradiction in the descriptions of creative persons. They are described as having social presence and poise, but are also said to be asocial and irritable. Furthermore, they are reported to be both dominant and introverted, despite the fact that dominance is generally considered a trait of extroversion. Many researchers, for

example Götz and Götz (1979) who studied professional artists, have shown that introversion is related to creativity. Thus, artists scored higher than non-artists on measures of both neuroticism and psychoticism.

Creative Children and Adolescents

As regards research on creativity and self-image in children and adolescents, the findings are rather contradictory. On the one hand, it has been shown that the most creative pupils are those presenting the best psycho-social functioning and the best academic performance (Smith & Tegano, 1992). They are described as favorite pupils or the shining lights of the class.

On the other hand, there are studies reporting that highly imaginative and creative children do not always function well in school settings (Westby & Dawson, 1995) and that creativity is not associated with academic performance (del Pilar Gonzalez Fontao, 1997). Thus, creative children might just as well be depicted as nonconformists or lone wolves. As far as we could ascertain, however, there are few studies investigating creativity and self-image in primary school children.

Well-Adjusted Creative Children

According to the humanistic creativity concept, the creative individual is a healthy self-actualizing person (Maslow, 1971; Yau, 1991). The creative person has a positive self-image. According to Yau (1991), only a person with genuine self-confidence has sufficient courage to delve into her/his subconscious to find material that will inspire her/his creative functioning. To nurture creativity in children, a true inner security must be developed, and this is accomplished through unambiguous parental love. The results of Smith and Tegano (1992) are in line with this view. In a sample of female college students, creative individuals reported a more positive self-image than did the less creative. The more creative group exhibited better psychosocial adjustment, including more social competence and low scores on isolation and loneliness. They viewed themselves as being more likeable; they felt happier and reported more confidence in their future professions. They also saw themselves as having greater control over their external world. One question concerning this study might be whether the partici-

pants were representative of the population or if this was a selection of well-adjusted creative individuals found among college students. Less conforming and less socially skilled creative individuals might not attend college.

Some researchers have disputed the alleged relationship between creativity and behavioral disorders. One study with 12- to 15-year-old children showed no relationship between creativity and social problems, aggressive behavior or somatic complaints, etc. (Gallucci et al., 1999). One drawback of Gallucci et al.'s study, however, is that they chose participants on the basis of IQ-scores (above 130); this level is above the cut-off point where creativity and intelligence are generally not considered to be connected (Martindale, 1989). Gallucci et al.'s participants were intellectually gifted but scored somewhat below average in creativity. The authors argued that studies showing an association between creativity and psychopathology are characterized by selection bias. Creative individuals who choose artistic careers may demonstrate affective disorders, but creative individuals with more conventional careers have good mental health (Gallucci et al., 1999). However, choosing the latter category of participants would also introduce selection bias.

Among college students, a positive relationship between ego development and creativity was found (Workman & Stillion, 1974): The more creative the students, the more advanced their ego development. Among Torrance's four dimensions of creativity, elaboration showed the strongest relationship to ego development and originality the lowest (with fluency and flexibility falling in between).

As a contrast, there are also studies showing that so-called invisible children are less creative than average children (Byrnes, 1985). However, looking more closely at the details of Byrnes' study, we see that one subgroup (25%) of "invisible children" were especially creative and bright, whereas the majority of these children were described as less bright and creative.

Ill-Functioning Creative Children

Other researchers present a more complex picture of creative individuals. Creative high-school students are self-confident and autonomous, but they are also reported to be labile, exhibitionistic, and aggressive as well as less orderly (Schaefer, 1969). Moreover, they have less self-control and endurance as compared to the controls. In the school setting, characteristics such as

these can complicate schoolwork and relationships. Westby and Dawson (1995) provide some explanations as to why creative children may not always function well in school. First, they do not always solve school tasks as they are told to, but approach them in their own original way. Second, particularly imaginative children do not always pay attention to teacher instructions, but sometimes become absorbed in their own inner world of daydreams. Finally, according to Westby and Dawson (1995), these children, as compared to their peers, are more individualistic, impulsive, determined and critical of others.

Teachers' notions of what constitutes creativity are not always in accordance with definitions generally used in creativity research. For instance, Westby and Dawson (1995) demonstrated that at least half of the teachers in their study did not consider a trait such as *divergent thinking* to be creative. If teachers do not recognize creativity, they certainly cannot encourage it. They might even unknowingly extinguish creative behavior, causing creative pupils to feel less confident.

Disadvantaged primary school children have been shown to be more creative in figural fluency as compared to their peers, but to score lower in verbal creativity (Richmond & Norton, 1973; Dawson et al., 1999). Consistent with these results are those on dyslexic children, who may be creative as well, but who show low general self-esteem and low academic performance (Bird LaFrance, 1997).

Furthermore, Cramond (1994) has highlighted the problem of creative children who are incorrectly diagnosed as suffering from ADHD (Attention Deficit Hyperactivity Disorder). She asserted that a creative trait such as vivid imagination might easily be interpreted as concentration difficulties. Little tolerance for boredom and high energy levels are traits often used to describe creative children, but they are also symptoms of ADHD.

Creativity and School

Obviously there are both well-adjusted and less well-behaved creative children in school. As regards teacher appreciation, Dawson (1995) found that teachers often recognize the well-mannered creative children, but fail to recognize the less conforming ones. It has among other things been shown that children with verbal creativity are recognised to a larger extent by teachers compared to those with figural creativity (Dawson et al., 1999). There are also studies demonstrating that creative

teachers have a positive influence on the achievement levels of creative pupils (Torrance, 1965). Cornelius and Casler (1991) have shown that teachers generally pose more convergent than divergent questions. They maintain that teachers' and other adults' attitudes toward creative expression and imagination can greatly influence children's perceptions of themselves. If teachers disapprove of creative behavior it will decrease, and creative children might have difficulties accepting themselves as they are and appreciating their creative gift. Cornelius and Casler (1991) also claim that there is always a risk that peers will reject the creative child because she/he dares to be original. It is important that teachers guard against rejection by consciously showing a supportive attitude toward originality.

There are, however, other problems with creativity in school. Impediments to creativity are incorporated into the system in the form of, e.g., regulations and control functions that teachers need to uphold (Gardner, 1991).

Different Aspects of Creativity

Creativity has been studied from different perspectives within psychology and there are, therefore, a number of different theories with associated test methods and definitions (Parkhurst, 1999). Those adhering to a given perspective tend to see their theory as the most valid way of studying creativity. However, it would seem more likely that different approaches elucidate different aspects of creativity. This must also be true of measures of creativity. The fact that two measures are unrelated does not imply that one is valid and the other invalid, but that they tap different aspects of creativity. The most widely used creativity measure is probably that of Torrance (1965). He uses the four scoring dimensions that Guilford (1967) once pinpointed: fluency, flexibility, elaboration and originality. These constitute one way of looking at creativity in a manifold way. However, these dimensions have also been criticized as being too limiting to describe the whole phenomenon (Amabile, 1983). Amabile (1983) believes that paper-and-pencil tests are artificial, for one thing because the studied participants are asked to create on command.

Some theorists have attempted to construct more eclectic creativity models that include many different aspects of creativity (Amabile, 1983; Csikszentmihalyi, 1990; Sternberg & Lubart, 1999). One example of a confluence theory is Sternberg

and Lubart's (1999) *investment theory of creativity*, which uses an analogy from economics to explain creativity. In order to "'buy low and sell high' in the realm of ideas" (Sternberg & Lubart, 1999, p. 10), that is, in order to believe in unpopular ideas and their potential for development, the creative person requires a confluence of six different resources. The resources are: intellectual abilities, knowledge, styles of thinking, personality, motivation and environment.

In our study we chose to use three different measures to capture at least a few different aspects of creativity. This should allow us to see whether individuals' levels of creativity were scored differently as a function of measurement tool.

Gender and Age Differences

Regarding gender differences in children's creativity, few studies have produced findings that are generally agreed upon. Some results point to the advantage of girls (Rejskind et al., 1992) and others show that boys are superior (Tegano & Moran, 1989; Torrance, 1965). Furthermore, there are studies showing gender differences in verbal and pictorial orientation (Torrance & Allioti, 1969).

Many scholars have reported a decline in creativity at school starting age (Torrance, 1965; Smith & Carlsson, 1990; Urban, 1991). Some speculate that school entrance causes this decline, since creativity level generally rises again a few years later, perhaps when the children have become acclimated to school. Others attribute this decrease in creativity to developmental factors (Johnson, 1985). Considering both these explanations, we chose 10- and 11-year-old children for this study.

Definition of Creativity

There are many different definitions of creativity. Parkhurst (1999) has summarized and criticized some of them, including that presented by Smith and Carlsson (1990). According to Parkhurst, their definition lacked a novelty aspect, which most creativity definitions include. We therefore altered it resulting in the following: a productive or generative *novel* way of experiencing reality – including the perceiver's own self. Parkhurst also maintained that there were other problems with this definition. He argued, for example, that the making of Jackson Pollack's

paintings could not be included in this definition. However, as we see it, Pollack's drop paintings certainly could be examples of a productive and a generative novel way of experiencing reality. A new way of making a painting is a new way of experiencing reality (the painter's reality).

Parkhurst (1999) suggested a definition intended to include all necessary aspects of the creativity concept: "The ability or quality displayed when solving hitherto unsolved problems, when developing novel solutions to problems others have solved differently, or when developing original and novel products" (p.18). We feel that the three parts of this definition are included in our definition, but in a more concise way.

The Aim of the Study

If divergent thinking is discouraged in school, as some scholars maintain, highly creative children will learn that their ways of functioning are not appreciated there, and only some of them will be able to adjust to the demands of school. Some highly creative children will probably not be able to adapt to school conditions and might develop negative self-images, particularly concerning their ability in traditional school tasks, but perhaps also regarding their overall self-image. Is this true for a majority of creative children?

There has been little research on how creative primary school children feel about themselves. The main focus of research in the school environment has been on teachers. The specific questions addressed in this study are the following: What kinds of self-images do creative primary school children have? Are there similarities between the self-images of creative adults and those of creative children? One of our assumptions was that there would be self-image differences between more and less creative children. We also assumed positive relationships among the different creativity measures. No gender differences were anticipated.

METHOD

Participants

The participants in this study were 69 10- and 11-year-old children in six classes at three different Swedish schools, with somewhat different demographic profiles. There were 35 girls and 34 boys. All children were 4th graders. In two of the classes only five and six pupils participated. The rest of the children in these classes did not wish to take part or parental permission was not given. In the other four classes almost all pupils participated in the study.

The total number of participants varied between 65 and 69 for the different tests because some children were absent from some testing sessions.

Measures

The Unusual Uses Test (UUT)

In the Unusual Uses Test (Guilford, 1967), the subjects make up as many alternative uses as possible for a well-known object, for example a newspaper or a brick. In this study, the Unusual Uses Test was adapted to function as a test for children. Empty milk packages were considered to be well-known objects for children and therefore suitable for the test. The children were asked to write down as many uses they could think of in 15 minutes. Two different scoring systems were used. First, the total number of uses was counted and every suggestion given one point. This is regarded as a measure of *fluency of ideas* (Guilford, 1967).

Second, different categories of uses were counted (Appendix A), measuring *flexibility of ideas*. In order to think up many suggestions and break loose from traditional uses, a generative and productive way of perceiving reality is required.

The Activity Questionnaire (AQ)

The Activity Questionnaire (Hoff, 2000) concerns, among other things, whether the children engage in any creative hobbies (e.g., drawing and writing stories), whether they spend a great

deal of time fantasizing, whether they remember their dreams and whether they have or have had imaginary companions. The children also indicate whether they have invented their own games or built their own toys. There are 10 questions and a maximum score of 12. The questions about creative activities and hobbies have been shown to correlate with the Creative Functioning Test (Smith & Carlsson, 1990) and the questionnaire in its present form with the Unusual Uses Test (Hoff, 2000). The questionnaire is a measure of *involvement in creative activities and hobbies*.

Creative Functioning Test (CFT)

In the Creative Functioning Test, a tachistoscopic or computerized stimulus is shown in repeated rapid presentations. The stimulus is a black-and-white still life of a glass bottle and a bowl (Picture A used in this study). Shadings and diffuse contours build up the picture, making it fairly easy to imagine other contents (e.g., a face, a body or a landscape). The participants are instructed that pictures will be shown very briefly (but not that it is the same picture). They are told to describe what they see on the screen after each exposure. To begin with, in the *increasing series,* the stimulus is presented for a very short period of time (0.02 sec) and then for every second exposure, the exposure time is prolonged until the participant sees the picture objectively (the longest possible exposure is 3.6 sec). Along the way to perceiving the content objectively, a number of subjective interpretations are often reported. When the participant has perceived the real content of the picture, the procedure is reversed. In the *decreasing series*, the picture is shown for shorter and shorter periods of time and the session is finished when the stimulus can no longer be discerned.

There are different scoring dimensions of the CFT. The first we use in this study concerns the *increasing series*, and the number of different subjective themes (different "incorrect" interpretations of the picture). This is a measure of *fluency of ideas*.

The second dimension focuses on new interpretations in the *decreasing series* or recollections of subjective themes from the increasing series. This dimension captures an ability to shift from rational (objective) thought to more imaginative (subjective) cognition, an ability closely related to creativity (Smith & Carlsson, 2001). Objective perception supposedly affects the

viewer such that when correct recognition has been attained, a low creative person will inhibit, or consciously ignore, subjective interpretations from the increasing series during the decreasing part of the test. On the other hand, a highly creative individual will be able to leave rational thought and let the subjective representational world, among other things recollected interpretations from the increasing series, influence her/his perception. According to the manual, six different levels of creativity can be distinguished in this scoring dimension (Smith & Carlsson, 2001). This is a measure of *cognitive flexibility*, i.e., flexibility between subjective and objective aspects of thought.

A new portable apparatus was developed for this study. The authors scored the CFT protocols independently and in cases of disagreement a third judge also made an assessment.

The Self-Image Inventory: "How I Think I Am"

"How I Think I Am" is a Swedish self-image inventory (Ouvinen-Birgerstam, 1999) consisting of five different subscales. The first subscale measures skills and abilities (school task related, e.g., "I'm good at math", but also more generally, e.g., "Other people do things better than I do"). The second subscale contains questions about physical self-image, health and appearances (e.g., "I don't care about my looks", "I often feel clumsy"). The third subscale concerns mental well-being (e.g., "I easily get angry ", "I'm a happy person"). The fourth subscale measures the relationship with parents (e.g., "My parents trust me", "In my family, we fight a lot"). The last subscale measures social competence or peer relationships ("I have many friends", "I feel different from others").

There are 76 items in the inventory. Each item has four answer alternatives, "Agree completely", "pretty much agree", "hardly agree at all", "disagree completely", which were scored +2, +1, -1 and –2, respectively.

According to the manual (Ouvinen-Birgerstam, 1999), homogeneity testing showed a reliability of .91- .93, and a re-test after one year had a correlation of .74 with the first test occasion. The inventory has also been validated through comparison with an adjective list (r = .75) and a psychologist's assessment, p = .001. The self-image inventory was related to average school grades (r = .32). The subscale Skill and Ability was associated in particular with average grades (r = .47). The specific questions about math ability and performance in Swedish were strongly

related to actual grades in mathematics and Swedish (*r* = .77 and .74, respectively).

Procedure

The test leader visited the children during school time and three of the tests were taken as a group in the classroom and one was taken individually (CFT). A fifth questionnaire dealing with imaginary companions will be reported on elsewhere.

Cluster Analysis

When analyzing complex and dynamic processes where separate variables (non-correlated) can be difficult to extract, a pattern analysis may be appropriate (Magnusson & Törestad, 1993). Cluster analysis is one way of classifying individuals into homogenous groups based on patterns of relevant variables.

The optimal number of clusters was decided according to the following criteria. The first is to choose theoretically meaningful clusters and the second to find a suitable number of clusters between five and fifteen. The third is to look for a sudden dip in the error sum of squares (or an increase in the distance coefficient, for Ward's method), which indicates that it is time to stop the procedure (Bergman, 1996). The fourth criterion is that the error sum of squares should be 67% of the total sum of squares. Despite these criteria, one part of the judgment is still subjective.

RESULTS

The Unusual Uses Test (*N* = 68)

Number of Uses – Quantity of Ideas

The mean for total number of proposed uses was 4.6 (*SD* = 2.8). For girls the mean was 4.9 (*SD* = 2.9) and for boys 4.2 (*SD* = 2.7). No significant gender differences were found. The number of different uses proposed by the participants varied between 0 and 12 items.

Number of Categories – Variety of Ideas.

The overall mean for number of categories was 3.5 (*SD* = 1.8). For girls the mean was 3.7 (*SD* = 1.8) and for boys 3.3 (*SD* = 1.8). Boys and girls did not differ significantly. The number of proposed categories varied between 0 and 8.

The Activity Questionnaire (*N* = 69)

The total mean on the Activity Questionnaire was 5.5 (*SD* = 2.8). For girls the mean was 6.3 (*SD* = 3.1) and for boys 4.7 (*SD* = 2.2). Significant gender differences were found, *U* (67) = 412.5, *p* = .03, to the advantage of girls. Homogeneity testing gave a Cronbach Alpha of .64.

The Creative Functioning Test (*N* = 66)

Cognitive Flexibility

The six levels of creativity defined in the manual (Smith & Carlsson, 2001) were collapsed into three larger groups. The total mean for the CFT records was 2.1 (*SD* = .8), for girls 2.0 (*SD* = .9) and for boys 2.1 (*SD* = .8). No gender differences were found. The interjudge reliability was .91 (Cronbach Alpha).

Fluency of Ideas

The overall mean was 6.0 (*SD* = 4.0). For girls the mean was 6.0 (*SD* = 4.2) and for boys 6.1 (*SD* = 3.7). The highest score was 11 and the lowest 0. Interjudge correlation was .96 (Cronbach Alpha).

"How I think I Am" (*N* = 69)

The overall mean was 77.2 (*SD* = 31) compared to the reference group mean of 68. For girls the mean was 74.8 (*SD* = 28.6) and for boys 79.8 (*SD* = 33.5). There was no gender difference in total self-image. However, among the subscales, there were gen-

der differences in the subscale regarding physical self-image (U = (67) 420.5, p = .04, Mann Whitney U). Across the entire inventory, the lowest score was –14 and the highest 140. Means for the five different subscales are presented in Table 1, where reference data from the manual are also presented (Ouvinen-Birgerstam, 1999). Data from the present sample are somewhat above the reference data on all subscales with the exception of mental well-being.

Table 1
Means of the Self-image Inventory for 69 Children (SD within Parenthesis)

	Skills & Abilities	Physical Self	Mental Health	Parent Relations	Peer Relations	Total
Girls	13.3 (7.8)	13.5 (7.4)	13.0 (8.4)	20.2 (7.5)	14.7 (7.4)	74.8 (28.6)
Boys	12.4 (9.9)	17.1 (6.8)	14.3 (10.6)	21.5 (6.8)	14.4 (8.0)	79.8 (33.5)
Total	12.9 (8.8)	15.3 (7.2)	13.7 (9.5)	20.8 (7.2)	14.6 (7.6)	77.2 (31.0)
Comparison Data N = 243 girls and 264 boys (Ouvinen-Birgerstam, 1999)						
Girls	9.8 (8.6)	11.9 (9.2)	13.0 (9.4)	20 (7.4)	12.9 (8.5)	67.7 (34.6)
Boys	9.7 (8.9)	13.7 (8.0)	14.0 (8.9)	18 (6.8)	12.5 (7.7)	68.2 (31.2)

Relationships between Creativity Measures

There were positive relationships between the different creativity measures in all cases but one. Half of the correlations were

Table 2
Spearman's Rho Correlation Between Different Creativity Measurements

	UUT	AQ	CFT	
	Flexibility of ideas	Creative Activities	Cognitive Flexibility	Fluency Idea
UUT				
Fluency of Idea	.90**	.44**	.17	.26*
Flexibility of Idea		.47**	.14	.21 (p = .08)
AQ				
Creative Activities			.10	-.10
CFT				
Cognitive Flexiblity				.54**

Note. * p < .05, ** p < .01

significant. The Activity Questionnaire and the Unusual Uses Test were strongly related. But the CFT dimension of fluency of ideas and the Unusual Uses Test's dimension of the same kind also showed a relationship. The main dimension of CFT was positively related with the other tests although none of them reached significance. Table 2 shows these relationships.

Relation between Creativity and Self-image

There was no self-image difference between high and low creativity groups (split at median) as indicated by the Mann Whitney U. Table 3 shows the means for the different groups.

Table 3
Self-image Means for High and Low Creativity Groups (SD within brackets)

| | UUT | | AQ | CFT | |
	Fluency	Flexibility	Creative Activities	Cognitive Flexibility	Fluency of ideas
Low	79.5 (25.1)	81.1 (27.6)	82.5 (27.9)	81.9 (27.8)	73.1 (32.0)
n	40	36	40	34	34
High	73.3 (38.2)	72.3 (34.5)	70.0 (33.9)	71.0 (34.3)	80.3 (30.3)
n	28	32	29	32	33
P-value	.82	.29	.12	.24	.28

Interaction Effects of Gender and Creativity on Self- Image

An ANOVA showed that there were no significant main or interaction effects of gender and the creativity measures (split into high and low) on self-image. However, there were tendencies toward interaction in three cases (p < .10): flexibility of ideas (UUT), creative activities and hobbies (AQ) and fluency of ideas (CFT).

Examining the performance of boys and girls separately, there were some significant self-image (total) differences between the high and low creativity groups as indicated by the Mann Whitney U. Girls and boys did not differ on the same dimensions, which explains why the ANOVA results were non-significant. Girls with high scores on flexibility of ideas (UUT) were more likely to have negative self-images, *U* (33) = 86.5, *p* = .03.

Boys with many creative activities and hobbies (AQ) also had low self-esteem, U (32) = 51, p = .02; however boys with high fluency of ideas (CFT) had positive self-images, U (32) = 89.5, p = .057. Table 4 shows the self-image means for the different creativity measures.

Table 4

Self-image Means for Girls and Boys split at Median in three Creativity Measurements

	UUT Flexibility	AQ Creative Activities	CFT Fluency of Idea
Girls			
Low	85.2 (23.7)	74.9 (26.5)	77.1 (25.5)
n	17	15	17
High	65.0 (29.9)	74.8 (30.7)	69.6 (32.1)
n	18	20	16
Boys			
Low	77.4 (30.9)	87.1 (28.3)	69.2 (37.8)
n	19	25	17
High	81.8 (38.7)	59.3 (40.0)	90.4 (25.5)
n	14	9	17

Note. SD within brackets

Relationships among Different Aspects of Creativity and Self-Image

A cluster analysis including all different creativity aspects and the self-image subscales resulted in a seven-cluster solution (Ward's method). Table 5 shows the mean z-scores (+ 4 to avoid confusing negative numbers) of the cluster groups for the different measures. Using the Kruskal Wallis' test, all measures showed significant differences between all clusters at an alpha level of .01, with the exception of the scale for parental relationship, which only reached the .05 level.

The first group of ten girls and seven boys showed low creativity scores but reported fairly good self-images, with the exception of mental well-being, where they were below average. The second group of five boys and five girls also had low creativity scores on all five measures, however these children had generally negative self-images and, contrary to the first group, scored above average on mental well-being.

The third group of four girls and thirteen boys scored somewhat above average on cognitive flexibility and fluency of ideas (CFT), but below on the other creativity measures. These children reported good self-images, but had slightly weaker confidence in their skills and abilities. The fourth group of nine girls and three boys also scored high on cognitive flexibility and fluency of ideas (CFT), but in contrast to the third group, they scored high on creative activities and hobbies as well. They scored somewhat below average on four of the self-image scales, and well below on the mental well-being subscale.

The fifth group of two girls and one boy scored high on fluency of ideas and flexibility of ideas (UUT) as well as on creative activities and hobbies (AQ). This group showed positive self-image on all subscales. The sixth group consisted of two girls and three boys, who also scored high on fluency of ideas and flexibility of ideas (UUT). They reported negative self-images, particularly on the skill and ability scale. The seventh group included one girl and one boy who scored high on all creativity measurements, but had utterly negative pictures of themselves. They were, however, less negative about their skills and abilities.

Table 5

Means of Clusters for the Five Creativity Scores and the Self-image Inventory (Z-scores + 4)

Cluster (n)		UUT Fluency of Idea	UUT Flexibility of Idea	AQ Creative Activities	CFT Cognitive Flexibility	CFT Fluency of Idea	Self-Image Inventory Skills & Abilities	Self-Image Inventory Physical Self	Self-Image Inventory Mental Health	Self-Image Inventory Parent Relations	Self-Image Inventory Peer Rel.
1 (17)	M	3.5	3.5	4.3	3.6	3.0	4.4	4.3	3.7	4.2	4.1
	SD	.6	.6	.9	.9	.4	.6	.7	.7	.8	.6
2 (10)	M	3.9	4.3	3.7	3.5	3.4	3.7	2.9	4.2	4.0	3.5
	SD	.5	.8	.8	.6	.5	.5	1	.5	.8	.6
3 (17)	M	3.6	3.6	3.2	4.2	4.5	4.3	4.8	4.8	4.4	4.7
	SD	.6	.7	.5	1.1	.8	.7	.6	.6	.6	.4
4 (11)	M	4.1	4.0	4.4	5.0	5.1	3.9	3.8	3.6	3.7	3.7
	SD	.6	.4	1.1	.4	.3	.7	.8	.7	1.2	.8
5 (3)	M	6.1	5.9	4.8	2.7	4.1	5.1	4.2	5.6	4.8	5.0
	SD	.4	.6	.8	0	1.1	.2	.8	.2	.3	.3
6 (5)	M	5.1	4.8	4.2	2.9	4.0	1.3	3.2	2.9	3.0	3.4
	SD	1.4	1.4	.8	1.2	1.1	.4	.7	1.1	1.2	.7
7 (2)	M	6.1	6.2	6.0	5.1	4.3	4.2	2.4	1.5	1.2	0.1
	SD	.7	.4	0	0	1.3	.8	1.0	0	.7	0

Note. M = 4, SD = 1

DISCUSSION

The main conclusion that can be drawn from this study is that there is no simple association between self-image and creativity. We have shown that creative primary school children do not generally have positive self-images. We have no convincing proof, however, that creative children have negative self-images, although the high creativity groups did have lower self-image means for four of five dimensions. Observed in our sample were confident and well-adjusted creative children as well as those who were insecure and less socially conforming.

Creative Types

When analyzing the different aspects of creativity, some different creativity types could be discerned among the clusters. Based on the creativity results, the seven clusters can be collapsed into three larger groups. Most cluster groups had an equal number of boys and girls. However, the two clusters of flexible thinkers (below) were dominated by one sex. As cluster analysis is an exploratory statistical tool, further hypothesis testing is required to examine how stable the cluster groups are with respect to both self-image and creativity.

The Conformists (two clusters)

Two groups contained conformists with generally low creativity scores; they were not particularly imaginative or good at associating ideas. One group of 17 children reported being successful in school and having many friends, but they were below average in terms of mental stability. The other group of 10 children had generally negative self-images, especially concerning physical appearance. However these children reported having average psychological health.

The Flexible Thinkers (two clusters)

There were two groups of flexible thinkers. These contained imaginative children who easily moved between subjective and objective thought processes. These children showed cognitive

flexibility and fluency of ideas (CFT). They also described themselves as having average skills and abilities. One cluster of 17 children, mostly boys, had a generally positive self-image (except on the skill and ability scale). The other cluster contained 11 children, mostly girls, who reported negative self-image (except on the skill and ability scale). These children also had high scores on the Activity Questionnaire.

The Brainstormers (three clusters)

The brainstormers comprised a collection of three small cluster groups, in which all participants had an ability to quickly produce a broad range of ideas and were engaged in creative activities and hobbies. They had high scores on both fluency and flexibility (UUT) as well as creative activities and hobbies (AQ). These three clusters differed a great deal in terms of self-image.

One group of three children could be called the *shining lights*. They reported the most positive self-images of all groups. They reported being successful in different school subjects, and found it easy to get along with other children. They felt liked by teachers and their parents and were generally happy. They were also highly engaged in creative activities and hobbies. The other two cluster groups could be called the *lone wolves*, as they reported negative relationships with both their parents and their peers and answered that they often felt lonely and different from others. They also provided negative reports of their physical self-images and mental well-being. One of these groups consisted of five children who were especially negative about their learning abilities and skills.

The other cluster of two children provided somewhat above average reports of their learning abilities, but this group had the most negative self-image. Furthermore, these two children also received high creativity scores on the main dimension of CFT.

Self-image in Children and Adults

If we compare the self-image of adults to that of the 10- and 11-year-old children in this study, creative adult individuals appear to have more positive overall self-images. The question is whether some of the creative children from the group with negative self-images will develop better self-images later in life.

Will they come to recognize their special gift and develop positive self-images when they are able to lead more independent lives, away from regulated school life and parental restrictions? Or will their creativity cease due to lack of self-confidence and lack of environments that encourage creativity? Or is it simply possible to be creative and have a negative self-image? Longitudinal research is required to explore creative individuals' self-image from a developmental perspective.

It seems appropriate at this point to complicate the picture further by discussing studies of creative adults that indicate different types of creative personalities (Ryhammar, 1996; Carlsson, Amner & Smith, 2000). Ryhammar (1996), for example, maintains that there is one introvert and one extrovert type of creative individual. These findings would seem to support the present results. Other researchers have demonstrated domain specificity regarding the creative personality. For example, Feist (1999) shows that the personality of creative artists is somewhat different from that of creative scientists. Creative writers, painters and musicians are more often depicted as intuitive and emotional, but also as labile. They are more inclined toward intense affective experience than are creative scientists. Even if both groups contain nonconformists, creative artists score below average on socialization and responsibility variables and are thought to be more actively nonconforming than are scientists. Scientists tend to be more conscientious and orderly than those in the artist group (Feist, 1999). Perhaps our maladjusted creative pupils are artists-to-be and our well-functioning pupils scientists-to-be. Further support for the idea of domain specificity is the fact that teachers mostly tend to recognise verbally creative children who also are described as more adapted, compared to the figurally talented (Dawson et al., 1999).

In any case, it appears to be high time for a revision of creativity models in which only one creative personality is described.

"How I Think I Am"

The self-image inventory results were slightly above the reference norms. One possible explanation for this could be that the children in this sample came largely from academic families. Accordingly, scores on the skill and ability scale (mostly school-related questions) were especially high compared to the

reference. This bias could limit the conclusions that can be drawn from this study.

Gender Differences among the Children

Of all the different measures, gender differences were only found for the Activity Questionnaire. A possible alternative explanation for this difference might be that the kinds of creative hobbies included in the questionnaire are more common for girls. The questionnaire items concern solitary creative activities such as writing stories or poems, making pictures or comics, making up games and creating one's own toys. Boys are perhaps more engaged in group activities and sports at this age, and there might be less room for individual creative activities. Social activities can also provide creative opportunities that are not detected by this questionnaire. On the other hand, a previous study using this questionnaire did not show significant gender differences (Hoff, 2000), making the above explanation less credible.

There were some self-image differences when split-half testing was performed with girls and boys separately. For the flexibility of idea dimension (UUT), highly creative girls were more insecure than were low creative girls. Boys with high scores on the Activity Questionnaire were less confident than were the low scorers. However, for the fluency of ideas dimension (CFT), highly creative boys had more self-esteem than did low creative ones.

The cluster analysis revealed one group with female dominance and one with male. These groups had quite similar creativity profiles, but the girls' images of themselves were negative and the boys' positive.

Different Aspects and Dimensions of Creativity

There were positive relationships between all but one of the creativity measures. However, only half of them were significantly related. Thus, although all measures are thought to tap creativity, they appear to measure different aspects. Torrance (1965) mentions four scoring dimensions, which perhaps are four different aspects of creativity. Smith and Carlsson (2001) used the term creative functioning for their test, the main dimension of which measures another aspect of creativity. This

aspect might more precisely be described as cognitive flexibility or the ability to shift between logical and imaginative thinking. Lubart et al. (2000) use the term flexible thinking to denote another aspect, which they show is not related to the flexibility (flexibility of ideas) tapped by Torrance's measurement. Their "morphing technique" might be based on assumptions similar to those used by Smith and Carlsson for their CFT measurement. In Lubart et al.'s morphing test, a picture shown on a computer screen is gradually transformed into another picture. Those participants who see the new picture at an early stage are considered to have a flexible thinking style. Perhaps CFT and the morphing test measure a similar aspect of creativity, which has received two labels: "creative functioning" and "flexible thinking".

The Unusual Uses Test as we chose to use it only deals with fluency of ideas and flexibility, but might also be scored in terms of Torrance's originality and elaboration dimensions. The other dimension of CFT, the increasing series, is also a fluency dimension of creativity, and accordingly there was a relationship to the Unusual Uses Test, which has also been found in earlier research (Carlsson, Wendt & Risberg, 2000). If one applied Torrance's elaboration and originality dimensions to both the Unusual Uses Test and CFT, additional relationships between the two tests would probably be found. Engagement in creative activities and hobbies (AQ) was related to the fluency and flexibility dimensions (UUT), a relationship also seen in earlier research (Hoff, 2000).

If we, however, consider the different creativity tests from the perspective of Sternberg and Lubart's (1999) *investment theory of creativity*, all tests tend to appear rather one-dimensional, even if Torrance's four dimensions are used. With respect to the six resources required for creativity, only some of them are measured by the tests used in the present study. Among the *intellectual resources,* both CFT and the Unusual Uses Test measure "synthetic" (idea generation) ability. However what Sternberg and Lubart (1999) call "analytic" and "practical-contextual" intellectual ability has not been systematically tapped by any of the tests used here. These concepts concern the elaboration and realization of creative ideas. *The knowledge resource* is difficult to measure in a creativity context and none of our tests did so. CFT classifies different *styles of thinking,* which is the third resource of creativity. If judged by its originality dimension, the Unusual Uses Test can also be said to tap styles of thinking. No test in this study has *motivation,* the fourth resource, as its focus, but favorable scores on any of the

tests nevertheless indicate motivated participants. The Activity Questionnaire is one type of personality measure for which participants are asked about their creative everyday activities and hobbies and *personality* is the fifth resource. *Environment* is the last resource included in Sternberg and Lubart's (1999) model, and this is an aspect of creativity that our tests did not measure. Nevertheless, the environment in which the tests are taken influences the results. It has been shown, for example, that a competitive environment might decrease creativity among some participants and increase it among others (Amabile, 1983; Baer, 1998). Some of the tests used in the present study were taken in a group and one (CFT) was taken individually. In fact, this difference might be another reason for the weak relationship between some of the tests, as well as for the fact that they appear to measure different aspects.

However, regarding measurement of creativity from the environmental perspective, no inventories exist, as far as we know, that are especially designed for children.

Summary

There were no simple relationships between primary school children's creativity and self-image. Some of the creative pupils described themselves as psychologically stable, popular among friends and teachers and as having good parental relationships; others depicted themselves as labile, different from their peers and as having ill-functioning relationships to parents and teachers. Some of the creative children were pleased with their achievements at school, others were less confident about their school performance. We proposed the following three personality types based on the participants' results for the different measures: the conformists, the flexible thinkers and the brainstormers. Conformist pupils are less disposed to creativity. The flexible thinkers are creative pupils with a special aptitude for shifting between rational and imaginative thought processes. The brainstormers are prone to rapidly conceiving a broad range of ideas or associations. All three personality type groups contained well-functioning as well as maladjusted pupils. However, both the group with the highest self-esteem and the groups with the lowest self-esteem belonged to the brainstormers. Thus, shining lights and lone wolves can be quite alike in their creative styles.

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Appendix A

List of Categories for the Flexibility Dimension of the UUT

Object: Empty Milk Packages

1. *Recycling*: folding or cleaning the packages
2. *Containers in general*: box, package, jar "to put things in".
3. *Containers for special purposes*: pencil-box, drawers for cooking recipes, mug, ash tray, piggy bank, jar for jam
4. *Toys*: doll, animal, car, boat, aeroplane, robot
5. *Accessories for pets*: bird pool, nesting box, feeding table for birds, hurdles for rabbits and hamsters
6. *Experiments and inventions*: With elaborated description of how the thing is put together or how it works. E.g., a weight-lifting tool where packages are filled with sand.
7. *Buildings*: house, castle, fortress, tower, shop, parts of houses, tent and hut.
8. *Furniture and interior decoration*: lantern, flower pot, lamp-shade, chair, basket, peep show (for toys), pool
9. *"Artistic" decoration*: Pictures, paintings, sculptures, Christmas and Easter decorations
10. *Apparatuses*: telephone, cell phone, binoculars, watch and periscope.
11. *Game or play*: soccer ball, badminton, throwing and catching the milk package
12. *Clothes or shoes*: "Plateau shoes" (high heeled), hat
13. *Books and paper*: Book cover, bookmark, letter paper, drawing paper and card.
14. *Circus performance*: Do magic tricks with, balance
15. *Musical instruments*: drums.
16. *Other (1 point each)*: Cut out recipes from the package, palette, ruler, name sign, wallet, road, pyramid, labyrinth

III

EVA V. HOFF

Imaginary Companions, Creativity, and Self-Image in Middle Childhood

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This study investigates four questions: First, whether there is a relationship between having imaginary companions and being creative; second, whether children with negative self-images are more likely to have imaginary companions; third, whether there are gender differences among those with imaginary companions; and, finally, what aspects of imaginary companions and what characteristics of those who invent them are related to creativity. In order to address these questions, a questionnaire about imaginary companions, three creativity tests (The Unusual Uses Test, The Activity Questionnaire, the Creative Functioning Test) and a self-image inventory (How I Think I Am) were used. The participants were 69 fourth graders. Among the 69 children, 52% reported having (had) imaginary companions. The children with imaginary companions were significantly more creative on 2 of 3 tests. Children with imaginary companions had significantly lower self-image scores and had relatively few friendships. It was more common for girls to have imaginary companions. Aspects associated with creativity among the children with imaginary companions were, for example, elaboration of the companion's character and number of imaginary companions.

Research on imaginary companions began just prior to the turn of the last century (Vostrovsky, 1895). At that time, imaginary companions were believed to be signs of mental illness. In the 1940's, there was renewed interest in the topic, this time within the psychodynamic tradition (Ames & Learned, 1946; Bender & Vogel, 1941); this interest continued for many decades. The phenomenon of imaginary companions appeared to be suitable for application of psychoanalytic concepts such as *the superego*, *the ego* and *the id* (Bach, 1971; Nagera, 1969; Sperling, 1954). Imaginary companions were also perceived as a manifestation of different kinds of defense mechanisms, for example the companion could be described as an effect of *splitting*, when a child's unfavorable characteristics were projected onto the pretend playmate. The imaginary companion could also be consid-

ered an instance of *reaction formation* when described as having personality traits opposite to the child's (Bach, 1971; Nagera , 1969; Sperling, 1954). In these psychoanalytic studies, children with imaginary companions were reported as having personality defects. However, Taylor (1999) pointed out certain problems with many of these early studies. Among other things, the children were not randomly selected, but recruited from clinics and hospitals where individuals were particularly likely to have psychosocial and emotional problems. As regards the concept of defense mechanisms, renewed interest has recently arisen within the field of social cognition (Cramer, 2000; Paulhus, 1997). An account of this revived field of research on the functions of imaginary companions is presented by Hoff (2003).

Today, the phenomenon is regarded as normal adaptive behavior. A pretend playmate[1] can sometimes compensate for minor deficiencies in the child's environment (Harter & Chao, 1992).

The reported frequency of children with imaginary companions varies across different studies. Early studies showed that 13-31% of children had make-believe friends (Ames & Learned, 1946; Hurlock & Burstein, 1932; Svendsen, 1934), but later research has demonstrated greater figures. Singer and Singer (1992) found an incidence of 65% in a sample of 111 children, and Taylor (1999) 63% among 100. One reason for differences in reported frequencies of the phenomenon is that in some studies (Ames & Learned, 1946; Bender & Vogel, 1941; Bouldin & Pratt, 1999; Manosevitz, Prentice, & Wilson, 1973) the children's parents were the informants. In other studies the children's own accounts were used. Taylor (1999) interviewed both children and their parents and demonstrated that the parents of younger children were in most cases aware of their children having imaginary companions, whereas parents of older children were not. Only 20% of parents of 6- and 7-year-olds knew about their children's pretend playmates. Another reason for this variation might be that the definition of the phenomenon varies. Some researchers include anthropomorphized dolls and others do not. Svendsen (1934) only included invisible make-believe friends in her definition. Singer and Singer (1992) argued that dolls, teddy bears and other objects can be included if they assume humanlike properties. But they did not regard dolls and stuffed animals that were simply carried around, or treated concretely

[1] In the text, the terms "imaginary companions", "make-believe friends" and "pretend playmates" will be used interchangeably to denote this phenomenon.

as transitional objects, as imaginary companions. Singer and Singer's definition was adopted in the present study.

Different scholars have concentrated their studies on different age groups. There are those who maintain that imaginary companions are most common in the preschool period with a peak at four years (see Taylor, 1999, for an overview), and others who contend that the phenomenon is equally frequent during the early school years (Hurlock & Burstein, 1932; Taylor, 1999). Singer and Singer (1992) proposed that even if imaginary companions disappear in their most primitive form between six and eight years, "the process of peopling one's private thoughts with companiable souls" (p. 110) continues throughout life.

Among the existing research, very little attention has been directed toward middle childhood. Most studies investigating imaginary companions have focused on preschool children's present playmates, or on retrospective accounts of adolescents and adults. Many children retain their make-believe friends during middle childhood and beyond, some until the age of 18 (Seiffge-Krenke, 1997; Taylor, 1999). The present study focuses particularly on the middle childhood age group.

Different correlates of having imaginary companions are discussed in the research literature. Seiffge-Krenke (2000) highlighted four possible relationships apart from the association with psychopathology discussed above: the giftedness hypothesis, the deficit hypothesis, the narcissism hypothesis, and the impulse control hypothesis. The first two will be dealt with in some detail in the next section, and the last two briefly below. The narcissism hypothesis states that children with make-believe friends are especially unwilling to give up the egocentrism of early childhood (something which is also discussed in Hoff, 2003), perhaps due to their having experienced narcissistic blows, such as abuse or the death of family members. Finally, the impulse control hypothesis supposes that children use their pretend playmates for ego support (or as a superego) during a transitional phase on their way to autonomous self-regulation.

Imaginary Companions and Creativity

Some scholars have proposed that children with imaginary companions are more gifted, or more precisely, that imaginary companions are precursors of creativity (Myers, 1979; Singer &

Singer, 1992). Myers presented six case studies showing that individuals who had had imaginary companions as children exhibited creative capacity as adults, and in some cases, the imaginary companions inspired adult creativity in different ways. Somers and Yawkey (1984) provided detailed examples of how children's intellectual and creative growth can benefit from having pretend playmates. They maintained that make-believe friends have a connection to creative growth as regards children's elaboration of such friends' characteristics and roles. Through interaction with imaginary companions, children practice and expand creative thought. They discover opportunities, explore materials and use them in new ways in their play with their pretend playmates. According to Somers and Yawkey, imaginary companions also promote originality of ideas.

Mackeith (1982) elucidated another kind of imaginary play in which imaginary companions are included, namely imaginary worlds, so-called paracosms. This pretend play comprises elaborated imaginary worlds that the children have developed and for which the children have sometimes invented special peoples, local societies, countries with special architecture, species of flowers and trees, and languages (Cohen & Mackeith, 1991; Mackeith, 1982; Singer & Singer, 1992). An interesting question is whether children who also invent paracosms are more creative than those who only have "ordinary" pretend playmates.

Smith and Carlsson (1990) studied children's creativity and hypothesized that make-believe friends constitute a sign of creative potential. However, systematic investigations are rare. One study of 800 high school pupils, which investigated the association between adolescents' creativity and retrospective reports of their having had imaginary companions as children, indicated such a relationship, particularly for literary creativity (Schaefer, 1969). In Manosevitz, Fling and Prentice's (1977) attempt to replicate Schaefer's results, however, no creativity differences were found between 5-year-olds (84 children in total) who had pretend playmates and those who did not. In another study on 40 children, highly imaginative children scored higher on creativity than did their less imaginative peers (Singer, 1961). To decide whether the children were highly involved in fantasy, one of the questions asked was whether they had an imaginary companion.

Singer (1961) argued that the ability to fantasize can be seen as a separate cognitive style or even a skill. In his study, 41 children (6-9 years) were divided into two groups: one high imaginative and one low imaginative. The groups differed on

many variables, e.g. style of defense, identification patterns, waiting ability and creativity. Among other things, the highly imaginative individuals had experienced periods of relative solitude that had given them opportunities for practicing fantasy play and daydreaming, something that, according to Singer, constitutes a dimension of human competence.

Creativity could be defined as a productive or generative novel way of experiencing reality – including the perceiver's own self (Hoff & Carlsson, 2002, p. 22). This definition emphasizes the individual's way of experiencing and way of being. Other definitions stress the product aspect of creativity – that it should result in new, original, useful products that actually come to use (Martindale, 1989). But what is a product? Are imaginary companions useful and novel products? For those children who invent them, they probably are, but perhaps not according to the constructors of those definitions. In the present study, imaginary companions were conceptualized as a way of experiencing the world in a productive or generative novel way.

Imaginary Companions and Social Competence

The deficit hypothesis, among other things, states that children with imaginary companions are not as socially competent as children without such companions (Bouldin & Pratt, 1999; Harter & Chao, 1992). In contrast, some contemporary scholars have claimed that the presence of imaginary companions may indicate that children *are* socially well adjusted (Manosevitz et al., 1973; Singer & Singer, 1992; Taylor, 1999). In the study by Singer and Singer, children with imaginary companions showed more positive emotionality and were less overtly aggressive during play compared to children without imaginary companions. In another study, children with make-believe friends were described by their parents as happier in day-to-day activities and as more verbally communicative (Manosevitz et al., 1973). These children gave up playing with the imaginary companion when real playmates appeared. There are also studies indicating that make-believe friends facilitate children's cognitive development. For example, theory of mind was better developed in young children with pretend playmates (Taylor & Carlson, 1997). The explanation given was that these children had prac-

ticed taking the perspective of others through their imaginary companions.

Children without siblings as well as first-borns have shown greater frequencies of imaginary companions, according to some scholars (Bouldin & Pratt, 1999; Hurlock & Burstein, 1932; Gleason, Sebanc, & Hartup, 2000; Manosevitz et al., 1973; Taylor, 1999). However, in several of these studies, parental reports were used to obtain data about the pretend playmates. Thus, an alternative explanation could be that parents mainly noticed imaginary companions in only or first-born children, and/or that younger siblings' imaginary companions were kept secret to a larger extent. Particularly in earlier studies, only children with make-believe friends were described as shy or even socially deficient (Ames & Learned, 1946).

Very few studies have been conducted where children's self-images have been used to investigate differences between children with and without imaginary companions. In this study, the question of how children with imaginary companions look upon themselves was addressed.

Imaginary Companions and Gender Differences

There are some gender differences described in earlier research. Many scholars have demonstrated that girls are more likely to have imaginary companions (see Taylor, 1999, for an overview). How can this gender difference be explained? If fantasy play in general is considered, there is no evidence for gender difference. One suggestion is that girls and boys play differently with imaginary characters (Taylor, 1999). Boys more often impersonate cartoon or film characters than do girls. Boys become "Superman", they do not socialize with him.

One gender difference revealed in Singer and Singer's (1992) study is that boys more frequently have animal friends than do girls, while girls have human pretend playmates to a greater extent. Additionally, girls are more likely to have imaginary companions of the opposite sex. In their study, 42% of the girls had at least one pretend playmate of the opposite sex, whereas only 13% of the boys had a female make-believe friend. In another study, girls' imaginary companions were found to be less competent than their inventors, while boys had companions that were admired and idealized (Harter & Chao, 1992). Girls' companions were protégés whereas those of boys were heroes or

idols. According to the authors, this might reflect two different mechanisms for handling issues of mastery and competence.

Aims of the Study

The aim of the present study was to scrutinize the relationship between the presence of imaginary companions and variables such as creativity, self-image and gender. One question was whether imaginary companions might be an expression of a creative disposition. A second question was whether children with make-believe friends had negative self-images. A third question involved discovering which aspects of the imaginary companionship are especially creative. A final question addressed possible gender differences in the phenomenon.

METHOD

Participants

The participants were 69 fourth graders (35 girls and 34 boys) in six classes at three Swedish schools, with somewhat different demographic profiles, but with the majority from middle class homes. In two of the classes only one and five pupils participated, respectively. The rest did not wish to take part or parental permission was not given. In the other four classes, almost all pupils participated. In the different tests the number of participants varied between 65 and 69, because some children were absent from some testing sessions.

A subgroup of 26 children (16 girls and 10 boys), comprising all children with imaginary companions from four classes, were given a more thorough questionnaire and interviewed about their companions. It was for practical reasons that not all children with imaginary companions were included in the detailed inquiry.

Measures

The Activity Questionnaire (AQ)

The Activity Questionnaire (Hoff, 2000) is a measure of *involvement in creative activities and hobbies* and it includes a question whether the children have or have once had imaginary companions. The questionnaire also concerns whether the children engage in any creative hobbies (e.g., drawing and writing stories), whether they spend a great deal of time fantasizing, and whether they remember their dreams. The children also indicate whether they have invented their own games or built their own toys. The maximum score was 10 (excluding the question about imaginary companion from the statistical analysis). The questions about creative activities and hobbies were shown to be related to the Creative Functioning Test (Smith & Carlsson, 1990/2001), and the questionnaire in its present form with the Unusual Uses Test (r = .34, p = .05 in Hoff, 2000; r_s = .44, p = .01 in Hoff & Carlsson, 2002).

The Creative Functioning Test (CFT)

The Creative Functioning Test (Smith & Carlsson, 1990/2001) is a measure of *cognitive flexibility,* which is the ability to shift flexibly between imaginative and rational thought. In CFT, a picture stimulus depicting a black-and-white still life of a bottle and a bowl is shown in repeated rapid presentations on a computer. Shadings and diffuse contours build up the picture, making it fairly easy to imagine other contents (e.g., a body or a landscape). To begin with, in *the increasing series*, the stimulus is presented for a very short time (0.02 s), and for every other presentation the exposure time is prolonged until the participant describes the picture content correctly (the longest possible exposure time is 3.6 s). Along the way to perceiving the content objectively, a number of subjective interpretations are often reported. When the participant has perceived the actual content of the picture, the procedure is reversed. In *the decreasing series*, the picture is presented at shorter and shorter exposure times and the session is finished when the stimulus can no longer be discerned. The participants are instructed that pictures will be shown very briefly (but not that it is the same picture). The participants are told to describe what they see on the screen, even if they are not quite certain.

The scoring in the present study focuses on the decreasing series, where new interpretations or recollections of subjective themes from the increasing series are registered. This dimen-

sion captures an ability to shift from rational (objective) thought to more imaginative (subjective) cognition, an ability closely related to creativity (Smith & Carlsson, 1990). Objective perception supposedly affects the viewer such that when correct recognition has been attained, a low creative person will inhibit subjective interpretations during the decreasing series. On the other hand, a highly creative individual will be able to abandon rational thought and let the subjective representational world influence her/his perception to a considerable extent. The scoring involves six levels of creativity defined in the manual (Smith & Carlsson, 1990/2001).

The author and another judge scored the CFT protocols independently, and in cases of disagreement a third judge also made an assessment. According to the manual (Smith & Carlsson, 2001), the re-test correlation for a group of children was .71. CFT has been validated through correlation with other measures, e.g., researchers rated by independent raters on originality and richness of ideas ($G = .67$), preschool children's drawings rated by professional artists ($G = .74$).

The Unusual Uses Test (UUT)

The Unusual Uses Test (Guilford, 1967) is regarded as a measure of *fluency of ideas*. In the UUT, the subjects make up as many alternative uses as possible for a well-known object, for example a newspaper or a brick. In this study, the Unusual Uses Test was adapted to function as a test for children. Empty milk packages were considered to be well-known objects for children and therefore suitable for the present study. The children were asked to write down as many uses they could think of in 15 minutes. As regards scoring, the total number of uses was counted and every suggestion was given one point.

The Self-Image Inventory: How I Think I Am

How I Think I Am is a Swedish self-image inventory for children (Ouvinen-Birgerstam, 1985/1999) and consists of five subscales. The subscales measure: (a) skills and abilities – e.g., "I'm good at math", "Other people do things better than I do", (b) physical self-image, health and appearances – e.g., "I don't

care about my looks", "I often feel clumsy", (c) mental well-being – e.g., "I easily get angry ", "I'm a happy person", (d) relationship with parents – e.g., "My parents trust me", "In my family, we fight a lot", (e) relationships with peers and others – "I have many friends", "I feel different from others".

There are 72 items in the inventory. Each item has four response alternatives, "Agree completely", "pretty much agree", "hardly agree at all", "disagree completely", which were scored +2, +1, -1 and –2, respectively, or conversely, depending on whether the question dealt with a positive or negative matter. The greater the sum, the better the self-image. Maximum score is 144 and minimum –144.

According to the manual (Ouvinen-Birgerstam, 1985/1999), homogeneity testing showed reliability of .91 - .93, and re-testing a correlation of .74. The inventory has also been validated through comparison with an adjective list (r = .75) and a psychologist's assessment (p = .001, N = 250).

The Questionnaire about Imaginary Companions

A questionnaire (see Appendix) about imaginary companions provided further information about these children and their companions. The information concerned, for example, appearances (shape, size, age), name and sex (and other characteristics) of the companions, the way they interacted (whether they played in a fantasy world or with real toys) and whether they engaged real peers in the play with their imaginary companions.

The questionnaire items represent subjects found to be meaningful for children with imaginary companions; the subjects were identified through a pilot study with unstructured interviews. However, some items proved to be dead ends. Some questions, for example number 13, concerning age of the friend, were excluded from presentation of the results, as there was too little variation. Most companions were the same age as the children. Other less quantifiable questions, for example question number 1, about the name of the companion, and number 22, about the content of the play, have been dealt with in an article about the forms and functions of imaginary companions (Hoff, 2003).

The Interview

The children were also interviewed, though much of this material is not relevant to this article. However one interview variable was deemed relevant as well as useable in the quantitative statistical analysis, namely that concerning the independence of the make-believe friend – termed *character depth* in the results section. In the interviews the children were asked about their roles and the roles of their pretend playmates. There were questions concerning: Who decided when they were about to meet? Who comforted whom? Who urged whom? Who made up mischief or suggested adventure? Who stopped the play when things had gone too far? Who determined what was right and wrong? There was also a question about whether the children had learnt anything from their imaginary companion or whether the companions had helped the children grow as individuals. To be assigned to the category "deep character" at least two affirmative answers were required in response to the questions of whether the child, during the interview, had expressed that the playmate had showed independent behavior or intentions (e.g., having taught the child something or encouraged the child to be mischievous) and whether the companion was described as having independent characteristics compared with the child (e.g., having its own relatives or that an elaborated imaginary world was linked to the play). Besides the author, a co-rater also categorized this variable.

Procedure

The test administrator (the author) visited the children during school hours. The first time the test administrator met the children, she presented the project, related what kind of questions would be posed to the children and asked them to return the parental permission form. On the next visit, four of the tests were taken in the classroom. Finally, within a few weeks' time, the last test (CFT) was taken individually in a separate room. The subgroup of 26 children was also interviewed.

RESULTS

Descriptives[2]

The total mean on the Activity Questionnaire was 5.0 (*SD* = 2.6, range: 0-11). Homogeneity testing gave a Cronbach's Alpha of .64. There was no gender difference on AQ (Table 1).

From the Activity Questionnaire it was concluded that thirty-six of the sixty-nine children (52%) currently had or had at one time had imaginary companions, 25 of the girls (71%) and 11 of the boys (32 %). There was a significant gender difference (Fisher's Exact Test, *p* = .01).

The six levels of creativity defined in the manual (Smith & Carlsson, 1990/2001) were collapsed into three larger groups. The total mean for the CFT scores was 3.3 (*SD* = 2.0, range: 1-3). The interrater reliability was 0.84 (Kappa). No gender difference was found (Table 1).

For the Unusual Uses Test, the mean number of proposed uses was 4.6 (*SD* = 2.8, range: 0-12). No significant gender dif-

Table 1
Descriptives of the Creativity Tests and the Self-Image Inventory

	AQ	CFT	UUT	How I Think I Am.					
				Skills & abilities	Physical self	Mental health	Parent relations	Peer relations	Total
Girls (n = 35)									
Mean	5.6	2.0	5.0	13.3	13.5*	13.0	20.2	14.7	74.8
SD	2.8	0.9	2.9	7.8	7.4	8.4	7.5	7.4	28.6
Boys (n = 34)									
Mean	4.4	2.2	4.2	12.4	17.1*	14.3	21.5	14.4	79.8
SD	2.1	0.8	2.7	9.9	6.8	10.6	6.8	8.0	33.5
Total (N = 69)									

[2] The creativity and self-image results have been presented in an earlier article (Hoff & Carlsson, 2002), where the relation between these variables was the main interest. The relation between these variables and imaginary companions has not been presented earlier.

Mean	5.0	2.1	4.6	12.9	15.3	13.7	20.8	14.6 77.2
SD	2.6	0.8	2.8	8.8	7.2	9.5	7.2	7.6 31.0

* With an alpha level of .05, there was a difference between girls and boys.

ference was found (Table 1).

The overall mean of How I think I Am was 77.2 (*SD* = 31, range: -14-140) compared to the reference group mean of 68 (Ouvinen-Birgerstam, 1999). There was no gender difference in total self-image. The only subscale that showed a gender difference was physical self-image, t (67) = -2.1, p = .04, to the advantage of boys. Boys' mean was 17.1 (6.7) and girls' 13.5 (7.4) (see Table 1). In comparison with the reference group (The reference mean of skills and abilities was 9.8; physical self-image, 12.8; mental health, 13.5; parent relationships, 19; and relationships with friends and others, 12.7), the participants of this study scored somewhat higher in all subscales except on the mental well-being scale, where they had average scores.

Imaginary Companions and Creativity

The children with imaginary companions scored significantly higher on two of the creativity measures: the Activity Questionnaire (*U* = 335, 5, p < .01) and The Unusual Uses Test (*U* = 375.5, p < .01) with Mann Whitney U. The Creative Functioning Test showed a tendency in the same direction (see Table 2).

Table 2
Imaginary Companions (i.c) in relation to the Creativity and Self-Image Tests

Tests	Had never had i.c. n = 33		Had/or had once had i.c. n = 36		M. Whitney U or T-test	
	Mean (*SD*)	Mean rank	Mean (*SD*)	Mean rank	*U/t*	*p*-value
Creativity					*U*	
AQ	3.9 (1.8)	27.2	5.9 (2.8)	42.2	335.5	.002
CFT	2.0 (0.9)	30.9	2.2 (0.8)	35.8	463	.28
UUT	3.6 (1.9)	28.2	5.4 (3.2)	40.1	375.5	.01
Self-image					*t*	
Skills & abilities	14.4 (7.7)		11.5 (9.7)		1.4	.17
Physical self	16.2 (8.2)		14.5 (6.3)		1.0	.34

Mental health	16.7	(7.7)	10.9 (10.2)	2.7	.01
Parent relations	21.8	(6.4)	20.0 (7.8)	1.0	.31
Peer relations	17.0	(6.1)	12.3 (8.3)	2.7	.01
Total self-image	86.1 (27.6)		69.1 (32.1)	2.3	.02

Imaginary Companions and Self-Image

There were some significant self-image differences between the children with imaginary companions and those without. Those who had pretend playmates scored lower on the subscale of mental well-being ($t (67) = 2.7$, $p = .01$) and on the subscale regarding relationships with friends and others, for example teachers ($t (67) = 2.7$, $p = .01$). The overall self-image was also significantly lower for those with make-believe friends ($t (67) = 2.3$, $p = .02$). Table 3 demonstrates the results. Compared with the reference material from the manual (Ouvinen-Birgerstam, 1999), the children with imaginary companions scored lower than average on mental well-being. Their mean was 10.9 and the mean of the reference group 13.5. On relationships to others and overall self-image, the children with imaginary companions had means equal to those in the reference data.

The Subgroup with Imaginary Companions

There were no only children in the subgroup of 26 children for whom sibling data were obtained. Seven children had one sibling, fifteen had two siblings and four had three siblings. There were 10 first-born children among the sample and 16 middle or last-born.

Questionnaire about Imaginary Companions

Most children had their make-believe friends (kept old ones or acquired new) after the age of seven. The reason for this age division was that Swedish children started school at the age of seven and it was deemed interesting to see whether this influenced the imaginary companionship. Ten children had their make-believe friends before seven, eleven kept old ones after school start and five acquired new ones. A majority of the children only had one imaginary companion. The number of chil-

dren who played in an imaginary world with their pretend play-mates almost equalled the number who played with their real toys. Most children played alone with their companions. The make-believe friends most often appeared in the shape of same-sexed humans. There were very few differences between girls' and boys' companions. The only significant finding was that girls were more likely to play with their imaginary companions together with a real playmate than were boys (Fisher's Exact,

Table 3

Aspects of Imaginary Companions (i.c.) from the Questionnaire

	Girls $n = 16$	Boys $n = 10$	Total $n = 26$
Age when having i.c.			
Before seven	6	5	11
After seven [a]	10	5	15
Number of i.c.			
One i.c.	8	8	16
More than one i.c.	8	2	10
Play context			
Play in real world	11	3	14
Play in paracosm	5	7	12
Character depth			
Shallow character	7	5	12
Deep character	9	5	14
Number of places			
Plays at home	7	7	14
Different places	9	3	12
Type of play			
Plays alone	7	9	16
Plays with others	9	1	10
Sex of i.c.			
Same-sex i.c.	11	9	20
Opposite-sex i.c.	5	1	6
Type of i.c.			
Human	10	7	17
Animal	6	3	9

[a] Comprising both those who acquired their imaginary companions before seven and kept them until after seven years of age and those who acquired imaginary companions after the age of seven.

$p = .04$). Only one of the boys reported playing with real friends while playing with his imaginary companions. There was also a

tendency for girls to play more in paracosms than for boys to do so (Fisher's Exact, p = .10). The frequencies are presented in Table 3.

Character Depth of the Imaginary Companions

The make-believe friends varied considerably as regards the level of elaboration of character. Their characters were sometimes depicted as very much alive and with an independent will, and sometimes the characters were copies of the children who had invented them. I will demonstrate some of these differences with quotations from the interviews. For the quantitative analysis, the characters of the imaginary companions were divided into the categories deep and shallow. Apart from the author, a co-assessor also made the categorization. The interrater reliability was .77 (Kappa).

Deep Characters

Some of the children gave examples of situations when their imaginary companions were so much alive that the children almost appeared to have forgotten that they were their own imaginary constructions.

Frida allowed her make-believe friend, "Nicki", to (secretly) join her when she played with real friends. But sometimes she sent "Nicki" away when she was not available to play with her, out of consideration that "Nicki" might become bored: "She's usually allowed to be there, but sometimes she has to go too. I mean, I can't, I just can't... it would be boring for her if I couldn't speak to her." Harriet reported that, in the beginning, she felt timid in the presence of the imaginary companion: "I used to be pretty shy of her."

In a few cases, the make-believe friends had well-considered characters. When asked what he knew about his friends, Elvis described them in the following way: "Well they are... from China. They are... live on being happy and they eat too, but they have to be happy in order to live. Then they are mostly kind, to me. But they tease each other. Especially Pepper /the companion's name/." Ida reported what her companion taught her:

Interviewer: Can "Knubbis"/Chubby/ tell you things you don't know? Can he teach you things?
Ida: Yes, he can teach me about where he was before, when he didn't know who I was...
Interviewer: Aha, where was he before then?

Ida:	He was on a planet, and I think it was Mars or something.
Interviewer:	Aha.
Ida:	Or Jupiter, some planet anyway and then... he was up there and then there was a, I think there was a fire there, that's why... he left. And then he fell down from the planet to earth. And then he came... and then I just saw him.

Shallow Characters

On the other hand, several children did not know much about their pretend playmates. They appeared when the children were bored or sad and kept them company or comforted them as long as the children needed them and then they vanished. These less elaborated companions looked like their inventors and did not have much will of their own. Aron's make-believe friend was not clearly distinguished from Aron himself and when they were different, Aron was the active part and "Kalle" the passive. A trick he and "Kalle" used to play on his parents was to hide things, and Aron related that he was the one who made up the trick. On other occasions, their wills were equal. To the question about who urged the other when they were going out on an adventure, he responded: "Nobody, because we both dared."

Another similar example was Hilda and her pretend playmate "Madeleine". They were very much alike. She told of a kind of mischief she and "Madeleine" used to get into:

Interviewer:	Who invented the mischief? Was it you or she?
Hilda:	It was none of us. We used to make them up together. /.../
Interviewer:	Was it ever like the pretend playmate was with you and said: 'Let's do this' and that you said: 'No, I don't want to'?
Hilda:	No.
Interviewer:	You always had the same opinion?
Hilda:	Yes.
Interviewer:	So it never happened that you had to encourage the pretend playmate to join you in something she didn't want to do? Could you have different opinions?
Hilda:	No, mostly not.
Interviewer:	No, is there an example of a situation when you had different opinions?
Hilda:	She always wanted to be with me and I really wanted to be with her and all.

Imaginary Companions and Creativity in the Subgroup

Among the 26 children in the subgroup *with* imaginary companions, there were some relationships with the creativity measures. The UUT and the Activity Questionnaire were selected as creativity measurements for this smaller sample, as the CFT dimension did not correlate significantly with the whole sample. Means, mean ranks and statistical figures are presented in Table 4.

Some aspects of the imaginary companionship were related to higher creativity scores in the children. Those children who had (kept old ones or acquired new) imaginary companions after the age of seven (U = 43.5, p = .04), had a greater number of make-believe friends (U = 23.5, p = .001), had companions with

Table 4
Creativity Measures for Different Aspects of Imaginary Companions (i.c.)

n = 26	Activity Questionnaire				Unusual Uses Test			
	Mean (SD)	Mean rank	U	p	Mean (SD)	Mean rank	U	p
Age when having i.c.								
Before seven	5.6 (2.1)	10.0	43.5	.04	4.1 (2.3)	12.4	71.0	.55
After seven[a]	7.3 (2.4)	16.1			5.3 (4.2)	14.3		
Number of i.c.								
One i.c.	5.6 (2.2)	10.0	23.5	.001	3.6 (2.6)	11.0	40.5	.04
More than one i.c.	8.2 (1.8)	19.2			6.8 (4.8)	17.4		
Play context								
Play in real world	5.8 (2.7)	11.0	54.0	.12	4.5 (3.9)	12.2	68.0	.40
Play in paracosm	7.3 (2.0)	15.6			5.1 (3.3)	14.6		
Character depth								
Shallow character	5.3 (2.4)	9.4	34.5	.01	3.6 (3.3)	10.5	47.5	.06
Deep character	7.8 (1.8)	17.0			5.9 (3.5)	16.1		
Number of places								
Plays at home	5.3 (2.2)	9.0	20.5	.001	4.0 (3.5)	11.4	54.5	.12
Different places	8.2 (1.5)	18.8			5.7 (3.5)	16.0		
Type of play								
Plays alone	5.9 (2.5)	10.4	30.5	.04	4.2 (3.5)	11.1	42.0	.15
Plays with others	7.9 (1.5)	18.4			5.9 (2.5)	17.3		
Sex of i.c.								
Same-sex i.c.	6.3 (2.4)	12.6	48.5	.30	4.0 (3.1)	12.0	38.5	.10
Opposite-sex i.c.	7.4 (2.2)	16.1			6.8 (4.1)	17.5		
Type of i.c.								
Human	6.6 (2.2)	14.6	67.0	.61	4.1 (2.9)	16.1	53.0	.20
Animal	6.8 (2.9)	12.9			6.1 (4.3)	12.1		

more elaborated independent characters (U = 34.5, p = .01), played at different places to a greater extent (U = 20.5, p = .001) and played more often together with real playmates and their make-believe friends at the same time (U = 30.5, p = .04), scored significantly higher on the Activity Questionnaire. There was also a tendency indicating that paracosmic play was more creative (p = .12). The relationships were weaker with the Unusual Uses Test. The only variable showing significantly separated creativity scores was the number of imaginary companions (U = 40.5, p = .04). Tendencies appeared for character depth, number of locations for the play, combined involvement with real friends and for pretend playmates of the opposite sex.

Imaginary Companion and Self-image in the Subgroup

Within the subgroup, there were no significant differences in self-image scores across the different aspects of the companionship.

DISCUSSION

Half of the fourth graders in this study reported having imaginary companions at the time of the interview or having had such companions earlier in their life. One of the main findings was that having imaginary companions was related to two out of three creativity measurements. The third creativity measure showed a tendency in the same direction. Few previous studies have focused on 10-year-olds, though some have been able to show associations between creativity and imaginary companions (Schaefer, 1969; Seiffge-Krenke, 1997; Singer, 1961). On the other hand, there are quite a few case studies discussing creative adult people who had imaginary companions as children (Myers, 1979; Taylor, 1999).

As regards self-image, the children with imaginary companions, as compared to those without, described themselves to a greater extent as having few friends, being different from others,

and having lower psychological well-being. They also had lower self-image scores on the overall scale. However, it is important that we do not, based on these results, ascribe severe psychological problems to the inventors of imaginary companions. Compared with the reference data in the manual of How I Think I Am (Ouvinen-Birgerstam, 1985/1999), the mean score for children with pretend playmates is noticeably discrepant for mental self-image, but about average for relationships with others and overall self-image. The sample in this study as a whole was well above average, probably due to, among other things, a larger percentage of children from middle-class homes. Other studies have also shown the disadvantages of children with make-believe friends (Bouldin & Pratt, 1999, 2002; Harter & Chao, 1992). Bouldin and Pratt (2002) showed that anxiety levels (judged from parental reports) were higher in 3- to 8-year-old children with imaginary companions compared with those who did not have such companions. Harter and Chao (1992) demonstrated that 3- to 6-year-old children with make-believe friends, as judged from preschool teacher reports, were less competent and less socially accepted by peers.

On the other hand, still other studies have demonstrated the advantages of the possessors of imaginary companions and shown that these children are superior in some respects to other children (Manosevitz et al., 1973; Singer & Singer, 1992).

Although this study and some others have demonstrated that children with imaginary companions might be socially less capable, it can be fruitful to speculate on how these children would have coped had they not had these companions at all. In another report on the functions of imaginary companions (Hoff, 2003), it was shown that, according to the children, imaginary companions not only had a social compensatory function, but also provided social practice and enhanced the children's social competence. Other researchers have also argued in line with these results. Gleason (2002) maintained that make-believe friends may provide practice in conceptualizing relationships. Harter and Chao (1992) purported that the competence of the child in general might be increased through the invention of an imaginary companion.

In the field of social cognition, the importance of illusions in maintaining self-esteem has been put forward (Taylor & Brown, 1999). In this context, having an imaginary companion can be a way of maintaining an illusion of social competence.

More complex peer interaction is developed in the early school years and social competence is an increasingly important

skill (Erikson, 1950/1993; Piaget, 1968). The imaginary companion might function as a transitional phase for some children, allowing them to gradually develop the skills for managing the role-taking and rule-oriented interactions that real friends demand (Sugarman & Jafee, 1989).

The high frequency of make-believe friends (53%) reported in this study may seem surprising. However, compared to some other studies, the present incidence is actually somewhat low (e.g., 65% in Singer & Singer, 1992, and 63% in Taylor, 1999). One reason for the somewhat lower frequency might be that some of the 10-year-olds had actually forgotten their early pretend playmates. An important question within this research area is whether the parents or the children themselves should constitute the source of information when investigating imaginary companions. Severe problems with the use of parental reports have been disclosed, especially for older children, as parents are seldom aware of their make-believe friends (Taylor, 1999). A combination of accounts from parents and children would in most cases be optimal. In this study only children's reports were utilized. Another explanation for the somewhat lower occurrence rate might be that the child participants were not explicitly informed that anthropomorphized toys could be counted as imaginary companions. In this study, only three children had real-world props in the shape of stuffed animals. Clearer instructions and parental reports, biased or not, may have identified more anthropomorphized toys and some of the forgotten early instances of imaginary companions.

10-year-old children have been demonstrated to be well-functioning participants as well as reliable informants (Andersson, 1998; Garbarino & Stott, 1992), perhaps more reliable than younger children who sometimes have difficulties in separating reality and imagination (Taylor, 1999). In one respect, 10-year-olds are also more trustworthy than teenagers, since they are still engaged in pretend play or have fairly recently abandoned this kind of play, whereas teenagers' experiences are more distant.

The Subgroup with Imaginary Companions

In the present study, no support was obtained for the assumption that only and first-born children tend to invent imaginary

companions more often. In the smaller sample of 26 children for which family data were collected, there were no only children and just 10 of 26 were first-born. However, no statistical evidence could be produced, as there were no family data collected among the children who did not have imaginary companions.

In the subgroup, more detailed information about the characteristics of make-believe friends was used to uncover particularly creative features of imaginary companions. A greater number of pretend playmates, a more elaborated independent character of the friend and greater variation in places where the companions appeared indicated a more creative inventor. Engaging other real friends in the pretend play also implied greater creativity. There was a tendency for the paracosmic imaginary play to be more creative. To summarize: the more variation and elaboration in the imaginary play, the more creative the child. These results must be replicated in a larger sample, and to accomplish this the questionnaire about imaginary companions will need some revision. For example, questions (in this study included in the interview) regarding the independence of the imaginary companion should be added. The result concerning character depth needs to be regarded with great caution. The children's memory capacity might have been a confounding factor, as children who had make-believe friends after school entrance were also assessed to be more creative. The children with elaborated companions might have remembered more details concerning their pretend playmates compared to those children who had had companions in earlier years.

Regarding gender differences, girls, as expected, more often had imaginary companions. Other, previously demonstrated gender differences were not corroborated, which might be due to the small subsample. Some of the expected differences concerned whether the companion had the shape of a human or an animal and whether the sex of the pretend playmate was the same as or opposite the child's. In the present study, only 42% of the boys had imaginary animal friends, whereas 60% of the girls did, although the opposite proportions were expected. As regards sex of the companions, the participants showed the anticipated differences, though they were non-significant: 45% of the girls had companions of the opposite sex, whereas only 11% of the boys had a female companion. Despite the small number of subjects, one new finding was detected: The girls in this study, as compared to the boys, reported playing more often with other real playmates together with their pretend playmates. This finding needs to be verified in further studies. One specu-

lation about the reason for the few gender differences in this study is that the more varied gender roles in Sweden might cause Swedish boys and girls to invent more similar friends than do children in other countries where the gender roles are more traditional (Boski, 2002). Future studies should address cultural comparisons with respect to possible gender differences in imaginary companions.

Conclusions

Evidence for both positive and negative correlates of children with imaginary companions was found in this study. On the one hand, a relationship with creative giftedness was demonstrated. On the other hand, an association with reported lower mental health, lower sociability and overall lower self-image was shown in comparison with those without make-believe friends. However, it is still unclear whether the children are assisted or inhibited by their imaginativeness as concerns their social and mental functioning. Longitudinal research, in which socially isolated children both with and without imaginary companions participate, is needed to answer the question of whether the invention of pretend playmates increases or at least maintains children's isolation, or whether this kind of fantasy play actually provides social practice during a transitional phase and helps the possessors of imaginary companions to become more mentally healthy and socially capable in the long run.

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APPENDIX

Questionnaire about Imaginary Companions

Name... Form..

1. Do you have any brothers or sisters?   Yes ☐   No ☐

2. How many sisters?_____   How many brothers? _____

3. How old are your brothers and sisters? _____

4. Did your brothers or sisters have pretend playmates?   Yes ☐   No ☐   Do not know ☐

5. What do you call your pretend playmate/s? _____

6. Do you still play with your pretend playmate/s now?   Yes ☐   No ☐

7. How old were you when you met your pretend playmate/s the first time? _____

8. If you no longer play with your pretend playmate, how old were you when it disappeared? _____

9a. Is your pretend playmate invisible for other people?   Yes ☐   No ☐

9b. Does your pretend playmate also exist as a teddy or toy?   Yes ☐   No ☐

10. How many pretend playmates do you have?_____

11. What does your pretend playmate look like?   Animal ☐   Human ☐

12. What size is your pretend playmate?   Small ☐   Natural size ☐   Big ☐

13. Is your pretend playmate…   a child? ☐   a grown up? ☐

14. Is your pretend playmate…   a boy? ☐   a girl? ☐

15. Do you speak with each other?   Yes ☐   No ☐

16. Do you have a secret language?   Yes ☐   No ☐

17. Describe how your pretend playmate is (naughty, mean, funny, happy, boring, nagging, adventurous, shy, brave) and what your pretend playmate looks like: _____

18. Does your pretend playmate have its own friends, relatives and parents?   Yes ☐   No ☐

Describe them here: _____

19. Do you play with other children together with your pretend playmate?   Yes ☐   No ☐

20. How would you describe yourself when you play with your pretend playmate?

Sad ☐   Bored ☐   Happy ☐   Different moods ☐

21. How would you describe your pretend playmate when you meet with her/him?

Sad ☐   Bored ☐   Happy ☐   Different moods ☐

22. What do you and your pretend playmate do when you play? Describe your play here: _____

23. Where are you when you play with your pretend playmate?

Home in my room ☐
Home in the garden ☐
In school at the breaks ☐
In school at the lessons ☐
Somewhere else ☐   Where? _____

24. Do you and your pretend playmate play with fantasy objects?   Yes ☐ No ☐

Do you visit make-believe houses or make-believe gardens or countries? Describe them here: _____

25. Do you and your pretend playmate play with your real toys and other real things?   Yes ☐ No ☐

26. What more do you know about your pretend playmate? _____

27. Have you told anyone about your pretend playmate?   Yes ☐ No ☐

Thank you very much for your help!

If yes, whom?_____

IV

A Friend Living Inside Me – The Forms and Functions of Imaginary Companions

Imaginary companions and the characteristics of the children who invent them were explored through interviews. Twenty-six children (16 girls and 10 boys) took part. The first aim was to explore the phenomenon in general, the second to investigate the functions of imaginary companions. General findings concerned the kinds and names of imaginary companions. The sources of inspiration varied, comprising friends and siblings. Having a place of their own, where the children could develop their imaginary play, was considered important. The study demonstrated various contents of and ways of conducting imaginary play. Imaginary companions functioned as inner mentors, assisting the children in their identity formation work. Imaginary companions were experienced by the children as giving comfort and company, bolstering self-regulation and motivation, enhancing their selves, expanding their personality potential, and finally, enriching their lives.

Imaginary companions appear at different ages. According to different scholars, between 50 and 60% of all children have imaginary companions at one point during their childhood (Hoff, 2003; Singer & Singer, 1992; Taylor, 1999). The earliest imaginary companions appear at the age of two or three (Singer & Singer, 1992; Taylor, 1999). Some of these companions are only kept for a couple of months; others are played with for years. Some children acquire their imaginary companions upon school entrance, others as late as 10 years of age (Hurlock & Burstein, 1932; Taylor, 1999). There are even accounts of individuals having imaginary companions until the age of 18 (Seiffge-Krenke, 1997; Taylor, 1999).

When the imaginary companion is no longer needed, perhaps when actual playmates and other social activities become more important, it disappears (Bender & Vogel, 1941). Imaginary companions may also disappear when adults interfere in the play and try to control the conditions of the imaginary play (Singer & Singer, 1992). However, there are also examples of

children who are encouraged by parental engagement in the pretense (Taylor, 1999). In fact, Singer and Singer (1992) recommended that parents and other adults should inspire children to develop their imagination through mutual pretend play.

The appearance of pretend playmates[1] in children may worry parents. However, a century's worth of research has demonstrated that there is no reason to be alarmed. There *are* studies showing that children with imaginary companions are less socially adapted (Bouldin & Pratt, 1999; Harter & Chao, 1992) and have negative self-images (Hoff, 2003), but there is no evidence that these children develop psychological disorders later in life more often than do other children (Taylor, 1999). However, some scholars have revealed opposite results, that children with make-believe friends are as well functioning as children without (Manosevitz, Prentice, & Wilson, 1973; Singer & Singer, 1992).

There are different definitions of imaginary companions. On the one hand, the imaginary companion has been defined by Svendsen (1934) as an invisible character "having an air of reality for the child, but no apparent objective basis. This excludes that type of imaginative play in which an object is personified" (p. 988). On the other hand, according to Singer and Singer's (1992) definition, imaginary companions can include anthropomorphized dolls and stuffed animals as well as invisible imaginary companions. The present study adopted the latter definition. Before making an effort to illuminate the manifold forms and functions these pretend playmates have, an outline of what is already known about imaginary companions is presented.

Functions of Imaginary Companions

The make-believe friend may perform a large number of different functions. Many researchers believe that pretend playmates can have an adaptive function for children with relational and environmental deprivation, but the imaginary companion can also play an important role in ordinary children's development (Singer & Singer, 1992; Taylor, 1999). Violations are easier to endure if one has an imaginary helper around with whom to share worries.

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[1] In the text, the terms "imaginary companions", "make-believe friends" and "pretend playmates" will be used interchangeably to denote the phenomenon.

Many theoretical studies have pointed out different functions on the basis of children whom the scholars had met in their clinical work. However, there are very few systematic studies of the functions of make-believe friends, such as systematic interviews with children. The richest presentations of proposed functions of imaginary companions come from psychodynamic research, according to which the companion can have the function of an *id impulse,* a *superego* or *ego support* (Bender & Vogel, 1941; Nagera, 1969*)*, but also the function of different kinds of *defense mechanisms* (Sperling, 1954; Myers, 1979; Nagera, 1969). As regards defense mechanisms, renewed interest in this area has recently arisen within the study of social cognition. Many of the unconscious psychodynamic defense processes have been rediscovered and tested experimentally, although under new names. Researchers have compared Freudian defense mechanisms (Freud, 1936/1961) and social cognitive processes with similar functions. The results have demonstrated great convergence (Baumeister, Dale, & Sommer, 1998; Cramer, 2000).

Imaginary companions may enter children's lives when they feel overlooked in different ways. They may appear at the birth of a sibling or be acquired to handle *family traumas,* such as divorce, sickness or death (Bach, 1971; Bender & Vogel, 1941; Nagera, 1969; Taylor, 1999). The creation of a companion could also be a way to cope with loneliness, helplessness, feelings of being abandoned, fear of darkness or the unknown. Imaginary companions can thus be likened to conscious *coping strategies* (Singer & Singer, 1992) as well as unconscious defense mechanisms (Sperling, 1954; Myers, 1979; Nagera, 1969). Bender and Vogel (1941) gave an account of a child who invented an imaginary companion to compensate for not having a normal family. He accompanied his itinerant father and had few opportunities to develop stable relations to peers. It is not uncommon that the pretend playmate is a *rescuer.* For instance, one child, accounted for by Singer and Singer (1992), had an elf that could conjure away monsters from the dark.

An imaginary companion has been proposed to be an important aspect of children's *development toward independence*, toward creating a social context of their own outside the realm of parental control. Such friends, at the same time, do not require the same amount of adaptation as do real friends (Singer & Singer, 1992). The imaginary companion can constitute one way of *compensating for feelings of inferiority* in relation to

adults or other children. Together with the make-believe friend, the child can experience equality that she or he feels neither in the relationship with parents nor with friends. The powerlessness of childhood can be alleviated (Singer & Singer, 1992).

The play with pretend playmates can also work as *social practice* for timid children (Ames & Learned, 1946; Harter & Chao, 1992). In a very early scientific report, Vostrovsky (1895) suggested that these companions could have stabilizing adaptive roles, an opinion shared by Piaget (1951/1967).

The pretend playmate can also fill the role of *scapegoat.* Singer and Singer (1992) mentioned one boy who punished his imaginary companion. This was seen as a developmental step toward internalizing his parents' opinions.

There are also examples of identification where the imaginary companion plays a role as an *ideal self*. Bender and Vogel (1941) brought up a case where a boy with behavioral disabilities and motoric difficulties invented a make-believe friend who could jump over the Empire State Building. A related role is when the companion is not subject to the same restrictions as the child (Taylor, 1999).

The pretend playmate can also be a *protégé*, someone for the child to take care of. Myers (1979) gave an account of some children with psychological problems, whose imaginary companions were small and sickly and in need of their inventors' care.

A gender difference has been pointed out as regards the latter two functions. Harter and Chao (1992) found that girls protected their imaginary companions and that boys idealized theirs. Girls' friends were more often less competent, weak and tiny, whereas boys' companions were more often considered competent and worthy of admiration. According to Harter and Chao (1992), this could constitute two different mechanisms for handling issues of mastery and competence.

Transitional Objects and Imaginary Companions

It has been proposed that imaginary companions can facilitate developmental changes by working as transitional objects. The creation of a transitional object is an infant's first attempt to create a space between the mother and the infant. It constitutes the first developmental step toward an independent self (Winnicott, 1971/1995). Inspired by Winnicott, Pruyser (1983) discussed the importance of creating a space between the inner

and outer reality, not only for toddlers with their transitional objects, but throughout life. He argued that there are three spheres in which we are engaged: the realistic, the autistic and the illusionistic. The realistic sphere does not need to be explained. The autistic entails daydreaming that does not result in any changes in the external world. The illusionistic sphere is a combination of the other two. As I see it, make-believe friends are products of the illusionistic world rather than the autistic. They help children with practical issues in the realistic sphere, but are at the same time imaginary. Singer and Singer (1992) asserted that attachment to transitional objects is an antecedent to involvement in imaginary play and imaginary companions. Sugarman and Jaffe (1989) propounded a developmental line of transitional objects. The more advanced the developmental level, the more abstract the transitional object. In early life, the thumb constitutes a transitional object for the child and later a blanket may help to alleviate separation anxiety. At around three or four years of age, imagination and make-believe play become transitional phenomena. The last stage in the development of transitional phenomena contains art, music and ideology, adults' places for relaxation between inner and outer reality.

Sugarman and Jaffe (1989) also suggested different psychodynamic regulatory functions of transitional objects, which are in many respects similar to those proposed for imaginary companions, namely: narcissistic regulation, drive regulation, promotion of superego development, promotion of ego development and facilitation of object-relations development.

Developmental Differences

Taking a developmental perspective, the first imaginary companions appear around three years of age, when the cognitive ability to represent symbolically is adequately developed (Donaldson, 1979; Harter, 1998; Higgins, 1989). But children of ten also have these companions. There are reasons for assuming that the functions of pretend playmates are quite different for different age groups.

First, *the transitional roles* of the make-believe friends of three-year-olds could be different from those of the imaginary companions of 10-year-olds. Children at three years of age are

about to learn to interact in a mutual way with other children, for example to take turns and share toys, and so on (Erikson, 1959/1982; Piaget, 1968). In their transitional period, a more compliant pretend playmate may be needed. Furthermore, at three years, children have developed the shame and guilt emotions (Erikson, 1959/1982; Harris, 1995) as a result of their awakening self-guides (Higgins, 1989). In order to avoid feelings of guilt, they can use their imaginary inventions as objects on which to place blame, so-called scapegoating. According to some scholars, this kind of self-defense is immature and predominantly used by preschoolers (Cramer, 2000; Nagera, 1969).

Some developmental transitions in middle childhood involve acquiring effective self-regulation (Higgins, 1989) and learning to handle and enjoy relationships with others. Children are expected to handle increasing levels of responsibility. Children in the early school years are described as being preoccupied with issues of self-image in comparison with others and success or failure in school (Harter, 1998). The development of spare-time activities is also emphasized. Piaget (1951/1967; 1968) highlighted other aspects of middle childhood, among other things, learning to play by the rules and the development of concrete operational ability, which is a more logical way of thinking. These important steps toward adopting more adult-like thinking patterns and attitudes toward oneself and others can be eased with a little help from a make-believe friend, who, thus, works as a transitional object (Sugerman & Jaffe, 1989). In imaginary play, children can maintain the (omnipotent) control over the play and define their own rules – until they feel old enough to take part in more socially demanding forms of peer interaction. Nagera (1969) contended that the process of abandoning the belief in omnipotence is gradual and difficult. To achieve this, pretend play has an important role as an intermediate step before children are willing to transfer control, at least in some areas, to their parents and the environment around them.

Second, children have different reasons for *externalizing unattractive self-features* to their companions. Younger children have not developed the ability to appraise both positive and negative traits in themselves (Harter, 1998). For these children, the externalization of unfavorable characteristics onto imaginary companions can work as an intermediary step before they can fully integrate all features of themselves.

In middle childhood, however, children normally have acquired the ability to represent both positive and negative concepts of the self. Children of this age begin to conceptualize

themselves in terms of dispositional rather than more temporary traits (Harter, 1998). They may appraise problematic aspects of themselves that are more enduring in nature. The attribution of negative dispositional traits to their imaginary companions may be a way to cope with this possible threat to their self-worth (Harter, 1998; Higgins, 1989).

Third, older children *keep their companions secret* to a larger extent, whereas younger children play overtly with theirs (Ames & Learned, 1946). There are several possible explanations for this difference: (a) Older children have acquired a capacity to fully internalize their thoughts and imaginary life, and are therefore also able to keep their fantasies to themselves (Singer & Singer, 1992); (b) Nagera (1969) maintained that make-believe friends serve different functions for younger children (2-6 years) compared to older (above 6 years). Through their imaginary companions, the younger children only claimed what was their genuine right: attention, love and companionship, whereas older children's reasons for having pretend playmates were more conflictual. For example, the older children used their make-believe friends for wish fulfillment, such as for experiencing omnipotence, being admired, and for vicarious impulse gratification.

Fourth, according to Singer and Singer (1992), *sharing an imaginary companion* is purported to be a sign of immaturity. The products of imagination are supposed to be a private matter for older children.

Open Interviews

Open interviews can be semi-structured or unstructured. In semi-structured interviews, some questions have been prepared beforehand. The interviewer, however, is not bound to these questions, but can flexibly pursue parts of the interview in depth. The unstructured open interview has no question specified in advance, only the subject of the talk (Carlsson, 1991; Kvale, 1997; Patton, 1990).

There were several reasons for choosing interviews in the present study. The qualitative interview is a tool to facilitate better understanding of a phenomenon. Hypotheses are generally not formulated in advance and therefore interviews allow maintenance of a certain openness toward what is studied. According to Kvale (1997), the qualitative interview is a sensitive

and powerful method for capturing participants' experience and meaning in their everyday lives. As the present work involves studying inner phenomena, it was considered important to gain the inner perspective of some individuals' who had invented make-believe friends, namely 10-year-old children.

Child Interviews as Research Method

The credibility of children's self-reports has sometimes been questioned. However, a considerable amount of research has demonstrated that children are reliable as interviewees (see summary in Garbarino & Stott, 1992). Some scholars have argued that, by ten years of age, children have certainly reached a developmental level where their verbal accounts are as reliable as those of adults. Among other things, children at this age have developed metacognitive thinking ability; they think more logically and have increasingly adult-like capacities for communication (Andersson, 1998; Garbarino & Stott, 1992). Expressed in Piagetian terms, 10-year-olds have acquired the concrete operational level of thinking and passed the preoperational period, in which children predominantly use practical intuitive thinking (Piaget, 1968). Other scholars, however, have contended that even small children can be reliable interviewees at such an early age as three (Garbarino & Stott, 1992) if the researcher adapts the interview adequately to the child.

Critique against Interviews

However, even if 10-year-old children are as reliable narrators as adults are, many scholars have questioned the interview as a research method. Positivistic critics have maintained that qualitative inquiries are subjective, because the researcher is the instrument of both data collection and data interpretation and because interviews include personal contact between scholars and participants (summarized in Kvale, 1997; Patton, 1990). Interview methodologists have argued that subjectivity cannot be excluded from science and have even contended that the focus on respondents' subjective everyday experience is one of the advantages of the interview method (Burr, 1995; Kvale, 1997; Denzin & Lincoln, 1994). Burr contended that:

> No human being can step outside of her or his humanity and view the

> world from no position at all, which is what the idea of objectivity suggests. /.../ The task of researchers therefore becomes to acknowledge

> and even to work with their own intrinsic involvement in the research process and the part that this plays in the results that are produced (p.160).

However, critique has also been aimed at the interview method within the qualitative paradigm. Alvesson (2003) proposed critical standpoints toward what he called the positivistic *qualitative* interview approach. He confuted the belief that interviewee reports are unproblematic truths and that deep, authentic accounts are produced if only the interviewer exhibits enough empathy in a comfortable interview situation. Alvesson propounded some critical metaphors in order to adopt a reflective standpoint toward interview material concerning the possible confounds produced by the context, the interviewee and language.

Aims of the Study

One intention of this study was to acquire knowledge about the functions of imaginary companions through qualitative interviews. A second more general aim was to explore the variation in the phenomenon and to report unexpected findings arising in the process of categorization. A third aim was to relate the interviews – in addition to general research on imaginary companions – to modern self theories and social cognitive theory in order to create a complementary framework of interpretation in relation to the psychodynamic perspective within which the phenomenon has already been explored extensively.

METHOD

Participants

In a pilot study, twelve 10-year-old children (7 girls and 5 boys) from an earlier study (Hoff, 2000) participated. Twenty-six 10-year-old children (16 girls and 10 boys) who had or had once

had imaginary companions took part in semi-structured interviews. These participants included all the children *with* make-believe friends (and with parental permission) in four classes.

Fourteen of the twenty-six children still had imaginary companions when the interview took place. Twelve accounted for their own past experience of having imaginary companions.

Procedure

The 12 participants in the pilot study took part in an unstructured interview about imaginary companions. From these interviews, the semi-structured questions that guided the second round of interviews were generated (see interview guide, Appendix A). The first 29 questions were posed to all the children and were in principle the same questions as the children had answered previously in a questionnaire about imaginary companions (reported on in Hoff, 2003). In this way, the children had a chance to confirm their answers or, on questions where they had failed to answer, they had a second chance to respond. Thus some empty answer spaces were filled. During the interview, further individual probes were made with respect to every child's specific responses. Besides these 29 more or less structured questions, there were a couple of open question areas concerning the ways of playing, the kinds of play, and the functions and roles of pretend playmates. All but six interviews were tape recorded and transcribed. The transcribed interviews and the interview notes were the basis for the qualitative analysis. Each interview lasted between half an hour and an hour and took place during school hours. The participants were informed that they could end the interview whenever they wished.

In this study, I started with open interviews with 12 pilot-participants to develop a wide understanding of the phenomenon, and in a second round of more structured (semi-structured) and focused interviews, 26 other participants were addressed. Thus, a procedure of repeated data collection was employed, whereby the first acquaintance with the phenomenon was allowed to influence the subsequent data collection, an approach that has been advocated by qualitative researchers (e.g., Strauss & Corbin, 1990).

Analysis of the Interviews

Different scholars inspired the present qualitative analysis (e.g., Carlsson, 1991; Huberman & Miles, 1994; Kvale, 1997; Patton, 1990). The first step of the procedure was to note patterns and themes intuitively, then attempts to see connections between these followed. After this followed an attempt to make metaphors for what had been perceived. Then these tentative results were scrutinized by checking and counting whether the intuitive categories were reasonable. Another way of verifying or refuting the found themes was the process of comparing and contrasting different examples. If necessary, prematurely grouped variables were partitioned. Then followed an attempt to group variables hypothetically. The relations between variables were explored in this manner. Finally, work was undertaken to construct a pattern of evidence to reach conceptual coherence concerning the studied phenomenon. This work was supported by referring to earlier theoretical and empirical studies in the field.

To ensure the validity of the chosen themes, a co-assessor, working independent of me, also noted what she perceived as important themes in the interviews. The co-assessor's view was taken into consideration in the final presentation. She also scrutinized the transcriptions as regards possible interviewer effects, such as when the interviewer posed leading questions. The few identified confounding effects found were excluded from the results.

As regards presentation of results, the procedure advocated by most qualitative methodologists (Carlsson, 1991; Huberman & Miles, 1994; Kvale, 1997; Patton, 1990) is that the researcher's interpretations, substantiated with illuminative contemporary research, should be interjected in the results. The usual rule of value-free result presentation is deviated from because qualitative methodologists contend that this type of data material can never be completely value-free, and therefore it is not considered meaningful to separate the interpretation and the results (Carlsson, 1991).

RESULTS

The interviews have provided different kinds of data. First, some general facts about the children and their pretend playmates

are presented as *Background material.* The other part of the presentation emanates from the analysis of the interviews, through which less evident facts appeared. The presentation contains two main themes: *Facts about the phenomenon* and *Functions of imaginary companions.*

Background Material

The children in this study show great variation as regards many facts. The age when they had had their pretend playmates varied as well as the number of years they had them (see Appendix B). Another fact sometimes connected to the occurrence of make-believe friends is the number of siblings. Most children came from fairly large families by Swedish standards, namely three-child families (17 children). Seven had only one sibling and four had three siblings. There were no only children within this sample, despite the fact that, in earlier literature, only children have been shown to have imaginary companions more often (Singer & Singer, 1992; Taylor, 1999). Another fact showing variation was the type of imaginary companions. Seven children had animal companions, two had both animal and human companions and seventeen had human companions. Three had anthropomorphized stuffed dolls and the others had invisible companions (Appendix B).

As regards the names of the companions, twelve children had companions with ordinary human names, such as Kristina and Peter (termed "ordinary" names in Appendix B). Others, especially animal friends, had names connected to the kind of animals they appeared as, for instance a dragon was called "Drakis" (dragon is "drake" in Swedish). Other animal names were onomatopoeic; a chicken was called "Pipip". For some children, food condiments seemed to have inspired their choice of name. There was one child who had friends named "Salt" and "Pepper". In some instances, the children called their companions "You" and "Nobody". These four kinds of names were termed "invented" and represented by five children in addition to the three children who had both ordinary and invented names for their companions. Six children's make-believe friends did not have a name, either because the children had forgotten them or refused to disclose them ("no" name). Appendix B presents the frequencies.

Among the 26 interviewed children, 14 still had their friends at the time of the interview. The median reported time that the play with the imaginary companion had lasted was three years

(see Appendix B).

Facts about the Phenomenon

The imaginary companions were of many different kinds. Some of the most varied qualities were facts related to the elaboration of the characters. Some children had intricate stories about the first meeting and the disappearance of the friend, others said that they could not remember how it had happened or that they just had started to play one day. Appendix C presents some detailed facts about the phenomenon.

Stories of Appearance and Disappearance

The most common reason for the appearance of pretend play-mates was that the child felt lonely and therefore invented a make-believe friend to keep her/him company. But there was a wide range of different stories of creation among the participants. Some children did not acquire imaginary companions because of a certain deficiency. Several of the children had elaborate tales of their companions' appearance.

> Ida: It was when I was building a snow sculpture. Then, I made a small house and then it struck me that someone could live there and then I pretended that a mouse fell down from the sky... which was supposed to live there.

This is one example of how imaginary companions constitute a natural creative expression for some children. The urge to create can also make children construct intricate tales in connection to their companions, even in such cases where there is another primary reason for the invention, such as loneliness (see also section about paracosms). In Hoff (2003), an association between a creative disposition and more elaborated imaginary companions was demonstrated.

Contrary to what other scholars have noticed (Singer & Singer, 1992), the twelve children in the present study who did not have a companion at the time of the interview did not have particularly elaborated stories of disappearance. The most frequent reason was that they had acquired actual friends or started school. Helga, who had her make-believe friend in her

stomach, lost her companion when her mother became pregnant. According to Helga, she had wanted a sibling so much that when this was realized, the make-believe friend was no longer needed.

Influence

The sources the children reported as having influenced them to create imaginary companions were various. Several participants knew that their siblings had or had once had imaginary companions. Saga even played with her sister and a cousin with their different imaginary companions. A pair of twins had probably influenced each other more or less unconsciously, as they had the name "Kurt" in common. However, the twin Jakob said that he did not know whether his brother Oliver had an make-believe friend. Oliver, on the other hand, reported that he believed that Jakob had one.

Real playmates influenced some of the children to invent pretend playmates. Sibylla got her shared imaginary companion from Alma, who had told Sibylla and another child, Moa, that she had an imaginary companion.

As 10-year-olds, the children were naturally influenced by their parents in different ways. Not even the children's make-believe friends were totally out of the parental power sphere. Aron's parents knew about his imaginary companion and jested with him once by setting another plate on the table. In the literature about imaginary companions, interfering parents have been discussed. Some scholars have argued that there is a risk that interference will make children lose interest in the game because they are no longer in full control (e.g., Klein, 1985). Others contend that imaginary play can and should be encouraged by parents in order to motivate children to elaborate their play (Taylor, 1999; Singer & Singer, 1992). Aron said that he was not disturbed, rather amused by his parents' prank.

Lisa seemed to indirectly relate her parents' opinions on her having make-believe friends: "Well, I think it is good when I don't have anything to do. Otherwise I only sit and watch TV, when I don't have anything else to do." Several children mentioned television as a source of inspiration for letting imaginary companions come into being. Rasmus saw a "Gremlin" film and decided that he wanted a pair of those as imaginary companions:

> Rasmus: Yes, it was because I saw Gremlins, it made me really scared. I was not allowed to do it for my mum and dad. I was home alone, and

then I saw it. Then I thought that it was super fun with these Gremlins that sat and drank beer, and they almost fainted from the champagne. I could not sleep that night… then, I don't know, but I was afraid and sad and then… I only thought about those small, cute animals, then I thought that perhaps some were called Salt and Pepper.

According to Singer and Singer (1992), television could be a source of inspiration for children's pretend play; however, they specified this to programs adapted to the needs of different age groups.

In Singer and Singer's (1992) presentation of the prerequisites for developing imagination, the source of inspiration provided by *imaginative others* was stressed as a main factor. Two other such sources were *places for play* and *literary inspiration.* As regards literature as an influence for the construction of imaginary companions, little evidence from these 26 children was found. They were all asked whether they had heard stories about pretend playmates, but few had.

Nevertheless, imaginativeness as a general disposition is prompted by hearing many stories as a child (Singer & Singer, 1992). Nearly all the children reported that they had frequently had stories read to them.

Location

There was some variation in the location where the imaginary companions were found. A majority of children only played with their make-believe friends in their rooms. However, there were also children who brought the companions wherever they went. Some children informed me that their invisible companions were with them during the interview.

Several of the children brought their imaginary companions to school. There were some who let their make-believe friends help them in school and some whose companions mostly got into mischief. Ida related what happened when her mouse "Knubbis" (Chubby in English) and her actual playmate's imaginary squirrel were in the classroom once: "Well, in the classroom we played with [giggle] "Knubbis" and the squirrel. They drove around with their cars in the classroom and then we started to laugh because they drove up Susanna's /the teacher's/ leg."

Some of the children explained that they mostly interacted with their pretend playmates when they were waiting to fall

asleep. The choice of time meant a restriction on the play, which resulted in long waiting periods for Amanda's imaginary companion: "You see, she doesn't meet me, she only meets me an hour and then I fall asleep, so she is enormously happy when I show up." At this particular age, most parents have stopped reading to their children. The play with imaginary companions might work as an intermediary step before the child has learned to go to sleep alone.

Sometimes a child played with her or his imaginary companions in a small private cubbyhole. Some of the girls had "small houses" that they had found outside under some bushes or in the grass. Others had these more or less imaginary cubbyholes in their rooms under their desks and so on. A few of the boys had haunted places they had discovered together with their make-believe friends. For some children, the bathroom or the attic was a territory where they could be on their own and fantasize.

As mentioned in the previous section, Singer and Singer (1992) enumerated different prerequisites to developing an imaginative capacity. Having a place to fantasize was one. According to them, a play space or cubbyhole may constitute a place where children can be in full control. In this way, children can construct a microcosm of their own.

Contents of Play

There appears to be no limit as regards possible activities performed together with pretend playmates. There were examples of ordinary children's games, such as "tag" and "hide-and-seek", as well as sport activities, and different party games. Sometimes they talked or went for a walk with their companions. At other times they cooked and did the dishes together. Such activities could take place both in the real world and in the imaginary world. When Ida and her companion "Knubbis" were washing the dishes, he bathed in the dishpan.

The Ways of Playing

Single Play
Nearly all the children gave different explanations of the nature of their play with imaginary companions. When asked about the

advantages of a pretend playmate, Ida explained: "It 's that you can play with it wherever you are. It's never gone. It's like having a friend living inside me." Some of the children reported that their make-believe friends were always brought along. Others had them merely at specific places, like in their own rooms. Herbert said that: "He was in my room when I came through the door." For several children, the companions appeared when they did not have a real playmate. Other children could not control whether the imaginary companion would turn up. Suddenly it was just there.

To make the play seem more realistic, the children invented plausible explanations for their pretend playmates. Jakob for example, went on picnics with his make-believe friend and they brought real food. However, since "Kurt" could not eat it, Jakob explained: "But he always left it. He said that he was in a hurry, then he left."

Two of Dora's imaginary companions came in the shape of her hands. She animated her hands and had the fingers talk to each other. Even though she was aware that they were her hands, she experienced them as a human girl and a human boy.

Joint Play

A few of the children shared their imaginary companions with other children. For Sibylla, the joint play was complicated. She shared her pretend dragon "Drakis" with two other girls. They mostly played with it during the breaks at school. Alma, who had first invented this imaginary companion, seemed to be the "leader" of the game when they played together. Alma generally told the other two children what "Drakis" was up to. However, Sibylla could sometimes meet "Drakis" by herself.

It is interesting to speculate on the reasons for inventing an imaginary companion when real playmates are around. It can perhaps be a means for the inventing child to at least for a short while exert control over the mutual play. Relatively little research has dealt with this type of play.

Singer and Singer (1992) argued that refusal to share the imaginary world often indicates greater maturation. Most of the mutual pretend play in the present study was indeed past experience. However, for some of the participants, it was reported to have occurred as late as between six and eight years of age.

Awareness of the Imaginary Part of the Play

Many children could take a metaperspective on the imaginary play; this was revealed now and then during the interviews when they reported that they, themselves, controlled the imaginary companions or evoked the companions' parts of the dialogues. The children thus showed an awareness of the fact that the play was make-believe.

Responding to the question about who decided whether they should go out for a ride, Elsa said: "It was this rabbit, even though it was me who came up with it, I pretended that the rabbit came up with it."

Other scholars have commented that children are fully conscious of the pretense status of their invented friends. Nagera (1969) wrote:

> /L/ike ordinary day dreams the imaginary companion fantasy is an attempt at wish fulfillment of one sort or another, is ruled by the pleasure principle, can ignore the reality principle, and need not be reality adapted, yet the fantasizing person remains fully aware of the unreality of the fantasies that are being indulged in. In other words, reality testing remains unimpaired (p. 194).

A Delicate Subject Matter

Still having imaginary companions at the age of ten or the mere thought of past companions appeared to evoke feelings of awkwardness in some children. They giggled intermittently when giving accounts of their make-beleive friends, indicating that they believed it was embarrassing to indulge in such fantasies. Others described different occasions with their pretend playmates as awkward, for example when other people appeared unexpectedly. Dora had her companions in the bathroom. Responding to the question of whether she merely interacted with her imaginary companions in the bathroom, she said: "No, I don't often have them outside, I mean, I always have them in the bathroom. I mean, then my family comes or somebody in my family and says: 'What are you doing?' And then I feel ashamed."

However, not all children were embarrassed by spectators. Some children reported that their parents or other friends had noticed them while playing, but were not disturbed by it (see also section on Attention Seeking). Harald waited until the tape

recorder was switched off to tell me that he still played with his imaginary companion during the summer vacation. While the tape was running, he maintained that he had stopped playing with the companion at the age of seven. For several of the children, having make-believe friends was profoundly private. They appeared to have different reasons for playing with their friends clandestinely. Dora appeared to be anxious about her being deviant because she had imaginary companions: "This is really very secret... I have really not told anyone about this."

Another kind of evidence of the delicacy of the phenomenon was that some children kept certain aspects of their companions secret during the interview.

According to past research, older children are more likely to keep their imaginary companions secret (Ames & Lerned, 1946; Nagera, 1969). According to Nagera (1969), this is because older children have imaginary companions to fulfill wishes that often are experienced as conflictual. On the other hand, for younger children the pretend playmate alleviates emptiness and loneliness, which are not conflictual issues.

Functions of Imaginary Companions

One overall role of imaginary companions was that they were experienced as inner mentors, who appeared to assist the children in their identity formation work. A large number of separate functions was arrived at through analysis of the interviews. The five main categories were: *comfort or substitute for company, motivation and self-regulation, self-esteem enhancement, extended personality*, and *life quality enhancement* (for the frequence of answers in each category see Appendix D).

Comfort or Substitute for Company

The most common function of imaginary companions was to give comfort or to help endure boredom, loneliness or fear of darkness. Nearly all the children reported that this was a reason for having imaginary companions. Responding to the question of what pretend playmates are good for, Frida said:

> Frida: 'Cause, I don't know, when you've, sort of, been frozen out by other playmates or when they don't want to play with you anymore then she can, sort of, be nice to you and help you and all.

Kohut (1977) emphasized children's need for "mirroring", that is, children's need for self-objects (often parents) that accept and admire them. In middle childhood, playmates become increasingly important as support. When friends or parents do not show enough empathy and respect, a make-believe friend can perhaps partly compensate for this.

> Rasmus: I'm usually a little sad, and sometimes when I'm having a lie-in in the mornings, I usually talk to them. Especially when I'm home alone, don't like that very much. But you feel you're not completely alone any more when they come along.

Children's need for company, which hardworking parents can perhaps not satisfy, can be fulfilled through an imaginary companion. Pretend playmates might promote two different life span themes: the development of intimacy and that of autonomy (Singer & Singer, 1992; Stern, 1985). Make-believe friends may ameliorate both the ability to play alone independently as well as the capacity to interact with other actual friends. Children actually practice being considerate toward others through imaginary companions.

Motivation and Self-Regulation

Many of these imaginary companions performed more complex functions. In some cases they were experienced as assisting the children in different school subjects. The make-believe friends functioned as school mentors:

> Amanda: I can't manage English class, no, I can't manage English.
> Interviewer: No.
> Amanda: But when you have one of those... pretend playmates then maybe you ... go to a place and then to school and then you manage English there, then you believe in yourself, you see.

One way of describing this situation is that her imaginary companion "assisted" her in attaining her self-ideal – in other words, the make-believe friend was used in Higgins' (1989) sense for self-regulatory purposes. Managing English was part of Amanda's self-ideal. There was a discrepancy between her

actual self-feature (bad at English) and her ideal self. To reduce the discrepancy, she pretended that she traveled with her make-believe friend to different countries where she could practice English.

Several children also described situations where they experienced being coached to manage different tasks outside school. Saga accounted for a situation where her make-believe friends "prompted" her when she sang in a choir:

> Saga: Anyway they sing songs. It was five years ago, I think it was. 'Cause I was maybe six years old or, or so, then we were going to sing aloud. We were going to sing, you see, we usually sing in the church, because I sing in the church choir, then I could, sort of, have all of them there /the imaginary companions/. So they stood there and sang beside me and all. Then I always knew that I sang correctly. And then, you see, I had papers and all. But I suppose that I couldn't read very well /.../ And you could, when they stood there and sang, sort of, they whispered the words to you and that way you knew.

The illusion of having support seems to increase self-esteem, and with greater self-esteem, the chances of actually succeeding increase. This example can be compared with what Taylor and Brown (1999) contended about positive misperception of capability, namely that the illusion of feeling more capable than one actually has reason to believe one is fosters success. Positive appraisals of the self are associated with perseverance with tasks, which in its turn produces more effective performance and increases the likelihood of success. In many situations, imaginary companions seemed to have self-regulatory and motivational functions that enabled the children to function better.

The more dynamically oriented scholars Sugarman and Jaffe (1989) also argued that latency fantasies may assist children in their self-regulating in different ways. For example, self-esteem regulation can be facilitated through identification with idols, teachers and make-believe friends.

Some children explained that their imaginary companions had taught them to be more imaginative. The imaginary companions worked as "creativity consultants" for the children. Jakob described why it was good to have a pretend playmate:

Jakob: No, he made me have a bit more fun. For example, he always made up, sort of, new games.
Interviewer: Aha. He was pretty inventive?
Jakob: Yes.
Interviewer: And a little naughty?

Jakob:	But really, he has... I think, taught me to become more inventive, sort of.
Interviewer:	Aha
Jakob:	So I'm pretty inventive too, you see.

In a few cases, the companions appeared to make the children function better together with their real playmates. The imaginary companions acted as social coaches. Adrian stated: "If someone is kind of mad at me, I can tell him /the pretend playmate/ that and that I want us to be friends again and then we become friends again." The make-believe friend acted as a mediator, who helped Adrian make peace with the lost friend. According to Sugarman and Jaffe (1989), one function of transitional objects is to facilitate object-relations development. The authors argued that in middle childhood an increased need to explore social relations arises and that children can practice the "nuances and subtleties" of such relationships in their play with imaginary companions. Gleason (2002) argued that make-believe friends afford practice in conceptualizing relationships.

Motivator for Mischief
Some children accounted for their need for their pretend playmates to dare to be mischievous. This function of imaginary companions is an example of the degree of independence the children experienced in the companions. Here Harriet gave an account of what she would not have dared to do without "Kristina":

Harriet:	Then, once it was at Christmas time she made me... I had a chocolate calendar. /.../ Well, there was a bed and a desk there, and then a wardrobe by its side. So, I went into the wardrobe and sat there. Then she said: 'now, eat up all the chocolates!' [laughter]. And I did it. /.../
Interviewer:	Oh, yes a chocolate calendar... did you open all the doors?
Harriet:	And ate them all up [giggle].
Interviewer:	All the doors, and she made you do it?
Harriet:	Yes.
Interviewer:	Otherwise you would never have done it if she had not...
Harriet:	I would never have dared.

Here the imaginary companion works as a motivator to disobey parental rules, internalized in Harriet to the extent that she would never have dared to break them if not urged by someone else. Nagera (1969) maintained that imaginary companions can be vehicles for discharging unacceptable impulses.

On their way to becoming autonomous, children need to learn to decide independently whether to follow a rule and to internalize those parental prohibitions deemed necessary. Garbarino and Stott (1992) asserted that one important step toward realizing a separate identity is when children "learn" to lie. Through lying, children perceive that parents cannot know or control their thoughts. Perhaps learning to be mischievous has a similar function.

A Conscience or Someone to Provide Moral Guidance to
For some children, the imaginary companion had the function of a help-conscience. These companions halted the game when it had gone too far or told the children when they had done something wrong. According to Hans, the companion punished him if he did not pay attention to the companion's summons. The punishment was five minute's imprisonment in Hans' room.

Helga related how her pretend playmate assisted her when she wanted to halt a game:

> Helga: It was sometimes maybe, for example... once we were going to escape... we were anyway going out and then she said: 'Are we really going to do this?' Or something like that. Because I didn't really know if I wanted to do it or not.

This is another example of how imaginary companions assist self-regulation (Higgins, 1989). Imaginary companions perform the function of self-guides until these are completely internalized. From a psychodynamic view, Sugarman and Jaffe (1989) argued that an imaginary companion could foster the superego by means of working as a transitional step between external control and an independent superego. Nagera (1969) designated this possible function of pretend playmates as "superego auxiliaries" and argued that many of the controls that adults demand of their children are often beyond their capacities. Imaginary companions may, thus, help to solve self-regulatory conflicts (Nagera, ibid). According to Higgins (1989), self-guides and the superego are closely related concepts.

A related function appeared to be very common, namely cases where the children were the more morally responsible. The children had to stop their companions when the play was going over the top. Responding to the question of who stopped

an overly exaggerated game, Harriet said: "I use to do that. Then I said 'Now you will have to go home because I am tired'". Miriam related how she had to stop her pretend playmates from pinching candy. "Mimmi" wanted to take the whole candy bag. However, Miriam only allowed her to take one piece of candy. Why are these imaginary companions so recalcitrant? One of the distinguishing developmental tasks for 7- to 10-year-olds – the age range during which most of the pretend playmates in this study were active – involves learning to play by the rules in games such as marbles (Piaget, 1951/1967), or today perhaps Pokemon or computer games. They should also have internalized well-functioning moral self standards or guides (Higgins, 1989) or a well-functioning superego (Sugarman & Jaffe, 1989). Perhaps the advantages of the more egocentric period are not given up willingly. In order to feel competent and in control, it might be easier for children to guide someone else than to themselves abide by all the rules. Even if they do not follow all rules themselves, it may feel good to know someone who is worse. This might be supported by Brown's (1986) finding that people tend to overestimate their own positive characteristics and depreciate those of others. Inventing a mischievous friend will provide children with a "favorable" comparison.

A different perspective is provided by Nagera (1969), who maintained that imaginary companions might work as vicarious gratification of forbidden impulses. When the pretend playmate makes mischief, it is doing what the child would most have liked to do.

Self-Esteem Enhancement

The imaginary companions could work as ego support in different ways. In an increasingly complex world, where more and more responsibilities are placed on children, an imaginary world can constitute a transitional space where they can temporarily find protection from feelings of powerlessness. In this transitional space, the children experience a sense of control that is not possible in the external world.

Externalization of Negative Characteristics
A rather common function for these pretend playmates seemed to be as an object onto which bad traits could be projected. These make-believe friends were frequently ascribed character-

istics such as "stupid", "lazy" and "cowardly". Here is an example of how Rasmus described his Gremlin companions (p.5):

Rasmus: They're so chicken, because…
Interviewer: Don't they want to go with you to school?
Rasmus: Yes, of course they want to come with me to school. But they're chicken.
Interviewer: In what way are they cowardly?
Rasmus: They're… they don't dare, well, they don't dare in that way… but they don't dare to take the first step.
Interviewer: No.
Rasmus: Or I don't know. They're always worrying about new things.

Rasmus had few friends and one could surmise that he was not always happy about going to school, but with very nervous imaginary companions perhaps his own insecurity could be deemed insignificant. Within the social cognitive tradition, this way of functioning has been described as externalizing (Baumeister et al., 1998 ; Cramer, 2000). Within psychodynamic theory, it is counted as a defense mechanism and termed projection (Freud, 1936/1961). Sugarman and Jaffe (1989) maintained that through externalizing undesirable traits onto the make-believe friend, the self-representation can be "purged of imperfection." This in its turn facilitates an idealization of the self, which will become a part of the ego ideal. Nagera (1969) argued that externalization was a mechanism predominantly used by younger children. However, among the participants in the present study, the sequences of externalizing took place at various periods in the children's lives. Furthermore, Brown (1986; see also Greenwald, 1980) demonstrated that, for individuals with high self-esteem, self-worth is bolstered by perceiving the self to be better than others, a phenomenon termed "self-deceptive positivity" by Paulhus and Reid (1990). Likewise, negative attributes are believed to be more descriptive of others. Perhaps imaginary companions can "help" children form "unrealistically positive views" (Taylor & Brown, 1999) of themselves, similar to the views self-confident adults possess. Brown (1986) also demonstrated that, in adults, this self-other bias promotes psychological well-being. Perhaps children can derive the same benefits from a self versus pretend playmate comparison.

Scapegoat

If the make-believe friends were not ascribed unfavorable characteristics, they could be used in a more concrete way as ob-

jects on which to blame mischief. In this interview collection, there were only a few tales about how the children used their imaginary companions for this function. Harriet argued that she invented her companion in order to have someone on whom to blame mischief: "Well, I dropped a plate or something like that and then it was always my pretend playmate who had done what I had done. Once [giggle] I had a pair of scissors and then I cut my bangs, and then it was she who had done it, sort of."

In this material, however, this function was not very frequent, something that can be explained by age factors. Restoring self-worth by blaming someone else is predominantly used by young children (Nagera, 1969; Cramer, 1991). Harriet reported having her companion between four and six years of age. The ability to appraise both positive and negative self-features may be difficult for preschoolers, and imaginary companions could be handy for relinquishing responsibility for mischief in order to maintain a feeling of self-worth.

According to Cramer (2000), scapegoating is equivalent to what the psychodynamic literature has called displacement and is considered an immature form of defense.

Protégé

For some children, the pretend playmate constituted someone in need of care and supervision. At least one part of the play involved acting as the caretaker of their companions. They were the mothers or fathers of their imaginary companions. This function is associated with the functions of externalization and moral guidance. However, having a protégé highlights the caretaking role. Aron acted as a math teacher for his imaginary companion: "Well, I could count a little, so I taught him that." Saga accounted for her relation with and the responsibility she felt for her pretend playmates:

> Saga: Pipip was childish. He was like a small child. I was older than him. I was a bit big compared with him, but the other was more like a mother. I felt childish together with her. But I could feel a bit big too, you know when I was taking care of those two.
>
> Interviewer: Yes, you could.
>
> Saga: Well, and even if it was, sort of, an adult hen that was an adult in 'hen years', I still had to take care of it. It could not manage on its own. /.../ If we moved, for example, then they wouldn't know themselves 'now we have to move up to that trailer'. We must help them.

According to Harter and Chou (1992), this role of imaginary companions could constitute a mechanism for handling issues involving mastery and competence. Having a friend who is less competent may allow children to feel more masterful in comparison. Having an imaginary companions as a protégé may also be a precursor of the above-mentioned propensity among normal healthy individuals to rate positive characteristics as more descriptive of themselves and to ascribe negative features to a larger extent to others (Brown, 1986; Greenwald, 1980).

Harter and Chou (1992) asserted that girls predominantly develop this kind of a relation with their imaginary companions. Among the interviewed children in the present study, three out

of ten boys and six out of sixteen girls described their make-believe friends as someone who needed their caretaking.

Self-ideal

Not only did the imaginary companions assist the children in attaining certain self-ideal standards (as shown in the section about motivation and self-regulation), but they could also constitute ideals themselves through their action or appearances. Rasmus expressed his opinion that pretend playmates were much more fun to be with than were real ones: "They are almost perfect. They are absolutely perfect."

The propensity to idealize imaginary companions has been discussed by different scholars. Sugarman and Jaffe (1989) asserted that self-esteem might be regulated through the fantasy of an *idealized object representation*. The invention of idealized objects might also be an attempt to provide oneself with idealized caretaking, which in its turn can compensate for parental deficiencies. Kohut (1977) used the term *idealized self object* and argued that children have a need to idealize primarily parents, but also others. The function of idealization is also related to identification. Children identify with their idealized objects. In the absence of real persons to idealize and identify with, perhaps imaginary companions might do.

According to Nagera (1969), having imaginary companions as an ego ideal can be observed in children who for different reasons feel rejected. Having a companion who is clever or strong may alleviate the feelings of rejection. The imaginary companion impersonates primitive ego ideals that may be beyond the child's reach. Similarly, Seiffge-Krenke (2000) contended that the omnipotent feelings of the child are projected

onto the imaginary companions in order to experience some longed-for competence. Harter and Chou (1992) asserted that using the companion as an ideal is more common for boys. However, among the children in this study, there was an equal occurrence of idealization among boys and girls.

Better than Real Friends
Several of the children described their play with imaginary companions as better and more fun than play with real friends. It seemed easier for these children to enjoy themselves if they were in full control of their games. Perhaps they were not yet ready to adapt to other children in order to play. Adrian said about the play that: "It looks different and it is a little cooler." Helga was of a similar opinion: She reported: "It's different 'cause for example when you talk to her then she understands. If I was sad then she always understood me. /.../ Playmates could also do that, in a way, but maybe not really as well... and it felt good to talk to her. She understood everything."

The dream of being completely understood can be discerned in this statement. It can be reminiscent of early childhood when parents' caretaking was administered as soon as a need arose, for example a need for comfort or food. For the small toddler, this well-matched caretaking could be experienced as being completely understood and it might constitute a state longed for later in life (Stern, 1985).

Harriet accounted for why she preferred imaginary play: "With the pretend playmates you can do what you want to do, if you see what I mean. With playmates, you have to do something real. Then you can't go home to the castle and such things."

The play with imaginary companions can be an escape, away from the demands of social adjustment placed on children in middle childhood. The possibility to be in full control for a while, as Harriet was in her "castle", might be a necessary transitional occupation on her way to getting used to adapting to others.

This theme could also be an instance of the psychodynamic defense mechanism rationalization, which among other things implies that wanted things are depreciated in order to maintain self-respect (Cramer, 1991). Children might report that they prefer playing with their imaginary companions to playing with real friends because they cannot get along with actual playmates.

Attention Seeking
For some children, the (invisible) pretend playmate actually

worked as a means of getting attention. Helga had an imaginary companion in her stomach called "Kristina" and used her for more obvious attention-seeking reasons. She told her real friends about "Kristina" in order to get attention. Other children related that they received attention from parents or other playmates when they spoke their imaginary play out loud. They were not bothered by (or they enjoyed) having others in the vicinity while playing. They revealed their secret friend more or less voluntarily when others asked them about their play.

Coping with Tragic or Horrifying Events
Sometimes the need to feel more competent was observed in situations where children felt powerless in the face of tragic or frightening events. The pretend playmates could alleviate these aspects in many different ways and make the children feel more in control. Amanda told me how she and "Bambina" went to war-torn parts of the world and cured the wounded:

Amanda:	Really, I want to become a doctor and then I fantasize that I'm already a doctor, so I go down there and then I help them there.
Interviewer:	Aha, and what does Bambina do, then? Does she help sort of?
Amanda:	Yes, she can help.
Interviewer:	Aha, so you imagine that you're a doctor... Do you help the wounded?
Amanda:	Yes
Interviewer:	And what does Bambina do then?
Amanda:	She can, sort of, cure them. She has also special things with her.
Interviewer:	What kind of special things does she have?
Amanda:	She has such different medicines that, well, she maybe pours them onto the wounds and then suddenly everything's all right again.

Another child, Ania, had learned about her mother's miscarriage, "revived" this younger sibling and had her as an imaginary sister, perhaps as a way to deal with the loss.

Several scholars within the field of social cognition have discussed self-illusions in adults as a normal way of coping with the world. Langer (1975) showed how adults maintained an illusion of control in a series of experiments where factors ruled by chance were appraised as controllable. A parallel can be discerned in children's imaginary companions, which might be a way of maintaining a feeling of being in control. The suffering of

people in a war-torn country was probably experienced as more endurable when the child felt she had a magical power to cure them, at least in her fantasy.

Another example of this function was exemplified by Karin, who had invented a paracosm – a secret archipelago consisting of different islands of which Karin had made a drawing. It had been elaborated for many years. It was an idyllic world where nobody died and where no wars were fought. Karin's sister and grandmother lived on the main island called "Hummel". A nearby island was called "Humse" and on this animals were kept. "Amse", a third island – half of which was covered with flower meadow – provided the inhabitants with food. The inhabitants of the island could transport themselves to different places with a magical "transporter", which made the trips instant and without the need for any vehicle. The teacher accounted for Karin's problematic home-situation and her lack of psychological support. Perhaps her grandmother was very important for her. Karin created this paradisiacal island where no one could die and where there were no difficulties, such as transportation or food provision. This imaginary island was a way of establishing some control and stability for a child with a difficult life situation.

Nagera (1969) expressed the opinion that imaginary companions could prolong children's feelings of omnipotence and control before they are ready to transfer the sense of control, in at least some areas, to their parents, which according to psychoanalytic views is how children adapt to the reality principle. He argued that children's process of accepting their limitations of control is slow, gradual and difficult. In this achievement, fantasy play has a critical role.

Extended Personality

Extended Gender Roles

For some children with imaginary companions of the opposite sex, the companion appeared to give an opportunity to expand the children's gender roles. Rasmus had one male and one female pretend playmate, and he played predominantly with the girl. She was the most active of Rasmus' two make-believe friends. The boy was described as lazy and slept a lot.

The girl was also described as bigger than the boy and was in many ways idealized by Rasmus. Besides the perhaps non-

stereotypical sex roles given to a girl, Rasmus also accounted for a favorite spare-time activity that he used to enjoy together with his pretend playmates, more often with the girl than the boy. This activity was cooking and baking cakes, which could be an example of how his imaginary companions assisted him in extending his personality potential beyond stereotypical male sex roles.

Imaginary Companions with Opposite Characters
For participants who had two (or more) imaginary companions, the two figures often had opposite characteristics, something that might entail experimentation with possible selves. Oliver, for instance, had two male companions with different personalities. "Mårten" was tough and rebellious with tough-looking clothes and orange hair, and "Kurt" was old-fashioned and dressed in a suit and bow tie. "Mårten" preferred going on adventures, but "Kurt" preferred playing quiet games. Oliver told about his two friends, who were also different as regards being supportive or needing support:

> Interviewer: When one of you did not dare, who said 'Come on now, let's do it'?
> Oliver: It was Mårten, then it was often him who, sort of, 'Come on now, it's not dangerous'.
> Interviewer: Could it happen that you felt: 'No, I don't want to'?
> Oliver: Yes, but I was often talked into it. But when it came to Kurt who... I often had to push him 'Okey, it's not dangerous, come on now, Kurt', sort of.

This is an example of how imaginary companions could function as transitional objects needed by children on their way to integrating their own positive and negative features into one person. Working out the opposite characters of their make-believe friends might aid children in their own gradual process of integrating positive and negative features into more lasting dispositional self-traits (Higgins, 1989). Having pretend playmates that are one-dimensional may also constitute transitional objects, offering momentary escape from the complex personalities of real persons – complexities that children in middle childhood have begun to observe (Harter, 1998).

The phenomenon of having imaginary companions with good versus bad features has been compared with a psychodynamic defense mechanism, namely splitting (Klein, 1985). Klein argued that the child splits off her/his own negative features, locating

them in one companion, and collects all positive features in the other. Both are then used as mirror-images of the child to try on different personalities. In this way the companions help the child move toward self-constancy (Klein, 1985; Singer & Singer, 1992).

Life Quality Enhancement

Imaginary companions are also a part of the imaginative world, which provides life with some extra color. Such imaginary companions and paracosms could be regarded as precursors of creative potential (Singer & Singer, 1992) or creative expression of children (Hoff, 2003).

Paracosms

Sometimes the imaginary companions were associated with elaborated imaginary worlds. These worlds, termed paracosms by Silvey and Mackeith (as cited in Singer & Singer, 1992; Mackeith, 1982), were imaginary constructions of many different kinds. The play with imaginary companions and paracosms in particular was not necessarily connected to any specific need or deficiency. It can be seen as l'art pour l'art – or play for the sake of play. It might just be that imagination often serves as a way to enrich life, a function just as important as any other.

Silvey and Mackeith (as cited in Singer & Singer, 1992; see also Cohen & Mackeith, 1991; Mackeith, 1982) distinguished five different kinds of paracosms among their 64 participants: (a) toys, animals, and family groups; (b) particular places and local communities; (c) islands, countries, and people; (d) systems, documents, and languages; and (e) unstructured, shifting, and idyllic worlds.

Of the thirteen instances of paracosms in the present study, only Elsa belonged to group (a); her paracosm constituted a jungle where Elsa ran with wild animals such as lions, moose and birds. Three children's (Harriet, Hilda, Sibylla) paracosms were grouped in category (b), as the homes of their imaginary companions, and five (Adrian, Frida, Nadja, Otto, Karin) were grouped in category (c), comprising worlds with their own people, flora, fauna and utilities used by the inhabitants of these worlds. Some children visited these paracosms with their pretend playmates. Frida had an intricately thought out world, that she described in the following way:

Frida:	You know it's sort of like that, that there are different, you know, there are a great many trees and grass and such things and then there's a gorgeous sea.
Interviewer:	Aha
Frida:	And then there're different trees that are, you know, for example there's a tree which is, I don't know… like spaghetti, where you can sort of go and eat and so on.
Interviewer:	Yes, a spaghetti tree.
Frida:	Yes, and then there's, sort of, a small lake which is… It's filled with marmalade [giggle].
Interviewer:	Yes, a lake that's made of marmalade.
Frida:	And then, there's a tree that is ice cream
Interviewer:	Aha
Frida:	And then if you go further away, then you meet some other, sort of, guys…
Interviewer:	That also live in this world?
Frida:	Yes.
Interviewer:	What kind of guys are they?
Frida:	You know, they have pretty big noses and they're very small. They have big feet and then they're very friendly. And after them comes one of those woods, sort of, and there they always say 'No, don't go there because stones fall down there'. And, that is, you know, jewels and all.

Adrian's companion arranged the trips to "the secret country", always with the departure-point in Adrian's room. With the imaginary panther's magic power, it took five seconds to go there. The landscape there did not look like our planet. Trees grew in the ocean. They jutted up above the surface. On the surface of the ocean there also grew flowers. In "the secret country" people lived on fruit and there were no apparatuses there.

In this sample, there were some difficulties in discerning the categories of Silvey and Mackeith. One example could belong to several. There were two possible instances of category (d). However, as these elaborated languages were parts of imaginary worlds, they could also be grouped under (c) (Hilda, Nadja). There were three representatives of (e) idyllic worlds (Frida, Nadja, Karin), which were also grouped under category (c) as these countries and islands were places where people could not die and where no wars were fought; they were also intricately elaborated worlds. As opposed to idyllic worlds, Ania played "the poor game" with her imaginary companion. It constituted a dark paracosm that took place in a rundown shed with rotten walls. In addition to the categories proposed by Silvey and Mackeith (as cited in Singer & Singer, 1992), I would like to suggest a

sixth category, namely paracosms where the activity was most central: Action paracosms. Three of the participants described different kind of worlds where certain activities were undertaken. Oliver had an imaginary haunted house, in which he sneaked around with his imaginary companions as a kind of adventure. Dora had four different people who were policemen and detectives who hunted thieves and solved mysteries. These constituted a world of their own, but the things around them were not particularly elaborated. The third example was Amanda who traveled to different countries and made poor countries look better and healed the wounded in war-torn places.

DISCUSSION

The present research demonstrated a multitude of forms that imaginary companions may have. Some findings were replications of earlier studies, such as the types and names of the companions (Hurlock & Burstein, 1932;Singer & Singer, 1992; Taylor, 1999). For example, there were individuals from "the little people", full-sized wild animals, and human children. The names were both creative inventions and ordinary human names. Several children had intricate stories of creation for their make-believe friends, but in contrast to earlier research no elaborate stories of disappearance were found (Singer & Singer, 1992; Taylor, 1999). The other findings have not been elaborated in past research. The invention of a pretend playmate was predominantly influenced by actual friends, siblings and television. The most frequent location of play was the children's own rooms. However, there were also children who brought their companions wherever they went, and others who had them in private cubbyholes. The imaginary quality of the companions did not seem to set any limits on the possible contents of play. The play with imaginary companions could both be enjoyed alone and with actual friends.

The Functions of Imaginary Companions

A multifaceted array of functions was discerned. Earlier the most cited presentations have had psychodynamic roots. In this

presentation, self-theoretical and social cognitive frames have also been applied to the functions of pretend playmates. In a broader sense, the play with imaginary companions was found to be an identity forming activity, in which the make-believe friends worked as inner mentors. Five main functions were identified, each having several subfunctions:

Pretend playmates (1) compensated for a lack of comfort and company. Imaginary companions also performed (2) the function of assisting *self-regulation* as well as being a *motivator* for both moral (in this sense working as a help-conscience*)* and mischievous deeds. The make-believe friends provided "cognitively oriented therapy" to overcome social problems, were "creativity consultants" and "school mentors", in addition to many other supportive functions. Imaginary companions also performed the function of (3) *self-esteem enhancement.* Seven subcategories were identified: (a) unfavorable features were externalized on make-believe friends. The companions were used as (b) scapegoats on whom one could pass on blame, (c) as protégés to increase feelings of competence, and (d) as self-ideals with whom to identify. Another strategy for maintaining self-respect was to (e) regard the pretend playmates as better than real friends in order to feel socially adequate. The make-believe friends were (f) means for seeking attention and (g) means for coping with tragic or horrifying events. Furthermore, the imaginary companions were utilized to (4) try out alternative personality traits and non-stereotypical gender roles. Finally, make-believe friends and their worlds simply functioned (5) to enhance life quality, just as imaginary and pretend play often do. They were created for the fun of experiencing something that is not possible in reality. Pretend playmates were l'art pour l'art.

An interesting question is why imaginary companions have all these functions. Given that the children were the inventors and that they were fully conscious of the make-believe status of their companions, it is remarkable that the children still contended that their companions assumed active parts in all the observed supportive and coaching functions. They obviously experienced that it was easier to achieve different objectives with imaginary support.

One may speculate whether school-aged children are considered self-managing by parents and teachers, while the children themselves would prefer having less responsibility or at least receiving all the support and encouragement given to younger children. Might imaginary companions be an indication

that too large a burden of responsibility is placed on too small children? Or should imaginary companions be considered normal transitional objects providing alleviation in a developmental shift? It was obvious that many children needed some extra help until they could grow into their oversized clothes. Having imaginary help was better than no help.

Defense-like Functions

The present study has presented some evidence that the functions of imaginary companions can have defense-like properties, similar to those of psychodynamic defense mechanisms. However, it might be even more adequate to use the redefinitions of defense mechanisms made within the social cognitive approach (Baumeister et al., 1998; Cramer, 2000). The distinction these researchers make with regard to psychodynamic defense theory is that the defense is aimed at self-enhancement rather than at warding off anxiety, negative affect or defending the individual from strong unconscious drives.

The accepted view concerning whether defense mechanisms are adaptive is that the mature variants, such as humor, altruism, and sublimation, are examples of adaptive functioning. Cramer (2000), however, argued that also immature defenses might be adaptive depending on contextual factors. Different defense mechanisms are more or less appropriate for different age groups. The use of age-characteristic defenses by children and adolescents constitutes protection from undue psychological stress and the use of age-inappropriate defenses often represents maladaptive functioning. Using a make-believe friend as an age-appropriate defense is thus adaptive. However, immature defenses can also be the best alternative in a short-term perspective, even for adults in such cases where they reduce unmanageable anxiety. In the long run, immature defenses are considered to hinder adaptation.

Sandler and Joffe (1967) maintained that there are positive defenses. A positive defense is one that is used by a person to maintain well-being, again, not simply to ward-off anxiety or other negative affects. Similarly, according to Cramer (1991), defenses used for healthy adjustment in the service of maturation, growth and mastery of drives, serve normal functioning.

In the present study, the observed instances of defense comprised projection, identification, displacement, splitting and

rationalization. These defense-like functions were predominantly defenses in the service of maturation and self-esteem maintenance rather than maladaptive defenses against anxiety or negative affect. The kind of anxiety that imaginary companions "defended against" was mostly separation anxiety, which cannot be deemed abnormal.

Projection and displacement are normal in early childhood. Identification is an adaptive regulatory mechanism used both by younger and older children. It plays an important role in learning how to handle emotional and instinctual needs. Rationalization is a mechanism predominantly used by older children, adolescents and adults. If defenses can foster ego-development, they may be adaptive even in later years and in adulthood (Cramer, 1991).

Having imaginary companions with opposite characteristics could be described as an example of the defense mechanism of splitting (Klein, 1985). Splitting in adolescence and adult life is a feature associated with borderline personality. However, pretend playmates with this function may not be maladaptive, because for young children there is no evidence that splitting is related to later development of a borderline personality. In addition, very few individuals with borderline personality report having had imaginary companions (Singer & Singer, 1992).

In this study, there was no clear-cut evidence of age differences in the defense-like functions of imaginary companions. More research is warranted to demonstrate whether or not there are any age differences as regards defense-like uses of make-believe friends.

Illusion Forming

Many scholars have emphasized that healthy adults make use of self-deception – or adaptive illusions – in order to function well. Could there be a parallel between adults' positive illusions (Taylor & Brown, 1999) and children's imaginary companions, which allow children to maintain their self-esteem? Taylor and Brown also asserted that self-enhancing strategies promote psychological well-being. Even though some research has demonstrated that children with imaginary companions are less socially well functioning (Bouldin & Pratt, 1999; Harter & Chao, 1992), and reported having more relational difficulties with

friends (Hoff, 2003), it can be fruitful to speculate on how these children would have coped had they not had these companions at all. Bouldin and Pratt (2002) found that pre-schoolers with imaginary companions had more anxiety compared with their peers. However, the anxiety levels were within the normal range. Still, the anxiety might be regarded as so stressful as to warrant the formation of a pretend playmate to assist the children in the difficult situation. As I see it, by inventing make-believe friends children may cope with their anxiety in a constructive and possibly creative way, in a similar way as positive illusions work for adults.

One suggestion concerning how the illusion mechanisms operate is that individuals assimilate contradictory, negative, or ambiguous information into preexisting positive self-schemata. Another explanation is that positive illusions are maintained by social and cognitive filters that distort negative information. Having passed through these filters, negative information may be considered as not having general implications for the self (Taylor & Brown, 1999). For children with imaginary companions, this would mean for example that the signs of having difficulties with actual friends are distorted and that the positive experience of the imaginary friendship is exaggerated.

Some people may object to the idea of self-illusions among healthy individuals and ask where the impetus for growth and change is. If individuals believe they are perfect, why should they change? Taylor and Brown (1999) argued that positive illusions "may inspire people to make changes that might be avoided if the uphill battle ahead was fully appreciated" (p. 59). They pointed out three kinds of adaptive illusions: unrealistic optimism about the future, an exaggerated sense of control, and excessive self-confidence. According to Paulhus and Reid (1991), self-deception can be divided into two different tactics: enhancement of positive self-features and denial of negative traits. Through factor analysis with several well-known self-assessment tests, the positively valenced characteristics (e.g., "I'm a saint") were related to adjustment, whereas the negative attributes (e.g., "I'm a sinner") were related to impression management – that is individuals' wishes to appear better than they are (Paulhus & Reid, 1991). If perceiving imaginary companions as instances of self-deception, children may use their imaginary companions for both adjustment and impression management purposes.

Imaginary companions might be predecessors of these adult forms of self-deception in many different ways. If children with

social or regulatory difficulties had fully appreciated what the required adaptation in middle childhood entails, they might not have endured. That is, if they had not had the opportunity to go via imaginary companions (and experienced the illusion of being socially competent or capable of self-regulation) and gradually acquired a capacity for social adjustment and self-control, they might have given up. In Fraiberg's (1959) words:

> It can be demonstrated that the child's contact with the real world is strengthened by his periodic excursions into fantasy. It becomes easier to tolerate the frustrations of the real world and to accede to the demands of reality if one can restore himself at intervals in a world where the deepest wishes can achieve imaginary gratification (p. 23).

In opposition to these observations stands the clinical wisdom that people must appraise reality in an unbiased fashion in order to survive. How can these positive illusions be functional in the face of contradictory evidence from the environment?

In some respects, the social cognitive perspective on the area of self-illusions contradicts the psychodynamic view. Individuals do not become more and more realistic in their perceptions of reality – they do not completely leave the pleasure principle in favor of the reality principle, as Freud might have put it (Freud, 1911/1986) – at least not healthy individuals, who rather continue to indulge in adaptive self-illusions throughout life (Taylor & Brown, 1999). Of course individuals do need some realistic foundation so as to not be deemed psychotic. But if they are to remain happy, they should not be too objective when evaluating themselves. Depressed individuals were found to appraise their negative features and their lack of control in a less positively biased (more realistic) fashion than did healthy individuals. There are studies demonstrating that most non-depressed adults have less-than-realistic beliefs about their personal control over their environment (Greenwald, 1980; Langer,1975; Taylor & Brown, 1999). My suggestion is that the imaginary companion may be an early predecessor of this adaptive self-illusion and may assist children in establishing a sense of control. This idea, however, is contradicted by the fact that self-deceptive adults are described as well functioning, whereas children with imaginary companions have been found to have negative self-images particularly regarding their mental well-being (Hoff, 2003). Does the imaginary companion illusion not work as well as the adult illusions described by Taylor and Brown (1999)? Will the capacity for cre-

ating adaptive illusions develop further after the age of ten, such that individuals who had imaginary companions as children will have an advantage in terms of psychological health? Or are adult illusions and children's imaginary companion illusions unrelated? These questions need to be addressed through longitudinal research efforts.

Life Span Themes

Imaginary companions assist in several life span developmental tasks. According to many scholars, the *development of intimacy* and that of *autonomy* constitute two different life span themes (Singer & Singer, 1992; Stern, 1985). Stern maintained that, from the very beginning, infants construct schemas of themselves as differentiated from others. Many different kinds of behavior can be described as signs of *autonomy*, for example, from averting the gaze or head at four months of age, to the more vociferous protests that adolescents often display in their struggle for independence. The development of *intimacy* can be discussed both in terms of attachment and in terms of sharing subjective states. Throughout life, people need attachment to other people. In addition, at a very early stage, infants develop primitive intersubjective understanding. From seven months of age, they can share subjective states. However, nonverbal sharing of subjective states is developed and experienced throughout life. For example, people who are in love do not need to verbalize what they feel (Stern, 1985).

Imaginary companions can provide a means for dealing with both the development of *intimacy* and the development of *autonomy*. The ability to play alone for longer periods is gradually developed from the age of three (Piaget, 1968). This independence may evoke positive feelings for both children and parents. However, from time to time, parents may impose demands on their children to play alone when the children would rather have had company. In a similar way, school-aged children are expected to handle being home alone, which might sometimes be fun. However, sometimes the demands on children to be autonomous can be experienced as difficult to live up to. The invention of an make-believe friend may then alleviate children's longings to belong to someone or constitute a transitional phase during which children get used to being on their own, a capacity needed throughout life. For other children, the imaginary com-

panions functioned to make them more capable of interacting with other actual friends and of experiencing intimacy. The present results indicated that make-believe friends did not only have a social compensatory function, but also seemed to afford *social practice* within the child's own control. In her study, Gleason (2002) demonstrated that the social provisions of make-believe friends were similar to the provisions of real friends, indicating that relationships with real and pretend playmates may encompass a single cognitive schema. She also argued that imaginary companions provide practice in negotiating and conceptualizing relationships. More over, the make-believe friends in this study were sometimes experienced to assist the children in overcoming social problems, for example prompting the children to make peace with their actual friends.

Many statements represented children's dreams of *being completely understood,* which is a third life span theme. This might be reminiscent of the preverbal stage of life (Stern, 1985). Now and then, the parent may match the infant's wishes so well as regards provision of food when the infant is hungry and comfort when that is needed, that the child experiences being perfectly understood. The speaking child, on the other hand, often finds herself/himself in a situation where language is not enough to express certain thoughts and needs, and a sense of emptiness can be felt. This results in a dream of being understood more completely. Individuals of all ages can experience the discrepancy between what they want to express and what they can express given the general limitations of human language. In relation to imaginary companions, children can re-experience the feeling of total understanding.

In psychodynamic terms, this feeling is related to the *feeling of omnipotence* – which reflects individuals' belief in their ability to control their environment through, for example, their thinking. Pumpian-Mindlin (1969) asserted that the experience of infantile omnipotence is so difficult to describe verbally in a precise way because it is primal and preverbal in nature.

Transitional objects are also a life span theme connected to imaginary companions (also discussed as regards age differences). According to Winnicott (1971/1995), transitional objects are needed to create a place between inner and outer reality. This is a place for rest. The transitional world (and transitional objects) borrows material from both outer reality and the internal world. It exists in different forms throughout life. A transitional object in early childhood often exists in the real world in

the form of a rag or a doll; however, to the child, it has a far greater internally constructed symbolic significance. In middle childhood, imaginary companions may constitute transitional objects. Finally, in adult life, cultural phenomena represent the transitional world.

Even if imaginary companions often lack a reference in the real world, they are still more than mere inner experiences. The play often has external consequences, for example, the child experiences having "company" in real life occupations such as picnicking and playing cards. For some, the make-believe friend is involved in mutual play with actual playmates.

Developmental Differences

Imaginary companions exist in different age groups throughout childhood and adolescence and therefore one may suspect that make-believe friends perform different functions depending on the age of their inventors. In the present study, all interviewed children were 10-year-old. Therefore no systematic comparison between different age groups could be made. However, some children accounted for their past experiences of pretend playmates and therefore the age differences reported in past research can be discussed in relation to the interview results.

Scapegoating is purported to be an immature kind of defense (Cramer, 2000; Nagera, 1969), and, indeed, the interviewees reported few instances of this function. One of two examples of scapegoating reported in this study was reported to have taken place between four and six. The other was a contemporary report, that is, took place at the age of ten.

Some scholars have maintained that older children predominantly keep their imaginary companions secret, whereas younger children are more likely to play overtly with theirs (Ames & Learned, 1946; Nagera, 1969; Singer & Singer, 1992; Taylor, 1999). Approximately half of the children in this study had told someone about their make-believe friends, but no differences was discernable between those who had companions earlier and those who had them presently. Nagera argued that the functions of older children's companions were more conflictual, which was supposed to be the reason for the secrecy. Among the children in the present study, these differences were not able to perceive. Many of the 10-year-olds did keep their companions secret, but they were there for giving love, affection

and comfort to the children, as well as serving as "someone" in whose company a sense of control (omnipotence) could be enjoyed.

In past research, shared pretend playmates have been described as indicative of younger children (Singer & Singer, 1992). However, among the present participants, some shared their companions as late as at eight years of age.

To demonstrate possible age-specific functions, more work in different age groups or longitudinal studies are required. Moreover, the quality and possible change in the child-companion relationship could be followed in those cases where the companions remain with a child for several years. Another question is whether the characters of the make-believe friends develop over the years children have them.

Relation to Creativity

Another important issue is the relation between imaginary companionship and creativity. Some scholars have shown that having imaginary companions is associated with creativity (Hoff, 2003; Schaefer, 1969; Seiffge-Krenke, 1997). Furthermore, Hoff demonstrated that the more creative children elaborated and varied their make-believe friends to a greater extent, for example as regards their characteristics and the locations of the play. A parallel to this might be found among the functions of imaginary companions, namely that a more creative child probably ascribes more functions to her/his pretend playmate. Supportive of this notion are the results of Carlsson (2002), who showed that creative individuals used a greater variety of defenses. As previously discussed, imaginary companions may in some respects function as defense mechanisms. Future research is needed to address the question of whether more creative children assign a greater number of functions to their imaginary companions.

Validity and Reliability

Methodological literature advocates different ways of securing the validity and reliability of interviews. One such method used in the present study was triangulation. In addition to myself,

another researcher read through the transcribed interviews. The goal of this co-assessment was to obtain a second view on whether the result categories were representative of the interview material as a whole. The co-assessor also checked for interviewer mistakes such as leading questions. Another method used for scrutinizing the reliability of the interviews was to check for inconsistencies in the material. Did the children say things that could be confirmed in other ways? For example, there were some children who either had played with each other when they were younger or did so at the time of the interview. There was also a pair of twin boys who spoke about each other. All these stories matched, which was taken as an indication of reliability.

A third method involved taking different critical metaphors into consideration (Alvesson, 2003). Alvesson advocated reflection concerning how the scene, the interviewee's interests and language influence the outcome. (a) *The context of the interview* influences the answers. Preconceptions about the research project affect what the respondents present. The different, more or less powerful, roles of the interviewer and the interviewee influence the outcome. Applicable to the context of the present study is the need to consider what happens when children speak to adults. They probably omit things that they discuss with their peers, and include other things that they would not tell a peer. When an adult addresses a child, the same selection probably occurs. However, it is difficult to foresee the impact of these factors. I tried not to play the role of a teacher, but as a woman in her thirties, I most likely resembled a teacher, though. Indeed, during the interviews, the children reported very little naughty behavior on their own part. The mischief reported was mostly harmless and some of the children actually emphasized that they did not make really wicked mischief, only the kind that does no harm. Few taboo topics were brought up, such as sexual themes or themes of companions as objects of romantic love. This selection might depend on the context, rather than on the fact that there were no such companions. (b) *The interviewee* has an interest in presenting herself/himself in a positive way. The respondents might feel constrained by imperatives to express themselves in ways that maintain loyalty to their group. Included in this might also be a wish to appear competent or perhaps "not odd", something that Alvesson (2003) called "moral story-telling". The above-mentioned selection of topics and children's efforts to present themselves as kind, normal asexual children might depend on moral story telling. They

might have felt like representatives of their age group and therefore wanted to please the adult, teacher-like interviewer. (c) *Language* can also include constraints for "truth-telling". Language is part of the construction of reality. Participants are believed to be easily influenced by verbal and non-verbal nuances expressed by the interviewer and can be led to answer in specific ways. There are probably such examples in the present study. However, in the interviews, evidence can also be found where this did *not* take place. Unfortunately for me as an interviewer, these proofs were sometimes found when I went beyond my role as an interviewer by asking leading questions. The kind of answer that I was looking for must have been evident even for 10-year-old children. But on many of these occasions, it was obvious that the children did not feel forced to answer in a specific way. If they did not relate to the situation I had imposed upon them, they just said "no, it was not like that". The information was omitted for the few occasions when the co-assessor felt that I had influenced the answers.

Considering the confounds that often interfere with what scholars intend to investigate, Alvesson (2003) proposed that the contribution a scientist can make is merely to provide "uncertain, but sometimes interesting clues for the understanding of social reality" (p. 23).

Conclusions

Through in-depth interviews, greatly varied descriptions of all kinds of imaginary companions were obtained. Furthermore, pretend playmates were found to be useful in many situations in assisting identity formation in middle childhood. Earlier studies have pointed out several functions that imaginary companions may perform, such as providing comfort or company and moral guidance, as well as being "someone" to nurture, idealize, or project bad features onto (Harter & Chao, 1992; Nagera, 1969; Singer & Singer, 1992; Taylor, 1999). Apart from these functions, this study presented some functions not identified earlier, that is, children who had make-believe friends for attention seeking purposes and for personality expansion, such as gender role experimentation. Few scholars have attempted to systematize the functions. In this study, five main categories of functions have been proposed, including three categories of self-reinforcing roles: comfort or substitute for company, motivation and self-regulation, and self-enhancement. In addition to these,

there was a fourth function, namely experimentation with personality expansion and a fifth, where the companions simply appeared to constitute life quality enhancement. The ability of imaginative children to invent an inner device that provides them with the psychological and emotional support that their outer environment has failed to adequately provide is a fascinating phenomenon. However, there are many questions within this field of research that still need to be investigated. In addition to the research tasks proposed earlier, the question of whether a child who has suffered psychological distress could, for one reason or another, gain psychological health through invention of an imaginary companion remains for future research to address.

Some ideas from modern self-theories and social cognition were applied to the different functions of imaginary companions in order to provide a complementary framework to the psychodynamic. For example, in stead of discussing imaginary companions in relation to the id, the ego, and the superego, concepts as "a motivator for mischief", school and social motivation, and help-conscience was applied. As a complement to theories of defense mechanisms, adaptive illusions were discussed in relation to imaginary companions.

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APPENDIX A

Interview guide: 29 structured questions and thereafter open questions

1. Do you have any brothers or sisters?
2. How old are they?
3. Do you know if they have had pretend playmates?
4. How long did you have it? Is it still around? How did it come to you? How did it disappear?
5. What do you call your pretend playmate?
6. Is the pretend friend A) a stuffed doll or a toy or B) invisible?

A. If the pretend friend is a stuffed doll or a toy:
  7. How many?
  8. What kind of a toy is it?
  9. Sex?
  10. Child or grown-up?
  11. Does it have a voice of its own or is it your voice you hear?
  12. How is this stuffed doll distinguished from other stuffed dolls?

B. If the pretend friend is invisible:
  13. How many?
  14. What does it look like?
  15. Animal or human?
  16. Size?
  17. Child or grown-up?
  18. Sex?
  19. Does it always come in the same form?
  20. Do you both see it and hear it as a voice or do you just hear it or just see it?

All pretend friends:
21. Does the pretend playmate have its own friends, relatives and parents?
22. Do you play with other real playmates together with your make-believe friend?
23. How do you feel when you play with your pretend playmate (sad, bored, happy etc?)
24. How do you think you pretend playmate feels (sad, bored, happy?)
25. Where are you when you play with your pretend playmate? Home? At school?
26. Do you play in a pretend world? Did you make up imaginary houses, woods or anything that you played with?
27. Do you play with your real toys with the pretend playmate?
28. Have you told anybody about this pretend playmate?
29. What more do you know about your pretend playmate?

When does this pretend playmate show up? Anytime or when you want it to? Is it only when you are alone the pretend playmate appears?

What makes this pretend playmate different from other real friends?

What do you do when you meet? Adventure, mischief, talk, adult stuff?

When you talk, do you talk like adults or like children do? Do you share secrets?

Why do you think this pretend playmate came to you? Why is it good to have?

Roles: Who decides when you should meet? Who comforts whom? Who urges the other along? Who makes up the mischief, adventure? Who says so when the play has gone too far? Who says what is right to do? Have you ever learned anything from your pretend playmate or can she/he help you become a better person?

Were you told stories as a child? Many or few? Were there any about pretend playmates?

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APPENDIX B

APPENDIX C

Facts About the Phenomenon

	Name of i.c. (sex of i.c.)	Characteristics of i.c.	Contents of play	Influence	Play location	Secret i.c.
1. RASMUS	Salt (m) Pepper (f)	gremlin, slept much brisk, mischievous	all kinds, e.g. cooked, mischief	tv-show: Gremlins	school, own room, in attic	Yes
2. OLIVER	Mårten (m) Kurt (m)	a cool guy, green hair wimpish with a bow-tie	adventure in imaginary ghost house, mischief, football	sibling	own room, garden	Yes
3. IDA	Knubbis (m) Josef (m)	a mouse walking on two legs from Mars human boy	played with actual mate related to squirrel played with actual mate	playmate	school, wardrobe in classroom	No
4. LISA	Michelle (f) Maria (f)	5 yrs, blond and blue eyes 6 yrs, brown hair & eyes	played party games, talked, adventure talked & watched tv	playmate	home, at breaks at school,cubbyh. home	No
5. HELGA	Josefin (f)	inside the stomach brown hair, blue eyes	talked, H told actual mates about J in the stomach	tv, longed for sibling	room & outside	No
6. HARALD	- (m)	like H	played with toy cars	sibling	home inside	-
7. FRIDA	Nicki (f) Kicki (f)	shy but also talkative dark hair, had fiancé her sister's i.c.	talk, mischief, went to fantasy world with jam lakes & spaghetti trees	sibling	at bedtime mostly, also other school, home	Yes
8. JAKOB	Kurt (m)	human boy	picnicked, played with cars	sibling	at bedtime, other bedtime, cubbyh.	Yes
9. HARRIET	Kristina (f)	long red & white skirt	cooked, mischief, played in imaginary castle		in own room	No
10. SAGA	Kaka (f) Pipip (m) "Nobody" (f)	hen, clean, cartoonlike chicken, mischievous, dirty, cartoonlike twin sister	talked, jumped in bed, drew pictures mischief, played party games	sibling	anywhere	No
11. HERBERT	- (m)	boy, could fly	mischief		room	Yes
12. ARON	Kalle (m)	boy, blue clothes, kind	mischief		home, outside	No
13. AMANDA	Bambina (f) Olof (m) Pelle (m)	tiger, had relatives tiger kitten dalmation	flew to different countries and healed		at bedtime mostly	Yes
14. DORA	Marko I (m) Tannya (f) Linky (f) Brunetten (f) Spinky (m)	D's hand, D:s son D's hand, D:s daughter blond brown hair thin	talked, D took care of i.c., D listened and watched what i.c. did		bathroom, room	Yes
15. HILDA	Madeleine (f)	long hair, short skirt mischievous, kind	played in i.c.:s house & garden, own language		own room, home	Yes
16. ELSA	Matilda (f)	rabbit, happy	flew to jungle on carpet, ran with animals, mischief	mates at kindergart.	own room, out- side in cubbyhole	No
17. MIRIAM	Mimmi (f) Cissi (f)	clever, kind, a tease kind and mischievous	talked, played w. toys, cooked, cleaned the dishes	tv	own room, in a cubbyhole	Yes
18. MAGDA	Delfi (m)	dolphin				Yes
19. ADRIAN	did not want to tell (m)	panther	performed tricks, played ball, went to "secret country" w. talking teddies & butterflies		home, school	Yes
20. JESPER	- (m)	coon				Yes
21. ANIA	"You" (f)	looks like A	played the "poor game", ate	miscarriage	own room	No
22. SIBYLLA	Drakis (m)	dragon, only those w. brown eyes could see	played "hide-and-seek", talked and played cards	playmate	at school, home	No
23. HANS	Peter (m)	one of the little people i.c:s brother is a bear			at school in bag	Yes
24. OTTO	- (m)	human	talked, played in pretend country with cocon. palms		own room, home	No
25. KARIN	- (f) Hummel,Amse,Humse	a secret archipelago	played in the music room transported between spots	playmates		Yes
26. NADJA	Kristina (f) Malin (f)	brown hair,cartwheeled	went to "Fantasia" situated in the clouds, own language	playmate		No

APPENDIX D

The category of comfort or substitute for company was the most frequent. Based on the results of the present study, however, no conclusions can be drawn about the incidence of the remaining categories. Even if the incidences are indicated in Appendix D, further research is required to scrutinize them systematically in a larger sample.

In the psychodynamic literature, the functions summarized above would be termed (a) ego support provided by transitional objects (Sugarman & Jaffe, 1989); (b) super-ego auxiliary or drive-regulation (ibid) and in the case motivation for mischief, id-impulse (Bender & Vogel, 1941); (c) narcissistic regulation (Sugarman & Jaffe, 1989) or giving opportunities for experiencing omnipotence (Nagera, 1969) through defense mechanisms, such as projection, displacement and rationalization; (d) splitting; and finally (e) imagination and day-dreaming seen as an immature form of defense (A. Freud, A, 1936/1961; S. Freud, 1911/1986), or as primary process thinking – a childlike irrational mode of thinking. Adult individuals predominantly use secondary process thinking, which constitutes an adaptation to the reality principle (S. Freud, 1911/1986, 1920/1986; Nagera, 1969; Singer & Singer, 1992).

The psychodynamic phenomenon of omnipotence is related to the illusion of control. Although it is often reported as an infantile phenomenon in the traditional psychodynamic literature, there is a possibility of experiencing feelings of omnipotence through internalized imaginary play also in middle childhood (e.g., Pumpian-Mindlin, 1969). In fact, in his revision of the traditional view, Pumpian-Mindlin (1969) proposed that omnipotence gradually transforms into a more mature form called "omnipotentiality" in adolescence, but lingers in the background throughout life (probably connected to the illusion of control discussed by Langer, 1975 and Taylor & Brown, 1999). As opposed to infantile omnipotence, adult omnipotentiality requires reality testing of the omnipotent dreams after some time, thus defining the limits of individuals' possibilities. The function of self-enhancement through imaginary companions could be discussed in terms of feelings of omnipotence. According to Pumpian-Mindlin (1969), omnipotence is the basis of all fantasy. One element of adolescent omnipotentiality is that individuals do not see any limits and believe that everything is possible. Some of the examples of self-enhancement through imaginary companions reflect a similar limitlessness like that of adolescents.

Uppgift till inskick

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