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Field-dependence/independence and socioeconomic level: A cross-cultural approach

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ABSTRACT

This study investigated the correlation between: (a) family type (extended, family of close bonds, nuclear), (b) values (collectivistic-individualistic), and (c) field-dependence/independence in different ecological (rural-urban) and socioeconomic contexts. The sample consisted of 655 adolescents aged 15-17 from Crete (Greek rural context), Athens (Greek urban middle class and upper class context) and Britain (northern European country). The results showed that habitation indices, like meeting frequency with grandparents, correlated with field-independence in the Greek upper class sample and in the British middle class sample. In the Greek upper class sample with the family of close bonds, *lower* meeting frequency correlated with higher field-independence whereas in the British middle class sample with the nuclear family, *higher* meeting frequency correlated with higher field-independence. In both cases, meeting frequency was a choice, which contradicted the demands set by the family type. It seems, then, that it is this choice in context which correlated with a different way of thinking, namely with field-independence.

Key words: Cross-cultural study, Family type, Field-dependence/independence.

Introduction

Cognitive style constitutes a stable way of adapting to the environment and refers to the perceptual-cognitive as well as to the socio-emotional functioning of the individual. The theory of psychological differentiation, which emerged from the experimental work on the field of perception, is the context within which this concept evolved (Witkin, Dyk, Faterson, Goodenough, & Karp, 1974).

In the course of development, the individual gradually perceives the parts of a field, which seem to have little relationship among themselves as a functional unit. At the same time, he/she starts to disembed the parts from their context, to restructure and reorganise them. In other words, analysis and synthesis of per-

ceptual input are the two interrelated manifestations of increasing differentiating ability (Witkin & Goodenough, 1981).

The findings from the field of perception were further complemented with those from the fields of cognitive and socio-emotional functioning. As far as cognition is concerned, standard psychometric tests, such as block design, picture completion, mazes, object assembly, Piagetian conservation tasks seem to involve a capacity to overcome embeddedness (Goodenough & Karp, 1961). Regarding socio-emotional functioning, a highly differentiated person is expected to develop a sense of separate identity, namely to function with little need for guidance or support from others, to maintain his/her own direction in the face of contradicting attitudes, judgements and values of others and to have a relatively

stable view of himself/herself in varying social contexts (Berry, 1976). The synthesis of these findings outlines the cognitive style "field-dependence/independence" (FD/I). The term refers to a person's tendency to rely on external or internal frames of reference when processing information and covers a range of behaviours more or less differentiated. Persons who can easily analyse an organised perceptual field are called field-independent (FI) whereas persons who accept it as it is are called field-dependent (FD) (Witkin et al., 1974).

Field-independents function with greater autonomy when working intellectually or participating in social interaction. Field-dependents develop a greater ease in interpersonal relations, which allows them to address the people in their surroundings to elicit information and organisational help and, generally, manifest a tendency for greater conformity with the environment. Of course, one does not belong distinctly to the one or the other type but finds himself/herself above or below the average of a group on this dimension (Witkin & Goodenough, 1981).

The correlation often found between FD/I and intelligence tests is due to a common cognitive non-verbal factor, namely the capacity to separate an item from its context (Goodenough & Karp, 1961). The question as to what proportion of these correlations can be explained based on the concept of general intelligence is not easy to answer. This may be attributed to the fact that the concept of general intelligence is so broad that it is difficult to define behaviours and abilities, which are not included in it. The popularity of the field-dependence/independence cognitive style is due, to a certain extent, to an increasing discontent with the psychometric approach to intelligence (McKenna, 1984). As Witkin (1965) has pointed out, "a cognitive style approach offers a more comprehensive and complex view of cognitive functioning than does intelligence. It has a more developed conceptual rationale, it encompasses broader segments of cognitive functioning and it recognizes the rooting of

intellectual characteristics in personality." (p. 329). From this perspective, the theory of psychological differentiation and the concept of cognitive style subsumed under it constitute a more comprehensive conceptualisation of intellectual functioning in relation to personality and the ecological-cultural context (Gruenfeld & MacEachron, 1975).

Thus, shifting the frame of reference from individual psychology to the socio-cultural domain, the meaning of differentiation can be viewed from another perspective. Societies differ depending on their structural complexity, namely the degree of urbanisation, professional specialisation, the number of roles available and the degree of their hierarchical organisation, the family type etc. The initial research on the field-dependence/independence domain showed that differences in the ecological environment and the way of production between the hunting/gathering and the agricultural societies had as a consequence different mode of perception, family organisation as well as cognitive style (Berry, 1994).

In the nomadic hunting/gathering societies, the development of the ability to disembed a part from its context in space as well as the analysis and synthesis of spatial information, two basic characteristics of the field-independent person, were fundamental for the survival of the members of this kind of society. At the same time, the functional family type in this context was the nuclear with the individualistic values, which encouraged the development of initiative and independence, indispensable elements of a good hunter. Conversely, in the sedentary agricultural societies, the development of spatial, analytical ability was not a requirement for survival while the prevailing family type was the extended with the collectivistic values, which dictate child-rearing practices favouring conformity to the norms of the community. In such an environment, the functional type was the field-dependent (Berry 1966, 1967; Dawson, 1969).

Consequently, cognitive style should be

considered in conjunction with the social context as a way to deal effectively with problems encountered in everyday life. In the modern western world, the field-independent seems more compatible with the urban, industrial society, where scientific analysis, control of the environment and acquisition of material goods are of primary importance. The field-dependent seems to be more functional within a social milieu, where the interpersonal relationship is of primary importance, namely the rural society (Paramo & Tinajero, 1990).

Recently, further elaboration on the notion of field-dependence/independence has led to the distinction of two cognitive styles: differentiation-integration and contextualisation-decontextualisation (Denny, 1988). Differentiation refers to fluency in separating the parts of a cognitive unit whereas integration emphasises fluency in joining together parts to make up a cognitive unit. Contextualisation involves "extra-unit connectedness" and refers to seeking out further information with which to link the given one whereas decontextualisation involves "extra-unit separateness" and concerns not requiring further information in order to draw a conclusion.

As far as the relationship between the ecological framework and cognitive style is concerned, the expectation is that differentiation will follow an alternating pattern of increasing in hunting, decreasing in agricultural and increasing significantly in industrial societies. Contextualisation will start from a high point in hunting groups, decreasing gradually in agricultural and industrial societies (Berry, 2001).

This novel conceptualisation of cognitive style has arisen out of the need to explain phenomena in which the unitary notion of field-dependence/independence has proved inadequate. For example, a hunting and an industrialised group of people can be equally differentiative, namely field-independent, but will differ in the degree of contextualisation, with the industrialised population being less and the hunting group more contextualising (Berry,

2001). However, for the time being, more work is required for a more complete view on these two cognitive styles.

As far as gender differences are concerned, a review of cross-cultural studies shows that while there is no obvious universal tendency towards higher differentiation in one gender over the other, where differences occur, they tend to be in the direction of males being more field-independent (Van Leeuwen, 1978; Witkin et al., 1974). However, research findings indicate that when education is equal for both genders, differences in field-dependence/independence between men and women are insignificant (Witkin & Berry, 1975).

Research on the antecedents of differentiated functioning has shown that encouragement of autonomy in child rearing is associated with the manifestation of greater field-independence whereas field-dependence tends to be associated with demands for adherence to parental authority (Witkin & Berry, 1975). Socialisation practices and degree of autonomy, however, differ as a function of family type (extended-nuclear) and values (collectivistic-individualistic), which vary according to the ecological (rural-urban) context (Georgas & Berry, 1995). Moreover, careful review of research data has shown that, often, differences in field-dependence/independence on cross-cultural as well as national level may be due to socio-economic variables. Parents' occupational and educational status, general living conditions like residence, nutrition, health care, opportunities for better education, constitute basic indices of socio-economic level, which reflect on family dynamics (Gruenfeld & MacEachron, 1975).

Child-rearing practices are crucial in helping the individual to acquire characteristics appropriate for the financial conditions of the society in which it lives (Whiting, 1961). In contemporary industrial society, self-reliance and analytical ability are fundamental for survival. These attributes are fostered within a secure financial

environment, in the context of the nuclear family, which encourages the child to develop its own identity and personal way of access to the world. Cross-cultural (Gruenfeld & MacEachron, 1975; Gruenfeld, Weissenberg, & Loh, 1973; Okonji, 1969) as well as comparative studies of ethnic groups within the same country (Dershowitz, 1971; Preale, Amir, & Sharon, 1970; Rand, 1971; Witkin, Price-Williams, Bertini, Christiansen, Oltman, Ramirez, & Van Meel, 1974) provide evidence to support the socio-economic difference perspective on field-dependence/independence.

In this study, the investigation of the impact of eco-cultural variables on cognitive differentiation was based on the Georgas eco-social model (Georgas, 1993). According to this model, countries can be classified ecologically and socio-politically and be placed on the "collectivism-individualism" dimension, which constitutes one of the main fields of research for cross-cultural psychology. The terms "collectivism-individualism" refer to more or less traditional forms of socio-economic organisation with more or less stable in-groups.

Based on the above model, the countries investigated in this study, Greece and Britain, are classified on the "collectivism-individualism" dimension as follows: Greece is in a transitional stage from collectivism to individualism whereas Britain belongs to the post-industrial, individualistic societies (Georgas, Christakopoulou, Pooringa, Goodwin, Angleitner, & Charalambous, 1997). The different position of the two countries on this dimension has as a consequence differences in family type, its values, degree of autonomy allowed to its members and psychological differentiation. Current research keeps adding findings that distinguish individualistic and collectivistic countries. One of the distinctions among different kinds of individualism and collectivism has been the horizontal and vertical species (Triandis, 1996). Horizontal collectivists merge with in-groups but do not use much hierarchy whereas vertical collectivists

submit to the norms of their in-groups and use hierarchy. Horizontal individualists function independently, but they do not necessarily want to be distinguished whereas vertical individualists want to excel. Even with this distinction in mind, Greece is higher than other individualistic countries on both horizontal and vertical collectivism (Triandis, Ping Chen, & Chan, 1998).

In Greece, the rapid, compared to the past, urbanisation and industrialisation had as a consequence abrupt changes in the economic organisation of society whereas changes in private life followed at a slower pace. Thus, at this moment, in the rural areas, the traditional extended family with the collectivistic values, which concern hierarchical father-mother roles, the concept of honour and children's obligations towards parents and relatives prevails. In the urban areas, however, although the nuclear form has emerged, it very often maintains features of the extended structure as research data concerning values, housing proximity and contact frequency show (Γεώργας, 1999; Μουσοπού, 1985). Although traditional family values change, the younger generation does not reject them altogether but only those concerning hierarchical roles and mother's subordinate position. Supportive relations and children's obligations towards parents and close relatives are still highly accepted. At the same time, families that appear to be nuclear, consisting of only father, mother and children, do not live far from close relatives (Γεώργας, 1999).

It seems, then, that in modern urban Greece, the traditional extended family with the collectivistic values coexists with the emerging nuclear form with a mixture of collectivistic and individualistic values, which often leads to confusion and conflicts regarding the roles and obligations of its members (Κατάκη, 1995). This type of family can be characterized as family of close bonds (Γεώργας, 1999).

As far as the modern British family is concerned, the most important emerging forms are the one-parent family and the family from

second marriage. The modern tendency is marriage at a relatively young age, divorce and long-term second marriage (Jackson, 1982). In these conditions, children soon realise that family is no more the refuge it used to be and they soon become independent (Jones & Brayfield, 1997; Kerchhoff & Macrae, 1992). The modern British family system is liberal and selective. Within this system of family values, individual interest is placed above the family interest and, consequently, personal autonomy and independence constitute basic values in child-rearing (Finch & Mason, 1991).

Moreover, the two countries were selected because they differ on the socio-economic level. According to education, which constitutes a basic socio-economic index (Gruenfeld & MacEachron, 1975), Britain is classified among the countries with the highest educational level whereas Greece is placed in the second rank

(Georgas & Berry, 1995).

The present study

The present study investigated the association between family type, its values and FD/I in different ecological and socio-economic contexts, as described briefly in Figure 1.

Family type is defined by the functional relationships among its members, namely housing proximity and contact frequency. Based on these indices, family can be characterised as extended family, family of close bonds and nuclear family. Family type is expressed in its values (collectivistic-individualistic) and it can also reflect on cognitive processes like FD/I. The correlation patterns between family type, values, FD/I may vary in relation to the ecological and socio-economic context, which in this study

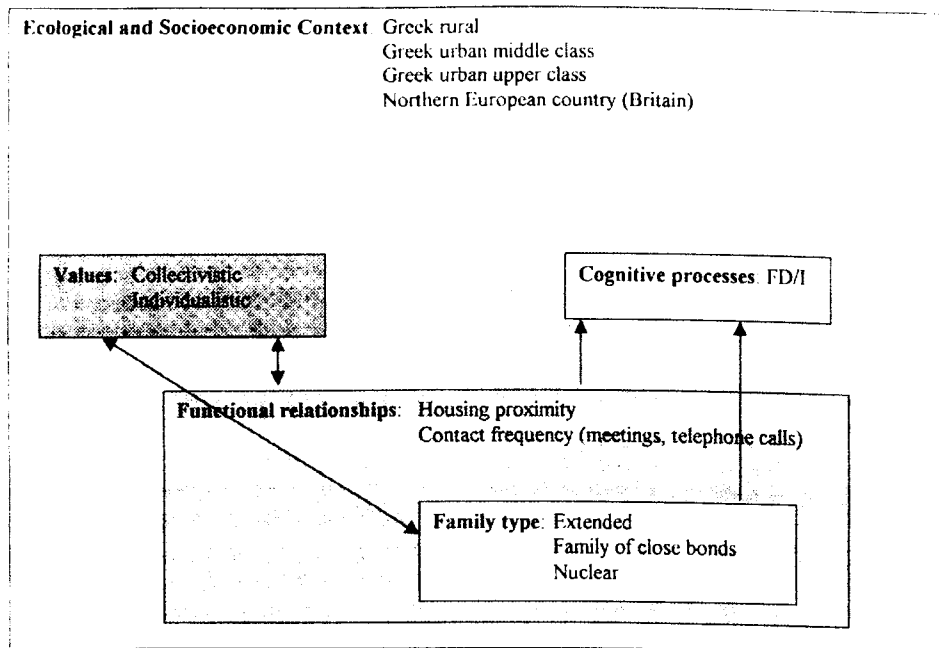


Figure 1

Correlation patterns between family type, values and FD/I in different ecological and socio-economic contexts.

consists of Greek rural, Greek urban middle class, Greek urban upper class and a northern European country, Britain.

Based on the above, the following research questions were investigated:

1) Family type in Greece and Britain would be expressed through the functional relationships among its members, namely housing proximity and contact frequency. For this hypothesis, the Greek family type is investigated in its transition from the rural, to the urban middle class and upper class context.

2) Collectivistic family value factors would be differentially endorsed by adolescents.

3) There would be an association among family values (collectivistic-individualistic), habitation indices (housing proximity, contact frequency) and field-dependence/independence in relation to the ecological (collectivistic-individualistic, rural-urban) and socio-economic context.

Method

Sample

The sample consisted of 655 adolescents aged 15-17 from Greece and Britain. The Greek sample came from the 1st and 2nd grade of Senior High School while the British sample from the 12th grade of Secondary School and the 1st year of Sixth Form College. In all schools, adolescents had completed compulsory education and were continuing their studies with a mainly academic orientation.

The students of the Greek rural sample were randomly selected from villages of Crete (Kolimbari, Alikianos, Vamos, Voucolies, Kissamos), which, according to the Greek National Statistical Service (Εθνική Στατιστική Υπηρεσία, 1983), have a population of less than 10,000 people whose main occupation is agriculture, herding and fishing.

The students of the Greek urban middle class

sample were randomly selected from high schools of middle class areas of Athens, N.Smyrni, Pangrati, Zografou (Εθνική Στατιστική Υπηρεσία, 1983). The students of the Greek urban upper class sample came from a private school of Athens of higher socio-economic level.

The students of the British sample were selected from schools of Essex near Southend-on-Sea and from Leighton Buzzard, both places with a predominantly urban population. Furthermore, these areas have a very small percentage of immigrants and, thus, the students of our sample can be considered as coming from typical British families (Dorling, 1995). The British schools, which participated in this research, were South East Essex VI Form College and Palmer's VI Form College in Essex and Cedars Upper School in Leighton Buzzard.

With respect to the educational level of the adolescents' parents, which constitutes a basic index of socio-economic level (Gruenfeld & MacEachron, 1975), we explored the distributions for each sample and for each parent separately. This descriptive approach indicated that the Greek rural and Greek urban middle class samples were different in parental education levels from the Greek urban upper class sample, which resembled more the British sample. The Greek urban upper class adolescents' parents had the highest percentage of higher education, even when compared with the British sample, which is indicative of their higher socio-economic level. However, these percentages are of descriptive nature, since, due to some empty cells, a non-parametric χ^2 test for statistical differences in percentages would be inappropriate.

Material

The test battery was composed of the Group Embedded Figures Test (Witkin, Oltman, Raskin, & Karp, 1971) and a questionnaire. The *Group Embedded Figures Test* was used as a measure of field-dependence/independence, which, like

all cognitive styles, in addition to being a cross-cultural variable, is also an individual difference and a situational variable. Thus, keeping individual and situational variation in mind, one should recognize that there is only a partial association of cognitive style with culture (Berry, 2001).

The test consists of 18 complex figures within each of which a simple form must be traced in a given time. The score is the total number of simple forms correctly traced. The time of administration was set at 15' based on data received from students of 15.5-17.5 years of age (Leahy & Zalatimo, 1985). The degree of internal consistency for the *Group Embedded Figures Test* has been estimated at .82 (Witkin et al., 1971).

The questionnaire comprised two parts: The

first part asked for information concerning demographic characteristics, housing proximity (1 = same house to 6 = far away) and contact frequency through meetings and phone calls (1 = daily to 6 = rarely). The second part included 32 traditional family values from the Georgas Scale of Family Values (1 = agree to 5 = disagree) (Γεώργας, 1986).

Results

Family Type

With respect to the first research question, Table 1 shows the corresponding means and standard deviations of housing proximity and contact frequency.

Table 1
Means and standard deviations of housing proximity and contact frequency*

		Greek rural	Greek urban (middle class)	Greek urban (upper class)	British (middle class)
Housing proximity with grandparents (1-6: same house-far away)	<i>M</i>	3.86	4.33	3.86	5.44
	<i>SD</i>	2.00	1.90	1.95	.94
	<i>N</i>	203	181	76	130
Housing proximity with uncles-aunts (1-6: same house-far away)	<i>M</i>	4.38	4.62	4.41	5.60
	<i>SD</i>	1.57	1.40	1.44	.68
	<i>N</i>	228	186	78	135
Meeting frequency with grandparents (1-6: daily-rarely)	<i>M</i>	2.28	2.80	2.25	3.67
	<i>SD</i>	1.62	1.90	1.43	1.64
	<i>N</i>	201	179	76	132
Meeting frequency with uncles-aunts (1-6: daily-rarely)	<i>M</i>	2.48	2.90	2.77	4.36
	<i>SD</i>	1.38	1.43	1.42	1.46
	<i>N</i>	226	193	82	139
Telephone call frequency with grandparents (1-6: daily-rarely)	<i>M</i>	2.51	2.28	2.26	2.72
	<i>SD</i>	1.33	1.39	1.35	1.43
	<i>N</i>	171	157	60	129
Telephone call frequency with uncles-aunts (1-6: daily-rarely)	<i>M</i>	2.73	2.44	2.94	3.50
	<i>SD</i>	1.26	1.30	1.46	1.47
	<i>N</i>	223	189	75	138

Note: *Higher mean shows less housing proximity or contact frequency.

Oneway analysis of variance and Scheffé *a posteriori* tests were performed to test differences between the four samples. According to these findings, the Greek family presented a fairly homogeneous picture resembling the extended family or the family of close bonds and the British family seemed nuclear with respect to meeting frequency with grandparents, $F(3, 584) = 20.4$, $p < .001$, and uncles-aunts, $F(3, 636) = 53.37$, $p < .001$. The only significant differences concerning the Greek family appeared between the Greek urban middle class and the Greek rural sample for meetings with grandparents and with uncles-aunts. For the statistically significant differences regarding meetings with grandparents, $F(3, 584) = 20.40$, $p < .001$, the Scheffé *post hoc* comparisons showed that the Greek urban middle class sample meets grandparents less often ($M = 2.80$) than the Greek rural sample ($M = 2.28$) and the Greek urban upper class sample ($M = 2.25$). Also, the British sample ($M = 3.67$) differs from all other three samples by meeting grandparents the least often. The ranges index for the Scheffé test was 3.96 ($\alpha = .05$).

For the statistically significant differences regarding meetings with uncles-aunts, $F(3, 636) = 53.37$, $p < .001$. The Scheffé *post hoc* comparisons showed that the Greek urban middle class sample meets uncles-aunts less often ($M = 2.90$) than the Greek rural sample ($M = 2.48$) and the Greek urban upper class sample ($M = 2.77$). Also, the British sample ($M = 4.36$) differs from all other three samples by meeting uncles-aunts the least often. The ranges index for the Scheffé test was 3.96 ($\alpha = .05$).

Therefore, based on the above, we can say that the members of the Greek urban middle class family meet their relatives slightly less often than their rural counterparts and the British sample shows the least meeting frequency levels. The British family seems nuclear and is significantly differentiated from the fairly homogeneous Greek extended and/or close bonds family also in terms of housing proximity and meeting with grandparents and with uncles-

aunts, $F(3, 586) = 23.29$, $p < .001$ and $F(3, 623) = 25.53$, $p < .001$, respectively. The Scheffé ranges indices were 3.96 ($\alpha = .05$) for both comparisons, as well. The respective means are presented in Table 1.

Family values

In order to investigate the second research question, namely the family values, factor analysis of the family values questionnaire was employed for the whole sample using the method of principal component analysis for factor extraction and orthogonal rotation. Three factors were identified:

Factor 1: Hierarchical father-mother roles. The first factor is the strongest, explaining 23.3% of the variance. It consists of values referring to the traditional roles in the collectivistic hierarchical family. Means range from 3.51 to 4.24 indicating that adolescents disagree with these values.

Factor 2: Obedience-control of children. The second factor explains 8.7% of the variance. It consists of values referring to parents being aware of who their children's friends are, whether children obey, etc. Means range from 1.91 to 3.10 indicating a tendency for agreement.

Factor 3: Philotimo. The third factor explains 5% of the variance. It consists of values referring to traditional in-group behaviour, such as maintaining good relationships with relatives, respect, obligations of children toward parents and relatives, etc. Means range from 1.25 to 1.93 indicating that adolescents agree with these values.

Multiple regression analysis

To test for the relationship between FD/I, family type and values, that is, our third research question, a stepwise multiple regression analysis was performed for each of the four samples. The

Table 2
Factors of the Georgas Scale of Family Values

Items	Loading*	<i>M</i>	<i>SD</i>
Factor 1: Hierarchical father-mother roles			
Mother accepts father's decisions	.75	4.00	1.20
Father head of the family	.68	3.51	1.52
Mother agrees with father's opinions about children	.66	4.00	1.28
Mother's place is at home	.63	4.23	1.23
Father handles the money	.62	3.92	1.36
Mother is compromising	.50	3.51	1.56
Mother gives way	.50	3.72	1.55
Son responsible for his sister's marriage	.48	4.24	1.25
eigenvalue = 7.45, % of variance explained 23.3%			
Factor 2: Obedience-control of children			
Children ask parents' permission	.67	2.04	1.25
Mother knows where children are	.67	1.91	1.17
Children have no secrets from parents	.65	3.10	1.52
Parents know their children's friends	.60	1.94	1.19
Children do not talk back to parents	.58	2.82	1.52
Children obey	.58	2.04	1.07
eigenvalue = 2.77, % of variance explained 8.7%			
Factor 3: <i>Philotimo</i>			
Good relationships with relatives	.70	1.45	.83
We should be honourable	.70	1.36	.74
Honour and protect family's reputation	.60	1.25	.62
Children respect grandparents	.60	1.26	.62
Children care for their parents at old age	.50	1.70	1.05
Marriage takes place at church	.44	1.93	1.33
eigenvalue = 1.61, % of variance explained 5%			

Note: *The cut-off point for the loadings is .40

following variables were tested for their possible effect on FD/I: Father-mother education, housing proximity, meeting as well as telephone call frequency with grandparents, uncles - aunts, factors of family values (hierarchical father-mother roles, obedience-control of children, *philotimo*).

We also considered possible gender effects in these multiple regression models. However,

the correlation of gender with FD/I was too low ($r = .06$). Therefore, gender was not considered as a possible correlate in the multiple regression models. It might be argued that one single model contrasting urban and rural samples for their correlating family variables with FD/I would be more appropriate, through the use of indicator coding for the urban and rural distinction. However, a first attempt in this direction revealed

a low correlation of the urban-rural dimension with FD/I ($h = .26$). Also, by implementing an ecological dimension along with family functions and values in the same regression model might suppress possible correlations of the family functions and values, which were of main interest. Thus, for the descriptive correlation aims of the present study, we analyzed the inter-relationships of family functions and values along with parental education levels with FD/I for each sample separately.

According to the results of this analysis, in the Greek rural sample, the only variable that seemed to have an effect on FD/I was the family value factor "obedience", which explained 7% of the variance ($R^2 = .07$). Its correlation with FD/I was positive and statistically significant ($r = .27, p < .01, b = .22$), which means that the more modern the values the higher the field-independence, namely the analytical ability.

In the Greek urban middle class sample, FD/I covaried mainly with the family value factor "obedience", which explained 4% of the variance ($R^2 = .04$). The correlation between the value factor "obedience" and FD/I was positive and statistically significant ($r = .19, p < .05, b = .14$), which means that the more modern the values the higher the field-independence, namely the analytical ability.

In the Greek urban upper class sample, FD/I covaried with "meeting frequency with grandparents", which explained 9% of the variance ($R^2 = .09$). Its correlation with FD/I was positive and statistically significant ($r = .30, p < .05, b = .72$). Because the scale of meeting frequency ranged from 1 = daily to 6 = rarely, a positive correlation means that the lower the meeting frequency the higher the FI.

In the British sample, FD/I covaried mainly with "meeting frequency with grandparents", which explained 6% of the variance ($R^2 = .06$) and "telephone call frequency with uncles-aunts", which explained 5% of the variance (Total $R^2 = .11$). The correlation between "meeting frequency with grandparents" and FD/I was

negative and statistically significant ($r = -.25, p < .01, b = -.65$), which means that the higher the meeting frequency the higher the FI. The correlation between "telephone call frequency with uncles-aunts" and FD/I was positive and statistically significant ($r = .12, p < .05, b = .48$), which means that the higher the telephone call frequency the lower the FI. This may signify that telephone calls often substitute meetings, in other words, the fewer telephone calls, consequently the more meetings, the higher the FI.

The main findings of this analysis can be summarised as follows:

1) The British nuclear family was significantly differentiated from the fairly homogeneous Greek extended and/or close bonds family in terms of housing proximity and contact frequency.

2) Individualistic values, and particularly "obedience", correlated positively with field-independence in the Greek rural and urban middle class samples.

3) Habitation indices, like meeting frequency with grandparents, correlated with field-independence in the Greek upper class sample and in the British middle class sample. In the Greek upper class sample with the family of close bonds, *lower* meeting frequency correlated with higher field-independence, whereas in the British middle class sample with the nuclear family, *higher* meeting frequency correlated with higher field-independence.

Discussion

Recent trends toward urbanisation and industrialisation have not affected drastically family type in Greece, which presents a fairly homogeneous structure, as indicated by the lack of significant differences among the rural, urban middle class and urban upper class in terms of housing proximity and telephone call frequency with close relatives. This finding is in accordance with other findings, which show that a significant percentage of the families in Athens live close to

relatives, meet and telephone each other quite frequently as in the traditional village milieu (Γεώργας, 1999).

Also, the lack of differentiation of the Greek upper class family from the rural and urban middle class is in accordance with other research findings, which show that, in the western world, the extended type does not appear exclusively in the rural society. It also appears in the urban milieu, at both ends of the socio-economic scale, namely in both poor and affluent families (Yorburg, 1972).

The British middle class family, functioning in a highly urbanised and industrialised society, is nuclear although this does not exclude the possibility of supportive relationships when required (Segalen, 1996). It seems, then, that comparing the two countries, our results are consistent with other research findings which show that in the relatively collectivistic culture of Greece, the geographical proximity of living and the frequency of meetings and telephone contacts with close relatives are higher than in an individualistic country like Britain (Georgas et al., 1997).

There are correlations between FD/I, country of origin and family type as it is expressed through values and habitation indices, like housing proximity and contact frequency. The more individualistic the values the higher the analytical ability in the Greek rural and urban middle class samples. According to theory, encouragement of initiative and autonomy in child rearing is associated with higher field-independence (Witkin & Berry, 1975). Individualistic family values imply greater encouragement of autonomy. Consequently, the finding that more individualistic values correlate with higher field-independence is compatible with the theory and expected.

As far as habitation indices are concerned, "meeting frequency with grandparents" correlates interchangeably with field-independence in the Greek upper class sample and in the British middle class sample. Habitation indices,

like housing proximity and meeting frequency with close relatives, usually express supportive relationships among the members of the extended family. These relationships often imply conformity with the demands set by the family environment and, consequently, less independence.

However, in this research, in both the Greek upper class and the British middle class samples, meeting frequency is a "choice in context" which contradicts the demands set by the family type. In other words, in the Greek urban upper class family of close bonds, its members are expected to meet quite often. Nevertheless, in such a context, choosing not to meet may imply initiative and autonomy, which, according to the theory, correlate positively with the development of field-independence. The same reasoning could be applied to the British nuclear family, in which distant housing might make meeting quite hard. In this context, however, deciding to meet with close relatives who live far away may also show initiative, which again is associated with the manifestation of field-independence.

To sum up, the findings of the above research pinpoint the importance of the environment, both ecological and socio-economic, for the function of the family by emphasising the different meaning that a pattern of living may acquire (in this case meeting frequency) depending on the social context, with concomitant implications for cognitive style.

Future research should take into account the newly conceived distinction of the two aspects of field-dependence/independence, namely, "differentiation-integration" and "contextualisation-decontextualisation" and further elaborate on them. Maybe, the investigation of these two cognitive styles as distinct dimensions can lead to a more fruitful approach of topics concerning interpersonal relationships like friendship-hostility, personal space and other aspects of social interaction.

The above cognitive styles should be considered within the context of individualism-

collectivism in its recent development with the horizontal and vertical dimensions. Within this framework, gender differences in field-dependence/independence could be a promising field of research.

As far as the relationship between socioeconomic level and field-dependence/independence is concerned, it should be further elaborated on by starting with groups of different socio-economic level within the same country to avoid possible variations due to cultural factors. Socio-economic level could be specified in greater detail by combining parents' educational level with other indices, like parents' occupation and family income (MacEachron & Gruenfeld, 1978). Using these findings, one could proceed to implement a method for cross-cultural research that will take into account item bias caused by cultural differences.

References

- Berry, J. W. (1966). Temne and Eskimo perceptual skills. *International Journal of Psychology*, 1, 207-229.
- Berry, J. W. (1967). Independence and conformity in subsistence-level societies. *Journal of Personality and Social Psychology*, 7, 415-418.
- Berry, J. W. (1976). *Human ecology and cognitive style*. New York: Sage.
- Berry, J. W. (1994). Ecology of individualism and collectivism. In U. Kim, H. Triandis, C. Kagitcibasi, S. Choi, & G. Yoon (Eds.), *Individualism and collectivism: Theory, method and applications* (Vol. 18, pp.77-84). Thousand Oaks, CA: Sage.
- Berry J. W. (2001). Contextual studies of cognitive adaptation. In J. Collis & S. Messick (Eds.), *Intelligence and personality: Bridging the gap in theory and measurement* (pp. 319-334). Mahwah, NJ: Erlbaum.
- Γεώργας, Δ. [Georgas, J.]. (1986). Οι οικογενειακές αξίες των φοιτητών [University students' family values]. *Επιθεώρηση Κοινωνικών Ερευνών*, 61, 3-29.
- Γεώργας, Δ. [Georgas, J.]. (1999). Ψυχολογικές διαστάσεις της σύγχρονης οικογένειας [Psychological dimensions of the modern family]. *Επιθεώρηση Κοινωνικών Ερευνών*, 98-99, 21-47.
- Dawson, J. L. M. (1969). Theoretical and research bases of bio-social psychology. *University of Hong Kong, Supplement to the Gazette*, 16, 1-10.
- Denny, J. P. (1988). Contextualization and differentiation in cross-cultural cognition. In J. Berry, S. H. Irvine, & E. G. Hunt (Eds.), *Indigenous cognition: Functioning in cultural context* (pp. 213-229). Dordrecht, the Netherlands: Nijhoff.
- Dershowitz, Z. (1971). Jewish subcultural patterns and psychological differentiation. *International Journal of Psychology*, 6, 223-231.
- Dorling, D. (1995). *A new social atlas of Britain*. Oxford, UK: Wiley.
- Εθνική Στατιστική Υπηρεσία [National Statistical Service]. (1983). *Στατιστική Επετηρίδα της Ελλάδας* [National Statistical Bulletin of Greece]. Αθήνα: Αυτοέκδοση.
- Finch, J., & Mason, J. (1991). Obligations of kinship in contemporary Britain: Is there normative agreement? *British Journal of Sociology*, 42(3), 345-367.
- Georgas, J. (1993). An ecological-social model for indigenous psychology: The example of Greece. In U. Kim & J. Berry (Ed.), *Indigenous psychologies: Theory, method and experience in cultural context* (pp. 56-78). Newbury Park, CA: Sage.
- Georgas, J., & Berry, J. W. (1995). An ecocultural taxonomy for cross-cultural psychology. *Journal of Cross-Cultural Research*, 29, 121-157.
- Georgas, J., Christakopoulou, S., Poortinga, Y.A., Goodwin, R., Angleitner, A., & Charalambous, N. (1997). The relationship of family bonds to family structure and function across cultures. *Journal of Cross-Cultural*

- Psychology*, 28, 303-320.
- Goodenough D. R., & Karp, S. A. (1961). Field-dependence and intellectual functioning. *Journal of Abnormal and Social Psychology*, 63, 241-246.
- Gruenfeld, L. W., & MacEachron, A. (1975). A cross-national study of cognitive style among managers and technicians. *International Journal of Psychology*, 10(1), 27-55.
- Gruenfeld, L. W., Weissenberg, P., & Loh, W. (1973). Achievement values, cognitive style and social class. *International Journal of Psychology*, 8, 41-49.
- Jackson, B. (1982). Single-parent families. In British Family Research Committee (Ed.), *Families in Britain* (pp. 157-177). London: Routledge & Kegan Paul.
- Jones, R. K., & Brayfield, A. (1997). Life's greatest joy? European attitudes toward the centrality of children. *Social Forces*, 75(4), 1239-1269.
- Κατάκη Χ. [Katakis, H.]. (1995). *Το μωβ υγρό* [The purple liquid]. Αθήνα: Ελληνικά Γράμματα.
- Kerchkhoff, A. C., & Macrae, J. (1992). Leaving the parental home in Great Britain: A comparative perspective. *The Sociological Quarterly*, 33(2), 281-301.
- Leahy, M., & Zalatimo, S. (1985). Group Embedded Figures Test: Psychometric data for a sample of high school students. *Perceptual and Motor Skills*, 61, 1243-1248.
- MacEachron, A. E., & Gruenfeld, L. W. (1978). The effects of family authority structure and socio-economic status on field independence. *The Journal of Social Psychology*, 104, 49-56.
- McKenna, F. P. (1984). Measures of field-dependence: Cognitive style or cognitive ability? *Journal of Personality and Social Psychology*, 1(3), 593-603.
- Μουσουρού, Λ. Μ. [Moussourou, L. M.]. (1985). *Οικογένεια και παιδί στην Αθήνα* [Family and child in Athens]. Αθήνα: Εστία.
- Okonji, M. O. (1969). Differential effects of rural and urban upbringing on the development of cognitive styles. *International Journal of Psychology*, 4, 293-305.
- Paramo, M. F., & Tinajero, C. (1990). Field-dependence/ independence and performance in school: An argument against neutrality of cognitive style. *Perceptual and Motor Skills*, 70, 1079-1087.
- Preale, I., Amir, V., & Sharon, S. (1970). Perceptual articulation and task effectiveness in several Israel subcultures. *Journal of Personality and Social Psychology*, 15, 190-195.
- Rand, M. Y. (1971). *Styles cognitifs et personnalité dans une situation de rencontre inter-culturelle* [Cognitive styles and personality in a cross-cultural encounter]. Unpublished doctoral dissertation, University of Paris.
- Segalen, M. (1996). *Sociologie de la famille* [Sociology of the family]. (4th ed.). Paris: Colin.
- Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist*, 51(4), 407-415.
- Triandis, H. C., Ping Chen, X., & Chan, D. K-S. (1998). Scenarios for the measurement of collectivism and individualism. *Journal of Cross-Cultural Psychology*, 29(2), 275-289.
- Van Leeuwen, M. S. (1978). A cross-cultural examination of psychological differentiation in males and females. *International Journal of Psychology*, 13(2), 87-122.
- Whiting, J. W. M. (1961). Socialisation, process and personality. In F. L. K. Hsu (Ed.), *Psychological anthropology* (pp. 355-380). Homewood, IL: Dorsey.
- Witkin, H. A. (1965). Psychological differentiation and forms of pathology. *Journal of Abnormal Psychology*, 70, 324-336.
- Witkin, H. A., & Berry, J. W. (1975). Psychological differentiation in cross-cultural perspective. *Journal of Cross-Cultural Psychology*, 6, 4-87.
- Witkin, H. A., Dyk, R. B., Faterson, H. F., Goodenough, D. R., & Karp, S. A. (1974). *Psychological differentiation: Studies of development*. Potomac, MD: Erlbaum.

- Witkin, H. A., & Goodenough, D. R. (1981). *Cognitive styles: Essence and origin*. New York: International Universities Press.
- Witkin, H. A., Oltman, P. K., Raskin, E., & Karp, S. A. (1971). *Manual for the Embedded Figures Test*. Palo Alto, CA: Consulting Psychologists Press.
- Witkin, H. A., Price-Williams, D., Bertini, M., Christiansen, B., Oltman, P. K., Ramirez, M., & Van Meel, J. (1974b). Social conformity and psychological differentiation. *International Journal of Psychology*, 9, 11-29.
- Yorburg, B. (1972). *The changing family*. New York: Columbia University Press.