

VALIDATION OF A PORTUGUESE FORM OF TEMPLER'S DEATH ANXIETY SCALE¹

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Summary.—To translate Templer's Death Anxiety Scale into the Brazilian Portuguese Escala de Ansiedade de Morte, linguistic validity was first established by back-translation and calculating bilingual split-half reliability coefficients. Even-numbered items achieved a minimally adequate .59, while the odd-numbered items attained a satisfactory .91. The internal consistency of the Escala (.77) matches that found for the original scale. The construct validity was tested by replicating the interactions of the English form with (1) the State-Trait Anxiety Inventory, (2) the Purpose-in-Life Test, and (3) Levenson's measure of locus of control. The Escala performed as expected, save for some difficulty with the locus of control measure.

Death anxiety is increasingly gaining an importance within psychology comparable to that it enjoys within philosophy (cf. Becker, 1973). Research on this topic conducted among Brazilians uses forms both longer and more complicated than the Death Anxiety Scale. Moreover, none of these alternative forms have been validated to the extent of the Death Anxiety Scale (Lonetto & Templer, 1986). A validated Portuguese form of the scale, therefore, makes available the best form in the field for research with Brazilians.

Project design was threefold: (1) linguistic validity was ascertained through back-translation and bilingual comparisons, as prescribed by Brislin (1970), (2) the internal consistency was estimated by calculation of the translation's split-half reliability, and (3) construct validity was established through comparison of its relationship to Portuguese versions of the State-Trait Anxiety Inventory (Biaggio & Natalício, 1979), the Purpose-in-Life Test (Torres, Guedes, Torres, & Ebert, 1989), Levenson's Locus of Control (Dela Coleta, 1987), with these same relationships among the original English forms. A brief account of the process and its results is given below.

Linguistic Validity

Six translations of the Death Anxiety Scale were solicited from native Portuguese speakers in Rio de Janeiro. Results were combined and presented to six additional Brazilians for back-translation. Items from the original English Death Anxiety Scale did not differ perceptibly from the English

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results of the back-translation. These results were used to develop an experimental form of the Escala de Ansiedade de Morte. Templer's original dichotomous scale was replaced with the Likert format suggested by McMordie (1979).

Brislin (1970, p. 199) proposed employing "a new variation of the bilingual technique and at the same time [using] the technique as a method to check the adequacy of materials translated by the back-translation method." His 2×2 design requires administration of the test to subjects divided into four treatment groups: target, source, and groups covering the two combinations of half-target/half-source. "The basis for the design includes predictions of equal cell means and variances, and high split-half reliability coefficients, determined by a Pearson correlation coefficient" (p. 200).

The two scales were combined to create two new forms. On Form A odd-numbered statements were English language, while even items were Portuguese. Form B reversed this pattern. The subject pool of bilingual students was too small to permit the complete 2×2 design, meaning that none responded to a completely English version. Only the split-half reliabilities of Forms A and B (e.g., Form A Odd \times Form A Even) are discussed here.

Forms were mailed to São Paulo and Rio de Janeiro for completion by students at two universities. Subjects were asked to complete one form or the other and did not have available to them the Portuguese version of any English item to which they were responding.

According to Brislin (1970, p. 200), "A high coefficient for [these groups] would suggest . . . adequate translation." The results from Form A ($n = 19$) were, however, disappointing. A split-half of .59 is well below the level usually considered desirable, although the translators of the State-Trait Anxiety Inventory were content with a bilingual correlation for the State form of a not much greater value of .69 (Biaggio & Natalício, 1979, p. 52, Table 22). The estimate for Form B ($n = 20$), on the other hand, is clearly satisfactory at .91. At this point we may tentatively conclude that at least all odd-numbered test items have been successfully translated into Portuguese.

Further analyses indicated that between-group differences (e.g., Form A Odd \times Form B Odd) were not significant (Odd: $t_{36} = .88, p > .05$; Even: $t_{26} = 1.26, p > .05$). So while the even-numbered items did not perform as well as the odd ones, they are not so different as to suggest they are not part of the same response universe.

In sum, the relevant criteria for translation equivalence as described by Brislin (1970) were applied. Results support the conclusion that the Escala de Ansiedade de Morte is an adequate translation into Portuguese of the Death Anxiety Scale.

Internal Consistency

While the test-retest procedure may be the "most obvious method"

(Anastasi, 1982, p. 109) to estimate reliability, other formulae require only a single administration and are often referred to as coefficients of internal consistency (p. 113). A high coefficient is interpreted as showing that all test items tap into the focal construct reliably.

Templer (1970, p. 168) reported a "coefficient of .76 (Kuder-Richardson Formula 20)." This result is slightly below what Anastasi (1982, p. 109) refers to as "desirable for reliability coefficients, which usually fall in the .80s or .90s," but at the boundary of .75 or .80 suggested by Nunnally (Drolet, 1985, p. 86). Sixty-two Brazilians completed the Escala. Analysis matched Templer's original result, yielding a split-half coefficient of .77.

Construct Validity

Even if the Escala is an adequate linguistic translation of the Death Anxiety Scale, it cannot be assumed that it measures in Brazilians the psychological dimensions the Death Anxiety Scale plumbs in Americans. Further data are needed to justify this conclusion.

The core standard used to ascertain the construct validity of the Escala is its relationship to the State-Trait Anxiety Inventory as rendered into the Inventário de Ansiedade Traço-Estado. Two other tests available with Portuguese versions widened this "bootstraps" approach by offering not only additional instances of "convergent validation," but also some "discriminant validation" (Anastasi, 1982, p. 147). Our goal was to enmesh the Escala in a network of predicted relationships, both positive and negative, which would ultimately provide more information about the validity of the instrument. The profitability of this approach was observed early by Cronbach and Meehl (1955, pp. 287, 295).

The first step was to establish the predicted correlations between the Escala and the other instruments. The Death Anxiety Scale in English correlates with A-state scores .26 ($p < .001$) and with A-trait scores .47 ($p < .001$) (Lonetto & Templer, 1986, p. 27, Table 2.7). Ideally, the Escala will duplicate this pattern.

The Purpose-in-Life Test (Crumbaugh, 1968; Torres, *et al.*, 1989) was expected to correlate negatively with the Escala scores on the order of $-.34$ (Amenta & Weiner, 1981).

The translation of Levenson's (1981) multidimensional scale for locus of control (Dela Coleta, 1987) differs from other locus of control measures by making Internal, Powerful Others, and Chance orthogonal qualities. No study could be obtained which directly correlated these scales with the Death Anxiety Scale, leaving the predicted relationships between these scales to be generated logically rather than empirically.

Of the three scales within the inventory, Levenson (1981, p. 23) reports that the Chance scale consistently delivers the highest correlation with Rot-

ter's popular scale. This correlation averages about .48, as compared to .24 and $-.29$ for the Powerful Others and Internal scales, respectively. Consequently, results for Rotter's scale are entered here as the expected values for Levenson's Chance scale. With this understanding, scores on this scale were expected to correlate with those on the Escala de Ansiedade de Morte with a value of .35 (Kuperman & Golden, 1978).

Given two assumptions, we predicted that the Levenson Internal Scale will have the strongest correlation with the Escala scores. First, Sadowski, Davis, and Loftus-Vergari (1979-80) correlated scores on the Reid-Ware Three-factor Locus of Control Scale and the Death Anxiety Scale. The Reid-Ware scale, like Levenson's inventory, has three scales termed Self-control, Social System Control, and Fatalism. If these resemble Levenson's Internal, Powerful Others, and Chance measures, respectively, the relative ordering of the scales becomes a suggestive model. Self-control has the strongest correlation with Death Anxiety Scale scores ($r = .304$), Social System Control next ($r = .203$), and Fatalism the weakest ($r = .175$). If we roughly equate Fatalism with the Chance scale and have already assigned to the latter a projected value of .35, then this value will be the weakest correlation predicted between Levenson's and Templer's scales.

Second, Stewart (1975, p. 163) concluded that those "who are high in internal control tend to be less fearful of death than persons who [are] not." We therefore expected a negative correlation between the Death Anxiety Scale and Levenson's Internal scale that will be the strongest of the locus of control scales. Since the weakest is predicted to be .35, a correlation of at least $-.5$ was anticipated. The Levenson Powerful Others scale \times Escala correlation was then estimated to fall between the other two, about .4.

Sixty-two respondents returned the questionnaires. Any incomplete test eliminated the respondent from the specifically affected analysis. Hence, the number of subjects for all analyses ranged from 56 to 62. Table 1 presents the means from these inventories.

The obtained correlation between the two forms of the Inventário de Ansiedade Traço-Estado ($r = .64, p < .001$) is almost identical to the English value of .65 (Spielberger, 1983, p. 15). This result suggests that the Portuguese Inventário is performing as designed, and we can now inspect its interaction with the Escala scores with reasonable confidence.

The correlations of scores on the Escala with those on the Inventário forms are greater than the predicted values (State: $r = .38, p < .01$; Trait: $r = .64, p < .001$). Since predictions were based upon results with American samples, this discrepancy may be characteristic of the Brazilian norms and not a failing of the Escala. More importantly for validation purposes, the Escala scores correlated much higher with the Trait than with the State form.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF SCALES FROM BRAZILIAN RESPONDENTS

Scale	<i>n</i>	<i>M</i>	<i>SD</i>
Escala de Ansiedade de Morte	62	56.84	16.60
Inventário de Ansiedade Estado	57	37.07	10.59
Inventário de Ansiedade Traço	57	39.26	11.24
Purpose-in-Life	56	110.07	19.60
Levenson's Internal Scale	61	26.95	4.87
Levenson's Powerful Others Scale	61	18.67	6.09
Levenson's Chance Scale	61	20.31	5.74

With the Purpose-in-Life scores, a direct hit was obtained with $-.34$ ($p < .05$). This result is especially important because it is in the opposite direction from the Inventário. While the latter results are instances of convergent validation, that with the Purpose-in-Life is one of discriminant validation.

As with the Inventário, the intercorrelation of the three locus of control scales matched the values found in the literature, although only the Powerful Others \times Chance correlation of $.60$ was significant ($p < .001$). These results suggest that, at least on the surface, Levenson's multidimensional locus of control instrument interacts internally as does the English original.

The value assigned to Levenson's Chance \times Escala scores correlation ($.35$) was that generated by earlier research on Rotter's scale. The actual correlation was $.44$ ($p < .01$). This result incorrectly was predicted to be the weakest of the correlations between Levenson's scales and the Escala, when in fact it was the strongest.

The predictions for Levenson's Powerful Others scale were a rank between those for the Internal and Chance scales in terms of magnitude and that its correlation with the Escala would be on the order of $.4$. Both predictions were correct ($r = .40$, $p < .01$).

Results for Levenson's Internal scale are problematic. Predicted to have the strongest of the correlations with Escala scores, approaching $-.5$, its value of $-.08$ ($p > .1$) is the weakest. Failure of Levenson's inventory to meet the predictions fully can come from at least three sources. (1) The Escala lacks construct validity; (2) the equation between the Levenson scales and the Reid-Ware form was ill-advised; or (3) the translated Levenson inventory, not being itself fully validated, may deviate from the English original. For our purposes, we need only note that the good performance of the Escala scores with the Inventário and Purpose-in-Life, and the success in predicting two of its three intercorrelations with Levenson's scales allows us reasonably to reject the first hypothesis.

The Escala de Ansiedade de Morte seems to perform as does the Death Anxiety Scale. The criterion validity of the latter, as reported in the original

work by Templer (1970), allows the inference that the Escala quantifies death anxiety, at least to the extent that the original scale performs this same function.

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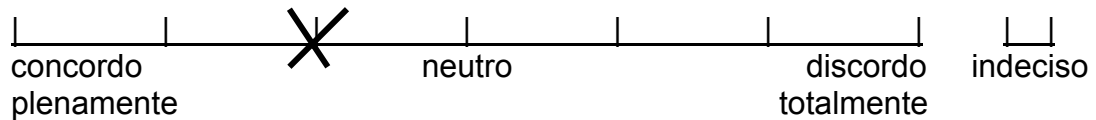
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ESCALA DE ANSIEDADE DE MORTE

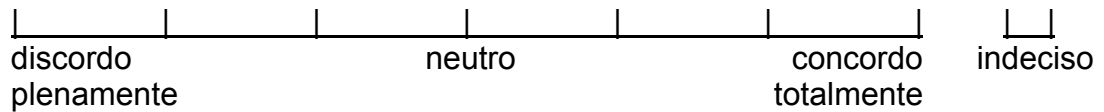
INSTRUÇÕES: Este formulário contém uma série de frases com escalas diferentes. Leia cada afirmação, decida se você concorda ou discorda e qual a intensidade de sua opinião, e coloque um "X" na linha que melhor indica como você se sente. As primeiras impressões são sempre as melhores. Por favor responda a todos os itens.

EXEMPLO:

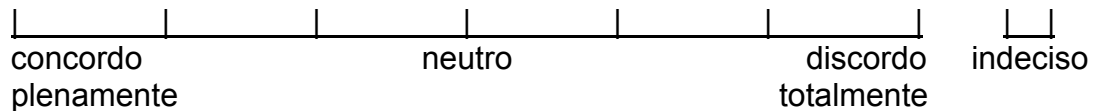
Eu gosto de ler livros.



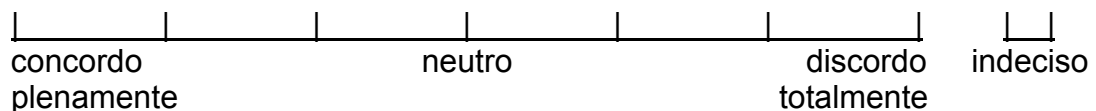
1. Eu tenho muito medo de morrer.



2. A idéia de morte raramente passa pela minha cabeça.



3. Eu não fico nervoso quando as pessoas falam da morte.



4. Eu tenho pavor de pensar em fazer um operação.

