

## MEASURING INVOLVEMENT FROM ITS CONSEQUENCES

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A 21-item Likert-type 'Consequences of Involvement' questionnaire (CIQ) was developed to measure the level of involvement with products. Unlike other scales, the CIQ attempts to measure involvement from its consequences, rather than requesting the subject to directly rate his or her state of involvement. It was applied to Spanish and English samples and in each sample the involvement with two products was measured. In all four cases the questionnaire met psychometric standards and provided essentially the same two-factor structure. The first factor was labelled 'Cognitive Dimension' and was inferred from consequences related to the increase of information on the product. The second factor was labelled 'Affective Dimension' and was related to the emotional aspects of using or owning the product. The results obtained were in agreement with the two-factor theory of involvement proposed by Park and Mittal (1985). In addition, the Personal Involvement Inventory (Zaichkowsky, 1985) was adapted to the Spanish population and some problems relating to criterion validity and its dimensionality were noted.

*La medida de la implicación a partir de sus consecuencias.* Nuestro objetivo ha sido desarrollar un cuestionario que permita medir el grado de implicación con distintos productos comerciales. Compuesto de 21 ítems tipo Likert, se denominó CIQ (Consequences of Involvement Questionnaire). A diferencia de otras escalas el CIQ intenta medir la implicación a partir de sus consecuencias en lugar de pedir al sujeto que evalúe directamente su estado de implicación. Se aplicó a muestras españolas e inglesas y en cada una de ellas se midió la implicación con dos productos. En los cuatro casos el cuestionario alcanzó los estándares psicométricos y proporcionó esencialmente la misma estructura bifactorial. El primer factor se denominó "Dimensión Cognitiva" y se derivaba de las consecuencias relacionadas con el incremento de información sobre el producto. El segundo factor se denominó "Dimensión Afectiva" y estaba relacionado con los aspectos emocionales derivados de usar o poseer el producto. Los resultados obtenidos coinciden con la teoría bifactorial de la implicación propuesta por Park y Mittal (1985). Además, se adaptó a la población española el PII (Personal Involvement Inventory; Zaichkowsky, 1985), encontrándose algunos problemas relacionados con su validez de criterio y su estructura factorial.

### The concept and measurement of involvement

Research on advertising and on consumer behaviour is paying an increasing

amount of attention to the 'involvement' construct. Although there is agreement on its importance, a uniform definition has yet to be established (Gainer, 1993). Various ideas on the concept of involvement have appeared which can be summarized in two broad groups. Both camps have sought to discover the main psychological functions affected by involvement. Rese-

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archers from the first group claim that these functions relate to the cognitive notion of *information processing* (e.g. Krugman, 1965; Houston and Rothchild, 1977; Petty and Cacioppo, 1981). Researchers from the second group claim that involvement is mainly a state of activation or arousal, and therefore *motivational* factors are the more important (e.g. Mitchell, 1979; Cohen, 1983; Andrews, Durvasula and Akhter, 1990). For these authors, involvement is a state of arousal caused by some 'antecedents' and revealed by some 'consequences'. There are different kinds of antecedents: personal (needs, values, aims, etc. of the subject), situational (e.g. the time left to make a decision on the product to purchase), and stimulus-related antecedents (the physical features of a product, the content of the advertisement, etc.). Concerning the consequences of involvement, two are the most outstanding: (a) the increase of searching and processing of information, and (b) an attitude change; but to predict its strength and direction other factors must be considered (Petty and Cacioppo, 1981; Gardner, Mitchell and Russo, 1985).

Problems concerning the definition of involvement naturally have had repercussions on attempts to measure the construct. Most of the usual instruments seek to measure involvement with products, whilst others do so with advertisements (Wells, 1986) and with TV programs (Lloyd, 1987). Considering instruments which seek only to measure involvement with products, very different procedures have been used. These include proximity measures (Bowen and Chaffee, 1974), the ranking of products (Sheth and Venkatesen, 1968), single-item scales, and multi-item inventories that meet psychometric standards (Bloch, 1981; Zaichkowsky, 1985; Laurent and Kapferer, 1985).

Approaches towards the measurement of involvement changed noticeably in

1985, with the publication of two papers which differed in two important ways: a) Zaichkowsky (1985) directly measured the level of involvement, but Laurent and Kapferer (1985) preferred to measure the antecedents of involvement instead, and then to infer from these measures the actual level of it, and b) whilst involvement was seen as a *uni-dimensional* construct for Zaichkowsky, it was regarded as *multi-dimensional* by Laurent and Kapferer. The four dimensions they posited involved perceived importance, decision risk, sign value, and the pleasure component. This scale (the 'Consumer Involvement Profile' (CIP)) was developed in French samples and it has just recently adapted to USA consumers (Rodgers and Schneider (1993)). They found only minor differences between the French and American factor structures. The only noticeable difference was that 'Pleasure' and 'Interest' may need to be conceptualized as a single factor in the American population, at least with some products.

On the other hand, Zaichkowsky's scale ('Personal Involvement Inventory'; PII) is a 20-item bipolar adjective scale which was designed to measure the involvement with products, although some minor modifications allowed it to measure involvement with advertisements and also with purchase decisions. The PII has received some criticisms related to its unidimensional character, that some items are only appropriate for university subjects, and that some items are redundant (Mittal, 1989; Macquarrie and Munson, 1987, 1992). Zaichkowsky (1987) points out the need of the addition to the PII of some new items to measure the affective component of involvement (as claimed by Park and Young, 1986).

Our first intention was to adapt the PII to the Spanish population, but some of the psychometric results and also other rea-

sons (see below) encouraged a widening of the initial proposal and the development of a new test to measure involvement with products.

### Spanish adaptation of the PII

#### *a) Zaichkowsky's (1985) results*

Zaichkowsky's (1985) twenty items were obtained as the outcome of a content validity selection carried out by expert judges on a high number of bimodal adjectives. To establish the psychometric indices of the PII, a few studies were carried out and the main results are briefly described below:

a) The internal consistency of the PII is high, regardless of the sample (e.g. students, clerks) or the product (watches, athletic shoes, instant coffee, colour TV, etc.). The mean alpha coefficients range from 0.90 to 0.95. Homogeneity indices are above 0.5 for each of the twenty items. Some samples were retested three weeks later, and test-retest reliability was 0.90.

b) Concerning validity, PII scores show a significant correlation with sentences related to the information search about the product, the comparison among similar products, the perception of similarity among different brands, and the preference for a particular brand. Additionally, PII scores also correlated with the ranking subjects gave to objects on the relative importance they have on their lives.

c) Concerning the factor validity, Zaichkowsky (1985) notes that: 'The items were factor analyzed using varimax rotation with squared multiple correlation in the diagonal for factor extraction. The general pattern of results showed a main factor and (usually) one minor or residual factor for every product category. The major factor accounted for a range of common variance from 65 percent for je-

ans to 100 percent for instant coffee' (p. 348).

#### *b) Spanish adaptation*

As the first step, a careful translation of each adjective was performed by a bilingual expert. The problems raised by cross-cultural adaptation of questionnaires have recently been considered (European Group for Health Measurement and Quality of Life Assessment: Hunt, Alonso, Bucquet, Niero, Wiklund and McKenna, 1991). Adapting a questionnaire does not merely involve translating it from one language to another. Rather, a correct adaptation requires a careful rewording and a new calculation of the reliability and validity indices.

The Spanish version of the PII was applied to a sample of 371 Psychology students. They rated their involvement with two products: cars and jeans (half the sample rated jeans first, and the other half did the reverse). Zaichkowsky (1985) found that jeans and cars gave different means (6.6 and 7.9, respectively). In order to establish criterion-related validity two additional questions, at the end of the scale, were asked of each subject. When the product was cars, the subject was requested to write (a) the brands of cars, and (b) the specialist car magazines which she/he could remember. When the product was jeans, the subject was requested to write: (a) the brands he/she could remember, and (b) the number of days per month which he/she wears jeans. In the opinion of the present researchers, these criteria are more operative and behavioural than those used by Zaichkowsky (1985).

The Spanish version of the PII was applied to 180 subjects for the second time three weeks later in order to obtain test-retest reliability.

Table 1 shows the main psychometric results. For each product, some indices are

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provided: a) Internal consistence index (Cronbach's alpha), b) two-half consistence index (Spearman-Brown reliability coefficient), c) Stability (test-retest reliability), and d) criterion-related validity (correlation between PII scores and the scores on the two criteria exposed for each product).

*Table 1*  
Psychometric indices for the Spanish version of the PII (N=371) (\*\*= $p < 0.01$ )

| Product | Cronbach's $\alpha$ | $R_{xx}$<br>Spearman-Brown | $R_{xx}$<br>Test-Retest | $r_{xy}$<br>(Brands) | $r_{xy}$<br>(Magazines/<br>use of jeans) |
|---------|---------------------|----------------------------|-------------------------|----------------------|--|
| Cars    | 0.94                | 0.90                       | 0.87                    | 0.18**               | 0.09                                     |
| Jeans   | 0.95                | 0.91                       | 0.81                    | 0.30**               | 0.41**                                   |

Two factor validity analyses (principal factor model and varimax rotation, as in the American study by Zaichkowsky) were also carried out, one per product. Squared multiple correlations were used as the diagonal entries for the correlation matrix. Only factors with eigenvalues above one were retained and rotated. For the product *jeans*, four factors emerged; but for *cars* only three had eigenvalues above one. Table 2 shows the factor loadings of each item, and the absolute and relative variance accounted for by each factor.

*c) Some reasons for a new scale*

The Spanish version of the PII achieved quite an acceptable internal consistency and temporal stability (see Table 1). These results were not unexpected considering how difficult it apparently was for subjects to differentiate the meaning of some of the items.

However, criterion-validity results were not so convincing. When the product was cars, eleven items from the whole test showed

*Table 2*  
Factor analyses for the Spanish version of the PII (N=371). Only loadings higher than 0.35 are reported

| Items             | Jeans          |                 |                  |                 | Cars           |                 |                  |
|-------------------|----------------|-----------------|------------------|-----------------|----------------|-----------------|------------------|
|                   | F <sub>I</sub> | F <sub>II</sub> | F <sub>III</sub> | F <sub>IV</sub> | F <sub>I</sub> | F <sub>II</sub> | F <sub>III</sub> |
| 1                 | 0.68           | 0.36            |                  |                 | 0.59           |                 |                  |
| 2                 | 0.66           |                 |                  |                 | 0.68           |                 |                  |
| 3                 | 0.71           | 0.37            |                  |                 | 0.61           |                 | 0.40             |
| 4                 | 0.60           | 0.48            |                  |                 | 0.60           | 0.47            |                  |
| 5                 |                |                 |                  | 0.53            | 0.41           |                 | 0.45             |
| 6                 | 0.37           | 0.42            |                  | 0.38            | 0.35           |                 | 0.40             |
| 7                 | 0.47           | 0.52            |                  |                 |                |                 | 0.63             |
| 8                 |                | 0.36            |                  | 0.46            | 0.38           |                 | 0.43             |
| 9                 | 0.66           |                 | 0.36             |                 | 0.72           | 0.43            |                  |
| 10                | 0.72           |                 | 0.39             |                 | 0.67           | 0.49            |                  |
| 11                | 0.54           | 0.42            |                  |                 | 0.46           |                 | 0.50             |
| 12                |                | 0.72            |                  |                 |                |                 | 0.63             |
| 13                |                |                 | 0.66             |                 |                | 0.80            |                  |
| 14                |                |                 | 0.77             |                 |                | 0.86            |                  |
| 15                |                |                 | 0.55             | 0.38            |                | 0.65            |                  |
| 16                |                |                 | 0.53             |                 |                | 0.66            |                  |
| 17                |                | 0.64            |                  |                 |                |                 | 0.81             |
| 18                |                |                 |                  | 0.59            | 0.43           | 0.38            | 0.41             |
| 19                | 0.35           |                 | 0.36             | 0.47            | 0.47           | 0.42            |                  |
| 20                |                | 0.50            |                  | 0.36            |                |                 | 0.64             |
| $\lambda$         | 4.1            | 2.8             | 2.6              | 2.3             | 4.0            | 3.8             | 3.7              |
| % Common variance | 35             | 24              | 22               | 19              | 35             | 33              | 33               |
| % Total variance  | 21             | 14              | 13               | 11              | 20             | 19              | 19               |

a nonsignificant validity index (i.e.  $p > 0.01$ ) for both criteria (brands and magazines recalled), and in five of the remaining nine items, the validity index was significant only for the recalled-brands criterion. These results raised the question of whether the Spanish version of the PII scale was appropriate to predict the proposed criteria when the product was cars. A different pattern emerged when the pro-

duct was jeans. Here, validity indices were significant for 19 out of the total twenty items, and for both criteria (recalled brands and frequency of use).

That future studies examining involvement scales should focus more closely on their factor structure. In our work the results of the factor analysis from the Spanish sample do not agree with those obtained by Zaichkowsky (1985). Rotating factors with eigenvalues above one (the general rule for retaining factors), four (jeans) and three (cars) factors appeared. The percentages of common and total variance explained by the factors (35% and 20%, respectively, for factor I) are far removed from those obtained by Zaichkowsky (1985) (above 65%, for factor I). So, both studies demonstrated a high covariation level among items (as shown by high alpha coefficient levels). In the former case, only one or two factors were needed to explain a substantial portion of this covariation; but, in the Spanish sample, at least three were needed. At the moment, it is not possible to explain why this should be so. Furthermore, because of the very similar semantic content of the adjectives, it is difficult to find the meaning of the emerged factors. It is interesting to remember that the items were selected by expert judges according to their validity content. This procedure produces quite similar items, and this guarantees the stability and consistency of the scale although it does make it difficult to specify the meaning of the different groups of items.

In summary, it was decided to develop a Likert-scale, the 'Consequences of Involvement' Questionnaire (CIQ), based on the following reasons:

a) The Spanish PII reveals some psychometric shortcomings: i) Its criterion-related validity for cars is low; and ii) the factor structure is more complex than that found by Zaichkowsky (1985) and no me-

anings could be deduced to account for the emerged factors.

b) As previously stated, the concept of involvement is complex. It has been proposed that involvement is a multidimensional construct and, as such, its measurement should also be multidimensional (Macquarrie and Munson, 1987,1992; Zaichkowsky, 1987; Mittal, 1989). Park and Mittal (1985) distinguish between a cognitive-based and an affective-based involvement. The proposed questionnaire attempts to incorporate this idea.

c) The proposed questionnaire inquires about possible consequences of involvement. Therefore, unlike the PII, it does not directly question the subject about his/her internal state of involvement. As an example, the first item of the PII asks the subject to rate a product on a seven-point scale, ranging from 'important' to 'unimportant'. The test to be proposed asks the subject to show her/his agreement with sentences such as 'I do not mind spending money on this product' or 'I enjoy using it'. Of course, it is expected that if the product is important for the subject, he/she would be keen to spend money on it. So, the importance of the product must be manifested by the subject's behaviour. It is regarded that it would be easier for a subject to evaluate their agreement with sentences related to behaviours than to evaluate internal states. Making the task easier for the subjects in this way would likely reduce the error variance and, thus, more accurate measurements would be obtained.

#### The initial «Consequences of involvement» questionnaire

##### *a) Main objectives*

The CIQ attempts to measure the components of the 'Involvement' construct. Based on previous research, the main

components which these items seek to cover are those outlined below:

a) *Affective link (AL)*. High involvement with a product implies some identification with it; some sort of affective link. The product is considered to be important in the subject's daily life and he/she shows a special interest in it (Krugman, 1965; Park and Mittal, 1985; Zaichkowsky, 1987).

b) *Search and information processing (SIP)*. High involvement also implies an active search of additional information on the product and a deeper processing of this information. As a result, a change in the quantity and the quality of the knowledge on the product would be expected (Howard and Jagdish, 1969; Macquarrie and Munson, 1992).

c) *Social interaction (SI)*. A high involvement also implies greater related social interaction, with the person trying to meet other people to talk about the product (Macquarrie and Munson, 1992).

d) *Purchase purpose (PP)*. High involvement is also related to purchase purpose, as people prefer to buy those products which they have high involvement with (Clarke and Belk, 1978; Zaichkowsky, 1985, 1986).

e) *Social Relevance (SR)*. People having high involvement with a product try to extrapolate their own personal interest and view the product as also important for others.

Forty three items were created which attempt to cover the five components described above. Appendix A fully lists these items and shows which component each item seeks to measure.

b) *Psychometric studies*

The 43 items were firstly applied to 377 Spanish psychology students and then again three weeks later to 365 students

(most of whom also completed the Spanish PII). Half of the sample completed the questionnaire relating to cars firstly and the questionnaire in relation to jeans secondly, whilst the other half performed the reverse order. Three weeks later, the evaluation was repeated in order to obtain test-retest reliability. The same two criterion-measures used to adapt the PII were also applied here.

The Psychometric indices applied above were also obtained from the CIQ data. Table 3a shows the indices corresponding to the initial CIQ (43 items).

*Table 3a*  
Psychometric indices for the initial CIQ (43 items) in the Spanish samples (\*\*=p<0.01)

| Product | Cronbach's $\alpha$ | R <sub>xx</sub> Spearman-Brown | R <sub>xx</sub> Test-Retest | r <sub>xy</sub> (Brands) | r <sub>xy</sub> (Magazines/use of jeans) |
|---------|---------------------|--------------------------------|-----------------------------|--------------------------|--|
| Cars    | 0.94                | 0.93                           | 0.88                        | 0.36**                   | 0.032**                                  |
| Jeans   | 0.95                | 0.93                           | 0.88                        | 0.39**                   | 0.44**                                   |

*Table 3b*  
Psychometric indices for the final CIQ (21 items) in the Spanish samples (\*\*=p<0.01)

| Product | Cronbach's $\alpha$ | R <sub>xx</sub> Spearman-Brown | R <sub>xx</sub> Test-Retest | r <sub>xy</sub> (Brands) | r <sub>xy</sub> (Magazines/use of jeans) |
|---------|---------------------|--------------------------------|-----------------------------|--------------------------|--|
| Cars    | 0.94                | 0.93                           | 0.91                        | 0.43**                   | 0.40**                                   |
| Jeans   | 0.92                | 0.92                           | 0.85                        | 0.35**                   | 0.38**                                   |

*Table 3c*  
Psychometric indices for the final CIQ (21 items) in the English samples (\*\*=p<0.01)

| Product | Cronbach's $\alpha$ | R <sub>xx</sub> Spearman-Brown | r <sub>xy</sub> (Brands) | r <sub>xy</sub> (Magazines/use of jeans) |
|---------|---------------------|--------------------------------|--------------------------|--|
| Cars    | 0.93                | 0.91                           | 0.33**                   | 0.24**                                   |
| Jeans   | 0.88                | 0.87                           | 0.21**                   | 0.40**                                   |

Homogeneity and validity indices for each of the 43 items were obtained. There were two homogeneity indices, one for cars and one for jeans. The number of validity indices was four, as two criteria were measured for each product.

A factor analysis (Principal Components model, varimax rotation) was performed for each product. In both cases, the number of eigenvalues above one was eight. Once the initial factors were rotated, three significant factors emerged for the product cars and three for the product jeans (the excluded five factors, collectively, explain only 5% of the total variance). Table 4 contains the important items which define each factor and the components they relate to (only items with loadings above 0.4 are presented).

As Table 4 shows, factor analyses for cars and jeans were not fully coincident, although the similarities were compelling. For cars, Factor I was mainly defined by items related to the components 'Search and information processing' and 'Social interaction'. Factor II was only defined by items measuring the component 'Affective link', whilst Factor III was mainly defined by the component 'Purchase purpose'. For jeans, Factor I measured 'Affective link' and 'Purchase purpose'; and each of the Factors II and III measured both the components 'Search and information processing' and 'Social interaction'.

These factor analyses were carried out to help the selection of items and, therefore, for present purposes, it is not necessary to be too concerned about the meaning of the emerged factors. A few words, nevertheless, may be in order. Factor I for cars is split in Factors II and III for jeans. Factors II and III for cars is Factor I for jeans. This last result could mean that 'Affective link' and 'Purchase purpose' compose a conjoint dimension for cheap products (jeans), but not for expensive ones (cars).

| <b>Factor I</b>   |           |         |             |           |         |
|-------------------|-----------|---------|-------------|-----------|---------|
| <b>Jeans</b>      |           |         | <b>Cars</b> |           |         |
| Item No.          | Component | Loading | Item No.    | Component | Loading |
| 35                | AL        | 0.76    | 28          | SI        | 0.84    |
| 22                | AL        | 0.76    | 14          | SIP       | 0.80    |
| 13                | AL        | 0.76    | 03          | SI        | 0.77    |
| 29                | AL        | 0.74    | 41          | SIP       | 0.77    |
| 25                | AL        | 0.73    | 02          | SIP       | 0.77    |
| 24                | AL        | 0.71    | 42          | SIP       | 0.74    |
| 05                | PP        | 0.68    | 12          | SI        | 0.72    |
| 10                | PP        | 0.64    | 07          | SIP       | 0.72    |
| 01                | AL        | 0.64    | 36          | SI        | 0.70    |
| 17                | PP        | 0.63    | 09          | SIP       | 0.68    |
| 08                | AL        | 0.63    | 27          | SIP       | 0.67    |
| 32                | AL        | 0.63    | 33          | SIP       | 0.59    |
| 30                | AL        | 0.56    | 40          | SIP       | 0.56    |
| 23                | AL        | 0.56    | 26          | SIP       | 0.53    |
| 15                | AL        | 0.50    | 30          | AL        | 0.52    |
| 11                | SR        | 0.49    | 37          | AL        | 0.46    |
| 37                | AL        | 0.45    | 21          | AL        | 0.45    |
| <b>Factor II</b>  |           |         |             |           |         |
| <b>Jeans</b>      |           |         | <b>Cars</b> |           |         |
| Item No.          | Component | Loading | Item No.    | Component | Loading |
| 41                | SIP       | 0.80    | 22          | AL        | 0.84    |
| 36                | SI        | 0.70    | 08          | AL        | 0.78    |
| 42                | SIP       | 0.67    | 32          | AL        | 0.78    |
| 21                | AL        | 0.65    | 01          | AL        | 0.73    |
| 28                | SI        | 0.63    | 35          | AL        | 0.74    |
| 27                | SIP       | 0.54    | 23          | AL        | 0.55    |
| 37                | AL        | 0.51    | 25          | AL        | 0.47    |
| 40                | SIP       | 0.50    | 29          | AL        | 0.47    |
| 14                | SIP       | 0.44    | 13          | AL        | 0.48    |
| 03                | SI        | 0.41    |             |           |         |
| 12                | SI        | 0.40    |             |           |         |
| <b>Factor III</b> |           |         |             |           |         |
| <b>Jeans</b>      |           |         | <b>Cars</b> |           |         |
| Item No.          | Component | Loading | Item No.    | Component | Loading |
| 02                | SIP       | 0.71    | 05          | PP        | 0.65    |
| 03                | SI        | 0.68    | 17          | PP        | 0.65    |
| 14                | SIP       | 0.51    | 10          | PP        | 0.46    |
| 07                | SIP       | 0.49    | 25          | AL        | 0.45    |
| 12                | SI        | 0.48    | 15          | AL        | 0.41    |
| 09                | SIP       | 0.47    |             |           |         |

c) *Item selection*

In general, the psychometric results for the initial CIQ were encouraging. By comparing Table 3a with Table 1 it was apparent that all the indices were better for the initial CIQ. However, the initial CIQ had 43 items and the PII only 20. So, some of the initial CIQ advantage could be due to length differences between both tests.

Particular psychometric indices for some items were poor and should be removed. It was decided to remove any item which did not comply with any of the following requirements:

a) There would be a significant ( $p < 0.01$ ) homogeneity index for both products. Item numbered 6, 18 and 38 were removed as their homogeneity indices did not meet this requirement for the product cars.

b) There would be a significant ( $p < 0.01$ ) validity index for at least one of the criteria. From the jeans data, items 4 and 41 had to be removed. From the cars data, items 8, 11, 17, 23, 24, 32, 35, and 43 were removed.

c) There would be a factor loading above 0.4 on one of the retained factors. The additional items of 16, 19, 20, 31, 34 and 39 were removed.

d) Items would not have low discriminant power. Items with a standard deviation significantly smaller than 1.5 ( $p < 0.01$ ) were also removed; items 5 and 25 (jeans) and item number 29 (cars).

Appendix A shows the initial 43 and the final 21 items (in italic).

The final «Consequences of involvement» questionnaire

New analyses were carried out on the final CIQ data (see Table 3b). Despite the difference in length between the initial and the final CIQ, the final CIQ, with only 21

items, gives as good psychometric results as does the initial test (43 items) and, as the comparison between Tables 1 and 3 makes apparent, it also provides superior results than those provided by the Spanish adaptation of the PII (20 items).

A decision was made to obtain an English-speaking (hereafter termed 'English') version of the CIQ. Firstly, a bilingual expert achieved a careful translation of each item and, secondly, the questionnaire and the two final questions were applied to two samples of Psychology students from Strathclyde University, Glasgow. A first sample of 147 undergraduates rated their involvement with cars, and a second sample of 152 undergraduates did likewise for jeans. Table 3c contains the psychometric indices provided by the English samples.

Concerning the reliability indices, no clear differences emerge between the Spanish and English results for the product cars, although the indices are somewhat poorer for the product jeans in the English sample. However, all the reliability indices for the English samples are above 0.86 and do seem appropriate.

Concerning the validity indices, all the four indices are significant, but only one English validity index exceeds the corresponding Spanish one. In general, these indices do not seem high, but they are significant. Further exploration is required as to whether other criteria would provide better or worse validity indices.

To determine the factor structure of the CIQ, new factor analyses were carried out on both samples (Spanish and English) and for both products (cars and jeans). As a first step, a principal component model for factor extraction and varimax rotation were attempted, but it was not possible to obtain any satisfactory solution. However, a principal component model and oblimin rotation were successfully tried and meaningful and

common (for the samples and products) solutions appeared. It is interesting to note that the CIP factors do also appear as the outcome of a non-orthogonal rotation.

Table 5

Factor analyses for the Spanish and English samples in the final CIQ. Loadings below 0.35 have been omitted

|                  |           | Spain           |                 |                  |                 | England         |                 |                  |                 |
|------------------|-----------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|------------------|-----------------|
|                  |           | Cars<br>(N=377) |                 | Jeans<br>(N=377) |                 | Cars<br>(N=147) |                 | Jeans<br>(N=152) |                 |
| Items            | Component | F <sub>I</sub>  | F <sub>II</sub> | F <sub>I</sub>   | F <sub>II</sub> | F <sub>I</sub>  | F <sub>II</sub> | F <sub>I</sub>   | F <sub>II</sub> |
| 1                | AL        |                 | .73             |                  | .62             |                 | .75             |                  |                 |
| 2                | SIP       | .82             |                 | .66              |                 | .77             |                 |                  |                 |
| 3                | SI        | .85             |                 | .75              |                 | .83             |                 | .53              |                 |
| 7                | SIP       | .79             |                 | .71              |                 | .43             |                 |                  |                 |
| 9                | SIP       | .59             |                 | .54              |                 |                 |                 |                  |                 |
| 10               | PP        |                 | .51             |                  | .76             |                 |                 |                  | .72             |
| 12               | SI        | .74             |                 | .59              |                 | .66             |                 | .49              |                 |
| 13               | AL        | .36             | .62             |                  | .77             |                 | .73             |                  | .90             |
| 14               | SIP       | .83             |                 | .68              |                 |                 |                 | .45              |                 |
| 15               | AL        |                 |                 |                  | .57             |                 |                 |                  |                 |
| 21               | AL        |                 |                 | .62              |                 |                 |                 | .73              |                 |
| 22               | AL        |                 | .80             |                  | .69             |                 | .70             |                  | .66             |
| 26               | SIP       | .70             |                 | .56              |                 | .53             |                 |                  | .45             |
| 27               | SIP       | .70             |                 | .69              |                 |                 |                 | .35              |                 |
| 28               | SI        | .86             |                 | .78              |                 | .63             |                 | .62              |                 |
| 30               | AL        | .57             | .48             |                  | .61             |                 | .38             |                  | .72             |
| 33               | SIP       | .65             |                 | .63              |                 |                 |                 |                  |                 |
| 36               | SI        | .72             |                 | .73              |                 | .78             |                 | .74              |                 |
| 37               | AL        | .35             |                 | .37              |                 | .59             |                 | .44              |                 |
| 40               | SIP       | .46             |                 | .60              |                 | .56             |                 |                  |                 |
| 42               | SIP       | .79             |                 | .67              |                 | .68             |                 |                  |                 |
| $\lambda$        |           | 9.3             | 3.9             | 7.7              | 5.0             | 7.3             | 3.6             | 4.5              | 3.8             |
| % Total variance |           | 44              | 19              | 37               | 24              | 35              | 17              | 22               | 18              |

Table 5 contains the factors retained in each of the two samples and the two products, and the items defining them. The variance explained and the proportion of explained variance are also provided. Some comments are in order:

a) In each of the four factor analyses, Factor I is the most important, and the percentage of variance accounted for ranges from 22 to 44. This factor is defined by items related to components 'Search and information processing' and 'Social interaction'. A second factor was also witnessed in each of the four analyses. The percentage of variance accounted for ranges from 17 to 24, and its highest loadings correspond to 'Affective link' items.

b) In the Spanish sample, both for cars and for jeans, one more factor had eigenvalues above one. In the English samples, three more factors did. Both because the explained variance is low and because no common meaning (across samples and products) was found, these factors were discarded.

c) The two retained factors are not orthogonal. The angle between them ranges from 63 and 79 degrees (Pearson correlations of 0.45 and 0.19, respectively). In this data, then, Factors I and II are correlated; but, whatever their meanings, they are not just a single dimension, as in all the four analyses they appear as separate factors.

d) Factor I is defined by largely the same items for the samples and products tested. The same is so for Factor II.

Factor congruence was analyzed across products and samples. The Congruence Index (Burt, 1948; Tucker, 1951) gives values above 0.8 for the factor solutions shown in Table 5. It can be seen that they are very close to the highest possible value of the index (1) and it seems reasonable to conclude that the CIQ provided a common factor structure for the samples and products tested.

#### Discussion and conclusions

A Likert scale has been developed to measure the involvement with products

(CIQ). It was decided not to directly ask the subject about his/her state of involvement. On the contrary, items of the CIQ ask the subject about the behavioural consequences of his/her state of involvement. It is considered convenient to distinguish involvement as a state from its antecedents and consequences, as proposed by Cohen (1983), and Andrews, Durvasula and Akhter (1990).

Firstly, an adaptation was attempted of the PII (Zaichkowsky, 1985) to the Spanish population. Two problems were found: a) criterion validity indices were low for the product cars, and b) factor analyses differed from those provided by Zaichkowsky (1985) in that the Spanish data on the PII revealed more than one factor for each product.

Regarding the validity indices for the product cars, it seems that the applied criteria are not those responsible for the low values, as the same criteria have been used to validate the CIQ and do perform well. Therefore, some difference between both products (jeans versus cars) must be accountable. Both products differ in cost, lifetime, function, etc. and they also differ in the level of involvement which they raise (Zaichkowsky, 1985). One possibility warranting closer examination would be whether the Spanish version of the PII is appropriate for products characterised by higher involvement, such as cars.

Regarding the factorial analyses on the Spanish PII data, it was expected that a uni-dimensional factor structure (in agreement with Zaichkowsky, 1985) would be found. Rodgers and Scheider (1993) did not find important differences between the French and American factor structures of the CIP. The Spanish PII did not reveal a uni-dimensional factor structure, despite the similarity between the levels of covariation in both studies, as indicated by Cronbach alphas. A possible and admit-

tedly *post hoc* explanation may be advanced for this difference. In the instructions of the PII, Zaichkowsky (1985, p. 350) asked her subjects to 'Work at fairly high speed through this questionnaire'. In the present case, the specific recommendation to work quickly was not made. This difference thus raises the possibility of slower responding in the Spanish sample. If this hypothesis holds, Spanish subjects could pay more attention to the minor semantic differences among adjectives, giving room for the presence of more than one factor.

A new scale has therefore been developed as an alternative measure of involvement. This CIQ has been applied to Spanish and English samples. Psychometric indices have been obtained and they show appropriate reliability and validity values. The CIQ does not appreciably differ from the Spanish version of the PII regarding its psychometric indices, nor its number of items (21 versus 20). The most outstanding difference relates to factor interpretation of the data provided by both tests.

Factor analyses on the CIQ data reveal the existence of the same two factors in each product and sample. Factor I explains a significant portion of the total variance and can be understood as a 'cognitive dimension'. It is inferred from activities aimed at increasing information on the product which the subject is involved with. Factor II, as expected, explains a smaller percentage of variance than does Factor I. It is mainly defined by items with a high affective content and can be understood as an 'affective dimension' of involvement.

It is important to bear in mind two points. Firstly, factor structures shown in Table 5 have been obtained using a non-orthogonal rotation. Second, an orthogonal rotation was firstly tried and no appropriate factor solution was found. Then, results showed that: a) both a cognitive and an affective dimension are needed as di-

mensions of involvement (this is why in all the four analyses both factors appeared), and b) both dimensions are correlated (this is why a non-orthogonal rotation was needed to obtain them).

To summarise, the present results do agree with Park and Mittal (1985) proposition of two main types of involvement: a *cognitive* involvement based on utilitarian motives, and an *affective* involvement based on value-expressive motives. Zaichkowsky (1987) and Macquarrie and Munson (1992) share the same idea: Involvement is a multidimensional construct and one of its dimensions is affective. As such, scales to measure it must include this affective dimension. The present results concur with this idea as both dimensions have appeared in the four analyses. These results also show that these two dimensions are correlated. Whether this correlation is genuine or an artifact of the two particular products used is something to further explore. More research on this issue is needed, as no more than two products have been evaluated until now. New additional studies have been planned to explore the construct validity of the CIQ. These studies request the measure of involvement with other products and they will provide more information on the universality of the observed correlation between factors.

## APPENDIX A

Instructions and items (final items in bold) of the CIQ. In brackets, the tentative component each item seeks to cover (AL, SIP, PP, SR and SI).

### The “Consequences of Involvement” Questionnaire

This questionnaire aims to measure a person’s involvement or interest in a specific product. In your case the product is:

The test consists of some sentences and you are asked simply to express your agreement or disagreement with each of those sentences.

You can classify your opinion in seven categories:

|                        |      |
|------------------------|------|
| Completely disagree    | (-3) |
| Strongly disagree      | (-2) |
| Slightly disagree      | (-1) |
| No particular feelings | ( 0) |
| Slightly agree         | (+1) |
| Strongly agree         | (+2) |
| Completely agree       | (+3) |

Please read each sentence and then tick the category which more accurately reflects your agreement or disagreement with the sentence. There are no right or wrong responses. What is important is that you express your opinions as honestly as possible. Thank you for your help.

Please remember to be sure that you give a mark for each sentence (do not omit any), and that you never give more than one mark to a single sentence.

- 1) (AL) *My life would change without this product*
- 2) (SIP) *I read all available information about this product.*
- 3) (SI) *I enjoy talking with knowledgeable people about the product.*
- 4) (AL) *I think it is sufficient if the product fulfils the purpose for which it was designed.*
- 5) (PP) *I like having it (or would like to have it).*
- 6) (SR) *This product is important for people.*
- 7) (SIP) *I try to get to know the pros and cons of each brand of the product.*
- 8) (AL) *Being without it makes me unhappy.*
- 9) (SIP) *Time spent learning about the product is time well spent.*

MEASURING INVOLVEMENT FROM ITS CONSEQUENCES

- 10) (PP) *I would choose it among other products of the same price.*
- 11) (SR) This product is an important social advancement.
- 12) (SI) *I talk about the product with my relatives and friends.*
- 13) (AL) *I enjoy using it.*
- 14) (SIP) *I am interested in experts' evaluations and comments on this product.*
- 15) (AL) *I do not mind spending money on this product.*
- 16) (SIP) I know different brands or models of this product.
- 17) (PP) If I can afford it, I buy it.
- 18) (SR) The product is something which people are interested in.
- 19) (SIP) I pay attention to adverts about this product.
- 20) (SIP) I can remember some adverts about the product.
- 21) (AL) *I would join a user's club of this product.*
- 22) (AL) *I would find it very difficult to stop using it.*
- 23) (AL) Using it helps me feel secure.
- 24) (AL) The product is better than all others with the same purpose.
- 25) (AL) I am interested in this product.
- 26) (SIP) *I notice the differences between the various brands of the product.*
- 27) (SIP) *I would like to know about the manufacturing of the product.*
- 28) (SI) *I enjoy talking about the product.*
- 29) (AL) When I use the product, I feel well.
- 30) (AL) *I am not at all interested in this product.*
- 31) (AL) I do not have a preferred brand of the product.
- 32) (AL) Not having it makes me feel uneasy.
- 33) (SIP) *I would not make much effort to get more information about this product.*
- 34) (SIP) I think that there is little to choose between different brands of the product.
- 35) (AL) I find that the product is important in my daily life.
- 36) (SI) *I could talk for quite a while about this product without getting bored.*
- 37) (AL) *I feel emotionally attached to the product.*
- 38) (SR) Most people do not care about this product.
- 39) (AL) It seems silly to me to have a strong interest in the product.
- 40) (SIP) *I would read an article on this product published in a consumer weekly magazine.*
- 41) (SIP) I spend some of my spare time trying to get more information about this product.
- 42) (SIP) *I keep abreast of recent news on the relevant product development.*
- 43) (AL) I do not understand people who show a strong interest in these kinds of things.

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