Person. individ. Diff. Vol. 7, No. 3, pp. 355–372, 1986
Printed in Great Britain.

0191-8869/86 $3.00 + 0.00

SOCIALIZATION AND PERSONALITY: STUDY THROUGH QUESTIONNAIRES IN A PREADULT SPANISH POPULATION

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(*Received* 31 *July* 1985)

Summary—This is a study on a Spanish (Valencian) population of children and adolescents, of a battery of personality questionnaires including the Silva and Martorell 'Batería de Socialización—3' (BAS-3; Silva, Martorell and Clemente, 1985), the Eysenck and Eysenck (1980) I_6 (Junior), an adaptation of the Allsopp and Feldman (1976) ASB and also adding the Spanish version of the EPQ-J (Eysenck and Eysenck, 1981). Data allow both 'internal' analyses—where intercorrelations between scales and the corresponding factorial matrices are particularly interesting—and 'external' analyses of relations with other variables, either identification variables or criterion variables, Delinquency being outstanding among the latter.

1. INTRODUCTION

This work is set within the framework of two lines of research actually inseparable from each other. First, the effort to have, for the Spanish child and adolescent population, a set of instruments of self-report allowing a thorough assessment of different personality areas. This was done partly by adaptation of instruments already existing in other countries, and partly by the creation of new ones. Second, after assuring a minimal psychometric quality for the instruments, we were interested in studying the relations among the variables included in them, as well as the relationship between these variables and those typically used in differential studies. All this will allow replication of research already achieved in other countries, the comparison of results obtained with a different population and, regarding the amplification towards new instruments and variables, a contribution to the international community of psychologists carrying out research in personality and individual differences, always with the aim of fostering a fruitful exchange of scientific knowledge.

Specifically, the following questionnaires have been used in this research:

—The 'Batería de Socialización' in its self-report version (BAS-3), an instrument devised in Spain, whose objective is the measurement of dimensions of social behaviour in children and adolescents, especially those dimensions focusing on inter-peer social relationships (Silva, Martorell and Clemente, 1985).
—The Eysenck and Eysenck (1975) EPQ-J questionnaire, in its Spanish version developed by TEA S.A. (Eysenck and Eysenck, 1981).
—The Eysenck and Eysenck (1980) I_6 (Junior) Questionnaire, translated and studied in Spain by our research team.
—The Scale of Antisocial Behaviour (ASB; Allsopp and Feldman, 1976), in a Spanish adaptation also by the same team.

Besides these questionnaires, a series of variables have been included in our study. All this will be described in more detail in the following section.

2. DESIGN

2.1. Instruments and Variables

2.1.1. The BAS-3 questionnaire

This questionnaire has its origin in two earlier versions, one to be filled in by teachers (BAS-1), and the other for the children's parents (BAS-2) (Silva and Martorell, 1982, 1983). The BAS-1 and BAS-2 rating scales underwent important transformations in arriving at the BAS-3 self-report

version, basically to simplify the instrument to allow it to be reliably filled in by children and adolescents. The BAS-3 current text was reached after a study with 806 *S*s, 411 boys and 395 girls from the 6th to the 11th grade. The age mean was between 13 and 14 yr. A series of factor analyses made it possible to isolate the following dimensions of social behaviour.

(*a*) *Consideration towards others*, a factor of social sensibility implying concern over others, particularly those who have problems and are rejected or ignored. This dimension has been repeatedly mentioned with relation to the concept of altruism (Rushton, 1976; Hampson, 1984), and has also been included as one of the components of emotional empathy (Mehrabian and Epstein, 1972). It also corresponds, largely, to what is measured in the 'Benevolence' scale of Gordon (1956) [see also Barbero and Echevarría (1984)].

(*b*) *Self-control in social relationships*, a clearly bipolar factor dealing, at one end, with observance of social norms and rules which facilitate coexistence in mutual respect and, at the other end, with aggressive, authoritative, obstinate and undisciplined behaviour. Thus, it is closely related to one of the chief dimensions of social adjustment/maladjustment, used by all authors concerned with the development of a taxonomy for child disturbances [see, for example, Achenbach and Edelbrook (1984), Quay and Werry (1979) and Kohn (1977)].

(*c*) *Withdrawal*, with separation both passive and active from the others. Here the second great taxonomic category of child disturbances appears, more generically called 'personality problems', to distinguish it from the 'conduct problems' where antisocial reactions are stressed (Peterson, 1961).

(*d*) *Social Anxiety and Shyness*, where different manifestations of anxiety (fear, nervousness) are detected along with reactions of shyness (diffidence, bashfulness) in social relationships. Thereby, shyness reactions are confirmed as a kind of social anxiety (Leary, 1983).

(*e*) *Leadership*, where ascendancy, popularity, initiative, self-confidence and helping spirit are detected.

Besides these five dimensions, the BAS-3 scale includes a Sincerity scale, with a total of 10 items selected both from the factorial results and from the examination of the correlations of items/scale. The first three dimensions of socialization are represented by 14-item scales and the last two by 12-item scales.

2.1.2. The EPQ-J questionnaire

In order to record the basic personality dimensions, the last version of the questionnaires developed by Eysenck and Eysenck [highly successful since its publication, as bibliometric data testify (Silva, Martorell, Tortosa and Carbonell, 1984)] was applied in its Junior version (EPQ-J; Eysenck and Eysenck, 1975). The Spanish version was prepared and published by TEA S.A., sponsored by the authors (Eysenck and Eysenck, 1981).

The EPQ-J (Spanish version) measures the dimensions of N(euroticism) (Emotional Instability), E(xtraversion) and P(sychoticism) (Toughmindedness) and also contains a 'Sincerity' scale (L, scored in reverse form) and a scale for the prediction of antisocial behaviour (C), consisting of items from the first three and corresponding to the C scale of the English version, although it must be noted that this scale, of a purely criterial construction, was not subjected to the corresponding studies in the Spanish version and so it must be treated cautiously in this case (Seisdedos, 1982).

2.1.3. The I_6 (Junior) Questionnaire

This is, probably, the most recently studied by Eysenck and Eysenck (particularly by S. B. G. Eysenck) and is intended to amplify the personality assessment included in the EPQ to primary dimensions which have aroused special interest. The original objective was to clarify an aspect related to the E dimension, namely, that of Imp(ulsiveness). The earliest studies showed that this latter dimension was pluridimensional, reflecting a factor of Impulsiveness in a strict sense, one of Risk-taking Behaviour, one of Non-planning and, finally, one of Liveliness—which clearly belonged more to Sociability than Impulsiveness and was therefore omitted (Eysenck and Eysenck, 1977). Later, the concept of 'Risk-taking Behaviour' was also investigated mainly with the help of 'sensation seeking', which had been evaluated by Zuckerman and was finally integrated (Eysenck and Zuckerman, 1978), a scale of Vent(uresomeness) being developed, which maintains only weak relations with that of Imp. Finally, a dimension of Emp(athy) was added to those two, with a

selection of items from the Mehrabian and Epstein (1972) Empathy scale. The three-dimensional instrument, presented first in its original version for adults (I_5; Eysenck and Eysenck, 1978), was also studied with delinquents (Eysenck and McGurk, 1980) and, more importantly from our point of view, adapted for children and adolescents (Junior IVE Scale; Eysenck and Eysenck, 1980). Besides the constant attempt to relate the new dimensions to the basic dimensions of personality, the Junior IVE was studied in relation to antisocial behaviour (Eysenck, 1981) and has been adapted for Canadian children (Saklofske and Eysenck, 1983). Some minor deficiencies of this instrument have been rectified in what the authors consider its final version (I_6 Junior; Eysenck, Easting and Pearson, 1984) which has also been studied on large British samples.

This I_6 (Junior) Questionnaire, which includes the dimensions of *Impulsiveness*, *Venturesomeness* and *Empathy*, was kindly made available to us by the authors before its publication and we have developed our research with it.

For the present, we shall report only on the Spanish factorization of the I_6 (Junior). Factor analyses were carried out for boys ($N = 262$) and girls ($N = 297$) and, in view of the great concordance found between the two matrices, for whole sample ($N = 559$). Differences from the English results are very few and, partly, on the same lines as those found in the Canadian studies (Saklofske and Eysenck, 1983). Because of some differences in the rotation (Promax in English studies and Varimax in the Spanish ones) and the minimal amount of differences found, we decided to score the questionnaire with the English version as a guideline.

2.1.4. The Scale of Antisocial Behaviour (ASB)

This scale had its origin in a study by Gibson (1967) about the delinquency self-report in schoolboys. Its current development is due to Allsopp and Feldman (1974, 1975, 1976), and was used as a criterion in the development of the scale of antisocial behaviour (C) of the EPQ-J in its English version (Allsopp and Feldman, 1975; see also Saklofske, McKerracher and Eysenck, 1978). The ASB was shown in the earlier studies as primarily of monofactorial structure (Allsopp and Feldman, 1976), which has been corroborated in studies conducted in Spain (Seisdedos, 1982). We have employed the ASB scale with very few changes from the English original; excluding some items and including others up to a total of 46. In a factor analysis conducted with a sample of 615 *S*s, 297 boys and 318 girls (200 from elementary school and 415 from high school), we fully confirmed the monofactoriality of the scale. Against the 22.6% of the variance explained by the first factor (analysis of principal components), which Allsopp and Feldman (1976) reported, we found in our case 24.8%. All this refers to male samples. For girls, however, the percentage of explained variance is smaller (16.5). Similarly, the percentage in the elementary school sample (20.8) was smaller than that in the high-school sample (22.6). These results are in the expected direction, and in no case break the monofactoriality of the scale, since no other important factors appear. Loadings are significant in the first factor for every item, in the different subsamples, and almost all of them are over 0.20. Hence we scored the ASB by calculating a single total score.

2.1.5. Other variables

Among the other variables included in this research, three kinds may be distinguished:

(*a*) *Identification variables*: sex, age, course.

(*b*) *Intelligence*. In order to obtain a global appreciation of intelligence particularly loaded with the *g* factor, the Raven Progressive Matrices, General Form, A, B, C, D and E series were applied, which have been adapted and published in Spanish (Raven, 1970).

(*c*) *Criterion variables*, such as school marks, scholar retardation and delinquency, which will be presented in more detail through the results.

2.2. Sample

The *main sample*, used for the study of relations among the different instruments and variables, consisted of 358 *S*s of both sexes and varying extraction, from the population as well as from the socio-economic points of view, within the community of Valencia, Spain. Its distribution, according to sex, age and school grades is given in Table 1. The questionnaires were applied to this sample on two occasions (test and retest), with an interval of 4 months in between.

Table 1. Distribution of the main sample

	Age	
	$\bar{X}$	SD
Boys	13.70	1.68
Girls	13.90	1.70
Total	13.80	1.69

School grade	Boys	Girls	Total
6th grade	21	18	39
7th grade	35	37	72
8th grade	48	29	77
9th grade	22	41	63
10th grade	29	40	69
11th grade	18	20	38
Total	173	185	358

Besides the original factorization sample mentioned when introducing BAS-3, and the main sample, we have employed other samples, either as a subdivision of the latter, as an extension, or as an inclusion of different groups of *S*s. These other samples will also be presented in more detail throughout the results.

2.3. Statistical Analyses

The data have been subjected to statistical analyses in accordance with each particular objective. Factor analyses (principal components and Varimax or Quartimin rotation), when we have attempted to find dimensions in each instrument, or when we have studied a more general common structure of the whole group of personality variables. When studying more detailed relations among such variables, or their relation to identification, intelligence or criterion variables, we have resorted to the corresponding correlation matrices (Pearson r). When studying differences among groups, ANOVAs and t-tests have been used. We have remained, therefore, within the traditional framework of correlational analyses of data.

3. RESULTS

3.1. Basic Statistics

Means and standard deviations of scales were calculated, in the case of BAS-3, on three occasions: for the sample where the original factorial studies were conducted, for the main sample test, and for the main sample retest. The corresponding data are shown in Table 2. Seen as a whole,

Table 2. Mean values and standard deviations for the BAS-3 scales in the 'factorization sample' and in the 'main sample'

			Boys			
	'Factorization sample' ($N = 411$; age = 13.76 ± 1.72)		'Main sample' ($N = 173$; age = 13.70 ± 1.68)			
			Test		Retest	
BAS-3	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Consideration	12.43	2.21	12.14	2.51	11.63	2.71
Self-control	9.15	3.18	9.62	3.26	9.31	3.52
Withdrawal	2.02	2.61	2.17	2.74	2.36	2.47
Anxiety	4.41	3.07	3.78	2.74	3.80	2.87
Leadership	6.38	2.81	6.76	2.66	7.01	2.94
Sincerity	5.77	2.18	5.82	2.17	5.92	2.34
			Girls			
	'Factorization sample' ($N = 395$; age = 13.14 ± 1.58)		'Main sample' ($N = 185$; age = 13.90 ± 1.70)			
			Test		Retest	
BAS-3	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Consideration	12.62	2.23	13.04	1.50	13.13	1.45
Self-control	10.14	3.07	9.83	3.04	9.75	3.08
Withdrawal	2.05	2.46	1.25	1.86	1.42	1.88
Anxiety	6.11	2.96	5.41	2.77	5.04	2.65
Leadership	6.60	2.51	6.44	2.43	6.74	2.58
Sincerity	5.72	2.19	5.78	2.29	5.84	2.24

Table 3. Mean values and standard deviations in the EPQ-J, I_6 (Junior) and ASB scales

	Boys					
	'Main sample' ($N = 173$; age = 13.70 ± 1.68)				'Spanish sample' ($N = 976$; age = 11.07 ± 2.00)	
	Test		Retest			
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
EPQ-J						
N	10.12	4.47	10.57	4.85	10.98	4.08
E	18.53	3.39	18.36	3.97	18.86	3.21
P	4.12	3.06	4.55	3.38	3.30	2.52
Sincerity[a]	11.63	4.25	12.28	4.48	10.68	4.45
	18.70	4.44	19.37	5.04	—	—
					'English sample' ($N = 633$; age = 11.88 ± 1.96)	
I_6 (Junior)						
Imp	11.29	4.99	12.02	5.43	13.82	4.18
Vent	17.79	3.94	17.38	4.20	16.88	4.18
Emp	16.26	3.46	16.18	3.91	14.05	3.85
ASB[b]	14.45	9.78	14.47	10.47	—	—
	Girls					
	'Main sample' ($N = 185$; age = 13.90 ± 1.70)				'Spanish sample' ($N = 1002$; age = 11.15 ± 2.03)	
	Test		Retest			
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
EPQ-J						
N	11.40	3.93	11.43	4.24	11.71	4.00
E	18.65	3.32	18.84	3.64	17.98	3.43
P	2.51	2.04	2.47	2.16	2.86	2.41
Sincerity[a]	10.99	4.47	11.74	4.73	11.23	4.51
C	18.49	3.94	18.73	4.28	—	—
I_6 (Junior)						
Imp	11.28	4.44	11.72	4.70	13.58	4.54
Vent	17.46	3.94	17.73	4.50	14.61	4.62
Emp	18.68	3.03	19.42	2.70	17.44	3.38
ASB[b]	11.98	7.25	10.32	7.70	—	—

[a]'Sincerity' represents the L scale, keyed in reverse.
[b]It must be remembered that in the Spanish version, the ASB scale consists of 46 items.

the data in Table 2 show a satisfactory stability of scales, with respect to score variability and level, both from one sample to the other and from one testing to the other within the same sample.

For the scales of the EPQ-J (Junior) and ASB, we had the data from the main sample. These may be compared, in the case of the EPQ-J, with the data from the Spanish study sample (Eysenck and Eysenck, 1981) and, in the case of the I_6 (Junior), with the data of the English norms (Eysenck *et al.*, 1984). This information is given in Table 3.

In Table 3 it can be seen that, with respect to the EPQ-J data, and with some exceptions, the sample in our study replicates the trends of the Spanish manual study sample scores well. The comparison with English data, in this case, must take into account that, in the Spanish version, there exist some content variations and that 'Sincerity' has a reverse sense to that of the L scale. Nevertheless, there do not seem to be any gross differences [see, for example, Eysenck and Eysenck (1980)].

With respect to the I_6 (Junior)—where Spanish scales exactly reproduce the original—higher scores in the English sample can be observed on the Imp scale, and lower scores on Vent and Emp. This is true for both sexes but, mainly, in girls. However, given the differences in N and age, these results cannot be considered as definitive.

3.2. Reliability

The reliabilities of the different scales of BAS-3, EPQ-J, I_6 (Junior) and ASB were calculated in their two traditional modalities: internal consistency (α-coefficients) and test–retest (4-month interval). Since the EPQ-J was not subjected in our study to a structural analysis, the internal consistencies appearing in the Spanish manual (Eysenck and Eysenck, 1981), will be quoted. Calculations were on boys and girls together. The corresponding information is given in Table 4. In view of the data in Table 4, it is possible to make at least, the following comments.

Table 4. Reliability of the BAS-3, EPQ-J, I_6 (Junior) and ASB scales

	α ($N = 806$)	Test–retest ($N = 358$)
BAS-3		
Consideration	0.82	0.42
Self-control	0.78	0.66
Withdrawal	0.78	0.43
Anxiety	0.73	0.65
Leadership	0.81	0.61
Sincerity	0.60	0.64
EPQ-J[a]		
N	0.78/0.77	0.63
E	0.67/0.69	0.69
P	0.65/0.65	0.56
Sincerity	0.81/0.82	0.75
C	—	0.55
I_6 (Junior)	($N = 559$)	
Imp	0.78	0.68
Vent	0.78	0.70
Emp	0.74	0.69
ASB	($N = 615$)	
	0.92	0.67

[a]In this case, data of the Spanish manual are quoted (Eysenck and Eysenck, 1981), with data for boys ($N = 976$) and girls ($N = 1002$). Data corresponding to the C scale do not appear here, given its special configuration.

3.2.1. Internal consistency

Given the few items used in the BAS-3 scales, it can be said that results obtained are satisfactory for the socialization scales. The result of the small scale of Sincerity (10 items) is low.

With respect to the I_6 (Junior), it is possible to say that the results found in the Spanish sample are highly satisfactory since, despite working with a British factorial solution, the coefficients obtained are not lower than those of the original studies. We had here, also, separate data for boys and girls. For boys ($N = 262$), the α-coefficients were for the three scales, 0.80, 0.81 and 0.76 and, in girls, ($N = 297$), 0.77, 0.78 and 0.70, respectively.

Finally, the high internal consistency of the ASB scale should be stressed.

As a general comment, it must be remembered that in future studies all coefficients should be calculated separately for boys and girls. The joint analyses probably increase the results (although, we think, not substantially).

3.2.2. Stability

As is well-known, this is one of the study areas where, in personality aspects, results are less encouraging [see, for example, Glow, Glow and Rump (1982)]. Regarding the BAS-3, results are low for the scales of Consideration and Withdrawal (which, however, have an acceptable internal consistency) (see Ledingham and Schwartzman, 1984). With respect to the EPQ-J, results are low in the P and C scales, English results published in the Spanish manual (Eysenck and Eysenck, 1981) thereby being confirmed, where P also appears with the lowest stability of the four factorial scales (intervals: 1 month and 6 months) and L, with the highest stability in the same intervals.

The results corresponding to the I_6 (Junior) scales are within very satisfactory limits, not having, in this case, any comparative English data. The stability shown by the ASB scale is within satisfactory limits as well.

3.3. Differential Analyses According to Sex

Since mean values and standard deviations which have served as the basis for the results presented herein are shown in Tables 2 and 3, we will not reproduce them again, but will give the comparative results only. These are summarized in Table 5. The following comments may be made with regard to Table 5:

1. As a general comment, we can say that the results of the two applications in the main sample remain almost identical. Only a few variations of little importance appear.

Table 5. Differential analysis according to sex for the BAS-3, EPQ-J, I_6 (Junior) and ASB scales

	'Factorization sample'	'Main sample'	
		Test	Retest
BAS-3			
Consideration	B < G	B < G***	B < G***
Self-control	B < G***	B < G	B < G
Withdrawal	B < G	B > G***	B > G***
Anxiety	B < G***	B < G***	B < G***
Leadership	B < G	B > G	B > G
Sincerity	B < G	B > G	B > G
EPQ-J			
N		B < G**	B < G
E		B < G	B < G
P		B > G***	B > G***
Sincerity		B > G	B > G
C		B > G	B > G
I_6 (Junior)			
Imp		B > G	B > G
Vent		B > G	B < G
Emp		B < G***	B < G***
ASB		B > G**	B > G***

B = boys, G = girls.
*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$; if no asterisk appears, the difference is not statistically significant.

2. With respect to the BAS-3, girls obtain higher scores on the Consideration and Self-control subscales (whose negative end, let us remember, is Aggressiveness). This is in accordance with data in other studies (Mehrabian and Epstein, 1972; Rushton, 1976). Data regarding Withdrawal seem to be higher in boys, though they are not altogether consistent. The most consistent difference is noted in Social Anxiety, where girls obtain the highest scores.
3. Regarding the EPQ-J, there are higher scores for *N* in girls (G) and for P in boys (B), which is in accordance with the literature (Eysenck and Eysenck, 1980, 1981; Eysenck, 1981). The remaining comparisons do not yield, in our study, any significant differences, although the trends observed (B < G in E, B > G in C and B > G in Sincerity, that is B < G in L) are also in agreement with literature data (see also Eysenck and Eysenck, 1975).
4. In connection with the I_6 (Junior), higher scores for girls in the Emp scale are observed, which is in accordance with the English studies (Eysenck, 1981; Eysenck and Eysenck, 1978, 1980; Eysenck *et al.*, 1984) and with Canadian studies (Saklofske and Eysenck, 1983. See also Mehrabian and Epstein, 1972). The finding of greater Imp scores in boys, common in the literature, though not always significant, is reproduced here as a trend. Our results regarding Vent are non-discriminative and of uncertain tendency. A greater tendency of Vent in boys is, thus, not replicated as is usual in research in the English language.
5. Finally, with respect to the ASB scale, our data clearly reproduce the highly significant difference found in the literature (see, for example, Eysenck, 1981), giving higher scores to boys.

3.4. Correlations with Age

The correlations found between personality scales and age (range between 10 and 18), are given in Table 6, together for boys and girls. Regarding this table, the following comments may be made:

1. With respect to the socialization scales in the BAS-3, the most consistent result is a slight negative correlation between Leadership and age. Furthermore, the scales of Consideration, Withdrawal and Anxiety do not seem to show any relation of importance with this variable [which, as far as Consideration is concerned, is in agreement with the conclusions in the review by Rushton (1976)]. The Self-control scale seems to show a slight negative relation to age, i.e. positive to Aggressiveness, though these results are not consistent.

Table 6. Correlations with age

	'Factorization sample' ($N = 806$)	'Main sample' ($N = 358$)	
		Test	Retest
BAS-3			
Consideration	0.06	0.04	−0.06
Self-control	0.02	−0.18	−0.23
Withdrawal	0.02	−0.13	−0.12
Anxiety	−0.02	−0.12	0.07
Leadership	0.13	−0.21	0.19
Sincerity	0.14	0.29	0.12
EPQ-J			
N		0.02	0.10
E		0.12	0.03
P		0.06	0.04
Sincerity		0.39	0.32
C		0.11	0.14
I_6 (Junior)			
Imp		0.18	0.18
Vent		0.24	0.17
Emp		0.10	0.10
ASB		0.16	0.23

2. With respect to the basic dimensions of personality in the EPQ-J, no important relation to age is observed. Similar findings are reported in Eysenck (1981) and Eysenck and Eysenck (1981).
3. Of all the variables studied, Sincerity (EPQ-J) is the one which shows the clearest and most positive correlation to age (i.e. negative correlation to L). This fully confirms what is found in other samples, both English and Spanish (Eysenck and Eysenck, 1981).
4. With regard to the scales of the I_6 (Junior), positive correlations to age are observed in all of them, though most clearly in Imp (see also Thompson, Teare and Elliott, 1983; Saklofske and Eysenck, 1983), an in Vent. Correlations are, in any case, low (Eysenck *et al.*, 1984).
5. The correlation between age and ASB appears as slightly positive, which is in accordance with the positive correlation age–C scale and the negative age–Self-control scale. Regarding ASB, a similar result is found in Eysenck (1981).

Another manner of studying the developmental profile of the variables was to connect them with the school grade the *S*s were attending (from the 6th to the 11th grade). The grade-to-grade analysis only yielded a clear linear, ascending profile for Sincerity. A grosser analysis was also attempted, comparing two large groups: all the *S*s in elementary school with all the *S*s in high school, separated this time according to sex, and in both test and retest applications. Again, Sincerity (EPQ-J) appears as the only variable with a significantly ascending direction for both sexes. In the case of boys, Withdrawal increases and Anxiety decreases from elementary school to high school; no other significant and consistent difference appears from test to retest. In the case of girls, on the other hand, the profile is different. Self-control and Leadership decrease, while Sincerity increases (within the framework of the BAS-3). Similarly, C in the EPQ-J and ASB also increase, which, along with the decrease in Self-control, reflects a clear increase of antisocial-like behaviour. Furthermore, the three scales in the I_6 (Junior)—Imp, Vent and Emp—increase their scores significantly and steadily from elementary school to high school. In this area of research, intersexual differences seem, thus, to be important.

3.5. Correlations with Intelligence and School Performance

Correlations for 189 boys and girls from the main sample were calculated between the questionnaire variables and general intelligence, measured by the Raven Pregressive Matrices (General Form). With this same sample, correlations were also calculated with the mean of the school marks on two occasions: test and retest. The corresponding information is shown in Table 7. We shall comment on intelligence and performance data separately:

Table 7. Correlations with intelligence (Raven) and school marks ($N = 189$)

		Marks ($\bar{X}$)	
	Intelligence	Test	Retest
BAS-3			
Consideration	0.26	0.03	0.07
Self-control	0.14	0.05	0.06
Withdrawal	−0.20	−0.07	−0.10
Anxiety	0.03	0.04	0.05
Leadership	−0.05	−0.08	0.11
Sincerity	−0.05	−0.10	0.01
EPQ-J			
N	−0.09	0.05	−0.08
E	0.03	−0.12	0.05
P	−0.19	−0.33	−0.10
Sincerity	−0.02	−0.11	−0.03
C	−0.14	−0.17	−0.09
I_6 (Junior)			
Imp	−0.17	0.12	−0.12
Vent	−0.01	−0.13	0.03
Emp	0.26	0.05	0.19
ASB	−0.20	0.02	−0.08

1. As far as intelligence is concerned, the positive correlation with Consideration is noticeable, in the first place, a fact which is supported by the same correlation with Emp. These results are in line with what Krebs and Sturrup (1974) found, although they have not been confirmed by other authors. Withdrawal, in the BAS-3, also shows a slight negative correlation with intelligence.

   In the EPQ-J, a slight negative correlation in confirmed with P, and very low correlations with N and E (Eysenck and Eysenck, 1981). However, the positive correlation with Sincerity, reported in the literature (Eysenck and Eysenck, 1981; Farrington, Biron and Leblanc, 1982; Seisdedos, 1979), does not appear. With respect to the I_6 (Junior), Emp has already been mentioned. Imp shows a slight negative correlation with intelligence (see also Thompson *et al.*, 1983) and Vent, no correlation. Finally, the ASB scale also shows a slightly negative correlation.
2. The perspective regarding school performance is more homogeneous, virtually no correlations appearing, either positive or negative, that are of interest or that are maintained from one occasion to the other. It is possible that no interesting correlations have been detected in the EPQ-J through failure in the design, since reverse relations have been reported elsewhere [see, for example, Eysenck and Eysenck (1981)] between school performance, N and E, depending on whether elementary school or secondary school is concerned. In our study, the analyses have been made for both groups jointly.

Another way of dealing with the question of whether there is any relation between the studied variables and academic performance is to investigate the differences between *S*s with normal schooling, i.e. *S*s attending a course in accordance with what is expected for their age, and those *S*s with an important retardation (of at least 2 yr) in their schooling. In the main sample, 22 of these *S*s were identified, whose scores were compared with 44 of normal schooling of the same sex and age. Significant differences appear only in the scales of Withdrawal (BAS-3) and Imp (I_6 Junior), children with school retardation appearing unfavourably in both cases. These results, though to be expected, are, however, difficult to interpret when one wants to go to the causal level.

3.6. Structural Approach: Intercorrelations and Factor Analyses

Information corresponding to this section is submitted jointly in three tables:

—Table 8 reproduces a matrix of correlations for all the personality variables included in this study, for boys in the two applications (test and retest).

—Table 9 reproduces the same information corresponding to girls.

—Table 11, finally, shows two factors analyses for boys and girls, with a quartimin rotation, where test and retest scores have been combined (in order to give data a greater representativeness),

Table 8. Matrix of correlations—boys (N = 174)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BAS-3															
1. Consideration	—	0.55	−0.42	0.06	0.31	−0.28	0.03	0.23	−0.38	−0.32	−0.02	−0.04	0.04	0.43	−0.23
2. Self-control	0.33	—	−0.28	−0.16	−0.01	−0.46	−0.26	0.13	−0.47	0.51	−0.34	−0.40	−0.04	0.22	−0.42
3. Withdrawal	−0.29	0.27	—	0.40	−0.13	−0.01	0.31	−0.40	0.30	0.01	0.10	0.11	−0.22	−0.19	0.04
4. Anxiety	0.05	0.02	0.47	—	−0.03	−0.08	0.47	0.29	0.02	−0.04	0.12	0.20	−0.18	0.16	−0.16
5. Leadership	0.27	0.12	−0.09	−0.02	—	−0.16	0.10	0.27	−0.03	−0.15	0.16	0.21	0.09	0.28	0.11
6. Sincerity	−0.23	−0.40	−0.06	−0.04	−0.15	—	0.09	−0.05	0.29	0.72	0.23	0.30	0.07	−0.27	0.36
EPQ-J															
7. N	0.01	−0.30	0.41	0.42	−0.02	0.14	—	−0.28	0.20	0.18	0.52	0.41	0.11	0.08	0.17
8. E	0.20	−0.02	−0.39	−0.12	0.38	0.02	−0.15	—	−0.12	−0.10	0.21	0.13	0.43	0.10	0.05
9. P	−0.26	−0.49	0.20	−0.08	0.14	0.27	0.27	−0.02	—	0.35	0.60	0.28	0.09	0.25	0.44
10. Sincerity	−0.29	−0.47	0.02	−0.06	−0.13	0.72	0.19	0.02	0.30	—	0.30	0.39	0.15	0.31	0.47
11. C	−0.10	−0.54	0.11	0.01	0.17	0.29	0.51	0.29	0.63	0.31	—	0.50	0.21	−0.07	0.42
I_6 (Junior)															
12. Imp	−0.03	−0.48	0.18	0.16	0.19	0.27	0.46	0.23	0.46	0.34	0.61	—	0.20	−0.07	0.43
13. Vent	0.11	−0.03	−0.28	−0.16	0.30	0.06	−0.15	0.61	0.04	0.11	0.21	0.21	—	0.08	0.26
14. Emp	0.54	0.24	−0.18	0.22	0.20	−0.23	0.11	0.15	−0.34	−0.23	−0.16	−0.07	0.08	—	−0.32
15. ASB	−0.29	−0.52	0.04	−0.16	−0.04	0.43	0.15	0.07	0.51	0.49	0.53	0.42	0.16	−0.35	—

RETEST / *TEST*

Table 9. Matrix of correlations—girls (N = 183)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BAS-3															
1. Consideration	—	0.13	−0.23	−0.17	0.18	−0.07	−0.04	0.14	−0.21	−0.08	0.05	−0.01	0.02	0.27	−0.02
2. Self-control	0.26	—	−0.12	0.06	−0.10	−0.56	−0.23	0.16	−0.44	−0.60	−0.47	0.47	0.21	0.12	−0.45
3. Withdrawal	−0.19	0.04	—	0.34	−0.08	−0.01	0.28	−0.32	0.10	0.03	0.02	0.05	−0.12	−0.02	−0.02
4. Anxiety	0.04	0.05	0.33	—	−0.35	−0.04	0.27	−0.33	0.11	0.01	−0.17	−0.10	−0.10	−0.18	−0.10
5. Leadership	0.21	0.03	0.24	−0.30	—	−0.14	−0.09	0.28	0.01	−0.15	0.09	0.15	0.06	0.02	0.14
6. Sincerity	−0.27	−0.54	0.08	−0.04	0.18	—	0.17	0.08	0.34	0.74	0.39	0.34	0.27	−0.09	0.41
EPQ-J															
7. N	−0.08	−0.33	0.37	0.41	0.25	0.25	—	−0.26	0.20	0.24	0.50	0.34	0.06	0.09	0.24
8. E	0.05	−0.23	−0.46	−0.31	0.27	0.12	−0.14	—	0.13	0.09	0.39	0.33	0.39	0.06	0.21
9. P	−0.29	−0.46	0.14	0.05	−0.01	0.28	0.28	0.11	—	0.45	0.57	0.46	0.08	−0.16	0.43
10. Sincerity	−0.22	−0.60	0.10	0.05	−0.19	0.79	0.32	0.17	0.29	—	0.45	0.46	0.28	−0.03	0.62
11. C	−0.14	−0.55	−0.02	0.04	−0.01	0.35	0.58	0.48	0.60	0.46	—	0.58	0.27	−0.05	0.47
I_6 (Junior)															
12. Imp	−0.19	−0.66	−0.01	−0.02	0.01	0.45	0.40	0.34	0.39	0.53	0.64	—	0.33	−0.04	0.47
13. Vent	−0.01	−0.23	−0.18	−0.17	0.15	0.22	0.10	0.57	0.07	0.31	0.44	0.42	—	0.07	0.29
14. Emp	0.36	0.11	−0.06	0.23	−0.01	−0.09	0.23	0.06	−0.33	0.00	0.01	−0.03	−0.10	—	−0.12
15. ASB	−0.19	0.54	0.12	−0.03	−0.04	0.50	0.29	0.21	0.32	0.61	0.40	0.54	0.35	−0.02	—

RETEST / *TEST*

variables implying redundance, in items, with other scales (Sincerity BAS-3 and the C scale in the EPQ-J) have been discarded, and rotation has been adjusted to assure a maximal loading of the ASB scale in the first factor.

Comments on this information will be made in the following order:

1. First, the intercorrelations within each instrument (BAS-3, EPQ-J and I_6 Junior).
2. Second, the correlations among the scales in the various instruments (BAS-3, EPQ-J, I_6 Junior and ASB).
3. Subsequently, the factorial matrices will be commented on specifically.

The information referring to the ASB scale will be repeated and complemented in the following section, on personality and delinquency.

3.6.1. Intra-instrument correlations

(*a*) *BAS-3.* Taking as reference the two dimensions most often referred to in the literature to classify adjustment problems: Self-control (the opposite end of which is Aggressiveness and Antisocial Behaviour) and Withdrawal, their postulated orthogonality (see Ledingham, 1981; Kohn, 1977; Peterson, 1961; Achenbach, 1966, 1978; Achenbach and Edelbrock, 1979; Quay and Werry, 1979; Spivack and Swift, 1973) is corroborated in the sample of girls. Due, probably, to the adaptive character of the first scale and the maladaptive one of the second, a negative, though low, correlation appears for boys.

Self-control has its highest correlation, among the socialization scales, with Consideration; correlations with Social Anxiety and Leadership being, on the other hand, very low. Consideration appears to be orthogonal to Social Anxiety and, understandably, negatively related to Withdrawal and positively to Leadership (see Hampson, 1984). With respect to the Withdrawal scale, this gives, also expectedly, the highest, positive, correlation with Social Anxiety and a negative correlation—although very slight—with Leadership.

Correlations of the socialization scales with Sincerity (BAS-3) are virtually all negative, but only high with the Self-control scale and, in second place, with Consideration. With this, the positive correlation of L (reverse of Sincerity) and prosocial dimensions (McCrae and Costa, 1983) are confirmed. The relation between Sincerity, and Withdrawal and Anxiety, may be considered as orthogonal (see Leary, 1983) and its negative correlation with Leadership very low.*

(*b*) *EPQ-J.* As regards the two oldest dimensions, E and N, we find in our data a slight negative correlation between them, which is in full agreement with both British and Spanish studies with the Junior version (Eysenck and Eysenck, 1981; Eysenck, 1981). In the adult version (EPI), on the other hand, complete orthogonality is reported.

The repeatedly detected negative correlation between P and N, does not appear in our study (see Eysenck and Eysenck, 1981; Eysenck, 1981; Farrington *et al.*, 1982; Seisdedos, 1979). The C scale, since it is made up of N, E and P items, logically appears positively correlated with these. With respect to the S scale, this is related primarily to P and, also, to a lesser degree, to N, being, however, orthogonal to E (see Eysenck and Eysenck, 1980, 1981; Eysenck, 1981; Eysenck and McGurk, 1980; Seisdedos, 1979; Farrington *et al.*, 1982). The correlation between S and C is understandably positive.

(*c*) *I_6 (Junior).* The table of intercorrelations which appears in our data is clear in reflecting a positive correlation, low in boys and moderate in girls, between Imp and Vent, which confirms, the previous research. The relation of Imp and Vent to Emp is, on the other hand, insignificant (see Eysenck and Eysenck 1978, 1980; Saklofske and Eysenck, 1983; Eysenck *et al.*, 1984; Eysenck and McGurk, 1980).

As a summary of what is observed in intra-instrument correlations, a highly satisfactory agreement can be seen with published research in the corresponding areas.

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*It was also possible to calculate the matrix of intercorrelations of the scales in the BAS-3 for boys ($N = 411$) and for girls ($N = 395$) in the 'factorization sample'. The patterns found are entirely similar to those given in Table 9; thus, a greater representativeness of results is assured at the same time.

3.6.2. Inter-instrument correlations

(*a*) *Correlations between the BAS-3 and EPQ-J.* The N scale shows, understandably, its clearest correlation with Social Anxiety, as well as a positive correlation with Withdrawal and a negative one with Self-control (see Frost, 1981 and Seisdedos, 1979). On the other hand, the relation with Leadership and Consideration is orthogonal.

The E scale shows its highest, negative, correlation with Withdrawal, as well as a slight negative correlation with Social Anxiety (higher in girls). Also understandably, it is positively related to Consideration and Leadership.

With respect to P, its highest, negative, correlation appears with Self-control—that is, positive with Aggressiveness (see Eysenck, 1985)—also being negatively correlated with Consideration towards others (remember its alternative denomination as Toughmindedness). A slight positive correlation with Withdrawal, higher in boys, also appears.

The scales of Sincerity in the BAS-3 and the EPQ-J are, understandably, highly correlated in the matrix we are discussing (values being 0.72 for boys and 0.79 for girls). Hence, correlation patterns of Sincerity (EPQ-J) with socialization scales are similar to those commented on in Section 3.6.1. (a).

Finally, with respect to the C scale, the highest, negative, correlation is found with Self-control, and a moderate positive correlation with Sincerity, which is easily deduced from the composition and nature of the former scale.

(*b*) *Correlations between the BAS-3 and* I_6 (*Junior*). The Imp scale has its highest, negative, correlation with Self-control, which, according to other studies, means a positive relation between Imp and Aggressiveness [see, for example, Finch, Saylor and Spirito (1982), Thompson *et al.* (1983) and Kendall and Wilcox (1979)], as well as a positive correlation with Sincerity, typical of a more general tendency of Sincerity/Maladjustment and L/Social Adjustment correlations (McCrae and Costa, 1983).

With respect to the Vent scale, its correlations with the BAS-3 are very low. Emp shows more interesting correlations, the highest one with Consideration towards others (see Mehrabian and Epstein, 1972; Hampson, 1984), and also a slightly positive one with Self-control (Kurz and Eisenberg, 1983), with Leadership and with Anxiety (Mehrabian and Epstein, 1972; Silbereisen and Schulz, 1977), as well as slightly negative with Sincerity (Emmons, 1984), all of which appear more clearly in boys.

(*c*) *Correlations between the EPQ-J and* I_6 (*Junior*). Of the three scales in the I_6 (Junior) Questionnaire, that of Imp is the one which shows the most significant relations to the scales in the EPQ-J, namely: close relations to N and P, as well as a high relation to C and Sincerity, all of them positive. Correlation with E is also positive and significant, although low (see Eysenck 1981; Eysenck and McGurk, 1980; Eysenck and Eysenck, 1978, 1980). Vent shows its highest, positive, correlation with E and, only in girls, a moderate correlation with Sincerity. Finally, Emp shows a negative correlation with P. The observation of a positive correlation between Emp and N, repeatedly reported in the literature, appears faintly in our study only for girls [in addition to the above-mentioned studies, see also Silbereisen and Schulz (1977), Mehrabian and Epstein (1972) and Saklofske and Eysenck (1983)]. The sometimes mentioned negative correlation between Emp and Sincerity is observed in our study in the case of boys (see Emmons, 1984), but no interesting correlations appear between Emp and E (see Silbereisen and Schulz, 1977).

With respect to the C scale in the EPQ-J, it has, understandably, a high positive correlation with Imp; the correlation pattern with Vent and Emp, on the other hand, does not appear clearly. We must wait for its corresponding criterion variable in English studies, the ASB scale, in order to obtain a clearer picture.

Although with minor differences, the most general conclusion from the results obtained in our studies referring to inter-instrument correlations, is completely similar to that drawn from the review of intra-instrument correlations: there is a close concordance with data obtained from research published in these areas.

(*d*) *Correlations between personality variables and the ASB scale.* That last column in Tables 8 and 9 reproduces the correlations of the BAS-3, EPQ-J and I_6 (Junior) scales with the ASB scale, for boys and girls in the first application, and the last row in these tables shows the information corresponding to the second application.

Table 10. ANOVA for three groups: 1 = low ASB ($N = 72$), 2 = medium ASB ($N = 250$), 3 = high ASB ($N = 81$)

	TEST						*RETEST*					
	Deviation from $\bar{X}_t$						Deviation from $\bar{X}_t$					
	$\bar{X}_t$	1	2	3	*F*	*P*	$\bar{X}_t$	1	2	3	*F*	*P*
BAS-3												
Consideration	12.61	0.63	−0.12	−0.26	4.26	0.01	12.41	0.78	0.07	−0.87	10.82	0.001
Self-control	9.73	1.60	0.25	−2.05	31.99	0.001	9.53	2.15	0.31	−2.68	56.06	0.001
Withdrawal	1.69	−0.21	0.03	0.11	0.38	NS	1.87	−0.03	−0.17	0.45	2.21	NS
Anxiety	4.62	0.24	0.26	−0.86	4.86	0.01	4.44	0.20	0.29	−0.01	5.60	0.01
Leadership	6.59	−0.15	−0.29	0.87	6.47	0.01	6.87	0.04	−0.15	0.34	0.93	NS
Sincerity	5.80	−1.46	0.09	1.06	28.60	0.001	5.88	−1.70	0.09	1.29	40.39	0.001
EPQ-J												
Neuroticism	10.78	−1.14	−0.06	1.17	5.88	0.01	11.01	−1.96	0.25	1.10	9.78	0.001
Extraversion	18.59	−0.48	−0.19	0.89	4.01	0.05	18.61	−1.15	0.09	0.80	5.26	0.01
Psychoticism	3.29	−1.38	−0.26	1.90	36.29	0.001	3.47	−1.36	−0.46	2.38	43.58	0.001
Sincerity	11.32	4.58	0.44	2.95	87.69	0.001	12.01	−4.66	0.61	2.60	72.18	0.001
C	18.58	−1.99	−0.47	2.96	35.42	0.001	19.03	−3.09	−0.31	3.54	50.40	0.001
I_6 (Junior)												
Impulsiveness	11.29	−2.52	−0.47	3.42	39.80	0.001	11.88	−3.31	−0.07	3.11	36.90	0.001
Venturesomeness	17.63	−2.05	0.17	1.40	16.27	0.001	17.56	−1.71	0.20	1.02	8.36	0.001
Empathy	17.50	0.71	0.33	−1.45	10.06	0.001	17.84	0.55	0.50	−1.76	12.53	0.001

$\bar{X}_t$ = total mean, NS = non-significant.

With respect to the correlations with the BAS-3, the highest, negative correlation is, understandably, observed with the scale of Self-control in social relationships, a positive correlation also appearing with Sincerity (already commented on with respect to the EPQ-J). In boys, a slight negative correlation with Consideration appears, but not in the case of girls. Regarding Withdrawal, Anxiety and Leadership, correlations with the ASB are non-significant.

In the case of the EPQ-J, the highest correlations with ASB appear, in a positive sense, with P, C and Sincerity, which confirms the repeated remarks in the literature (Allsopp and Feldman, 1974, 1976; Saklofske *et al.*, 1978; Eysenck and McGurk, 1980; Eysenck, 1981; Seisdedos, 1982; Farrington *et al.*, 1982). Correlations appearing with N and E, on the other hand, are lower, that between E and ASB being non-significant in boys. This lesser correlation with E appears also in Allsopp and Feldman (1974) and in other studies, and in the Spanish study (Seisdedos, 1982) a significant correlation is not obtained between self-reported ASB and E and N. Allsopp and Feldman suggest, however, another kind of analysis: that of differences among groups, which will be submitted further on.

The correlations between ASB and the scales in the I_6 (Junior) show the highest, positive, correlation with the Imp scale, a positive one, though low, with Vent and a negative one (only for boys) with Emp.

An alternative analysis consisted of making up, according to classical psychometrical standards (Cureton, 1965), three groups of *S*s in our main sample depending on whether they obtained low, medium or high scores on the ASB, and comparing among them the scores obtained in the remaining variables through an ANOVA. The corresponding information appears in Table 10, where, given the low *n* resulting from the separation into three groups, boys and girls have been put together, but the analyses kept separate for test and retest.

Background information being the same, the results obviously have to be very similar to those previously discussed. Some interesting information is added, however. There exists a relation between ASB and Social Anxiety, but which discriminates only the group with high ASB from the rest (that group showing a lesser Social Anxiety) and the same seems to be true for Leadership (that group appearing with higher scores on this scale). The relation of ASB to N appears clearly rectilinear and significant, and also, though not so marked, does the relation to E. The three scales in the I_6 (Junior) appear as highly discriminant, noting that, in the case of the Emp scale, the difference is focused merely between the group high in ASB and the other two. This kind of analysis is, thus, very illuminating, it being possible therefore, by way of summary, to fully subscribe Eysenck's conclusions (1981, p. 36): "Thus the picture of the antisocial child that emerges is of an exceptionally impulsive, somewhat extraverted, but mainly toughminded individual who is low on empathy", adding, on our part, that the child appears also with low self-control in social relationships and with low social sensitiveness (or consideration towards others).

Table 11. Factor analysis (quartimin rotation)

	Boys (N = 174)				Girls (N = 183)			
	I	II	III	h^2	I	II	II	h^2
Consideration	−0.54	0.50	0.14	0.57	−0.17	0.18	0.58	0.43
Self-control	−0.74	0.01	−0.18	0.60	−0.75	−0.01	0.15	0.60
Withdrawal	0.20	−0.44	0.54	0.56	0.04	−0.65	−0.14	0.46
Anxiety	−0.13	−0.08	0.73	0.56	−0.02	−0.69	0.21	0.50
Leadership	−0.03	0.60	0.15	0.38	0.00	0.53	0.03	0.29
N	0.23	0.03	0.74	0.61	0.47	−0.55	0.21	0.52
E	0.08	0.70	−0.30	0.60	0.36	0.68	0.14	0.63
P	0.71	0.02	0.12	0.52	0.58	−0.04	−0.38	0.51
Sincerity (EPQ-J)	0.67	−0.01	−0.04	0.45	0.76	−0.11	0.00	0.58
Imp	0.60	0.37	0.40	0.64	0.77	0.10	0.01	0.60
Vent	0.24	0.60	−0.27	0.49	0.50	0.32	0.27	0.43
Emp	−0.50	0.43	0.31	0.53	−0.01	−0.17	0.75	0.57
ASB	0.87	0.16	−0.10	0.77	0.86	0.00	−0.06	0.75
% Variance	25.6	15.5	14.5	55.6	26.5	16.4	9.8	52.7

Intercorrelations of factors

	I	II	III	I	II	III
I	—	−0.05	0.04	—	0.01	−0.06
II		—	−0.04		—	0.10
III			—			—

3.6.3. Overall picture (factorial matrices)

Having as reference the information contained in Table 11, we can obtain an all-embracing view of the studied variables, noting that analyses of this kind are seldom found in the literature of the area we are concerned with, probably due to the limited number of variables being considered (see Seisdedos, 1979), as well as that, obviously, there is no other publication that has analysed all the variables included here as a whole.

The *first factor* in both matrices—result of a rotation maximizing the loading of the ASB scale—shows also high loadings (>0.60) in self-control (negative), P, Sincerity* and Imp in the boys' matrix, with a similar picture in that of girls. The differences stand out, however. In boys, Consideration and Emp appear negatively and highly represented in this factor. In girls, on the other hand, Vent, N and, to a lesser degree, E appear as positive. This latter variable is also the one that stands out in the *second factor*, combining with Leadership and Vent, with Consideration and Emp and—negatively—with Withdrawal in the case of boys. However, it combines negatively with Social Anxiety, Withdrawal and N, as well as positively with Leadership and—to a lesser degree—with Vent in the case of girls. E thus appears more related to prosocial behaviour in boys but with emotional stability in girls. Finally, the *third factor* is one of emotional instability in the case of boys (N, Social Anxiety and, to a lesser extent, Withdrawal and Imp) and, on the other hand, specifically of prosocial behaviour in the case of girls (Emp and Consideration towards others, as well as, to a lesser degree, P in a negative sense).

It is possible to note, as a general comment, that all the variables appear well-represented in the factorial matrices—loading to an important extent at least on some factor—and the correlations found among factors are very low (r between 0.01 and 0.10), and so the rotation can be regarded almost as orthogonal. The picture that appears is reasonable, as well as clearly differentiated according to sex and it may well serve as a starting point for more detailed and inquisitive research.

3.7. Some Data on Personality and Delinquency

The question of relations between personality and delinquency, of continuous interest, has been maintained alive over recent years around Eysenck's theory (1977), there existing recent studies both for it (Eysenck, 1985) and against it (Farrington *et al.*, 1982). In the empirical field, we have applied the instrument battery to a sample of 42 young delinquents in a reformatory and compared their results with those of 103 non-delinquent *S*s matched according to sex (males) and age ($\bar{X}$ = 13.1). The corresponding results are shown in Table 12.

*It must be remembered that L, in studies like ours, must be interpreted as conformity, need for approval and social adjustment (see Eysenck, 1981; McCrae and Costa, 1983).

Table 12. Comparison between non-delinquent and delinquent boys ($\bar{X}_{age}$ = 13.11 yr)

	Non-delinquents (N = 103)		Delinquents (N = 42)			
	$\bar{X}$	SD	$\bar{X}$	SD	t	P
BAS-3						
Consideration	12.03	2.83	10.74	3.03	2.37	0.05
Self-control	9.66	3.19	7.26	3.12	4.17	0.001
Withdrawal	2.66	3.14	4.44	2.77	3.37	0.001
Anxiety	4.21	2.80	4.33	2.32	0.27	NS
Leadership	7.04	2.65	7.84	2.44	1.75	NS
Sincerity	5.61	2.17	6.35	2.55	1.65	NS
EPQ-J						
N	10.50	4.67	12.40	3.54	2.66	0.01
E	18.22	3.41	16.86	3.20	2.28	0.05
P	4.56	3.46	6.60	2.97	3.57	0.001
Sincerity	10.86	4.23	12.65	4.73	2.13	0.05
C	18.97	4.59	21.21	4.03	2.91	0.01
I_6 (Junior)						
Imp	11.15	4.75	15.60	4.02	5.73	0.001
Vent	17.28	3.92	17.12	2.52	0.29	NS
Emp	15.92	3.50	14.84	3.09	1.84	NS
ASB	14.07	10.45	32.28	10.20	9.68	0.001

NS = non-significant.

With respect to the BAS-3, highly significant differences appear on the scales of Self-control (with higher scores for non-delinquents) and Withdrawal (with higher scores for delinquents), as well as a significant difference in the Consideration scale, in the expected direction. Although there is a tendency for scores to be higher in delinquents regarding Leadership and Sincerity, in this case no statistically significant indexes have been obtained, and regarding Social Anxiety the tendency is also in the expected direction, although it is minimal. The picture obtained from the BAS-3 falls, thus, within what might be reasonably predicted.

All the comparisons made with the scales in the EPQ-J are statistically significant. The high difference in P, already reported in the literature by Eysenck (1981) among others, stands out here, as well as that in N (see also Allsopp and Feldman, 1976) and in Sincerity, delinquent boys obtaining the highest scores in all cases. The same is true for the C scale (see Seisdedos, 1982) and, above all, for its corresponding criterion scale: the ASB scale, which shows among all the scales studied, the highest difference between the two groups, the great correspondence between self-report of delinquency and 'official' delinquency being confirmed in this sense (see Farrington *et al.*, 1982). Where results have been most controversial (see Allsopp and Feldman, 1974; Eysenck, 1985; Eysenck and McGurk, 1980; Farrington *et al.*, 1982), that is for the E scale, our data yield a higher score for non-delinquent *S*s. This is in accordance with the results obtained in Withdrawal, and also with results obtained in the comparison of other samples of young delinquents and non-delinquents, where the number of *S*s was greater and where the patterns of relations in the EPQ-J scales happened to be very similar (see Pérez, Mestre and Silva, 1984). From these results with the E scale, which are opposite to those postulated in Eysenck's theory, it is probably not reasonable to give an explanation on the basis of lack of control of the kind of offence, since we are working with people with an average age around 13 yr. As we did obtain significant differences in the expected direction with the ASB scale, the Farrington *et al.* (1982) hypothesis giving a different weight to E, depending on whether it deals with self-report of delinquency or 'official' delinquency and, hence, giving an artifactual explanation to the E–ASB relation, seems feasible, although it is not in agreement with the statement by these authors regarding the high correspondence between self-report of delinquency and 'official' delinquency, which is also confirmed by our data. Seisdedos (1979), for his part, has found two different factors in his study on the basis of self-report scales, which he has called Antisocial Behaviour and Delictive Behaviour, although he has also reported on their significant correlation. A part of the solution to the problem could go along these lines or, more probably, along those of the decomposition of E into primary scales where results seem to be clearer.

One of these scales is precisely that which gives rise to Imp on the I_6 (Junior) Questionnaire, where differences between non-delinquents and delinquents are highly significant and in the

expected direction (see also Redmountain, 1976). Results in Vent and, above all, in Emp (see Ellis, 1982) are also in the expected direction, although in our study no statistically significant indices are obtained. The profile for the 'official' young delinquent yielded by our data is that of a *S* with high P (Toughmindedness), high Imp and low Self-control, as well as low Sociability (i.e. high Withdrawal), greater emotional instability (N) and lesser Consideration towards others compared to non-delinquent *S*s. It is, therefore, a profile very similar to that of *S*s with high ASB or self-report of antisocial behaviour, which is also strongly supported by the literature. There remains as the only finding at variance with Eysenck's theories the one found for E. The possible solution of analysing the relative incidence of delinquency in EN (or high in E *and* N) *S*s (Allsopp and Feldman, 1974; Eysenck, 1985; Farrington *et al.*, 1982) must wait, with respect to our data, for a greater number of *S*s and for new analyses.

4. CONCLUSIONS

1. With respect to the distribution of scores ($\bar{X}$ and SD), we can say that our main sample is satisfactorily similar to the studied sample in the Spanish manual, as far as the EPQ-J is concerned. The corresponding comparison with English standard data does not seem to reflect important differences either, although some content variations in the Spanish vs the English version should be noted here. With respect to the I_6 (Junior), the corresponding comparison between our data and the English ones yield higher scores in Imp for the British sample, which also obtains lower scores in Vent and Emp. In view of some differences in the composition of the samples, these findings must, however, be regarded as tentative.
2. Referring to internal consistency, the socialization scales in the BAS-3 stay within satisfactory limits, and the same is true for the N and Sincerity scales in the EPQ-J. The internal consistency of the three scales in the I_6 (Junior) is also very satisfactory. Finally, the ASB scale shows the highest α-coefficient among all the personality variables studied.
3. The Consideration and Withdrawal scales in the BAS-3, as well as the P and C scales in the EPQ-J, show an unsatisfactory temporal stability. All the remaining scales, however, stay within acceptable limits in this test which is difficult for instruments of this kind. Yet we must note that many reliability calculations in our study have been made only for boys and girls jointly. Some important differences may appear in analyses made separately.
4. In the comparison between boys and girls, a clear differential picture appears, which is, in general, in accordance with what is found in other studies, and where there are several outstanding results: in BAS-3, the higher scores obtained by girls in Consideration towards others and Social Anxiety; in the EPQ-J, the higher score in P (Toughmindedness) obtained by boys; in the I_6 (Junior), the greater Emp shown by girls; and in the ASB scale, their lesser scores compared to the male sample.
5. Correlations of scales with age (range between 10 and 18) are low (slightly negative correlation with Self-control and Leadership, and slightly positive with Sincerity, Imp, Vent and the ASB scale). All this in a joint analysis for boys and girls. The exploration of differences according to the course (elementary school versus high school), made for boys and girls separately, however, suggests that important inter-sexual differences may appear in the developmental framework.
6. Only the scales of Emp and Consideration towards others show a fair (positive) correlation with Intelligence. No consistent or interesting correlations appear with school performance, although the course variable, of a moderating effect in other studies, was not considered as such in our case. Another way of dealing with the differential power of school performance was to compare children with and without retardation in their schooling with respect to their age. Children with retardation in their schooling level show higher scores in Withdrawal and Imp.
7. Merging the multidimensional instruments from factorizations looking for orthogonality, intra-instrument correlations among the different scales generally reach a low and only exceptionally moderate level. More generally, the patterns of intra-instrument correlation are in complete agreement with what is found in other publications, and with respect to the patterns of inter-instrument correlation, the concordance with the literature is also close,

more differentiated correlation profiles standing out in this case, which will appear clearly in factor analyses.

8. The relations between the ASB scale and personality variables found in our study are in line with the research published on this subject. ASB appears related above all with high Imp and Toughmindedness, low Self-control and Consideration in social relationships, as well as, to a lesser degree, with high E and low Emp.
9. The overall picture which appears as a function of the factorial matrices shows the close relation between the ASB scale and P (Toughmindedness), Imp, Sincerity and lack of Self-control in both sexes. A second factor where E stands out, appears more closely related to prosocial behaviour in the case of boys and to emotional stability in the case of girls. The third factor, which differs greatly depending on the sex, groups emotional stability in the male sample and prosocial behaviour in the female sample. Thus, the picture of overall relations among variables appears understandable and, at the same time, differentiated according to the sex.
10. The final analyses were a comparison of a sample of young male delinquents with one of young male non-delinquents matched by age. The young delinquent appears as a boy with high P (Toughmindedness) and Imp, low Sociability and Self-control in social relationships, as well as with higher N and lower Consideration towards others compared to non-delinquent *S*s. In relation to Eysenck's criminality theory, the only discordant point lies in the higher scores found in our study, for non-delinquents, in E. Although this does not directly affect the theory nucleus, where the prediction for higher delinquency refers more exactly to the EN group and not to the E or the N groups separately (see Burgess, 1972), it is suggested that the solution might lie in working more intensively with the primary dimensions forming E, since at that level, greater clarity seems to arise with respect to the problems we are dealing with.

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