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Effortful Control and Achievement Motivation of Institutionally- and Family-Reared Primary
School Children

Maryna Charnyshova

Abstract

My primary objective in this study was to investigate the impact of the upbringing environment on the development of children's effortful control and achievement motivation. Twenty-five SOS Children's Village- and 33 family-raised children reported on achievement motivation, whereas SOS Village and family mothers assessed children's effortful control along with emotion regulation as an additional variable. Consistent with predictions, SOS Village children were characterized by lower levels of emotion regulation than children from conventional families. The data on SOS Village children's lower levels of effortful control were marginally significant. As opposed to the expectations, SOS Village children had higher achievement motivation than their family-reared counterparts. Moreover, relations existed between effortful control and some of the achievement motivation components, namely, effortful control was positively related to hope of success and negatively related to active fear of failure. A number of associations were also found between achievement motivation components and emotion regulation. Finally, there was an interaction between children's upbringing environment and effortful control such that there was a significant difference in the effect of a rearing condition on achievement motivation of children with different levels of effortful control. Implications include a focus on developing self-regulation abilities of institutionally-reared children when designing interventions to improve their behavior.

Key words: Effortful control, Achievement motivation, Achievement goal orientations, Contextualist perspective, Family-reared children, Institutionally-reared children

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1. Introduction

According to the UNO Convention on the Rights of the Child (1989),

“Every child has the right to a loving and caring family.

Every child has the right to a home.

Every child has the right to be cared for by both parents.

*According to the latest report of the UNICEF (2005),
there are approximately 210 million orphaned children in the world today.*

Losing parents is one of the most painful experiences that a child can face in his/her life. The number of orphaned and abandoned children in the world is growing at alarming pace (UNICEF, 2005). Every country has its own path to finding a solution to this problem. Thus, developed countries have complex programs aimed at financial support of single-parent families, prevention of child abandonment, creation of favorable conditions for bringing up children with special needs in their own families et cetera. Most developing countries are only at the beginning of this road due to various social, economic, political and cultural reasons. The most prevailing way of handling this issue in developing countries is placing children in special rearing institutions. Unfortunately, institutional upbringing of children is not confined to developing countries or countries in transition but is widespread within the European area. According to the University of Birmingham and WHO investigation, there is an overuse of institutional rearing of children in need (Browne et al., 2006). They define institutions as “residential health or social care facilities with 11 or more children, where children stay for more than three months without a primary caregiver. Small institutions had the capacity for 11-24 children and large institutions 25 or more children, regardless of age” (ibid., p.485). The recent WHO program on fighting against child abuse also reported the need for more public policies to support one of the basic children’s rights to be brought up in a family.

1.1. Theoretical perspectives

During the second half of the 20th century experimental studies generated overpowering facts proving that public care institutions were not only unsuccessful in improving children’s psychological conditions but essentially harmful to the cognitive, behavioural, emotional, and social spheres of young children. A number of theories have been developed in order to explain striking discrepancies between psychological

characteristics of family- and institutionally-reared children. One of the theories most frequently cited in this context is that of Bowlby (1951). After the Second World War, a lot of children remained without their parents and were, consequently, placed into orphanages. Bowlby was asked by the WHO to investigate the reasons and treatment for children's development that became deviant after children were placed into a rearing institution (Birns, 1999). The core premise of Bowlby's attachment theory is that a child needs to have a close emotional bond with at least one primary caregiver (usually the mother). Later on, this secure or insecure attachment style serves as the fundamental basis for child's social development throughout the whole life. The absence of such attachment has a detrimental impact on child's psychological wellbeing.

Despite having produced far-reaching repercussions on public policies concerning orphaned children, Bowlby's attachment theory has been criticized. The main criticism relevant for the present study is that the theory focuses solely on the mother-child interactions and ignores the existence of other potential figures of attachment, such as siblings, grandparents et cetera (Field, 1996). Consequently, it overlooks a range of behaviors in a broader context. The observation of normal, everyday interactions between mothers and their children should also be accompanied by observations of a child's behavior per se and with relevant others. This is important because a child's attachment style and behavior towards the mother can differ greatly from those towards other figures of secondary attachments. Thus, a child is definitely expected to cry and protest when the mother leaves but can simply be nervous and capricious when grandparents depart. In this case, the picture of a child's attachment style and working model (inner model of his/her interaction with caregivers) will be more complete and will provide more insight into understanding of his/her behavior (Field, 1996). Hence, attachment theory obviously needs more extensive and inclusive assumptions which would embrace a wider range of attachments to a bigger number of individuals during different life periods.

An alternative explanation of damaging effects of institutionalization of children is based on the cognitive approach to child's development. The advocates of this approach (Casler, 1961; Tizard & Hodges, 1977; Tizard & Rees, 1974) related the harmful impact of institutionalization to the institutional setting and, in particular, to a low quality of cognitive stimuli presented in it. They emphasized that cognitive stimulation of a child differs greatly in family and institutional contexts, with former supposedly having rich cognitive stimulation and latter – a poor one.

A common limitation of both approaches is that their proponents attempted to create a one-component solution where a specific component would determine damaging outcomes of the institutional rearing. Bowlby and colleagues' approach emphasized the emotional component whereas Casler and his followers focused on the cognitive facet. Unfortunately, taking into account the harmful impact of only one component, the advocates of the attachment theory as well as of the cognitive approach have overlooked a number of other possible factors. The current study is aimed at avoiding one-sided standpoints of the aforementioned approaches and based on the contextualist perspective on child's development. I believe that the contextualist perspective incorporates and, more importantly, expands the core premises of both attachment and cognitive development theories and provides a valuable insight into the understanding of the reasons for the deficient development of the institutionally-reared children.

1.2. Contextualist perspective

The present research presumes a theoretical assumption about child's development happening in contexts that are regarded as composite multifaceted structures. The contextualist perspective assumes that there are dynamic relations between a growing up child and his/her environment, on the one hand, and between the constituents within this environment, on the other hand. Both kinds of relations jointly influence the course of child's development (Barker, 1978; Bronfenbrenner, 1979; Vygotsky, 1987). The advocates of the contextualist approach claim that human development progresses in specific microcontexts, or close surroundings, such as a family setting, school, playing fields, etc., and macrocontexts, such as societal norms, state laws etc. According to the contextualist approach, the presence of any immediate setting, for instance a family, as well as its absence dramatically alters the context of development, and consequently, its nature and direction. Hence, relative to the present study, this approach implies that the development of children without families is not equivalent to the development of children with families subtracting the family component. In this case, development is regarded as a process unlike the one in the family setting because it takes place in the essentially different context.

Institutions and families diverge from each other on two major parameters, namely, the structure of their settings and the functions of the people involved in them. These two parameters influence the conduct of children as well as adults and, moreover, have an impact on the development of children.

The first mentioned diverging characteristic concerning the structure of the institutional setting was elaborated on by Goffman (1962) who subsequently coined a term “total institution”. “Total institution” embraces a number of distinct features that are significantly different from those of a family. They are:

1. The residents are limited in their interactions with the outside world, while personnel constitute a part of this world.
2. Every inhabitant of the institution has to consider and reside with other similar inhabitants.
3. There is usually a visible gap between institution’s residents and its scanty managerial and administrative personnel.
4. All kinds of activities are held inside of the institution and controlled by the same people in charge.

On the contrary, a family represents the environment with a free access to the outside world. In this case, children participate in numerous settings (play yard, school, sports club, church, etc.) where they play multiple social roles (a son, a brother, a pupil, a friend, etc.) and witness other people altering or combining their roles (a mother, a wife, a neighbor, a buyer, etc.). Such experience of both participating in or merely observing the diverse social functioning makes a valuable contribution to the child’s development. This cannot be said, however, about the children brought up in institutions where employees’ roles are reduced to a set of clear-cut responsibilities.

Based on the aforementioned theoretical premises, it can be concluded that development of family- and institutionally-reared children takes place in dramatically diverging contexts, has different nature and, consequently, leads to different developmental results. Emotional attachment and cognitive stimulation are only constituents of more complex systems, or contexts. An overwhelming amount of research supports the assumption that the institutional context often described as impeding social interactions, limiting cognitive stimulation, preventing emotional attachment to adults, and restricting authoritative figures to a teacher, destructively influences children’s cognitive and emotional development, their communication skills, ability to comprehend other people and their emotions.

Thus, Furmanov and colleagues (1999a, 1999b) assert that such children are normally characterized by low self-esteem. Deprivation of parental love and care causes lack of assertiveness, which once having appeared in childhood, becomes a stable personality trait. Orphans’ attitude to themselves usually reflects other people’s assessment. The authors also detected serious defects of will regulation manifested through inability to plan and control

actions. Dobrova-Krol and colleagues (2008) addressed the development of children in terms of their physical growth and stress regulation. They confirmed the fact of children's physical growth delays and stress dysregulation associated with institutional care. IJzendoorn and colleagues (2008) conducted meta-analysis of 75 studies of the intellectual development of children living in children's homes in 19 different countries. Children brought up in institutions demonstrated a significant lower level of IQ than their peers reared in (foster) families. A lot of research was dedicated to orphans' behavioral patterns. Mukhina (2003) claims that constant congestion of people in premises forces children to contact with others, which causes emotional tension, anxiety and, at the same time, reinforces aggression. Prikhojan and Tolstyh's (1990) study produced evidence that the motivation of children growing in institutions is limited and insufficient.

Achievement motivation and effortful control of children reared outside of conventional families have been chosen as the primary focus of the present study due to a number of reasons. First of all, the most popular topics of research on orphans are their personality traits, IQ, self-esteem, aggression, emotions et cetera, whereas their motivational and effortful control spheres remain virtually neglected. More information is needed in order to understand the course and consequences of the development of these psychological constructs for orphaned and abandoned children.

Second, an overwhelming amount of research suggests that achievement motivation as well as highly-developed effortful control are positively related to academic achievement (e.g.: Gottfried, 1990; Liew, Chen, & Hughes, 2010; Schiefele & Csikszentmihalyi, 1995), self-efficacy beliefs (e.g., Liew et al., 2008), social competence/adjustment (e.g.: Liew, Eisenberg, & Reiser, 2004; Ryan & Shim, 2008). This is particularly important in the case of orphaned or abandoned children. Once they leave an institution, they are no longer observed or assisted unlike their family-raised mates. In the case of Belarus, where the study took place, children often end up going back to their drinking or criminal parents¹ and becoming either alcoholics or drug addicts. In this sense, highly-developed achievement motivation and effortful control may become chief driving forces towards attaining a decent life regardless of circumstances and impediments.

Finally, both achievement motivation and effortful control are constructs that demonstrate a notable and particularly fast development in early and middle childhood (Davidson, Jackson & Kalin, 2000; Gottfried, 1990; Kochanska et al., 1996; Posner & Rothbart, 2000; Vogt, Finch & Olson, 1992; Nemov, 1999). Hence, there is a possibility of an early detection of achievement motivation- and effortful control-related issues. An

efficient and timely intervention may bring both constructs to a higher level and thus increase children's chances of succeeding in life after they leave an institution and face an adult world.

1.3. Effortful control

The present research rests primarily on the effortful control model offered by Rothbart and colleagues (Derryberry & Rothbart, 2001; Rothbart et al., 2001; Rothbart & Derryberry, 1981). They focused mainly on temperamental constituents and contributed greatly into the development of the effortful control concept. According to these authors, effortful control represents a higher-order characteristic of temperament and constitutes a key component of self-regulation. It is crucial to define these basic concepts before proceeding to the elaboration of effortful control per se. Temperament is described as "constitutionally based individual differences in emotional, motor, and attentional reactivity and self-regulation" (Simonds et al., 2007, p. 475). Reactivity ensures responding in various ways to diverse kinds of stimuli. Regulation implies mechanisms that control these reactions and shape them into an appropriate form. Constitutional nature of temperament means its biological origin that is later affected by environment and life experience (Simonds et al., 2007).

Hence, effortful control is defined as prohibitive control processes that enable a person to suppress a dominant reaction to some triggering event in order to let a subdominant but more appropriate reaction emerge (Rothbart et al., 2000). In contrast to other components of temperament that have been widely investigated, effortful control is an especially challenging issue. As opposed to such temperament features as, for example, fearfulness to the unknown that can be regarded as a distinct emotion, effortful control represents a considerably more composite phenomenon. It is a generic concept that incorporates a number of more specific constituents, namely, attentional, inhibitory and activation control, along with perceptual sensitivity, and low intensity pleasure (Simonds et al., 2007).

Temperament has long been regarded to be a fixed personality feature that would similarly manifest itself throughout diverse situational settings and remain constant during life. Thus, Birns (1999) claimed that her investigation as well as a lot of other research showed temperament differences in newborn children. A number of follow-up studies reported the significance of such differences in subsequent child development. The author admitted the importance of the family in this case but emphasized that children are born with specific behavioral patterns that can be a result of intrauterine environment, heredity, and other factors preceding child's birth. However, such a conclusion, while possible, is not

entirely accurate. This perspective ignores the fact that a child does not possess a complete set of temperamental features at its birth. A number of researchers proved that temperament tends to develop, with its components emerging and developing during different life periods. This is true for various emotions and their elements (Izard, 1977), as well as for motor, arousal (Rothbart, 1989), and attentional spheres (Posner & Raichle, 1994). On the basis of these facts, Rothbart, Ahadi, and Evans (2000) suggested that a newborn child has a set of basic reactions that later develops in a more complex system by encompassing additional self-regulation abilities. Considering these developmental mechanisms, the authors, therefore, announced the necessity to investigate the nature of temperament with its self-regulatory capacities during different life periods from infancy through toddlerhood and childhood to adolescence and adulthood.

The aforementioned facts are supported by the separate studies of effortful control. Thus, Rothbart and Rueda (2005) assert that as a child grows up, his/her self-control abilities strengthen and provide a more efficient regulation of motor, emotional, and attentional reactions. Kochanska and colleagues' (1996) research proved that effortful control displays a remarkable and especially rapid developmental advancement between the ages of 3 and 6 years. Similar conclusions were drawn from the studies of the biological foundation of effortful control. It was discovered that effortful control is associated with neurological activity in the midfrontal lobe (Posner & Rothbart, 2000; Vogt, Finch & Olson, 1992). Furthermore, Posner and Rothbart (2000) noticed flexibility in neural activity of these zones. Likewise, Davidson, Jackson and Kalin (2000) proposed that between the ages of 3 and 11 years children's prefrontal cortex is characterized by a distinct flexibility. Collectively, the admission of the notion about neural flexibility has facilitated the process of investigating the impact of various experiences on brain development. Consequently, it is crucial to consider contextual factors, such as a family setting or its absence, that can affect the development of the above mentioned brain zones. Hence, investigation of contextual impacts on effortful control during such a delicate developmental phase can illuminate the nature of the mechanisms that facilitate or hamper its development.

In line with the contextualist perspective, a number of studies proved effortful control to be a context-dependent construct. For instance, primary school children who lived in poor families did worse on a delay of gratification task than children from middle income families. The contextual factors that contributed to such difference were bad living conditions of low-income families, as well as noise, overcrowding, mess et cetera (Evans & English, 2002). Furthermore, such poverty-related stressors as cold, hunger, and dangerous environment were

investigated in primary school children and adolescents and were found to be related to lower self-regulatory processes (Buckner et al., 2003). In the same vein, worse performance on a delay of gratification was found to be connected with rural environment (Evans, 2003). Another research showed a long-term effect of unfavorable contextual conditions on self-regulation (Hart, Atkins, & Fegley, 2003). Three- and 4-year-old children were rated as “well-regulated”, “overcontrolled” (e.g., shy), or “undercontrolled” (e.g., rebellious), according to the results of the parents’ answers. So unfavorable contextual conditions accounted for the shifts from well-regulated type to undercontrolled type within a two-year period. The findings of the above mentioned studies confirm the presence of the relation between diverse contextual factors and self-regulatory processes.

The primary focus of the present research, however, is a family context and its contribution to the development of child’s effortful control. There have been a number of studies that proved parenting to be a predictor of self-regulation. Thus, mothers’ receptiveness when children were a year and 10 months old affected the development of effortful control within subsequent ten months (Kochanska et al., 2000). Furthermore, responsive and caring parenting was demonstrated to predict child’s effortful control capabilities (Eisenberg, Zhou et al., 2003) and associated with related notions of ego control (Block & Block, 1980) and impulsive functioning (Olson, Bates, & Bayles, 1990). On the contrary, mothers’ restraints (Olson et al., 2002) and maladaptive way of communicating (Calkins, Smith, Gill, & Johnson, 1998) were related to lower self-regulation of their children. Moreover, cognitive stimulation and sensitivity demonstrated by mothers, along with the characteristics of home setting, were related to impulsivity and protracted attention of their children (NICHD Early Child Care Research Network, 2003). In addition to that, mothers’ socialization level was also found to be related to more efficient effortful control of their children (Kochanska, Murray, & Harlan, 2000). Child–caregiver communication style during toddlerhood was a predictor of differences in children’s impulsivity demonstrated later in their lives (Olson et al., 2002).

Sensitive and responsive caregivers arouse in children the feeling of safety and help them to recover from intense negative emotions (Davies & Cummings, 1994), which can encourage the development of children’s effortful control capabilities. Likewise, caregivers’ support, when it’s needed, also predicts children’s self-regulation (Katz, Wilson, & Gottman, 1999). On the top of that, caregivers who behave consistently with their upbringing approach, turn to argumentation and support independence, facilitate a greater level of self-regulatory abilities of their children (Grusec & Goodnow, 1994).

Thus, previous research has mainly focused on the impact of various facets of parenting and family environment on child's effortful control and other related constructs. In particular, the nature of caregiver-child interactions and a family background were proved to be significant predictors of the development of child's effortful control. However, none of the prior studies has examined the impact of the upbringing environment other than a traditional family. The present research is aimed at investigating the nature of children's effortful control in the context of the institutional upbringing.

Furthermore, to better capture the notion of effortful control in divergent contexts, the study incorporated the concept of emotion regulation. Despite the fact that emotion regulation is not included into Rothbart and colleagues' model (Simonds et al., 2007), this construct is present in a lot of effortful control-related studies. Eisenberg, Smith, Sadovsky, and Spinrad (2004), for instance, regard effortful control as a core element of emotion-related regulation. Simonds and colleagues (2007) studied relations between effortful control, executive attention, and emotion regulation in the situation of receiving an undesired gift. They confirmed a correlation between effortful control and emotion regulation. Eisenberg, Fabes, Guthrie, and Reiser (2000) assert that effortful control implies alteration of emotional response, enabling the demonstration of socially acceptable emotions and the suppression of emotions that are socially disapproved.

Based on the results of the aforementioned studies and a conceptual link between effortful control and emotion regulation, it is sensible to assume that the absence of a family setting or lack of maternal attention, sensibility, responsiveness and warmth affect child's effortful control and emotion regulation abilities. This study investigated a type of upbringing environment (family or institution) as a predictor of effortful control and emotion regulation in primary school children. It was hypothesized that

Hypothesis 1: Institutionally-reared children's effortful control and emotion regulation is lower than that of family-reared children.

1.4. Achievement motivation and achievement goals theories

Most scholars consent that achievement motivation represents a multidimensional construct. There is a disagreement, however, on how to properly define this concept. There are also numerous contradictions regarding to how many factors comprise it. Thus, Story and colleagues (2009) offer a two-factor theory of achievement motivation, whereas Cassidy and Lynn (1989) proposed a seven-factor model of achievement motivation. According to classic

achievement motivation theorists, achievement motivation is “the desire for accomplishment and mastery of skills” (Young, Chen, & Morris, 2009, p. 150). From a modern perspective, such definition appears to be rather narrow due to the fact of implying the prevalence of individual’s mastery orientation. Recent research has demonstrated that achievement motivation is a considerably broader concept including a wider range of components. Hence the present study supports Cassidy and Lynn’s notion of achievement motivation where it is defined as “the tendency to set and work toward personal goals and/or standards” (in Story et al., 2009, p.391). This definition was given in 1989 but already contained the idea of achievement goals. Subsequently, a classic version of achievement motivation theory has been challenged by achievement goal theory and, consequently, undergone a considerable transformation.

Early achievement goal theorists (e.g.: Ames & Archer, 1987; Dweck, 1986) conceptualized two discrete types of attitude towards one’s strivings in an achievement setting: A mastery goal defined as the inherent desire to acquire skills and become efficient in doing some tasks, and performance goal defined as one’s tendency to demonstrate his/her abilities to others. Such a classification, however, solely focused on “approach” facet of motivation and, consequently, yielded contradictory results. Thus, performance goal orientation was sometimes claimed to be related to adaptive and sometimes to maladaptive behavior. Moreover, this approach essentially contradicted the classic notion of achievement motivation where approach and avoidance characteristics were core components and “activity in achievement settings may be oriented toward the attainment of success or the avoidance of failure” (Elliot & Church, 1997, p. 218). This inconsistency was solved by Elliot and Harackiewicz (1996) who proposed to view mastery goals as merely approach orientation but divided performance goals into two separate concepts, namely, performance-approach and performance-avoidance goals.

Elliot and Church (1997) further elaborated on the proposed classification and developed a hierarchical model that incorporated traditional and modern approaches to the investigation of achievement motivation. In support to the model, the authors conducted a study where they proved that mastery goals were related to achievement motivation, performance-avoidance goals were related to fear of failure, and performance-approach goals were related to both. They assumed that a performance-concerned person demonstrates an approach orientation if (s)he assesses the situation as challenging, and vice versa, a performance-concerned person demonstrates an avoidance orientation if (s)he assesses the situation as threatening.

In line with Elliot and Church's (1997) model, Schmalt (2005) proposed a three-factor structure of achievement motivation. It consisted of Hope of Success (HS), comprised of positive competence expectancies, desire to achieve, and behavior aimed at managing complicated tasks; passive Fear of Failure (FFp), comprised of negative competence expectancies and leaving an achievement situation; active Fear of Failure (FFa) that involves more intense emotions and expectation of failure but, in contrast to passive Fear of Failure, represents a stimulating and encouraging factor. Schmalt claimed that motivation tendencies constitute precursors of achievement-goal employment. Thus, HS corresponded to mastery and performance-approach goals whereas FFp and FFa were linked to avoidance goals as they were both directed at avoiding negative outcomes. Such an approach seems the most appropriate for the present study as it matches each motive disposition with a specific goal orientation and, therefore, provides a more complete picture of one's achievement-related characteristics.

Overall, an overwhelming amount of research on achievement motivation indicates a significant role, which this construct plays in social, educational, personality and other psychological subdisciplines. Achievement motivation was found to be related to academic achievement (Gottfried, 1990; Meece & Miller, 2001; Schiefele & Csikszentmihalyi, 1995), self-concept, self-esteem (Skaalvik et al., 1994), self-efficacy (Schunk & Swartz, 1993), anxiety (Skaalvik, 1997), intrinsic motivation (Elliot & Harackiewicz, 1996) and so forth. Hence, an early understanding of the development and determinants of achievement motivation is crucial for understanding and predicting the overall developmental outcomes.

Among other factors, parental behavioral patterns were proved to significantly affect the development of child's achievement motivation (e.g.: Crandall & Sinkeldam, 1964; Elliot & Dweck, 1988; Fincham, & Cain, 1986; McClelland & Pilon, 1983; Rosen & D'Andrade, 1959). For example, the parents' encouragement of their children's initiative, abilities and success facilitates the development of high level of achievement motivation (Spence, 1983; Woolfolk, 1990). Likewise, parents' expectancies and observational learning are significant antecedents of the development of their children's achievement motivation (McClelland, 1983). Furthermore, children's competence expectancies were more related to parents' than teachers' competence expectancies (Entwisle & Hayduk, 1981), and they were predicted more by their parents' expectancies than by children's academic performance (Parsons, Adler, & Kaczala, 1982). Also, parental teaching tactics were assumed to affect self-assessment or motivational dispositions of children, which subsequently influenced the children's performance (Hess & McDevitt, 1984).

In addition, parental responsiveness, warmth and sensitivity were also proved to affect children's achievement orientations. Thus, positive affective tone of caregiver-child communication was related to children's perceived academic competence (Wagner & Phillips, 1992), high achievement in future, active and investigative achievement conduct (Estrada et al., 1987), and overall better and more active development of children's achievement motivation (Maccoby & Martin, 1983). A more detailed analysis of mother-child interactions in the situation of failure revealed that mothers of mastery-oriented children encouraged mastery orientation of their children by employing task-focused teaching strategy and redirecting children's low-ability ascriptions and performance-oriented comments at mastery-focused actions (Hokoda & Fincham, 1995).

These findings are consistent with the core premise of the contextualist perspective that constitutes a theoretical rationale for the present study and admits the importance of contextual impact on child's developmental outcomes. As previous research has mainly focused on the variations of parent-child interactions, some other contextual aspects have been disregarded. Thus, little is known about the development of achievement motivation in the situation of family deprivation. There has been an examination of achievement motivation of adolescents sent away from home to attend high schools (Maqsd & Coleman, 1993). As expected, the main effect of living with parents was obtained, that is parents had a significant impact on the achievement motivation of their children. Nevertheless, the adolescents lived in families for the most part of their lives, and even after departure they still had a family and home. Hence, this and similar results cannot be generalized to a sample of children who were removed from their families and placed in a special rearing institution at an early age.

Taking into account the aforementioned theoretical premises and empirical findings, the present study is aimed at investigating the role of the upbringing environment, other than a traditional family, for the primary school children's achievement motivation and goals. Before proceeding to the hypothesis, it is essential to indicate what high and low achievement motivation implies. Thus, a person with high achievement motivation "aspires to accomplish difficult tasks; maintains high standards and is willing to work toward distant goals; responds positively to competition; willing to put forth effort to attain excellence" (Jackson in Smith, Sansone, & White, 2007, p. 101). So people with high and low achievement motivation are assumed to diverge in the types of achievement goals they intuitively employ in the same setting. A major distinction is that people higher in achievement motivation are more prone to adopt all three types of achievement goals (mastery, performance-approach and performance-avoidance) as compared to people lower in achievement motivation (Elliot & McGregor,

2001). Hence individuals lower in achievement motivation do not focus on all three goals but employ, for example, performance-avoidance goals at the cost of other achievement goals. Hence they lose the benefits that people higher in achievement motivation gain by adopting all three kinds of goals *pari passu*.

Based on the results of the aforementioned studies, it is sensible to assume that the absence of a family setting or lack of maternal attention, sensibility, responsiveness and warmth affect the development of child's achievement motivation and goals. This study examined a type of upbringing environment (family or institution) as a predictor of achievement motivation in primary school children. It was hypothesized that

Hypothesis 2: Institutionally-reared children's achievement motivation is lower than that of family-reared children.

1.5. Effortful control and achievement motivation

There is a host of research demonstrating the link between effortful control and regulatory processes, on the one hand, and achievement motivation-related constructs, on the other hand. Most research, however, focuses primarily on self-regulation rather than on effortful control and more on achievement rather than achievement motivation. Liew and colleagues (2008), for example, conducted a longitudinal study of self-regulation abilities, self-efficacy beliefs and achievement of primary school children. The researchers observed the children throughout first three grades of school. The authors concluded that first-graders' effortful control positively affected their academic self-efficacy beliefs and literacy achievement during subsequent two years. Archer, Cantwell and Bourke (1999) discovered that mastery orientation was positively associated with flexibility in self-regulation. Radosevich and colleagues (2004) investigated the linkages between self-regulatory capabilities and goal orientations in achievement situations. The findings suggested that (a) mastery goal orientation was "positively related to how much resources participants allocated to their goals and the degree to which they engaged in cognitive self-regulation" and (b) "performance-avoidance goal orientation was negatively related to cognitive self-regulation" (*ibid.*, p. 207).

However, the concept of effortful control, while being related, does not entirely correspond to the notion of self-regulation offered in the aforementioned studies. A major difference relevant for the present research is that self-regulatory abilities described earlier entail volitional control while carrying out some activity. On the contrary, the definition of

temperamental effortful control, chosen as a theoretical rationale for the study, implies a primary focus on mechanical or subconscious facets of emotional responsiveness and control. There are a number of studies, however, where effortful control was integrated into a set of various self-regulation characteristics. Blair and Razza (2007), for instance, studied the impact of effortful control and a range of other self-regulation components on academic achievement of preschool children. Among others, the self-regulation elements included inhibitory control and attention-related facets of executive function. In this sense, the authors' measures of self-regulation overlap with the constituents of a more general notion of effortful control proposed by Rothbart and colleagues (Simonds et al., 2007). The findings of the study proved that effortful control and other mentioned self-regulation components accounted for the variance in children's academic achievements regardless of their IQ. Moreover, inhibitory control was the strongest predictor of academic performance. Furthermore, Valiente, Lemery-Chalfant and Castro (2007) investigated the linkage between children's effortful control and academic competence. A positive correlation was found between these constructs.

The reported findings confirm the belief that timely encouragement of a child's self-regulation abilities may contribute to the development of his/her achievement, academic self-beliefs and other important achievement-related characteristics. They also imply the existence of a correlation between achievement motivation and effortful control per se. However, there is no empirical evidence proving this fact. Based on the aforementioned empirical evidence and a potential link between effortful control and achievement motivation, I, therefore, hypothesize that

Hypothesis 3: There is a relation between achievement motivation, on the one hand, and effortful control and emotion regulation, on the other hand.

Moreover, as has been shown in the preceding sections, effortful control is related to various contextual factors in general and a family setting, in particular. There are no empirical studies that would examine how children's effortful control and the context of upbringing operate simultaneously on children's achievement motivation. Thus, the present study also examines whether the presence or absence of a family environment would moderate the relation between effortful control and achievement motivation. I therefore hypothesize that

Hypothesis 4: There is an interaction between children's upbringing environment and effortful control, that is, there is a significant difference in the effect of a rearing condition on achievement motivation of children with different levels of effortful control.

1.6. *The context of the study*

The most prevailing way of handling the issue of orphanhood in developing countries is placing children in special rearing institutions. Such form of dealing with orphaned and abandoned children abounds in former USSR countries, present CIS, which account for about one third of world's orphans who live in rearing institutions (Oslon & Holmogorova, 2001a, p.80). However, such a way of solving this problem is being reconsidered even in these countries. One of the most popular ways of solving this issue is promoting SOS Children's Villages.

SOS Children's Villages is the world's largest orphan charity, active in 132 countries. The variety of this international charity effort is brought together by the umbrella organization SOS-Kinderdorf International, which unites all of the self-directed local associations, scattered throughout the world. The organization functions to meet the needs and protect the interests and rights of orphaned and abandoned children worldwide. It claims to base its work on a family approach that includes four major principles: (a) children are provided with a mother; (b) several children live together so they could have brothers and sisters; (c) every family is provided with their own house; (d) the houses are located in a village built especially to organize and support such families (SOS Children's Villages International, 2010).

It is undoubtedly true that the most effective way of solving the issue of abandoned and orphaned children is placing them into living conditions that are maximally approximated to those of a real family. It remains rather unclear, however, in what way a family organization, promoted by the SOS-Kinderdorf International, influences the development of children. There is enough empirical evidence proving that foster cared children, for example, catch up on many psychological characteristics with their family-raised peers within a year or two (Oslon & Holmogorova, 2001a, 2001b). There is lack of such information on SOS Children's Villages. Obviously, the findings obtained for such family-based rearing as a foster family cannot be generalized to SOS Villages. It is crucial to highlight that despite employing a family approach, these settlements do not have some core family components (e.g., a father) and, in some respects, still resemble Goffman's (1962) total institution.

The reported research was conducted in SOS Children's Village located in Borovlyany, the Republic of Belarus. There are three SOS Children's Villages in Belarus and Borovlyany Village is the oldest one. It will be celebrating its 15th anniversary in August, 2010. There are 17 families in the village. Every family is allotted a detached house of a standard design with

the exception of one family that rents an apartment outside of the village. There are minimum three and maximum seven children in a house. On average, however, every family raises four children. There are three caretakers in every family: a mother, an aunt and an assistant. A mother is a major person who lives with children six days a week, takes care of them and does the housework. These are mostly middle-aged women with no or adult children of their own. The youngest mother is 43 years old, the oldest is 65. Mothers have special helpers – an aunt and an assistant who visit a family once or twice a week to provide help about the house and substitute for a mother when she has a day off. There are special meetings organized for mothers every Monday. The meetings usually start with the discussion of general questions regarding the village matters, when the head of the village announces various deadlines, news, and comments. After this official part is over, mothers have an opportunity to sound and discuss specific issues with a psychologist who is invited from outside of the village socio-psychological department and specializes in this particular area.

A total number of children residing in the village amounts to 68. It is important to highlight that not every orphan can be allocated into the village. There is a national conception of enrolment that is based on a number of major hallmarks: (a) a child must have an officially recognized status of an orphan; (b) a child must be physically and mentally healthy; (c) a child must be from 0 to 10 years old at the moment of the enrolment; and (d) a child must not be separated from his/her siblings.

The children of Borovlyany Village were placed there due to several reasons. The most popular reason was that both parents had been deprived of their parental rights due to child abuse, alcohol abuse, or crime (47% of all cases). Consequently, the authorities removed children from their biological families and placed them in rearing institutions (in the SOS Children's Village in this case). The second reason was similar to the first one and accounted for 47% of children as well. The mothers of those children had also been deprived of their parental rights. The only difference was that their fathers were unknown. There was abbreviated "F2" in a father's name column in their records. "F2" stands for Form Two and means that a father was not present at the registration of a child and did not participate in a child's upbringing later in his life. The remaining 6% of the children were placed into the village due to more specific reasons. One child, for example, was a foundling. Another child had only a father who was physically handicapped. Consequently, the man could not support his son and had to let the village staff take care of him. Only four children (three of them were siblings) were placed into the village because of the death of both parents. There were

several cases when parents voluntarily abandoned their children or one parent died and another parent was deprived of his/her parental rights.

In addition to a clear-cut personnel hierarchy, the village has rather structured everyday routine. Apart from such usual activities as going to school and doing homework, children attend meetings at socio-psychological department; they are also assigned to a range of extracurricular activities, taken to numerous excursions, cinemas, theaters et cetera. In summer, mothers and their assistants go on vacation and children are involved into a number of projects. Some of them go on a 36-day water trip along the river; the others camp out in the woods. Overall, the village community leads a very active life, participates in various competitions, concerts and so forth, which, undeniably, keeps children busy.

2. Method

2.1. Design

The study had a 2 (Upbringing Environment: SOS Children's Village vs. family) \times 3 (Achievement Motivation: hope of success vs. active fear of failure vs. passive fear of failure) \times 3 (Achievement Goal Orientations: mastery goal orientation vs. performance-approach goal orientation vs. performance-avoidance goal orientation) \times 2 (Self-regulation abilities: emotion regulation vs. effortful control) between-subjects design.

2.2. Participants

Participants were 25 institutionally-reared children² (Sample 1, 11 boys and 14 girls) and 33 family-reared children living with their biological parents (Sample 2, 17 boys and 16 girls). The age range of the children was from 7 to 10 years old. Middle childhood has been chosen as an age limit of the study due to its specific role as compared to other life periods. A lot of basic psychological traits develop primarily during pre-school years. For example, according to some researchers (e.g., Nemov, 1999), achievement motivation does not belong to a set of inborn traits but appears and develops in early years and can become a stable personality trait by middle childhood. So, on the one hand, children enter school with a large set of personality characteristics and other psychological constructs that are easier to detect in middle than in early childhood. On the other hand, however, children at this age are still more amenable to interventions and corrections if that is needed compared to, for instance, teenage years. Moreover, the impact of upbringing environment is most influential during early and middle childhood and associated with diverging developmental outcomes (Sloutsky, 1997).

Hence, middle childhood appears to be the most suitable time for investigating the impact of upbringing environment on children's achievement motivation and effortful control.

Both samples were Caucasian as there is virtually no racial or national diversity in Belarus. Every child from the control group was pair-matched on age and gender with a child from institutional care. Mean age of institutionally-reared children was 102.96 months (*S.D.* = 9.94; range 85–118), and mean age of family-reared children was 99.79 months (*S.D.* = 7.31; range 85–115).

2.2.1. Institutionally-reared children

Institutionally-reared children were recruited from SOS Children's Village located in Borovlyany, the Republic of Belarus. The following selection criteria were applied: (a) age between 7 and 10 years old; (b) residence in the institutional care no less than 18 months; and (c) no genetic syndromes (e.g., Down syndrome) or mental retardation symptoms. Twenty-five children were selected according to these criteria.

The data on the history of institutionalization showed that none of the children in the institutionally-reared group was an orphan whose both parents died, all children were admitted to institutional care because both of their parents were deprived of their parental rights ($n=16$), the father was unknown and the mother was deprived of her parental rights ($n=8$) and one child's father was unknown and the mother was mentally handicapped. All mothers of the institutionally-reared children were abusing alcohol or drugs. Although almost all institutionally-reared children had parents and/or relatives, 21 children remained in contact with their birth family on a regular basis and remaining 4 had sporadic contacts. According to the information provided by a social worker, there were no sampled children who were completely out of touch with their parents or family members. Seven children were living in the same institution with their siblings; two sibling couples participated in this study.

Eighteen children were transferred to the SOS Children's Village from SPCs (socio-pedagogical centres). SPCs are first-referral institutions where children are normally placed when they are removed from a family. They reside in SPCs while the deprivation of their parents' rights is under consideration. Children may stay there from several weeks to maximum of six months, after which they have to be allocated to places of permanent residence such as orphanages, Children's Homes, SOS Villages, or foster families. Three children were transferred from another type of a rearing institution – orphanage³, and two

others – from Children’s Homes⁴. Thus, since enrolment into their current institution, all children had experienced at least two changes of primary caregivers.

It was an uneasy task to identify at what age children were placed into an institution for the first time and, consequently, how much overall time they spent in rearing institutions. As indicated earlier, none of them was placed into the village directly from a family and the data about how long children had been staying in other institutions before their transition to the village were strictly confidential. This is the reason why such a valuable piece of information was not utilized in the current research, which otherwise could have provided additional evidence about the impact of length of stay in an institution on psychological characteristics of children. Only the mean of living in the SOS Children’s Village was available and therefore calculated. On average, children had been living in the village for 24.36 months (*S.D.*=16.49; range 4 –52).

2.2.2. Family-reared children

For the control group, family-reared children were recruited from Radoshkovichy Secondary School. This school was chosen due to two major reasons: (a) it is located in the same geographical area as the SOS Children’s Village; and (b) Radoshkovichy is a small provincial town with mostly working class and low-income families. This fact made the children from the control sample maximally approximate to the children from the SOS Village group in terms of their social backgrounds. Children were selected according to the following criteria: (a) age between 7 and 10 years old; (b) living in two-parent biological families; and (c) no genetic syndromes (e.g., Down syndrome) or mental retardation symptoms. Thirty-nine out of 40 first-, second- and third-grade children were selected according to these criteria. One child was not included in the study as he demonstrated the symptoms of mental retardation.

2.3. Procedure

Informed consent was received for all children who participated in the study. For the children in the SOS Children’s Village, the consent was initially obtained from the head of the village who is an officially appointed guardian of all the orphans residing in the village. For the family children, the headmaster was first addressed as the testing of children was carried out in school. Parents of family-reared children and village mothers were addressed after the headmaster of the school and the director of the SOS Children’s Village approved of

conducting the research within their domains. The parents were contacted via mail. Every child was given an envelope that contained a letter of consent and two questionnaires regarding child's effortful control and emotion regulation. The children were told to give the letters to their mothers. The letter provided parents with the information about the research and, if agreed, asked to sign an enclosed consent, answer the questionnaires and give the papers back to a child so (s)he would return them to the teacher. All the interested parties (parents, village mothers, and the headmasters) were provided with rather detailed information about the research. They were explained the purpose of the study, what psychological phenomena were investigated and how the obtained information would be stored and applied. The English versions of both letters of consent are given in Appendixes A and B. The parents were given two days to answer and return the questionnaires. The teachers collected the envelopes from children and gave them back to the researcher. Thirty-three out of 39 parents and all village mothers returned the envelopes with signed consents.

The parents as well as the headmasters, however, asked for the feedback from all the administered tests, which was provided to them individually in a written form upon the completion of the research. The administrations of both the SOS Children's Village and a regular secondary school were also offered reports with general information about the gained results and some relevant recommendations.

After the consents were obtained from all the involved adults, the children in both samples were divided into two groups each of which had a different time session. With family-reared children, testing was administered in a classroom where they normally had their classes. One lesson was allotted for holding both tests. In the SOS Children's Village, the children were invited to a special house in the village where they normally had classes with social workers and psychologists. The researcher explained the purpose of the research and demonstrated the use of 5-point Likert scale. Children were told to ask questions in case if anything was difficult to understand and they were also guaranteed that the data would remain private. The instructions to both tests were provided orally. There were children who understood all the directives and immediately started working on their own. Younger children, however, often had hard time understanding the instructions or some questionnaire statements. In this case, the researcher worked individually with each child, explaining instructions again, reading every statement and clarifying its meaning.

2.4. Measures

Self-reported measures. Two instruments were utilized for measuring children's achievement motivation. First, achievement goal orientations were measured by Goal Orientation Scales developed by Midgley and colleagues (1998). According to the stated hypothesis, family-reared children were expected to obtain a higher overall achievement goal orientation score than institutionally-reared children. The second measure was a short version of the Achievement-Motive Grid (AMG-S) developed by Schmalt (2005). Based on above presented Schmalt's theoretical assumptions and stated hypothesis, it was expected that hope of success is a prevailing achievement motivation disposition among family-reared children, whereas both types of fear of failure (active and passive) are more typical of institutionally-reared children.

Achievement-Motive Grid. A measurement of children's achievement motives was conducted with the help of a short form of the Achievement-Motive Grid (AMG-S) developed by Schmalt (2005)⁵. It is a semi-projective instrument that incorporates the elements of both self-report questionnaires and of the Thematic Apperception Test. Like in the TAT, motives are triggered by demonstrating a collection of pictures depicting achievement-related situations. Similar to a questionnaire, motives are assessed with a number of certain statements that reflect core elements of achievement motivation. A child is shown a picture of an achievement-related situation and given a prepared set of ten statements that express thoughts, feelings, and expectations typical of one of the three achievement motives (e.g.: hope of success statement - He thinks: "I'm proud of myself because I can do that."; active fear of failure statement - He's afraid he could do something wrong; passive fear of failure statement - He thinks he can't do that.). A child is then asked to decide whether each of the ten statements fits the situation. Each picture is accompanied by the same set of statements.

The application of both exploratory and confirmatory factor analyses verified the rationale of dividing achievement motivation sphere into three factors that Schmalt termed as hope of success (HS), active fear of failure (FFa), and passive fear of failure (FFp). The author utilized three distinct criteria (the parallel analysis, the scree test, and the eigenvalue criterion) for identifying the amount of factors and all of them confirmed a three-factor structure to be the most appropriate decision. Moreover, the Cronbach's alphas detected satisfactory internal consistencies of all extracted factors. For the three calculated points on HS, FFp, and FFa scales, the Cronbach's alphas were .80, .77, and .81, respectively. The

correlation analysis confirmed the fact of discriminant validity of the three distinguished motives: The coefficients of the scales' intercorrelations did not exceed .20, $ps < .001$

Finally, confirmatory factor analysis provided additional evidence for the discriminant validity of the scales. The factor analysis was followed by Maximum Likelihood analysis with several criteria estimating the fit of the proposed model. There was a significant result for global model fit: $\chi^2 (24, 285) = 62.37, p < .001$, with additional indexes of fit having high values: GFI (the Goodness-of-fit index) = .96, AGFI (the adjusted goodness-of-fit index) = .92, IFI (the incremental fit index) = .91, and AIC (Akaike's information criterion) = 104.38.

This instrument has been chosen due to several reasons: (a) the test has been proven to be a reliable and valid measure; (b) the theoretical underpinnings of this measure perfectly correspond to the theoretical framework chosen for the study; (c) it is considerably easier for primary school children to work with a picture-based test where there is neither a lot of reading nor need to rank the statements on 5-point Likert scale.

Achievement Goal Orientation Scales. A measurement of children's achievement goals was conducted with the help of Achievement Goal Orientation Scales (AGOS) created by Midgley and a group of researchers (1998). The questionnaire is comprised of three 6-item scales for each of the achievement goal orientations in the three-factor model (e.g.: mastery goal orientation statement – "I like school work that I'll learn from, even if I make a lot of mistakes"; performance-approach goal orientation statement – "I would feel really good if I were the only one who could answer the teachers' questions in class"; performance-avoidance goal orientation statement – "The reason I do my school work is so my teachers don't think I know less than others"). The children are offered to read 18 statements and identify on a 5-point Likert scale to what extent each statement is true of them.

The authors tested the questionnaire using seven different samples of primary and middle school children and reported high values of internal consistency, stability, and construct validity in all samples for all three scales. The Cronbach's alphas for the internal consistencies of the three scales have been tested on numerous samples that differed by size and the age of the participants and were always higher than .60. Recently, bigger samples have been used and, consequently, the alpha values for the mastery, performance-approach, and performance-avoidance orientations were .84 and higher.

The stability of scales was tested during a longitudinal study of children through their 5th and 6th grades. For the mastery orientation, the stability coefficient of .63 was obtained and for the both approach orientations, it was .61.

Convergent validity was tested with the help of an additional achievement goals measurement. The relations among the scales of the two questionnaires were greater than .63, which provided proof of collecting similar results and, therefore, confirmed convergent validity of the instrument.

To demonstrate the construct validity of the three distinguished orientations, the authors investigated their relations with a number of other constructs (e.g., academic self-efficacy beliefs, learning strategies etc.) that had been proved by the previous research to be related to the goal orientations. The results of the analyses confirmed the relations among the constructs and, consequently, the construct validity of the scales.

Finally, confirmatory factor analysis provided the evidence for the discriminant validity of the scales. The factor analysis was followed by Maximum Likelihood analysis with several criteria estimating the fit of the proposed model. There was a significant result with all the indexes of fit having high values: $\chi^2(116, 647) = 298.55, p < .001$, GFI (the Goodness-of-fit index) = .95, TLI (Tucker-Lewis index) = .95, and CFI (the Comparative fit index) = .96.

This measure seemed to be the most appropriate instrument as (a) it has been demonstrated to be a reliable and valid measure (b) it is based on the theoretical framework chosen for the study; (c) its scales correspond to Schmalz's classification of achievement motives that is also used in the study and thus provide a more complete picture of participants' achievement motivation; (d) the wording of the scales are considerably easier for children to comprehend as compared to some other achievement goals orientation questionnaires for children (e.g., Lau & Lee, 2008); (e) it is a more precise measure of achievement goals as, for example, statements in some other questionnaires often imply such emotional experiences as, for example, fear, anxiety, or worries rather than motives of academic performance (e.g., "I worry about the possibility of getting a bad grade in this class", or "I often think to myself, "What if I do badly in this class?" in Elliot & Church, 1997).

Parent-reported measures. Two instruments were operationalized for investigating children's effortful control and emotion regulation. First, effortful control was measured by the Temperament in Middle Childhood Questionnaire (TMCQ) created by Simonds and Rothbart (2007). Based on the earlier stated theoretical assumptions, it was hypothesized that family-reared children would be characterized by higher levels of effortful control than institutionally-reared children. The second instrument was the Emotion Questionnaire (EQ) created by Rydell, Berlin, and Bohlin (2003). Based on the conceptual link between effortful

control and emotion regulation, it was hypothesized that family-reared children would be characterized by higher levels of emotion regulation than institutionally-reared children.

Temperament in Middle Childhood Questionnaire. The Temperament in Middle Childhood Questionnaire belongs to the battery of tests of temperament developed by the professors of Oregon University – Jennifer Simonds and Mary K. Rothbart. The authors' research field focuses primary on temperament constituents which allowed them to create a number of parent- and self-report questionnaires for assessing temperament in various life periods from infancy, childhood, and early adolescence to adulthood. The TMCQ has been designed to measure temperament in children at the age of 7 to 10 years old.

There are two versions of the questionnaire – for parents and a computerized self-report form for children. Paper-and-pencil parents' version was operationalized in the current research. It contains 157 statements that describe children in various circumstances (e.g.: “My child likes going down high slides or other adventurous activities” – high intensity pleasure scale; “My child has a hard time waiting his/her turn to talk when excited” – inhibitory control scale; “When working on an activity, has a hard time keeping her/his mind on it” – attention focusing scale). Parents are instructed to read each statement and identify on a 5-point Likert scale to what extent it is true of their children.

The questionnaire contains 17 scales and represents a highly differentiated assessment of temperament. The scales are activity level, affiliation, anger/frustration, assertiveness/dominance, attentional focusing, discomfort, fantasy/openness, fear, high intensity pleasure, impulsivity, inhibitory control, low intensity pleasure, perceptual sensitivity, sadness, shyness, soothability/falling reactivity, and activation control. These components are then combined into three major factors – surgency, effortful control, and negative affect.

The stated focus of the present research was effortful control, which, according to the TMCQ, encompassed the measures of attention focusing, inhibitory and activation controls, low intensity pleasure, and perceptual sensitivity. Attentional focusing implies a tendency to maintain attentional focus upon task-related channels. Inhibitory control signifies is a capacity to plan and to suppress inappropriate approach responses whereas activation control represents a capacity to perform an action when there is a strong tendency to avoid it. Low intensity pleasure is an amount of pleasure or enjoyment related to situations involving low stimulus intensity, rate, complexity, and novelty. Finally, perceptual sensitivity is an amount of detection of slight, low intensity stimuli from the external environment (Rothbart, 1996).

The authors tested the questionnaire using several different samples of primary school children and reported high values of internal consistency, reliability, and validity measures. The Cronbach's alphas for the internal consistencies of the 16 scales (with an exception for activity) ranged from .69 to .90. There was also a significant agreement between parent and child versions of the questionnaire on 11 scales. The results of the factor analysis, however, were somewhat inconclusive at the point of validating the questionnaire (Simonds & Rothbart, 2004).

The main reason for choosing this instrument was the fact that its effortful control scale was comprised of a multitude of components. Hence, it exhaustively reflects the complexity of the notion of effortful control. Moreover, the questionnaire has been demonstrated to be a reliable and valid measure. Finally, it provides some additional information on other child's temperament characteristics.

Emotion Questionnaire. A measurement of children's emotion regulation abilities was conducted with the help of a short version of the parent-reported Emotion Questionnaire (EQ) developed by Rydell, Berlin, and Bohlin (2003). First, a certain situation is offered (e.g.: My child is forbidden to do something he/she wants to do.) and then a number of children's emotional reactions are described (1. "My child often becomes angry and falls in a bad mood." 2. "When angry or in a bad mood, my child reacts strongly and intensely" etc.). Parents are instructed to read 40 statements and identify on a 5-point Likert scale to what extent each statement is true of their children.

The questionnaire examines two basic characteristics: emotionality and emotion regulation. The emotionality factor includes three negative (sadness, anger, fear) and a mixture of positive emotions (exuberance). It is studied with the questions concerning the rate of occurrence and strength of emotional responses (e.g.: "My child often gets frightened and anxious", "When frightened and anxious, he/she reacts strongly and intensely"). However, as the emotionality was not a major interest of the current research, this information was not used. Emotion regulation is investigated with the items concerning the child's regulation abilities and the child's capability to manage emotions with the help of others (e.g.: "It is easy for others, for instance a parent, to calm him/her down", "My child has difficulties calming down on his/her own").

The authors tested the questionnaire on numerous samples for several years and reported high values of internal consistency, stability, and construct validity for all scales. The Cronbach's alphas for the internal consistencies of the three scales provided high values,

namely, .88 for negative emotionality, .79 positive emotionality, and .89 for overall emotion regulation.

The stability of scales was tested during a longitudinal study of several samples of children at the ages of 5-6½ years old, 5-8 years old, and 6½-8 years old. For the last sample, the stability coefficients were .50, .61, .45 for negative emotionality, positive emotionality and overall emotion regulation, respectively.

To confirm the construct validity of the distinguished factors, the authors investigated their relations with the scales of the recognized CBQ (Children's Behavior Questionnaire) developed by Rothbart et al. (2001). The results of the analyses confirmed the relations between the scales of the EQ and the scales of the CBQ ($r_s > .37$ for most scales) and, consequently, the construct validity of the EQ scales.

The reliability of the measure was tested by its repeated administration to the same sample of parents. The obtained correlation coefficients were greater than .62 for emotionality constituents, and greater than .74 for emotion regulation constituents. The correlation analysis confirmed the fact of discriminant validity of the emotionality and emotion regulation constituents. The coefficients of the intercorrelations did not exceed .28, $p_s < .001$.

This instrument has been chosen due to a number of reasons: (a) it had been demonstrated to be a reliable and valid measure; (b) most of its scales correspond to Simonds and Rothbart's TMCQ, which provided a more complete picture of participants' self-regulation capacities; (c) its economic version with simple short statements provided valuable information within short timing and thus freed additional time for a considerably longer and time-consuming TMCQ.

3. Results

3.1. Outline of analyses

First, descriptive and preliminary analyses were carried out, and diversity of children's gender and age on the main variables of the research were investigated. Next, zero-order correlations of the main variables were examined. Further, two separate multivariate analyses of variance were conducted to test main effects of a rearing condition on children's effortful control and emotion regulation (Hypothesis 1) and achievement motivation (Hypothesis 2). The relationship between effortful control and achievement motivation was investigated using Pearson product-moment correlation coefficient (Hypothesis 3). Finally, a two-way

between-groups analysis of variance was conducted to check for an interaction effect of rearing conditions and effortful control on achievement motivation. On the top of that, profile analyses were utilized as additional means to contrast self-regulation and achievement motivation profiles of the two samples. However, no regression or any other more complex analyses were employed as the declared purpose of the current study was to examine the strength and direction of relations between the variables, not their causal relations.

3.2. Descriptive statistics and preliminary analyses

The means and standard deviations of the main measures for the total sample and two separate samples of family- and institutionally-raised children are given in Table 1.

Each analysis was preceded by testing specific preliminary assumptions required for this particular type of analysis. In sum, the results of evaluation of assumptions of normality, univariate and multivariate outliers, homogeneity of variance-covariance matrices, linearity, and multicollinearity were satisfactory.

Table 1

Means and standard deviations of main measures for total sample and by rearing condition

Variables	Total sample (N=25-33)		Institutionally-reared children (n=25)		Family-reared children (n=33)	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Effortful control	15.87	2.08	15.21	1.96	16.37	2.07
Emotion regulation	88.59	19.27	75.84	17.13	98.24	14.78
Overall Achievement	66.69	10.87	70.32	10.78	63.94	10.25
Goal Orientation Score						

3.2.1. Age, gender and main variables

The analyses of zero-order correlations between age and main variables were carried out. It detected that participants' age was only positively related to overall achievement goal orientation score ($r[58] = .303, p = .02$). To examine gender differences, two MANOVAs were conducted for self-regulation and achievement motivation variables. There were no statistically significant results obtained for gender differences.

3.2.2. Relations between self-regulation variables

Zero-order correlations analysis of the self-regulation variables revealed multiple positive relations among all the scales. Thus, overall emotion regulation and regulation of positive and negative emotions were related to each other and to effortful control (Table 2).

Table 2
Zero-order correlations between achievement motivation variables

	1	2	3
1. Overall Emotion Regulation	-	-	-
2. Regulation of positive emotions	.88**	-	-
3. Regulation of negative emotions	.99**	.79**	-
4. Effortful control	.57**	.55**	.54**

** $p < .01$

3.2.3. Relations between achievement motivation variables

The results of the zero-order correlations analyses of the achievement motivation variables confirmed the expected positive relations among the overall achievement motivation score and all three measures of Achievement Goal Orientation Scales questionnaire (Table 3). It was also positively associated with hope of success measure of

Table 3
Zero-order correlations between achievement motivation variables

	1	2	3	4	5	6
1. Overall Achievement Goal Orientation Score	-					
2. Hope of Success	.32*	-				
3. Fear of Failure active	-.17	-.15	-			
4. Fear of Failure passive	-.07	-.13	.23	-		
5. Mastery Goals	.59**	.19	-.28	-.25	-	
6. Performance-Approach Goals	.83**	.31*	-.19	-.09	.33*	-
7. Performance-Avoidance Goals	.75**	.19	.04	-.02	.17	.39*

* $p < .05$, ** $p < .01$

Schmalt's Achievement-Motive Grid. Mastery goal orientation was positively related to performance-approach orientation and negatively related to active fear of failure. Performance-approach goal orientation was found to be positively related to both hope of success and performance-avoidance goal orientation (Table 3). The absence of correlations among the three scales of AMG-S confirms the author's findings concerning discriminant validity – that the scales measure distinct constructs.

3.3. *Main analyses*

3.3.1. *Effortful Control*

A one-way between-groups multivariate analysis of variance was performed to investigate differences in effortful control and emotion regulation between children brought up in traditional families and children raised in the SOS Children's Village. The independent variable was rearing condition. There was a statistically significant difference between family and SOS Village children on the combined dependent variables: $F(2, 55) = 14.23, p = .00$; Wilks' Lambda = .66; partial $\eta^2 = .34$. This finding confirms the fact that children reared in conventional families and children raised outside of a traditional family differ in how well they can regulate their emotions and behavior.

When the results for the dependent variables were considered separately, the only difference to reach statistical significance using a Bonferroni adjusted alpha level of .03 was emotion regulation: $F(1, 56) = 28.5, p = .00$, partial $\eta^2 = .34$. An inspection of the mean scores indicated that family-reared children reported higher levels of emotion regulation ($M=98.24; S.D.=14.78$) than institutionally-reared children ($M=75.84; S.D.=5.41$), which implies that it is considerably easier for family-reared children to control their emotions as compared to their SOS Village peers.

However, it is crucial to highlight that the difference in effortful control between the two groups of children obtained marginal statistical significance: $F(1, 56) = 4.68, p = .035$, partial $\eta^2 = .077$. Further analysis of the mean scores demonstrated that family-reared children reported slightly higher levels of effortful control ($M=16.37; S.D.=2.07$) than institutionally-reared children ($M=15.21; S.D.=1.96$).

Furthermore, a profile analysis was carried out as an additional visual means of contrasting the two groups of children. It was performed on four effortful control and emotion regulation characteristics: effortful control, overall emotion regulation, regulation of positive emotions, and regulation of negative emotions. A profile analysis was

operationalized due to its ability to conveniently demonstrate questionnaire scores in a graphical way that allowed observing an overall performance of a particular sample as well as comparing the performances of two samples at a glance. Conventionally, profiles present questionnaire scales on one axis of the diagram, typically the x-axis, and the obtained scores on the other axis. This provided an opportunity to reconcile individual scores into an integral picture and literally see the relative strengths and weaknesses of a particular group and, more importantly, whether the profiles of the two groups differed. After all the preliminary assumptions were met, three hypotheses were tested: flatness, parallel and level hypotheses. The grouping variable was a rearing condition.

The results of this analysis rejected all three hypotheses for the profiles of the two groups of children. Thus, Wilks' Lambda criterion found the profiles to deviate significantly from parallelism, $F(3, 54) = 10.99$, $p = .00$, partial $\eta^2 = .379$. Likewise, for the levels test, statistically significant difference was found among groups, $F(1, 56) = 28.03$, $p = .00$, partial $\eta^2 = .334$. When averaged over groups self-regulation characteristics were found by Wilks' Lambda criterion to deviate significantly from flatness, $F(3, 54) = 1166.42$, $p = .00$, partial $\eta^2 = .985$.

The rejection of the parallelism and flatness hypothesis implied that children, brought up in the two investigated conditions, had different patterns of effortful control and emotion regulation and, moreover, obtained differing scores on these characteristics. The analysis of the levels hypothesis indicated that family-reared children and their peers from the SOS Village, on average, differ in their effortful control and emotion regulation abilities (Figure 1).

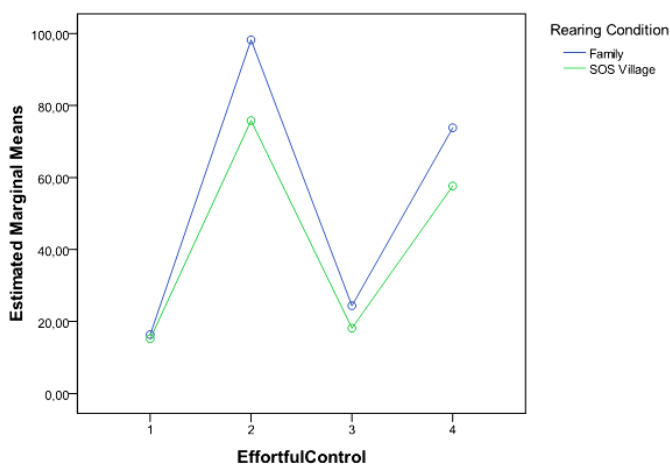


Figure 1. Comparison of self-regulation profiles of family- and institutionally-reared children.

Thus, the results of the aforementioned analyses partly confirmed hypothesis 1. It was proved that institutionally-reared children's emotion regulation was lower than that of their family-reared peers. It remains rather arguable whether effortful control can be considered to differ for the two samples of children. On the one hand, the difference between the samples did not reach statistical significance; on the other hand, however, it was marginally significant.

3.3.2. Achievement Motivation

Another one-way between-groups multivariate analysis of variance was performed for the second group of dependent variables: overall achievement motivation score and hope of success. The independent variable was rearing condition. There was a statistically significant difference between family and SOS Village children on the combined dependent variables: $F(2, 55) = 10.184, p = .00$; Wilks' Lambda = .73; partial $\eta^2 = .27$. This finding confirms the fact that children reared in conventional families and children raised outside of a traditional family differ in the strength of their achievement strivings.

Both dependant variables – overall achievement motivation score and hope of success – made unique contributions to the composite dependent variable that best distinguished between family- and institutionally-reared children. The greatest contribution was made by hope of success: $F(1, 56) = 18.68, p = .00, \eta^2 = .25$. Family-raised children scored lower in hope of success ($M=10.36; S.D.=4.61$) than SOS Village children ($M=15.16; S.D.=3.54$). This result indicates that institutionally-reared children are considerably more success-oriented than their family-raised peers.

Overall achievement motivation score was also found to be statistically different for the two groups of children: $F(1, 56) = 5.28, p = .03, \eta^2 = .09$. Family-raised children were characterized by a lower achievement motivation score ($M=63.94; S.D.=10.25$) than SOS Village children ($M=70.32; S.D.=10.78$).

To obtain a more detailed visual picture of the results, a profile analysis was performed on seven achievement motivation characteristics: overall score (OvS), mastery goal orientation (MG), performance-approach goal orientation (PApG), performance-avoidance goal orientation (PAvG), hope of success (HS), active fear of failure (FFa), and passive fear of failure (FFp). After all the preliminary assumptions were met, three hypotheses were tested: the flatness, parallel and level hypotheses. The grouping variable was a rearing condition.

The results of the analysis rejected all three hypotheses for the profiles of the two samples of children. Thus, Wilks' Lambda criterion found the profiles to deviate significantly from parallelism, $F(6, 51) = 4.16, p = .00$, partial $\eta^2 = .33$. Likewise, for the levels test, statistically significant difference was found among groups, $F(1, 56) = 6.56, p = .01$, partial $\eta^2 = .12$. When averaged over groups achievement motivation characteristics were found by Hotelling's criterion to deviate significantly from flatness, $F(6, 51) = 615.58, p = .00$, partial $\eta^2 = .99$.

The rejection of the parallelism and flatness hypothesis implied that children, brought up in the two investigated conditions, have different patterns of achievement motivation characteristics and demonstrate differing levels of achievement motivation components. The analysis of the levels hypothesis indicated that family-reared children and their peers from the SOS Village, on average, differ in demonstrating specific achievement motivation features (Figure 2).

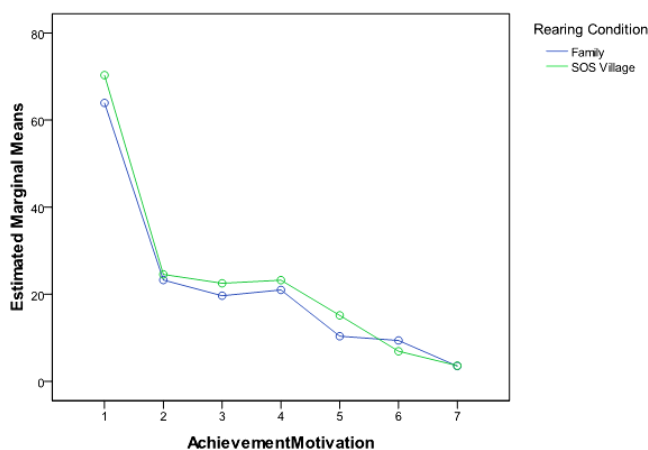


Figure 2. Comparison of achievement motivation profiles of family- and institutionally-reared children.

Thus, the results of the aforementioned analyses rejected hypothesis 2 in its original formulation. The presence of the main effect of a rearing condition on achievement motivation was confirmed. The direction of the relationship was, however, the opposite. Institutionally-reared children appeared to have a higher overall level of achievement motivation instead of hypothesized lower level. On the top of that, the SOS Village children were characterized by more frequent cases of hope of success than family-reared children, which also contradicted the expected results.

3.3.3. *Effortful Control and Achievement Motivation*

The relationship between effortful control (as measured by TMCQ and Emotion Questionnaire) and achievement motivation (as measured by AMG-S and AGOS) was investigated using Pearson product-moment correlation coefficient. The examination of the correlation between achievement motivation and effortful control was based on the examination of the relationships between their constituents. Thus, achievement motivation was represented by the components suggested by the authors of the operationalized questionnaires, namely, overall achievement motivation score (OvS), mastery goal orientation (MG), performance-approach goal orientation (PApG), performance-avoidance goal orientation (PAvG), hope of success (HS), active fear of failure (FFa), and passive fear of failure (FFp). Likewise, the information obtained for effortful control was supplemented with the findings for emotion regulation.

There was a small negative correlation between effortful control and hope of success [$r = -.28, n=58, p = .03$], with high levels of effortful control associated with lower levels of hope of success. Moreover, there was a medium positive correlation between effortful control and active fear of failure [$r = .35, n=58, p = .01$], with high levels of effortful control associated with similarly high levels of active fear of failure. Based on these findings, it can be assumed that the more a child expects to succeed in something, the less effortful control (s)he exerts. The situation is opposite when a child realizes the presence of thwarting circumstances and, consequently, a high probability of failure. In this case, the more likely a failure is, the more effortful control a child demonstrates.

The above mentioned findings were in line with the results obtained for the correlation between achievement motivation and emotion regulation. There was a small positive correlation between emotion regulation and active fear of failure [$r = -.27, n=58, p = .04$], which suggests that the more child foresees a potential failure, the more (s)he is able to control her/his emotions. However, the relation of emotion regulation with hope of success was opposite to those obtained for effortful control and hope of success: there was a medium positive correlation between emotion regulation and hope of success [$r = .46, n=58, p = .00$], which may signify that the more child is success-oriented the better (s)he is at regulating her/his emotions.

Furthermore, there was a medium negative correlation between emotion regulation, on the one hand, and performance-approach goals and overall achievement goal orientation score, on the other hand [$r = -.4, n=58, p = .00$ and $r = -.32, n=58, p = .01$, respectively].

Such nature of findings assumes that the more a child is achievement-oriented, and particularly performance-approach oriented, the less (s)he is able to control her/his emotions.

Thus, hypothesis 3 that there is a relation between achievement motivation, on the one hand, and effortful control and emotion regulation, on the other hand, appears to receive support.

3.3.4. Interaction of Rearing Conditions with Effortful Control and Emotion Regulation

A two-way between-groups analysis of variance was conducted to explore the impact of rearing conditions and effortful control on levels of achievement motivation. Participants were divided into three groups according to their scores on the effortful control scale (Group 1: 0-8.4 scores; Group 2: 8.4-16.63; Group 3: 16.64-25)⁶. In line with the previous analysis, there was a statistically significant main effect of rearing condition on achievement motivation $F(1, 54) = 9.41, p = .00$, however the effect size was small (partial $\eta^2 = .15$). There was a statistically significant interaction effect between rearing condition and effortful control, $F(1, 54) = 5.14, p = .03$ with a small effect size (partial $\eta^2 = .09$). This confirms hypothesis 4 that there is a significant difference in the effect of a rearing condition on achievement motivation of children with different levels of effortful control.

An additional analysis was conducted to investigate an interaction of a rearing condition and emotion regulation. Interestingly, there was no statistically significant interaction effect between rearing condition and emotion regulation on achievement motivation, $F(1, 53) = 2.99, p = .09$. This result signifies that a rearing condition has a similar impact on achievement motivation of children, regardless of their levels of emotion regulation.

4. Discussion

At the dawn of the 21st century the question concerning the nature and functions of effortful control has been given a new concern. The scientific community is continuously elaborating on this issue and, consequently, one can find himself/herself confronted with the fascinating diversity of theoretical perspectives on this construct. One of the popular topics that the researchers turned to is investigating links between effortful control and various achievement-related constructs. In spite of this new concern, hardly ever have researchers examined the relations among effortful control and the concept of achievement motivation

per se. Moreover, there are still countless factors that accompany and affect both constructs but for indefinite reasons remain unstudied.

The present research was aimed at filling some of the aforementioned gaps and particularly focused on the impact of the absence of a conventional family environment on the development of children's effortful control capabilities and achievement motivation. A number of theoretical approaches were operationalized as underlying principles for conducting a study. First of all, Sloutsky's (1997) contextualist perspective was thoroughly elaborated on. It was applied for substantiating the reasonableness of the hypothesis regarding diverging impacts of upbringing environment on children's effortful control, emotion regulation, and achievement motivation characteristics. Next, Rothbart and colleagues' (Derryberry & Rothbart, 2001; Rothbart et al., 2001; Rothbart & Derryberry, 1981) concept of temperamental effortful control was scrutinized and linked to a number of achievement-related constructs. Finally, the discussion proceeded to the achievement motivation and goal orientation theories. It proved to be an uneasy task to choose a single theoretical perspective here; that is why achievement motivation and achievement goal approaches were combined and employed in the current research.

In sum, it was hypothesized that upbringing environment influences children's effortful control, emotion regulation and achievement motivation. It was also argued that there is a relation between effortful control and achievement motivation and, moreover, an interaction between children's upbringing environment and effortful control. The research provided rather insightful, albeit discrepant, results.

4.1. Rearing condition, effortful control and emotion regulation

In line with the first hypothesis, the obtained data confirmed a pivotal role of a family for the development of child's emotion regulation. These results are consistent with a host of findings of other researchers who advocated the importance of a family context for child's self-regulatory abilities, in general, and emotion regulation, in particular. It has been proved, for example, that regardless of divergent temperamental dispositions, caring and loving upbringing environment is crucial for the emergence of efficient tactics of emotion regulation (Jaffe, Gullone & Hughes, 2010). The upbringing styles, applied by mothers, were also found to be associated with their children's emotion regulation. Lower degrees of maternal psychological control were linked to higher degrees of their children's emotion regulation (Manzeske & Stright, 2009). In line with that, children's emotion regulation abilities were

predicted by maternal instruction (Supplee et al., 2004). A family possesses three major factors that affect child's emotion regulation. The three influential factors are observational learning and imitating, then parenting styles concerning emotion management and, finally, emotional atmosphere in a family (Morris et al., 2007).

There may be a range of reasons for why the SOS Village children had significantly lower levels of emotion regulation. The very first potential explanation, undoubtedly, involves the fact that village families still differ from conventional ones. It is rather hard to be a good role model in terms of emotion management skills when having four, five or in some cases seven children. Moreover, there is no father, whose presence or absence also influences the development of children's affective sphere (Hazen et al., 2010). It is too hasty, however, to attribute such a discrepancy in children's emotion regulation abilities mainly to the fact that SOS Village families cannot completely make up for numerous little but very important attributes of a real two-parent family. There is at least one factor that definitely contributed to the lowered emotion regulation abilities of these children before they appeared in the village: They were removed from defective families where adults were deprived of their parental rights due to alcohol abuse, drug abuse or children abuse. A mere fact of coming from such a family implies that a lot of children's physiological as well as socio-psychological needs were not met. It is hard to imagine that such parents devoted enough attention to developing children's self-regulatory as well as many other abilities.

Despite the fact that the effect of a rearing condition on effortful control was found to be only marginally significant, this finding is still valuable and contains a lot of potential for further research. This seems to be especially true if to consider existing studies that confirm the reasonableness of such an assumption. Parenting, along with a number of other contextual factors, was proved to predict children's self-regulation abilities. The character of early relationships between children and their parents, for instance, was proved to determine children's self-regulation abilities. Moreover, this effect was so strong that secure attachment type of relationship, as opposed to insecure, overruled genotypic predisposition to poor self-regulation and facilitated the development of good regulation abilities (Kochanska, Philibert, & Barry, 2009). Likewise, child-mother communication during toddlerhood predicted child's self-regulation abilities later in life (e.g., Olson et al., 2002). Maternal sensitivity and degree of socialization, for example, were shown to predict higher levels of effortful control of their children (Kochanska, Murray, & Harlan, 2000). Other contextual determinants, such factors as , for instance, poverty, single-parent families, parental psychopathology, were also argued to affect effortful control (Lengua, Honorado, & Bush, 2007).

I do believe that the expected result concerning lower levels of effortful control among SOS Village children was not obtained primarily due to a small sample size. As it was indicated earlier, there were only 68 village inhabitants with the age range from two years old to seventeen. So it was rather hard to find a big number of children at the age required for the study and only 25 children participated. Marginal statistical significance indicates that there are high chances of obtaining significant result on the condition of finding a bigger sample.

4.2. Rearing condition and achievement motivation

The results obtained for achievement motivation were surprising. After a thorough elaboration on achievement motivation literature, it was hypothesized that family-reared children would have considerably higher levels of achievement motivation than their institutionally-reared peers. The research, nonetheless, has demonstrated reverse outcomes. SOS Village children had significantly greater overall achievement motivation score. Interestingly, they were also characterized by a higher degree of hope of success. Such results contradict all the known findings. There is a great number of studies confirming the impact of a family context and other environmental characteristics on the development of children's achievement-related features (e.g.: Elliot & Dweck, 1988; Fincham, & Cain, 1986; Hokoda & Fincham, 1995; Maqsd & Coleman, 2001; McClelland & Pilon, 1983; Wagner & Phillips, 1992). All of them univocally argue that effective, caring and warm child-caregiver interactions facilitate the development of children's achievement-oriented behavior.

There are a number of potential explanations of the obtained results. First, parents of family-reared children were insensitive and unresponsive towards their children and, moreover, practiced maladaptive and inefficient upbringing styles, which, according to Hokoda and Fincham (1995) might suppress mastery goal orientation. Second, mothers of the SOS Village children were encouraging their children's achievement-oriented behavior in a considerably more effective way than the parents from conventional families. However, both explanations seem rather unlikely.

Furthermore, there might be a third factor, mediating the relations between rearing conditions of children and their achievement orientations and expectations – cognitive appraisal abilities. The SOS Village children might not be able to adequately appraise a situation, comprehend the probability of failure and the seriousness of impediments. This may narrow down their perception of reality. If this were true, then the children would not consider a chance of failing at all and vice versa would be able to expect only a successful

outcome. This is, however, merely a speculation and a separate study is required in order to find the causes of such contradictory data.

There is another plausible explanation for the unexpected direction of the discrepancy between achievement motivation characteristics of family- and institutionally-reared children. High level of achievement motivation among SOS Village children can be explained from a coping theory perspective. According to Lazarus (1993), coping can be regarded as a process, which implies that it changes over time and in accordance with the social environments in which it takes place. In other words, he believed that coping strategies can be affected not only by personality traits but also by social context. Hence, considering a specific context is crucial to understanding one's coping strategies.

On the top of that, coping as a process is often conceptualized as three-dimensional construct, namely, as cognitive-motivational-relational: Cognitive aspect includes knowledge and appraisal, motivational characteristic emphasizes the link to the perceived status of an individual, and relational aspect signifies an interaction between an individual and his/her environment. Moreover, coping mechanisms are often presented as having either problem-focused or emotion-focused functions. A problem-focused function holds a particular interest for the current results as it is believed to facilitate a change of the disturbed person-environment relationship by acting on the environment or oneself (Lazarus, 1993).

Based on the abovementioned theoretical premises, it is sensible to assume that the SOS Village children's higher levels of achievement motivation may serve as a coping mechanism. The children are either consciously or subconsciously aware of their family situation and the position that they occupy in it and. Consequently, they may try to change their relationships with the environment by acting upon themselves, which in this case implies having increased levels of hope of success, mastery, performance-approach and performance-avoidance achievement orientations. However, it is crucial to stress that the fact of having high levels of achievement motivation components as a kind of a coping strategy may have merely an adaptational effect and does not necessarily imply subsequent achievements in life. This assumption is based on Lazarus's (1993) contextualist assumption concerning the effectiveness of coping mechanisms. He argued that whether a coping strategy is beneficial or harmful, from an adaptational standpoint, depends on the specific individual, the particular kind of encounter, in the short or long run, and the nature of the consequences being investigated, for instance, morale, social functioning, or physical well-being. There are probably no strictly beneficial or strictly harmful coping mechanisms, although some may more frequently be better or worse than others.

Finally, the factor of social desirability could also be the cause of the contradictory outcomes concerning upbringing environment and achievement motivation. Both questionnaires assessing achievement motives and goal orientations were self-reported measures with no special scales for eliminating its effect. First of all, children could answer based on what they thought was appropriate to answer instead of what was true of their behavior. Second, the SOS Village children could provide more socially desirable answers due to their increased affiliation tendency, which, as the research demonstrated, was significantly higher compared to the family-raised peers’.

4.3. *Effortful control, emotion regulation and achievement motivation*

Consistent with earlier studies that investigated links between children’s self-regulation abilities and achievement-related factors (e.g.: Archer, Cantwell & Bourke, 1999; Blair & Razza, 2007; Liew et al., 2008; Radosevich et al., 2004; Valiente, Lemery-Chalfant & Castro, 2007), the obtained data suggested that there are relations among effortful control and achievement motivation constituents. Moreover, the results of the study provide a more detailed picture of the relations by throwing light upon specific facets of the achievement motivation that effortful control is linked to. Thus, it was shown that effortful control was positively associated with active fear of failure and negatively related to hope of success. This might appear rather unexpected as one may have anticipated positive relations in both cases. However, a closer look at the nature of these relations may provide rather sound explanations.

As it has been indicated, an increase in individual’s hope of success is associated with a decrease in his/her effortful control. Such pattern of relations suggests that when one is rather confident of a successful outcome, (s)he might deliberately or subconsciously reduce her/his effortful control characteristics. Turning back to the definition of the concept of effortful control, this fact implies that when a person assumes a high probability of success, (s)he might be more likely to follow his/her first responses to some stimuli without considering whether it is going to be appropriate for the present situation or this first reaction should rather be suppressed and let another, more acceptable behavior occur.

Furthermore, it is true that the notion of effortful control does not equal to the idea of making an effort. However, it would be wrong to completely disentangle these constructs because as it has earlier been shown they both imply self-regulation aspects. From this perspective, the results obtained for the relations between effortful control and hope of

success appear to contradict a well-known self-efficacy theory, whose core premise asserts that “unless people believe they can produce desired outcomes they have little incentive to act” (Usher & Pajares, 2009, p.89). According to this statement, an expected outcome would be a positive link between effortful control and hope of success, which is the opposite for the results of the present study.

However, the potential of the self-efficacy theory to explicate human conduct is somewhat deceptive. The theory posits relations between a number of factors but does not account for a lot of additional variables and complex correlations and interactions between them (e.g., the proximity of a desired goal). The result of the study regarding a negative link between effortful control and hope of success provides an empirical proof of this methodological and theoretical weakness. However, it can easily be incorporated into Louro, Pieters, and Zeelenberg’s (2007) multiple-goal pursuit model that essentially supplemented self-efficacy theory and extended its explanatory abilities. The model describes the ways how people distribute their efforts between several goals throughout a timeframe. It posits that individual’s choice to increase efforts, coast, give up a goal, or shift to another one is predicted jointly by the affective state that results from earlier goal advancement and the closeness to future goal achievement, and determined by changes in expectations about goal achievement. As it can be seen in Figure 3, when an individual advances in his/her goal attainment, (s)he experiences positive emotions. The next step is an estimation of whether a goal is close or distant. If it is close, high success expectancy or, using the terms of the current study, a hope of success can be observed. In this case, there is no need in working hard to attain this goal and, consequently, an individual decreases his/her efforts. This assumption is somewhat supported by the result obtained in the present study for effortful control and hope of success. Self-efficacy theory is also relevant here but only in two specific situations: Either when an individual experiences positive emotions, a goal is rather distant, and the expectancy of its attainment is moderate or when an individual experiences negative emotions, a goal is close and the expectancy of its attainment is moderate.

Thus, the abovementioned theoretical analysis demonstrates that the finding of the present research concerning negative link between effortful control and hope of success does not contradict self-efficacy theory. It reveals the weaknesses of the theory and opens up its capacity to better predict human behavior.

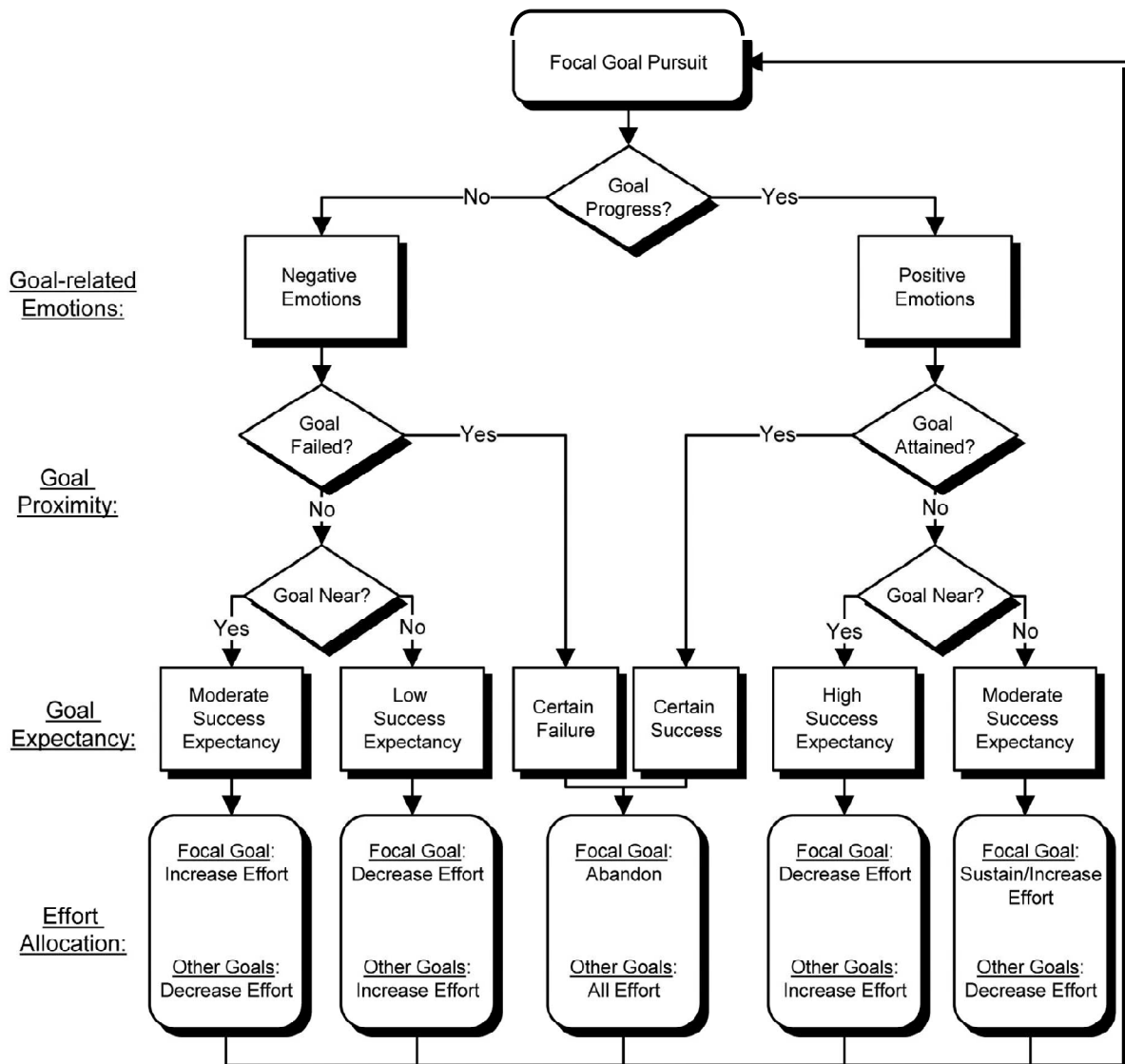


Figure 3. The multiple-goal pursuit model. Adapted from Louro, Pieters, and Zeelenberg (2007).

Viewed in this light, hope of success may be considered a somewhat undesirable motive as the reduction of effortful control abilities, which it is likely to cause, may decrease the chances of achievement. However, this is a too audacious statement as the design of the current research was aimed only at finding correlations among the variables and does not allow making any causal inferences. Further research is needed in order to check the offered assumptions.

Next, based on the positive link, an increase in active fear of failure is associated with a raise in effortful control. Such pattern of relations suggests that when one fears a failure, (s)he might deliberately or subconsciously reinforce her/his effortful control characteristics. In this case, a person will be more likely to suppress his/her first response to some stimulus to the advantage of a more appropriate and beneficial, albeit less wanted, behavior as compared to the situation when (s)he anticipates a success. Moreover, this specific result of the research

empirically confirms the assumptions that were only voiced but not investigated by Schmalt in his achievement motivation model (2005).

According to Schmalt (2005), the active component of one's FFa lies in their inclination to ascribe their failure to the shortage of efforts. The author, therefore, assumed that lack of effortful control appears to be a precondition for an active way of escaping failure by more focusing on efforts and thus increasing chances of success and, consequently, making FFa an achievement motive. It is clear, then, why effortful control was not linked to passive fear of failure. People with this achievement motive are characterized by negative appraisals of effectiveness and would rather withdraw from a situation than become encouraged and start acting. Thus, by definition, high levels of this motive exclude effortful control. Interestingly enough, low levels of passive fear of failure still do not ensure any specific relation between this motive and effortful control: An individual may have either hope of success or active fear of failure as a dominating achievement motive, which implies two opposing directions of relation with effortful control.

Furthermore, there was a number of positive and negative links between achievement motivation constituents and emotion regulation, which is in accord with recently appeared theoretical findings concerning the relations among achievement goals and emotion regulation (Pekrun & Stephens, 2009; Tyson, Linnenbrink-Garcia, & Hill, 2009). The researchers have only recently turned to the investigation of the relations between emotion regulation and achievement motivation. Such step was taken in the attempt to find sound explanations of frequent ambiguities in the research on performance outcomes of achievement goals. While the results for performance-avoidance goals are fairly consistent, proving mostly harmful performance effects, the empirical evidence for performance-approach goals' outcomes keep the research community puzzled. Thus, Tyson and colleagues (2009) offered to consider emotional reactions and emotion regulation. The underlying premise is that achievement goals impact emotions that in turn influence performance by either hampering or facilitating it. Based on this assumption, emotions and emotion regulation serve as mediators of achievement goals' outcomes. Positive emotions, for example, considered to promote achievement are triggered by mastery goals, whereas hampering anxiety by performance-avoidance goals. Performance-approach goals are claimed to be associated both with emotions that promote achievement, for example, happiness, and with emotions that hinder it, for example, anxiety. Taking into account these inconsistent impacts of emotions, the authors assert that the emotion regulation can be of particular significance for foreseeing whether performance-approach goals facilitate positive

or negative overall impact on achievement. From this standpoint, emotion regulation and its strategies are major keys for illuminating the ambiguity of performance-approach goals.

Viewed in this light, the findings of the current research present empirical evidence partially confirming this mediating role of emotion regulation between various achievement goals and performance. Thus, emotion regulation was found to be negatively associated with overall achievement motivation score and performance-approach goals and it was positively related to hope of success and active fear of failure. The abovementioned theoretical framework, in its turn, somewhat explains such discrepant results obtained for the relations of emotion regulation and achievement goals and motives. Different achievement goals elicit different emotions, which, consequently, may trigger divergent relations between goals and emotion regulation.

Overall, diverging patterns of relations of effortful control and emotion regulation with achievement motivation constituents provide additional evidence that these are two distinct constructs. Moreover, the fact that there was relation found between effortful control and HS, FFa but no relations with achievement goal orientations may also confirm the premise that achievement motives and achievement goal orientations measured discrete constructs.

4.4. Rearing condition, effortful control and achievement motivation

An interesting pattern of results was obtained for interaction effects of effortful control and emotion regulation with achievement motivation. As hypothesized, there was an interaction found between children's upbringing environment and effortful control. However, there was no interaction between rearing condition and emotion regulation. These data suggest that there were differing impacts of rearing condition on achievement motivation of children with different levels of effortful control but it did not matter whether those children differ in emotion regulation abilities. The fact that there was a main effect of rearing condition on achievement motivation but not on effortful control and there was an interaction among these three variables may provide evidence of effortful control being a mediating mechanism in the relations between rearing conditions and achievement motivation.

These findings reflect a complex nature of the relations between a social context, achievement motivation and self-regulation processes. Above all, they provide an insightful contribution and some clarification to the theoretical assumptions concerning the interplay between the three variables. Thus, Pekrun and Stephens (2009) and Tyson, Linnenbrink-Garcia, and Hill (2009) refer to temperamental and environmental factors when elaborating

on the potential determinants of children's achievement goal orientations, emotions, and emotion regulation. They survey the literature on the role of children's temperament, parents' socialization styles, and school's goal structures and demonstrate the impact that these factors have on achievement goals and emotion regulation. Moreover, the authors claim that the effect of some of these factors may unite and jointly influence achievement goals and emotion regulation. Thus, the impacts of family and school contexts or the impacts of one's predispositions and his/her environments can merge and, consequently, influence the employment of both achievement goals and emotion regulation strategies. The results of the current research provide additional empirically confirmed data that apart from the aforementioned combinations, there is a joint effect of an environment and effortful control on one's achievement goal orientations, which is not the case for emotion regulation whose impact on achievement goals does not interweave with the contextual influence. Moreover, based on the aforementioned theoretical assumptions and obtained empirical evidence, it can also be assumed that different self-regulation components have divergent interaction patterns with environmental characteristics in terms of their joint effect on achievement motivation.

5. Limitations of the Study

The current research is limited in several ways. First of all, the major limitation is that the obtained data are strictly correlational and offer limited capacity for causal inferences. Despite the fact that effortful control was found to be associated with a number of achievement motivation constructs, it remains unclear whether it should be regarded as an antecedent or an outcome of achievement motives and goals.

It is true that effortful control was proved to be a predictor of academic achievement (Valiente, Lemery-Chalfant, & Castro, 2007). Nevertheless, this finding does not answer the question of causality between achievement motivation and effortful control if to take into account the fact that academic achievement and achievement motivation are two distinct constructs. The same question can be raised regarding causal relations between emotion regulation and achievement motivation. A number of researchers (Pekrun & Stephens, 2009; Tyson, Linnenbrink-Garcia, & Hill, 2009) consider the likelihood of causal reciprocity of relationships between individual's emotion regulation and achievements as well as between his/her emotion regulation and social contexts.

The next restraint of the current research is a small sample size, both combined and as sub-samples. As it has already been stated before, it was rather challenging to involve a

bigger number of the SOS Village children. Such villages are quite small and shelter children of a wide age range. Hence, there is a low percentage of children of some particular age, middle childhood in this case. There are three SOS Children's Villages in Belarus but they are scattered throughout the country, which makes it difficult to involve several villages when having rather limited resources. This constraint, unfortunately, considerably limited the scope of the study and left a lot of questions unanswered. Thus, as I have indicated earlier, a bigger sample size might have produced a statistically significant result for the impact of a rearing condition on effortful control. Moreover, bigger numbers would have provided an opportunity to conduct more complicated analyses with the sub-samples. It would be interesting, for example, to know whether there were any differences in relations of achievement motivation and effortful control between the two samples of children.

Further, the participation in the study was voluntary. All parents of the primary school students were contacted and asked to answer the questionnaires. It has been proved (Harth, Johnstone, & Thong, 1992) that people who volunteer their children to participate in some research may significantly differ on a number of psychological characteristics from those who do not. Harth and colleagues (1992) found that volunteering parents were more introverted, had lower self-esteem, and demonstrated higher anxiety, whereas non-volunteering parents had higher social confidence and emotional stability. The last fact is especially important for the current research. Since parents' values, personality and the patterns of self-regulation behavior constitute the main part of a family context, it can be assumed that the family environment of the children of the volunteering parents was significantly different from that of the children of non-volunteering parents. Therefore, the obtained results may not be representative of a general sample but reflect only a specific subsample of volunteering parents with their distinct psychological profiles influencing their children. Further investigation is needed where the participation would be made obligatory for every parent and child.

Another limitation concerns the measurements operationalized with children. The AGOS test developed by Midgley and colleagues (1998) appeared to be rather difficult for children's comprehension. The authors claimed the test to have elementary and middle school students as its target audience. However, it turned out that elementary school children had hard time understanding the questions and, moreover, using 5-point Likert scale for answering. Every child was individually assisted and demonstrated the application of the questionnaire but it seemed that children still had difficulties in using it. This is very important. The fact that children did not understand the questions and, in addition, misused

the Likert scale can place a serious threat on the accuracy of the findings. There is another concern regarding the application of the test. Based on a big amount of research confirming lower IQ levels of institutionally-reared children (IJzendoorn et al., 2008), it is rather likely that family-reared children might have understood the instructions and questions whereas the SOS Village children did not. Such an assumption explains the fact of higher achievement motivation levels of the institutionally-reared children as opposed to what had been expected. The solution in this case is to operationalize an easier achievement motivation test that includes simpler wording and less differentiated answering system. In this regard, Schmalt's (2005) semi-projective questionnaire that contained pictures and did not need to grade answers was a helpful measuring tool.

Finally, the cultural setting in which the research has been conducted could have also limited the value of received results. Many scientists (e.g., Gergen et al., 1996) agree that Western style of thinking is artificially transferred to the non-Western cultures primarily on the basis of politico-economic superiority. This is also true in the case of science in general and psychology in particular. Western psychology is blamed for bringing its own specific constructs and disregarding other valuable possibilities from incompatible cultural practices. Constructing reality via Western concepts is believed to have caused the cases of misconstruing people from non-Western cultures. Thus, when individuals with non-Western backgrounds face Western psychology, they discover their beliefs put under question and their theoretical heritage labeled obsolete. Consequently, a host of researchers started the discourse of indigenous psychology by investigating, for instance, the differences between Eastern and Western concepts of self and identity (e.g., Paranjpe, 1984) or by incorporating such non-Western notions as human spiritual and natural roots into the theories of psychological functioning (e.g., Misra & Gergen, 1993). This shift transcends the positivist standpoint and suggests that the theoretical assumptions in the human realm are pertinent to the environment in which they are developed.

From this viewpoint, it is important to consider whether the concepts of achievement motivation and effortful control are relevant in the context of Eastern European culture. Thus, achievement motivation is a characteristic that is vital for an individual in a competitive Western world. At the same time, a rapid pace of westernization in Eastern Europe has drawn considerable attention to this construct and, consequently, facilitated an escalating amount of research. Investigators agree that it can be considered as an important psychological feature relevant in the context of Eastern Europe as well (Nemov, 1999). However, the situation is different in the case of effortful control. This is a rather novel construct that has been

developed solely in the Western world and there is no evidence yet whether it is equally relevant in a non-Western environment. Indeed, Russian psychologists focus on self-regulation abilities but the concept of effortful control per se is rather unknown and raises a lot of questions. There is only a theoretical presupposition that this notion can be a helpful tool in a better understanding of individual's psychological functioning in a non-Western environment. Nevertheless, there is no empirical evidence proving this assumption. I do not think, however, that abandoning or questioning the relevance of psychological constructs developed by Western scientists is a solution to this issue. On the contrary, the goal should be not to produce a set of mutually exclusive, culturally determined orientations that disregard the alternatives; vice versa, there should be a special line of research that would generate ideas that intersect and interpenetrate. In the specific case of this study, such a direction of further research would help to identify whether effortful control is a relevant and important construct for Eastern European individuals.

6. Future Research and Implications

To handle some of the limitations of the previous and present research provided above, I conclude this paper with a list of directions for future research on the role of a rearing condition, effortful control, emotion regulation and achievement motivation.

First of all, the results of the study contain insightful potential for new and valuable findings regarding the abovementioned constructs. The most efficient way of extracting this important information is creating a clear-cut theoretical model that would explain the nature and functions of all of its elements. The fundamental principles of this theoretical model ought to be defined from the standpoint of a number of assumptions, namely, positive or negative associations between the constituents, moderators and mediators of these relations, causal relations between the variables, boundary conditions et cetera. Creating such a conceptual model would definitely facilitate the research process.

Second, it is important to identify causal relations between the variables. There is still no agreement among scholars regarding this question. Thus, first group of investigators (e.g., Blair & Razza, 2007) consider effortful control and other self-regulation related constructs as antecedents of individual's achievement. The second camp of scientists (e.g., Radosevich et al., 2004), however, proved self-regulation processes to be outcomes of one's achievement goal orientations and performance. The third group of researchers (Pekrun & Stephens, 2009; Tyson, Linnenbrink-Garcia, & Hill, 2009) suggests the golden mean – reciprocal relations

among the discussed constructs. Despite the fact that this debate seems to last for a long time, it is crucial to approximate to the truth as this would mean considerably more efficient practical application of the findings. The results of the current research provide only correlational information but they are more likely to support the second approach. Unfortunately, this question was outside of the scope of the present study and further research is needed.

Third, a more detailed analysis of emotion regulation and achievement goal orientations is required. In this case, emotion regulation needs to be investigated from the perspective of its strategies. It would be helpful to know what emotion regulation strategies correspond to what achievement goals. Such information would also provide a valuable practical implication.

Fourth, the analyses of the relations and interactions between emotion regulation, effortful control and achievement motivation were conducted on an overall sample that included both sub-samples of institutionally- and family-reared children. It is, therefore, desirable to disentangle the research on the relations between these constructs within the sample of the SOS Village children from the sample of family-reared children.

Fifth, the SOS Children's Villages are gaining more and more support worldwide. The major reason of such universal support is a silent agreement on the effectiveness of such children's shelters. This study by no means argues the opposite. Interestingly, however, that there is no research available on the impact of such villages on the psychological development of children. This study demonstrates that even several years after children are removed from their problem families and placed into the SOS Village, they still differ and often fall behind their family peers on a number of psychological characteristics. As it has been noted earlier, these discrepancies can be far-reaching repercussions of the detrimental effects of their biological families. On the other hand, however, it is pivotal to investigate what specific factors distinguish an SOS Village family from a conventional family in order to use this information to maximally approximate the SOS Village homes to traditional ones.

The sixth recommendation for the future research overlaps with the previous one in that it remains unclear whether SOS Village children's measures are provoked by their present village environment or these are unsolved psychological problems stemming from their biological families. In other words, it is essential to find out whether SOS Children's Village environment differs from that of abusing families where children come from. It is even more important to identify whether SOS Village conditions facilitate the process of children's psychological as well as physical recovery. For this purpose, a new study needs to involve

two samples of children, where the first sample would be children from abusing families and the second sample would consist of children who have already been living in an institution for a long period of time.

The next recommendation is related to the information provided in the Discussion section for elucidating the unexpected results concerning higher levels of achievement motivation among institutionally-reared children. It was assumed that the children could use achievement motivation as a coping mechanism to overcome their family-related hardships. It is barely an assumption that needs more theoretical as well as empirical support. A research is needed where a list of traditional coping strategies (e.g., distancing, seeking social support, positive reappraisal etc.) would include achievement motivation variables. The study then can be carried out within two samples of family- and institutionally-raised participants in order to clarify whether achievement motivation is indeed applied as a coping mechanism and, if yes, whether it is equally frequently turned to for the coping purpose by both samples.

Finally, concerning the data obtained for the SOS Village children, it is important to continue the study of their effortful control characteristics to clarify the impact of their upbringing environment on this construct. Moreover, more attention should be placed on the development of their self-regulation abilities when designing interventions to improve their behavior.

7. Conclusion

The present research offers an insight into effortful control and emotion regulation abilities of family- and institutionally-reared primary school children, and relates these abilities to the children's achievement motives and goals. The obtained data contribute to a mounting body of research that highlights the interaction between psychological and contextual characteristics, the "person in the context" perspective (Sloutsky, 1997). Of particular importance were the results that a rearing condition effected children's emotion regulation, achievement motivation and in some degree effortful control. Due to the relations among upbringing environment and these and other psychological constructs, there is a growing number of studies focusing on the ways of drawing the authorities' attention to take reasonable steps for preventing children's abandonment in general and improving psychological conditions of their institutional upbringing in particular. A lot has been done in this direction but even more remains to be handled.

In addition, it was interesting to discover the relations of emotion regulation and effortful control with achievement motives and goals. Despite the absence of causality inferences, these results still have valuable practical implications. Thus, it is crucial to keep in mind that a change in one of these characteristics is associated with a change in related to it constructs as well. Moreover, the findings prove the necessity to consider contextual factors in order to understand the association between effortful control and achievement motivation characteristics. This is useful to know when designing intervention programs for correcting various aspects of children's behavior.

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Footnotes

¹ Most orphans in Belarus are social orphans – children whose parents were deprived of parental rights.

² Based on the aforementioned facts, the SOS Children’s Village is viewed as a special rearing institution distinct from a conventional family. That is why the terms “institutionally-reared” and “village” children are used interchangeably and signify children whose upbringing conditions are conceptually different from those in traditional two-parent families.

^{3,4} In Belarusian context, children’s homes and orphanages are rearing institutions for orphaned and abandoned children. They differ in that there is no school in children’s homes and children attend regular primary, middle and high schools whereas orphanages provide their own schooling facilities.

⁵ Especially for the purposes of the present study, this and subsequent questionnaires were translated from English into Russian and back translated by two bilingual English-Russian speakers blind to the original English version. The third bilingual English-Russian speaker rated the two obtained English translations on the basis of their semantic similarity.

⁶ The division was done due to the requirements of a two-way ANOVA to use two categorical independent variables. As the authors of the questionnaire did not offer any specific levels for obtained scores, it was decided to divide the score range into three groups.

Appendix A

A letter of informed consent for family mothers

Dear _____,

Your child's school participates in a research project investigating achievement motivation and emotion regulation of primary school children. You are kindly asked to help the research by participating in it and giving permission to administer two questionnaires with your child. The results of the questionnaires administered with your child will show to what degree (s)he is motivated by achieving success or avoiding failure when striving for something.

Emotion regulation (how well your child can control emotions, what emotions dominate in his/her reactions etc.) of your child is measured by two questionnaires enclosed in this envelop. Answer the questionnaires, please, and together with this letter give them to your child so (s)he will bring them back to school within next two days. Answering the questionnaires will take you no more than 20 minutes and will help you to see your child's behavior from a new angle and to better understand it.

This study involves no serious risks. The data you provide will be used only for the purposes of the present research. The investigator will ensure the confidentiality of information you provide, by keeping records that associate your and your child's responses with an arbitrary identification number, not your names.

You have the right to refuse to participate in this study. Refusal to participate will not affect the treatment of your child in any way.

Your signature below will indicate that you have given your informed consent to participate in the above-described project and allow administering two questionnaires with your child.

Signature of Participant

Date

If at any time you would like additional information about this project, you may contact Maryna Charnyshova at +375 29 305 35 05.

Appendix B

A letter of informed consent for family mothers

Dear _____,

The SOS Children's village participates in a research project investigating achievement motivation and emotion regulation of primary school children. You are kindly asked to help the research by participating in it and giving permission to administer two questionnaires with your child. The results of the questionnaires administered with your child will show to what degree (s)he is motivated by achieving success or avoiding failure when striving for something.

Emotion regulation (how well your child can control emotions, what emotions dominate in his/her reactions etc.) of your child is measured by two questionnaires enclosed in this envelop. Answer the questionnaires, please, and together with this letter give them back to the SOS village's social worker within next two days. Answering the questionnaires will take you no more than 20 minutes and will help you to see your child's behavior from a new angle and to better understand it.

This study involves no serious risks. The data you provide will be used only for the purposes of the present research. The investigator will ensure the confidentiality of information you provide, by keeping records that associate your and your child's responses with an arbitrary identification number, not your names.

You have the right to refuse to participate in this study. Refusal to participate will not affect the treatment of your child in any way.

Your signature below will indicate that you have given your informed consent to participate in the above-described project and allow administering two questionnaires with your child.

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