

Multidimensional Social Science

An inclusive approach to
social position and inequality

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Rozenberg Publishers 2009

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Cover and layout design: HAVEKA BV | *de grafische partner*

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Rozenberg Publishers
Lindengracht 302 d+e
1015 KN Amsterdam
T. 020 - 625 54 29
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I. www.rozenberggps.com

ISBN: 978 90 3610 140 0

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Chapter 4

SOME THEORETICAL AND METHODOLOGICAL APPLICATIONS OF CENTRE-PERIPHERY THEORY AND THE SOCIAL POSITION INDEX

Juan Díez-Nicolás

4.1 Applications of the Social Position Index

The Social Position Index (SPI) developed by Galtung (1964, 1976) had three main potential applications. First, it was a way of simplifying the main explanatory-independent variables generally used in survey data analysis in a synthetic index (socio-demographic variables). At the time it was developed, when the use of the first generation of computers was just beginning, and when most researchers were happy if they could use the older tabulating machines (counter-sorter, tabulator, etc.) for their IBM 'punched cards', most analysis was based on bivariate tables. Therefore, an index that combined the most widely used socio-demographic variables to describe the main differences in attitudes and behaviour was eagerly welcomed.

Secondly the SPI was enabled the testing of the main hypotheses derived from Centre-Periphery theory, as it provided a way to operationalize the concepts of 'social Centre' and 'social Periphery' as the two poles of a social position continuum. And the third main application of the SPI was the utility to explain attitudes towards foreign policy through determining the salience of different policies in the different social position categories. This is an easy way to show which policies are 'going into' a society (their salience was high at the Centre and low in the Periphery) or 'fading out' of society (their salience was declining in the Centre and rising in the Periphery) (Halle, 1966).

The SPI was one of the most important variables used by researchers for the analysis of the data of the 'Images of the World in the Year 2000' project, coordinated by Johan Galtung for the UNESCO Centre in Vienna (1965-69). Due to limitations of computing tools at the time, Galtung constructed the SPI on the basis of eight available variables, each of them dichotomized to refer to 'more socially rewarded social positions' and 'less socially rewarded social positions'.

The variables were gender, age, education, income, occupation, sector of the economy, habitat and centrality. Thus, male, adult (except for the younger and the older cohorts), better educated (more than secondary education), and with a higher income (more than average for the country), and a more prestigious occupation (non-manual), and working in the most active sectors of the economy (secondary and tertiary sectors), urbanite (living in urban and metropolitan areas), and living in a more central, accessible and dynamic location, each provided one point. The SPI could hence vary on a scale between 0 (a young or old female with low education, low income, no occupation or manual worker in the primary (extractive) sector of the economy, living in a rural place with low accessibility and socially non-dynamic) and 8 points (a male adult, with high education, high income, non manual worker in the secondary or tertiary sector of the economy, living in an urban or metropolitan place that was central and dynamic (i.e., had positive net immigration)).

4.2 Testing the Explanatory-Predictive Power of the SPI in Spain

The SPI has been applied to Spanish data to test and verify some of Galtung's main hypotheses derived from his 'Centre-Periphery' theory. The data confirmed that social position was positively related to mass media consumption, and that those in higher social positions showed greater knowledge and a greater variety of opinions on current events, as well as a reformist-gradualist (rather than absolutist) orientation towards social change (Díez-Nicolás 1966). The SPI was also related to Cantril's self-anchoring scale, showing a positive relationship between social position and evaluation of the personal, national and world situation (Díez-Nicolás and Torregrosa 1967a, 1969).

The SPI was also used to test the salience of domestic (rather than foreign) policies (Díez-Nicolás, 1967b) and, in addition, to provide further confirmation of the positive relationship between social position and social participation through mass media consumption, knowledge (information) and opinion on current issues. It also verified some other hypotheses from Centre-Periphery theory, such as the positive relationship between social position and the consistency of opinions, the greater internalization of new social norms and values by the 'social Centre', and the prevalence of a gradualist-reformist orientation towards social change among those in the 'social Centre'.²⁹

Most importantly, this research provided evidence for the existence of different degrees of salience of domestic policies according to social position, so that issues such as economic development, education, international relations, institutionalization, social equality and state control were more salient for the 'social Centre', while level of living, housing, agriculture, labour problems, municipal problems and (internal) migration were more salient for the 'social Periphery'.

Having shown that the SPI seemed to explain Spain's socio-demographic structure quite well, it was incorporated in all of the questionnaires used for social survey research as one of the main independent-explanatory variables. As of October 1986 a monthly national survey (La Opinión Pública de los Españoles/Spaniards' Public Opinion) was conducted on a representative sample of the Spanish population 18 years and over (the SPI was constructed following very closely the definition developed by Galtung). Twenty years later there are 231 monthly surveys that have included the SPI as one of the main independent-explanatory variables (See ASEP collection in www.jdsurvey.net), and it can be said without any doubt that it has proved to be the best descriptive variable for the analysis of attitudes and behaviours. The SPI is used in the above-mentioned surveys as a variable with nine categories (0 to 8), or grouped as a variable with three categories variable (high, middle and low social position).

²⁹ It may be added that all of these hypotheses were tested using several indicators to measure each of the variables: social participation, knowledge, opinion, consistency, internalization and orientation to social change.

This construction was also incorporated in 52 monographic surveys conducted by ASEP for the CIRES project (Díez-Nicolás, 1992-1997) between 1991-1996. Each survey was on a different topic (religion, social inequalities, environment, political culture, immigration, Europe, etc.) (See CIRES collection in www.jdsurvey.net).

4.3 Testing the Explanatory-Predictive Power of the SPI in International Comparative Research on Values

Data from the World Values Survey international comparative research project (www.worldvaluessurvey.org) provided the best 'test-set' for Galtung's Centre-Periphery theory and its tool, the SPI. When Ron Inglehart (Inglehart 1977; 1990; 1997) developed his theory about value change in industrial and post-industrial societies, it was only natural to expect that the new post-materialist/self-expression values should be more present in those societies that were in the 'Centre' (more developed) and, within each society, in the social groups that were more 'Centre' than in the 'Periphery'. In other words, according to the Centre-Periphery Theory the new cultural and social values should first (and most intensively) be internalized by the 'social Centre' and would later gradually be transferred to the 'social Periphery'.

In a preliminary approach (Díez-Nicolás, 1992a) it was demonstrated, using path analysis, that the SPI not only was very positively related to the new self-expression values, but also that it was a better predictor of those values than the usual socio-economic status index (SES). The main conclusion of the analysis, based on one of ASEP's monthly surveys, can be summarized as follows: The model used has demonstrated the importance of an intervening variable, such as exposure to information. It seems evident that post-materialism will be greater as social position and exposure to information increase (Díez-Nicolás, 1992a).

Table 4.1. Explanatory/Predictive power of age, SES and SPI on post-materialism*

	Effects on post-materialism		
	Direct	Indirect	Total
Age	(-.225)	(.002)	(-.223)
Socio-economic status (SES)	(.045)	(.003)	(.048)
Social position (SPI)	(.106)	(.013)	(.118)

* *The intervening variable was exposure to information.*

The model allows for the separation of the direct from the indirect effects of independent/explanatory variables on the dependent variable. Direct effects refer to the explanatory capacity of an independent variable to explain only by itself part of the variance in the dependent variable. Indirect effects refer to the explanatory capacity of an independent variable to explain, in combination with one or more other independent intervening variables part of the variance in the dependent variable.

Results in Table 4.1 confirm the almost universal finding that age is the variable that explains by itself a larger part of the variance in post-materialist values (the young are more oriented to post-materialist values than the elder). But the aim of this research was to find out to what extent social position was a better predictor of post-materialist values than the more traditional SES index. The results are robust and conclusive that SPI has a greater predictive power than SES, both when direct effects are compared, and when indirect effects (through the intervening variable exposure to information) are compared. (Nevertheless, it is evident that the indirect effect adds very little to the direct effect of each of the three independent variables on post-materialist values). One can say that the mediating role of exposure to information (the indirect effect) is somewhat larger with respect to social position (10 per cent) than with respect to SES (7 per cent) and to age (1 per cent). Hence, the direct effect of social position on post-materialism, which is greater than that of SES, is accentuated when taking into account the intervening role of exposure to media. For the same reason

'the difference between the effects of age and social position on post-materialism is reduced when taking into account exposure to information as an intervening variable' (pp. 163-164 of the English edition, 1996). The positive relation between social position and self-expression values was maintained when controlling for age, ideology and nationalist sentiments both at the national level, and when using regions (autonomous communities) as units of analysis (Díez-Nicolás, 1992b, 1994).

The SPI has also proved to be a very useful tool for analyzing attitudes of Spaniards towards almost any social object (Díez-Nicolás, 1997, 1998a, 1998b, 1999b, 2003, 2005; Díez-Nicolás and Ramírez-Lafita 2001b; Fernández-Ballesteros and others 2002). The contrast between social Centre's attitudes (high social positions) and those of the social Periphery (low social positions) is generally greater than the contrast found when considering any other independent variable.

Another source of international comparative research data is the International Social Survey Program (ISSP, on <http://www.issp.org/>). From this dataset the 1993 module on Attitudes towards the Environment, conducted in 20 countries, was selected to test the relationship between social position and self-expression (post-materialist) values in societies that vary greatly in their economic development, democratic system of government and cultural values (Díez-Nicolás, 1999a). Though the data were not fully appropriate to construct the SPI for all countries (some had to be excluded because they did not provide information on some of the variables that are necessary to construct the SPI), the main hypotheses of the Centre-Periphery theory were tested and provided a verification of the theoretical framework. Thus, it was concluded that 'individuals in the social Centre seem to be more knowledgeable than post-materialists about what causes damage to the environment, they have a more discriminating view than post-materialists about the relation between economic growth and environment, they seem to be only slightly less willing than post-materialists to accept sacrifices on behalf of the environment, and they behave only slightly better than post-materialists to care for the environment. In most countries included in the present analysis post-materialists belong to

environmental groups, have signed petitions about environmental issues, have given money to environmental groups and have taken part in a protest or demonstration about an environmental issue in proportions which are very similar to those found among individuals in the social Centre' (Díez-Nicolás, 1999a, p. 347). Therefore, there seems to be a great but not complete overlap between individuals belonging to the social Centre and post-materialists.

4.4 The SPI and the new Post-materialist-Self expression Values

The data accumulated through ASEP's monthly surveys include Inglehart's 12 items scale of post-materialism (a question asks for choice among 4 items, and another question asks for choice among 8 items), as well as the eight variables necessary to construct Galtung's SPI. This has allowed for the analysis of values of social position with an extremely large amount of data.

Table 4.2 National Goals (scale of 4 items), by Social Position 1988-1999
1st option

Year	Maintain Order			More say in political decisions			Fight rising prices			Protect freedom of expression		
	Social Position Index			Social Position Index			Social Position Index			Social Position Index		
	High	Middle	Low	High	Middle	Low	High	Middle	Low	High	Middle	Low
1988	33	42	49	26	18	10	26	25	27	13	12	6
1989	36	41	44	24	16	10	21	27	32	17	12	8
1990	35	39	42	22	17	10	21	27	33	19	14	9
1991	37	42	44	23	18	12	22	24	29	17	14	10
1992	33	37	41	26	20	13	26	28	34	14	14	10
1993	30	34	39	28	21	15	26	31	34	14	13	10
1994	30	33	38	26	23	16	25	27	32	18	14	10
1995	34	38	41	27	21	15	21	25	29	17	14	11
1996	33	38	44	26	20	15	21	23	28	19	17	12
1997	29	32	36	28	22	17	21	25	29	21	19	14
1998	28	28	30	28	25	20	20	23	30	24	21	16
1999	24	26	31	29	24	18	23	27	32	23	22	15
EVS-'99	33	39	44	31	24	20	13	15	13	19	17	12

1st and 2nd Options

Year	Maintain Order			More say in political decisions			Fight rising prices			Protect freedom of expression		
	Social Position Index			Social Position Index			Social Position Index			Social Position Index		
	High	Middle	Low	High	Middle	Low	High	Middle	Low	High	Middle	Low
1988	51	62	69	49	36	23	58	62	70	38	32	20
1989	52	58	65	44	36	23	56	64	70	42	33	21
1990	49	57	64	46	37	27	56	62	70	43	36	24
1991	53	61	66	47	39	29	54	58	65	42	35	26
1992	49	55	64	48	42	31	56	61	70	42	36	26
1993	46	54	62	51	42	34	57	63	69	39	36	27
1994	45	54	62	51	46	36	54	59	66	45	35	26
1995	49	58	65	48	44	34	53	57	63	44	36	27
1996	52	58	65	49	44	36	51	54	61	46	40	31
1997	47	52	59	52	46	38	48	54	60	48	43	33
1998	43	46	52	53	49	40	47	52	60	52	47	37
1999	40	42	51	54	49	40	51	57	64	52	48	35
EVS-'99	52	59	66	55	46	42	33	36	37	48	44	29

Source: Data for the years 1988-1999 come from ASEP Data Archive, and correspond to the aggregate data for each year of the monthly national surveys, each one of them based on a representative sample of the Spanish population of about 1,200 persons 18 years and over. EVS '99 data have been calculated by the author from the survey data file produced by DATA. (Translated from Spanish, Díez-Nicolás, 2000, p. 300).

The monthly surveys were aggregated for each year, producing a file with more than 13,000 cases per year for 1988 to 1999. This made it possible to compare the proportion of individuals that had chosen one of the four items in the first scale (Díez-Nicolás, 2000, 2001a). In 1988, 33% of the individuals in the 'social Centre' (high SPI) chose as the most important national goal for Spain 'to maintain order', while 26% chose 'to have

more say in political decisions' and another 26% chose 'to fight rising prices'. Only 13% chose 'to protect freedom of expression' as their most important national goals, 2% of those in the 'social Centre' did not answer). The corresponding percentages for persons in middle social positions on were 42%, 18%, 25% and 12% (plus 3% who did not answer). The percentages for persons in the 'social Periphery' were 49%, 10%, 27% and 6% (plus 8% who did not answer). A comparison between the three categories shows that the preference for 'maintaining order' and for 'fighting rising prices' (both measuring materialistic-scarcity-survival values) are higher in the 'social Periphery' than in the 'social Centre', while the preference for 'more participation in political decisions' and 'protecting freedom of expression' (both measuring post-materialist-self expression values) is higher in the 'social Centre' than in the Periphery. An increasing or decreasing percentage from the 'social Centre' to the 'social Periphery' is found for each item and each year, regardless of whether only the first option or the first two options are considered. In fact, out of 104 distributions in Table 4.2 only two cases do not follow the monotonic and consistent increasing or decreasing pattern, something that obviously cannot be attributed to chance. It must be underlined, on the other hand, that this monotonic pattern is achieved through trichotomies, something much more difficult (especially when having 104 comparisons) than if dichotomies (social Centre vs. social Periphery) had been used.

The same pattern is found when the other 8 items in Inglehart's scale are used (4 materialistic-scarcity values: maintaining a high rate of economic development, having a strong Armed Forces, maintaining a stable economy and fighting crime; and 4 post-materialistic-self expression values: having more say in decisions concerning one's job and community, protecting the environment, having a less impersonal and more humane society, and progressing towards a society in which ideas are more important than money). The proportion of respondents that chooses each of the four post-materialist-self expression values is generally higher in the 'social Centre' than in the 'social Periphery', while the reverse is (usually) observed regarding each of the four materialist-scarcity values. An additional important contribution of this research was that results from a different

source of data for Spain (EVS '99 survey) provided practically the same results. And it may be added that ASEP's data for years 2000 to 2008 have continued to show the same pattern, that is, post-materialistic-self expression values being more important in relative terms for the 'social Centre', and materialist-scarcity values being more important in relative terms for the 'social Periphery'.

4.5 SPI and Ideology

The analysis of the EVS '99 data provided some other very interesting findings. One of them is the lack of relationship between social position and ideology, a result that had earlier been determined by Díez-Medrano (Díez-Medrano, Garcia-Mom, & Díez-Nicolás, 1989). Furthermore, it also confirmed Gelding's hypotheses that the 'social Centre' is ideologically heterogeneous, meaning that individuals in the 'social Centre' do not necessarily have to be predominantly rightwing or leftwing, but that the 'social Centre' knows groups of any ideology.

The data of 1999 also disclosed, using regression models, that post-materialism and social position have very similar predictive potential on all sorts of values and attitudes: the satisfaction with how democracy is working, the support for democracy, political information, political interest, political participation, individual freedoms, trust in institutions, attitudes towards the environment, membership and voluntary work in associations, religious practice and beliefs, family values, social exclusion, social solidarity, etc. As has been said, both variables, post-materialism and social position, seem to have very similar relationship with all sorts of attitudes, values and behaviours. The 'social Centre' adopts new values earlier and more intensively than the 'social Periphery', while post-materialist-self expression values are indeed new social values. This similar explanatory and predictive capacity does not preclude, however, that one or the other variable may have some more or less explanatory-predictive power. Thus, for example, whenever the relationship involves a variable with some ideological component, post-materialism is a better predictor than social position, but when the variable involves emerging social values or some dimension

of Centre-Periphery theory social position is a better predictor. That is why a model that differentiates the predictive power of each variable became necessary.

4.6 SPI and Environmental Attitudes and Behaviour

Other research than SPI and (post)materialism on attitudes and behaviours towards environmental issues provided the possibility to confirm and expand previous findings through a more sophisticated explanatory model (path analysis) (Díez-Nicolás, 2004, 2006b). This research was limited to Spain. The main goal was to measure environmental behaviour and measure the effect of the different explanatory variables.

After forty years of using Galtung's SPI without any modification, it was considered convenient to introduce some changes, especially regarding the dichotomization of the component variables and their weight on the index. A path analysis model was constructed with six independent variables, ordered from the most antecedent variable to the least: social position, exposure to environmental information, knowledge about environmental issues, post-materialism, environmental orientation, and confidence in civil society. The underlying reasons for choosing this set of independent variables were the following. In the first place, previous research had shown that there is a lack of coherence between knowledge, attitudes and behaviour with respect to (though not exclusively) the environment. According to well-known and still valid theory (Katz, 1953) knowledge about a social object usually precedes reflection on it, which in turn precedes its evaluation. However, mass media today tend to send information about a social object together with its evaluation, for which reason a large part of society (excluding most of the 'social Centre' but including most of the 'social Periphery') accepts at the same time the information and the evaluation, skipping the reflective part of the process. Exposure to information on the environment was therefore included as an independent variable and it was decided to measure 'exposure to information on environment', 'knowledge about environmental issues' and 'attitudes towards the environment (environmental orientation)' separately.

From the theoretical point of view, Galtung's Centre-Periphery theory underlined the importance of the variable 'information on the environment', given the fact that the 'social Centre' has more knowledge and more opinions about society than the 'social Periphery', and that the 'social Centre' has a more active role in sending information while the 'social Periphery' has a more passive role in the information process, as a receiver. It was therefore assumed that individuals with a higher exposure to information on the environment would also have higher knowledge on the environment and, consequently, would be more favourable to preserving and restoring a good environment and, finally, would show better behaviours towards the environment.

From the empirical point of view, as explained above, I have used exposure to information (not necessarily about the environment, but about society at large, through mass media consumption) in several hundred surveys during the last 20 years as a 'background variable', and it has proven to be one of the best predictors of attitudes and behaviours in many different areas of research.

Another independent variable that requires some justification is 'confidence in civil society'. The introduction of this variable as an intervening one was based on the assumption that respondents who think that individuals (through non-governmental institutions) can do something to protect, restore and improve the environment should show more positive behaviours towards the environment than individuals who think that only the State or other public institutions can positively influence the environment.

As for the other two independent variables, it has already been explained what was the expected relationships with behaviours towards the environment. Thus, for reasons already explained it was presumed that individuals in the 'social Centre', or those with a more post-materialistic orientation, would show more positive behaviours towards the environment than individuals in the 'social Periphery' or with a predominant materialistic orientation. Below a more detailed explanation about how the six independent variables were measured is provided.

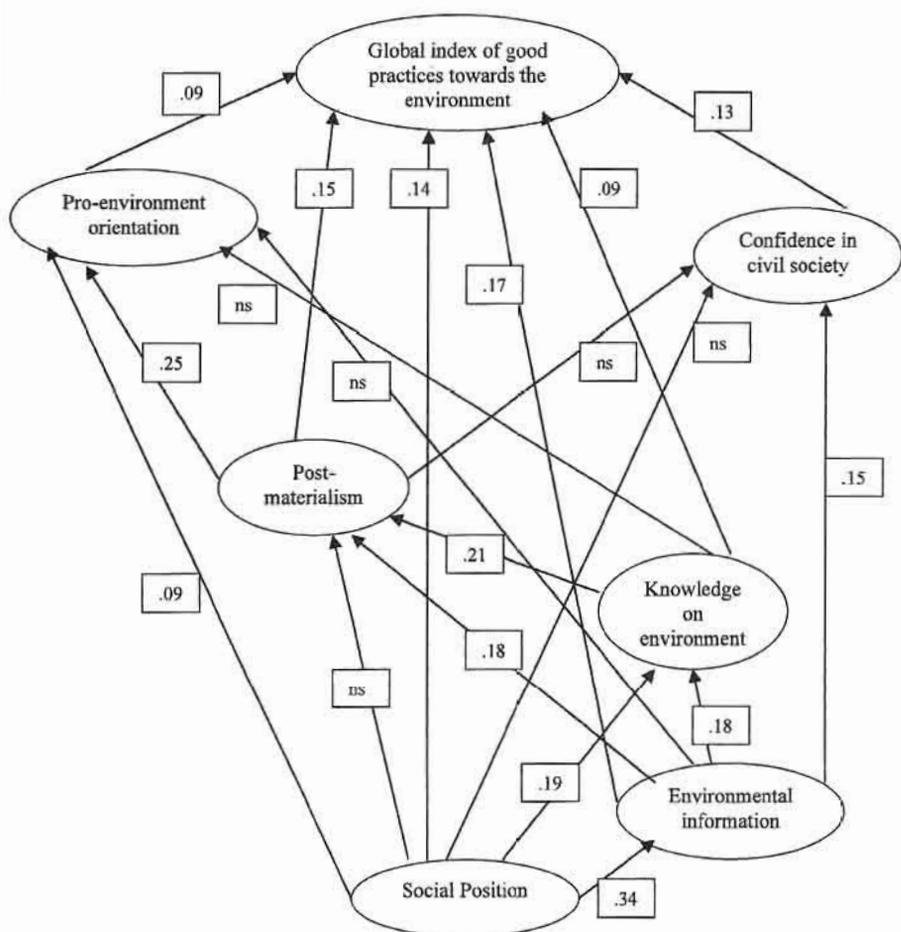
The dependent variable was environmental behaviour. It was measured through the construction of a 'global index of favourable behaviour' that

integrated seven different environmental behaviour indexes, each of which had been constructed from several survey questions. The seven indices from which the 'global index' was constructed measured the following different dimensions of behaviours towards the environment: 1) the net difference between 'good' and 'bad' environmental behaviours practiced by respondents, 2) the same net difference but weighted by frequency of practice of each one of the 23 behaviours, 3) the same but taking into consideration only the seven 'good' behaviours included in the 23 items list, 4) the change in consumption habits in order to favour the environment, 5) pro-ecological behaviours, 6) participation in activities of 'affirmative action' to protect the environment, and 7) intentions to adopt practices favourable to the environment.

The index of social position was constructed as follows: Gender (male = 1; female = 0). Age (>18 and 75 <= 0; 18-25 and 65-74 = 1; 26-35 and 55-64 = 2; and 36-54 = 3). Educational level (less than primary and missing = 0; primary, elementary, secondary first cycle, vocational = 1; secondary second cycle, pre-university = 2; university degree = 3). Monthly income (>450 € = 0; 451-900 € = 1; 901-1,650 € = 2; <1,650 € = 3). Size of habitat (> 10,000 inhabitants = 0; 10,000-50,000 = 1; 50,000-250,000 = 2; 250,000 plus Madrid and Barcelona = 3). Occupational status (no occupation plus missing = 0; non-qualified = 1; qualified and middle status occupations = 2; high status occupations = 3). Economic sector (no occupation plus missing = 0; primary, extractive sector = 1; secondary, industrial sector = 2; tertiary, service sector = 3). Centrality (regions with low per capita income [Castilla-La Mancha, Galicia, Andalucía, Extremadura] = 0; regions with middle per capita income [La Rioja, Aragón, Cantabria, Valencia, Castilla-León, Canarias, Asturias, Murcia] = 1; regions with high per capita income [Madrid, Navarra, País Vasco, Baleares, Cataluña] = 2). The social position index could therefore vary between 0 and 27 points. Social position was correlated positively and significantly at .01 level with the eight component socio-demographic variables. This was as expected, but the correlation coefficients were especially high for occupation, education, economic sector and income, and lower for gender and age, as was anticipated by deciding to put more weight on occupation, income and education. The index showed a bell-shaped curve, with about 10% of respondents in high social positions (21 points or more)

though only 3% in what Galtung would call 'the decision making nucleus' (24 points or more). At the other end of the scale, about a quarter of the sample qualifies as 'social Periphery' (10 points or less), and about 5% could even be considered 'extreme social Periphery' (5 points or less). The path analysis model, including the standardized direct effects of each explanatory variable on all other variables, is shown in Figure 4.1.

Figure 4.1. Standardized direct effects of each one of the explanatory variables in the model on all other variables



Source: Díez-Nicolás, 2004 and 2006b.

'Exposure to environmental information' was measured through three indicators, 'exposure to information in general', 'self-evaluation on the degree of information on the environment', and 'exposure to information on the environment', which were combined on a single indicator. 'Knowledge about environmental issues' was measured through eight items, four measuring 'scientific knowledge' and four measuring 'concern about the environment'. The indicator was, however, constructed of the four items that measured 'scientific knowledge'. 'Post-materialism' was measured through Inglehart's 12 items scale. Pro-environmental orientation was measured through nine items, some of them more favourable to economic development and others more favourable to protecting the environment. The index was constructed with two items that were more favourable to the environment, and with two items that were more favourable to development. Finally, confidence in civil society was measured on the basis of four questions that attempted to assess the degree of confidence that respondents had in different civil institutions (educational, mass media and business and industrial firms) regarding the protection of the environment.

Table 4.3 Effects of explanatory variables on good practices towards the environment*

	Non-standardized effects		
	Direct +	Indirect =	Total
Social position	.11	.08	.19
Exposure to environmental information	.45	.18	.63
Scientific knowledge on the environment	.09	.03	.13
Post-materialist values	.45	.04	.50
Confidence in civil society	.17	--	.17
Attitudes favourable to environment	.17	--	.17

	Standardized effects		
	Direct +	Indirect =	Total
Social position	.14	.11	.26
Exposure to environmental information	.17	.07	.23
Scientific knowledge on the environment	.09	.03	.12
Post-materialist values	.15	.01	.16
Confidence in civil society	.13	.00	.13
Attitudes favourable to environment	.09	.00	.09

* All coefficients are significant at .05 level.

Results of the path analysis model can be summarized as follows (Díez-Nicolás, 2006b:224-228). The standardized direct effects of each variable on all others, following the path established in the model, confirms that the 'social Centre' is more informed and has more knowledge about everything (in this case about the environment) than the 'social Periphery'. The 'social Centre' shows better environmental behaviour than the 'social Periphery', thus confirming also that the 'social Centre' internalizes new values (good practices towards the environment) earlier than the 'social Periphery'. But social position has no statistically significant direct effect, neither on confidence in civil society nor on post-materialist values. It does show a very weak though significant direct effect on attitudes in favour of the environment.

Post-materialism, which is the other major explanatory variable according to the theoretical framework, shows significant direct effects on preference for the environment over economic development (hence confirming Inglehart's assumptions and findings) and also on environmental orientation, suggesting that values have an impact on behaviour but no direct effects on confidence on civil society. The model also confirms that exposure to information and knowledge about the environment have no direct effects on preferences for protecting the environment over economic development, suggesting that attitudes may be a consequence of adaptation to what seems 'politically correct'. Furthermore, the six explanatory variables in the model have a direct and statistically significant relationship with the dependent variable. Knowledge about the environment and preference for protecting the environment over economic development have weaker though significant relationships with it. The model explains 18% of the total variance on the good practices towards the environment.

One of the most important findings of this research was that attitudes towards the environment do not seem to be a consequence of being informed or knowing about the environment. The environment is not the only realm of social life where attitudes are accepted without the necessary reflection. Important findings too are the weak and not significant direct effects of social position on post-materialism.

The apparent contradiction between on the one and the lack of statistically significant direct effects of social position on post-materialism (derived from this model) and on the other hand the strong and statistically significant relationship between social position and post-materialism, using Spanish or international comparative data, may be due to several reasons. First, in most other analysis reported above, the relationship between the two variables was measured with the correlation coefficient (Pearson's r). When the same statistical tool is used in this research, the result is the same, a high correlation ($r = .10$) which is significant at the .001 level. Second, the path analysis model reported above (Díez-Nicolás, 1992a) was a very simple one, designed to compare the predictive value of SPI and SES on post-materialism, with age as the only antecedent variable and exposure to information as the only intervening variable. However, the model used to

explain environmental behaviour does include some additional variables. Most important, it includes additional intervening variables between social position, such as the antecedent variable, and post-materialist values. The higher complexity of this model, with many more interrelations among the different intervening variables, may have reduced the direct effect of social position on post-materialism. And last, when post-materialism is placed as an antecedent variable to 'exposure to environmental information' and 'knowledge about the environment', the direct effect of social position on post-materialist values is stronger and statistically significant. The apparent contradiction, therefore, is just 'apparent', and is a result of an assumption regarding the sequential order of the intervening variables.

Thus, though the direct effect of social position on post-materialism is insignificant but positive (0.05), there are indirect effects (through exposure to information on the environment and scientific knowledge about the environment) that are very strong and positive (.11), producing a total effect of .16. This could be interpreted as meaning that not all individuals in the 'social Centre' adopt post-materialist values, but only those who, in addition, are exposed to more information on the environment and have more knowledge about the environment, a hypothesis that would require an analysis of the interactive effect of SP on the relationship between environmental information and environmental knowledge on post-materialist values, but that is something that will have to be done in some future research.

The greater explanatory power of social position with respect to post-materialist values should not be interpreted as a rejection of Inglehart's theory, but as a specification that results from the assumption that attitudes (and more so behaviours) towards the environment are changing not only because of modernization and post-modernization processes, but also because the 'social Centre' has become conscious of the real threat that mankind has created to life on Earth. For the same reason, it seems plausible that attitudes favourable to protecting the environment are being transferred from the 'social Centre' to the 'social Periphery' with greater intensity and speed than behaviours, since the social Periphery tries to adapt their opinions (probably not as much as their real attitudes) to what they

accept as 'politically correct', but without really internalizing these attitudes, and therefore, without this adaptation implying an ineffective transfer of attitudes into behaviours towards the environment. The contradiction between attitudes and behaviours that these results show is not new, but common to other surveys conducted in Spain and other countries (Díez-Nicolás, 1999a) does not necessarily result from a deliberate intention of respondents to lie. In other words, the majority of Spaniards, and probably of other people, really believe that they 'should' give priority to protecting the environment over economic development, but their real behaviours and value orientations continue to give greater priority to economic development. This finding is very relevant because it has to do with the social speed at which new issues first internalized by the Centre reach the social Periphery. As a matter of fact, as has been explained, new attitudes reach the Periphery earlier than new behaviours. The well-established fact is that there is no relationship between attitudes and behaviour at the individual level, something that apparently is also true at the collective level. Actually, Scruggs, (2003) reports that Spain's official policies (equivalent to intentions in my research) are among the best in the EU, but results or outcomes (measured through the reduction of pollution) are together with Ireland's the worst (equivalent to behaviours in my research).

4.7 SPI and Attitudes towards Foreign Policy

The Centre-Periphery theory was also the main theoretical framework for analyzing Spaniards' attitudes and opinions on foreign policy, defence and national security issues (Díez-Nicolás, 2006a). Results have shown that most opinions on these issues are contingent on social position, degree of information, ideology and, in certain cases, some other variable. Social position is generally the best explanatory variable for issues that relate to knowledge of facts and new social values, while ideology is generally the best explanatory variable of attitudes towards specific policies. The degree of information, generally very much related to social position, is a variable of great importance to explain attitudes that require certain basic knowledge of issues about which opinions are being expressed. This research, based on a national sample of 1,200 persons representing the Spanish

population, was complemented with a smaller sample of 50 experts (journalists, diplomats, high civil servants, managers, etc.). This fact provided the opportunity to compare the opinions of this very special elite group, one that might be considered as the 'decision making nucleus', that is, the core of the 'social Centre' as Galtung named it, with the wider definition of 'social Centre' extracted from the national sample. SPI was constructed for this research following the same methodology as in the cited research on environment, thus varying between 0 and 27 points. The data usually showed an increasing or decreasing pattern from the 'social Periphery' towards the 'social Centre' that generally continued towards the 'decision making nucleus' in the presumed direction, thus reinforcing the theoretical framework. Once more, it must be underlined that the monotonic consistent pattern is found when using trichotomies (Centre, middle and Periphery), and in this particular case, even using tetrachotomies (Periphery, middle, Centre and decision making nucleus), in more than 30 frequency distributions of different attitudes, values and knowledge characteristics.

4.8 SPI and Value Differences between Elites and Publics

Another application of the SPI and the Centre-Periphery theory refers to differences in values between elites and non-elites in developed and less-developed countries. 'The main hypothesis that is tested here is another example of how Galtung's theory of the emergence and diffusion of new values can complement Inglehart's theory of cultural change. Thus, according to Inglehart's well known hypotheses, post-materialist or self-expression values are more frequently found, at the macro level, in more developed societies, and at the micro level, in the upper strata of each society. Consequently, elites (the 'social Centre') in developed and less developed societies should be expected to share more similar values between them than with their respective publics (the 'social Periphery'), so that it should be possible to observe a convergence of values between elites in different societies at the same time that a divergence of values between elites and their respective publics may be observed. The convergence of values between elites would be a consequence of their greater access to communica-

tion facilities (telephone, internet, travelling, interpersonal communication through professional meetings) and, as a result, to the greater possibilities of interaction between them. A second hypothesis that will be tested is that publics in developed and less developed societies should show the largest divergence in values, due to the lack of frequent interaction between them' (Díez-Nicolás, 2007a: 49-50).

The analysis was based on a sample of 81 countries from the aggregate EVS '99 and the WVS 2000 surveys, though 10 had to be excluded because they missed one or several variables. The SPI was again a modified version of the Galtung's index, similar to the version used in the environment and the foreign relations researches discussed above, that is, based on seven variables and varying between 0 and 13.

The data strongly supported the hypothesis that there is a high and positive correlation between social position and post-materialism. In three different groups of countries, based on the degree of development, and at the same time comparing European-Christian and Islamic societies around the Mediterranean, it was shown that the index of post-materialism is higher among those who occupy higher social positions and low for these with lower social positions. Elites in European-Christian and Islamic societies seem to exhibit more similarities in their post-materialist orientation with one another than they do with their respective publics. They also share greater similarities with each other in terms of the five political indicators as well as in terms of their attitudes toward immigrant workers than with their respective publics.

However, this is not true with respect to moral and religious values, or social exclusion, and traditional family values. When these values are considered, elites and publics of European-Christian societies manifest themselves as more tolerant and less religious, less exclusionist and less traditionally oriented towards the family than elites and publics in Islamic societies. These differences are even greater than when more developed and less developed countries are compared. The first modification of the main hypothesis stated above, therefore, is that convergence of values among elites of European-Christian (more developed countries) and Islamic (less developed societies) is not the same regarding all kinds of

value, On the contrary, results seem to suggest that convergence is more evident with respect to political values and policy issues, and less evident with respect to moral, religious, family and gender values. The second important modification is that some of the expected differences do not appear, or they do not appear with the expected intensity, because of the quality of the samples in less developed countries in general and in most Islamic countries in particular, which are not fully representative of their population. In many of these samples the lower and more numerous socio-economic strata are clearly under represented. Because of this under representation, and given that post-materialism seems to be much lower in the lower social positions, it seems plausible to think that Islamic and less developed countries would have significantly much lower scores on the post-materialist scale, had those neglected lower social strata been included in the sample.

4.9 SPI and the Return of Materialist Values:

The Dilemma between Freedom and Security

Though the main original hypotheses of post-materialism established by Inglehart have been tested in many countries and with similar results, the world has changed very significantly over the last few years. A change that has affected profoundly the basis on which Inglehart's theory was rooted, that is, the assumption that after World War II most of the population in the more developed countries have achieved high levels of personal and economic security, and that this trend is to be observed in a majority of countries around the world, though at different levels and degrees of change. However, the attack on the Twin Towers on September 11, 2001 represented the announcement of a threat of international terrorism to personal security all over the planet, and in that sense, it marked a 'before' and 'after' of that date. Growth of crime rates, especially in large cities, has also contributed to a stronger sense of personal insecurity in many countries all over the world. At the same time globalization of the economy, the emergence of new large economic powers in the Middle East and Asia in particular, and the growing substitution of industrial capitalism by financial capitalism, is causing large and rapid economic changes throughout

the world, also contributing to an increase of personal insecurity that seems to affect especially the lower socio-economic segments of society, including the young and the elderly.

As has been shown above, it is true that until the beginning of the XXI century there was a positive relationship between post-materialist/self-expression values and economic development, degree of democracy and democratic attitudes, gender equality, protection of the environment, preference for free market economy, and a negative relationship with religious beliefs and practices, social exclusion or authoritarianism. In fact, more than half the countries that have participated in at least three WVS waves continue to show increasing post-materialist values, but a group of countries (mostly former communist countries) show decreasing values, and a small group of ten countries: Argentina, Chile, Finland, France, Italy, Japan, Netherlands, Slovenia, Spain and the United States (Díez-Nicolás, 2007b) have shown increasing levels of post-materialism until 2000, but significant decreases in the 2005 wave.

The most important finding, however, was that though post-materialist values were higher in the 'social Centre' than in the 'social Periphery' (thus confirming Inglehart's and Galtung's theories), and the reduction of post-materialist values has been more intense and earlier in the 'social Centre' than in the society at large, post-materialist values have continued to increase in the 'social Periphery'. In addition, and confirming this finding, it was also shown that while respect for authority had decreased when post-materialist values were increasing, it has increased when those values have started to decrease, and the change seems again to be more pronounced in the 'social Centre' than in the rest of society. The data are not yet conclusive, but they seem to be coherent with the increasing personal and economic insecurity that seems to characterize many developed societies. If further analysis confirms these preliminary results from the WVS 2005 wave, Inglehart's theory would be confirmed once more, since it would mean that new post-materialist values were really a consequence of greater levels of personal and economic security, and that when insecurity grows a reversal of that trend also appears. Galtung's theory would also be confirmed, since the 'social Centre' led the change towards more post-materialist values and less respect

for authority until 2000, and seems to be also leading the change towards less post-materialist values and more respect for authority when personal and economic insecurity is growing.

The question that remains is, will the reduction of post-materialist values and the corresponding return to values that emphasize greater personal and economic security be compatible with the continuous increase in 'emancipation' values that emphasize individual freedom? Present societies will have to find a difficult balance between freedom and security.

The many applications and replications of findings reported here, not only regarding Spain, but also for almost one hundred countries around the world, provide sufficient evidence that the Centre-Periphery theory, and its main measurement tool, the SPI, continue to be valid and reliable to explain the emergence and diffusion of new social and cultural values. More research is certainly needed, and one that is already in process refers to the potential effect that a new explanatory intervening variable as the 'generation' (meaning a sum of cohorts), combined with social position, might have. At present it is already known that Spanish generations (from those born between 1907-1921 to those born between 1982-1997) have changed their value-orientation in a very dramatic way (Díez-Nicolás, 2008), but it will be interesting to find out to what extent persons belonging to the 'social Centre' in different generations share similar or different values, and whether the aging of generations and their subsequent change of social position in time affects their adherence to specific values.

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