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Imagination and its association with internal control in middle childhood

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Master thesis, spring 2011

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Acknowledgements

First of all, many thanks to all children, teachers and schools for participating in the study and for sharing experiences and opinions. Many thanks to my supervisor Eva Hoff for invaluable guidance. I would also like to thank David Clavertz for offering me some of his knowledge in the statistical area. Last, I would like to thank Dianne Hallworth for devoting some of her time for linguistic correction in parts of the thesis.

Abstract

The present study investigated the relation between imagination, motivation and locus of control. The participants were 95 children (53 girls and 42 boys) born between 1998 and 2001. Motivation was measured using “Achievement Goal Questionnaire” and theoretical background on motivation was oriented in “Achievement Goal Theory”. “Mastery goal orientation” (goal to develop ability) was hypothesized to interact with imagination, imaginary companions and internal locus of control. The “Nowicki-Strickland Locus of Control Scale for Children” was used for measure of “Locus of control”, a construct developed by Rotter in 1966. Imagination was measured using “The Children Fantasy Inventory”. Results revealed that children high in imagination demonstrate internal control to a greater extent than children low in imagination. No relation was found between imagination and mastery goal orientation, between imaginary companions and motivation, between imaginary companions and locus of control, nor between locus of control and motivation. Directions for further research are discussed.

Key words: imagination, imaginary companions, mastery goal, performance-approach goal, performance-avoidance goal, locus of control

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Introduction

Children's play has long been acknowledged as important for psychological development. Piaget (1951) concurred to some of his times scientists, saying that play occur even during the first few months of life. As the child grows older the play becomes more advanced and meaningful. The child uses it to explore the world and acquire knowledge through trial-and-error. He/she uses play to quiet curiosity and to express inner fantasies and thoughts. Hence, play is perhaps the most common and easiest way for children to express fantasies. However, the fantasy behavior in children has often been regarded in a negative fashion. Children are encouraged to play, often with children of the same age, and perhaps to entertain themselves when no one else is around. But to prefer to engage in play alone is not always accepted. Western norm tells us that children gain more favorable cognitive development by interacting with peers. However, some children prefer the company of fictitious or invented characters. But to turn inwards to find company, comfort, security and joy is an almost despised personal characteristic. Media repeatedly preserve the image of the lonely, quietly, introverted, sad and abusive child, adolescent or adult who expresses personal fantasies by harming innocent individuals. And when searching the literature on child imagination and pretend play it is easy to find that the construct have been linked to autism.

However, imagination is a crucial inner resource that facilitates many aspects of life. As will be presented later, creativity and problem-solving is much dependent on imaginative processes (Yuan & Zhou, 2008). So, what needs to be explored is the advantages of having a vivid imagination and the characteristics of children high in imagination. This study aim at revealing some of the relations to other constructs to illuminate the importance and advantages of imagination. It is investigated whether motivation and internal control might be enhanced in children high in imagination. But first, a theoretical background will be presented to elucidate the constructs of concern.

Imagination

The study of fantasy behavior in children is a small research field in need of much more investigation. However, during the development of psychology as a discipline some researchers have taken an interest in the imaginative lives of children. During the twentieth century researchers like Lev Vygotskij have devoted their time to this kind of study. However, before deep-diving into specific research, imagination as a concept will be explicitly defined.

What is imagination and how is it defined? Imagination is a cognitive process where new constructions in the fantasy of the creator are shaped by combining memories, former experiences and images. The imaginative creation could concern thoughts about future events (anticipatory), things that have happened (reproductive), or thoughts about new, never before experienced constructions (creative). These imaginative thoughts are either realistic or fictive or a combination of the two (Hoff, 2011). A critical notion is the combination of memories, former experiences and images. Edmund Husserl (2005) points out that memories or expectations anchored to past realities are not to be seen as fantasies or imaginative tendencies. These can be used in the production of fantasies, but reminisce only cannot be seen as indulgence in fantasies. Husserl does point out that hallucinations, illusions, and dreams are often designated as fantasies (Husserl, 2005).

Imagination is expressed in numerous ways, depending on how the child feels he/she needs to release these imaginative thoughts. Some children express their imagination through pretend play; some through daydreaming, some through role play, some use imaginary friends or imaginary worlds, and some use all of the above mentioned or completely different ways to express imagination (Harris, 2000). The earliest form of imagination is pretend play, noticeable in children from around two years of age when children gain an understanding of the way the world works. When engaging in pretend play the child might perform this act alone or in company of other children or adults. However, whether alone or in company all involved in the imaginary play have accepted the consensual understanding that this act is a symbolic play, created outside reality as an alternative world. They share the pretence and use their conceptual knowledge to combine this form of play, but they still use the properties of the realistic world when making the rules for the fictional world. As pretend play is an attempt to represent reality, an alternative form of this play takes place when children engage in role play. Role play is an extended version of pretend play where the child acts out the part of someone else using pretend actions and utterances. The child can take the role of a physical person or create and enact a role that is made up by mental activity. When taking the role the child absorbs the climate surrounding the role by adjusting the tone of voice, displaying sensations and emotions appropriate for that role etc. To elucidate what was just said; pretend play is the most obvious and earliest form of expressed imagination and role play is an extended version of this form of play, where the child articulates a role that fascinates or speaks to him or her (Harris, 2000). Imagination and daydreaming in children can also take

different forms, like the creation of imaginary friends and imaginary worlds (paracosms). These will be discussed below in separate sections.

What is interesting is that children make a binary distinction between reality and fantasy. They understand what is created in fantasy and what is real in the physical world and that these two entities are separate (Dierker & Sanders, 1996; Samuels & Taylor, 1994). What is also known is that children, like adults, understand that characters from different imaginary worlds are fictional to each other and separated from one another, e.g. that Batman and Robin live in the same created world but are separate from Spiderman since he inhabits a different fantasy world. These results have been found in children as young as 4 years of age (Skolnick & Bloom, 2005).

The soviet psychologist Lev Vygotskij (1995) was the first to investigate the relation between fantasy and creativity in the beginning of the 1920's. Vygotskij perceived creativity as the ability to produce work that is both novel and appropriate, but he also noted that creativity is at work when a construction is made in the human mind, i.e. when daydreaming or imagining. He explicitly explained that the human brain has the capacity to use and reproduce prior experiences (memories) to create new imaginative inner images to fantasize about never occurred past experiences, present experiences or future situations. If we were only capable of retrieving and reproducing old experiences then we would only live in the past, Vygotskij notes, but the capacity to creatively imagine a future makes us capable of creating a future and at the same time changing the present. Creativity is most authentic and genuine in children's play. Of course, the child makes use of past experiences but the play is not a total reproduction of perceived elements but rather a combination of perceived impressions for creation of a new reality that fits the needs and interests of the child (Vygotskij, 1995).

When fantasy is used in problem-solving situations one needs to creatively imagine the solution since it can only be exposed through careful reconsideration of the goal, the means and some yet undiscovered solutions. A problem arises when a given category of means does not lead to the desired goal and so new means need to be created using imaginative processes. Individuals fantasize how to apply other means to the problem and in that way many possible solutions can be imagined before the best solution can be chosen. It seems that an interest in solving the problem is the driving force behind using fantasy in problem-solving situations. Without the interest the imaginative process will not take into consideration all relevant aspects, experiences and elements that are needed to find the most accurate and precise

conclusion. Thus, the ability to creatively solve a problem is greatly dependent on the ability to fantasize about an outcome that has yet not happened (Klinger, 1971).

Within Western culture children are encouraged to believe in fictional characters and cultural myths like Santa Clause and the Easter Bunny. In fact, some studies show that only 20 percent of eight year olds do not believe in Santa whereas 25 percent do and 55 percent are transitional. Children are encouraged to watch, read or listen to stories about fictional characters and to engage in play and dress up in resemblance to these characters. And since society goes to great lengths to convince and prove the existence of these characters, adults leave children with no choice but to believe in what they are told. So the fantasies made up by children are strongly influenced and affected by the cultural norms and myths that are provided for the children. In India, the phenomenon of imaginary friends does not seem to exist. Indian children do not play with imaginary companions. The small percent of Indian children that demonstrate a form of play with imaginary companions are perceived to engage in play with *invisible* companions. The common belief is that these invisible friends are not an entity made up in the human mind, but rather memories of past experiences. So when engaged in fantasy play, Indian children are perceived by adults as remembering past life experiences and are encouraged by the age of seven to abandon these memories in order to embrace their current identity (Taylor, 1999).

Thus, the ability to imagine is not limited to what culture one belongs to. Indian children do imagine, although it is perceived as reminiscing previous lives. Brazilian children as young as 5 years of age demonstrate the ability to accurately solve problems that contradict empirical and logical knowledge. When presented with a premise that all fish live in trees, “Tot” is a fish and when questioned whether “Tot” lives in the water, Brazilian as well as British children are likely to give the make-believe answer “no” although contradictory to empirical facts and knowledge (Harris, 2000). Hence, make-believe and the ability to imagine is a phenomenon seen in children of all ages and in places outside Western culture.

Imaginary companions

Imaginary companions can be understood as pretend friends or imaginary friends created by children who perceive them in their mind. The imaginary friend can take different forms and may deviate from the common picture of a pretend friend as presented in the media. Of course, it could be a character simply made up by the child, but it could also be an imaginary version of a real friend, a character from a book or a movie the child has seen, a stuffed

animal, a friend created by the child's own hands and so on. As is often the case, the imaginary companion in the fantasy of children does not have to be limited to one character. In many cases the child has two or several imaginary companions inhabiting the mind for short or long periods of time. It is not uncommon for the child to present the story of an imaginary friend in detail, but when later requested to further explain the relationship with this pretend friend the child has no memory of ever having had an imaginary friend, or cannot remember what happened to this once beloved friend. They do not seem too sad or angry about the disappearance of the imaginary friend either. Sometimes the parents or family members seem to mourn the vanished friend a lot more than the creator of the character. Multiple reasons for the disappearance of fantasy friends have been found; loss of interest, the creation of a new imaginary companion, adults taking control of the imaginary companion (if the child loses control of the pretend friend because of adult's interest in the imaginary character, the pretend friend sometimes disappear), parental disapproval or the acquisition of more real friends (Taylor, 1999).

What are the reasons for the creation of imaginary companions? As in the case of imaginary friends vanishing from the mind of the creator, many reasons exist for the creation of pretend friends. It could be out of boredom and a clever way to create companionship. Taylor (1999) stresses that fun and companionship could be the primary reasons why most children create imaginary companions. Another reason could be a feeling of neglect, loneliness, and rejection, an observation confirmed and reported by several child psychiatrists and psychologists. First born and children without siblings are also found to be more likely to have created imaginary friends, although children with siblings also report having pretend friends. A third reason has been identified as children's desire to demonstrate enhanced or reduced competence. Sometimes the friend is invented to be perceived as helpless and incompetent, in order for the child to be perceived as highly skilled. The reversed situation - a competent imaginary companion - might help the child to enhance his/her own self-esteem. Another possible reason is the feeling of restriction or limitation children sometimes experience. Pretend friends are not told by anyone what to do or not to do, as children often are by parents and teachers with an educating purpose. Yet another reason is that pretend friends are convenient scapegoats and easy to blame when not feeling responsible enough to take the blame for one's own actions. This way the child could easily think he/she could avoid blame. Pretend friends can also act as a defense or protection against fears in childhood. When put to bed alone at night, a scared child might use a pretend friend as company to

overcome the fear of darkness. Yet another reason for creating a pretend friend is that it comes in handy when children experience a problem or difficulty. Children might use the imaginary companion to communicate this troubling situation to adults. It could be expressed by the child that the pretend friend has this problem or that the pretend friend might get into trouble, when in fact the child has these feelings of unresolved issues. One last reason for the creation of imaginary friends is the most unfortunate. The pretend friend could be the response to trauma, as a way to handle and to separate from the troublesome or dangerous situation. Some sources have claimed that 89 percent of abused children have imaginary companions. But this should not be interpreted as an indication that most children with imaginary companions have been the victim of trauma, the creation of imaginary companions could stem from other needs as discussed above (Taylor, 1999).

What has been confirmed is a relation between having imaginary companions and demonstration of “theory of mind”, a result found in children as young as 4 years of age (Taylor & Carlson, 1997). Theory of mind has been defined as the ability to infer the mental state of other to understand their emotions, desires and beliefs (Gazzaniga, Ivry & Mangun, 2009). Researchers found that children with imaginary companions performed better on theory of mind assignments than did children without imaginary companions. It is hypothesized that children with imaginary companions are trained in taking the perspectives of others when trying to adjust the pretend friend to the real world, by taking the perspective of the imaginary friend. However, it could also be that children with more advanced theory of mind feel the need to indulge in fantasy play, i.e. that children more developed in theory of mind are more interested in imaginative play (Taylor & Carlson, 1997).

What percentage of the child population is then estimated to have created an imaginary friend? Different studies have revealed different results, but a fair estimation would be that 50 percent of all children develop this kind of fantasy character. Hoff (2003) reported that 53 percent of the children included in her study acknowledged currently having or at one time having had an imaginary friend, which could be seen as a low number in comparison to other studies. Singer and Singer (1990) found that 65 percent of children in their study reported having an imaginary companion, whereas Taylor and Carlson (1997) found that 63 percent of children they asked had make-believe friends.

Paracosms

Sometimes children make up entire worlds or societies, called paracosm, for their imaginary friends to inhabit. This is typically seen in older children at the age of 9 or 10, but they seem to be more prolonged or consolidated than solitary imaginary companions. More time and imagination is spent on these paracosms and they take longer to develop, which could be the reason why they are more persistent and linger on in the child's fantasy for a longer period of time, sometimes years. No systematic research has been conducted on the phenomenon of paracosms, but elaborate story telling has been done by people like the Brontë sisters and Robert Louis Stevenson as well as private persons sharing their stories in the media. Marjorie Taylor has examined this media literature and found that children develop paracosms with human proportions that include government systems, documents, maps, cultures, religions, histories, public transportation systems, currency, national anthems, magazines, and languages. Like the imaginary friends, paracosms seems to fade away for one reason or another and has often vanished by the age of 18 (Taylor, 1999).

After having discussed the phenomenon of imagination and found that not much research has been devoted to the characteristics of children with vivid imagination, the following discussion describes how and why this study came to focus upon the relation between imagination, locus of control and motivation. But first, creativity will be discussed since it seems an important component in the association between motivation and control.

Creativity

When studying the literature on creativity some key terms seems crucial for defining the construct of concern. The recurrent terms are novel, original and appropriate. "Creativity is the ability to produce work that is both novel (i.e., original, unexpected) and appropriate (i.e. useful, adaptive concerning task constraints)" (Sternberg 1999, p.3). The expression of creativity is then mostly evident in problem solving situations, where new ideas and solutions have to connect in order to create a desired outcome. A commonly held belief is that only gifted or specially talented individuals are equipped with enormous creative potential. To some degree this statement is true. In order to create ground breaking scientific work like the theory of relativity, one needs the ability to think in novel and original ways. However, people of average intelligence all display everyday creativity. One would have considerable difficulties in coping with everyday life without the ability to solve new problems through novelty thinking. When facing a problem or being exhilarated in creative productivity

individuals display a recall for memories acquired in similar situations in order to apply them to the situation of concern. However, creative individuals also display the ability to contemplate the new situation from different angles or in new perspectives to produce a new solution. Hence, two cognitive operations take place in creative productivity; retrieval of relevant memories and problem solving abilities (Sternberg, 1999).

A common perception is that creativity is only found in those individuals high in intelligence, i.e. that creativity originates from the intellect. However, while most researchers have concluded that there is no or only a limited relation between intelligence and creativity, some still claim the opposite. Truth is that creativity and intelligence probably interact to some degree but one cannot by intelligence measures predict an individual's creative potential, and one cannot predict intellectual performance by measures of creative thinking. Empirical evidence has demonstrated that creativity is not the same thing as intelligence, i.e. is not dependent on traditional intelligence (Runco, 2007).

The discussion on creativity has led to a proposal that creative potential is greatly dependent upon imaginative tendencies. To be creative, i.e. to explore the possibility of a novel and appropriate new object or idea, one needs the ability of imaginativeness in order to combine the mental images of memories, experiences, and former images (Craft 2000, in Hoff, 2011). When facing a problem-solving situation the most creative solution might have taken the longest to reach, due to the many possible ways to solve the problem by using imagination. Vivid imagination might create multiple solutions before finding the most accurate or appropriate for this particular situation (Yuan & Zhou, 2008). Husserl has distinguished between two forms of, what he calls, productive fantasy. When using a wider form of productive fantasy invention takes place, as when an artist is caught up in the creation of art. But productive fantasy, according to Husserl, is also found in almost all people although narrower. When a historian is conducting research he tries to unveil or recreate a past historic event or era using imagination to access this former period in time, but there is no question about the invention of a new phenomenon or idea. Hence, Husserl distinguishes between using fantasy in the creation or invention of a new object or idea and using fantasy in order to solve minor to moderate sized problems in ordinary life (Husserl, 2005). Experimental studies have revealed that children given the opportunity to pretend play with objects produce more creative answers when asked the use of these objects. These children produce significantly more standardized and nonstandardized uses for the object (Dansky & Silverman, 1975). Thus, in order to find a solution to a problem or spontaneously create a novel phenomenon,

object or idea, the ability to imaginatively picture this idea seems to be an important part of the creative formation.

Imaginary companions, a form of fantasy play, have been suggested by researcher to interact with creative potential. Some studies have revealed these results including Hoff (2003) who demonstrated that children with pretend playmates scored higher on creativity measures. It is difficult to establish the causal connection between the two but it is possible that having an imaginary friend expands creative thinking. When fantasizing about an imaginary companion the child explores new possible opportunities, solutions to problems and develop novel ideas in its play with the imaginary friend (Somers & Yawkey 1984, in Hoff 2003). However, other studies show no difference in creative potential between children with or without imaginary companions. Taylor indicates that lack of a significant result could imply that creation of an imaginary companion is only one way to express creativity, but many highly creative children might not engage in this form of creative expression (Taylor, 1999).

Decades of research have demonstrated that motivation is one of the most important components in creative performance (Runco, 2007; Sternberg, 1999). Without it one would not be driven to put time and effort into this sometimes extensive work. More important is the notion that intrinsic motivation plays a major role in creative thinking. For intrinsic motivation often involves a perception that the activity is interesting, absorbing, satisfying, or personally challenging and the focus is on the activity itself, whereas surrounding factors adherent to the situation of interest are only considered secondarily. When intrinsic motivation is the primary factor for creative performance the individual is independent of pressure to perform. The mind is able to freely reconsider what needs to be solved or produced in a way that is original and necessary or appropriate. When extrinsic motivation has the upper advantage in creative production, we seldom see as brilliant results as when motivation comes from within. “[E]xtrinsic motivation is defined as the motivation to engage in an activity primary in order to meet some goal external to the work itself, such as attaining an expected reward, winning a competition, or meeting some requirements; it is marked by a focus on external reward, external recognition, and external direction of one’s work” (Sternberg 1999, p. 299-300). However, even though intrinsic motivation mostly facilitates creative productivity extrinsic motivation can to some degree also affect the productive work in a positive direction. When having the opportunity to be creative for the sake of creation but being praised or salaried for this accomplishment, external factors might then enhance the

ability and urge to perform creatively. Thus, there is a close relation between motivation and creative thinking (Runco, 2007; Sternberg, 1999).

The relation between motivation and creative thinking as well as the relation between creativity and imagination gave rise to the idea that imagination, locus of control and motivation might be related. Hence, motivation and control will be discussed below to give the reader some understanding regarding respective field.

Motivation

“Achievement Goal Theory” is just one of many motivational theories but is highly relevant today. Much research into this field is taking place at the moment and the theory is well-developed. Theorists have defined the achievement goal theory as focusing on both the individual performance and the situation in which the achievement goal arise. At individual level, much research has led to understanding the motivational factors that force individuals to perform or act. According to Carol S. Dweck (1999) motivation is founded on either helpless or mastery-oriented responses, and individuals have different goals depending on the responses they present. Two different orientations for competence have been identified; “Mastery orientation” and “Performance orientation”. Mastery orientation is exhibited in individuals’ striving to increase competence and learn new skills, whereas performance orientation is seen in those individuals trying to outperform others and to be positively judged in relation to others (Dweck, 1999). Further research showed that performance orientation can be divided into two goal orientations that motivate individuals; “performance-approach” and “performance-avoidance”. Mastery goal is linked to achievement motivation, performance-avoidance goal is linked to fear of failure, and performance-approach goal is linked to both achievement motivation and fear of failure. Both mastery goal and performance-approach goal are linked to high competence expectancies, whereas performance-avoidance goal is linked to low competence expectancies (Elliot & Church, 1997). For purpose of clarification, the terminology used in Achievement Goal Theory differentiates in the literature. Goal to develop ability will here be referred to as mastery goal (otherwise also termed task goal and learning goal). Goal to demonstrate ability will here be referred to as performance-approach goal (otherwise also termed ability-approach goal, ego goal and performance goal). Goal to avoid the demonstration of lack of ability will in this paper be referred to as performance-avoidance goal (also termed ego goal and ability-avoid goal).

At present, the common belief is that behavior is motivated and organized by certain goals and the pursuit of incorporating these goals into the individual life-sphere. Children's achievement goals are determined by how they experience themselves to be, mastery oriented, performance-approach oriented or performance-avoidance oriented. When children perceive themselves to be helpless, a failure in performance will be attributed to low ability, whereas children oriented towards mastery goal achievement will perceive their failed performance as a useful feedback about learning and mastery. The presented explanation for this phenomenon is the goals chosen by children within the different achievement orientations. When belonging to the performance orientation, a task will be seen as a test of one's own ability and a failure will then be perceived as a confirmation of the lack of ability or know-how. When, on the other hand, a child can be classified as mastery oriented, this child will not perceive the failure as a failure of competence, but as a chance to enhance ability or know-how. The goal for performance oriented children is to outperform others or to avoid demonstrating lack of ability. Mastery oriented children are driven by goals to learn new skills and acquire knowledge to perform better. The emergence of another picture starts to appear. It seems that goals are determinants of the later developed orientation. When driven by a learning goal the child is more likely to develop a mastery goal orientation, but when driven by the goal to outperform others, to present ability or to avoid the demonstration of lack of ability the child seems more likely to display a performance-approach or performance-avoidance goal orientation. Goals can by this argument be dichotomously divided into performance or learning goals. Children are also susceptible to influence from environmental cues that highlight a certain goal (mastery or performance), and in combination with the self-perception of one's own ability an orientation evolves and influences the child within the achievement situation. In other words, when children are told that a certain goal is to be attained and their capability is indicated by an outstander, the child develops an orientation suitable for the situation to be handled (Elliott & Dweck, 1988).

Although goals are important components in motivation, personal control is also seen as a motivational factor in achievements situations. When perceiving a sense of control over one's own life, a variety of positive outcomes has been found to appear, such as optimism, self-esteem and, not the least, motivation (Skinner, 1996). Control could be defined as "the perceived ability to significantly alter events" (Burger 1989, p. 246) and "the expectation of having the power to participate in making decisions in order to obtain desirable consequences and a sense of personal competence in a given situation" (Rodin 1990, p. 4, in Skinner 1996).

When feelings of control are present, individuals experience a sense of belief in their own ability to change and influence environmental situations to attain desired outcomes. This sense of control activates motivational behavior to pursue a desired goal (Shell & Husman, 2008). Among the different constructs of control, Julian Rotter's established "Locus of control" theory will be related to the achievement goal theory in this study.

Locus of control

This term was first introduced by Julian B. Rotter in 1966 and refers to generalized expectancies for internal versus external control of reinforcement. Rotter believed that reward or reinforcement is perceived and reacted to in different ways by different people. The way one reacts to a reward or reinforcement is determined by the belief that this occurrence is a consequence of one's own behavior or attributes (internal control), or that this reward is a consequence of forces outside one's control (external control). If one perceives the reward to be dependent on internal control, one believes that it is one's own behavior or one's own permanent characteristics that are the underlying factors for the event. If one, on the other hand, believes the reward to be dependent on external control, our culture says that chance, luck, fate, powerful others and great forces outside one's control are mainly responsible for this happening. To establish internal control one need to establish a causal relationship between one's own behavior and the reward. It is believed that learning is greatly dependent on this variable, given that individuals are more likely to replicate a behavior if that behavior in previous situations has been followed by a reward (Rotter, 1966).

This assumption stems from social learning theory (Rotter, Chance & Phares, 1972) which provides the theoretical background for reinforcement. Reinforcement is believed to create an expectation that a behavior or event in the future will create the same reinforcement. Whether these expectations will last or not is dependent upon the behavior and reinforcement causality in the future. If the behavior is followed by reinforcement, the expectation will increase. But if the behavior is not followed by reinforcement, the expectation will extinguish. If the individual has a history of reinforcement that is contingent upon the subject's own behavior, it is believed that this person will tend to experience rewards as consequential of own actions. As these expectancies are attached to specific situations, similar or related situations will be perceived as potentially reinforcing actions. Generalized expectancies are developed when similar situations as the original one are reinforced with a reward that is contingent upon the individual's own actions. If these generalized expectancies are also being exposed to

reinforcement or reward as a consequence of one's own actions, a generalized expectancy determined by skill will manifest itself in the individual. But if these expectancies are perceived as dependent upon external factors, generalized expectancies as determined by chance will be manifested in the individual. In summary, it seems that experience is the determining factor regarding the development of internal versus external control. It is the nature or causality of the relationship between the reinforcement and the preceding behavior that ultimately determines whether the relationship between the two will be strengthened or extinguished (Rotter et al. 1972).

When combining the classical behavioristic concepts of "stimuli-response" and "reinforcement" with a cognitive framework, social learning theory tries to give a more comprehensive understanding of personality. The behavioristic conditioning of reinforcement, i.e. a situation is associated with a reinforcement after "stimuli-response" exposure, is understood in a social context or situation instead of segregating this basic psychological mechanism to a solitary operation in the individual as behaviorists advocated. The social learning theory can be summarized as followed; when operant conditioning has occurred this association is seen as an influence on personal characteristics. What leads to this reinforcement? Was it the individual's actions or was it external forces that gave rise to this consequence? Whatever the answer is, an apprehension about the social world has emerged in the individual. This understanding about the social environment will affect the individual in its interaction within social situations, and hence modify or influence the understanding about the own person and his/her environment. Social learning theory applies basic operant conditioning theory to cognitive theories in order to understand how learning affects and is affected by the environment. The behavioristic concept of reinforcement is viewed within a cognitive framework that emphasizes how we think about our behavior and its expected outcomes (Rotter et al. 1972).

The now established relationship between control and motivation was hypothesized as soon as Rotter introduced the locus of control theory in the beginning of the 1960's. Early studies indicated that people who have some beliefs that the outcome of actions is determined by their own skill or ability also have a great need of achievement. In other words, these studies supported the hypothesis that internals have stronger motivation in achievement situations. However, Rotter made a critical remark regarding this relationship. He claimed a limitation on the potential strength of this relationship. Adults that have started off as internals and highly

competitive might have transferred on the internal-external dimension as a defense of repeated failures. Since children have not experienced the number of failures adults have gone through, Rotter hypothesized that children at the internal end of the dimension will display a stronger achievement than those who feel they have little control over their environment. Whereas adults at the external end of the dimension might have started off as competitive but lost the faith in their own abilities because of repeated failures and mistakes (Rotter, 1966).

What was discovered when developing a standardized measurement scale for locus of control in children was that externals have a tendency to become more internal with age. This was seen in both males and females, when measuring children at grades 3 through 12 (Nowicki & Strickland, 1973).

Relating achievement goal to locus of control

Regarding the subject of control and motivation, the term “self-efficacy” seems to be an important construct that relates the two with each other. The term, coined by Albert Bandura (1997), has not to do with what skills one perceives oneself to have but rather with what one believes one can do under a variety of circumstances. Different people with similar skills might then perform differently under the same conditions, due to their own perceived control and efficacy. Skill might then not be the most contributory factor when performing but may rather be influenced by the perceived self-efficacy to perform extraordinarily or poorly. Highly skilled people might perform badly under certain conditions when their perceived self-efficacy is low. The same performance and result can then be observed in a less skilled individual who has high perceived self-efficacy. “Perceived self-efficacy is not a measure of the skills one has but a belief about what one can do under different sets of conditions with whatever skills one possesses” (Bandura 1997, p. 37). Perceived self-efficacy has a strong influence on motivation and control. When doubting one’s own capacity, individuals tend to shy away from difficult tasks because of lack of motivation, aspiration, goal commitment and self-esteem to perform adequately. When facing a failure or setback these individuals tend to demonstrate a slower recovery in self-esteem and self-efficacy. On the other hand there are the sort of individuals that seek out difficult and challenging tasks to be mastered rather than perceiving these tasks as threats to be avoided. This fosters strong commitment, interest and involvement in the tasks and drives the individual to finding a solution to the problem. Failure and setbacks are perceived as indicators of insufficient effort whereas stressors and threats are challenges that need to be mastered and controlled (Bandura, 1997). Hence, perceived self-

efficacy has a strong influence on motivation and control and could be the factor that relates the two.

During the past decades numerous research findings have validated the relation between motivation and control. In 2008 Shell and Husman demonstrated this relation by including self-regulation as a variable. They found that when students´ display high self-regulation they also demonstrate higher positive control beliefs and higher mastery and performance-approach goal orientation. When students´ on the other hand exhibit lower self-regulation they tend to express lower control and lower mastery and performance-approach goal orientation. Put another way, high control is associated with high use of self-regulated learning strategies, knowledge building, question asking, study time, and perceived study effort. Low control is associated with no self-regulated strategy use, study effort, or active classroom involvement through question asking. The investigators describe this relation as a dimension where we find high self-regulation with relating variables at the one end and low self-regulation with relating variables at the other end. They also concluded that this dimension is bipolar.

Children high in internal control earn better grades and perform better on achievement tests. Perceived lack of control will result in the opposite, more failure and poorer performance. Children with high perceived control exert themselves more in preparation and task performance and complete assignments at a faster rate than children with low control beliefs. These last-mentioned children exert less effort in preparation and task performance and tend to complete assignments at a slower rate. High-perceived control children understand that their effort is related to their performance and achievement. They have established a connection between effort and outcome; high efforts lead to desirable outcomes. Inference like this has been drawn because of a generalized perceived control. Children who experience high control do not perceive themselves as high controlled individuals only in specific situations, but experience the control to be cumulative, i.e. have generalized expectancies for internal control of reinforcement (Schmitz & Skinner, 1993).

The relationship between locus of control and achievement has long been confirmed and a confident conclusion is that internal control and academic achievement are positively correlated. However, experimental studies are rarely conducted and therefore only a correlational conclusion can be drawn, i.e. it cannot be inferred that locus of control causes academic achievement. A weak indication suggests that adolescents (in comparison to children and adults) and males exhibit a stronger positive correlation between these

constructs. Although, no absolute conclusions can be drawn from these studies (Findley & Cooper, 1983).

The effect control and motivation has on school achievement in young adolescents was also confirmed by Walls and Little (2005). They found that agency beliefs (belief in own volitional, intentional goal pursuing due to own effort) do result and mediate in higher intrinsic motivation and better school adjustment measured by school grades, school well-being and positive affect. In other words, the relation between motivation and positive school adjustment is mediated by agency beliefs pertaining to own effort. Motivation will enhance school performance but faith in own effort and control will further enhance motivation and performance. However, despite high or low agency beliefs, when found to be guided by extrinsic motivation students tend to perform more disadvantageously in school. So, motivation and thus school performance seems to be mediated by the perceived agency beliefs individuals have.

A relation between grades and internal locus of control was also found when examining this relation in grades eight through twelve. A significant relationship between locus of control and academic achievement was found and pointed to a correlation between higher academic achievement and internal control orientation (Shepherd, Fitch, Owen & Marshall, 2006).

Summary of research interest

The study began with an interest in children's imaginary lives. When examining the literature on this topic it became obvious that not much research has been done. Many of the characteristics of children with imaginative tendencies have not yet been exposed. Numerous research results have confirmed the relation between control and motivation, between creativity and motivation and between creativity and imagination. However, personality characteristics and cognitive functions of highly imaginative children have not been thoroughly examined. Is it advantageous to have vivid imagination? Does it make children feel more in control and motivated? This is just a few of the questions that do not have an answer. So an idea was born from the notion that creativity and imagination are related. If creativity and motivation are related does there also exist a relation between imaginative tendencies and intrinsic motivation? And since motivation and control are closely related maybe children with vivid imagination do exhibit internal control. Fantasy is needed to predict in what way and with what means a desired goal can be obtained. Within the problem-solving situation creativity, the ability to mentally picture (imagine), and motivation to solve

the problem are the most prominent factors. Hence, there seems to be a relation between constructs of concern for this study.

Aim and hypotheses

The research question that this study is based on is: Do children high in imagination demonstrate mastery goal orientation and internal locus of control to a greater extent than children low in imagination?

The hypotheses states that:

(I). Children high in imagination demonstrate mastery goal orientation to a greater extent than children low in imagination.

(II). Children high in imagination demonstrate internal locus of control to a greater extent than children low in imagination.

(III). Children with imaginary companions demonstrate mastery goal orientation to a greater extent than children without imaginary companions.

(IV). Children with imaginary companions demonstrate internal locus of control to a greater extent than children without imaginary companions.

(V). Children high in internal locus of control display mastery goal orientation in comparison to children high in external locus of control.

Method

Participants

The study was conducted in a middle-sized city in Sweden .The sample consisted of 95 elementary school children (53 girls and 42 boys) in three public schools in third, fourth and fifth grades, born between 1998 and 2001. The total number of children who filled out the questionnaire was 107 but only 95 were kept due to unserious answers or incomplete answering. Seven children choose not to fill out the questionnaire when the author visited the schools. A demographical question stated spoken language at home; 61 children declared Swedish, 28 children declared Swedish and other and 6 children declared other. When asked about employment status of parents and parental occupation 82 children stated their mother to

be part-time or full-time employed, 12 children stated the mother to be unemployed. One missing value was found. Eighty children stated the father to be part-time or full-time employed, 9 children stated the father to be unemployed. Six missing values were found.

Measurements

A battery of measures of motivation, locus of control and fantasy were put together using well established measurements of respective field. All measuring instruments are frequently used and well-developed within their research area and have been used for more than ten years. A total of 89 items were included in the questionnaire whereas some items were excluded (see description below).

Background questions

Demographical questions included; sex, year of birth, spoken language at home, employment status of mother and father and occupation of mother and father.

Achievement Goal Questionnaire

For measure of motivation “Achievement Goal Questionnaire” (AGQ) was used, a test developed by a research team at University of Michigan (Migdley et al., 1998). The test consists of 18 items divided into three subdivisions; Mastery Goal Orientation, Performance-Approach Goal Orientation and Performance-Avoidance Goal Orientation. Each subdivision consists of six items. Analysis of the scale demonstrates convergent validity (.83) as well as good internal consistency (Cronbach’s alpha .84). Discriminate validity for subscale I (mastery goal orientation) was $\alpha = .83$, for subscale II (performance-approach goal orientation) $\alpha = .86$ and for subscale III (performance-avoidance goal orientation) $\alpha = .74$. Construct validity was found by correlating the test to other measures of the same construct and an association was found between mastery goal orientation and academic self-efficacy; mastery goal orientation was positively associated to adaptive learning strategies and negatively associated to maladaptive learning strategies; and an association revealed that mastery goal orientation was positively related to affect in school (Midgley et al, 1998). A translated version of the scale into Swedish was supplied to the children (Mattsson Bergh & Storm, 2011). Answers are given on a Likert scale ranging from “strongly disagree, disagree, neutral, agree and strongly agree”.

Nowicki-Strickland Locus of Control Scale for Children

From Rotter's Internal-External Locus of Control theory, Nowicki and Strickland (1973) extended the locus of control variable to children by creating Locus of Control Scale for Children (NSIE). Forty items are answered by replying yes or no. When examining the literature on locus of control it becomes obvious that the Nowicki-Strickland test is applicable even to present time and seems to be the most widespread test of locus of control in children. High scores indicate external control, low scores indicate internal control. Median value is used as the cutoff point. The test demonstrates internal consistency ($r = .63$ for Grades 3,4,5; $r = .68$ for Grades 6,7,8; $r = .74$ for Grades 9,10,11; and $r = .81$ for Grade 12). Test-retest reliability was .63 for the third grade, .66 for the seventh grade, and .71 for the tenth grade. Construct validity were concluded by correlating Locus of Control Scale for Children with Intellectual Achievement Responsibility Scale ($r = .51, p < .01$), with the Bialer-Cromwell score ($r = .41, p = .05$) and with Rotter's Locus of control scale ($r = .61, p < .01$) (Nowicki & Strickland, 1973). The items were translated into Swedish (Appendix A) by the author and went through a "back-translation process", in which the English version were translated into Swedish and then translated into English one more time by a bilingual person. The two English versions were then compared to reveal major differences between the original version and the translated one. Swedish items were then corrected if found to differ from English items.

The Children Fantasy Inventory

In 1982 Rosenfeldt, Huesmann, Eron and Torney-Purta developed a test for measure of fantasy in children, The Child Fantasy Inventory (CFI), consisting of forty-five items. The scale is a 3-point Likert scale ranging from "often", "sometimes" to "never". Factor loadings reveal nine factors; frequency, intellectual, scary, aggressive, vivid, dysphoric, active-heroic, absorption, and fanciful. Three factors were excluded from the final questionnaire for time-limiting reasons. Frequency, aggressive, and dysphoric were removed since they were considered to be least relevant for the investigation. Coefficient alpha ranged from .41 (Absorption) to .70 (Frequency). Test-retest correlation ranged from .39 (Absorption) to .67 (Intellectual). Construct validity were concluded by relating the Children Fantasy Inventory to Imaginative Play Predisposition interview ($\chi^2 = .54.3, p < .02$) (Rosenfeldt et al., 1982). A Swedish version of the test was given to the children (Levin, 2008).

Procedure

The questionnaire was administered during school hours and permission to visit the classrooms was given by the principals and teachers. All children in concerned classes were given a short presentation of the study and then a free choice of participation. They were then provided the battery of measures that were individually responded. Overall, the children have finished the questionnaire within a time-span of 15 to 50 minutes. As expected, children in the third grade took the longest to finish.

Data analysis

Data were analysed using SPSS 19.0. Hypothesis I was analysed using independent *t*-test; imagination were the independent variable and were dichotomized as high or low by calculation median score. The median score were used as a cutoff score when categorizing children as high respectively low imaginative. A total score was calculated on the dependent variable; the mastery goal subscale. Hypothesis II was analyzed using independent *t*-test; independent variable was the dichotomized imagination variable and dependent variable was the total score on the locus of control variable. The median score were used as a cutoff score when categorizing children as internal respectively external. Hypothesis III and IV was analyzed using ANOVA because the independent variable (imaginary companions) consisted of three groups; children who often, sometimes or never play with imaginary companions. The dependent variables were used as described above. Hypothesis V was analyzed using independent *t*-test. Independent variable (locus of control) and dependent variable (mastery goal orientation) were used as described above.

Results

Descriptives

Descriptives for the different tests are presented in Table 1.

Table 1

Descriptives of the Achievement Goal Questionnaire (AGQ), Locus of Control Scale for Children (NSIE), The Children Fantasy Inventory (CFI) and Imaginary Companions (i.c)

	AGQ		NSIE	
	Mean	(SD)	Mean	(SD)
High fantasy	62.20	(10.37)	63.55	(3.46)
Low fantasy	55.00	(11.54)	66.17	(2.58)
Total	58.48	(11.51)	64.93	(3.28)
Often i.c.	62.07	(11.20)	64.50	(3.82)
Sometimes i.c.	59.19	(11.27)	64.42	(2.87)
Never i.c.	56.27	(11.25)	65.54	(3.35)
Total	58.22	(11.32)	64.98	(3.28)

Mean on mastery goal scale for external locus of control was 23.42 (SD = 5.14). Mean on mastery goal scale for internal locus of control was 24.24 (SD = 4.57).

Forty eight children (51 %) reported to often or sometimes play with imaginary companions.

Statistical analysis of the hypotheses

Inferential statistical analysis did not revealed a significant result for hypothesis I; children high in imagination did not demonstrate mastery goal orientation to a greater extent than children low in imagination. The association between imagination and mastery goal orientation was not significant: $t = 3.361$, $df = 92$, $p = .102$, one-tailed.

Inferential statistical analysis revealed significant result for hypothesis II; children high in imagination demonstrate internal locus of control to a greater extent than children low in imagination. The relationship between imagination and locus of control was significant:

$t = -3.760$, $df = 74$, $p = .027$, one-tailed. Mean value on locus of control scale was lower for highly imaginative children (63.55), indicating an internal locus of control. Children low in imagination reported higher mean value on locus of control scale (66.17), indicating an external locus of control. The 95 % confidence interval was between -4.00 and -1.23. Effect size was large ($d = -.852$).

No statistical significant result was found for hypothesis III; children with imaginary companions did not demonstrate mastery goal orientation to a greater extent than children without imaginary companions. $F(2,90) = 0.852$, $p = .430$.

Hypothesis IV (Children with imaginary companions demonstrate internal locus of control to a greater extent than children without imaginary companions) could not be confirmed:

$F(2,72) = 1.046$, $p = .357$.

No statistical result was found for hypothesis V; children high in internal locus of control did not display mastery goal orientation in comparison to children high in external locus of control. $t = 0.809$, $df = 92$, $p = .622$, one-tailed.

Discussion

Discussion of results

Relation between imagination and mastery goal orientation. Collected data found no support for hypothesis I; children high in imagination do not demonstrate mastery goal orientation to a greater extent than children low in imagination. No previous research has touched upon the subject; hence no results indicated there would be such a relation. However, the ability to fantasize plays a major role in individuals' creative performance (Craft 2000, in Hoff, 2011; Dansky & Silverman, 1975; Yuan & Zhou, 2008) and intrinsic motivation is of utter importance for maintaining the creative driving force (Runco, 2007; Sternberg, 1999). Intrinsic motivation has also been shown to be closely related to internal control and seems important for academic achievement (Schmitz & Skinner, 1993; Shell & Husman, 2008; Shepherd, Fitch, Owen & Marshall, 2006) and the current study has provided support for a relation between internal control and imagination. Hence, imagination, creativity and internal control are all connected to each other in different ways, whereas creativity, intrinsic motivation and internal control are related to each other in other ways. So how come motivation was not related to imagination in this study? Perhaps due to measurement

problems. Perhaps other measures of motivation would reveal different results. If the theoretical background were oriented in less complex scholars of motivation and measures of motivation were only dichotomized as intrinsic and extrinsic, a result might reveal in what direction highly imaginative children are motivated. Achievement goal theory and achievement goal questionnaire might be wrong theoretical orientation, whereas intrinsic motivational research might provide more suitable instruments for measure of motivation in relation to imagination.

Another reason for not finding a significant result might be due to the fact that no relation exists between the two. Perhaps there is no relation between mastery goal orientation and imagination due to the fact that mastery goal oriented children seek contact with the outer world to gain knowledge and master new skills (Dweck, 1999). They might feel the need to turn towards the concrete surrounding instead of turning inwards to a place where an abstract world can be created. Perhaps, it would be more accurate to hypothesize that performance-avoidance oriented children would demonstrate higher imagination in comparison to children oriented in mastery goal and performance-approach goal, due to performance-avoidance orientated children's perceived helplessness and fear of failure (Elliot & Church, 1997). It would be more favourable to have high imagination were the helpless child could fantasize about being highly competent, skilled and unafraid of being in the center of attention.

Relation between imagination and locus of control. Hypothesis II stated and found support for an association between imagination and locus of control. The *t*-test analysis show that children low in imagination tend to regard life outcomes as dependent upon external factors, whereas children high in imagination tend to regard personal control as the most prominent factor for life outcomes.

Why is that? A fair speculation would be that children high in imagination have earlier in life or to a greater extent developed internal locus of control. They have come to the conclusion that the events and happenings in their life are much dependent upon their own actions and behavior (Rotter, 1966). When regarding consequences in life as a result of choices one has made, it is easier to build and develop fantasies due to the fact that the individual have done the connection between actions and consequences. If I desire a certain result or consequence, I might use my imagination to conclude which action is the most suitable for pursuing the goal. I know for a fact that the goal can be obtained if I act correctly, but I do not know yet which action is the most suitable. Hence, I need to trial-and-error them all to make a decision. The

least time consuming solution would be to fantasize about the actions, rather than concretely perform them. If I were to regard consequences as dependent upon external factors, I would not need to imagine alternative actions to pursuit my goal since I am not responsible for how results come to be.

This hypothesis might only be limited to Western culture since results have shown that imagination in other cultures (India) might be attributed to other sources like past life-experiences (Taylor, 1999). If the fantasy the child might be experiencing is perceived as memories then internal control might not be relevant, since these images cannot be altered. Imagination and external control might then be hypothesized as related in cultures where external control is seen as the norm or more desirable.

Relation between imaginary companions and mastery goal orientation.

Hypothesis III stated that children with imaginary companions demonstrate mastery goal orientation to a greater extent than children without imaginary companions. Collected data could not confirm this hypothesis. Children high in imagination do not demonstrate mastery goal orientation to a greater extent than children low in imagination.

As in the case if imagination and mastery goal orientation, there might just not exist a relation between having imaginary companions and being mastery goal oriented. However, it could also be due to the fact that only half of the questioned children have had imaginary companions. Collected data revealed that 51 percent of the children in the study often or sometimes play with imaginary companions, which could be seen as a low number in comparison to previous studies (Hoff, 2003; Singer & Singer, 1990; Taylor & Carlson, 1997). Hence, low power might be accounted for this non-significant result as well as the limited investigation of imaginary companions. Only one question was devoted to explore children's experiences of pretend friends.

However, a problem arises when dealing with the issue of imaginary companions. Children tend to forget ever have had an imaginary friend, sometimes within a week from the time the pretend friend was reported to the researcher (Taylor, 1999). By the age of 8 many children show patterns of skepticism towards fictional characters and hence might devote less time for fantasies about fictional characters and pretend entities (Taylor, 1999). Children of this age are also starting school and might be occupied by what is revolving this situation. Older children might not then feel the need to turn to fantasies and hence forget what was once imagined, whereas daydreaming about being a pop-star or astronaut or contemplate the future

are more common themes of fantasy at middle childhood. Children in the present study might just have been too old to confirm this hypothesis.

But the hypothesis should not be deserted, but rather reformulated. Creation of imaginary companions is a time-consuming process and the child needs to be high in imagination (Taylor, 1999). For this reason, it could be claimed that the relation between imaginary companions and motivation should demonstrate the same amount of association as that of imagination and intrinsic motivation, if this relation could be confirmed using other measures of motivation. But as in the case of imagination, it could also be speculated that children with imaginary companions are performance-avoidance oriented and turn to fantasies to master their sense of incompetence. How to more thorough investigate this question is discussed in the section of future research.

Relation between imaginary companions and locus of control. Hypothesis IV stated that children with imaginary companions demonstrate internal locus of control to a greater extent than children without imaginary companions. This was not confirmed in the present study. It cannot be claimed that children with imaginary companions demonstrate internal control to a greater extent than children without imaginary companions.

Why this was not found in the collected data can perhaps be tracked to the same reasons hypothesis III was not confirmed. Low power and limited investigation of imaginary companions as well as having older children included in the study. With proper ways to measure the occurrence of imaginary companions in children high in control, it could be speculated that this relation could show the same amount of strength as that between imagination and internal locus of control. Creation of imaginary companions is a complex process much dependent on imagination (Taylor, 1999), so hypothesizing about a relation between imaginary companions and internal locus of control is not an absurd idea. How to further explore this hypothesis is discussed in the section of future research.

Relation between internal locus of control and mastery goal orientation. What is more surprising is the non-significant result of hypothesis V; children high in internal locus of control did not display mastery goal orientation in comparison to children high in external locus of control. Many years of research confirm this relation between control and motivation (Schmitz & Skinner, 1993; Shell & Husman, 2008; Walls & Little, 2005). So why was this not found in the collected data? Perhaps due to low power, a significant result might have been found if more responders were included in the sample. Another explanation can be found

in the notion that internal locus of control grows with age (Nowicki & Strickland, 1973). Children in this sample might have been too young to attribute success and reward to own performance or effort and hence leaning more towards the external end of the internal-external dimension. To attribute success and reward to own performance, effort or control one needs repeated exposure of the relationship between reward and the behavior. To understand the causal relationship between these could take years, and children might not have come to that conclusion in their middle childhood because of insufficient opportunities to draw such conclusions. However, Rotter (1966) hypothesized that children have not gone through the amount of failures adults have experienced during their lives and should not, for this reason, lean towards the external dimension but rather towards the internal dimension. When regarding these notions it could be hypothesized that younger children more often experience external control because of lack of knowledge that relates effort to reward, adolescents more often experience internal control because of sufficient experiences and adults more often experience external control because of repeated failures. Whether this statement is true remains a question for future research. But if hypothesis IV should be further explored, more power (i.e. larger sample) and homogeneous age groups should be included in the study.

The role of self-efficacy in highly imaginative children. The results of this study clarified the relation between having high imagination and being high in internal control. Previous research has shown that individuals with higher self-efficacy perceive themselves as in more control of the environment surrounding them (Bandura, 1997). Could this mean that highly imaginative children have more perceived self-efficacy? We do not know, from the results of this study, the causal relation between the imagination and control. All we know is that they covary. In the above speculation, it was proposed that individuals high in internal control use imagination to reach desired goals by anticipate the most convenient action to obtain this desired goal. Self-efficacy is of great importance in the process to reach goals. One needs self-efficacy in a variety of conditions to pursuit a desired result. “Perceived self-efficacy is not a measure of the skills one has but a belief about what one can do under different sets of conditions with whatever skills one possesses” (Bandura 1997, p. 37). It could be speculated that self-efficacy is influenced by imagination. Skills are needed to master situations but skills needs to be adjusted to a new condition. The ability to fantasize is of great help when adapting the skill. It could be foreseen which behavior or action is most suitable for the new situation. If reaching a comprehension that foreseeing actions to obtain results are facilitated by mentally visualizing actions, perceived self-efficacy might be

enhanced. In other words, perceived self-efficacy could be enhanced if the individual realize that he/she can plan, foresee and execute an action based upon a decision to choose an action among different, imaginative actions. Within this speculative scenario internal control is enhancing the imaginative tendencies through the desire to reach a desired goal, whereas the enhanced imagination allows one to adjust skills to a particular situation. When realizing that conditions have been excellently mastered, the perceived self-efficacy grows due to repeated rewards.

Critical discussion

How do we know that these research findings actually reflect the phenomenon of fantasy, motivation and control? Do these constructs even exist? They are thought to exist because researchers claiming to have identified them, because of measures to estimate them, because of previous research findings telling us they are associated with other phenomenon or constructs, because they have been named (Lindén, 2003). But this does not mean that what was measured in this study actually are the constructs of fantasy, motivation and control. Perhaps fantasy is not a cognitive process where new constructions in the fantasy of the creator are shaped by combining memories, former experiences and images (Hoff, 2011). Perhaps fantasy is a reflection of past life memories, as is the common belief in India (Taylor, 1999). However, Western culture says humans only have one life to live, so how could fantasy fragments be the representation of memories from past lives?! When dismissing ideas like the Indian approach to fantasy, the risk of drawing wrong conclusion about the world, humans, phenomenon and constructs increases. It limits us to observe phenomenon through different angels and perspectives. But it does not mean that Western perspectives of these constructs are wrong. They have been confirmed according to Western academic traditions. “A knowledge claim becomes valid when there is a strong or forceful reason to accept it” (Lindén 2003, p.12). The knowledge claim would be that no research has falsified the current conception of these phenomenon and enough research indicates that these constructs are psychological mechanisms or inner resources, rather than past life memories. In other parts of the world, one might say that motivation, control and fantasy come to the individual by external sources through mediation or praying. However, no scientific investigation has so far provided compelling claims to falsify the current western view on these constructs. The point here being that fantasy, control and motivation has passed the demands established by the academic traditions of Western culture and are to be regarded as psychological mechanisms,

not as resources provided by the individual through external forces. To draw this conclusion, it is of utter importance to have met the standards of the academic traditions.

How about the way the measures were performed in this study? Were they sufficient to make a statement regarding fantasy, motivation and control? What could be criticized is the methodological approach. When regarding the measure of fantasy, a more appropriate way might have been to make children develop their imaginative stories using interviews. What is created in the fantasy is highly subjective and delicate, and should for this reason be presented by the storyteller in his/her own fashion, by using own words and descriptions. Predetermined questions regarding fantasies might bias the experiences the responders have. The questions might not at all reflect fantasies of all responders, but by using interviews the real subjective experiences could be presented in whatever ways the responders prefers to mediate their inner fantasies.

External validity is achieved when the sample is representative of the population from which it was chosen. When obtaining external validity, one can generalize from the sample to a similar population (Shaughnessy, Zechmesiter & Zechmeister, 2009). Where external validity achieved in this study? Perhaps. The sample seems to be representative of the population of middle childhood children. The majority of children reported Swedish as spoken language at home, whereas a minority reported another language to be spoken at home. This could be compared to the majority of Swedish speaking people living in Sweden, whereas only a minority speaks other languages. The majority of children also reported both parents to be part- or full time employed, whereas only a minority of children reported the parents to be unemployed. This could also be compared to the majority of adults in Sweden having an employment. The schools were not chosen through randomization, but were included in the study if the principal gave approval for the author to visit the school. However, it so happened to be that the three schools came to represent different socio-economic status among the children. One school was located in a district with lower socio-economic status, whereas the other two schools were located in areas with higher socio-economic status. Hence, the sample consisted of a majority white, middle-class Swedish children and the minority of children in the sample came from homes with lower socio-economic status, which is representative for the population in large in Sweden today.

Reliability refers to the stability or consistency of the measures (Shaughnessy, Zechmesiter & Zechmeister, 2009). The reliability of the measurements in the study is thought to be high. All

measurements are well developed and used in their respective field and have been for more than ten years. The all present good internal consistency reliability and test-retest reliability and it can for this reason be claimed that the study should display high reliability.

Ethical aspects

In this thesis one ethical concern might be discarded, namely that care-takers permissions were never collected. A form was produced to give care-takers enough information about the study in order for them to give the responders approval for participation in the study. Principals and teachers at concerned schools did not request the parental form and the form were then interpreted as irrelevant by the author. The study was conducted according to ethical standards. Principals, teachers and children were given a presentation about the study and then given the choice to participate. They were given promise about anonymity and a free choice to end participation at any point during the time the author visited the school.

Not much can be said regarding the ethical aspects of the constructs included in the study. Questionnaires of imagination, motivation and control used in the study are designed and appropriate for children of this particular age. It could even be claimed that children benefit from exposure to question that make one contemplate the internal or psychological mechanisms that guide, alter and control human behavior.

Future research

Some questions arose during the process of this study. Regarding the confirmed hypothesis, further research needs to be done to examine whether self-efficacy is a mediating factor in the relation between imagination and internal locus of control. It could be of importance to identify this mediating factor to enhance perceived self-efficacy in children in need of more motivation and self-esteem to enhance academic performance. If realizing that enhanced imagination promotes perceived self-efficacy and internal control, imagination could be stimulated to enhance the latter one's to improve school performance. When realizing that one is in control of results and having enough self-efficacy to execute actions to reach desired goal, one is likely to also improve academic performances. It should also be explored what other benefits high imagination in children, adolescents and adults convey. But it should also be investigated what negative impact high imagination can have on the individual. It could be hypothesized that high imagination contributes to more severe depression and anxiety, due to the ability to contemplate and complicate different anxiety arising scenarios.

Regarding the non-significant results, further research should explore other ways to investigate the association between imaginary companions and intrinsic motivation as well as the relation between imaginary companions and internal locus of control. Because of the association between imagination and internal control, having imaginary companions (as a form of fantasy play) should also reveal internal control in children. A larger sample will enhance power and a significant result could be found if measures were only to focus upon the phenomenon of imaginary companions, by excluding other forms of fantasy play. A quantitative measure provided to a large sample might be a good approach. However, older children have been shown to forget their imaginary companions or desert their imaginative tendencies at middle childhood (Taylor, 1999). A younger sample of children might be more suitable to examine this hypothesis, although interviews might be more appropriate because of their lack of ability to read.

Why is it important to investigate this question? Prior research has shown that children with imaginary companions demonstrate more advanced theory of mind than children without pretend friends (Taylor & Carlson, 1997). Cognitive development in children might be more advantageous if factors that enhance cognitive development (e.g. having imaginary companions) could be exposed, encouraged and stimulated.

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Appendix A

Nowicki-Strickland Locus of Control Scale for Children

	Ja	Nej
1. Tror du att de flesta problem löser sig av sig själv om du inte bryr dig om dom?	<input type="checkbox"/>	<input type="checkbox"/>
2. Tror du att du på egen hand kan undvika att bli förkyld?	<input type="checkbox"/>	<input type="checkbox"/>
3. Finns det vissa barn som har mer tur än andra?	<input type="checkbox"/>	<input type="checkbox"/>
4. Betyder det mycket för dig att få bra betyg?	<input type="checkbox"/>	<input type="checkbox"/>
5. Får du ofta skulden för sådant som inte är ditt fel?	<input type="checkbox"/>	<input type="checkbox"/>
6. Tror du att om man lägger ner tillräckligt mycket tid på läxor så kan man få bra betyg i vilket ämne som helst?	<input type="checkbox"/>	<input type="checkbox"/>
7. Tror du att det inte spelar någon roll hur mycket man kämpar för saker blir ändå inte som man vill?	<input type="checkbox"/>	<input type="checkbox"/>
8. Tror du att om morgonen börjar bra kommer dagen också att bli bra oavsett vad som händer?	<input type="checkbox"/>	<input type="checkbox"/>
9. Tror du att föräldrar oftast lyssnar på sina barn?	<input type="checkbox"/>	<input type="checkbox"/>
10. Tror du att om man önskar något väldigt mycket kan det hända på riktigt?	<input type="checkbox"/>	<input type="checkbox"/>
11. När du blir bestraffad, tycker du det är utan anledning?	<input type="checkbox"/>	<input type="checkbox"/>
12. Tycker du det är svårt att förändra vad en kompis tycker?	<input type="checkbox"/>	<input type="checkbox"/>
13. Tror du att om man hejar riktigt mycket på ett lag är det hejandet mer än tur som får laget att vinna?	<input type="checkbox"/>	<input type="checkbox"/>
14. Tror du att det är nästan omöjligt att få dina föräldrar att ändra sig om det mesta?	<input type="checkbox"/>	<input type="checkbox"/>
15. Tycker du att dina föräldrar skulle låta dig få bestämma mer över dig själv?	<input type="checkbox"/>	<input type="checkbox"/>
16. När du gjort fel tycker du det nästan inte finns något du kan göra för att det ska bli bra igen då?	<input type="checkbox"/>	<input type="checkbox"/>
17. Tror du att de flesta barn är bra på idrott och sport därför att de är födda så?	<input type="checkbox"/>	<input type="checkbox"/>
18. Är de flesta barn i din ålder starkare än dig?	<input type="checkbox"/>	<input type="checkbox"/>
19. Tror du att det bästa sättet att lösa ett problem är att inte tänka på det?	<input type="checkbox"/>	<input type="checkbox"/>
20. Känner du att du själv kan bestämma vem du vill ska vara din vän?	<input type="checkbox"/>	<input type="checkbox"/>
21. Om du hittar ett fyrklöver, tror du att du får mer tur då?	<input type="checkbox"/>	<input type="checkbox"/>

	Ja	Nej
22. Tror du att om du gör läxorna kommer det leda till högre betyg?	<input type="checkbox"/>	<input type="checkbox"/>
23. Om ett barn i din ålder vill slå dig, finns det något du kan göra för att han eller hon inte ska göra det?	<input type="checkbox"/>	<input type="checkbox"/>
24. Har du någon gång haft en turdag när du hade extra mycket tur?	<input type="checkbox"/>	<input type="checkbox"/>
25. Tror du att hur du beter dig (hur du är) påverkar om andra tycker om dig eller inte?	<input type="checkbox"/>	<input type="checkbox"/>
26. Om du frågar dina föräldrar om hjälp, hjälper de dig då?	<input type="checkbox"/>	<input type="checkbox"/>
27. Om någon är elak mot dig, brukar det vara utan anledning?	<input type="checkbox"/>	<input type="checkbox"/>
28. Tror du att du kan förändra vad som händer imorgon genom vad du gör idag?	<input type="checkbox"/>	<input type="checkbox"/>
29. Tror du att om någonting hemska ska hända så kommer det hända oavsett vad du gör?	<input type="checkbox"/>	<input type="checkbox"/>
30. Tror du att barn kan få som dom vill om dom bara försöker?	<input type="checkbox"/>	<input type="checkbox"/>
31. Tycker du ofta att det inte känns lönt att försöka få som du vill där hemma?	<input type="checkbox"/>	<input type="checkbox"/>
32. Tycker du att när det händer bra saker så händer det för att du har kämpat?	<input type="checkbox"/>	<input type="checkbox"/>
33. Om någon i din ålder vill vara din ovän, känns det svårt att ändra det då?	<input type="checkbox"/>	<input type="checkbox"/>
34. Tycker du det är lätt att få dina kompisar att göra vad du vill att de ska göra?	<input type="checkbox"/>	<input type="checkbox"/>
35. Tycker du att du oftast inte får bestämma vad ni ska äta hemma?	<input type="checkbox"/>	<input type="checkbox"/>
36. Om någon inte tycker om dig känns det svårt att göra något åt det då?	<input type="checkbox"/>	<input type="checkbox"/>
37. Tycker du det är onödigt att kämpa i skolan för de andra barnen är ändå smartare än vad du är?	<input type="checkbox"/>	<input type="checkbox"/>
38. Tror du att saker blir bättre om man planerar dom i förväg?	<input type="checkbox"/>	<input type="checkbox"/>
39. Tycker du ofta att du inte har mycket att säga till om när din familj bestämmer hur ni ska göra?	<input type="checkbox"/>	<input type="checkbox"/>
40. Tycker du det är bättre att vara smart än att ha tur?	<input type="checkbox"/>	<input type="checkbox"/>