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Ph.D. THESIS SUMMARY

THE SOCIO-COGNITIVE PREDICTORS OF SCHOOL AGGRESSION

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CHAPTER 1.
INTRODUCTION AND RESEARCH AIMS

School aggression is a subject of actuality, which draws more and more the attention of parents, teachers and media, because of the high incidence of aggressive behaviors and violent acts within the school environment.

We have little data regarding the forms of aggression that occur during the transit from primary school to higher classes or the influence of social and cognitive factors which could have a predictive role for aggressive behavior at this age.

The literature describes a detailed analise of the role of social status in determining the variance of aggressive behavior.

Also, studies which address the the social information processing of primary school children underline the fact, that some of the processing stages are biased in the case of aggressive students.

The existing evidence is not enough to establish the cognitive level at which these biases occur, neither is it enough to present de direction of relationship between social, cognitive and behavioral variables.

The thesis wishes to establish the bases of a functional model for the relationship between cognitive and social factors which are involved in the process of triggering aggressive behavior specific to children from the primary school.

We also explore the relationship between the subtypes of aggression (ex. Reactive and proactive aggression) and social status of pupils, and the implications of some executive functions and cognitive processes in the students' processing of social informations.

1. Research aims
1. 1 Theoretical aims

At theoretical level, the thesis explores and identifies the socio-cognitive factors which determine the aggressive behavior of children within the school context. Our aim is to create a theoretical model that comprise the predictive role of social components and those cognitive characteristics which have an influence on some aspects of school aggression.

As a first step in this direction, we present results from a quantitative meta-analysis regarding the relationship between students' social status and different forms of aggression. This study is important because it sustains through quantitative data the strong correlation between the status of the aggressive child and the specific aggressive behaviors which can be identified in the school environment.

To establish the role of the social factor in determining specific types of aggression, our aim is to analyze the variables related to peer relationships, like the pupils' perception on their classmates.

We will include in our analyse the social status variables respectively the social preference and perceived popularity, and the variables wich have specific cognitive and emotional correlates, like admiration and friendship among classmates.

Regarding the cognitive factors, we aim to explore the role of different executive functions in the prediction and influence of aggressive behavior in the population school students. We will identify the role of monitorization, regulation and self-monitoring in the task and will explore the influence of strategic abilities on different forms of aggression.

To create a model of association between the social and cognitive predictors, we finally aim to analize the effect of social status upon the aggressogenic character of cognitions (representations, associations related to peers) evoqued by highly aggressive children.

1.2 Methodological aims

Regarding the methodological innovations, we aim to complete and optimize the tools used to evaluate the different types of aggression presented by children in the school setting. We will introduce an instrument that can be used in the population of pupils from Transylvania, with the Romanian and also with the Hungarian students. For achieving this objective, we completed a validation study of the Questionnaire of Attitudes towards Peers (Chestionarului de Atitudini față de Colegi) (Camodeca et al., 2010).

Because the instruments used to evaluate executive functions are included at the moment in the instrumentary used for the assessment of problem solving strategies of children, we aimed to validate an instrument for the assessment of social strategies of primary school children. We adapted the instrument " Meta-adventure - In the search of the Treasure" to the Transylvanian population of pupils, obtaining a Romanian and a Hungarian language version of the questionnaire.

These instruments complete the instruments used in the process of children's assessment on one hand through their psychometric properties, on the other hand through their playful structure and method of application, which make the instrument ideal for use in primary classes.

1.3 Practical aims

As a final goal, we aimed to create the theoretic model of the socio-cognitive factors which have a predictive role in the development of aggressive behaviors, in order to create a base for future prevention programs which include the complex relationship of these factors.

CHAPTER 2
THEORETICAL ASPECTS

2.1 Social status, social preference and perceived popularity

The scientific literature presents a large body of forms and functions of aggressive behavior, which is related to the social relationships of children and has different influences upon these relationships (Card et al., 2008). Starting the 1980's, studies focused on different types of aggressive behavior, and included in their analysis the indirect forms also, which hurt the victim through the quality of social relationships and caused emotional states (Crick & Grotpeter, 1995).

According to the North-American psychological orientation, the social status is a bypolar state (liked-disliked) and it is operationalized as social preference (Olweus, 2001). This orientation focused on the relationship between aggression and rejection, considering that these variables show a strong positive association. Studies have emphasized that aggressive peers who show different types of aggressive behavior could have a high social status, if this status is not operationalized through the liked-disliked parameters (Farmer et al., 2003; Rodkin, Farmer, Pearl, & Van Acker, 2000). Data regarding high levels of popularity and low levels of sympathy for different types of aggressive children (Farmer et al., 2003) led to the separation of the concept of sociometric popularity and perceived popularity. Sociometric popularity is established depending on the pupils' social preference level in the class (the pupil is liked or disliked in the class) (Rubin, Bukowski & Parker, 1998). Perceived popularity is measured through the degree of popularity which a child attributes to it's peers, depending on the level of popularity perceived by the child (Adler & Adler, 1998). Data suggests that aggression relates negatively to preference, but positively to child's perception of peers popularity (Cillessen & Mayeux, 2004). Longitudinal studies proved that this relationship is strong starting with primary classes and throughout adolescence (Cillessen & Mayeux, 2004; Rose, Swenson & Waller, 2004). Research related to aggressive students and their social relationships shows ambiguous associations between the two factors (Farmer et al., 2003). Aggressive students who are rejected, are still members of certain groups and many of them have influent social positions (Bagwell, Coie, Terry & Lochman, 2000). The relationship between popularity and sociometric status is still contradictory: many of the students are group leaders but are not preferred socially (Lease, Kennedy & Axelrod, 2002).

2.2 Associations between the forms and functions of aggression and social relationships of children

The most frequent forms for which the associations with social relationships were studied, are: direct-indirect aggression; overt-covert aggression; instrumental and relational aggression. Regarding our research aims, we are mainly interested in the reactive and proactive functions of aggression (Crick & Dodge, 1994; Dodge & Coie, 1987), which have important role in determining the aggresssor's and victim's behavior in the school context.

Reactive aggression implies anger and hostile behavior as reaction to provocation or threat. Proactive aggression is goal-directed, planned and does not imply anger or provocative stimuli. A recent meta-analysis emphasizes (Card & Little, 2006) that both reactive and proactive behavior relates to poor sociometric status, and that reactive aggression shows stronger correlations with poor status than proactive aggression. Reactive aggression is usually less tolerated than proactive aggression and has strong correlations with low social preference both in primary and high school classes (Vitaro et al., 2006).

2.3 School aggression and executive functions

Executive functions are seen as cognitive constructs involved in planning skills and regulation of goal-oriented (Mesulam, 2002). There are many processes controlled by executive functions: abstract thinking, strategic planning, flexible thinking, manipulation of informations in working memory, decision skills, problem solving, behavior inhibition, emotional regulation and task monitoring, self-monitoring (Bechara &Van Der Linden, 2005; Ylvisaker & Feeney, 2002). All the above mentioned components need a top-down cognitive approach and are necessary to goal-oriented behaviors which need flexible thinking (Hughes & Graham, 2002). A recent experimental study shows that inhibitory processes, emotional control, flexible thinking, self-regulation are predictive regarding adult aggressive behavior (Giancola, Godlaski & Roth, 2011).

Data suggests that executive disfunctions are predictive to aggressive and impulsive behavior (Pennington & Bennetto, 1993). Results show that inhibitory skills are protective factors, and an elevated level of these functions relates with lesser behavior problems (Riggs et al., 2004).

Recently, difficulties of the inhibitory processes have been identified in a non-clinical sample of aggressive pupils (Ellis et al., 2009). The study was concluded on a sample of boys (N=83) and presented deficits of the inhibitory processes and planning skills for the reactively aggressive boys. Researchers also proved that the relationship between the executive function deficits and different types of aggression is moderated by the hostile attributions of boys (Ellis et al., 2009).

2.4 Assessing aggressive behavior and strategic skills of school aged children

2.4.1 Instruments for the assessment of school aggression

In the process of assessing pupils' aggressive behavior and evaluating the effects of certain intervention programs, researchers use a large scale of intsruments which assess the aggressive behavior of primary school children (Card et al., 2008). Although research results sustain the use of multiple data sources (teacher reports, peer evaluation, family reporst, observations), the majority of these sources offers informations through questionnaire - and inventory-type instruments (ex. Mathieson & Crick, 2010). Observations and other types of evaluation represent less than 15% of all instruments (Card et al., 2008) .

The number of scales appropiate to this population of students is limited for a number of reasons:

- Some of the instruments assess criminal or delinquent behavior and not the level of aggression in the non-delinquent population (Tremblay, Pihl, Vitaro & Dobkin, 1994);

- Some of the instruments were developed to assess youth from special institutions like juveniles referred from psychiatric institutions (Morrison, 1993); juveniles from prison institutions (Oyserman & Saltz, 1993); youth with ADHD or conduct disorder;

- Instruments used differentiate at a smaller range between the different types of aggression, which leads to a prediction of aggressive behavior that is not appropiate for differentiation (Kokko et al., 2009) and the use of intervention programs that can not be tested for effectiveness regarding the different forms of aggression.

- Some of the instruments were developed and tested on student populations (Buss & Durkee, 1957; Buss & Perry, 1992) and teenagers (Kolbe, Kann și Collins, 1993). Many of the self-evaluation scales used assess the intention af an aggressive behavior (Deluty, 1979) and do not test the frequency of the behavior.

At the present time, we don't know self-report scales that would assess the different types of aggression of 8-12 aged children, validated on the Romanian and Hungarian pupil population of Transylvania.

2.4.2 Instruments for the assessment of strategic skills

Strategic abilities and skills of children are assessed through different games and methods that use mainly strategic games like Pappa LOTTO, Hexip (Bottino, Ferlino, Ott & Tavella, 2007), or unexpected situations (Warden & MacKinnon, 2003). While strategic games incorporate selection skills, processing and monitoring of data and reflect the level of development of decision skills, social situations focus mostly on strategic conflict solving (ex. Green et al., 2008; Walker et al., 2002).

Regarding the aggressive behavior, the social executive functions are important, because they play a role in the analysis and understanding of social stimuli in order to interpret the behavior of peers (Ylvisaker & Feeney, 2002). It would be important to use in the assessment of certain executive functions an instrument that comprises items with a high level of abstraction, but also items in which the social aspect influences the emotional and cognitive decisions.

CHAPTER 3
ORIGINAL RESEARCH
STUDY 1
3. Quantitative meta-analysis of the relationship between forms of aggression and social status of primary school children

3.1 Objectives

The main objective of the meta-analysis is to receive quantitative data about the specific associations between peer's social perception (sociometric status, popularity) and different subtypes, respectively functions of aggression in the population of primary and secondary school students.

We aim to identify the role of students' gender in the type of aggression presented and social status of students.

3.2 Study characteristics

Sample type can influence the effect size of the relationship between subtypes of aggression and social relationships. The relationship between the above mentioned factors could be weeker because the targeted samples are normal samples. Students with clinical or sub-clinical symptomes of AD, HD, ADHD, or other disorders from the cathegory of conduct disorders, have been excluded.

Gender of participants.. Study results support generally a higher incidence of different types of aggressive behavior among boys relative to girls (Vitaro et al., 2006; Salmivalli & Nieminen, 2002; Lansford et al., 2002).

3.3 Method

3.3.1.Selection of studies

The present study included all empirical studies that targeted the relationship between subtypes or functions of aggression and social relationships of primary school students. Our objective was to establish the intensity of the relationship in a non-clinical population of school children.

We used two types of sources for identyfing studies selected for the meta-analysis. The first source were the electronic databases. PSYCINFO (www.psycinfo.com), Science Direct (www.sciencedirect.com), ANELIS (www.anelis.ro) and WILEY (www.onlinelibrary.wiley.com). The search was made using the following keywords: "aggression subtypes and rejection", "social relations", "social preference", "popularity", "peer rejection", "forms of aggression and social preference". A second source was obtained from the reference list of the studies which corresponded the criteria of inclusion. The initial search of the databases allowed the selection of 20 studies which corresponded the criteria and described the reference terms. Following the analise for eligibility, we included a number of 15 studies, which represent studies.

Study selection criteria

For study inclusion we used the following selection criteria:
1. Study offers quantitive data regarding associations between one or more subtypes of aggression and the social perception of the student regarding the social status of his peers or himself.
2. Study targets school students up tu classes 5-6. of secondary school.
3. Study targets pupils from mainstream schools (public or private) and does not include students with special curricula (ex. Students from special schools, incarcerated youth, schools with special profile, like sports, etc.).
4. Studies target non-clinical or sub-clinical participants, who don't have a diagnosis of (AD), (HD), (ADHD), (ODD), depression, anxiety of conduct disorder.
5. Studies offer sufficient information regarding participant characteristics, methodological characteristics and factor operationalizing.
6. Studies report correlations between subtypes of aggression and social perception of students about peers, or report data sufficient for the correlational and effect size calculus.

The studies included in our meta-analysis reported data from a total number of 7586 participants (N), 3783 boys and 3803 girls. Most of the studies reported several effect sizes, so our study comprised a total of 33 effect size calculations.

3.3.2 Coding of studies

Our research used 5 coding parameters. We coded the number of subjects, gender of participants, types of aggressive behaviors, social perception types and data sources.

3.4 Results

The results of the meta-analysis show a significant relationship between the different forms of aggression and the social status of students with age up to 12 years old. Data indicates a medium effect size (d= 0,60) for the relationship between subtypes of aggression and social status in the school context. There is a medium effect size for associations between reactive-proactive aggression and the social status of peers (d= 0,64). From the perspective of social relationships, the social preference of students presents shows associations with the types of aggression with an effect size of medium to large (d= 0,73). A small effect size (d= 0,46) was obtained for the relationship of overt-relational dimension with the social status of the students. We obtained a small effect size (d= 0,37) also for the associations between types of aggression and the social dimension of acceptance-rejection of peers.

The corrected effect sizes (D), resulted from the ponderation of effects based on sample sizes, show that reactiv-proactiv aggression is influenced with a medium to large effect (D= 0,73) by the social status characteristics that peers obtain in the class environment. Social preference and aggressive subtypes show a large effect size (D= 0,79). There is also a strong effect size between types of aggression and social status in general (D= 0,74)

For the heterogeneity analyse we used Cochran's Q calculus, to obtain the I^2 index that shows the degree of heterogeneity related to the total variance of the estimated effect sizes.

Based on these calculus, we obtained an index of 22% of heterogeneity. This percentage is a very low one, which means that the effect sizes have predictive value, because they represent effects which are probable to occur in the population.

Regarding the moderating role of participants' sex in the relationship between types of aggression and social status, the independent sample t test has not shown significant differences (t=1.17, p≥0,05). between the samples of boys and girls.

3.5 Discussion

Results show that the studies which target the specific associations between types of aggression and students' social status, present a general medium effect size. This result is in line with data obtained from multiple studies that emphasize a reciprocal influence between different types of aggression and the social status of the aggressive pupil (Farmer et al., 2003; Rodkin, et al., 2000), and also with the data regarding the influence of social status (ex. rejected student) on the manifestation of a specific type of aggression (ex. reactive aggression) (Dodge et al., 2003). Results show a stronger effect for the

relationship between reactive-proactive aggression and social relationships, as well as social preference. The stronger effect for these two variables can be explained by the fact that these functions show a large scale of influence in the process of development of school aggression.

STUDY 2
4. Validation of two instruments used to assess the forms of aggression and strategic abilites of primary school children

4.1 Main objectives
The first objective was to validate the Questionnaire of Attitude towards Peers (Camodeca, 2010) (AC) in the Romanian and Hungarian population of primary school students.

The second objective was to adapt to the Romanian and Hungarian primary school population the questionnaire"In the search of the treasure" Antonietti şi Sala (2008),developed for the assessment of different strategic abilities.

We aim to establish the psychometric properties of these instruments on a Romanian and a Hungarian sample, to obtain data regarding the validity and reliability of these instruments.

4.2. The Romanian validation of the Questionnaire of Attitude towards Peers (AC)
4.2.1 Method
We completed a correlational study which analyses the face validity, content validity and construct validity of the Questionnaire of Attitude towards Peers (AC). To establish the reliability of the scale, internal consistency was analized and inter-form reliability calculus was completed on a sample of Romanian (N=421) and Hungarian (N=411) school students, with ages from 9 to12 years old.

4.2.1.1 Participants
For the validation of AC, we had a number of 421 participants (m=10.4). The selection of participants was made with a cluster-based selection. The main selection criteria were the mother tongue (Romanian native tongue speekers were selected), age (between 8 and 12 years old) and school class (classes 4-5).

From the total number of participants, 47.5% were boys and 52,5% girls. Participants were selected from cities of four regions of Transylvania.

4.2.1.2 Instruments

- *Questionnaire of Attitude towards Peers (Camodeca, 2010)*

  The AC is an Italian questionnaire developed by Marina Camodeca in 2010 (Camodeca, 2010). It includes 36 statements regarding the behavior and cognitions representing the attitude of the pupil towards his peers. Each statement is weighted on a scale from 1 to 4, where 1 means that the statement is absolutely false and 4 means that the statement is absolutely true and it characterises the subject.

  The questionnaire assesses 6 forms of aggressive behavior, distributed on two bipolar dimensions: overt-relational aggression; reactive-proactive aggression.

- *Written report of the teacher regarding the occurance of signs of behavior disorder*

  Report describes the presence/absence of the signs, and assesses the intensity by assigning an index on a scale from 0 to 3.

4.2.1.3 Procedure

During the validation process of the AC, we completed measures of childrens' attitude toward peers (AC), and obtained data regarding the presence of signs of conduct disorder.

4.2.2 Results

The aspect validity of the translated questionnaire was analized through the interviews with participants, five teachers and four specialized psychologists.

Based on the gathered data, we concluded that the items of the questionnaire address all important aspects and specific characteristics of school aggression. The specialists identyfied the two major forms of aggression targeted (overt and relational aggression), and the reactive and proactive functions which appear in the items.

Content validity and construct validity analysis were made in parallel through component extraction and factor analysis which allowed the identification of the major components. The Alpha Cronbach for the 36 items of the scale is $\alpha= .92$ (N=419). Data regarding the reliability of subscales shows that the overt-reactive subscale has a good reliability ($\alpha= .83$). The reliability is good for the proactive relational subscale also ($\alpha= .81$). The other subscales have weeker reliability and question the overall reliability of the scale.

After the factor analysis completed in order to establish construct validity, 6 items were excluded. The exclusion allowed a better structuring for the 4 major components identyfied. The names of the components and the obtained level of reliability is presented in Table 1.

Table 1- Major components of AC, identyfied based on the factor anaysis

nr	Major components	Number of items	Reliability α=
1	*Total AC*	30	.91
2	*Overt Aggression*	12	.88
3	*Proactive Aggression*	8	.74
4	*Relational Aggression*	7	.79
5	*Overt-Proactive Aggression*	3	.47

Results of internal reliability calculus show that the reliability of the last subscale is unacceptable (Table 1.). Our analyse resulted in the incorporation of these items in the proactive aggression subscale.

At the level of content validity, the study concludes that the questionnaire is valid and reliable on three components: overt aggression, proactive aggression, relational aggression. Mixed components were not confirmed.

The final questionnaire, adapted to Romanian for primary school students is, structured as presented in Table 2.

Table 2.- Subscales of the AC questionnaire, validated in Romanian (N=-419)

nr	Main components	Number of items	Reliability α=
1	*Overt Aggression*	12	.88
2	*Proactive Aggression*	11	.77
3	*Relational Aggression*	7	.79
4	Total ACQuestionnaire	30	.91

To establish the internal consistency of the scale, a split-half analysis of the items was made. Results show the good internal consistency of the questionnaire.

For parallel forms reliability, scores obtained on the AC Questionnaire were correlated with the presence of signs of behavior disorder, obtained from the teachers of participants. Results show that the level of aggression based on the AC scores shows strong correlations with the presence of signs for behavior disorder ($r_{(419)} = .73$, $p \leq .000$).

A split-half analyse was made on the sample also, using random sample distribution. The $\alpha = .92$ (N=218) for the first randomized subsample and $\alpha = .90$ (N=201) for the second sample, which emphasizes the good reliability of the items.

Results that report the incidence of different forms of aggression in our sample are also in line with the literature of the field.

4.3 The Romanian validation of the Meta-aventura- În căutarea comorii"
questionnaire

    4.3.1 Method

    We assessed the aspect and content validity of the questionnaire Meta-aventura-
În căutarea comorii" Internal consistency was evaluated with the calculation of the α
Cronbach. Correlations for parallel forms validity were completed on the Romanian
sample (N=421) of children between 8 and 12 years old.

    4.3.1.1Participants

    The participants were the students from the sample of children assessed for the
Romanian validation of the AC questionnaire.

    4.3.1.2 Instruments

1. *Meta-aventura "În căutarea comorii"* " Meta-adventure - In the search of the
   Treasure"

The Questionnaire is the primary school version of an Italian instrument used for the
assessment of strategic abilities (Antonietti & Sala, 2008).
The questionnaire evaluates:

- Assessment of information (2nd item),
- Evaluation of resources given to solve a social problem (5th item),
- Evaluation of contradictory arguments (6th item)
- Error monitoring (7th item)
- Planning of future actions (3rd item)
- Choice and decision processes (9th és 10th item)
- Planning of activities: planning of individual priorities (1st şi 8th item),
  planning of the order of actions (4th item)

The task is distributed on 10 episodes. In each of these episodes the child needs to choose
between 3 alternative strategies. Each of the assessed alternatives has a score between 1
and 3, depending on the strategic character of the approach used to solve the problem. In
the end, participants are asked to finish the story. The questionnaire was developed to be
applied in the classroom.

2. *Clock Task (Moron, 1997i*n Pizzingrilli et al., 2010*).*

The task assesses the automatization skills of children and the capacities of inhibition of
authomatized responses. The task has 4 items. Each of the items represents a set of clocks
which show different times. Children are asked to identify and mark all clocks that show
four o' clock. The first three items are identical and are used to authomatize responses.
The last item assesses inhibitory processes post-authomatization.

Three scores are reported: total score for inaccuracy; rigidity score (evaluates flexible thinking); authomatization score. The last item evaluates set shifting capacities.

3. *Teacher s written report regarding the presence of signs for behavior disorders*

4.3.1.3 Procedure
During the validation of the questionnaire, students were assessed in two stages. First, participants (N=411) completed the Meta-aventura ”În căutarea comorii” questionnaire. Second, students who were allowed to further participate (N=96), completed the Clock Task (Moron, 1997). Written reports regarding the presence of signs for behavior disorders were obtained from teachers.

43.2 Results
Based on the gathered data, we concluded that the instrument contains items of task monitoring, strategical planning, data manipulation in the working memory, strategical thinking, organization of data, perception of social stimuli and interpretation of possible consequences (Ylvisaker &Feeney, 2002).

Specialists identified the major components described by the authors (Antonietti și Sala, 2008): decision skills, establishing priorities, selection of relevant data, planning strategies.

To establish content validity, we analyzed de literature of the field regarding the definition of the concept, factors included in the theoretical component and type of items used for the assessment of strategic abilities in other instruments. Other instruments use as main assessment components the following components (Warden & MacKinnon, 2003; Green et al., 2008; Walker et al., 2002): unexpected social situations; selection of adaptative versus inadaptative strategies; situations that require decisions. The main components reported in the literature of the field were also found in our task. The instrument has also a clear structure regarding the relationship between certain items and the main component of strategic abilities (Antonietti & Sala, 2008).

Based on our analyse, we established 8 main components, identified in the present instrument: assessment of data; assessment of resources; evaluation of contradictory arguments; error monitoring; planning of future activities; decision processes; planning of individual priorities; planning of the sequence of activities.

Our factor analysis did not report separate factors on which items are grouped. The items presented a variate distribution.

From the perspective of content validity, the task assesses different components of strategic abilities, which show a clear association with the main component, but show a differentiated associations between each other.

The calculus of between forms validity (N=96) shows that certain items have a significant association with the task of inhibitory processes and behavioral monitorization and regulation (Clock Task). (Table 3.).

Table 3.-Associations between *strategic abilities* and functions of self-regulation (N=96)

Nr.	Associated variables	Correlation index r=	p≤
1	**Authomatisation** and information sequencing skills	.26	.01
2	**Inexactity** and resource evaluation	-.23	.02
3	**Rigidity** and priority planning	.21	.05

Results from the literature regarding the relationship of executive functions and aggression and behavior disorders suggests that executive disfunctions are predictive to aggressive and impulsive behavior (Pennington & Bennetto, 1993). Results of our study emphasize a significant relationship with behavior disorders (r (419)= .41, p≤ .000).

Data obtained following correlational analysis between the forms of aggression (AC) and strategic abilities (În căutarea comorii), shows that reactive aggression (r= .10, p≤ .05), aswell as proactive aggression (r= .10, p≤ .05) has a positive relationship with good strategic abilities. The relationship of strategic abilities and proactive aggression is a strong one (r= .57, p≤ .000). The association between strategic skills and reactivity is weaker (r= .10, p≤ .05).

4.4 Hungarian Validation of Questionnaire of Attitudes toward Peers

4.4.1 Method
4.4.1.1 Participants
The validations study of the AC questionnaire had a sample of N=411 of 4th and 5th grade students from six location of Transylvania. Students of 22 Hungarian language classes were selected, 12 classes from the rural area and 10 from the urban area. The average age of participants was m= 10.4 (SD= 0.70).

4.4.1.2Instruments
The instruments used were those described in the validation study of the Romanian version of the questionnaire.

2.4.4 Procedure

After the selection of the sample, measures were completed. We registered two sets of assessments:

1. Questionnaire of Attitudes toward Peers- self-reported, completed by the pupils.

2. Written report of the techer- assessment of the presence of behavior disorders within the class setting.

4.4.2 Results

As a first step of the Hungarian validation of the questionnaire, we analized the face validity of the Hungarian translation of the scale. The items represent all important aspects and characteristics specific to school aggression.

The validation methodology of the questionnaire was similar to the one used to validate the Romanian version of the instrument.

The Cronbach Alpha index for the 36 Hungarian items of the scale was α= .93 (N=411). The Alpha Cronbach indexes are good for the overt reactive subscale, α= .80 and overt proactive subscale, α= .84. Data shows acceptable levels of Alpha Cronbach for the relational reactive (α= .77), and relational proactive subscales (α= .79). For the other subscales, the reliability of items is questionnable.

To obtain a reliable and optimal adaptation and to establish the content validity and construct validity of the questionnaire, a factor analysis was conducted.

The four main components resulted are the following: relational aggression; overt-proactive aggression; overt aggression; overt-reactive aggression.

Our calculus showed that the reliability of the last scale, based on the overt-reactive component, is questionnable. For this reason, we decided to include the items of this scale in the overt aggression subscale. The inclusion of the overt-reactive items in the overt subscale was an optimal action in this case. The reliability analysis, calculated with the hypothetic withdrawal of items 8, 10 and12 shows that this action would not affect considerably the reliability of the subscale (α= .84, respectiv α= .74 și α= .75).

The final subscale structure of the questionnaire, validated on the Hungarian population of 4th and 5th grade students, is presented in Table 4.

Table 4.- Final subscales of the AC questionnaire, validated in the Hungarian population (N=411)

Nr.	Main components	Item number	Reliability scores α=
1	*Relational Aggression*	12	.85
2	*Proactive-overt Aggression*	6	.84
3	*Overt Aggression*	12	.86
	Total AC questionnaire	30	.91

To assess the internal consistency of the final version of the scale, a random, split-half analyses was completed on the items of the questionnaire. Results describe the good internal consistency of the questionnaire.

To test the content validity through application, we summarized the incidence of different forms of aggression, which were assessed with the adapted version of the scale. Results confirm the data reported in the literature of the field.

To test the validity of different assessment forms, we completed calculus regarding the association of the level of aggression with signs of behavior disorder, assessed through the written report of teachers. Results show that the level of aggression assessed on the scale has a strong correlation with the teacher s report regarding the presence of signs of behavior disorder $(r (409) = .77, p \leq .00)$.

To assure that data was not biased by the differences in the constitution of the sample, we analyised the internal consistency of the scale with a split-half analyis with random subsamples. Results reflect the good reliability of the item in both subsamples.

4.5 The Hungarian validation of the „În cautarea comorii" Task

4.5.1 Method
4.5.1.1 Participants
Tha participants of the validation study of the task "În căutarea comorii" were the students of the Hungarian sample (N=411) on which the AC questionnaire was validated.

4.5.1.2 Instruments
The instruments used are the ones described in the Romanian validation process:
1. *Meta-aventura "În căutarea comorii"*
2. *Written report of the teacher regarding the presence of signs of behavior disorder*
3. *Clock Task (Moron, 1997)*

4.5.1.3 Procedure
The validation process is identical with the one used in the Romanian validation of the instrument. At the second evaluation, the students who were allowed to further participate(N=51), completed the Clock Task (Moron, 1997).

4.5.2 Results
Throughout the process of content validity analysis, we identified the same components which were detailed in the Romanian validation process of the task.

The factor analysis did not reveale separate factors for the scale. This result is supported by the results of the internal consistency of the 10 items, which shows an index of $\alpha = .09$.

The data obtained regarding the between form validity shows that priority setting abilities have a negative correlation with the capacity of authomatisation (r (49) = -.34, p≤ .01). The data manipulation capacity shows a negative association with the degree of inexactity (r (49)= -.29, p≤ .05).

We also tested the association between the aggressive behavior and planning abilitie and strategic abilities. Results obtained on the Hungarian sample did not present a relationship between reactive aggression and planning abilities mentioned in the literature (Ellis et al., 2009). Data suggests an important relationship between strategic abilities and behavior disorders (r (409) = .33, p≤ .000). Deși nu la fel de mare, ca asocierea nivelului general de agresivitate cu semnele tulburării de conduită, aceasta este însă semnificativă.

4.6 Discussion

Results from the validation studies of the AC questionnaire revealed that there are differences in the Romanian and Hungarian version of the questionnaires compared with the Italian version developed (Antonietti et al., 2011). In both samples we found three major components, based on which the items of the original scale could be structured.

Regarding the components, the AC questionnaire presents in the elementary school student population of Transylvania, only three major components from the original six created.

The validation results of the two AC questionnaires suggest that the overt-relational dimension of the aggressive behavior is the most prononunced one. Of the two functions of aggresion, the questionnaire differentiates only the proactive function.

The data obtained based on the results of the validation and reliability analysis sustains that the adapted versions of the AC questionnaire can be applied in the primary school population of Transylvania for differentiation among the overt, relational and proactive forms of aggression.

Informations regarding the reliability and validity of the ”În căutarea comorii” task show a good face and content validity, although, the internal consistency of the instrument is not acceptable. The associations between results obtained on the task measures and signs of behavior disorders and some of the executive monitoring and regulation functions, enhance the conclusion that the instrument prooves the associations related in the literature (Card și colab., 2008) regarding the correlating factors of strategic abilities.

STUDY 3
5. Executive functions as determining factors of reactive and proactive aggression in the primary school

5.1 Objectives and hypothesis

Our main objective is to identify the executive functions which are predictive to the different subtypes of aggression (reactive and proactive) present in the population of 4th and 5th grade primary school students of Transylvania.

the following hypothesis were proposed:

1. Children of the reactive aggressive group show difficulties in all assessed executive functions (planning abilities, authomatisation, rigidity, inexactity) compared to the proactive aggressive children.
2. Children who show a high level of reactive aggression present more signs of attention deficit and signs of hyperactivity, compared to other subgroups.
3. Reactive girls have greater difficulties on the inhibitory control of authomatisation than reactive boys have.

5.2 Method

We planned a correlational study on a heterogenous sample of 4th and 5th grade school students coming from 5 schools of Transylvania (N=342). A cluster selection was used, using the 4th and 5th grades of the schools, which resulted in a sample of 342 students.

Data collection was completed in four sequences. First, children were assessed to establish the severity and type of aggressive behavior (adapted versions of the AC questionnaire). In a second phase, children completed the Clock Task (Moron, 1997), and at a third encounter, students answered the questions of the instrument *"În căutarea comorii"* (Antonietti & Sala, 2008), for the evaluation of strategic abilities.

Data regarding attention deficit and hyperactivity disorder signs were gathered from teachers, through the SDAI Inventory (DuPaul, Anastopoulos, Power, Murphy & Barkley, 1994 in DuPaul et al., 1997).

5.2.1 Participants

The participants in our study were 342 4th and 5th grade school students from 3 regions of Transylvania.

Regarding the distribution of genders, the sample included 46.4 % boys, 53.6% girls. 64.1% of the assessed sample was Romanian, and 35.9% of the children were Hungarian

5.2.2 Instruments

- *AC- Chestionar de Atitudini față de Colegi* (adapted version, based on the Italian version of M. Camodeca, 2010). (see the results of the II study).

- 2.*Meta-aventura "În căutarea comorii"*- primary school version (Antonietti & Sala, 2008).
- *Sarcina Ceasului (Clock Task)* (Moron, 1997). Task used to assess the capacity to authomatise an action and to assess the level of inhibition of the authomatised answers.
- *SDAI*- adapted form of the *AD/HD Rating Scale- IV* (DuPaul, Anastopoulos, Power, Murphy și Barkley, 1994 in DuPaul et al., 1997). Teacher report used for the evaluation of attention deficit and hyperactivity signs. It is structred on 18 items, 9 items assess the attention deficit, 9 items identify signs of hyperactivity disorder.

5.2.3 Procedure

We conducted a correlational study, with a cluster selection of the sample. After the completion of the AC questionnaire, 5 scores were obtained for the following forms of aggression: general level of aggression, relational aggression, overt aggression reactive aggression, proactive aggression.

As one of the executive functions, strategic abilites were also assessed (adapted version of the *"În căutarea comorii"* task).

To assess the inhibitory control component, and the flexibility of thinking processes (set shifting), we applied the Clock Task (Moron, 1997).

For the hyperactivity component and signs of attention deficit, we completed calculus based on the results of the two subscale of the SDAI (DuPaul, Anastopoulos, Power, Murphy și Barkley, 1994 in DuPaul et al., 1997).

5.3 Results

At the validation of our first hypothesis, results of the independent sample *t* test show, that there are no differences between the reactive and the proactive aggressive children regarding the variables of executive functions processes.

For the second hypothesis, our data suggests a tendency for negative association between authomatisation abilities and the general level of aggression ($r_{(18)} = -.44$, $p \geq 0.05$). More precisely, the lower the abilitiy of authomatisation, the higher the level of reactivity of the student.

The third hypothesis did not confirm either, differences between the reactive and proactive children based on the presence of signs for attention deficit of hyperactivity, were not found. These differences did not reveal even after including in the calculus the gender variable.

Results of the secondary analyses emphasize that the assessed executive functions significantly correlate with different subtypes of aggression, but only by girls (Table 5).

Table 5-Association between executive functions and form of aggression in the sample of aggressive girls (N=44)

Assessed subsample	Executive function	Type of aggression	r	p
Reactive girls (N=19)	*Inexactity*	Reactive	.58	≤.01
		General	.63	≤.005
		Proactive	.59	≤.01
Proactive girls (N=8)	*Strategic abilities*	Reactive	.90	≤.002
Relational girls (N=17)	*Inexactity*	Proactive	.65	≤.005
		Generale	.66	≤.005
		Reactive	.61	≤.01
	Authomatisation	Proactive	-.52	≤.05
		Generale	-.48	≤.05
		Reactive	-.52	≤.05
	Strategic abilities	Overt	-.48	≤.05

Results emphasize that the level of inexactity in the task is the variable significantly and constantly associated with different types of aggression and a general level o aggressive behavior (Tabelul 6.).

Table 6- Correlation between the executive functions and forms of aggression based on the gender and ethnicity of the students (N= 321)

Ethnicity	Related variables	*Boys (N=149)*			*Girls (N=172)*		
		r	*p*	N=	r	*p*	N=
Romanian	Inexactity and relational aggression	.21	≤.05	97	-	-	
Hungarian	Inexactity and aggression	-	-	-	.37	≤.002	63
	Inexactity and reactive aggression	-	-	-	.37	≤.005	63
	Inexactity and proactive aggression	-	-	-	.38	≤.002	63
	Inexactity and overt aggression	-	-	-	.29	≤.01	63
	Inexactity and relational aggression	-	-	-	.26	≤.05	63

We completed calculus to found out if the differences between Romanian and Hungarian girl s results could be explained by socio-demographic differences in the sample Results revealed that there is a significant difference in the level or inexactity (t(46) = -3,13, p≤ .005) between girls from the secuime (N=35) and those from the center of Transylvania (N=13).

To identify the role and effects of strategic abilities on variables of aggression, we completed reggression analysis.

Throughout our calculations, the variables of aggression were introduced as dependent variables, and the standardised scores of executive functions (inexactity, authomatisation, strategic abilites), as independent variables. Gender and ethnicity factors were introduced as independent variables, but also as possible covariables, along with the specific executive functions Data obtained (Table 7), showed the small predictive value of the gender factor in the case of different types of aggression. The resulted associations in the case of aggressive children are explained in a proportion of 1% to 11% by the gender (boys) of children.

Ethnicity has a low and independent rol in determining the proactive aggressive behavior, as the only predictive factor of the behavior. Regarding the correlation between inexactity, authomatisation skills, strategic abilities and proactive aggression, ethnicity is a small predictor of the proactive behavior: (β = .15, t= 2.71, p≤ .05) in the case of inexactity; (β = .14, t= 2.65, p≤ .05) for authomatisation; (β = .14, t= 2.57, p= .01) for strategic abilities. In the case of the rigidity factor, ethnicity and the rigidity of thinking processess interact as predictive covariables for the proactive behavior (β = -.46, t= -2.73, p≤ .05).

Results show that gender has a predictive role in all relations between executive functions and aggressive behavior.

Table 7- Predictive effects of gender in the relationship between executive functions and subtypes of aggression (N=320)

Executive functions	Type of aggression	R^2	$F()$		$p \leq$
Inexactity	Reactive	.09	F(2,318)	17.88	.000
	Proactive	.02	F(2,318)	4.76	.005
	Relational	.01	F(2,318)	3.52	.05
	Overt	.11	F (2,318)	21.75	.000
Authomatisation	Reactive	.09	F (2,318)	17.65	.000
	Proactive	.02	F (2, 318)	4.23	.01
	Relational	.01	F (2, 318)	3.44	.05
	Overt	.11	F (2, 318)	21.28	.000
Strategic abilities	Reactive	.09	F (2, 317)	17.92	.000
	Proactive	.02	F (2, 317)	5.46	.005
	Overt	.11	F (2, 317)	22.59	.000

Our results also show that a high level of reactive aggression does not involve defficiencies at the level of attention processes and does not relate with signs of hyperactivity reported by teachers. There is a relationship for the proactive aggression,

where boys showed (N=11) a correlations between the strategic abilities and deficits in the attention process (r=-.67, p≤ .02).

For the proactive aggressive girls, there is strong correlation between the level of proactive aggression and signs of attention deficits and hyperactivity (r= .86, p≤ .005, respectively, r= .72, p≤ .05).

Overt aggressive girls (N=7) show a negative correlation between the level of reactive aggression and signs of hyperactivity (r=- .74, p≤ .05).

In the presence of a high level of relational aggression, attention deficits negatively correlate with strategic abilities (r=- .55, p≤ .05), and positively relate to the level of proactivity (r= .55, p≤ .05), dar numai în cazul but only for boys (N=23). The high level of overt aggression of boys (N=27) associates with high levels of signs for attention deficits (r= .42, p≤ .02).

Reggression analysis did not show a specific model of influence between strategic abilities, level of reactivity or proactivity, respectively, signs of attention deficits or hyperactivity disorder.

5.4 Discussion

We can conclude that a high level of reactivity for girls associates with several types of aggression, which are influenced by the deficits in the exactity of the activities. The disadvantaged status of reactive children is well argumented in the literature of the field (Ellis et al., 2009; Crick, Dodge, 1996; Dodge and Coie, 1987; Hubbard et al., 2002). The negative correlation between proactive aggression and planning skills has been also recently documented (Ellis et al., 2009). According to Ellis et al. (2009), the positive associations between planning skills and a high level of reactivity could be explained through the moderating effect of hostile attributions. Hostile attributions have an invers effect upon the relationship between proactivity and strategic abilities. Although the literature emphasizes that proactive aggression is a well planned behavior, which would presume good strategic abilities (Hubbard et al., 2002, Crick, Dodge, 1996; Dodge and Coie, 1987) and weeker strategies for reactive children, research has not revealed the association model of these factors for reactive/proactive children..

Our second hypothesis, that difficulties of authomatisation are more represented in the sample of reactive girls, did not confirm. Although boys show a lower level of authomatisation than boys, differences are not significant.

Our third hypothesis was not confirmed, reactive children do not present more signs of attention deficit or hyperactivity, compared with other subfroups of aggressive children. This model was not valid even when entering in the calculus the gender variable. Although the hypothesis was constructed based on a pilot study (Caravita & Demeter, 2010), on an Italian sample (m= 10.2 years), results were not confirmed on the Romanian sample. Differences could be induced by cultural differences, aswell as by

differences in the perception of teachers regarding signs of attention deficits and hyperactivity disorder in the two countries.

The moderatind effect of the gender variable regarding the relationship between different types of aggresion and cognitive correlates is presented in the literature of the field (Card et al., 2008). Our data shows a small and constant predictive role in the prediction of different forms of aggression. Results suggest, that although there is an association between the assessed executive functions and different forms of aggression, these are not predictive to the studied aggressive behavior.

Informations gathered in the study allow the formulation of three conclusions:
1. The relationship between executive functions and different types of aggression is represented through the differences in boys and girls cognitive processes.
2. The variables and instruments used in the study did not assure the propor cuantification in order to be able to assess the differences in executive functions between children presenting different types of aggression.
3. The assessed executive functions present the associations formulated in our hypothesis only if high levels of aggression, behavior disorders, conduct disorders or other cognitive disorders are present (ex. AD, HD, ADHD, ODD, CD).

STUDY 4
6. Social status and social attrubitions as predictors of different types of school aggression

6.1 Objectives and hypothesis

Our objectives focuse on two dimesnions.

The first dimensions aims the relationship of different types of aggressive behavior, like reactive and proactive aggression, and the social status that the student has in the classroom.

The second dimension wishes to evaluate the relationship between spontaneous cognitions like associations and the social status and behavior of the aggressive child.

Based on our aims and the literature of the field, we constructed three hypothesis:
1. Reactive aggressive children have more hostile attributions towards children whom they dislike compared with proactively aggressive children.
2. Proactive aggressive children show more hostile attributions towards unpopular children, compared with reactive aggressive children..
3. Children of the reactive/proactive aggressive subsample are among the most disliked children in the classroom.

6.2 Method

To reach our objectives, we planned a correlational study on a sample of 342 4th and 5th grade children of 16 school classes from Transylvania.

First, the Prompt task was developed to identify attributions regarding peers with a specific status using the priming method (Caravita, Demeter, 2010).

In the second phase, the AC questionnaire was validated in Romanian and Hungarian. The scales obtained are presented in the second study.

Third, the sample of participants was selected and the instrumentary described at section Instruments was applied. The gathering of data lasted 4 weeks and was followed by the creation of the database and the analysis of results.

6.2.1 Participants

The participants in our study were 342 4th and 5th grade school students from 3 regions of Transylvania.

Regarding the distribution of genders, the sample included 46.4 % boys, 53.6% girls. 64.1% of the assessed sample was Romanian, and 35.9% of the children were Hungarian.

6.2.2 Instruments

1**.** *AC- Chestionar de Atitudini faţă de Colegi* (adapted version, based on the Italian version of M. Camodeca, 2010). (see the results of the II study).

2**.** *Status-* instrument composed of six questions, used to identify the social status of children within the socio-matrix of the targeted peer group (Cillessen & Mayeux, 2004; Newcomb, 1993).

3. *Prompt* (Caravita & Demeter, 2010)- task which uses priming as method to assess the relationship between types of peer relationships and aggresogenic quality of attributions generated towards peers. The instrument includes six sets of instructions according to which the subject needs to attribute characteristics to peers with different status within the classroom: preferred, disliked, admired, popular, unpopular peer and friend. Answeres are given rapidly. A maximum of 3 associations are allowed. The instrument uses priming processes to establish the influence of the social relationship upon the aggressogenic character of generated attributions in the absence of a present provocation (Caravita & Gini, 2009; Caravita şi Demeter, 2010).

4. *SCOD* (Marzocchi et al., 2001)- teacher-reported inventory for the evaluation of disruptive behaviors (Marzocchi et al. , 2001). The scale targets 4 factors: behavior disorders, oppositional defiant disorder, learning difficulties and socio-economic status. The instrument evaluates on a scale from 0 to 3 the intensity of certan problem behaviors.

6.2.3 Procedure

To reach our objectives, we planned a correlational study on a sample of 342 4th and 5th grade children of 16 school classes from Transylvania. Complete data was received from a final number of children.

Children ef each classroom were assessed with the adapted version of the AC to establish the degree and type of aggression presented.

To establish the social status of the child in the peer group, we calculated 6 scores as index for the following social statuses:

- social preference (liked-disliked);
- friendship (friends);
- perceived popularity (popular-unpopular);
- admiration (admired)

To assess the character of attributions related to different peers, we applied the Prompt task (Caravita & Demeter, 2010). Coding of answers was completed with 4 teachers. Inter-rater reliability showed a Cronbach $\alpha = .97$. The final score used in the calculus was obtained by accepting scores which had the same code in three out of four evaluations.

SCOD evaluations were obtained from teachers of each of the assessed classes (N=16).
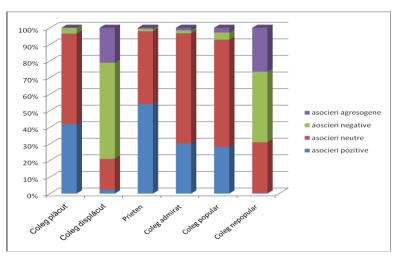
6.3 Results

To test our first hypothesis, we completed frequency calculus and the t test for independent samples, in order to establish the level of significance of the differences between the reactive and proactive aggressive children.

Our primary results show that 76% of the children who have aggressogenic attributions toward a disliked peer, are reactive, compared to 24%, percentage of proactive children. This prooved to be an insignificant difference between the two groupes (79)= 0.07, $p \geq .05$).

Hostile attributions towards disliked peers are a general tendency which is outnumbered only by the aggressogenic attributions related to unpopular peers (Graficul 2.).

Results related to our second hypothesis show that there are no differences between reactive and proactive children regarding aggressogenic attributions given to unpopular peers (t (79) = 0.30 , $p \geq .05$.).

Graph 2.- Type of attributions made regarding peers with different statuses (N=321)

At our third hypothesis, data obtained following the independent sample t test showes that students from the mixed group do not differentiate significantly from the reactive pupils (t (58) = -4.37 , p≥ .05) (Graph 2.). Results emphasize that there are difference only between students with low levels of aggression and highly reactive children (t (498) = 5.37 , p. ≤ . 000), respectively proactive children (t (498) = -4.74 , p≤ .000) and relationally aggressive children (t (498) = 3.67 , p≤ .000). Data suggests that reactive and proactive children are more disliked only compared with children who present mild levels of aggression. The association between aggression and disliked status shows the strongest correlation in the group of reactive aggressive children (r (499) = .12, p≤ .007). An ulterior analyse showed that this association is characteristic only to girls (N=241).

Secondary analysis revealed that from the spectrum of school difficulties, behavior disorders correlate significantly with the disliked status r (338) = .10, p≤0.05) and the unpopular status of the child ((r (338) = .13, p≤ .01).

Signs of learning difficulties relate to the degree by which students are chosen as friends among the peers (r (338) = .17, p≤ .01). These results show some modifications when assessed by gender distribution.

Table 8.- Predictive effects of type of aggression and conduct disorder regarding the disliked status of the child

nr	Predictive variables	R2	F(df)	p≤
1	Reactive aggression and behavior problems	.04	F(2,318) =8.76	.000
2	Proactive aggression and behavior problems	.04	F(2,320) =7.78	.000
3	Relational aggression and behavior problems	.01	F(2,318) =3.45	.03
4	Overt aggression and behavior problems	.04	F(2,318) =7.85	.000

Data regarding the role of types of aggression and signs of behavior disorders in determinig the social status of the child shows, that these factors have a small predictive role (1-4% of the variance) in determining the child s disliked status within the classroom (Table 8).

To analyze the relationship between the aggressogenic character of attributions and the child s social status within the classroom, we first completed correlations on the whole sample. First data suggests that there is a negative correlation between the hostile attributions of a preferred child and the unpopular status of the child (r (316) = - .13, p≤ .01). These results suggest that unpopular children tend to evaluate more positively the children they prefer. The same relational model was to be found for the attributions of the disliked children, too (r (316) = - .12, p≤ .05).The analysis of the gender differences revealed that admired boys present low levels of aggressogenic attributions toward unpopular peers (Table 9.)

Table 9.- Correlations between status factors and type of attributions in the sample of boys (N=149)

ASSOCIATED FACTORS	Admired status		Disliked status		Unpopular status	
	r	p≤	r	p≤	r	p≤
Hostile attributions unpopular	-.16	.04				
Hostile attributions liked			-.20	.01	-.17	.03

Results differentiated by gender and ethnicity revealed that in the sample of Romanian children, negative statuses (disliked or unpopular child) associate with more positive appraisals regarding liked peers (Table 10.). In the case of Hungarian students, positive statuses (admired child) associate with a low level of aggressogenic attributions toward unliked peers.

Table 10.- Association between status and aggressogenic attributions based on gender and ethnicity (N=321)

ASSOCIATED FACTORS	Boys				Girls			
	Admired status		Disliked status		Unpopular status		Liked status	
	r	p≤	r	p≤	r	p≤	r	p≤
Hostile attributions liked			- .21	.05	- .30	.05		
Hostile attributions disiked	- .20	.05			- .34	.005	.27	.05

Results that present the relationship between subtypes of aggression and the type of attributions evoked show, that reactive boys show more aggressogenic attributions towards preferred peers when they are disliked within the peergroup (r (41)= .33, p≤ .02). Reactive girls tend to attribute more positive characteristics to disliked peers if they are popular witthin the peergroup (r(17) = - .48 p≤ .05). A similar association is to be found between the attributions made to an admired peer by a preferred reactive girl (r (17)= 0,48 p≤ .05). Reggression analysis did not reveal a predictive rol for gender or status regarding the type of attributions evoked by peers.

Based on the correlations found within the proactive group of children, we completed reggression analysis. The reggression models revealed a predictive role for the variables presented in Table 11.

Table 11.- Predictive variables for the attributions of proactive aggressive children (N=19)

Nr.	Predictive variables	Dependent variables	R2	F	p≤
1	**Popular status**	Attributions admired peer	.49	F=(1,15)=16.56	.001
2	**Liked status, gender**	Attributions admired peer	.49	F(3,15)=6.80	.005
3	**Gender *popular status**	Attributions friend	.54	F(3,15)=8.15	.002
4	**Gender *popular status**	Attributions disliked	.39	F(3,15)=5.38	.01

In the proactive aggressive sample, the popular status of the child considerably predicts (49%) the attributions related to an admired peer (Table 11.). Being a **liked student** in the classroom predicts along with the child s **gender** 49% of the attributions evoked regarding admired peers.The results of the reggression analysis emphasizes that popular status, in interaction with the gender of the child, is predictive to children s attributions regarding friends. These factors influence attributions in a proportion of 54 %. Regarding the predictive power in the case of hostile attributions made towards disliked peers, reggression analysis shows that popular status, interacting with gender characteristics, is the more predictive factor (β = -4.67, t=-3.84, p≤ .002).

6.4 Discussion

Our hypothesis, regarding differences between the mode of association of status and attribution factors in th reactive and proactive groups of children, did not confirm.

Our data suggests that subtypes of aggression are not differentiated based on the relations between status and aggressive attributions. Differences can be identified only by different levels, but not by different types of aggression.

Data regarding the association of signs for behavior disorder with a disliked and unpopular status is supported by the literature of the field which reports a strong relationship between behavior disorders and lack of acceptance, lack of popularity,

asweel as rejection (Cole et al., 1990). A more stable hypothesis would be that children are influenced by the teachers perception of peers with learning difficulties (Lindsay & McPherson, 2012).

Our results also show that aggressive subtypes along with the signs of behavior disorder predict the social status of the child. One explanation would referr to the difficutlites in the inhibitory processes, which are also specific to behavior disorders (Quay, 1997). These would interact with aggressive behavior and stimulate the activation of activity, which in turn might lead to behaviors which are not accepted or tolerated by peers.

Data presenting the relationship between aggressogenic attributions and the social status of the child reports that generally, negative statuses induce a more positive approach of the peers. This result leads to the hypothesis that unpopular students, at the level of meta-cognitions, are aware of their status. This status does not represent a factor of frustration, which would lead to aggressogenic attributions. There are studies which found, that self-perceptions regarding the self as a rejected person leads to aggressive behaviors (Gendron et al., 2011). This view was confirmed in the case of reactive boys. The literature of the field supports tha popularity might be associated with a high level of reactivity, asweel as with the lack of aggressive behaviors (Cillessen & Mayeux, 2004). Literature supports also the fact that accute rejection leads to hostile attributions, which in turn can lead to aggressive behaviors (Peets et al., 2011). This situation could explain our results for the relationship of other types of aggression and aggressogenic attributions.

Regarding the attributions of reactive children toward friends and disliked peers, it seems that we deal with a complex model, where the joint effect of gender and popular status predicts the character of attributions.

CHAPTER 4
GENERAL CONCLUSIONS AND DISUSSIONS

Theoretical contribution

Based on the results obtained from the studies on the social and cognitive factors related to aggressive behavior in the school setting, we created a model of the socio-cognitive factors which predict and determine the aggressive behaviors of school children. The model emphasizes first of all the enhancing influence of the presence of aggressive tendencies upon childrens social status and the level of aggression induced in the processing of social informations.

The level of aggression is predictive to the development and stability of certain statuse in the classroom. The status, gender, and demographic vulnerability of the cathegory to which the subject is related (ex. ethnicity, etc.), influence attributions towards targeted peers.

Results obtained from the assessment of executive functions show that deficits in task monitoring and task regulation relate to the specific forms of reactive and proactive aggression.

The gender of students has a primary role, executive function deficits being found almost exclusively in the sample of girls. Informations gathered support the fact that at the level of executive functions, some of the functions are more affected in the case of reactive girls, than in the population of boys. funcţiilor executive, unele funcţii sunt mai lezate în cazul fetelor reactive, decât în cazul băieţilor reactivi. Totodată, în grupul fetelor, aptitudinile de automatizare pot avea rol protectiv referitor la dezvoltarea unui comportament reactiv.

Our theoretical exploration concludes with the suggestion for future studies to focus on the role of personality traits, like self-trust, and perception of self-efficacy of the aggressive children. Thes factors could explain the differences between types of attributions made by boys and girls, aswell as the role of ethnicity in this process.

Methodological contributions

Based on the methodological aim of the thesis, we validated two instruments: the AC questionnaire for the assessment of different types of aggression, and the In căutarea comorii task, which assesses the strategic abilities of primary school children. The validated instruments complete the instrumentary used in the evaluation process of primary school students on one hand through the psychometric properties given, on the other hand, through their ludic structure and method of application, which is optimal for primary school students.

Practical contributions and further development

Based on the model of socio-cognitive predictors of aggression, we identified several groups of children exposed to the risc of aggressive behaviors or victimisation. We also identified several cognitive functions and social factors which influence the enhancement of aggressive behaviors and therefore should be considered in further prevention programs. Our results suggest that a prevention program targeted on the improvement of monitoring and regulation skills, aswell as on the development of flexible thinking processes, could minimize the intensity of aggressive behaviors. Also, interventions in the social perception process of peers could modify the evaluations of children regarding the social status of peers and influence the character of the attributions made to them. If a preventive program based on these principles would target the groups which present a higher risc fo aggression, the preventive interventions regarding aggressive behaviors, could be more efficient.

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