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Children's Willingness to Help Peers in Need: Is Development of Sociability Approach Orchestrated Dis-harmonically?

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Abstract: Children's helping schemata, made of two-components, others' needs and self needs, were extracted, in terms of Functional Measurement, from a mosaic of ratings of willingness to help in two sorts of occasions – 'as if' (imaginary) and 'in vivo' (concrete). A total of 317 children from four age groups – kindergarteners, 1st, 3rd, and 6th graders participated in Experiments 1 and 2 which examined the influence of 10-minute facilitation of prosocial approach via purposeful conversation. The design, a unique combination between Functional Measurement and Solomon design, enabled an exposure of two inversed developmental functions – a decrease in 'as if' helpful approach to others' requests for help and increase in two other social functions – concrete help and social suggestibility. A possible conceptual account in terms of imagination and differentiation learning and a possible age limitation were examined in Experiments 3 and 4, respectively. This work is conceived as a preliminary basis for the study of a rather non-conventional, non-unison and modular approach to issues of helping in specific and development of sociability in general.

Keywords: Development of sociability, Helping schemata, Functional cognition, Functional measurement, Social modularity

INTRODUCTION

Decisions to comply with explicit or implicit requests for help are studied under a variety of titles. Most salient are prosocial behavior and helping, defined as acts deliberated to benefit others (Eisenberg & Fabes, 1998; Staub, 1979). Related studies seem to be rooted in the subject of altruism, which deals mainly with the question of whether or not there is help for no expectation for some sort of reward (e.g, Cialdini et al., 1997). Encounters (or plays) with others in-need (usually strangers) are typical example of the social context where this sort of notions is defined operationally.

Quite a few aspects of the related phenomenon seem to capture recently the attention of researchers, especially situational accounts or circumstantially activated motives (Killeen, 2001) which occur within the person or in immediate situations (e.g., Ames, Flynn & Weber, 2004; Blair, Thompson, & Wuensch , 2005; Branas-Garza, 2007; Flynn & Brockner, 2003; Flynn & Lake, 2008; Gueguen, Pichot & Le Dreff, 2006; Karakashian, Walter, Christopher & Lucas, 2006; North, Tarrant & Hargreaves, 2004). Focusing on such an effect, the present study adopts the perspective of functional cognition (Anderson, 1996, 2008; Wolf, 2001) in order to shad light on some developmental facet of helping.

Functional Cognitive Approach to Helping

A discrete progress (i.e., in terms of stages) in moral and social development is postulated by the Piagetian (1932/1965) writings and the works of his followers (e.g., Colby & Kohlberg, 1987; Demetriou, 1988; Rest, 1986; Rest, Turiel & Kohlberg, 1994; see also Emler & Rushton, 1974). Within this framework, a connection between moral development and social development is implied due to the focus of this approach on helping and giving as reflections of moral values (Rubin & Schneider, 1973; Rushton, 1975). A presumption of experience dependent progress is an indispensable part of this approach.

The presumption of experience dependent progress in helping and giving is essential for the Functional Theory of Cognition as well (Anderson, 1996). Nevertheless, while the former approach conceives the accumulation of experience in terms of stages and accordingly focuses on individual differences (e.g., Colby & Kohlberg, 1986), it derives from the latter that helping or willingness to help are expected to change at any moment as a function of a variety of factors.

When looking for a viable framework for a developmental study of helping it should be recalled that the operational definitions of the cognitive developmental conceptions suffer from validity problems. That is due to the phenomenological assumption according to which a child's verbal reasoning is related to as a feasible reflection of his or her moral or social schemata (Colby & Kohlberg, 1987). Social desirability, demand characteristics and other validity jeopardizing influences might cover undetectable part of the observed verbal matter (see analysis in Wolf, 2001). Such problems are avoided in the present study which adopted a quantitative algebraic formulation of longitudinal and situational changes in children's prosocial behavior during last year of kindergarten and the years at elementary school.

This methodology is based on Anderson's (1981, 1991a) Information Integration Theory and this theory's updated version – the Functional Theory of Cognition (Anderson, 1996, 2008). The theory postulates that any observable response is an integral of inner responses to the salient aspects of a given stimulation. With some reference to evolutionary considerations, the theory assumes that in each sphere of reality, such as physical, geometrical, logical, moral or social, any individual learns to attend spontaneously to the salient aspects of related stimulation.

A friendly example can be found in the field of intuitive geometry. For instance, objectively the area of rectangles is an exact function of the size of height and width. Valid estimation of such area should be based on the use of multiplication rule (Anderson & Cuneo, 1978; Wolf, 1995; Wolf & Algom, 1987). Similarly, moral judgment is conceived as a function of *culpa* and *consequences* (Anderson, 1991d), and responses to social appeals are determined by the needs of *other* and *self*.

The theory postulates that in any request to respond to specific stimulation of any sort, available information from all salient dimensions are absorbed and are subjected to internal processing in several phases. The most important phases are the assignment of relative importance to the perceived bits of information, and integration of the weighted information, the product of which being transformed to an observable response. Functional Measurement (hence FM), the methodological counterpart of the theory, provides viable operational definitions to the theory's basic notions (Anderson, 1982, 1996, 2001), as illustrated below.

With regard to developmental issues, the Piagetians speak of centration, i.e., tendency of kindergarteners (preschool children) to attend to the most salient source of information when required to respond to a multi-dimensional stimulus. The functional cognitivists claim that children at that age are capable of attending to all relevant sources of information. The

framework of FM (Anderson & Cuneo, 1978; Wolf, 1995, 2001), a method which does not suffer from validity problems as the Piagetian methodology does was adopted as an unbiased stage for a duel (see a review in Wolf, 2001).

The FM findings seem to refute the assumption of centration. However, one issue which deals with the role of situational effects is not yet decided. Wolf (1995, 2001) claims that while stability of responses to a given stimulation beyond a given situation is derived from the basics of the cognitive developmental approach (Piaget and followers) shifts are expected according to his cognitive modularity hypothesis, regardless of social motivational vectors. Thus far there hasn't been a straightforward confrontation in the field which deals with prosocial behavior. The present study attempts to reduce some uncertainty with regard to the situational or momentary nature of prosocial behavior.

More than a decade ago a relevant FM experimental study was conducted in terms of estimation of the size of simple Euclidian objects – rectangles, triangles and parallelopipeds (Wolf, 1995). A shift from the use of non valid rule (addition) of information integration to a valid one (multiplication) following about 10 minutes of handling was found in children's estimation of area.

The framework for Wolf's (1995) study, i.e., the Functional Theory of Cognition and FM, the theory's methodological counterpart, apply to nearly any sub-field of psychology (Anderson, 1991a-c, 1996). One such field is moral judgment. Wolf (2001), using a similar experimental framework, exemplified a shift in the relative weighting of the classical Piagetian blame schema which is made of two (molecular) components – Intent and Damage. He found that a

momentary attempt to increase the salience of intent, by means of an approximately 10-minute conversation which focused on well known fables dealing with incidents among protagonist animals, facilitated an increase in the relative weight assigned to intent. Intent and damage are defined by Anderson (1991d, 1996) as molecular components of a core blame schema which includes Culpa and Consequences as molar components, as symbolized in Eq. 1.

$$\textbf{Blame} = \textbf{Culpa} \oplus \textbf{Consequences} \qquad (1)$$

Schema 1 represents psychological occasions where the extent of blame allocated to a person which is perceived as being responsible for harmful act(s) is a function of the available information on two sorts of components: the degree of the perpetrator's culpability (intent being a molecular instance of this term) and the consequences of the to-be-judged act (in terms of damage). The symbol ⊕ denotes a simple algebraic integral (evidently averaging) between the individual's inner representations of the two components, substantiated spontaneously by the related cognitive mechanism (see a comprehensive description in Anderson, 1991a). The participant in such an experiment allocates blame (on a rating scale) to the harm doer in a series of (usually to-be-imagined) incidents included in a complete multi-factorial (bi-factorial in the present context) design. The ratings are made on the basis of the unique combination of information about the specific levels of each of the two components, intent and damage, in each of the designed incidents.

Equation 2 represents another modification of the molar schema presented in Eq. 1, in which the molecular components, i.e., the needs of each of the two actors – self and other, are deliberated to reflect this study's interest in developmental aspects of helping.

$$\textbf{Helping} = \textbf{Other's Needs} \oplus \textbf{Needs of Self} \qquad (2)$$

Relative weighting of others' needs as well as other related measures deliberated to reflect helping schemata are extractable from the ratings of each participant in FM experiments.

The Present Study

As detailed in the previous section, Wolf (2001, pp.4-6) paved the way for a study of situational effects in the field of moral development. That work, however, was a preliminary exploration of the viability of situational facilitation of shifts in children's related schemata. The present study is an attempt to conduct a more systematic research in the field of prosocial behavior, i.e., helping. While Wolf (2001) focused only on kindergarteners, the present study applies his combined design (FM embedded in Solomon Design (see Campbell & Stanley, 1963; Shadish, Cook & Campbell, 2001) to each of four age groups – kindergarten, 1st grade, 3rd grade and 6th grade; this time in a way which enabled valid cross-section comparisons. The basic design was a sort of modification of the method used by Wolf (2001). The following hypotheses became testable this way.

Hypothesis 1, which accords the basics of both cognitive approaches mentioned above, asserts that children's prosocial approach, as reflected in the relative weight assigned to others' needs when information on self needs are provided to the child as well, should increase with age.

Hypothesis 2 deals with the influence of situational intervention. To operate on a relatively solid basis, a modification of the method of Wolf (2001) was applied. It took the form of a free conversation between the experimenter and the participant, deliberated to accentuate others' needs. According to

Hypothesis 3 the effect of conversation will increase with age.

Hypothesis 4 relates to the Piagetian presumption of social centration in kindergarteners. Most structural theorists would hypothesize dominance of self, simply due to the presumed immature ability to relate to others' needs (Piaget, 1932/1965, 1962, 1969). In the present context it means that kindergarteners would not yet be able to assign meaningful importance (weight) to others' needs in conditions where helping decisions are based on information about the needs of self and other (see Eq. 2). Alternatively, from the functional theory of cognition (Anderson, 1996) and related works (e.g., Wolf, 2001) it derives that meaningful importance should be assignable to the needs of others, even by kindergarteners.

Experiment 1: Helping Schemata in 'as if' conditions

Method

Participants. The participants were 245 preschool children from four age groups: Kindergarteners (last year of kindergarten), 1st, 3rd and 6th graders, who did not have any record of emotional, social or learning problems. They were sampled from two kindergartens and four schools in the central area of Israel, all located in mid-class neighborhoods. Eight children (2 kindergarteners, 4 1st graders and 2 6th graders) did not meet the calibration standards and were excluded from the sample. The main problem with each of them was a severe cut of range. The remaining participants in the four age groups were as follows: Kindergarten – 38 children, 21 girls and 17 boys (Mean age = 5:5); 1st Grade – 72 children, 36 girls and 36 boys (*M* = 6:5); 3rd Grade – 71 children, 44 girls and 27 boys (*M* = 8:8). 6th grade –

Design and Stimuli

Two comments with regard to sample size and effect size should be made, to clarify the uniqueness of the present design. One point relates to the core principle of single case experimental design. In this sort of psychological experimentation (e.g., Anderson 1982, 2001; Anderson et al., 2004; Barlow & Hersen, 1984), any single participant serves as a complete sample for the process of hypotheses testing. In the FM version of such methodology the participant is exposed to a mosaic of stimuli made of all combinations of the defining components of the different levels of the related phenomenon (helping schema in the present context). He or she delivers a quantifiable response to each such combination.

In classical experimental designs, a different group of participants would be exposed to a different combination of stimuli or at most to a part of the entire set of related conditions. Accordingly, a greater number of participants is required for a complete hypotheses testing, allocating an apparently greater power for the inferential statistical tests. In the present sort of experimentation, where each participant is exposed to a multiple set of stimuli, the power to detect any effect should not be regarded as a function of the mere number of participants, but rather a function of a special combination of the number of participants and the number of conditions to which each participant is responding to. As for effect size, a widely accepted convention is that number of repeated findings, as is the case in the results below, compensates for relatively small size effects.

The method of FM seems to offer the best array of qualities required for the present empirical venture, i.e., single case experimental design. It provides opportunities for vivid and valid presentation of stimuli and quantitative measurement via the use of graphic rating scale, as well as refined statistical tools for data arrangement. This framework enables an exposure of each participating child to a series of variations of same background story. Each variation of such a story includes a specific combination of information on the levels of each component of the related schema, making the entire design a multi-factorial one.

The to-be-studied helping schema (see Eq. 2) is consisted of two components – self and other. In Eq. 3, the term SRo (Social Ratio) means relative weight of others' needs; O and S represent the independent weighting of the needs of other and self, respectively.

$$\mathbf{SRo = O/(O + S)} \qquad (3)$$

As an example for the computation of this statistic let's take nine demo ratings of a single participant, from a 3 x 3 matrix which is a sort of an operational representation of the bi-factorial design – needs of other and self. A formal representation of the design with the demo ratings is presented in Table 1. The difference between the marginal means of the right and left columns (8 and 2, respectively) gives the value of O. Similarly, the difference between the marginal means of the upper and lower rows (6 and 4, respectively) gives the value of S. Putting this numbers in Eq. 3 gives the relative weight of others' needs (SRo): SRo = 6/(6 + 2) = .75.

The viability of this measure was exemplified by Wolf (2001). The relevant predictions of the present study can be converged into terms of relative weighting. As in most studies which deal with related developmental issues, a cross-sectional comparison of kindergarteners with older children is essential. Use of the same procedure to measure relative weighting assigned to the needs of self and other would enable a standardized beyond age comparison.

Functional Measurement offers bi-factorial design, deliberated to achieve valid representation of individual participants' social schemata. In this study's terms, each participant was exposed to a bi-factorial set of information on the needs of self and other.

A complete bi-factorial combination of the three levels (little, some and much) of the needs of each of these two 'players' (3 x 3) forms a 9-cell design (see Table 1). To simplify the presentation of the molecular aspect of the design let's replace the quantifiers little, some and much with the digits 1, 2 and 3, respectively. Using these symbols, the nine combinations of the need of self and other are as follows: 1-1, 1-2, 1-3, 2-1, 2-2…3-3. The dependent variable was estimation of the likelihood that self will be willing to hand out a requested object in each of the nine episodes. A computational procedure offered by FM enables the production of quantitative representation of the overall level of willingness to help and especially the relative weight assigned to others' needs.

Table 1
A demo Example of a Bi-factorial (3 x 3) Rating Matrix

	Needs of Other		
Needs of Self	Little	Some	Much
Little	3	6	9
Some	2	5	8
Much	1	4	7

The experimental manipulation (after the measure 'before' and before the measure 'after' accomplished via two mini 9-episode FM experiments) was purported to facilitate assignment of greater relative weight to the needs of the other (to-be-imagined) child in conditions where the needs of self and other are well known (i.e., little-little, little-much,...much-much).

In the spirit of Wolf (2001, pp. 4-6), Solomon Design (hence SD) aims to enable a check of the effect of experimental manipulation (conversation in the present context) and ad-hoc control for the effect of participants' exposure to measurement before the manipulation.

The two-model experimental framework (FM and SD) is presented in Table 2. Group 1 includes measurements before and after suggestive (accentuation of others' needs) conversation (hence 'before' and 'after'). Group 2 enables a comparison of measurements 'before' and 'after' with small talk instead of suggestive conversation. Group 3 is free from exposure to measurement before the suggestive conversation. Group 4 is free from exposure to measurement before the small talk. Quite a few informative comparisons can be made within this framework. Most informative is an arrangement of all four measurements 'after' within a 2 x 2 design, Manipulation x Measurement 'before'. This way, the main and interactive effects of the conversation can be inferentially assessed.

Procedure

Following the basics of FM (see Anderson, 1982; 1990; Wolf, 2001), each participant was interviewed and questioned individually by a well trained (female) experimenter. These sessions took place at school in a small quiet room were both child and experimenter were sitting frontally near a small table which fits the human engineering of a child of the specific age. The experimenter spent much effort on warming up and calibration. Calibration required introducing the graphic rating scale and the end anchors (a smiling face and a face with neutral expression), and an exposure of the participant to several demo incidents to practice rating (in order to avoid cutting of range).

Information on a specific level of the needs of two children was included in the experimenter's request to imagine serially nine episodes of help-request, where the participant (self) is asked by another child (other), same gender same age, to handout an object belongs to self. To minimize unaccountable emotional effects, the participant was encouraged to

imagine any child as long as the relation with him or her is not too good or too bad. The distinction among not too good and not too bad hypothetical peers was a matter of understanding between the experimenter and each participant in his or her own terminology. Practically, participants of all ages (kindergarten-6th grade), had easy time thinking of such (intermediate) friends. Unlike the traditional approach which focuses on standardization of stimulation, the FM approach, which was applied in this study, assumes that a commitment of the participant to imagine a peer with whom he or she has intermediate relation should form a sample of imagined peers which is more intermediate than a sample dictated by a 'standard' protagonist peer presented by the experimenter.

The imagined object was chosen on the basis of a preliminary personal conversation between the child and the experimenter where personally useful objects were listed by the participant. Interestingly, the preferred choice of most children whatsoever was computer games. It should be noted that the same object to be imagined appeared in all nine situations. As about the object requested by the other child, the experimenter approved the use of objects (usually computer games) not so important for the child.

In each episode, the child was told by the experimenter how much both self and other need the requested object. This way she specified the level of need (how much the object is needed) for each of the two protagonists (little, some or much) at the very moment of the request for help. Then, in each episode the participant was asked to estimate the likelihood that in such a situation he or she would be willing to give the object to the other child. Order of the nine episodes (3 x 3) was incidental; namely, the experimenter switched from one incident in the bi-factorial design to another in an order which, according to her view, is not hinting to the participant on any function which may connect between the incidents. It should be noted that the same peer appeared as the request maker in all nine episodes included in the complete bi-factorial design, 'before' and 'after'. That is for sakes of homogeneity of stimulation. However, to increase independence between the incidents, the participant was instructed to think of a different occasion in the context of each incident.

More specifically, the experimenter asked the child to imagine situations in each of which when he or she is playing with an object a friend is coming over and asks for permission to play with the object. In each such episode, the child was instructed to think of a specific level of need of himself or herself and a specific level of need of the other child. The experimenter spent much effort in an attempt to frame the appropriate quantifiers for each participant using the child's own terms. In each of the nine episodes, the experimenter ascertained that the levels of need of the two

protagonists are easily recallable. Then, she asked the child how likely (on a 1-10 graphic rating scale) is the possibility that he or she would give the game to the other child.

The independent weight assigned to others' needs is a product of the difference between the marginal means of the extreme rows in a 3 x 3 matrix beyond columns, where *other* (O) is rows and *self* (S) is columns. Similarly, the independent weight assigned to the self (S) is a product of the difference between the marginal means of the extreme columns in the same 3 x 3 matrix, beyond rows. These values of each participant were placed in Equation 3, and the product, i.e., the value of SRo, was used as a dependant variable.

Table 2
Illustration of the Solomon Design in terms of the Present Context

	Experimental Phase		
Groups	Meas.'before'	Manipulation	Meas. 'after'
1	Responses to 9 episodes	Conversation	Responses to 9 episodes
2	Responses to 9 episodes		Responses to 9 episodes
3		Conversation	Responses to 9 episodes
4			Responses to 9 episodes

As about the conversation, the experimental manipulation, the experimenter asked the participant to recall various occasions where he or she requested from a peer some object. The child was asked to get to details about the situation, his or her needs, the response of the peer, related feelings, etc. Most importantly, using an empathy technique the experimenter encouraged the child to speak freely about everything which looks relevant in his or her eyes, using own words and own terminology.

The conversation lasted about 10 minutes. The closing point depended on the experimenter impression that the goal of increasing meaningfully the salience of everyone's needs is being achieved. Immediately after the conversation the other mini FM experiment was conducted. For the participants in the conditions without manipulation (Groups 2 and 4 in the Solomon design), a time interval of 10 minutes (similar to the time of the conversation in the other conditions, i.e., Groups 1 and 3) between the two mini FM experiments ('before' and 'after') was spent on having a small talk with the experimenter. It should be noted that the participants of Group 4 there were not exposed to a mini FM experiment, before the 10-minute small talk.

Results and Discussion

Methodology wise, equated (four) samples are necessary for the application of SD. This kind of control is possible by comparing the baseline (before manipulation) measurements (Groups 1 and 2 in each of the age groups). Seemingly, Groups 1 and 2 in each age group were sampled from the same population, in terms of the related helping schema. In terms of SRo, all *t* tests yielded negligible significance. In most of these tests, the value of *t* is even smaller than 1. The results of the inclusive test of two-way ANOVA are in line with this conclusion ($F < 1$).

Another advantage of SD lies in the option to conduct two examinations of the original hypotheses, intrapersonal and interpersonal. The former enables a comparison between the measurements after and before conversation, while the latter enables beyond age, i.e., developmental, analyses. A combination of the two was made via two-way ANOVA, Age (four age groups) x Group (1 and 2), using SRo as a dependent variable. This analysis does not reveal any interaction whatsoever, $F(3, 221) < 1$. The test discloses, however, a strong main effect of age, $F(1, 221) = 12.67$, $p < .01$, and a barely noticeable 'after' 'before' difference in groups 1 and 2, $F(1, 221) = 2.54$, $p < .05$.

The effect of age overshadows everything else: In contrast with Hypothesis 1, an unexpected decrease in the relative weight assigned to others' needs is evident. Follow up analysis in terms of Tukey's test isolates three different ages – Kindergarteners, 1st graders, and 3rd + 6th graders; the respective means are .61, .58 and .43.

A clear support for Hypothesis 4 implies clearly from the fact that kindergarteners assigned to others' needs greater weight than to their own needs! In terms of external validity, this effect might be limited to mid socio-economic children. These children, in their specific neighborhood, are exposed to extensive sociability education (see Rushton, 1988; Burwood & Wyeth, 1998). They are either taught to take care of their small brother or sister to help career centered mother or are taken care by their older siblings. Such learned effect, however, if purified experimentally, is in line with the functional assertion that sociability in preschool is modifiable (Wolf, 2001).

A comprehensive examination of the study's hypotheses focuses on the two effects included in SD, conversation and, in terms of the ratings 'after' of the four independent groups in all four ages. In line with Hypothesis 2, a tendency to view more positively others' needs following conversation without measurement 'before' (Group 3) is evident in both measures. A three-way ANOVA (Age x Manipulation x Measurement 'before') reveals two meaningful effects: age [$F(3, 220) = 12.50$, $p < .001$] and conversation [$F(1, 220) = 12.49$, $p < .001$]. Content wise, these effects reveal two contradicting trends in terms of two age functions (kindergarten to 6th grade) – reduction in the relative importance (weight) assigned to others' needs and increased social suggestibility (effect of conversation).

To present a comprehensive picture of these results two modifications were made, one for each of the due effects. For the effect of reduction in baseline SRo participants of Groups 1 and 2 for each of the four age groups were combined (for the participants of the other two groups there was a conversation, suggestive or small talk, before measurement). The differences between SRo 'after' to SRo 'before' in Group 1 provided an isolated estimate for the effect of suggestive conversation. Respective graphical representations are /presented in Figure1.

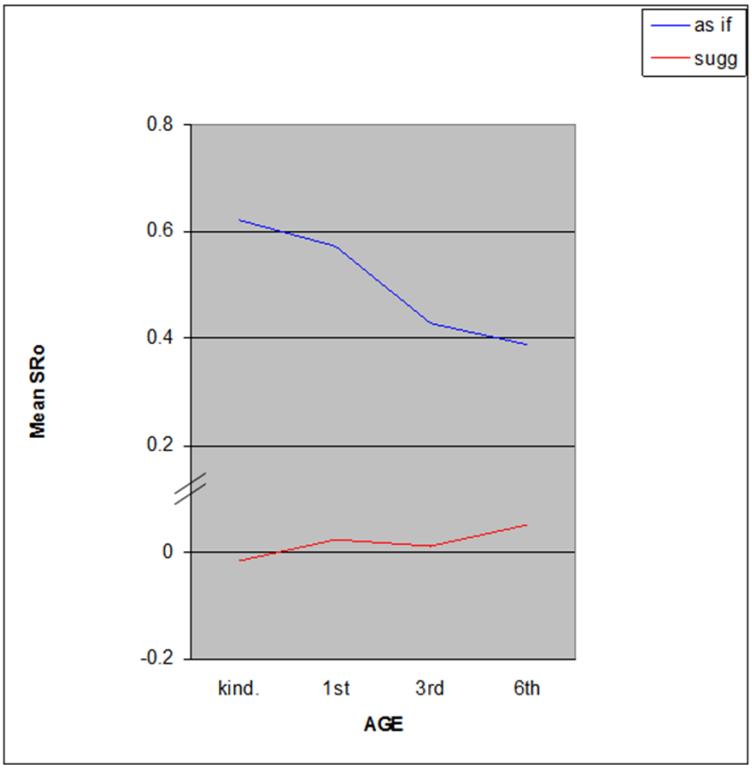

Figure 1. Age function in terms of baseline SRo values

Experiment 2: Helping Schemata in vivo

A preliminary qualitative examination was conducted to prime an account for the decrease with age of the relative importance (weight) assigned to others' needs,. A sample of 13 children from all four age groups was taken for illustrative considerations (four from kindergarten and three from each of the three elementary school grades). Each participant was interviewed individually. He or she was empathetically encouraged by the interviewer to speak freely about occasions where help, in terms of being asked to give a toy or another object, was requested by a peer. Evidently, the content of their verbal reasoning (see Appendix) became more pragmatic with age. This content seems to reflect an approach according to which the child would consider adhering to another child's request for help if some potential gain, such as a return of favor or building reputation as a good hearted child, is expected.

This matter reflects an age dependent change from naive to more realistic, pragmatic and sophisticated considerations. One related question is why, in terms of Experiment 1, a naive approach to others' requests at kindergarten has been reflected in assignment of greater importance to others' needs. The answer might be looked for in the make-believe nature of the experimental task. The participants of Experiment 1 were instructed and trained to imagine a peer's request in each experimental episode. Each such child was then asked to rate the degree to which he or she would be willing to comply.

Naturally, discrimination learning improves as the years go by. Kindergarteners' and 1st graders' ability to distinguish between 'as if' and 'in vivo' gestures is not comparable to that of 6th graders. The developing child learns to associate possible refusals with social denigration.

Socialization teaches such a kid that while there is an unpleasant social price for refusals in vivo, no such cost should result from 'as if' rejections.

In terms of the need to form a considerable basis for a comparison between 'as if' and 'in vivo', the ideal 'in vivo' task should be as similar as possible to the one used in the 'as if' task, i.e., sharing a computer game. However, the task of sharing a computer game did not work very well when it was pre-tested in an 'in vivo' condition. For understandable reasons, children were willing to hand out only obsolete computer games. Not surprisingly, money sharing worked quite well. In fact, money speaks to kids at all ages, even for kindergarteners, in a rather generalized and standardized way. A sort of justification for the present decision to use a task of money sharing is rooted in some unique quality of the measure of relative weighting, i.e., it can reflect validly beyond-task individuals' schemata in the form of their responses to a variety of related appearances of other-self everyday life dilemmas (Wolf, 2001).

On this basis, it was assumed that partial replication of Experiment 1 when the participant is required to respond to requests 'in vivo' would reveal a straightforward function where relative consideration of others' needs would increase with age. To enable an experimental exploration of this sort of reasoning a partial replication of experiment 1 was conducted. This time, however, the nature of the task of helping the child in need was concrete, i.e., money giving.

Method

Participants

The participants of Experiment 2 were 43 children sampled from a kindergarten (n = 10, Mean age = 5:5) and three elementary school grades – 1st (n = 10, M = 6:9), 3rd (n = 12, M = 9: 1) and 6th ((n = 11, M =11:7)), all reside in the neighbourhoods were experiment 1 was conducted. Each of these children did not have a record of social or emotional problems or any indication of learning disability; thereby they should belong to a population of similar background.

Design, Tools and Procedure

The quantitative part of Experiment 2 was a partial replication of experiment 1: bi-factorial manipulation of the information on the needs of another child (same gender and same class). The following three modifications were carried out. 1. Forty coins of 10 Agora (1/10 of Israeli Shekel; equivalent approximately to 4 cents) were placed on the table between the participant and the experimenter. The child was told that this is a payment for his or her participation in the game (experiment). Pre-experimental conversations revealed and assured that all participants from all age groups related to this amount of money as valuable.

Then, the child was asked to think of friends with whom he or she has an intermediary level of relations. He or she was then asked to think of one of them who on some occasion is asking for some extent of money (depending on the specific condition of the experimental model – some or much), provided that the participant needs the money too (to a given extent, depending on the specific experimental condition – some or much). The participant's task was to give the experimenter a certain number of coins for the friend in need in each of the four (others' needs x self needs = 2 x 2) experimental conditions. The experimenter documented the amount given in each of these conditions. It should be noted that SD was not replicated in this experiment, which was destined to focus on a specific implication of the results of Experiment 1.

Results and Discussion

Figure 2 presents descriptive SRo values, produced on the basis of the raw data of Experiment 2 (amount of coins delivered to friends in need by children from the four age groups). To enable a comprehensive comparison the two respective age related statistics from Experiment 1 are presented in the lower part of the table. Evidently, the age function of the relative weight assigned to others' needs (SRo) 'in vivo' seems to reflect an increase in sociability. The two older groups do not differ from each other; namely the observed increase is from age 5 to 9-12. The results of one-way ANOVA for independent samples support this impression, $F(3, 39) = 3.92$, $P < .05$. Tukey's test supports the conclusion that the children from the two older ages (9 and 12) should be included in one category. Overall, the results in conditions of social suggestibility (following a suggestive discussion) in conditions of 'as if' and in conditions of 'in vivo' giving reflect upward developmental trend while baseline results in 'as if' conditions point to a decrease in social attendance to others' needs.

Further clarifications with regard to the effects of social enrichment until the baseline age of the present study, i.e., kindergarten, might provide some clue as to the nature of the puzzling decrease in the relative weight assigned to others' needs. Experiment 3 was deliberated to provide preliminary insights regarding a couple of related issues. Firstly, replication of the findings which relate to kindergarteners; this time in terms of intra-personal observations 'as if' and 'in vivo', recalling that Experiments 1 and 2 provided inter-group observations. Secondly, exemplification of the viability of some derivation from the above hypothetical mechanism, which relates to the unique role of f helping 'as if' in kindergarteners.

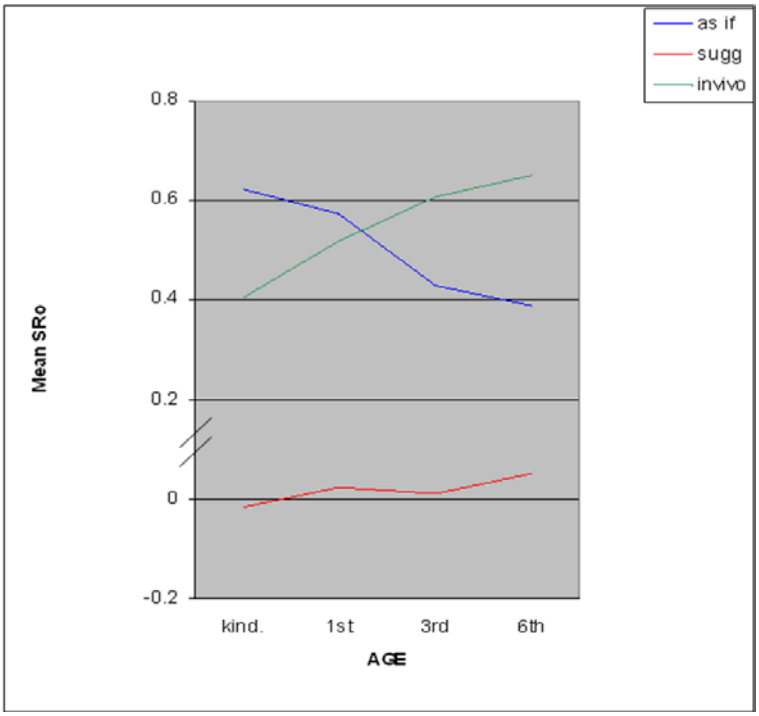

Figure 2. An overall view of the results

Experiment 3: Purifying Examinations of Kindergarteners

The two parts of Experiment 3 were deliberated to clarify some aspects of the findings of Experiments 1 and 2. Parts 1 and 2 attempted to purify methodological and substantive issues, respectively, with regard to kindergarteners' helping schemata.

Part 1: Intrapersonal Replications of Experiments 1 and 2

The participants in Part 1 of Experiment 3 were 14 kindergarteners (six girls and eight boys, M = 5:5). They were sampled arbitrarily from the same neighbourhoods where the participants of Experiments 1 and 2 were sampled from. They did not have a record of social or emotional problems or any indication of learning disability. Thereby their socio-economic background should be considered similar to that of the participants of Experiments 1 and 2.

Part 1 of Experiment 3 was a partial replication of Experiments 1 (as if) and 2 (in vivo). Measurement was made via bi-factorial manipulation of information on the needs of other and self (details see in the respective sections of Experiments 1 and 2). Namely, there were only two levels of needs – little and much. Therefore, there were four incidents in each sub-experiment ('as if' and 'in vivo'). Each participant met individually with the experimenter. He or she was exposed in an arbitrary order to both sub-experiments. The main goal of this part of Experiment 3 was intra-individual comparisons Thus there was no manipulation (i.e., conversation).

Table 3 presents descriptive statistics, produced on the basis of the ratings of willingness to comply with peers' requests in one of the two sub-experiments and number of coins given to peers in-need in the other sub-experiment. The respective statistics of kindergarteners from Experiments 1 and 2 are enclosed as well, for friendly comparisons. As can be seen in the table, the findings are in line with those of Experiments 1 and 2. Inferential comparisons between the respective statistics in Experiment 3 and the former experiments do not refute the expected null hypothesis which means an acceptable replication of the original findings, $t(22) < 1$ in all tests for independent samples.

Table 3
Comparison Between Experiment 3 and Experiments 1 + 2 in the 'As if' Mode Among all Four Age Groups

	Mode of Helping			
	As if		In vivo	
	M	SD	M	SD
Exp 3	.72	19	.44	.21
Exps 1 & 2	.62	.15	.40	.20

Part 2: Facilitation of Differentiation Between 'As if' and 'In vivo'

The participants in Part 2 of Experiment 3 were 15 kindergarteners (7 girls and 8 boys, M = 5:5), 13 of them participated in Part 1 of Experiment 3, and two other children were sampled from one of the original kindergartens. The procedure took place about two weeks after Part 1 of this experiment.

This part of the Experiment was based on the following reasoning. Assumingly, at early childhood there is no much differentiation between imaginative reality and outer reality and children tend to relate to the content of imagination as if it is part of concrete reality (Dilalla & Watson, 1988; Gleason, 2002; Gleason, Sebanc & Hartup, 2000; Jarrold et al., 1994; Lillard, 1993, Lillard et al., 2000; Nichols & Stich, 2000; Rakoczy, Tomasello, Striano, 2004).

Based on another premise, i.e., differentiation learning, it can be assumed that as the time goes by children learn to differentiate between 'as if' appeals and requests 'in vivo'. Presumably, they become more pragmatic. As such, they are expected to avoid loosing face in cases of refusals to help and thus act 'in vivo' in a way which looks friendly. At the same time, such a kid is learning that responses in 'as if' conditions are not likely to incite social denigration. This hypothetical reasoning might account for the puzzling finding which reveals two opposite age dependent trends. Part 2 of Experiment 3 was designed to provide a preliminary examination of some aspect of this account. The focus was on kindergarteners' assignment of relative importance to others' needs. It was hypothesized that suggestive approach by a qualified experimenter should facilitate momentarily greater differentiation between 'as if' and 'in vivo' situations, thus reducing the importance assigned to others' needs in 'as if' conditions.

Following the above rationale, the manipulation was based on the 'as if' part of the original design. Observations were made of a plain replication of FM as applied in Experiment 1. Namely, there was only one group of participants. The added element in the individual meeting between the child and the experimenter was a continuous attempt of the latter to convince him or her that the to-be-imagined situation is nothing but an 'as if' episode. The experimenter mentioned this to the child before the presentation of each of the nine measurement episodes and during each episode, just before rating. In accord with the expectation there was a meaningful and significant decrease in the relative weight (importance) assigned to others' needs, from .72 to .55 following the manipulation, $t(12) = 2.64$, $p < .05$.

Experiment 4: Extending the Upper Side of Age range

The main line finding seems to require some clarification in terms of age range. Of special interest is the nature of 'as if' and 'in vivo' responses in older children. To achieve some preliminary insight, 19 8th graders (M = 14:1) participated in replications of Experiments 1 and 2. Eleven of them participated in a replication of experiment 1 and eight participated in a replication of experiment 2; all were exposed to FM without further manipulation.

The results of the 'as if' condition are in line with the downward developmental trend found in Experiment 1: Mean SRo = .27, recalling that the respective values from Experiment 1 at kindergarten, 1st grade, 3rd grade and 6th grade are .62, .53, .43 and .37. However, the results 'in vivo' seem to reflect a change in the steady increase from kindergarten to 6th grade: Mean SRo = .51, recalling that the respective values from Experiment 2 at kindergarten, 1st grade, 3rd grade and 6th grade are .40, .52, .61 and .65. These findings might mark some inverse of

the 5-12 year-old children upward trend in conditions of helping in vivo. Noting that 6th grade is the last class of elementary school in Israel, the observed downward shift might be due to a complex array of factors which deserve special conceptual analysis and methodological purification. Of no less importance is the question whether or not the downward trend of 'as if' helping stabilizes at later age or changes direction down the stream of development of social maturity.

General Discussion

Programmatic Perspectives

Sociability is a surname for quite a few terms in contemporary psychology, such as prosocial behavior or helping. The frequent use of simple and uncontrollable measures, such as verbal reasoning (e.g., Colby & Kohlberg, 1987), might miss the complicated nature of the development of sociability, especially in terms of helping schemata (see discussions in Anderson, 1996, 2008; Wolf, 2001). FM provides a useful means to extract representations of cognitive sociability schemata from a mosaic of ratings of individual participants. Most viable is the relative weight (importance) assigned to others' needs, given a hypothetical two-component schema – others' needs and self needs.

In the present study weighting preferences were measured in two sorts of occasions, 'as if' and 'in vivo'. The very combination of these two sorts of modes can be looked at as an innovative way to reflect children's intentions to benefit others. Unlike most of the related studies whatsoever, this combination enabled the exposure of two inversed developmental trends (kindergarten to 6th grade: a decrease in the relative importance assigned to others' needs in 'as if' conditions and two inversed developmental trends – increased social suggestibility and an increase in others' importance in conditions of concrete helping. The surprise is twofold: the counter-developmental meaning of the age-dependent decrease in the importance assigned to others' needs, and the possibility that opposing functions can develop under the same phenomenological umbrella.

Theory of Mind

Theories on the development of social understanding (Gopnik & Meltzoff, 1994, 1997; Meltzoff & Moore, 1995) postulate that the child makes an analogy from his or her own mind to that of others. He or she acquires knowledge about others via self examination. Muller and Runions (2003) criticize the analogy theory and cite Baldwin (1906) according to whom at the beginning of development the individual does not differentiate between his or her ego and the ego of the other person. From that point on, development takes place in the course of a dialectic process via social imitation. Baldwin spoke of gradual differentiation of the self from the other and pointed out that this process is derived from continuous social activity.

Muller and Runions (2003) maintain that the ability to understand the other person’s attitude regarding the activity of the self develops through social interaction between parent and child and through cooperation with others. A combination between this sort of conception and verbal reasoning of children recorded in the present study from all four related ages supported our decision to compare make-believe helping with concrete helping. The viability of the finding on simultaneous routs of prosocial development taking into account possible ways of interaction between them might provide a takeoff point for studies which will confront the approach of Gopnik Meltzoff and Moore with that of Muller and Runions.

Differentiation and Imagination

An examination of social influence on kindergarteners' 'as if' choices (2nd part of Experiment 3) revealed a decrease in the (relatively high) importance assigned to others' needs. A possible mechanism which puts helping considerations in 'as if' and 'in vivo' conditions and imagination in one theoretical framework is outlined below. According to the basics of developmental psychology the important role of imagination and imaginary processing (make-believe in terms of the present study) is lessened as the time goes by, especially after preschool (Dilalla & Watson, 1988; Gleason, 2002; Joseph, 1998; Perner, Baker & Hutton, 1994; Piaget, 1962; Rackoszy, Tomasello & Striano, 2004; Richert & Lillard, 2002).

Naturally, the developing child learns to take into account practical considerations when asked for help. The kindergarten participants may have assigned relatively much importance to others' needs in 'as if' conditions, for apprehension of social reaction in case of refusals or for expectation to receive some reward (Borke, 1971). Assumingly, when such a kid accumulates more social experience he or she is expected to allocate less importance to imagined reactions. Then, practical considerations which are related to the request for help should play greater role than in earlier ages.

Functional Cognition

One important aspect of the present findings deals with the increase with age of social suggestibility since 1st grade. This finding is in line with quite a few successful attempts to achieve situational effects on children's helping schemata and responses (e.g., Feshbach, 1979; Wolf, 1995; 2001). This sort of effect is in accord with Wolf's (2001) exemplification of a change in preschoolers' blame schema. However, blame schema does not necessarily match, conceptually and methodologically, with helping schema (but see a comment at the end of this section). Thus, possible connection between the two sorts of schema and the issue of takeoff age deserve further analysis and examination.

Another issue, i.e., the exemplification of the viability of the notion of functional cognitive sociability in a developmental context deserves some programmatic consideration. The general term 'cognitive schema' means that an individual's experience and knowledge in each meaningful facet of life is encoded, perceived, and serves as a basis for responses to related stimulation. A schema is made of molar units which encompass the most salient features of the related reality for any individual. Speaking of helping schemata, the needs of other and self should have a considerable generality, as was shown in the present study and as is the case with culpa and consequences in the context of blame schema (Anderson, 1991a, 1996, 2008). The addition of helping schema to the accumulated assortment of empirical indications that individuals' organized view of various sorts of reality can be conceived as further support to Anderson's (1996, 2008) notion of functional cognition.

Another relevant notion is Wolf's (2001, 2002) hypothesis of moral modularity. This is a prediction that the weighting characteristics of a schema will change as a function of situational factors at a given context, such as task and goal. The presently exemplified effect of purposeful conversations on helping schema in both directions, upward (Experiment 1) and downward (2nd part of Experiment 3) provides further support to this hypothesis. On this basis, the advancement of a notion of cognitive modularity, based on Wolf (2001, 2002) is recommended.

With a specific regard to the developmental context, a child's relative weighting of others' needs, as a special case of helping schema, should be considered a special aspect of his or

her functional morality (Anderson, 1991a, 1996, 2008; Wolf, 2001). Further elaboration of the possibility of overarching moral development and social development under the umbrella of the functional theory of cognition and the cognitive developmental approach is of call.

Methodological Considerations

Critical Remarks

From a critical methodological perspective one may question the comparability of the two tasks – sharing a computer game (Experiments 1 and 3) and giving money (Experiments 2 and 3). However, if there is no basis for such a comparison, long time ago the literature on experimental child psychology should have been focused on only one sort of experimental task, to enable comparability. In fact, a comprehensive screening of many publications in the leading host of such experimentation, i.e., the Journal of Experimental Child Psychology, reveals use of very many sorts of tasks, all seem to share one generalized implicit presumption, i.e., that psychological development goes up, not down, in many directions whatsoever. The present study revealed a sort of counter-developmental trend in two replications (Experiments 1 and 1st part of Experiment 3), via one of the most prevalent reflections of social or moral development, i.e., make-believe schemata (see a review in Wolf, 2001),

Based on the above reasoning and recalling that quite a few regular developmental trends were found via such measures one should suspect the viability of the above mentioned criticism, recalling that the two inverse trends, downward and upward, were found by means of one experimental model. This model, i.e., FM, enabled an application of a standardized (bi-factorial) model and standardizing algorithm to extract a representation of relative weighting of others' and self needs from each participant's matrix of the two sorts of participants' choices – ratings (Experiments 1 and 3) and number of coins to be handed to a peer.

Two counter-arguments in terms of descriptive statistics can be raised as well. First is the similarly quasi-linear shape of the two developmental functions, downward and upward. Another counter-argument is the similarity between the standard deviations of the quantitative responses in the two modes. Nevertheless, it should be recalled that the nature of construction of the two phases of the advancement of the issue in the present study was a sort serendipity, i.e., swinging with the flow of foundation. Future experimentation on this issue should attempt to construct at least two perfectly similar (knowing that nothing is identical in psychological experimentation) tasks for the comparison between the two helping modes – sharing games and sharing money.

Methodological Modeling

The combination of FM and SD enabled within participant, between participants and between group comparisons (in terms of age and experimental group). This merger allows a comprehensive test of the effect of preplanned manipulation (purposeful conversation) and an ad hoc control of the influence of most relevant factor, i.e., measurement before manipulation.

The meaningful findings seem to provide an ad hoc support for Anderson's (1982, 1991c, 1996) claim that FM offers a valuable tool for the study of functional cognition. In the present study this method enabled an instructive reflection of children's helping schemata,

based on a mosaic of responses produced on the basis of multi-factorial experimental design. As exemplified in the onset of Experiment 2 (see appendix) this method gains from simultaneous recording of children's verbal reasoning (see Carpendale, 2000, on the relevance to the cognitive developmental approach), which provided complementary qualitative data. Furthermore, the inversed developmental functions found in this study seem to provide an empirical support for the claim (Wolf, 2001) that cognitive schemata should be related to as an overarching concept for both rating responses (as if) and concrete choices (in vivo).

Another important methodological note should be referred to the outstanding work of Gilath, McCall, Shaver and Blascovich (2008) on possible scientific gain from the study of the connection between prosocial tendencies and virtual reality. These researchers used a tool called Immersive Virtual Environment Technology (IVET), which they claim has important methodological advantages, such as precise measurement, easing across participants replication and high ecological validity. Such qualities appear to offer a valuable method for an experimental study of the development of prosocial behavior. However, any attempt to use this tool for related issues should begin with thorough analysis of similarities and differences between pretending, imagination and virtual processes.

Prospective Regards and Applied Implications

Much empirical purification should be made as a precondition to any attempt to illustrate a viable mechanism of prosocial decisions and processing. Most imperative is an analysis of the presumed connection between the age dependent relative role of two substantive aspects of cognitive development – imaginary processes and relative weighting of the two components of helping schemata – the needs of others and self). Systematic research on the role of emotional states in helping and as a part of the developed sociability is recommended as well (Bretherton, Fritz, Zahn Waxler & Ridgeway, 1986; Leiman, 1978; Mikulincer et al., 2005). Ffurther research should focus on overarching (unification of) moral education and sociability education as well (e.g., Eisenberg-Berg, 1979; Ruiz & Valejos, 1999).

A number of cognitive developmental writers offer educational implications of their approach (Gelman, 1969; Kohlberg & Turiel, 1971; Rest, 1986; Tirri, 1999). Such suggestions are based on their substantive premises, one of which is that cognitive development should be approached in terms of stages. A special case of this view implies that at an early stage of development, presumably preschool, a sort of egocentricity (which can be looked at as a special case of centration) is expected.

The indication that kindergarteners can assign meaningful importance to others' needs does not accord the cognitive developmental presumptions of stages and egocentricity (see Buckley, Siegel & Ness, 1979). Nevertheless, for reasons mentioned in the former section, caution is urged when raising applied suggestions in terms of sociability education, based on these findings. While casting doubt on the widely used educational and deductive means derived from the postulates of the cognitive developmental approach, the present findings do not imply that these postulates are not applicable. Practically they are. Most educational and teaching programs all over the globe are based on these postulates, explicitly or implicitly. This fact, however, does not negate the possibility that some cautious recommendation from the present findings might prove applicable as well.

One may begin with a derivation from the (present) findings which exemplifies an increase in the weight assigned to others' needs following a short term purposeful conversation. Repeated educational intervention like those applied in the present study or in the study of Wolf (2001),

which used fables as a means for the facilitation of weighting shift, might empower sociability and prosocial behavior. Empowering children's ability to take others' view, i.e., empathy, might take place as another means for that purpose (Coke, Batson & McDavis, 1978; Feshbach, 1979)..

Further implications of such an approach are noted by Rushton (1988), who showed that prosocial behavior facilitate independent and autonomous thought in children from families with warm and nurturing relations (see also Burwood & Wyeth, 1998). Role playing can be instrumental for such educational move as well (Selman, 1976). Children's participation in role-play, including an analysis of anti-social events, may develop the child's ability to experience events from the other person's perspective (Looft, 1971; Piaget, 1932/1965).

The present findings support a recommendation to undertake another way to develop social awareness by means of a game that accompanies a conversation (Rubin & Pepler, 1982, 1991). Supposedly, such communication process would achieve an additional goal. That is, a responsible adult would serve as a model for empathetic communication. According to the social learning approach, the child is influenced by model figures and tends to imitate them (Astor, 1994; Bandura, 1973, 1986). Originally, these researchers dealt with the imitation of aggressive behaviors, but such powerful effect (i,e., modeling) should apply to prosocial behavior as well (Radke-Yarrow, Zahn-Waxler & Chapman, 1983). Children's special need for reward and approval is liable to add an element of operant learning which should reinforce learning of empathy.

Based on Idisis and Wolf (2002), educators can allocate more attention to their role as models for meta-judgment of their own sociability. This seems to suite the constructivist (cognitive developmental) postulate which deals with children's need to find meaning within themselves and to build inner learned knowledge (Barret-Lennard, 1993; Basch, 1983; Berger, 1984; Tuch, 1997).

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Appendix

*Verbal Reasoning of a Sample of 13 Children from the Four Age Groups**

Kindergarteners

1. I was very angry at my mother since she gave presents to my friends and I cried because we bought them. What's the point? It wasn't a birthday party where you give presents. I asked my mother to tell them to give back the presents because I didn't want to give the presents, because I wanted to play with them. I really wanted to play with them and because of my mother I lost them.

2. My brother asked me for a snack and I didn't give him. Later on I found out that he also got something that I like a lot. I asked for it and he said: "You didn't give me either." I told him that I didn't give him the snack because I didn't know that he is going to have something I would want.

3. I had a candy bar and I gave it to a friend. I did it because I don't collect the covers of this specific candy.

4. If I had a lot of toys I would give the ones I have twice. I would give Itamar and possibly Nir [names of friends], and all my friends except for Peleg [another friend]. Peleg hits me…I wouldn't give him because he has a lot and he has more than me and if I would give him a lot he would beat me. If he had 40 toys and I had 160 I would give him 100 and then he would have more; then Itamar would have 140 and I would have 60, so I wouldn't give him even 40 toys. If he ever comes close to having the same amount as I have I wouldn't give him.

Grade 1

The following narratives seem to provide examples of more pragmatic considerations in 6.5 year-old children:

1. I would like to have lots of friends and so I have to give them lots of things. I'm sad when they give me lots of stuff and I can't give them anything. I really want to give them. When I have something like money I give everyone an equal share because I don't like it when I have a lot more and it's also not fair for me to have less and for them to have more.

2. At the spring fair I asked my mother to give me money and she gave me. When the fair was over I gave my mother eight Shekels [Israeli money] which I did not spend. I get 20-30 Shekels from my mother every week. I save it so that when I'm big I can buy a palace to live there with my mother, and I'll be able to buy games for my kids. If my they are good kids I'll buy them lots of things, even if it costs 1,000 Shekels. I'll give them whatever they want if they behave well, even if they want a dog.

3. I brought a Game-boy with me to school and Idan [a friend's name] asked if he could play with it. I gave it to him because he's my best friend and he also says that I'm his best friend. I'm happy to give him the game because he gives me pizza. I give him the game and he gives me his. I am happy because I like his game.

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* Free translation from Hebrew

Grade 3

Considerations beyond give-and-take rational, which focus mainly on the satisfaction involved in giving are reflected in the following narratives:

1. I always give the other kids things in the middle of class time. Kids ask me for rulers and scissors, as if I'm the only girl in the class. Every time a friend of mine needs it I give it to her. Just like my mother gives to people in need. She helps needy people. Many people help needy people. There is a storage place full of clothes. These people [the donors] feel good for donating. It makes them feel good to donate. Like [the prophet] Moses, if he didn't give to anyone, if he was bad like Pharaoh, then at the end there would be no Jewish nation. We would still be slaves. If God hadn't created Moshe Israel would not exist. The person who receives the donation also feels good. He is happy that people are donating all kinds of things that he needs. If no one donates, all poor people who have no jobs would die at the end. They need houses like everyone else and they live off of those clothes. They sell it to get some money.

2. I really wanted to play with my sisters. Yesterday I decided to give them a present. After I gave it to them I remind them that I gave them things that they really want and so they should give me something in return. It's not fair that only I give them and they get everything. It doesn't matter what they give me. You have to give and not just receive. They give me all sorts of things that they get for their birthdays. They let me play with them even when they don't want to. I love very much giving them because I am glad when they are happy. I am also very happy when I help someone. Even if I don't like the person I know that I helped him. He's also happy because possibly people don't help him; maybe people don't really love him and he doesn't get any attention, but he gets attention from me.

3. I have friends who ask me for all sorts of things. I like being generous since I feel good when they are happy because I gave to them. I give them things that I don't need so much. I give my sister the pens that I don't need and don't want. My mother gives me earrings that she doesn't really need.

Grade 6

Narratives like those presented above, which reflect quasi-altruistic considerations mixed with practical considerations, are presented below:

1. Mother asked me to help preparing the party of my sister's birthday and I helped her. Sometimes it's fun to help. It was also fun to prepare balloons and drinks. Preparing games for the kids beforehand was fun too. Sweeping is less fun. I brought all the cars and superheroes to my cousin because he loves superheroes and it made me happy that he was happy, but also because I didn't need the cars or the superheroes anymore.

2. When we went to the store I asked a boy from another school for money. He gave me two Shekels. I was happy. I asked my brother for money to go to McDonald's. We always pay for each other. If he gives me I give him too. He distributes newspapers so this is money that he earns. If I take his money all the time then he won't have any left at the end! And vice versa, if I would be working I would want him to pay me back. When I needed a colored shirt she gave it to me because she knew I would give it back.

3. My friend asked if he could borrow money from me. I gave him the money and he returned it to me. He's the one that wanted to return it. I told him he didn't have to. He needed the money to get in to a movie. I am willing to lend up to 10 Shekels, because otherwise it's a bit absurd for me to give him all the money for a movie. I got a card for free gifts in the mail. I'm willing to give this because I don't need it. I don't need it and my friend does, so I give it to him.

The above mentioned study of Wolf (2001) was conducted within a combination between two experimental frameworks – FM and Solomon design (Campbell & Stanley, 1963; Shadish, Cook & Campbell, 2001; hence SD). The former was used to achieve a valid and valuable measurement before and after conversation, and the latter served as a bi-factorial framework for an overall assessment of three possible effects – measurement before conversation, conversation, and interaction between the two.

The FM methodology requires, as detailed in the first empirical section below, a series of ratings; each rating is made in response to an incident where one child harms another one. The FM design included a series of such incidents arranged in the form of bi-factorial (2 x 2) design. Each of the four incidents included information on a specific combination of intent and damage (two levels each) and the participants rated the blameworthiness of the perpetrator. The relative weight (moral ratios) assigned to intent, which was computed on the basis of all four ratings, provided a numerical representation of each participant's blame schema. The moral ratios in the bi-factorial table presented by Wolf (2001, p. 6) expose an increase in the weight assigned to intent as an interactive function of measurement before and conversation.