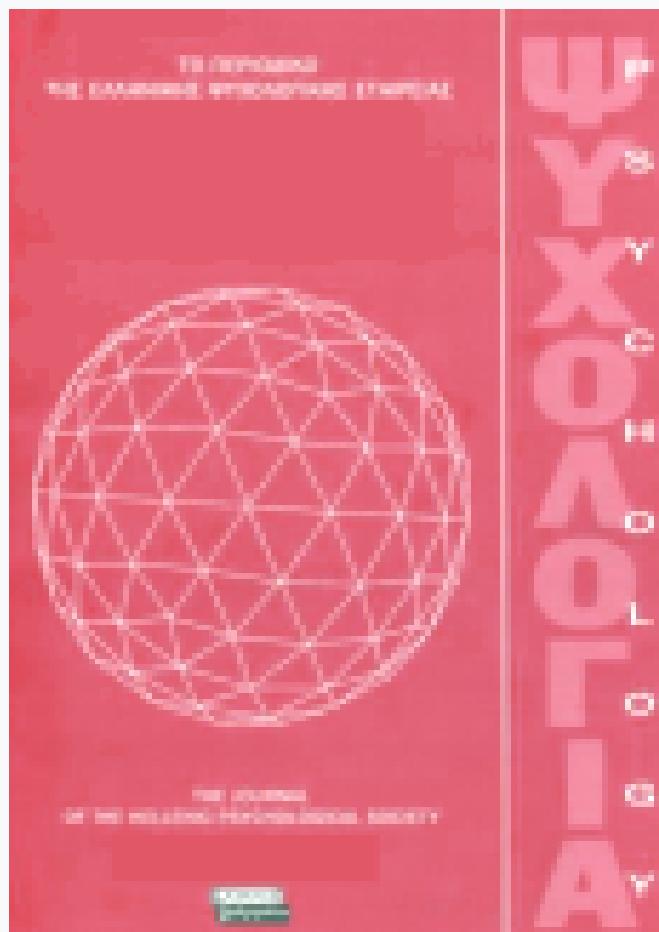


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Intrinsic and extrinsic motivation for religious thinking in a sample of Greek Orthodox children

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ABSTRACT

In the study of religious behaviour the terms *intrinsic* and *extrinsic* were used to differentiate two forms of motivation underpinning religious practices and thought.

In this study, participation in religious practices of both children and their families was considered indicative of *extrinsic* motivation for the children, whereas religious experience was considered indicative of *intrinsic* motivation. It was predicted that intrinsic motivation would lead to a higher level of religious thought than extrinsic motivation. One hundred and twenty Greek participants from eight to sixteen years of age took part in the study. Participants were interviewed with three sets of questionnaires. The first set investigated the existence of extrinsic motivation and the second the existence of intrinsic motivation. The third questionnaire tested five religious concepts. Multiple regressions analysis (stepwise method) showed that only the effect of religious experience (i.e., intrinsic motivation) predicted a higher level of religious thinking; however, this effect was not equally strong for all the religious concepts tested. A multivariate analysis of variance (MANOVA) was used to test the possible interaction between intrinsic and extrinsic motivation. The multivariate analysis did not reveal second or first order interactions between extrinsic and intrinsic motivation. The main effect of religious experience was the only significant effect found.

Key words: Intrinsic motivation, Religious experience, Religious thinking.

Church leaders and religious teachers are often heard urging parents to guide their children toward church attendance, private prayer and participation in church life in general. What do they really expect to achieve by this? Is there any hope of bringing about an improvement in children's ability to use religious concepts and understand religious ideas? If so, are these hopes well founded? In other words, are children from religious families or children who are religious themselves more motivated toward

religious thinking than children from non-religious families or children who are not religious? Motivation in this context can be defined as "underlying value towards or reasons for learning" (Hooper, 1994). Motivation in this sense is typically not measured directly but rather from behavioural changes in response to internal or external stimuli.

Even if individuals believe that they are competent and successful in an activity, they may not engage in it if they have no reason for

Note 1. Part of this paper was presented in the 6th Workshop on Achievement and Task Motivation, Thessaloniki, 27-30 March 1998.

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doing so. The motives people may have for getting involved in various activities are their values of achievement (Eccles, Adler, Futterman, Goff, Kaczala, Meece, & Midgley, 1983), achievement goals (Dweck & Leggett, 1988) and intrinsic and extrinsic motivation (Deci, 1975). The particular focus of this study was the intrinsic and extrinsic motivation children may have in order to function at a high level of religious thinking.

"Intrinsic motivation" refers to choosing to do, and then doing, an activity for its own sake, rather than for "extrinsic" reasons such as receiving recognition or grades (Deci, 1975). For Eysenck (1982), intrinsic motivation to perform a task is present if engaging in that task enhances a person's feelings of competence and self-determination. On the contrary, extrinsic incentives provide satisfaction which is independent of the activity itself, and they are controlled by someone else rather than the person himself or herself.

In the field of religion, Allport (1966) used the terms "intrinsic" and "extrinsic" to distinguish two polar types of religious affiliation, while Wilson (1960) used the terms "intrinsic" and "extrinsic" as orientation to or motivation for religion. The above distinction was useful in order to distinguish religious people who were involved in social behaviour such as ethnic prejudice (Allport, 1959, 1960, 1966; Allport & Ross, 1967), anti-Semitism (Wilson 1970), anti-Negro prejudice (Feagin, 1964), religious experience (Hood, 1970), assertiveness (Kraft, Litwin, & Barber, 1986), anxiety (Baker & Gorsuch, 1982), etc. Many different definitions of extrinsic and intrinsic religious motivation have been proposed up to now, and various researches have failed to agree on a common operational definition of the terms. There is general agreement, however, that extrinsic religious motivation involves components such as *instrumental* (supports and serves non-religious ends) and *selfish* (self-centred, use for one's own ends) (Feagin, 1964). Brown (1964) suggested

that extrinsic religious motivation may be of two types: "inner" (use of religion for personality support or help in crisis) and "outer" (use of religious membership and participation for social purposes). For Hunt and King (1971) the operational definitions of intrinsic religious motivation involve components such as *ultimate* (religion is a final good), *unselfish* (not self-centred), *salience* (sincerely believing, without reservations) and *regularity* of church attendance. Hoge (1972), however, stressed that specific religious activities such as church attendance and religious reading are not very reliable indicators of intrinsic religious motivation. He suggested that "the measurement of intrinsic religious motivation should be limited to other dimensions of religiosity such as *ultimate* versus *instrumental*" (p. 371). Moreover, Hood (1970) found that intrinsic religious motivation was significantly related to religious experience. Looking for a link between intrinsic and extrinsic motivation and the development of faith, Chirban (1981) concluded that "intrinsic is an implicit striving of religious experience which stems from within the individual" (p. 114). Religious experience, in this context, was defined in the same way as in the Eastern Orthodox Christian doctrine: "The experiential requirement for doing theology" and not as in the Western mysticism: "A loss of consciousness or ecstasis".

Empirical research concerning the effect of intrinsic and extrinsic religious motivation on religious thinking does not exist to our knowledge. On the contrary, a lot of empirical evidence exists on the effect of religious behaviour and attitudes of the individuals and their closest familial environment on their religious thinking. The evidence, in general, suggests the importance of the family's religious attitude (Ban, 1986; Dudley & Dudley, 1986; Forliti & Benson, 1986; Hyde, 1963; Vergote, 1980) and of the adoption by the children of religious practices such as church attendance (Dydney & Dydney, 1986; Hyde, 1990) and private prayer (Cater, 1976) for the development of their

religious thinking. However, notable studies (Goldman, 1964; Mark, 1982) found a low, non-significant correlation between religious cognition and religious attitudes and behaviour. On the other hand, various studies (Allport & Ross, 1967; Clark, 1965; Farmer, 1992; Ranwez, 1965; Tamminen & Nurmi, 1995) stressed the importance of the mystical encounter with God for the sense of God's presence in the world. For Vergote (1965), this mystical encounter constitutes the religious experience, and Allport and Ross (1967) considered the individual with awareness of the presence of God as an intrinsically motivated person.

This study aimed at investigating the possible motivational effect of the Greek Orthodox children's engagement with religion on their religious thinking, that is, their ability to use religious concepts and to understand religious ideas. The motivation for children's religious thinking could derive from their family's religious behaviour, from their own religious behaviour, or from more internal factors such as their personal religious experience. We assumed that children would be motivated either intrinsically owing to a personal encounter with God, or extrinsically, owing to participation in religious activities or living with religious families or both. We did not include specific religious activities such as church attendance and private prayer as indicators of intrinsic motivation for two reasons: first, such behaviour is not a very reliable indicator of intrinsic religious motivation and it seems preferable in studies for intrinsic religious motivation to keep religious behaviour separate conceptually and operationally (Hoge, 1972). Second, we assumed that, because of the range of the age of the participants in this study (8–14 years of age), participation in religious activities is correlated with the religious behaviour of their parents, who control the activity (see Dudley & Dudley, 1986; Pnevmatikos, in press), rather than with their own intrinsic motivation.

The following questions were formulated as regards the impact of children's intrinsic and

extrinsic motivation on understanding religious concepts and ideas. Does participation in religious practices enhance children's motivation for higher-level religious thinking? Does compliance with religious practices suffice to motivate individuals, or is a personal encounter with God and the mystical experience stemming from it more important?

The following hypotheses were formed: it was predicted that if a child is a frequent churchgoer or prays frequently, and therefore has high extrinsic motivation, then he/she will think in a higher level of religious thinking than if he/she is not actively engaged in religion. Moreover, if the child has experience of God's existence, and hence is probably more intrinsically motivated, he/she will think in a higher level of religious thinking than if he/she does not have any religious experience. In other words, the prediction was that children with intrinsic motivation will have better performance on religious thinking tasks than children with extrinsic motivation, and children with extrinsic motivation will perform better than children with no motivation at all for religious thinking (Hypothesis 1).

Deci (1975), however, argued that the effects of extrinsic and intrinsic motivation are not cumulative but interactive. He posited that when extrinsic motivation is predominant, the effect of intrinsic motivation decreases, whereas insufficient extrinsic rewards tend to increase the effect of intrinsic motivation. Therefore, it was predicted that children who come from religious families and who are religious themselves, that is, who are extrinsically motivated, should tend to score lower on intrinsic motivation. In contrast, the group of children who come from religious families but do not adopt their parents' religious attitude and vice versa, and therefore their extrinsic motivation is low, they should have increased *intrinsic* motivation. As a consequence, children who do not follow their parents' religious attitudes are expected to perform at a higher level of religious thinking than their peers

who follow their parents' religious attitudes (Hypothesis 2).

Method

Participants

Fifteen males and fifteen females of 8, 10, 12, and 14 years of age (N=120), who were Greek Orthodox and came from the city of Thessaloniki, participated in the study. As can be seen in Table 1, the majority (57.7%) of the individuals interviewed in this study and their families (53.8% for fathers and 73.9% for mothers) had a positive attitude towards religion. However, it should be noted that all information regarding religious attitudes came from individual interviews with the children and not from objective measurements. We did not have information from parents themselves as to their private prayer and religious experience and we had to contend ourselves with the answers to a question put to the children related to the frequency of their fathers' and mothers' church attendance. That is, children were asked about the frequency of their father's and mother's church attendance.

Tasks

Extrinsic motivation. *Children's religious profiles.* The questionnaire involved two items and investigated the degree to which the participant related to religion; the first item measured children's frequency of private prayer (*How often do you pray?*); the second item concerned the frequency of church attendance (*How often do you go to church?*). The answers were given on a scale from zero (never), one (I pray only when I need to ask something / only for special socio-religious services), two (only when I am in a church / occasionally, e.g., in Easter and in Christmas), three (once a day / between one and two times per month) and finally four

(twice a day / between three and four times per month).

Family's religious profile. The second set of items investigated the parents' frequency of church attendance - both the father's (*How often does your father go to church?*) and the mother's (*How often does your mother go to church?*). Responses were scored on the same scale as above.

Intrinsic motivation. Religious experience. The existence of religious experience in the children was measured with the following items: *Could you report any personal experience coming from your encounter with God? If so, could you describe it? How did you feel? If not, why do you think that you did not have any personal encounter with God?*

Scoring. Answers were given a score between zero and four. Specifically, zero was given to irrelevant answers or to yes/no answers without any explanation. One was given to answers which expressed failure to have any personal encounter because of objective technical difficulties (e.g., *I can't have any because God lives in heaven and there are clouds between us*). Answers which referred to social experience and knowledge about the God - Man relationship were given a score of two (e.g., *we meet Him whenever we pray to Him*). Reference to personal experience without sufficient explanations were given a score of three (e.g., *I felt His presence once when I was in danger*). And finally, answers expressing detailed personal experience accompanied by emotions of satisfaction received a score of four (e.g., ... *It is an absolutely different feeling: my existence was overflowed with happiness...*).

Religious Thinking tasks. Each participant's religious thinking was determined by the use of a semi-structured interview (Pnevmatikos, 1993). The interview lasted approximately 25 - 40 minutes. The interviewer introduced a story concerning the Fall of Man (Genesis, 1-2). Afterwards, the interviewer talked with the child about the story, posing questions concerning

five concepts of religious literature. The questions demanded a variety of cognitive skills and in previous study (Pnevmatikos, 1995) were found to scale in three developmental levels.

Specifically, the first religious concept we examined referred to the "Idea of God" (7 items):

1. The child's image of God: *When you are thinking about the story of the Fall of Man, how do you imagine God? Could you describe Him?*

2. The place He lives: *Does God live somewhere? If so, where? Could you describe it? If not, explain your answer.*

3. The need to sleep: *Does God sleep? If not, explain your answer.*

4. The need to eat: *Does God eat? If so, how and what? If not, explain your answer.*

5. Communication with people: *What people does God communicate with? Does He have preferences?*

6. The means of communication: *How does God communicate with people?*

7. Communication with two people at the same time: *Is it possible for God to communicate with two people at the same time - with a person living in Africa and one living in Greece? If so, how? If not, why not? Could you explain your answer?*

The second religious concept referred to the "Idea of the Devil" (9 items):

1. The image of the Devil: *Do you think that the Devil exists today as in the past? Could you describe him?*

2. The place where the Devil lives: *Does the Devil live somewhere? If so, where? Could you describe it? If not, explain your answer.*

3. The need to sleep: *Does the Devil sleep? If so, where? If not, explain your answer.*

5. Communication with people: *What people does the Devil communicate with? Does he have preference?*

6. The means of communication with people: *How does the Devil communicate with people?*

7. Communication with two people at the same time: *Is it possible for Devil to communicate with two people at the same time - with a person*

living in Africa and one living in Greece? If so, why not? Could you explain your answer?

8. Communication with God: *Do the Devil and God communicate with each other? If so, how? If not, did they communicate in the past? When did they stop communicating?*

9. The necessity of the Devil's existence: *Why does God not get rid of the Devil?*

The third religious concept referred to the "Idea of Freedom of the Transcendent" (3 items):

1. The nature of God's freedom as creator: *Is there something that obliged God to create the universe? If so, what? If not, why do you think God created the universe?*

2. The nature of God's freedom - cannot be negative: *Is there any possibility of God changing His mind about Creation? Could you explain your answer?*

3. The relation of God's freedom to the freedom of the people He created: *Was Adam's freedom the same as God's? If so, what were their common elements? If not, what were their differences?*

The fourth religious concept referred to the "Idea of Freedom of Human Beings" (7 items):

1. The necessity of boundaries in defining human freedom: *Why did God forbid Man to eat the forbidden fruit?*

2. Why does God not intervene when people transgress the bounds: *Why did God not help Man when he was prepared to eat the forbidden fruit?*

3. The first people hide: *Why did Man hide when he heard God coming?*

4. How could Man have reacted? Was it a good decision to hide? If not, how could Man react? Could you explain your answer?

5. The boundaries today: *John's parents forbade him to watch television last night because they assumed that the film was not suitable for children of his age. Do you think John was free? Explain your answer.*

6. The role of God in marginal situations: *Christos, 19 years old, stole money from a house. When the owners came back home and saw what*

had happen, they said to each other: 'Why did God not root the thief to the spot when the thief was here? What do you think? Why did not God do that?

7. The Devil's freedom: Can the Devil do whatever he wants? Explain your answer.

Finally, the fifth concept referred the "Idea of Prognosis" (7 items):

1. Prognosis and Man: Does God know everything we do in our lives?

2. Individuals' action if they were in Adam's position: If you were in Man's position, how would you act? Explain your answer.

3. People's will and prognosis: Have you ever hidden yourself from God? Explain your answer.

4. God's prognosis today: Tom, the oldest son in a family, is an important scientist. Orestis, the youngest son of the same family, is in prison for life. How did God's prognosis affect the life of the two brothers? How can we see so many differences?

5. God's prognosis and our lives: Could you explain to me what happens with God's prognosis and the way we live our lives?

6. Prognosis and freedom to choose in our lives: Can everyone plan his/her life, as he/she wants? Explain your answer.

7. Prognosis and faith: Why do some people believe in God and others not?

Procedure and scoring. The interviews were conducted by the author at the students' school in a private room. The interviews were taped and scored afterwards. Participants were given a score between zero and four for each item. Irrelevant answers or yes/no answers without any explanations were given a score of zero. Anthropomorphic answers were given the score 1 (e.g., God is an old man living in heaven). Answers with supernatural anthropomorphic elements were given a score of 2 (e.g., God is like a superman, He can do everything). Supernatural answers with anthropomorphic elements used in negative way (He is not like people) were given a score of 3 (e.g., God is not like a man, He does not have a body). A mark of 4 was given to answers which emphasised spirituality without any reference to anthropomorphic elements (e.g., God is spirit, God is love, God is everywhere).

Results

The structure of the items measuring motivation

As previous research does not exist, we had first to investigate the structure of the items measuring motivation for religious thinking despite the small number of items. A principal components analysis was applied on the items measuring motivation. Two factors were extracted, explaining 67.9% of the total variance (see Table 2). The first factor explained 47.9% of the variance in the sample. The variables representing extrinsic motivation for religious thinking, namely, church attendance (father .786, mother .873, child .822) and private prayer (.577), were loading this factor. This factor was labelled *extrinsic religious motivation*. The second factor explained 20.1% of the variance in the sample, and was labelled *intrinsic motivation*; it was loaded by the variable measuring religious experience (.996). Therefore, our assumption of two distinct forms of motivation was supported, although a factor with one item is very weak.

The religious profiles of the family and the child

The next step was to test if there were similar religious profiles between parents and children. This was necessary in order to test Hypothesis 2, and also to further support the assumption that children who participated in religious activities were extrinsically motivated. A bivariate correlation analysis was applied to the data. Table 3 presents the association (Pearson's correlation) between individuals' church attendance, frequency of private prayer and religious experience with the respective measures of parent's church attendance.

Answers regarding the father's and mother's religious characteristics were highly correlated between them as regards church attendance ($r=.635$, $p<.001$). Usually, parents have the same attitude towards religion.

Table 1
Percentage (%) of participation in religious activities

Church attendance	Never	Only for special social Services	Occasionally	One-two times per month	Three-four times per month
Child	0	1.7	22.7	41.2	34.5
Father	3.4	6.7	36.1	32.8	21.0
Mother	2.5	1.7	21.8	40.3	33.6
Private prayer	Never	Only when I need to ask something	Only when I am in church	Once a day	Twice a day
Child	1.7	18.5	5.0	63.0	11.8
Religious experience	Irrelevant answers	Failure: Technical difficulties	Refence to social experience	Personal experience, not detailed	Personal experience, detailed
Child	9.2	16.8	30.3	22.7	21.0

Table 2
The factor structure abstracted from the items measuring motivation
(Principal components analysis)

	Factor I	Factor II
% Variance	47.9%	20.1%
Eigenvalue	2.392	1.003
Church attendance		
Father	.786	-.020
Mother	.873	-.025
Child	.822	.103
Private prayer		
Child	.577	.021
Religious experience		
Child		.996

Table 3

Pearson's correlation between individuals' church attendance, private prayer and religious experience and their fathers' and mothers' church attendance

	Church attendance			Private prayer	Religious experience
	Father	Mother	Child	Child	Child
Church attendance					
Father					
Mother	.635***				
Child	.455***	.653***			
Private prayer					
Child	.286**	.305**	.378***		
Religious experience					
Child	-.037	-.061	.018	-.026	

Note: **p=.01, ***p=.001

A significant correlation was also found between children's church attendance and the frequency of their prayer ($r=.378, p<.001$) but not between children's religious experience and their church attendance ($r=.018, p>.05$) nor between religious experience and the frequency of private prayer ($r=-.026, p>.05$). Therefore, the most frequent churchgoers were also those who prayed most frequently in private. In contrast, religious experience did not correlate with these two religious behaviours and was independent of them. It may occur either in children who participate in religious activities or in children who do not or do so to a limited extent.

Moreover, there was a significant correlation between children's answers regarding church attendance and both parents' church attendance ($r=.455, p<.001$ for father's and $r=.653, p<.001$ for mother's). Children adopt religious practices somewhat similar to those of their mother's and father's. Significant correlations were found between the private prayer of children and that of their fathers ($r=.286, p<.01$) and mothers

($r=.305, p<.01$), and their own church attendance ($r=.378, p<.001$). In contrast, no significant correlation was found between the variables measuring religious behaviour and religious experience. Thus, religious experience does not necessarily occur among individuals having religious or coming from families having positive attitude towards religion.

For later use, two religious profiles were formed based on the data presented above. The first, namely the child's religious profile, was formed as the sum of the child's church attendance scores (0-4) and child's private prayer (0-4) scores. If the sum was more than five (5), then the score of one (1) was given to express the child with positive religious profile. If the score was less than five (5), the score of zero (0) was given to express the child with negative religious profile. In order to test the reliability of the new variable we correlated the initial variables with the new variable (child's church attendance: corrected item total correlation $R=.597$, child's private prayer: corrected item

total correlation ($=.402$, $\alpha=.686$). The second profile, namely *family's religious profile*, was formed as the sum of the father's church attendance scores (0-4) and mother's church attendance (0-4) scores. If the sum was more than five (5), then the score of one (1) was given to express the family with positive religious profile. If the score was less than five (5) the score of zero (0) was given to express the family with negative religious profile. In order to test the reliability of the new variable, we correlated the initial variables with the new variable (father's church attendance: corrected item total correlation ($=.691$); mother's church attendance: corrected item total correlation ($=.718$; $\alpha=.810$). Significantly ($r=.577$, $p=.000$) positive was also the correlation between the family's and the child's religious profile. The fact that the frequency of church attendance of children is significantly correlated to their family's church attendance shows the nature of this behaviour. For the majority of the cases, children tended to resemble their parents in their religious behaviour.

Relations between motivation and religious thinking

In order to reduce the number of scores measuring religious thinking on each concept to a manageable level, the set of scores dealing with the same religious concept was averaged to produce a mean score. Thus, a total of five scores was created to indicate performance on each of the five tasks of religious thinking: God, the Devil, freedom of human beings, freedom of the transcendent, and prognosis.

Multiple regression analyses (stepwise method) were performed in order to identify the motivational predictors of children's performance in the tasks of religious thinking. Specifically, regression analyses were conducted involving the following independent variables: child's church attendance, frequency of private prayer

and religious experience, and father's and mother's church attendance. Mean performance on the items related to God, the Devil, freedom of human beings, freedom of the transcendent and prognosis were the dependent variables. Table 4 presents children's performance on religious thinking tasks in relation to their church attendance, private and religious experience as well as father's and mother's church attendance. Children who attended church and prayed more frequently performed worse than their peers who only occasionally went to church and prayed. In contrast, the individuals with higher level of religious experience performed better than their peers who did not have the same experience.

The results (see Table 5) of the regression analysis revealed that religious experience was the only predictor of children's performance on religious thinking. Religious experience in this study was assumed to be indicative of intrinsic motivation. The contribution of religious experience in explaining the variance of performance on religious thinking provided support for the significance of intrinsic motivation in religious thinking. In contrast, extrinsic motivation factors were unable to predict a significant proportion of the variance of religious thinking performance. Neither the parents' nor the individuals' participation in religious practices seems to be prerequisite for performing at a higher level of religious thinking. As we can see in Table 4, the opposite proves to be the case. On the other hand, the existence of religious experience improves the individual's performance in thinking with religious concepts. Therefore, the findings supported only the first part of Hypothesis 1, which referred to the advantage of the intrinsically motivated children versus the other groups, and seem to be in agreement with those of Goldman (1964) and Mark (1982).

In order to test Hypothesis 2, that there is an interaction between extrinsic and intrinsic motivation, the motivational constructs were now defined in terms of three new (see p. 27) variables, namely: "extrinsic 1" (child's religious profile:

Table 4
Children's mean performance score on religious concepts as a function of the
score on motivational variables

Score on motivational variables	Scores on religious concepts				
	God	Devil	Freedom of the human beings	Freedom of the transcendent	Prognosis
Child's Church Attendance					
0					
1	2.83(.24)	2.54(.29)	2.42(.69)	1.88(.18)	3.20(.28)
2	2.10(.84)	1.77(.97)	2.04(.76)	1.75(.85)	2.07(1.17)
3	2.07(.74)	1.68(.78)	2.05(.67)	1.61(.74)	2.16(.78)
4	2.02(.78)	1.90(.82)	1.82(.81)	1.70(.99)	2.09(.93)
Child's Prayer					
0	2.17(1.18)	2.46(1.47)	3.14(.55)	2.13(.53)	3.25(.07)
1	2.01(.77)	1.70(.65)	1.83(.63)	1.69(.72)	1.93(.87)
2	1.89(.92)	1.90(.96)	1.99(.87)	1.42(.63)	2.33(.70)
3	2.13(.77)	1.80(.91)	1.99(.76)	1.75(.90)	2.18(.97)
4	1.95(.75)	1.77(.58)	1.94(.78)	1.29(.78)	1.91(.80)
Child's Religious Experience					
0	1.33(.51)	1.20(.58)	1.22(.36)	1.05(.60)	1.28(.77)
1	1.69(.49)	1.43(.68)	1.67(.70)	1.50(.90)	1.57(.88)
2	2.26(.80)	1.87(.86)	2.08(.64)	1.72(.81)	2.49(.80)
3	2.12(.72)	1.93(.75)	2.20(.64)	1.79(.78)	2.28(.85)
4	2.39(.78)	2.08(.92)	2.14(.90)	1.92(.91)	2.27(.90)
Father's Church Attendance					
0	1.79(1.18)	1.23(.69)	1.62(.82)	1.63(1.01)	1.53(.90)
1	2.13(.77)	1.85(.67)	1.97(.97)	1.22(.56)	2.15(.87)
2	2.00(.78)	1.69(.88)	1.97(.69)	1.74(.81)	2.00(1.04)
3	2.22(.74)	1.91(.80)	2.02(.79)	1.71(.91)	2.31(.85)
4	2.01(.75)	1.85(.88)	1.95(.81)	1.68(.88)	2.17(.84)
Mother's Church Attendance					
0	2.06(1.26)	1.44(.63)	1.91(.82)	1.50(1.15)	1.53(1.53)
1	2.17(1.18)	2.08(.94)	2.82(.11)	1.88(.18)	3.25(.07)
2	2.17(.81)	1.83(.97)	2.08(.71)	1.76(.84)	2.22(1.05)
3	1.99(.75)	1.74(.78)	1.92(.74)	1.65(.87)	2.11(.85)
4	2.11(.75)	1.84(.85)	1.92(.79)	1.66(.85)	2.09(.92)

Note: Standard deviations are given in parenthesis

Table 5
Summary of effects of the independent variable Religious Experience left in the equation
in the five sets of Stepwise Regression Analysis on the different religious
concepts as dependent variables

Dependent variables	Adjusted R ²	Beta	T	F(1,117)	Significance F
God	.126	.365	4.237	17.962	.0000
Devil	.092	.316	3.607	13.008	.0005
Freedom of human beings	.108	.340	3.916	15.335	.0002
Freedom of the transcendent	.061	.264	2.955	8.732	.0038
Prognosis	.085	.304	3.451	11.906	.0008

church attendance and private prayer), "extrinsic 2" (family's religious profile: father's and mother's church attendance), and "intrinsic" (child's religious experience). This was necessary because of the small number of participants in this study. The next step was to define the effect of the different forms of motivation on children's performance on the five tasks of religious thinking. A multivariate analysis of variance (MANOVA) was used. The design was: 2 (extrinsic 1, positive/negative child's religious profile) x 2 (extrinsic 2, positive/negative family's religious profile) x 5 (intrinsic, levels of religious experience). The dependent variable was the five mean performance scores.

Multivariate testing did not reveal second order interactions between the "extrinsic 1", "extrinsic 2" and "intrinsic" motivation (Pillai's=.112, F(10,198)=1.175, p=.310). First order interaction between each of the two extrinsic motivation variables (Pillai's=.0726, F(5,98)=1.534, p=.186) was nonsignificant. No significant interaction was revealed between "extrinsic 1" and "intrinsic" motivation (Pillai's=.172, F(20, 404)=.910, p=.574). Neither the interaction between "extrinsic 2" and the child's intrinsic motivation was significant (Pillai's=.125, F(15, 300)=.871, p=.598).

The main effects of the "extrinsic 1"

(Pillai's=.024, F(5,98)=.4825, p=.789) "extrinsic 2" (Pillai's=.019, F(5,98)=.388, p=.856) variables were nonsignificant. Only the main effect of "intrinsic" motivation was significant (Pillai's=.235, F(20,404)=1.784, p=.020) (for means see Table 4). This finding confirms the findings of the regression analysis. Furthermore, univariate F-tests showed that differences in performance in the religious thinking tasks were primarily due to differences between individuals with different levels of religious experience. The religious experience effect was significant F(4,102)=5.150, p=.001 for the concept of God; F(4,102)=4.245, p=.003 for the concept of the Devil; F(4,102)=4.465; p=.002 for the concept of the freedom of human beings; F(4,102)=7.978, p=.000 for the prognosis concept. The only religious task with nonsignificant difference was the concept for the freedom of the transcendent, F(4,102)=1.958, p=.107. The items testing this concept were shown in previous work (Pnevmatikos, 1993; 1995) to demand more complex thinking than the rest of the tasks. Therefore, the influence of religious experience was less effective in those religious concepts, which demanded more complex thinking.

Discussion

Children's motivation for religious thinking

The prediction that children who are extrinsically motivated, because they are more frequent churchgoers and they pray more frequently, would perform better on religious thinking than their peers who are not, proved to be not true. The paradox was that the children who were not actively engaged in religion performed in most cases better than their religiously active peers. Thus, in the Greek Orthodox sample, compliance with religious practices was not sufficient to motivate children for a higher level of religious thinking. Rather it discouraged them from thinking at higher levels. Further research is needed to identify the reasons for this discouragement.

On the other hand, our prediction that intrinsically motivated children would perform better than extrinsically motivated children and those without any motivation proved to be true. The results showed that children with intrinsic motivation, which was derived from experience of God's existence and from a personal encounter with God, scored higher on the religious thinking tasks than their peers without any such experience. The transition from the inexistence of any personal experience of the transcendental through the deceptive signs of pseudo-experience and superficial signs (Ranwez, 1965) to a deep personal religious experience, creates a different awareness of transcendental existence. In other words, it reflects the transition from an anthropomorphic and mythical knowledge about the transcendental to personal existential experience. This experience is reported as qualitatively different from all other human experiences (Clark, 1965) and related to happiness even though it is rarely experienced (Vergote, 1965). Thus, religious experience confirms God's existence to people who have the experience and, in so far as it is accompanied by a feeling of happiness people get motivated and

guide their actions according to the outcome they expect to have from their relationship with God. Religious experience in this sense becomes intrinsic motivation for religious thinking. The effect of religious experience as intrinsic motivation on thinking did not differ significantly among the various religious concepts. However the effect of religious experience was less clear in the case of the most cognitively demanding concept included in this study: the freedom of the transcendent. This is probably due to the fact that the levels of religious experience were relatively low and the concept of freedom of the transcendent was very cognitively demanding.

The family's religious profile and children's religious thinking

It has been assumed in the past (e.g., Goldman, 1964) that homes where religion is actively discouraged may stimulate the child to take an inordinate interest in the subject, and homes where religion is felt to be an excessive pressure may produce a child bored with and even antagonistic to religion. The evidence from this study shows that children from religious families generally adopted the religious practices of their families. This means that generally in Greek families there were no strong conflicts over church-going, at least in the age range included in this study. However, this positive attitude is not necessarily reflected in the development of children's religious thinking. Mark (1982) and Goldman (1964) obtained similar results with a Protestant and Catholic sample. Goldman assumed that "familiarity with church services and church people may not necessarily result in higher religious insight into the nature and significance of the church in modern life" (p. 210). Over thirty years later, this suggestion was confirmed by the present study. What can we say about this evidence today?

The discussion will not be limited to the value of the church in modern life; it will be extended to

the way in which families and church-leaders communicate with children. We do not expect nonreligious families to set challenging goals in religious thinking; although they presumably do. But it seems that their interest is limited to seeing children participate in church services rather than to setting higher goals for religious thinking and to achieving a higher level of understanding of religious concepts. It is known (Bandura, 1988) that motivation based on personal standards involves a cognitive comparison process: when individuals commit themselves to explicit standards or goals, perceived negative discrepancies between performance and the standards they seek to attain create self-dissatisfaction which serves as an incentive for enhanced effort. On the other hand, people who set no goals for themselves make no effort. Indeed, if neither parents nor children set high and challenging goals, how can motivation deriving from their positive attitude towards religion be activated? However, the results revealed a trend according to which children of religious families with positive attitude performed higher in some religious tasks than their peers from families with a negative attitude toward religion. Probably, religious families spend more time on discussions concerning these concepts than others do, and this affects children's thinking and awareness of these concepts.

Implications

The nonsignificant correlation between religious cognition and religious behaviours has clear implications for the structure of a religious education curriculum. It is clear that a person's attitude towards religion alone does not determine success in understanding religious meanings if this attitude is not accompanied by religious experience. Religious experience can operate as steady intrinsic motivation for the development of religious thinking. So, church leaders should focus on religious experience

rather than on religious behaviour per se are interested in establishing a permanent intrinsic motivation for religion. On the other hand, since children adopt their families' positive attitudes and attend church at least once a month, efforts of church leaders to develop children's religious thinking based solely on church attendance become unproductive.

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