

Clayton K. Sisk

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La *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, la publicación oficial de la Sociedad Interamericana de Psicología/Interamerican Society of Psychology, se publica dos veces por año. El propósito de la *Revista* es servir como un medio de intercambio de información científica y profesional entre psicólogos, a través del Hemisferio Occidental (América del Norte, Central y del Sur y el Caribe). La *Revista* está diseñada para facilitar la comunicación, promover un mayor entendimiento y fomentar la cooperación entre los científicos del comportamiento, a través de las Américas. Su objetivo es interesar a todos los psicólogos en el Hemisferio Occidental. Con este fin, la *Revista* aceptará manuscritos en todas las áreas de psicología general y las disciplinas relacionadas. Se aceptan los manuscritos en inglés, español y portugués.

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The *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, the official journal of the Sociedad Interamericana de Psicología/Interamerican Society of Psychology, is published twice a year. The purpose of the *Journal* is to serve as a medium to exchange scientific and professional information among psychologists throughout the Western Hemisphere (North, Central, and South America and the Caribbean). The *Journal* is designed to facilitate communication, promote greater understanding, and foster cooperation among behavioral scientists across the Americas. It is intended to be of interest to all psychologists in the Western Hemisphere. To these ends, the *Journal* will accept manuscripts in all areas of general psychology and related disciplines. Manuscripts are accepted in English, Spanish, or Portuguese.

Manuscripts. Accepted manuscripts fall within several categories: reports of original empirical studies, theoretical articles, integrative or critical literature reviews, and methodological contributions. Occasionally, the *Journal* will also publish articles dealing with significant policy issues related to psychology as a science and/or a profession. Although it is more oriented to basic research and theory, the *Journal* also will publish articles dealing more directly with technological and applied problems. Research focusing on the cultural context of human behavior and development will be especially welcome, but assuredly the scope of accepted manuscripts will not be limited to this focus. Comments on technical and substantive issues addressed in articles previously published in this *Journal* will also be considered; comments will be reviewed like other types of papers, and the author of the original article will be given an opportunity to respond. Manuscripts will be published in the same language in which they are submitted.

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Manuscritos. Os manuscritos aceitos pertencem a várias categorias: relatórios de dados originais, artigos teóricos, ensaios críticos, e trabalhos metodológicos. Ocasionalmente a *Revista* publicará artigos que tratam de questões políticas relevantes à Psicologia como ciência e/ou profissão. Embora a *Revista* se dedique mais à pesquisa básica e à teoria, publicará também artigos mais diretamente ligados a problemas da tecnologia e da aplicação. Pesquisas que enfocam os aspectos culturais do comportamento e desenvolvimento humanos serão especialmente bem recebidas, porém os manuscritos aceitos não se limitarão a esses aspectos. Comentários sobre questões técnicas ou sobre o conteúdo dos artigos publicados em números anteriores da *Revista* serão também aceitos; sendo que esses comentários serão avaliados como qualquer outro manuscrito e se dará ao autor do artigo original a oportunidade de responder às críticas feitas. Os manuscritos serão publicados na língua original em que foram submetidos.

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Separatas. O autor principal receberá, gratuitamente, vinte separatas do seu artigo na ocasião da publicação do mesmo.

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US\$20 para residentes da América Latina ou das Caraíbas. A anuidade para estudantes é de US\$15. Os cheques devem ser pagáveis à Sociedad Interamericana de Psicología/Interamerican Society of Psychology e enviados por via aérea à SIP/ISP Assinaturas para Indivíduos: Héctor Betancourt, Casilla 52, Correo 29, Santiago, Chile. Mudanças de endereço para indivíduos devem ser também enviadas ao endereço acima.

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Contenido/Contents

PSICOLOGÍA SOCIAL Y DE LA PERSONALIDAD/
SOCIAL AND PERSONALITY PSYCHOLOGY

Development of Portuguese- and Spanish-Language Measures of Self-Concept	1
Sumário Extenso.....	18
<i>Suellen L. Crano and William D. Crano</i>	
Una Escala de Locus de Control para Niños Mexicanos	21
Extended Summary	32
<i>Rolando Díaz-Loving y Patricia Andrade-Palos</i>	
Umbral Sensorial y Tiempo de Tolerancia a Diferentes Estímulos Aversivos y su Relación con Factores de Personalidad	35
Extended Summary	51
<i>Francisco J. Labrador y Miguel A. Vallejo</i>	

PSICOLOGÍA TRANSCULTURAL/CROSS-CULTURAL
PSYCHOLOGY

Ethnic Differences in the Measurement of Hostility in Forensic Patients	53
Resumen Extenso	63
<i>Robert C. Reinehr, Jon D. Swartz, and Harold K. Dudley, Jr.</i>	

PSICOLOGÍA CLÍNICA/CLINICAL PSYCHOLOGY

Self-Efficacy Theory Applied to a Case of School Phobia	65
Resumen Extenso	74
<i>Lázaro García and Ángel Martínez Urrutia</i>	

APRENDIZAJE ANIMAL/ANIMAL LEARNING

Autoshaping in Pigeons: Effects of Partial Reinforcement on Acquisition and Extinction	75
Resumen Extenso	86
<i>Mauricio R. Papini and J. Bruce Overmier</i>	

PSICOLOGÍA EDUCATIVA/EDUCATIONAL PSYCHOLOGY

Características Psicossociais de Crianças Brasileiras Mais e Menos Criativas	87
Extended Summary	100
<i>Eunice M. L. Soriano de Alencar</i>	

LIBROS/BOOKS

<i>Como Hacer Desarrollo de Personal en las Empresas Colombianas</i> por Orlando Urdaneta Ballén Reseñado por <i>Rubén Ardila</i>	101
<i>Terapias del Comportamiento: Aspectos Clínicos y Experimentales</i> , Universidad de Cádiz, Instituto de Ciencias de la Educación, editor Reseñado por <i>Alfredo Muñoz</i>	102
<i>The Growth of Biological Thought</i> by Ernst Mayr Reviewed by <i>James L. Colwell</i>	104

OTRO/OTHER

Instrucciones para los Autores	106
Instructions to Authors	107
Instruções aos Autores	108
Aviso a los Bibliotecarios	109
Note to Librarians	109
Aviso aos Bibliotecários	109

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Además de pedir a los miembros de la Junta de Consultores Editoriales que revisen los manuscritos presentados, el Director pide a otros psicólogos que participen, como consultores editoriales ad hoc, en el proceso de evaluar manuscritos. De esta forma, ha sido posible conseguir una base aún más amplia en lo que respecta al proceso de evaluación de manuscritos. A continuación se listan los individuos que han participado como consultores ad hoc para los manuscritos presentados a este volumen de la *Revista*.

In addition to asking members of the Board of Consulting Editors to review submitted manuscripts, the Editor asks other psychologists to participate as ad hoc reviewers in the review process. In this way, we have been able to achieve an even broader review base. The following individuals served as ad hoc reviewers for manuscripts submitted to this issue of the *Journal*.

Além de pedir que membros do Corpo de Consultores Editoriais façam as críticas dos manuscritos submetidos, o Editor solicita também que outros psicólogos participem no processo de crítica dos manuscritos, como consultores editoriais "ad hoc". Deste modo, tem sido possível obter-se uma base mais ampla para as críticas. Indicamos a seguir os nomes das pessoas que participaram como consultores editoriais "ad hoc" na crítica dos manuscritos submetidos para este volume da *Revista*.

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Development of Portuguese- and Spanish-Language Measures of Self-Concept

SUELLEN L. CRANO

and

WILLIAM D. CRANO

*Michigan State University
U.S.A.*

This article describes three studies conducted to develop a Portuguese- and a Spanish-language measure of self-concept. In Study 1, a Portuguese-language version of A. H. Eagly's (1967) self-concept measure was developed and administered to 276 Brazilian secondary school students. The study yielded a scale of high reliability. In Study 2, a known-groups technique was employed to determine the criterion validity of this scale. Results disclosed that the scale successfully discriminated among students ($N = 192$) whose teachers had ranked them as having high, medium, or low self-concept. In Study 3, 144 respondents from 4 South American countries completed a Spanish translation of the scale. Results indicated that the Spanish version, too, was a reliable measure. Implications of these findings, and the possible utility of the scales that were developed, are discussed.

This research was undertaken while the authors were supported by a Fulbright Fellowship to the Federal University of Rio Grande do Sul, Porto Alegre, Brazil. We are grateful to the Fulbright Commission and to our many colleagues at the Federal University, whose assistance at various stages of this research project was invaluable. We also are grateful to the individuals who assisted in the instrument translation process: Angela M. B. Biaggio, Paulo Schutz, José Suarez, Juan Antonio Tijiboy, Vilma Letitia Tijiboy, Cláudia Salazar, Rosa Maria Py Moreira Linck, and Angela Moreira Linck. In addition, we are grateful to Vera Pires Morais, Sofia Tetelbom, and Jussara Lummertz for their assistance in the administration of the instrument. Finally, we acknowledge the able assistance of Neal Grove and Bettina Hansel of American Field Service International.

Considerable research in contemporary psychology suggests the crucial role of the self-concept in cognitive, social, and academic development (Bandura, 1977; Brookover, Patterson, & Thomas, 1964; Epstein, 1973; Fink, 1962; Gergen, 1971; LaBenne & Greene, 1969; Markus, 1977; Montemayor & Eisen, 1977; Purkey, 1970; Wegner & Vallacher, 1980). Although the importance of this construct has long been recognized in Latin America (e.g., Bauermeister & Colon, 1974; Buriel & Vasquez, 1982; Holtzman, Díaz-Guerrero, & Swartz, 1975; Poppovic, 1972; Poppovic, Espedito, & Cruz, 1973; Rodrigues, 1983; Rodrigues & Comrey, 1974; Rodríguez & Kimmel, 1970; Rohner, Rohner, & Roll, 1980; Taliuli, 1982; Tamayo, 1981), Wylie (1974) has observed that the paucity of reliable and validated instruments for the measurement of self-concept has seriously retarded progress in this important area of investigation. To begin to meet Wylie's legitimate criticism, this paper details the results of three studies designed to develop a Portuguese- and a Spanish-language version of a well-regarded English-language test of self-concept.

Measuring the Self-Concept

Over the years, three major approaches have been employed in the measurement of the self-concept: self-reports, behavioral observations, and projective techniques. In general, the projective techniques have not withstood critical study of their reliability and validity, and hence, will not be discussed further (see Crano & Brewer, 1973; Kidder & Campbell, 1970).

Behavioral observations have been employed successfully in the measurement of self-concept, but they are time-consuming and costly in terms of measurement operations, and they generally are noncumulative. That is, most observational studies typically employ idiosyncratic measures of self-concept and, as such, a validated bank of reliable observational measures of the self-concept has failed to materialize in psychology or education (Carbonara, 1961; Combs, 1965; Purkey, 1970; Wegner & Vallacher, 1980; Wylie, 1974).

By far the most widely employed means to measure the self-concept are self-report techniques, in which the self-concept is inferred through respondents' replies to questions of an introspective nature. Of the numerous means employed to obtain introspective self-reports of the self-concept, the standardized scaling approach provides researchers with the optimal means of developing reliable and valid measures. Wylie (1974) has provided a detailed analysis of many of the standardized measures that have been developed in this area. The impressive variety of scales of self-concept attests to the importance that psychologists have attached to this issue, but the proliferation of these measures also suggests the unfortunate fact that many of them have been used only once or twice, without any attempt at validation. As Wylie (1974, p. 5) noted, this lack of validation leads to a situation in which "interpretation of individual studies and meaningful syntheses are . . . precluded."

The Revised Janis–Field Scale

Some exceptions to Wylie's criticisms are provided in the scales of self-concept developed by Berger (1952), Coopersmith (1967), Eagly (1967), Janis and Field (1959), Poppovic (1972), Poppovic et al. (1973), and Rosenberg (1965), among others. The Eagly revision of the Janis–Field scale was chosen for translation into Portuguese and Spanish because of its positive psychometric qualities, its wide use with school-age respondents, its ease of administration and scoring, and the ease with which its items could be meaningfully translated into both languages (Crano & Brewer, 1973; Robinson & Shaver, 1973; Schmidt & Hunter, 1977; Schmidt, Pearlman, & Hunter, 1980).

The revised Janis–Field scale, which employs a Likert-type format, was developed by Eagly (1967) to measure self-concept. Ten items from the original Janis–Field (1959) Feelings of Inadequacy scale were used as the basis of the revision. These items were all worded so that the positive response (e.g., very often, very much) indicated low self-concept. Eagly added another 10 items to the original group of 10. These new items were written to be the reverse of the originals; that is, a positive response on the new items indicated positive self-concept. The added items were not exact reversals of the originals but were very similar in content to the items on the Janis–Field inventory.

On Eagly's scale, all items are scored so that a high score indicates a positive self-concept. Thus, negatively worded items are reverse-scored. In the original application of the inventory, Eagly (1967) administered the measure to 144 male college undergraduate students. The split-half of the 20-item scale was .72; when corrected according to the Spearman–Brown formula, the coefficient of reliability was .84. Given these results and the other positive qualities of the revised Janis–Field test noted above, the present researchers decided to have the scale translated and to validate this scale on samples of Portuguese- and Spanish-speaking students. The studies are described below, where we discuss how the translation and validation processes were undertaken.

Study 1: Reliability of the Portuguese-Language Version

METHOD

Instrument Translation

The revised Janis–Field scale was translated into the Portuguese language by a group of native Brazilians, who also were fluent in English. The instrument

then was back-translated into English. Any discrepancies disclosed in the back-translation process were resolved before the instrument was completed and administered.

As noted, the measure consists of 20 items, 10 of which are worded positively, 10 negatively. The items are presented in a Likert-type format, with five possible response options for each item. Ten of the items seek to determine the frequency with which certain behaviors related to the self-concept are expressed by the subject. As such, the response options for these (frequency) items are *muitas vezes, com frequência, às vezes, raramente, and quase nunca*. The other 10 items measure the degree to which students experience various internal reactions to self-concept-related behaviors. The response options for these items are *muitíssimo, muito, mais ou menos, um pouco, and muito pouco, or muito bem, bem, mais ou menos, mal, and muito mal*.

Items are scored on a scale of one to five, such that a high score indicates a more positive self-concept (the negative items were reverse scored). Thus, scores can range from a low of 20 to a high of 100.

Subjects

A total of 286 respondents completed the Portuguese version of the Janis-Field scale. The respondents were enrolled in a large public secondary school in Porto Alegre, Brazil. Almost all of these students came from lower middle class homes in Porto Alegre or the diverse surrounding municipalities of the state of Rio Grande do Sul. The average age of the respondents was 15.7 years; ages ranged from 13 to 19 years. Forty percent of the respondents were males, 60% were females.

Procedure

In their homeroom class, students were asked to complete the measure, responding as honestly as possible, and thinking in terms of the way they felt about themselves in general. Other information—sex and age—also was gathered at this time. After the scales were collected, they were scored by the researchers.

RESULTS

The subjects for whom data were complete ($N = 276$) averaged a score on the 20 items of 67.2, with a standard deviation of 11.15. The scores ranged from a

minimum of 32 to a maximum of 94. The distribution of scores approximated normality (skew = $-.69$, kurtosis = $.52$).

Calculation of the degree of internal consistency of the item-set resulted in a standardized coefficient alpha of $.86$ for the total scale. This degree of internal consistency is indicative of a highly reliable instrument (Crano & Brewer, 1973). Item-total correlations corrected for the contribution of the specific item under investigation (Nunnally, 1967), along with the items that constitute the scale, are presented in Table 1.

Table 1
Items, Translation of Items, and Corrected Item-Total Correlations

Items	Response Format	Corrected Item-Total Correlations		
		Study 1	Study 2	Study 3
1. How often do you have the feeling that there is nothing you can do well? Quantas vezes você tem a sensação de que não pode fazer nada direito? ¿Cuántas veces se siente Ud. como si no pudiera hacer nada bien?	a	.54	.47	.41
2. How often do you feel that you have handled yourself well at a social gathering? Quantas vezes você se sentiu bem sucedido numa reunião social? ¿Cuántas veces se siente Ud. que se ha desenvuelto correctamente en una reunión social?	*a	.48	.37	.38
3. When you have to talk in front of a class or a group of people your own age, how worried do you usually feel? Quando tem que falar diante de uma aula ou diante de um grupo de pessoas de sua mesma idade, em geral, o quanto fica preocupado? Cuando tiene que hablar ante una clase o ante un grupo de personas de su misma edad, por lo general, ¿cuánto se preocupa Ud.?	b	.41	.44	.27
4. How often do you have the feeling that you can do everything well? Quantas vezes você tem a sensação que pode fazer bem qualquer coisa? ¿Cuántas veces se siente Ud. como si pudiera hacer bien cualquier cosa?	*a	.51	.43	.15
5. How often do you worry about whether other people like to be with you? O quanto você se preocupa das pessoas gostarem de estar com você? ¿Cuántas veces se preocupa por si la gente le agrada estar con Ud. o no?	b	.12	.21	.19

Table 1 (Cont.)

Items	Response Format	Corrected Item-Total Correlations		
		Study 1	Study 2	Study 3
6. How often do you feel that you are a successful person? Quantas vezes você se sente uma pessoa de sucesso? ¿Cuántas veces siente que es Ud. un individuo que ha triunfado?	*a	.47	.43	.51
7. How often do you feel self-conscious? Quantas vezes você se sente encaquilado? ¿Cuántas veces se siente Ud. cohibido?	a	.56	.43	.40
8. When you talk in front of a class or group of people your own age, how pleased are you with your performance? Quando fala diante de uma aula ou diante de um grupo de pessoas de sua mesma idade, o quanto satisfeito fica com a sua apresentação? ¿Cuando habla ante una clase o ante un grupo de personas de su misma edad, ¿cuán satisfecho queda Ud. con su presentación?	*b	.38	.34	.31
9. How often are you troubled with shyness? Quantas vezes você se incomoda por causa de sua própria timidez? ¿Cuántas veces le incomoda su propia timidez?	a	.45	.39	.47
10. How comfortable are you when starting a conversation with people whom you do not know? Como você se sente quando você começa a falar com um desconhecido? ¿Cuán a gusto se siente Ud. al conversar con un desconocido?	*b *c *b	.38	.26	.18
11. How often do you feel inferior to most of the people you know? Quantas vezes você se sente inferior à maioria das pessoas que conhece? ¿Cuántas veces se siente Ud. inferior a la mayoría de la gente que conoce?	a	.51	.53	.51
12. How confident are you that your success in your future career is assured? Que confiança você tem de que você vai ter sucesso na sua futura carreira? ¿Cuán seguro está Ud. de que tiene el éxito asegurado en su futura carrera?	*b	.43	.27	.33
13. Do you ever think that you are a worthless individual? Você alguma vez pensou que não valia nada? ¿Ha pensado Ud. alguna vez que no vale nada?	a	.55	.47	.54
14. When you speak in a class discussion, how sure of yourself do you feel? Quando está numa discussão de aula, que confiança você tem em si mesmo? ¿Al hablar en una discusión de clase, ¿cuán seguro de sí mismo se encuentra Ud.?	*b	.59	.56	.38

Table 1 (Cont.)

Items	Response Format	Corrected Item-Total Correlations		
		Study 1	Study 2	Study 3
15. How much do you worry about how well you get along with other people? O quanto você se preocupa em dar-se bem com as outras pessoas? ¿Cuánto le preocupa a Ud. llevarse bien con la gente?	b	.03	.15	.00
16. How sure of yourself do you feel when among strangers? Quanta confiança você sente em si próprio quando está entre desconhecidos? ¿Cuán seguro de sí mismo se siente Ud. entre desconocidos?	*b	.43	.49	.55
17. How confident do you feel that some day the people you know will look up to you and respect you? Que confiança você tem em você mesmo de que algum dia as pessoas que o conhecem irão admirá-lo e respeitá-lo? ¿Cuán seguro se siente Ud. de que la gente que lo conoce lo admirará y lo respetará algún día?	*b	.36	.25	.43
18. How often do you feel that you dislike yourself? Quantas vezes você sente que não gosta de si mesmo? ¿Cuántas veces siente Ud. que no gusta a sí mismo?	a	.55	.58	.32
19. Do you ever feel so discouraged with yourself that you wonder whether anything is worthwhile? Você alguma vez se sentiu tão desiludido consigo mesmo que se perguntou se existe alguma coisa na vida que vale a pena? ¿Se ha sentido alguna vez tan desilusionado consigo mismo que se haya preguntado si hay algo en la vida que valga la pena?	a	.38	.50	.32
20. In general, how confident do you feel about your abilities? Em geral, quanto você confia em suas próprias capacidades? En general, ¿cuánto confía Ud. en sus propias aptitudes?	*b	.61	.52	.62

Note. * = items that were reverse-scored. a = Very often; frequently; sometimes; rarely; almost never. Muitas vezes; com frequência; às vezes; raramente; quase nunca. Muy a menudo; con frecuencia; a veces; raramente; casi nunca. b = Very much; much; somewhat; a little; very little. Muitíssimo; muito; mais ou menos; um pouco; muito pouco. Muchísimo; mucho; más o menos; un poco; muy poco. c = Muito bem; bem; mais ou menos; mal; muito mal.

As shown by the corrected item-total correlations of Table 1, two of the items (5 and 15) were weakly correlated with the total score. Removing these two items from the reliability analysis, however, does not appreciably influence the coefficient of internal consistency (revised alpha = .87). As such, little is gained by discarding these items.

The results of this analysis suggest that the translation of the Janis–Field scale from English to Portuguese was successful. A scale of high reliability was obtained, with little missing data and a reasonable distribution of scores. Thus, at least in terms of the reliability of the measure, the translation process appears to have successfully replicated the original English version. As mentioned earlier, a back-translation approach was employed in developing the Portuguese items. It is generally recognized that whenever feasible, a double back-translation process is preferred. However, given the robust nature of the translation—the reliability coefficient of the translated scale exceeded that of the original from which it was developed—it does not appear that our inability to engage the double back-translation process seriously attenuated the internal consistency of the instrument. Although the translated version of Eagly’s instrument was shown to possess reasonable reliability (internal consistency), the question of the validity of the translated scale remained at issue, and it is to this question that Study 2 was addressed.

Study 2: Criterion Validity of the Portuguese-Language Version

This investigation extended and replicated the methodology of Study 1 to provide additional psychometric information on the reliability and validity of the Portuguese version of the scale. The known-groups technique was used to infer the criterion validity of the instrument (Campbell, 1960; Crano & Brewer, 1973). Details of this process are provided in the following pages.

METHOD

Subjects

In this administration, 195 subjects completed the Portuguese version of the revised Janis–Field self-concept scale, the development of which was detailed in Study 1. These respondents were enrolled in the secondary program of a small public laboratory school that is connected to the Federal University in Porto Alegre, Brazil. The students were primarily from upper-middle- and middle-class families, and many were the children of the professors who were employed at the University. The respondents ranged in age from 12 to 17 years. Average age of the respondent sample was 14.4 years; 104 were male, and 89 were female.

Procedure

As in Study 1, the translated version of the revised Janis–Field scale was employed. In their respective classrooms, six groups of students (of 30–36

students each) were provided the self-concept scale, along with a set of self-explanatory instructions for completing the 20 Likert-type items that constitute the instrument. Respondents were asked to be as honest as possible and to respond to all questions. Students were assigned identification numbers by their respective teachers so that confidentiality could be ensured.

To enable the study of the criterion validity of the instrument, the six class teachers were asked to categorize their students into one of three levels of self-concept: high, average, or low. The teachers were instructed to place approximately equal numbers of students in their respective classes into each of these three groupings. Although such instructions restrict the range of teacher responses (and hence attenuate correlations involving this measure), they were given to help standardize the scoring procedure over all raters—that is, to ensure that all teachers used the same grading scale. This standardization process helps avoid some of the biasing influences that a less restrictive rating system might have introduced. (See the discussion of this issue by Messê, Crano, Messê, & Rice, 1979.) Thus, each group of 30–36 students was subdivided into three groups, each containing 10–12 students with the most positive self-concepts (according to teacher ratings), 10–12 with the least positive self-concepts, and the remaining 10–12 students with self-concepts between these extremes.

RESULTS

Over all of the subjects for whom data were obtained ($N = 192$), the average scale score over the 20 items was 71.3, with a standard deviation of 9.01. The scores ranged from a minimum of 39 to a maximum of 91. The distribution of scores again approximated the normal curve (skew = $-.51$, kurtosis = $.75$).

Standard psychometric tests of the internal consistency of the item set were performed and resulted in a coefficient of internal consistency of impressive strength (standardized alpha = $.83$). The corrected item–total correlations for this set of data are presented in Table 1. As shown in Table 1, items 5 and 15 were weakly (but significantly) correlated with the total score, as in Study 1. By removing these two items, little is gained in terms of internal consistency (revised alpha = $.84$).

Correlational analyses were performed to determine the relationship between teachers' estimates of students' self-concepts and the students' scores on the revised Janis–Field measure. A correlation coefficient of $.32$ ($p < .001$) was obtained in this analysis. This significant and positive correlation indicates that the scale did reflect teachers' estimates of their students' self-concept scores. Although the absolute magnitude of this correlation is not great, it is clear that it was attenuated by the relative range restriction of the teacher ratings, a "necessary evil" of the teacher rating system that was employed here, and by the unreliability of these teacher ratings. A better measure of teachers' evaluations,

had one been possible, that is, would have resulted in a more powerful predictive relationship.

Comparing the average self-concept scores of students in each of the three teacher-defined self-concept groups reveals a result that is consistent with that of the correlational analysis. Over all six teachers, the average Janis–Field self-concept score of the students ranked in the lowest third of the class was 67.49; the average self-concept score of the (teacher-defined) middle group was 71.14; and the mean self-concept score of the students estimated to have the highest scores was 74.81. Planned contrasts between these means disclosed that the scale scores of the high self-concept group (as defined by the teachers) were significantly greater than were those of the middle group ($t = 2.37, df = 188, p < .02$), which, in turn, significantly exceeded the average scores of the students thought by the teachers to possess low self-concepts ($t = 2.48, df = 188, p < .02$). On the basis of these findings, it seems reasonable to conclude that the translation process of the revised Janis–Field scale from English to Portuguese was successful. A reliable test was developed, and the evidence provided in Study 2 indicates that the scale measures the construct with a reasonable degree of validity. The development of the Spanish version of the revised Janis–Field test of self-concept is addressed in the following study.

Study 3: Reliability of the Spanish-Language Version

METHOD

Instrument Translation

Native Spanish speakers who also were fluent in English translated Eagly's (1967) 20-item adaptation of the Janis–Field inventory from English to Spanish. Another group then back-translated the instrument into English, and any inconsistencies between the original and the back-translated version were resolved before the test was administered.

As in the Portuguese version, the Spanish-language instrument consists of 20 items, 10 of which are worded positively, and 10 negatively. Ten of the Likert-type items concern the frequency with which certain self-concept related behaviors are expressed by the respondent. The response options for these items are *muy a menudo, con frecuencia, a veces, raramente, and casi nunca*. The remaining items measure the degree to which various internal reactions related to the self-concept are experienced. Their response options are *muchísimo, mucho, más o menos, un poco, and muy poco*. Items are scored on a scale from 1

to 5. Negatively worded items are reverse scored; thus, a high score reflects a more positive self-concept. As in the Portuguese version of the scale, scores on the Spanish-language version can range from 20 to 100.

Subjects and Procedure

A total of 144 respondents from four South American countries constituted the subject sample. All of the respondents were enrolled in an international student exchange program (American Field Service), and all completed the Spanish-language self-concept inventory before beginning their year-long visit to the United States. The tests were administered to the students in groups at the orientation that was held shortly before they embarked for the United States. Of the total group, 42 respondents were from Ecuador, 31 from Paraguay, 31 from Uruguay, and 40 from Venezuela. Information regarding the mean age and gender distribution of each of the four subsamples is provided in Table 2.

Table 2

Characteristics of the Spanish-Speaking Sample: Mean Age, Gender Distribution, Self-Concept Score, and Coefficient Alpha

<i>n</i>	Ecuador 52	Paraguay 31	Uruguay 31	Venezuela 40	Total 154
Age	17.6	17.1	18.3	17.0	17.13
% males	46.2	74.2	41.9	35.0	48.10
Self-concept	74.0	69.0	70.9	72.9	71.95
Alpha	.72	.87	.83	.64	.78

RESULTS

Over all 144 Spanish-speaking respondents, the average score on the 20-item self-concept inventory was 71.95, and the standard deviation was 7.65. As shown in Table 2, the scores of the subgroups were reasonably similar, as were their distributions, which in all cases approximated normality. Item-total correlations employing the total sample are presented in the last column of Table 1. As shown, the translated items appeared reasonably homogeneous in their relationship with the total score. This observation was reinforced in the reliability analysis. Calculating the coefficient of internal consistency within each group, and across all four nationality groupings, also revealed considerable consistency. As shown

in Table 2, standardized alpha coefficients ranged from .70 to .86; over the total group, the reliability coefficient was of impressive magnitude ($\alpha = .79$). Standardized alphas are used here to permit comparison of results among the three studies reported here.

The results of this study suggest strongly that the translation of the revised Janis-Field measure of self-concept into Spanish was successful. A scale of high internal consistency was constructed, and this consistency was evident over a number of different Spanish-speaking nationality groupings.

DISCUSSION

In the development of the Portuguese- and Spanish-language versions of Eagly's (1967) self-concept scale, care was taken to assure that the item translation process was adequate and that the reliability and validity of the resulting scales were of acceptable magnitude. The results of the three studies detailed here bear on these concerns, and as such merit review.

Studies 1 and 3 provide evidence that is useful in judging the adequacy of the item translation process, and in general, this evidence is encouraging. In neither study did subjects appear to experience any difficulties in understanding the meaning of the items, nor in completing the scale. Those 10 respondents in Study 1 (which was focused on the Portuguese-language instrument) who failed to complete the entire scale inevitably skipped only one item, and this suggests carelessness rather than misunderstanding. This observation is bolstered by the fact that different items were skipped by the 10 respondents who failed to complete the entire inventory.

Among the 144 Spanish-speaking respondents in Study 3, none skipped even a single item of the translated self-concept inventory. Thus, while a double back-translation process would have been desirable, the simple back-translation approach taken in this research appears to have succeeded in producing a scale that, at a minimum, was easily understood by all respondents.

The development of a comprehensible item set is the necessary first step in any scale translation process, but it is not a sufficient criterion through which to judge the goodness of the resulting instrument. In addition to comprehensibility, the reliability of the instrument must be examined. This issue, too, was investigated in Studies 1 and 3, and as before, the results proved encouraging. In both the Spanish-speaking and the Portuguese-speaking samples, the interrelationships found between the 20 items of the self-concept inventory were strong and positive. The high index of internal consistency obtained in these studies ($\alpha = .86$ and $.79$ for the Portuguese- and Spanish-language scales, respectively) attests to this fact, and suggests that these instruments are of adequate reliability. The reliability figures obtained in these studies (and in Study 2, as

well) compare favorably with that reported by Eagly (1967) in her discussion of the English-language scale.

As noted, all three studies reported here demonstrate reliabilities of impressive magnitude. Study 2, in addition to replicating the reliability findings of the first investigation, was also concerned with the issue of validity. Using a known-groups technique to validate the Portuguese-language instrument (Campbell, 1960; Crano & Brewer, 1973), Study 2 asked teachers to provide estimates of the self-concept of each of the students in their classes who completed the inventory. The implicit assumption of this study was that having worked with the children for nearly an entire academic year, the teachers could provide a sensitive and accurate estimate of each of their students' self-concepts. If the scale results mirrored the teachers' ratings, then some support for the validity of the instrument would be provided. Although conditions did not allow for a validation of the Spanish-language inventory, Study 2 indicates that the Portuguese-language version of the self-concept instrument provided a reasonably accurate indication of the teachers' ratings. Average self-concept scores of the students rated in the top third of each class (in terms of self-concept) were significantly greater than were those of students ranked in the middle third; and the scores of the middle group significantly exceeded those of the students who were viewed by their teachers as being in the lowest third of the class with respect to self-concept. As might be expected on the basis of these results, the internal consistency reliability of the scale in Study 2 was strong ($\alpha = .83$), thus replicating the outcomes of Studies 1 and 3.

The replication of the first investigation in Study 2 suggests the robustness of the Portuguese-language scale, since the respondents employed in these two investigations were of considerably different socioeconomic status (SES). Recall that Study 1 respondents were students attending a large public school, whereas those of the second investigation attended a small, selective, laboratory school, which was attached to a university. Given the similarity of results of Studies 1 and 2, it appears reasonable to infer that the instrument might function similarly across different SES groupings (at least in Brazil).

All of these observations reflect favorably on the two scales that have been developed in this research, and this leads us to hope that others will be encouraged to use these instruments in their own research on the self-concept. At the same time, we must also recommend caution when using and interpreting one or another of these scales. This caution is inspired by the fact that no validity test of the Spanish-language version of the scale was possible, and it is conceivable that the positive results of Study 2, which were obtained with the Portuguese-speaking Brazilian students, would not be replicated in samples of Spanish-speaking respondents. In addition, the validation process is still incomplete even for the Portuguese-language scale. Although the criterion validity of the instrument appears reasonably secure on the basis of Study 2, other forms of validity (e.g., construct, discriminant, convergent) have yet to be demonstrated (see Campbell, 1960; Campbell & Fiske, 1959; Mellon & Crano, 1977). Despite these cautions we believe, however, that the scales, as they have been developed

to this point, are of sufficient promise to merit further investigation. In this way we hope that the psychometric issues that are still unresolved will gradually be resolved, at least in part, by the work stimulated by this report. Such work will also add to the existing information surrounding the self-concept, a construct that appears to reside at the core of many of psychology's most pressing and important concerns.

REFERENCES

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*, 191–215.
- Bauermeister, J. J., & Colon, N. (1974). Rendimiento académico en función del nivel de ansiedad-rasgo, sexo y habilidad general. *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, *8*, 53–67.
- Berger, E. M. (1952). The relation between expressed acceptance of self and the expressed acceptance of others. *Journal of Abnormal and Social Psychology*, *47*, 778–782.
- Brookover, W. B., Patterson, A., & Thomas, S. (1964). Self-concept of ability and school achievement. *Sociology of Education*, *37*, 271–278.
- Buriel, R., & Vasquez, R. (1982). Stereotypes of Mexican descent persons: Attitudes of three generations of Mexican-Americans and Anglo-American adolescents. *Journal of Cross-Cultural Psychology*, *13*, 59–70.
- Campbell, D. T. (1960). Recommendations for APA test standards regarding construct, trait, or discriminant validity. *American Psychologist*, *15*, 546–553.
- Campbell, D. T., & Fiske, D. D. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, *56*, 81–105.
- Carbonara, N. T. (1961). *Techniques for observing normal child behavior*. Pittsburgh: University of Pittsburgh Press.
- Combs, A. W. (1965). *The professional education of teachers: A perceptual view of teacher preparation*. Boston: Allyn & Bacon.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: W. H. Freeman.
- Crano, W. D., & Brewer, M. B. (1973). *Principles of research in social psychology*. New York: McGraw-Hill.
- Eagly, A. H. (1967). Involvement as a determinant of response to favorable and unfavorable information. *Journal of Personality and Social Psychology*, Monograph, *7*(Whole No. 643), 1–15.

- Epstein, S. (1973). The self-concept revisited: Or a theory of a theory. *American Psychologist*, 28, 404-416.
- Fink, M. B. (1962). Self-concept as it relates to academic achievement. *California Journal of Educational Research*, 13, 57-62.
- Gergen, K. J. (1971). *The concept of self*. New York: Holt.
- Holtzman, W. H., Díaz-Guerrero, R., & Swartz, J. D. (1975). *Personality development in two cultures: A cross-cultural longitudinal study of school children in Mexico and the United States*. Austin: University of Texas Press.
- Janis, I. L., & Field, P. B. (1959). The Janis-Field feelings of inadequacy scale. In I. L. Janis & C. I. Hovland (Eds.), *Personality and persuasibility*. New Haven: Yale University Press.
- Kidder, L. H., & Campbell, D. T. (1970). The indirect testing of social attitudes. In G. F. Summers (Ed.), *Attitude measurement*. Chicago: Rand McNally.
- Labenne, W. D., & Greene, B. I. (1969). *Educational implications of self-concept theory*. Los Angeles: Goodyear.
- Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 35, 63-78.
- Mellon, P. M., & Crano, W. D. (1977). An extension and application of the multitrait-multimethod matrix technique. *Journal of Educational Psychology*, 69, 716-723.
- Messé, L. A., Crano, W. D., Messé, S. R., & Rice, W. (1979). Evaluation of the predictive validity of tests of mental ability for classroom performance in elementary grades. *Journal of Educational Psychology*, 71, 233-241.
- Montemayor, R., & Eisen, M. (1977). The development of self-conceptions from childhood to adolescence. *Developmental Psychology*, 13, 314-319.
- Nunnally, J. C. (1967). *Psychometric theory*. New York: McGraw-Hill.
- Poppovic, A. M. (1972). Fatores culturais, classe social e realização escolar na marginalização cultural. *Cadernos de Pesquisa* (São Paulo: Fundação Carlos Chagas), 6, 25-30.
- Poppovic, A. M., Espedito, Y., & Cruz, L. A. (1973). Índice de marginalização e características psicológicas de um grupo culturalmente marginalizados. *Cadernos de Pesquisa* (São Paulo: Fundação Carlos Chagas), 7, 11-59.
- Purkey, W. W. (1970). *Self-concept and school achievement*. Englewood Cliffs, NJ: Prentice-Hall.
- Robinson, J. P., & Shaver, P. R. (1973). *Measures of social psychological attitudes*. Ann Arbor: Survey Research Center.

- Rodrigues, A. (1983). *Psicologia social*. Petropolis, Brasil: Vozes.
- Rodrigues, A., & Comrey, A. L. (1974). Personality structure in Brazil and the United States. *Journal of Social Psychology, 92*, 19–26.
- Rodríguez, L., & Kimmel, H. D. (1970). Discrepancia entre el Yo Real y el Yo Ideal en Puerto Rico y en los Estados Unidos. *Revista Latinoamericana de Psicología, 2*, 353–365.
- Rohner, E. C., Rohner, R. P., & Roll, S. (1980). Perceived parental acceptance–rejection and children's reported behavioral dispositions: A comparative and intercultural study of American and Mexican children. *Journal of Cross-Cultural Psychology, 11*, 213–231.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schmidt, F. L., & Hunter, J. E. (1977). Development of a general solution to the problem of validity generalization. *Journal of Applied Psychology, 62*, 529–540.
- Schmidt, F. L., Pearlman, K., & Hunter, J. E. (1980). The validity and fairness of employment and educational tests for Hispanic Americans: A review and analysis. *Personnel Psychology, 33*, 705–724.
- Taliuli, N. (1982). *Atribuição de causalidade, auto-conceito e desempenho acadêmico: Um estudo com crianças de baixa renda*. Dissertação de mestrado. Universidade Federal do Espírito Santo.
- Tamayo, A. (1981). EFA: Escala fatorial de auto-conceito. *Arquivos Brasileiros de Psicologia, 33*, 87–102.
- Wegner, D. M., & Vallacher, R. R. (1980). *The self in social psychology*. New York: Oxford.
- Wylie, R. C. (1974). *The self-concept: A critical survey of pertinent research literature*. Lincoln: University of Nebraska Press.

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SUMÁRIO EXTENSO

Desenvolvimento das Medidas de Auto-Conceito para as Línguas Portuguesa e Espanhola

SUELLEN L. CRANO

e

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Um considerável corpo da investigação em psicologia sugere que o auto-conceito desempenha uma posição central no desenvolvimento cognitivo, social, e educacional. Com a intenção de facilitar a investigação nessa importante área da psicologia, este artigo descreve as técnicas empregadas em três estudos desenhados com a intenção de desenvolver uma medida do auto-conceito para as línguas portuguesa e espanhola.

No primeiro estudo, uma versão modificada por Eagly (1967) da escala de Janis e Field (1959) foi traduzida para o português e depois retraduzida por um grupo de brasileiros com fluente domínio do inglês. Depois de obtido um acordo sobre as 20 questões, a escala foi aplicada a 276 estudantes do curso secundário de um colégio na cidade de Porto Alegre, Brasil. Análises feitas sugeriram que a tradução foi bem sucedida—somente um pequeno número de sujeitos respondeu incorretamente às questões. Além disso, a escala provou ser internamente consistente (α do Cronbach = .86).

No segundo estudo, uma conhecida técnica (técnica de “grupos contrastantes”—Campbell, 1960; Crano & Brewer, 1973) foi usada para determinar a validade do critério do instrumento. Pediu-se a seis professores do segundo grau de uma escola-laboratório associada à Universidade Federal do Rio Grande do Sul (Porto Alegre, Brasil), para que classificassem os estudantes em um dos três níveis do auto-conceito—alto, médio ou baixo. Esses estudantes ($N = 192$) completaram a escala do auto-conceito, previamente traduzida do inglês, e os resultados obtidos foram comparados com as classificações feitas pelos professores. Tais investigações resultaram numa correlação significativa entre as classificações dos professores e os resultados dos estudantes ($p < .001$); além disso, a fidedignidade encontrada no primeiro estudo foi repetida no segundo (α do Cronbach = .83). Tal repetição foi especialmente interessante devido ao fato que as duas amostras de estudantes foram selecionadas de grupos com status sócio-econômico muito diferente.

No terceiro estudo, a escala de Eagly (1967) foi traduzida para o espanhol, e depois retraduzida para o inglês por hispânicos com fluente domínio desse idioma. A escala resultante foi aplicada a 144 estudantes de quatro países sul-americanos (Ecuador, Paraguai, Uruguai, e Venezuela). Os respondentes

eram estudantes de escola secundária em vias de embarque para um ano de intercâmbio educativo através de um programa administrado pelo American Field Service International. Os resultados desta investigação indicaram que a versão espanhola foi muito bem compreendida pelos estudantes. Nenhum deles deixou de responder a nenhuma questão. Além disso, tal como na versão em português, a consistência interna do instrumento em espanhol foi alta, o que indica que o processo de tradução produziu uma medida fidedigna (alpha do Cronbach = .79). Notou-se a necessidade de um maior aperfeiçoamento e teste da validade das escalas desenvolvidas nesta investigação, junto à possível utilidade de tais escalas para o contínuo progresso da teoria psicológica.

Una Escala de Locus de Control para Niños Mexicanos

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Se realizaron tres estudios para elaborar una escala de locus de control (LC) para niños mexicanos, la cual fue aplicada a un total de 999 niños y niñas, estudiantes de quinto y sexto año de primaria de escuelas públicas y privadas del Distrito Federal de México. Se describen los pasos que se llevaron a cabo para la construcción de la escala final de 30 ítems.

De acuerdo con el análisis factorial se definieron tres subescalas o dimensiones del LC: (a) Subescala Fatalista (SF), la cual se refiere a situaciones en las que el niño considera que no puede hacer nada para controlar su medio ambiente. (b) Subescala Afectiva (SA), se refiere a situaciones en las que el niño modifica su medio ambiente a través de sus relaciones afectivas con quienes le rodean. (c) Subescala Instrumental (SI), describe situaciones en las que el niño considera que es capaz de tener control, venciendo la dificultad. La SF podría considerarse como una forma de control externo; la SA y la SI como formas de control interno.

Los resultados apoyan el argumento de multidimensionalidad del constructo de LC.

El concepto de locus de control desarrollado por Rotter (1966) plantea la existencia de un control de reforzamiento interno-externo, el cual se refiere al grado en que un individuo considera que los reforzamientos son contingentes a su conducta. Un individuo interno es aquél que considera que los reforzamientos son contingentes a sus conductas, capacidades o habilidades; mientras que un

individuo externo es el que supone que los reforzamientos no están bajo su control, sino que son controlados por otros factores, por el poder de otros o bien por la suerte. Con base en este concepto se considera que una persona desarrollará un rasgo consistente ya sea interno o externo dependiendo de sus experiencias de reforzamiento pasadas.

Existen numerosas investigaciones (p.ej., Joe, 1971; Lefcourt, 1966) en las que se ha encontrado que el locus de control es predictor de diferentes conductas sociales, como son: logros en el aprendizaje, conformismo, toma de riesgos, influencia social, etc., lo cual hace de este concepto un objetivo importante de investigación científica que permita explicar la habilidad del ser humano para controlar su medio ambiente.

El instrumento que más se ha usado para medir locus de control en adultos es la escala de internalidad–externalidad de Rotter (1966) cuya unidimensionalidad es cuestionable según lo muestran diversos estudios, dentro de los cuales, algunos sugieren una distinción entre *control personal* y *control ideológico*, más que enfocarse a un solo atributo (Abrahamson, Schludermann y Schludermann, 1973; Barling y Bolon, 1980; Carment, 1974; Lao, 1970; Niles, 1981; Trimble y Richardson, 1982; Viney, 1974). Esta diferenciación se refiere al nivel de control que una persona cree que la mayoría de la gente de su sociedad posee (control ideológico) y al nivel de control individual propio que cree poseer esa persona (control personal). Los autores que apoyan esta diferenciación consideran que a pesar de que Rotter (1966) define control interno como creencias individuales sobre las contingencias de la propia conducta, su escala internalidad–externalidad contiene sólo algunos ítemes que se relacionan con creencias personales, pues la mayoría de los ítemes enfrentan a las personas con adherencias individuales a creencias ideológicas acerca de lo que determina el éxito para la mayoría de la gente en su sociedad.

Otros autores sugieren la separación de el poder de otros y la suerte en lo referente a la dimensión de externalidad (Levenson, 1973; Niles, 1981) y definen el factor suerte como “fatalismo”.

También se han encontrado diferentes dimensiones en diferentes poblaciones (Escovar, 1984; Jones y Zoppel, 1979) y aunque algunos factores son similares, su peso es mayor en unas poblaciones que en otras.

Una explicación de las dimensiones de locus de control puede estar basada en diferencias culturales, donde la ideología juegue un papel importante, ya que la percepción de las conductas que un individuo pueda controlar será determinado por las normas que rigen a dicha sociedad; por lo tanto, se esperaría que las premisas socioculturales dictaminaran los parámetros del locus de control.

Por lo que respecta a las formas de medición utilizadas con niños, están entre otras, la escala de locus de control para niños de Nowicki y Strickland (1973) y el cuestionario de responsabilidad de logro intelectual de Crandall, Kratkovsky y Crandall (1965). También se ha cuestionado la unidimensionalidad de estas formas de medición (Milgram y Milgram, 1975), así como su validez y confiabilidad (Gorsuch, Henighan y Barnard, 1972).

Con fundamento en lo anterior y considerando la importancia de tener una escala válida y confiable para medir locus de control en niños, se diseñó el presente estudio cuyo objetivo es elaborar una escala de locus de control para niños mexicanos. Primeramente, se utilizó la escala de locus de control para niños de Nowicki y Strickland (1973), la cual fue traducida al español por uno de los autores, posteriormente fue retraducida al inglés por el otro autor, con la finalidad de tener una escala equivalente. La escala original de Nowicki y Strickland consta de 40 preguntas de respuestas dicótomas (sí-no); los coeficientes de consistencia interna que los autores obtuvieron son los siguientes: $r = .63$ (3°, 4° y 5° grado); $r = .68$ (6°, 7° y 8° grado); $r = .74$ (9°, 10° y 11° grado).

PRIMER ESTUDIO

Sujetos

Se utilizaron 319 sujetos, 155 niñas y 164 niños, estudiantes de primaria de 2 escuelas públicas y 2 privadas del Distrito Federal de México; 174 cursaban el sexto año y 145 quinto año; aunque las edades de los sujetos fluctuaron entre 9 y 16 años, la mayoría tenían 11 años ($M = 11.89$; $DE = 1.42$). La selección de los sujetos fue de tipo propositivo, ya que dependió básicamente del acceso a los planteles en los que estudiaban los niños. Inicialmente se realizaron análisis estadísticos por grado y por sexo, no encontrándose diferencias, por lo cual se decidió realizar los análisis en forma global.

Instrumento

Se aplicó la escala de Nowicki y Strickland (1973) traducida al español.

Procedimiento

La escala se aplicó a los niños por grupos, durante sus actividades escolares. Antes de iniciar la aplicación se dijo a los niños lo siguiente: "Estamos realizando una investigación para conocer qué piensan los niños que cursan quinto y sexto año de primaria acerca de la vida. En este cuestionario no hay respuestas buenas ni malas, simplemente es lo que cada uno de ustedes piensa." Posteriormente se les entregaban los cuestionarios y se leían las instrucciones del mismo en voz alta; una vez que no existían dudas sobre la forma de responder, los niños procedían a contestar el cuestionario.

Resultados

Los resultados fueron analizados utilizando el *Paquete estadístico de las ciencias sociales* (Nie, Hull, Jenkins, Steinbrenner y Bent, 1975). Inicialmente

se realizó un análisis factorial, de componentes principales sin iteración y con rotación directa oblimin ($\delta = 0$). Se utilizó la rotación directa oblimin dado que teóricamente los conceptos representados por las afirmaciones que conforman la escala están correlacionados.

El análisis factorial mostró 16 factores iniciales con autovalores mayores de 1. Se decidió elegir los 3 primeros factores, que explican el 18.3% de la varianza total de la escala, porque los factores restantes no tenían claridad conceptual.

Posteriormente se eligieron los ítems con peso factorial mayor a .20 de cada uno de los factores y se definieron 3 subescalas: Instrumental (SI), Afectiva (SA) y Fatalista (SF). La SI se refiere a situaciones en las que el niño trata de hacer algo por conseguir lo que quiere o modificar directamente el medio ambiente. La SA se refiere a situaciones familiares o filiales en las que el niño puede conseguir algo si él es "bueno", es decir, modifica su medio ambiente a través de sus relaciones afectivas con quienes le rodean. La SF describe situaciones en las que el niño considera que no puede hacer nada para controlar las situaciones, ya que cree que la vida está determinada.

Posteriormente se obtuvo la confiabilidad de cada una de las subescalas por medio del α de Cronbach, pero el valor de α fue muy bajo (SI, $\alpha = .30$; SA, $\alpha = .45$; SF, $\alpha = .38$). Dado esto se decidió construir una nueva escala considerando los 3 factores encontrados, así como los ítems de cada factor que mostraron la confiabilidad más alta y se añadieron ítems semejantes para cada uno de los factores, quedando una nueva escala de 36 ítems.

SEGUNDO ESTUDIO

Sujetos

Se utilizaron 378 sujetos, 173 niñas y 205 niños estudiantes de sexto año de primaria de 4 escuelas públicas del Distrito Federal de México; las edades de los niños fluctuaron entre los 9 y los 15 años. ($M = 11.59$; $DE = 1.01$). La selección de los sujetos se hizo en la misma forma que en el primer estudio.

Instrumento

Se aplicó la nueva escala elaborada de acuerdo con los resultados del primer estudio.

Procedimiento

Se procedió de la misma forma que en el primer estudio.

Resultados

Los resultados también fueron sometidos a análisis factorial de componentes principales sin iteración y con rotación directa oblimin ($\delta = 0$), encontrándose 15 factores con autovalores mayores a 1 de los cuales se eligieron los 3 primeros, que explican el 22.9% de la varianza total de la escala, por su claridad conceptual. Posteriormente se eligieron los ítems con peso factorial mayor a .30 de cada uno de los factores y se obtuvo la confiabilidad de cada subescala. La confiabilidad obtenida por alpha de Cronbach fue la siguiente: SI, $\alpha = .54$; SA, $\alpha = .45$; SF, $\alpha = .48$. Dado que estos coeficientes de confiabilidad aún no eran satisfactorios, se procedió a realizar un tercer estudio.

TERCER ESTUDIO

Sujetos

Se utilizaron 302 sujetos, 190 niñas y 112 niños estudiantes de 6° año de primaria de 2 escuelas públicas y 2 privadas del Distrito Federal de México; las edades de los niños fluctuaron entre 10 y 15 años ($M = 11.33$; $DE = 1.03$). La selección de los sujetos se hizo en la misma forma que en los estudios anteriores.

Instrumento

Se aplicó una nueva escala de 44 ítems, elaborada de acuerdo con los resultados del segundo estudio.

Procedimiento

Se procedió de la misma forma que en los estudios anteriores.

Resultados

Se realizó nuevamente análisis factorial de componentes principales sin iteración y con rotación directa oblimin ($\delta = 0$), encontrándose 17 factores iniciales con autovalores mayores a 1. Se eligieron solamente los tres primeros factores, que explican el 19.3% de la varianza total de la escala, porque los restantes no tenían claridad conceptual.

Posteriormente se seleccionaron los ítems con peso factorial mayor a .30

(Tabla 1), quedando una escala total de 30 ítems y 3 subescalas integradas de la siguiente forma (ver Apéndice):

SF: ítems 1, 2, 3, 4, 6, 8, 15, 16, 18, 21, 22, 26, 27, 30

SA: ítems 5, 9, 10, 12, 13, 14, 19, 20, 24, 25, 28

SI: ítems 3, 4, 7, 11, 17, 23, 29

Tabla 1
Pesos Factoriales de la Matriz Patrón

Ítem	Factor		
	1 (SF)	2 (SA)	3 (SI)
El esfuerzo es inútil	.40	-.08	.00
Los padres deciden por el niño	.39	-.14	-.16
Todo sale mal	.39	-.16	.35
Forma de ser sin control	.30	-.05	.41
Esfuerzo mejor que suerte	-.41	.18	.02
Resolver problemas olvidándolos	.31	.20	.14
No importa lo que haga	.33	.16	.07
Mejor suerte que inteligencia	.64	.16	.11
Me gusta luchar	-.30	.04	.02
Mejores alumnos los que tienen suerte	.63	.05	-.03
Todos deciden por mí	.41	-.02	.14
Todo sale bien por suerte	.61	.07	-.03
Problemas se resuelven solos	.30	-.02	.06
Es mejor la suerte	.64	.07	-.01
Caer bien a la gente	-.18	.30	-.21
Entusiasmo mejor que suerte	-.07	.34	.27
Decidir los amigos	-.07	.42	.21
Papás buenos si soy bueno	.21	.30	-.18
Decidir la comida	-.02	.42	-.05
Padres deben dejar decidir	-.24	.46	-.11
“Caer bien” ayuda	.08	.51	-.07
Decido por mí	.03	.36	.19
Importante ser bueno	.09	.38	.11
Decidir por los amigos	.04	.40	-.07
Capaz de decidir	-.25	.43	.06
Todo sale mal	.39	-.16	.35
Forma de ser fuera de control	.29	-.05	.41
Difícil de cambiar las cosas	.15	.13	.42
Todo en la vida difícil	.12	-.05	.54
Controlar forma de actuar	-.04	.23	-.30
La vida es difícil	.03	.04	.62
Difícil caer bien	.07	-.03	.52

La confiabilidad obtenida por alpha de Cronbach para cada una de las subescalas fue la siguiente: SF, $\alpha = .73$; SA, $\alpha = .57$; SI, $\alpha = .66$.

Cabe destacar que los ítems que conformaron la SI se refieren a situaciones

que implican dificultad para conseguir algo o para modificar directamente el medio ambiente.

DISCUSIÓN

Los resultados del presente estudio apoyan el argumento de multidimensionalidad del concepto de locus de control, que se ha encontrado en los estudios realizados con sujetos de culturas diferentes a la anglosajona (Carment, 1974; Lao, 1970; Trimble y Richardson, 1982).

En la muestra estudiada se encontraron tres factores de control: fatalista, instrumental y afectivo; conformándose tres subescalas. La SI bipolar, que en un extremo mide internalidad y en el opuesto externalidad, sería la más parecida al concepto tradicional de locus de control planteado por Rotter (1966); asimismo se refiere al concepto de control personal descrito por algunos autores (Carment, 1974; Lao, 1970; Trimble y Richardson, 1982). La dimensión instrumental aparece consistentemente en estudios realizados con diferentes culturas; sin embargo, la existencia de otras subescalas que varían de cultura a cultura, las cuales miden características individuales que influyen en el tipo de control que los individuos utilizan, impide predecir con exactitud las tendencias hacia control interno y externo basándose solamente en la escala tradicional.

La SA que se refiere a la modificación del medio ambiente a través de las relaciones afectivas, no se indica en otros estudios. Se considera que esta subescala representa la ideología control (Carment, 1974; Trimble y Richardson, 1981) de niños mexicanos, ya que una importante premisa sociocultural del mexicano es la obediencia afiliativa (Díaz-Guerrero, 1982) que dicta que siempre se debe obedecer a los padres y que hay ciertas conductas que sólo ellos pueden realizar. Esto significa que los niños mexicanos pueden tener diferentes normas para los comportamientos sobre los que ellos ejercen control y para los que sólo los adultos tienen control. Sin embargo, pueden lograr sus metas con respecto a comportamientos controlados por los adultos, de manera indirecta, a través de las relaciones afectivas con éstos. Por ejemplo, si un niño se comporta "bien", esto es, hace lo que su papá le pide, podrá recibir a cambio algo que está fuera del control ideológico de todos los niños, como sería el decidir qué quiere comer.

Dentro del marco tradicional de Rotter (1966) que fue elaborado dentro de una cultura anglosajona, en la cual se fomentan los comportamientos instrumentales y los que demuestran independencia de los demás, los ítemes de esta subescala podrán considerarse como representativos de control externo, ya que se refieren a situaciones en las que el niño depende de otros; sin embargo, enmarcados en culturas latinas, donde las relaciones afectivas juegan un papel fundamental en el comportamiento, pueden considerarse como características de

control interno, pues de alguna manera los niños ejercen una forma de control que se manifiesta en una presión de tipo afiliativo hacia aquellos que pueden ejecutar la conducta.

Lo anterior demuestra la importancia de tomar en cuenta las características culturales no sólo para la elaboración de instrumentos sino también para la conceptualización de éstos, ya que de lo contrario se puede caer en el error de considerar como externos a un grupo de latinos que en realidad están haciendo algo por modificar su medio ambiente.

Por lo que respecta al contenido de la SF podría considerarse que ésta representa una forma extrema de control externo; inclusive Rotter (1966) plantea que las personas externas tienden a ser fatalistas. Lo importante es que en México esta característica formó un factor independiente. La aparición de este factor se podría deber a la importancia que se le da al fatalismo en México (Díaz-Guerrero, 1982). Es lógico que a mayor énfasis en un fenómeno dentro de un grupo cultural, se produzca mayor diferenciación dentro de éste. Este factor también se ha encontrado en otras culturas (Niles, 1981).

Resumiendo se puede decir que en el caso de los niños mexicanos se encontró que existe más de una forma de ser interno, ya que, un niño puede estar orientado a intentar resolver situaciones difíciles y por lo tanto puede lograr sus metas interviniendo directamente sobre el medio (SI) o indirectamente a través de sus relaciones afectivas (SA) con otros. Al mismo tiempo es posible que exista más de una forma de ser externo: el externo instrumental, el externo afectivo y el fatalista; éste último, de acuerdo con el contenido de los ítems del cuestionario, está representado por niños que consideran que el control está en el poder de fuerzas superiores (p.ej., Dios, suerte, destino).

Una serie de investigaciones se puede derivar de los hallazgos de este estudio. Es esencial hacer experimentos para validar la escala; éstos pueden tomar la forma de estudios correlacionales con otras escalas estandarizadas en México, buscando la convergencia y divergencia correspondientes. También pueden realizarse estudios en los cuales se hagan predicciones de la conducta que debe producir el tener diferentes niveles en cada una de las subescalas.

REFERENCIAS

- Abrahamson, D., Schludermann, S., y Schludermann, E. (1973). Replication of dimensions of locus of control. *Journal of Consulting and Clinical Psychology, 41*, 320.
- Barling, J., y Bolon, K. (1980). Multidimensional locus of control: The case of white South African students. *Journal of Social Psychology, 111*, 295-296.
- Carment, D. W. (1974). Internal versus external control in India and Canada. *International Journal of Psychology, 9*(1), 45-50.
- Crandall, V. C., Katkovsky, W., y Crandall, V. J. (1965). Children's beliefs in

- their own control of reinforcements in intellectual academic achievement situations. *Child Development*, 36, 91-109.
- Díaz-Guerrero, R. (1982). *Psicología del Mexicano*. México: Trillas.
- Escovar, L. A. (1984). *Dimensionality of the I-E scale: A cross-cultural comparison*. Manuscrito inédito.
- Gorsuch, R. L., Henighan, R. P., y Barnard, C. (1972). Locus of control: An example of dangers in using children's scales with children. *Child Development*, 43, 579-590.
- Joe, V. C. (1971). Review of the internal-external control construct as a personality variable. *Psychological Reports*, 28, 619-640.
- Jones, E. E., y Zoppel, C. I. (1979). Personality differences among blacks in Jamaica and the United States. *Journal of Cross-Cultural Psychology*, 10(4), 435-456.
- Lao, R. C. (1970). Internal-external control and competent and innovative behavior among Negro college students. *Journal of Personality and Social Psychology*, 14(3), 263-270.
- Lefcourt, H. M. (1966). Internal versus external control of reinforcement: A review. *Psychological Bulletin*, 65, 206-220.
- Levenson, H. (1973). Multidimensional locus of control in psychiatric patients. *Journal of Consulting and Clinical Psychology*, 41, 3, 397-404.
- Milgram, N. A., y Milgram, R. M. (1975). Dimensions of locus of control in children. *Psychological Reports*, 37, 523-538.
- Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., y Bent, D. H. (1975). *SPSS: Statistical package for the social sciences*. New York: McGraw-Hill.
- Niles, F. S. (1981). Dimensionality of Rotter's I/E scale in Sri Lanka. *Journal of Cross-Cultural Psychology*, 12(4), 473-479.
- Nowicki, S., y Strickland, B. R. (1973). A locus of control scale for children. *Journal of Consulting and Clinical Psychology*, 40(1), 148-154.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80(Whole No. 609).
- Trimble, J. E., y Richardson, S. S. (1982). Locus of control measures among American Indians. *Journal of Cross-Cultural Psychology*, 13(2), 228-238.
- Viney, L. L. (1974). Multidimensionality of perceived locus of control: Two replications. *Journal of Consulting and Clinical Psychology*, 42(3), 463-464.

APÉNDICE

Cuestionario

Instrucciones: A continuación encontrarás una lista de afirmaciones, lee cada una de ellas con cuidado. Si estás de acuerdo con lo que dice la afirmación marca una equis en el paréntesis que dice *sí* (x). Si no estás de acuerdo marca con una equis en el paréntesis que dice *no* (x).

1. Es casi inútil esforzarse en la escuela porque la mayoría de los niños son más inteligentes que yo.
2. Mis papás siempre deciden lo que yo tengo que hacer.
3. Todo lo que hago siempre me sale mal.
4. Mi forma de ser está fuera de mi control.
5. Le caigo bien a la gente por mi forma de ser.
6. Yo creo más en el esfuerzo y la dedicación que en la suerte.
7. En la vida aunque se luche es muy difícil cambiar las cosas.
8. Una de las mejores formas de resolver los problemas es olvidarse de ellos.
9. El entusiasmo más que la suerte ayuda a un equipo a ganar.
10. Yo decido quienes van a ser mis amigos.
11. Todo en la vida es difícil de conseguir.
12. Mis papás son buenos conmigo si yo soy bueno con ellos.
13. A veces yo decido lo que me dan de comer en mi casa.
14. Mis papás deben dejarme tomar algunas decisiones.
15. Si las cosas comienzan bien en la mañana, va a ser un buen día sin importar lo que yo haga.
16. La suerte vale más que la inteligencia.
17. Yo puedo controlar mi forma de actuar.
18. Me gusta luchar para lograr mis propósitos.
19. Si le caigo bien a la gente me ayudará.
20. Yo decido por mi mismo.
21. Los mejores alumnos son los que tienen suerte.

22. Todas las personas deciden lo que tengo que hacer.
23. La vida es muy difícil.
24. Es importante ser bueno para conseguir muchas cosas.
25. A veces yo decido lo que mis amigos y yo haremos.
26. Todo lo que hago me sale bien gracias a la suerte.
27. Todos los problemas se resuelven solos.
28. Soy capaz de tomar algunas decisiones.
29. Es difícil caerle bien a la gente.
30. Es mejor tener suerte que ser inteligente.

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EXTENDED SUMMARY

A Locus of Control Scale for Mexican Children

ROLANDO DÍAZ-LOVING

and

PATRICIA ANDRADE-PALOS

A series of three studies was conducted in order to develop a scale to measure locus of control in Mexican children. A total of 999 boys and girls from fifth and sixth grades in public and private schools in Mexico City participated.

In Study 1, the Locus-of-Control Scale for Children, developed by Nowicki and Strickland (1973), was adapted to the Spanish language by the translation-back-translation technique, and was answered by a set of the above-mentioned children. The responses were analyzed as follows. First, principal-components factor analysis with no iterations and a direct oblimin rotation ($\delta = 0$) was conducted; sixteen initial factors with eigenvalues greater than 1 appeared. Since only the first three, explaining 18.3% of the total variance, were conceptually clear, the remaining factors were discarded.

As a second step, items with factor weights greater than .20 for each of the three factors were selected and submitted to Cronbach coefficient alpha analysis in order to obtain the internal consistency for each subscale. The subscales were defined as follows: (a) Instrumental, referring to situations in which children do something directly to modify their environment; (b) Expressive, referring to familial or affective situations in which children can obtain what they want or modify their environment by using affective and expressive skills to influence others; and (c) Fatalism, describing situations in which children decide that there is nothing they can do to obtain control.

Because the internal-consistency coefficients for the subscales were low, items with the highest factor weights were kept, and new items were developed that fitted the conceptual definition for each factor. The new 36-item instrument was administered in Study 2 to a sample of children similar to those of the first study. The statistical analysis and criteria of the first study were used. Although the internal-consistency coefficients were higher than in the first study, they were still not satisfactory and thus prompted the execution of a third study.

In Study 3, unreliable items from the second inventory were excluded, and new items were created to form a 44-item inventory that was administered to a new set of children. Again, a principal-components factor analysis with no iterations and direct oblimin rotation ($\delta = 0$) was conducted. Only the first three factors, explaining 19.3% of the variance, were considered since they corresponded to the three conceptually defined subscales of Studies 1 and 2.

Items having factor weights higher than .30 for each subscale were extracted and submitted to Cronbach coefficient alpha analysis. The internal-consistency coefficients obtained were: Instrumental, $\alpha = .66$; Expressive, $\alpha = .57$; and Fatalism, $\alpha = .73$.

The results of these studies are congruent with the multidimensional conceptualization of locus of control found in studies conducted with non-Anglo Saxon cultures (Carment, 1974; Lao, 1970; Trimble & Richardson, 1982). For the present study, the control dimensions that emerged were fatalism, instrumental, and expressive.

The fatalism dimension has been considered, even by Rotter (1966), to represent an extreme form of external control. The expressive dimension, which had not appeared in previous studies, seems to represent the mode of control of Mexican children. We believe that the expressive dimension is a general form of internal control in more affiliative cultures, where the children are expected to use indirect channels to modify their environment. Finally, the instrumental subscale appears to be closest to the idea of internal control advanced by Rotter (1966).

Umbral Sensorial y Tiempo de Tolerancia a Diferentes Estímulos Aversivos y su Relación con Factores de Personalidad

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Frecuentemente se señala la importancia que las variables de personalidad tendrían para explicar la percepción del dolor. Se diseñó un experimento para contrastar las predicciones que, a partir de los modelos de personalidad de H. J. Eysenck y J. A. Gray, se pueden formular sobre las diferencias en la percepción de estímulos dolorosos. Se analizan los umbrales sensoriales, tiempos de tolerancia al dolor y rango de sensibilidad en la prueba del agua helada (Cold-Pressor Test), y el valor máximo de descarga eléctrica tolerada. Los resultados no apoyan las predicciones del modelo de Eysenck y solamente prestarían un ligero apoyo al modelo de Gray en cuanto que, aunque no alcanzan valores significativos, aparecen en la dirección esperada. Las bajas correlaciones entre las diferentes medidas de sensibilidad al dolor (entre ellas las referidas a ambas manos) cuestionan el valor de formular predicciones específicas a partir de una sola variable de tipo general, como el nivel de activación cortical, y el considerar una estructura básica única, la personalidad, para explicar la percepción del dolor. Se considera como alternativa el acercamiento propuesto por la psicología soviética de analizar tanto tipologías parciales como una tipología general, o el desarrollado por las técnicas de modificación de conducta, en especial el estudio de los aspectos específicos que caracterizan los patrones conductuales de los sujetos ante los estímulos nocivos.

El trabajo de Melzack y Wall (1965) produjo un cambio significativo en la orientación del estudio del dolor al resaltar la importancia de considerarlo como una percepción, variando de esta forma el punto de vista tradicional seguido por la medicina que le consideraba como una sensación. Dado que, en la percepción del dolor, tan importantes como los aspectos meramente sensoriales son los motivacionales y los cognitivos, se ha comenzado a prestar atención de manera progresiva a las diferentes variables psicológicas implicadas en esta percepción (Barber y Adrian, 1982; Bonica, 1980; Bonica y Albe-Fessard, 1983; Turk, Meichenbaum y Genest, 1983).

Entre los distintos acercamientos psicológicos al estudio del dolor es posible que el de la personalidad ayude a clarificar, si no el por qué los sujetos perciben dolor, sí al menos por qué algunos tienen una mayor sensibilidad y/o tolerancia a éste. Aunque el tema en cuestión, como todos los relacionados de alguna manera con la personalidad, tiene una larga historia que no suele relacionarse con resultados claros, concluyentes y operativos.

En este trabajo interesa constatar si las predicciones formuladas por algunos modelos de personalidad, en especial los modelos biológico-factoriales y más en concreto los de Eysenck (1967, 1976, 1981) y Gray (1970, 1973, 1981), son capaces de explicar las diferencias en las respuestas de sensibilidad y tolerancia a los estímulos nocivos de las personas.

Estos dos modelos establecen unas claras predicciones: las personas introvertidas mostrarán una mayor sensibilidad ante los estímulos aversivos que las extrovertidas. lo que implica tanto que su umbral para la percepción de un estímulo sea más bajo, como que el tiempo durante el cual pueda soportar este estímulo tras su aparición sea menor. Aunque las predicciones comportamentales formuladas a partir de ambos modelos coinciden, al menos parcialmente, las explicaciones subyacentes a éstas son diferentes. Según Eysenck la mayor sensibilidad de los introvertidos se deberá a su mayor nivel de activación cortical o "arousal". Según Gray a las diferencias con que analizan y son afectados por los estímulos en función de sus cualidades motivacionales. Así, las personas extravertidas atenderían y se verían afectadas preferentemente por los estímulos reforzadores, positivos o negativos, prestando poca atención a los aversivos, mientras que las introvertidas serían especialmente sensibles a los estímulos aversivos y/o frustradores pero no a los reforzadores.

Con respecto a la dimensión de Neuroticismo, las predicciones de ambos modelos son diferentes. Para Eysenck no pueden establecerse diferencias en función del grado de Neuroticismo de las personas, ya que éste, salvo casos muy excepcionales, no afecta al nivel de "arousal". Para Gray el nivel de Neuroticismo influye decisivamente al interaccionar con el nivel de Extraversión, actuando como un amplificador de los valores en esta dimensión. Así, los sujetos con valores altos en Neuroticismo y bajos en Extraversión (NI) serían los que mayor sensibilidad presentarían ante los estímulos dolorosos (o si se prefiere, de acuerdo con la rotación de ejes propuesta por Gray, los sujetos con valores altos en Ansiedad), mientras que las personas con valores bajos en Neuroticismo y

altos en Extraversión (CE) serían los que menor sensibilidad mostrarían al dolor.

A pesar de estas diferencias, ambos modelos de personalidad suponen que, a través de cualquier manipulación de diferentes variables independientes de un experimento, las variables dependientes que aparezcan pondrán en evidencia la estructura básica de la personalidad del sujeto humano, dado que ésta es única y subyace y organiza la puesta en marcha de todas sus conductas. Esta estructura de personalidad aparecerá aunque se estudien diferentes índices tipológicos, o se usen diferentes índices de respuesta, o diferentes estímulos, dado que las propiedades básicas siempre son las mismas y por lo tanto la estructura de la personalidad que surja ha de ser siempre idéntica. Así pues, siempre que se presente un estímulo, sea cual sea éste, se presente en la modalidad que se presente y afecte a la zona del cuerpo que afecte, la respuesta de la persona, incluso cuando se mida a través de diferentes índices, será similar. En concreto, la persona que sea muy sensible a un determinado estímulo nocivo debe serlo también a cualquier otro que tenga esas características.

Una revisión de la literatura experimental relacionada con el tema, ciertamente no muy abundante, no aporta conclusiones claras sobre este punto. Así, algunos trabajos apoyan la predicción de la mayor sensibilidad de los sujetos introvertidos a los estímulos aversivos (Haslam, 1966, 1967, 1972; Lynn y Eysenck, 1961; Schalling y Levander, 1964; Shiomi, 1977), o apoyan esta predicción de acuerdo con la formulación de Gray que incluye además la menor sensibilidad de estas personas a estímulos reforzadores (Gupta, 1976; Gupta y Nagpal, 1978; Seunath, 1975). Otros trabajos no han conseguido replicar estos resultados (Levander, 1966; Levine, Tursky y Nichols, 1966), o como en los trabajos de Schalling (1971) y Shiomi (1978), han encontrado que aunque la sensibilidad al dolor correlaciona negativamente con el nivel de Extraversión, también lo hace con el nivel de Neuroticismo, en contra de lo indicado por Eysenck, siendo en algunos casos más importante el valor en Neuroticismo que el de Extraversión para explicar las diferencias en sensibilidad al dolor, como en el estudio de McCreary (1979). Esta correlación entre Neuroticismo y sensibilidad al dolor también ha aparecido, entre otros, en los trabajos de Kuhlman (1974), Elton, Vagg y Stanley (1978) y Phillips y Hunter (1981). Por último, en otros casos los resultados eran más complejos, por ejemplo en el estudio de Davidson y McDougal (1969) se confirmó la predicción de mayor sensibilidad a estímulos aversivos de las personas introvertidas cuando se utilizaron estímulos eléctricos pero no con estímulos térmicos, o en el de Labrador (1980a) los resultados apoyaron la predicción de Gray cuando la tarea implicaba estímulos auditivos pero no cuando eran visuales.

Con el objetivo de aportar claridad a tan confuso panorama se diseñó un experimento en el que, utilizando las dos pruebas que parecen más indicadas para el estudio del dolor (Wolf, 1980)—la prueba del agua helada (Cold-Pressor Test) y la estimulación con descargas eléctricas—, se intentó someter a prueba las tres predicciones centrales que pueden desarrollarse a partir de los modelos de

personalidad en cuestión sobre las diferencias individuales en la percepción del dolor. La primera, derivada del modelo de Eysenck, postula que cuanto menor sea la puntuación de las personas en Extraversión, dado que sus niveles de "arousal" cortical serán mayores, menores serán sus umbrales sensoriales y sus tiempos de tolerancia al dolor. La segunda, también derivada del modelo de Eysenck, postula que, dado que el Neuroticismo es una dimensión ortogonal a la Extraversión, las puntuaciones en Neuroticismo que alcancen las personas no servirán para diferenciar a éstas en cuanto a sus umbrales sensoriales ni tiempos de tolerancia al dolor, al estar regulados éstos por el nivel de Extraversión. La tercera, derivada del modelo de Gray, postula que las personas con valores bajos en Extraversión y altos en Neuroticismo (NI) con respecto a los sujetos con valores altos en Extraversión y bajos en Neuroticismo (CE) presentarán umbrales sensoriales menores y tiempo de tolerancia al dolor más cortos.

MÉTODO

Sujetos

Participaron como sujetos 51 estudiantes universitarios con edades entre 19 y 21 años, de los cuales 15 eran varones. Todos los sujetos eran alumnos de segundo curso de Psicología que se habían apuntado voluntariamente a un seminario sobre modelos de personalidad y fueron informados de manera exclusiva y detallada sobre el tipo de estímulos que se iban a utilizar en la prueba. De la muestra inicial de 63 sujetos 51 aceptaron voluntariamente participar y son los considerados en este trabajo.

Estímulos

Como estímulos aversivos se utilizaron: (a) agua a una temperatura entre 0 y 1 grados centígrados y (b) descargas eléctricas de intensidades comprendidas en 0.4 y 3 miliamperios. El orden en que se aplicaban estas descargas siempre era el mismo: 0.4, 0.5, 0.75, 1, 1.25, 1.50, 1.75, 2, 2.25, 2.50, 2.75 y 3 miliamperios.

Instrumentos

Para la aplicación del primer tipo de estímulos se utilizaron cubetas de 39 × 32 × 10 centímetros, en las que se contenía el agua a una temperatura entre 0 y 1 grados centígrados (se comprobaba la temperatura momentos antes de que cada sujeto pasara la prueba).

Para la aplicación de las descargas eléctricas se utilizó un dispensador de descargas modelo ROA-81, este modelo tiene un programador que permite regular la intensidad de las descargas desde 0.4 hasta 3 miliamperios, para una resistencia de la piel de los sujetos entre 50 y 150 Kilohmios. Los dos electrodos a través de los cuales se aplicaban las descargas se colocaron sobre los dedos índice y corazón de la mano izquierda. Un mando a distancia permitía que, aunque el experimentador regulara los valores de intensidad de la descarga, fuera el sujeto el que apretara el mando para que ésta se produjera.

Variables

Variables de personalidad. Se consideraron las dimensiones de Neuroticismo (N) y Extraversión (E) medidas por el Eysenck Personality Inventory (Eysenck y Eysenck, 1964), escala A, según la adaptación realizada por TEA (1973) para la población española. Así mismo se consideraron las diferencias en función del sexo controlándose por balanceo. La variable edad no se tuvo en cuenta por ser prácticamente la misma en todos los sujetos ($M = 19.18$; $DE = 0.7$).

Variables independientes experimentales. (a) Estimulación con agua fría de la mano derecha, (b) estimulación con descargas eléctricas de la mano izquierda y (c) estimulación con agua fría de la mano izquierda.

Variables dependientes. Con respecto a las condiciones de estimulación con agua fría (Cold-Pressor Test) se utilizaron: (a) el umbral de sensibilidad al dolor (USD), considerando como tal el tiempo desde que el sujeto introduce la mano en el agua hasta que informa que comienza a sentir dolor; (b) tiempo de tolerancia al dolor (TTD), considerando como tal el tiempo que permanecía el sujeto con la mano en el agua; (c) rango de sensibilidad al dolor, considerando como tal la diferencia entre tiempo de tolerancia al dolor y umbral de sensibilidad al dolor ($TTD - USD$).

Con respecto a las condiciones de estimulación con descargas eléctricas se consideró el valor de la máxima descarga tolerada (VTS) medida en miliamperios.

Procedimiento Experimental

Las pruebas para medir las variables de personalidad se realizaron en una sesión anterior a la de la tarea experimental. Durante la prueba experimental los sujetos pasaron por todas las condiciones y siempre en el mismo orden. Primeramente fueron introducidos en la cabina número 1 donde introducían la mano derecha en la cubeta del agua fría. El sujeto informaba cuando comenzaba a sentir dolor (USD) y ponía fin a la prueba cuando ya no podía aguantar más el dolor (TTD). El tiempo máximo de permanencia en el agua permitido fue de 5

minutos, utilizado como margen de seguridad para evitar posibles problemas circulatorios.

Acabada esta prueba el sujeto pasaba a la cabina número 2 donde se llevaba a cabo la prueba de descargas eléctricas. Aunque el experimentador regulaba la intensidad de las descargas era el propio sujeto el que accionaba el interruptor que las producía. Así, el experimentador indicaba cada 15 segundos al sujeto que apretara el interruptor y paralelamente iba aumentando la intensidad de la descarga de acuerdo con los valores indicados, hasta que, a indicación del sujeto, se daba por concluida la prueba. Tras esta prueba los sujetos pasaban a la cabina número 3 donde se repetía la prueba del agua fría, si bien ahora la mano que debía ser introducida en el agua era la izquierda. Concluida esta prueba se daba por finalizado el experimento.

RESULTADOS

En primer lugar se llevó a cabo un análisis correlacional con las puntuaciones de todos los sujetos en las diferentes variables consideradas. Los resultados pueden observarse en la Tabla 1. Como puede apreciarse no aparece correlación entre Extraversión y Neuroticismo, tal como especificaban los modelos de personalidad considerados. La variable sexo, aunque presenta una pequeña correlación con Extraversión ésta no llega a ser significativa.

Respecto a la primera hipótesis se puede observar que a excepción de la correlación de E con USD-1, prácticamente todas las demás son de signo contrario al esperado, e incluso el valor de esa correlación que aparece en la dirección prevista no solamente no es significativa, sino que además es muy baja. Los resultados por tanto no apoyan las predicciones de la primera hipótesis.

La segunda hipótesis sí parece confirmarse hasta el punto de que ninguna correlación alcanza valores significativos ni próximos a ser significativos, pero hay que tener en cuenta que es una hipótesis nula y que su valor dependía de que se hubiera cumplido la hipótesis anterior. La tercera hipótesis no puede considerarse a partir del análisis correlacional, ya que éste no distingue, como se requiere, a los sujetos con valores altos en Ansiedad (NI) de los sujetos con valores bajos (CE).

A la vista de estos resultados y pensando que quizá pudieran estar oscurecidos por los valores de los sujetos con puntuaciones medias en E, se llevó a cabo un análisis de las diferencias entre las medias de los grupos de sujetos con valores extremos en E. Para ello se seleccionaron las puntuaciones de los sujetos que ocupaban valores superiores al percentil 85, o inferiores al 15, en la escala E del Eysenck Personality Inventory, según los baremos de la adaptación española ya citada.

Tabla 1

Resultados del Análisis Correlacional (Correlación de Pearson) de los Valores Alcanzados por los 51 Sujetos en las Distintas Pruebas

	N	E	USD-1	TTD-1	TTD - USD-1	VTS	USD-2	TTD-2	TTD - USD-2
Sexo	-.01	-.26	-.33*	-.23	.05	-.20	-.38**	-.10	.19
N		-.02	.00	-.07	.05	.05	.05	.06	.06
E			.13	.03	-.05	-.08	-.10	-.18	-.11
USD-1				.56***	-.32*	.40**	.54***	.35*	-.08
TTD-1					.61***	.48***	.34**	.71***	.45**
USD-TTD-1						.18	.12	.47***	.58***
VTS							.51***	.30*	.15
USD-2								.41**	.37**
TTD-2									.69***
<i>M</i>	11.59	9.31	57.18	124.68	68.25	1.64	42.70	133.48	90.87
<i>DE</i>	4.49	3.95	58.29	71.19	62.35	0.59	56.34	72.82	71.60

Nota. N = Neuroticismo, E = Extraversión, USD = Umbral Sensorial del Dolor, TTD - Tiempo de Tolerancia del Dolor, TTD - USD = Rango de Sensibilidad al Dolor, VTS = Valor de Tolerancia de la Descarga, -1 - en la primera prueba del agua fría, -2 en la segunda prueba del agua fría.

* $p < .05$, ** $p < .01$, *** $p < .001$; pruebas de dos colas.

Como puede apreciarse en las tablas 2 y 3 las diferencias en función del grado de E no solo no aparecen en la dirección indicada sino más bien en dirección contraria, llegando incluso en un caso, TTD-2, a alcanzar valores próximos a un nivel de significación estadística adecuado ($p < .1$). Por lo que respecta a la segunda hipótesis nuevamente vuelven a aparecer resultados a favor de la incapacidad de la dimensión de N para diferenciar los resultados, si bien se presenta la constante de que las puntuaciones de los sujetos con valores altos en N sean superiores a las de los sujetos con valores bajos en N, especialmente en la variable TTD.

Tabla 2

Significación de Diferencias entre las Medias de los Sujetos con Valores Altos en Extraversión (E) y Bajos (I)

	E (N = 7)		I (N = 9)		t	p
	M	DE	M	DE		
USD-1	52.42	53.07	56.00	61.11	0.11	N.S.
TTD-1	138.00	71.99	140.89	71.57	0.07	N.S.
VTS-1	1.71	0.58	1.61	0.60	0.30	N.S.
USD-2	25.57	17.04	49.88	64.15	0.91	N.S.
TTD-2	103.00	76.46	170.66	61.57	1.83	.1

Nota. Ver la nota de la Tabla 1.

Tabla 3

Significación de Diferencias entre las Medias de los Sujetos con Valores Altos en Neuroticismo (N) y Bajos (C)

	N (N = 7)		C (N = 9)		t	p
	M	DE	M	DE		
USD-1	49.28	48.83	47.44	53.59	0.06	N.S.
TTD-1	147.85	60.39	107.00	82.63	0.95	N.S.
VTS	1.64	0.45	1.52	0.64	0.37	N.S.
USD-2	25.57	9.89	23.11	19.16	0.27	N.S.
TTD-2	117.71	73.84	92.00	71.69	0.61	N.S.

Nota. Ver la nota de la Tabla 1.

Por último, para someter a consideración la tercera hipótesis, se llevó a cabo un análisis de las diferencias entre las medias de los sujetos con valores altos en N y bajos en E (NI) y los sujetos con valores bajos en N y altos en E (CE). Para ello se seleccionó a los sujetos con valores superiores al percentil 75 o inferiores al percentil 25 en E que a su vez fueran superiores al percentil 75 o inferiores al 25 en N.

Como puede apreciarse en la Tabla 4 las medidas de la primera prueba de agua fría (mano derecha) aparecen en la dirección esperada e incluso en el caso de la variable USD-1 con valores próximos a un nivel de significación adecuado ($p < .1$), siendo también importante la diferencia, en la dirección esperada, en TTD-1. Sin embargo, a partir de la prueba de descargas eléctricas las diferencias desaparecen completamente. Con todo, dado el escaso número de sujetos, los resultados son cuando menos interesantes.

Tabla 4

Significación de Diferencias entre las Medias de los Sujetos con Valores Altos en Neuroticismo y Bajos en Extraversión (NI) y los Sujetos con Valores Bajos en Neuroticismo y Altos en Extraversión (CE)

	NI (N = 10)		CE (N = 6)		t	p
	M	DE	M	DE		
USD-1	23.04	19.69	61.50	61.60	1.77	.1
TTD-1	116.40	72.16	168.00	64.99	1.34	N.S.
VTS	1.67	0.46	1.61	0.77	0.18	N.S.
USD-2	20.90	10.39	21.17	16.54	0.04	N.S.
TTD-2	134.60	74.25	125.50	93.07	0.16	N.S.

Nota. Ver la nota de la Tabla 1.

DISCUSIÓN

Las correlaciones obtenidas entre las diferentes variables dependientes rara vez alcanzan valores elevados, en especial las correlaciones entre las medidas obtenidas con estímulos térmicos y eléctricos, y aquellas en las que intervienen las puntuaciones de rango de sensibilidad (TTD - USD). Por lo tanto ha de cuestionarse uno de los puntos básicos implícito en los modelos considerados, el de que al ser la estructura de la personalidad única, las respuestas de las personas ante estímulos funcionalmente similares, aversivos en este caso, han de ser también similares.

Así mismo los resultados evidencian la incapacidad del modelo de Eysenck para explicar las diferencias en el grado de sensibilidad y tolerancia al dolor de las personas, poniendo de relieve lo inadecuado de pretender explicar las diferencias en una conducta tan compleja como la percepción y tolerancia al dolor a partir de una sola variable que además es genérica: el mayor nivel de "arousal" cortical de los introvertidos. Se pueden aducir posibles causas que contribuyan a la falta de éxito de este modelo. En primer lugar dista mucho de

estar demostrado que los introvertidos tengan un mayor nivel de "arousal" que los extravertidos. Las revisiones llevadas a cabo sobre este punto teniendo en cuenta diferentes índices de "arousal" (M. W. Eysenck, 1977; Orlebeke y Freij, 1980; Stelmack, 1981) parecen llegar a una misma conclusión que se puede resumir con la siguiente frase de Stelmack: "El resultado de los informes publicados desde 1967 presentan un collage de contradicciones e inconsistencias" (Stelmack, 1981, p. 40). A la misma conclusión se ha llegado a partir de la revisión de los aspectos teóricos centrales al modelo (Labrador, 1980a, 1980b).

En segundo lugar es difícil explicar que el "arousal" pueda afectar de manera lineal y constante a la percepción o tolerancia al dolor. Tanto los trabajos de Melzack y Dennis (1978), Melzack (1980) y Melzack y Wall (1983) y sus modelos de "Mecanismo Generador de Patrones de Dolor" (Pattern Generating Mechanism), a nivel teórico, como los de Fordyce (1976) y Turk, Meichenbaum y Genest (1983) a nivel práctico, de técnicas terapéuticas, demuestran que algunos aumentos en el nivel de "arousal" cortical pueden producir así mismo aumentos significativos bien en el umbral sensorial bien en el tiempo de tolerancia al dolor o bien en ambos.

Por último, tanto la explicación de la percepción del dolor como las predicciones sobre las diferencias de los sujetos en ésta propuestas por Eysenck, parecen considerar el dolor como una sensación simple, incidiendo únicamente sobre la dimensión sensorio-discriminativa y olvidando los aspectos motivacionales y cognitivos. Difícilmente este tipo de acercamiento unidireccional y simplificador puede proporcionar datos de utilidad sobre la percepción del dolor (Labrador y Vallejo, 1984).

Respecto al modelo de Gray las conclusiones pueden ser algo más positivas. En primer lugar porque los resultados parecen estar más de acuerdo con sus predicciones, aunque este acuerdo sea más bien escaso (los resultados aunque aparecen en la dirección esperada no llegan a ser significativos). En segundo lugar, porque a nivel teórico, su modelo basado en la importancia dada al Sistema de Inhibición Conductual (Gray 1976, 1982), en el que se tienen en cuenta no sólo los aspectos biológicos sino también los conductuales y de procesamiento de información, parece más adecuado, de acuerdo con las consideraciones anteriores, para explicar las diferencias en la percepción del dolor.

Analizando más detalladamente los resultados obtenidos en relación con las predicciones de Gray se ha visto como los correspondientes a la primera prueba de agua fría aparecen en la dirección prevista, con valores próximos a ser significativos ($p < .1$), desapareciendo posteriormente las diferencias tanto con los estímulos eléctricos como en la segunda prueba del agua fría. Esta desaparición de las diferencias en la segunda parte de la prueba, en especial en la segunda prueba del agua fría, se debe exclusivamente a que el grupo de sujetos con valores bajos en N y altos en E (CE) ha disminuído mucho tanto sus umbrales sensoriales como sus tiempos de tolerancia al dolor, lo que puede interpretarse como consecuencia de una sensibilización a los estímulos aversivos conforme avanza la prueba. Esta sensibilización, por supuesto se daría en ambos grupos CE y NI,

pero solo se refleja en el CE dado que los índices del grupo NI ya eran muy bajos y apenas si podrían disminuirlos.

Como alternativa se podría explicar tanto las discrepancias en los resultados de los sujetos NI y CE en las tres pruebas, como las bajas correlaciones entre algunas de las variables dependientes, a partir de las indicaciones de la Escuela Soviética sobre la necesidad de considerar tanto tipologías parciales como una tipología general del sistema nervioso (Nebylitsyn, 1972a, 1972b; Strelau, 1972; Mangan, 1982). Si ya Nebylitsyn (1972a) indicaba que rara vez se conseguían, entre los resultados de una misma persona cuando se implicaban analizadores diferentes, correlaciones con valores superiores a .30 ó .40, aquí se ha observado que incluso el variar la zona del cuerpo sobre la que se aplica el estímulo, de una mano a otra, o el tipo de medida utilizada para considerar el efecto de los estímulos sobre una misma zona, las correlaciones rara vez explican más del 30 por ciento de la varianza, e incluso en algunos casos con valores en estas correlaciones apenas superiores a .10. Resultados similares a éstos fueron obtenidos por Strelau (1972) comparando también respuestas a estímulos eléctricos y térmicos (en este caso agua a 60 grados centígrados). Así pues, el estudio de las tipologías parciales podría dar una explicación más precisa de las diferencias individuales en la percepción del dolor.

Como conclusión no parece que la aproximación al estudio del dolor desde los modelos de personalidad, o al menos de los aquí considerados, sea útil, pues solo uno de estos modelos y a duras penas parece tener alguna oportunidad. El problema, tal como se ha comentado en otras ocasiones (Labrador, 1980b, 1984), es que con un modelo general difícilmente se pueden hacer predicciones adecuadas sobre aspectos o comportamientos específicos, para los que aún no está muy claro cuales son los mecanismos fisiológicos ni bioquímicos subyacentes.

Es evidente que aspectos considerados como psicológicos intervienen de manera decisiva en la modulación del dolor, bien inhibiendo o amplificando las señales periféricas aferentes por medio de la acción de centros superiores sobre estas vías (Cannon, Liebeskind y Frenk, 1978; Kerr y Fukushima, 1980; Watkins y Mayer, 1982), bien provocando la descarga de neurotransmisores péptidos o de opiáceos endógenos (Bolles y Fanselow, 1982; Sicuteri, 1982; Snyder, 1980). La eficacia obtenida por las técnicas psicológicas en el tratamiento del dolor crónico apoya, así mismo, la importancia de estos aspectos (Fordyce, 1976; Labrador y Vallejo, 1984; Turk et al., 1983; Tan, 1982).

Dado pues que los acercamientos más eficaces, desde la psicología, al área del dolor han sido las diferentes técnicas de modificación de conducta, que repetidas veces han conseguido el objetivo de aliviar el dolor, incluso en pacientes en los que fracasaban tanto la cirugía como la farmacoterapia, parece más adecuado el orientar la investigación en la línea de buscar aspectos muy concretos que caractericen los distintos patrones conductuales de los sujetos ante los estímulos nocivos (Blanchard et al., 1983; Roca y Labrador, 1984; Rosebaum, 1980), que el de intentar integrar modelos generales para explicar estas diferencias.

REFERENCIAS

- Barber, J., y Adrian, C. (1982). *Psychological approaches to the management of pain*. New York: Brunner/Mazel.
- Blanchard, E. B., Andrasik, F., Arena, J. G., Neff, D. F., Saunders, N. L., Jurish, S. E., Teders, S. J., y Rodichok, L. D. (1983). Psychophysiological responses as predictors of response to behavioral treatment of chronic headache. *Behavior Therapy*, 14, 357-374.
- Bolles, R. C., y Fanselow, M. S. (1982). Endorphins and behavior. En M. R. Rosenzweig y L. W. Porter (Eds.), *Annual review of psychology* (Vol. 33) (pp. 87-101). Palo Alto, CA: Annual Reviews.
- Bonica, J. J. (1980). *Pain*. New York: Raven.
- Bonica, J. J., y Albe-Fessard, D. G. (1983). *Advances in pain research and therapy* (Vol. 5). New York: Raven.
- Cannon, J. T., Liebeskind, J. C., y Frenk, H. (1978). Neural and neurochemical mechanisms of pain inhibition. En R. A. Sternbach (Ed.), *The psychology of pain* (pp. 27-48). New York: Raven.
- Davidson, P. O., y McDougall, C. E. A. (1969). Personality and pain tolerance measures. *Perceptual and Motor Skills*, 28, 787-790.
- Elton, D., Vagg, P., y Stanley, G. (1978). Augmentation-reduction and pain experience. *Perceptual and Motor Skills*, 47, 499-502.
- Eysenck, H. J. (1967). *The biological basis of personality*. Springfield, IL: Charles C Thomas.
- Eysenck, H. J. (1976). *The measurement of personality*. Lancaster: M.T.P. Press.
- Eysenck, H. J. (1981). *A model for personality*. Berlin: Springer-Verlag.
- Eysenck, H. J., y Eysenck, S. B. G. (1964). *Manual of the Eysenck Personality Inventory*. London: University of London. (Adaptación española: *Manual del Eysenck Personality Inventory*. Madrid: TEA, 1973).
- Eysenck, M. W. (1977). *Human memory*. New York: Pergamon.
- Fordyce, W. E. (1976). *Behavioral methods for chronic pain and illness*. St. Louis, MO: Mosby.
- Gray, J. A. (1970). The psychophysiological basis of introversion-extraversion. *Behavior Research and Therapy*, 8, 249-266.
- Gray, J. A. (1973). Causal theories of personality and how to test them. En J. Royce (Ed.), *Multivariate analysis and psychological theory* (pp. 409-463). New York: Academic.

- Gray, J. A. (1976). The behavioral inhibition system: A possible substrate for anxiety. En M. P. Feldman y A. Broadhurst (Eds.), *Theoretical and experimental bases of the behaviour therapies* (pp. 3–41). London: Wiley.
- Gray, J. A. (1981). A critique of Eysenck's theory of personality. En H. J. Eysenck (Ed.), *A model for personality* (pp. 246–275). Berlin: Springer-Verlag.
- Gray, J. A. (1982). *The neuropsychology of anxiety*. Oxford: Clarendon.
- Gupta, B. S. (1976). Extraversion and reinforcement in verbal operant conditioning. *British Journal of Psychology*, 67, 47–52.
- Gupta, B. S., y Nagpal, M. (1978). Impulsivity/sociability and reinforcement in verbal operant conditioning. *British Journal of Psychology*, 69, 203–206.
- Haslam, D. R. (1966). *Individual differences in pain threshold and the concept of arousal*. Tesis doctoral no publicada, University of Bristol, Bristol.
- Haslam, D. R. (1967). Individual differences in pain threshold and level of arousal. *British Journal of Psychology*, 58, 139–142.
- Haslam, D. R. (1972). Experimental pain. En V. D. Nebylitsyn y J. A. Gray (Eds.), *Biological basis of individual behavior* (pp. 242–253). New York: Academic.
- Kerr, F. W. L., y Fukushima, T. (1980). New observation on the anatomy of the spinothalamic tract. En J. J. Bonica (Ed.), *Pain* (pp. 47–62). New York: Raven.
- Kuhlman, D. M. (1974). Comunicación personal citada por M. Zuckerman. En H. London y J. E. Exner (Eds.), *Dimensions of personality* (pp. 487–559). New York: Wiley.
- Labrador, F. J. (1980a). Tiempos de reacción y efectos del premio y castigo en función de las diferencias en personalidad. *Informes del Departamento de Psicología General*, 8, 235–255.
- Labrador, F. J. (1980b). *Estudio de la utilidad de los modelos factoriales-biológicos de personalidad: Eysenck y Gray*. Madrid: Editorial de la Universidad Complutense.
- Labrador, F. J. (1984). *Modelos biológico-factoriales de personalidad*. Bilbao: Desclée de Brouwer.
- Labrador, F. J., y Vallejo, M. A. (1984). Dolor crónico. En J. Mayor y F. J. Labrador (Eds.), *Manual de modificación de conducta*. Madrid: Alhambra.
- Levander, S. (1966). *Reaction to electrical pain stimulation*. Tesis doctoral no publicada, Universidad de Estocolmo, Estocolmo.
- Levine, F. M., Tursky, B., y Nichols, D. C. (1966). Tolerance for pain,

- extraversion and neuroticism: Failure to replicate results. *Perceptual and Motor Skills*, 23(3, Pt. 1), 847–850.
- Lynn, R., y Eysenck, H. J. (1961). Tolerance for pain, extraversion and neuroticism. *Perceptual and Motor Skills*, 12, 161–162.
- McCreary, C. P. (1979). MMPI and EPI scores of chronic pain patients. En D. J. Osborne, M. M. Gruneberg y J. R. Eiser (Eds.), *Research in psychology and medicine* (pp. 41–47). London: Academic.
- Mangan, G. (1982). *The biology of human conduct*. Oxford: Pergamon.
- Melzack, R. (1980). Psychologic aspects of pain. En J. J. Bonica (Ed.), *Pain* (pp. 143–154). New York: Raven.
- Melzack, R., y Dennis, S. G. (1978). Neurophysiological foundation of pain. En R. A. Sternbach (Ed.), *The psychology of pain* (pp. 1–26). New York: Raven.
- Melzack, R., y Wall, P. D. (1965). Pain mechanisms: A new theory. *Science*, 150, 971–979.
- Melzack, R., y Wall, P. D. (1983). *The challenge of pain*. New York: Basic Books.
- Nebylitsyn, V. D. (1972a). The problem of general and partial properties of the nervous system. En V. D. Nebylitsyn y J. A. Gray (Eds.), *Biological basis of individual behavior* (pp. 400–418). New York: Academic.
- Nebylitsyn, V. D. (1972b). *Fundamental properties of the human nervous system*. New York: Plenum.
- Orlebeke, J. F., y Feij, J. A. (1980). The orienting reflex as a personality correlate. En H. D. Kimmel, E. H. Van Olst y J. F. Orlebede (Eds.), *The orienting reflex in humans* (pp. 524–557). Hillsdale, NJ: LEA.
- Phillips, C., y Hunter, M. (1981). Pain behavior in headache sufferers. *Behavior Analysis and Modification*, 4, 257–266.
- Roca, M., y Labrador, F. J. (1984). Diferencias en las respuestas de defensa y orientación en los sujetos con y sin cefaleas. *Revista Española de Terapia del Comportamiento*, 2, 1–18.
- Rosebaum, M. (1980). Individual differences in self-control behaviors and tolerance to painful stimulation. *Journal of Abnormal Psychology*, 89, 581–590.
- Schalling, D. (1971). Tolerance for experimentally induced pain as related to personality. *Scandinavian Journal of Psychology*, 12, 271–281.
- Schalling, D., y Levander, S. (1964). Ratings of anxiety-proneness and response to electrical pain stimulation. *Scandinavian Journal of Psychology*, 5, 1–9.

- Seunath, O. M. (1975). Personality, reinforcement and learning. *Perceptual and Motor Skills*, 41, 459-463.
- Shiomi, K. (1977). Threshold and reaction time to noxious stimulation: Their relation with scores on Manifest Anxiety Scale and Maudsley Personality Inventory. *Perceptual and Motor Skills*, 44(2), 429-430.
- Shiomi, K. (1978). Relation of pain threshold and pain tolerance in cold water with scores on Maudsley Personality Inventory and Manifest Anxiety Scale. *Perceptual and Motor Skills*, 47, 1155-1158.
- Sicuteri, F. (1982). Natural opioids in migraine. En M. Critchley, A. P. Friedman, S. Gorini y F. Sicuteri (Eds.), *Advances in neurology no. 33: Headache* (pp. 65-74). New York: Raven.
- Snyder, S. H. (1980). Peptide neurotransmitters with possible involvement in pain perception. En J. J. Bonica (Ed.), *Pain* (pp. 233-244). New York: Raven.
- Stelmack, R. M. (1981). The psychophysiology of extraversion and neuroticism. En H. J. Eysenck (Ed.), *A model for personality* (pp. 38-64). Berlin: Springer-Verlag.
- Strelau, J. (1972). The general and partial nervous system types, data and theory. En V. D. Nebylitsyn y J. A. Gray (Eds.), *Biological basis of individual behavior* (pp. 62-73). New York: Academic.
- Tan, S. Y. (1982). Cognitive and cognitive-behavioral methods for pain control: A selective review. *Pain*, 12, 201-208.
- Turk, D. C., Meichenbaum, D., y Genest, M. (1983). *Pain and behavioral medicine*. New York: The Guilford Press.
- Watkins, L. R., y Mayer, D. J. (1982). Organization of endogenous opiate and nonopiate pain control systems. *Science*, 216, 1185-1192.
- Wolf, B. B. (1980). Measurement of human pain. En J. J. Bonica (Ed.), *Pain* (pp. 173-184). New York: Raven.

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EXTENDED SUMMARY

**Sensory Threshold and Tolerance for Aversive Stimuli:
Relationship with Personality Factors**

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and

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A significant increase in pain research has recently been noted, and especially an increased interest in the different psychological factors involved in perception of pain. Personality variables have often been proposed to account for a wide range of individual differences in pain sensitivity, but attempts to establish a relationship between broad personality dimensions and specific reactions to pain have not been successful until now. Both H. J. Eysenck's and J. A. Gray's biological-factorial personality models make specific predictions about individual differences in sensitivity to harmful stimuli. Both models agree that introverts are more sensitive than extraverts to aversive stimuli, but explanations for this phenomenon are quite different in each model. Eysenck's model rejects the notion of the effect of different degrees of neuroticism on sensitivity to pain. Gray, in contrast, postulates that neuroticism works as an amplifier of degrees of introversion-extraversion. Consequently, neuroticism can be associated with higher pain sensitivity when accompanied by high degrees of introversion.

An experiment was conducted to test the predictions of Eysenck's and Gray's models, using 51 university students (16 male and 35 female) between 19 and 21 years of age as the experimental subjects. After they completed the Eysenck Personality Inventory, experimental pain was induced in each hand by the Cold Pressor Test; and electric shocks of varied intensity (ranging from 0.4 to 3 mA) were applied to the left hand of the subjects in a single session. Measured were pain threshold, pain tolerance, and pain sensitivity range in the Cold-Pressor Test, and the maximum intensity level of electric shock tolerated. In contrast with the Eysenck predictions, no significant positive correlation was found between extraversion and the different pain measures; indeed, although statistically nonsignificant, almost all the results were in the opposite direction from those predicted from this model. The analysis of the mean differences between the groups with extreme extraversion scores confirmed these results.

The results did not support the main prediction of Eysenck's model, and they might be considered as only a weak support for Gray's. Because no high correlations between different measures of pain sensitivity were found, the investigators question the value of considering a single basic structure (the

personality) and a single variable (cortical arousal level, in the Eysenck model) as the basis of explaining pain perception. It is suggested that it might be more adequate to adopt the Soviet School's approach to personality. This approach stresses the necessity of considering partial typologies as well as a general typology of the nervous system.

An understanding of the psychological components of pain is not likely to be attained through using broad personality measurements. It is becoming evident that this goal will be reached, rather, by the cognitive-behavioral approach to pain research, which is focused on identifying the different processes involved (cognitive, physiological, and behavioral) and provides assessment and treatment methods for pain management. The success that the behavioral and cognitive-behavioral techniques—developed from behavior therapy and behavioral medicine—have had in the management of pain supports this alternative approach.

Ethnic Differences in the Measurement of Hostility in Forensic Patients

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Two hundred and seventy-three adult male forensic patients admitted to the Maximum Security Unit of a large state mental hospital in Texas, U.S.A., during a 12-month period were administered the Buss-Durkee Hostility Inventory (BDHI), an objective test, and Form A of the Holtzman Inkblot Technique (HIT), a projective technique. Of these patients, 130 were Anglo American, 109 Black American, and 34 Hispanic American. Results revealed no significant differences between the Anglo and Hispanic American populations, but differences appeared between the Hispanic and Black Americans on the BDHI Resentment and HIT Form Definiteness subscales. The Anglo and Black forensic patients differed significantly on three BDHI subscales—Guilt, Suspicion, and Resentment—and on seven HIT variables—Form Definiteness, Form Appropriateness, Movement, Integration, Hostility, Barrier, and Popular—the Black patients scoring higher on all BDHI subscales and lower on all HIT variables. Hypotheses concerning ethnic differences in this patient population, and the relationship of scores on the BDHI and HIT, are presented and discussed.

Relationships between projective and objective methods of measuring personality dimensions are often modest at best (Anastasi, 1982). Although Buss,

Fischer, and Simmons (1962) found no relationship between the Buss–Durkee Hostility Inventory (BDHI) and hostility responses on the Rorschach. Rosenstiel (1973) has suggested that this outcome may be due to ambiguity in the meaning of the scores yielded by both projective and objective techniques. Buss and Durkee (1957) reported that factor analysis divided the BDHI into an “attitudinal” and a “motor” component, although factor loadings were not high. A subsequent analysis of the BDHI by Bendig (1961) also found two oblique factors, although the patterns of subscale loadings were different. Further study by Bendig (1962) found these two components, referred to as “hostility” and “aggression,” to be unrelated to other frequently obtained personality factors. Later studies suggested that clinicians’ ratings of patients’ general hostility may be meaningfully separated into hostility (i.e., attitudinal) and aggression (i.e., motor or action-oriented) components (Buss, Fischer, & Simmons, 1962), and that the hostility factor was a better predictor of verbal hostility and the aggression factor a better predictor of physical aggression (Leibowitz, 1968). Gunn and Gristwood (1975) offered some support for this position by finding that only some subscales of the BDHI (primarily the Assault scale) predicted violent behavior in prisoners. Holland, Levi, and Beckett (1983) found differences between Anglo and Black prisoners on four BDHI scales. Blacks scored lower than Whites on Indirect Hostility, Irritability, and Verbal Hostility, and higher on Suspicion.

The present study attempts to replicate and extend these findings with a sample of male forensic patients, that is, patients who have been committed to a mental health facility either for a determination of competency to stand trial for alleged criminal acts, because a determination of incompetence has already been made, or who have been found not guilty of a felony charge by reason of insanity. It also attempts to provide comparative data regarding the performance of Anglo, Black, and Hispanic patients on objective and projective measures of hostility.

Little systematic information is available regarding ethnic differences in projective test responses, but Megargee (1966) has reported some differences between the scores of Anglo (Caucasian inhabitant of the United States of non-Hispanic extraction) and Black juvenile delinquents on the Holtzman Inkblot Technique. Rosenstiel (1973) suggested, in a study of male medical students, that the hostility variable as scored on the Holtzman Inkblot Technique might provide a projective measure of the attitudinal aspect of Hostility. It was thus hypothesized that scores on the attitudinal scales of the BDHI would be more highly related to the HIT Hostility score than would scores on the aggression scales.

METHOD

Instruments

The BDHI (Buss & Durkee, 1957) is a paper-and-pencil personality inventory for the assessment of hostility that consists of 75 items organized into nine

subscales: Verbal Hostility (negative affect expressed in both style and content of speech), Guilt (feelings of being bad or having done wrong), Suspicion (projection of hostility onto others), Resentment (jealousy and hatred of others), Irritability (a readiness to explode with negative affect at the slightest provocation), Indirect Hostility (roundabout and undirected aggression), Assault (physical violence against others), Negativism (oppositional behavior, usually directed against authority), and Total Hostility, the sum of scores on the seven hostility (minus Guilt) subscales.

The Holtzman Inkblot Technique (HIT) (Holtzman, Thorpe, Swartz, & Herron, 1961) is an inkblot test that consists of two parallel forms, A and B, each consisting of 45 inkblots to which the subject gives only one response per card. Form A was used in the present study. Twenty-two standard variables are scored on the HIT: Reaction Time, Rejection, Location, Space, Form Definiteness, Form Appropriateness, Color, Shading, Movement, Pathognomic Verbalization, Integration, Human, Animal, Anatomy, Sex, Abstract, Anxiety, Hostility, Barrier, Penetration, Balance, and Popular. Detailed descriptions, scoring procedures, and psychometric data for these variables are given in Holtzman et al. (1961). Previous studies of the total scores on each of these 22 variables, obtained by summing the individual response scores across the 45 cards, demonstrated that uniformly high test-retest, interscorer, and split-half reliabilities have been achieved for the majority of these variables (Holtzman et al., 1961; Holtzman & Swartz, 1983).

Subjects and Procedure

The BDHI and the HIT were administered to 273 adult male forensic patients admitted to the Maximum Security Unit of a large state mental hospital in eastern Texas, U.S.A., during a 12-month period. The median age of these patients was 27; the average number of previous admissions was 2.1. Included were 130 Anglo American (median age = 28.5), 109 Black American (median age = 26), and 34 Hispanic American patients (median age = 26). Median education for the Anglo patients was 11 years, for the Black patients, 10 years, and for the Hispanic patients, 8 years. The median score on the revised Beta examination was 87 (Anglos = 89, Blacks = 86, Hispanics = 86). Members of the Hispanic American patient group was almost exclusively from the U.S. Mexican American population.

Means, standard deviations, and intercorrelations were computed for scores on all BDHI and HIT variables.

RESULTS

The mean scores and standard deviations for the nine BDHI scales and the 22 HIT variables are presented by ethnic group in Table 1. The significance of mean

differences across the three ethnic groups was investigated by applying the *t* test, one measure at a time. The .05 level of significance was adopted for rejecting the null hypothesis.

Table 1
Means and Standard Deviations of BDHI and HIT Scores for Three U.S. Ethnic Groups

Variable	(N = 130) Anglo American		(N = 34) Hispanic American		(N = 109) Black American	
	M	SD	M	SD	M	SD
BDHI						
Verbal Hostility	6.25	2.58	5.64	1.82	6.40	2.51
Guilt**	4.61	2.66	5.03	2.62	5.80	2.31
Suspicion*	4.72	2.86	4.91	2.45	5.49	2.39
Resentment*	3.26	2.18	2.94	2.12	3.85	2.13
Irritability#	4.62	2.84	4.15	2.53	4.64	2.94
Indirect Hostility	3.56	2.22	3.57	1.71	3.41	2.26
Assault	4.48	2.77	4.39	2.03	4.98	2.70
Negativism	2.15	1.60	2.09	1.38	2.42	1.50
Total Hostility*	33.18	14.73	32.73	11.72	36.98	14.46
HIT						
Reaction Time	15.20	7.38	14.47	7.72	14.64	8.66
Rejection	12.10	11.68	14.44	10.46	12.31	11.40
Location	20.51	13.67	20.97	12.13	18.46	12.00
Space	.67	.93	.68	.98	.68	.97
Form Definiteness###	79.20	20.65	80.00	18.23	69.85	19.62
Form Appropriateness*	33.24	10.61	32.32	10.34	30.37	9.64
Color	10.94	9.37	8.23	8.12	10.62	12.54
Shading	6.69	6.61	5.20	5.60	5.81	6.28
Movement**	19.65	15.22	16.59	13.10	14.05	12.64
Pathognomic Verbalization	10.76	13.87	11.26	13.40	10.17	15.69
Integration**	5.74	4.60	4.94	3.45	3.83	3.58
Human	15.56	10.48	15.26	7.96	13.12	9.78
Animal	19.15	9.96	18.41	10.76	17.65	11.66
Anatomy	3.89	5.63	4.74	12.54	5.30	7.86
Sex	1.20	2.43	1.18	2.07	.97	1.85
Abstract	.90	2.52	.88	1.75	.43	1.55
Anxiety	8.93	8.47	9.03	11.22	7.23	7.01
Hostility**	7.18	7.50	6.50	5.43	4.78	5.57
Barrier*	3.37	2.86	2.62	2.26	2.53	2.68
Penetration	3.98	3.64	4.20	6.73	4.52	4.82
Balance	.74	1.73	.26	.57	.79	2.67
Popular**	5.92	3.40	5.18	2.98	4.32	2.81

Note. BDHI = Buss-Durkee Hostility Inventory. HIT = Holtzman Inkblot Technique.

*Anglo American group significantly different from Black American group, $p < .05$.

**Anglo American group significantly different from Black American group, $p < .01$.

#Hispanic American group significantly different from Black American group, $p < .05$.

##Hispanic American group significantly different from Black American group, $p < .01$.

No significant mean differences were found between the Anglo and Mexican American patient samples on any of the BDHI or HIT scales. Mexican

American and Black patients differed significantly on the Resentment Scale of the BDHI (Blacks higher) and the Form Definiteness scale of the HIT (Blacks lower). BDHI Resentment is defined by Buss and Durkee (1957) as follows: "jealousy and hatred of others . . . refers to a feeling of anger at the world over real or fantasied mistreatment" (p. 343). The Black patients obtained a higher score on this subscale, indicating that they expressed more of the sort of Resentment inquired into by the test than did the Mexican American patients. The Form Definiteness variable, a 5-point scale, ranging from 0 (concepts that are completely formless or lacking in specificity) to 4 (concepts that are highly definite in form), is defined by Holtzman et al. (1961) as referring to the definiteness of the form of the concept reported, regardless of the goodness of fit of the concept to the inkblot. The Black patients thus tended to report percepts that were less definitive or precise than those reported by the Hispanic patients.

The Anglo and Black patients differed significantly on three BDHI subscales and on seven HIT scales: BDHI Guilt, Suspicion, and Resentment; and HIT Form Definiteness, Form Appropriateness, Movement, Integration, Hostility, Barrier, and Popular. The Black patients scored higher on all the BDHI scales and lower on all the HIT variables on which there were significant differences.

DISCUSSION

Buss and Durkee (1957) and Bendig (1961) place Resentment and Suspicion, two of the BDHI variables on which Anglos and Blacks differed in this study, in the attitudinal factor of the BDHI. The hypothesis regarding differences between Anglos and Blacks is thus not confirmed: Blacks scored higher on attitudinal measures of hostility than did Anglos. They in fact scored higher on all but one of the BDHI subscales, although none of the other differences (except the Total Hostility score) were significant. This finding is quite unlike that reported by Holland, Levi, and Beckett (1983), who found Blacks to score higher than Anglos on only one variable. The population of forensic patients may well differ from a prisoner population in several important respects, and the ethnic differences here reported may be related to these other dimensions; but previous studies have found forensic patients to be similar to general psychiatric patients in many psychometric characteristics (Mullen & Reinehr, 1981).

Black patients scored significantly lower on HIT Hostility, a variable thought to measure the attitudinal component of hostility. The Black patients thus scored higher than Anglo patients on an objective test thought to reflect an attitudinal component of hostility and lower on a projective measure of the same dimension. Five of the seven HIT variables found to be significantly different between Anglos and Blacks have high loadings on HIT Factor 1 (Mullen, Reinehr, & Swartz, 1982). The other two variables have a high loading on Factor 1 in some

populations (Holtzman et al., 1961; Holtzman & Swartz, 1983; Swartz, Reinehr, & Holtzman, 1983). A high score on this factor generally is interpreted as indicative of well-organized ideational activity, good imaginative capacity, well-differentiated ego boundaries, and awareness of conventional concepts (Holtzman & Swartz, 1983). Two of these variables, Movement and Integration, are reliable and valid indices of personality development throughout the lifespan. The sequence of scores on these variables is in keeping with Heinz Werner's theory of development: progression along a continuum of increasing differentiation of part functions and processes, followed by increasing hierarchic integration achieved by the subordination of these part functions. To date, research with the HIT has supported the notion that such development proceeds almost monotonically, both in the United States and in Mexico, from early childhood until adulthood (Holtzman, Díaz-Guerrero, & Swartz, 1975; Swartz et al., 1983). It should be noted, however, that the U.S. sample on which this finding is based was almost exclusively Anglo American.

Recently, Mullen, Reinehr, and Swartz (1983) obtained results suggesting that both delinquents and forensic patients may perform at lower perceptual levels than do some normal reference populations. The results of the present study further suggest that this perceptual difference may have ethnic components, at least among psychiatric patient populations. Black patients seem to display a lower level of perceptual development than do either Anglo or Hispanic patients. Megargee (1965, 1966) found that juvenile delinquents obtained lower mean scores on Factor 1 variables, including Form Definiteness, than the normal control groups of Holtzman et al. (1961) but that Blacks showed few differences from Anglos when matched for mental age. Subjects in the present study were not matched for mental age, a matching Megargee suggests as prerequisite to any cross-cultural comparison, although the ethnic groups did not differ significantly in median Beta IQ. Matching might also be a wise precaution when comparing normal and exceptional populations (Swartz, Cleland, Drew, & Witzke, 1971). Until systematic studies are undertaken, the question of differences between Anglos and Blacks in perceptual performance must remain open, but the present study points up the need for such research before Anglo American norms are applied to Blacks or to populations that contain a high percentage of Blacks.

Several issues are thus raised by the present findings:

1. The ethnic differences found in the BDHI and HIT data are unlike findings previously reported on this topic. Before these differences can be interpreted properly, more extensive normative data need to be collected on both normal and deviant populations of Anglo, Black, and Hispanic Americans, but it does seem apparent that ethnic considerations may be important in the interpretation of either projective or objective test data or in the use of such data in statistical prediction procedures.

2. The contradictory findings regarding the concepts of attitudinal and aggressive hostility suggest that these concepts are in need of closer scrutiny. The factor structure of the BDHI may vary even between very similar populations. That ethnic differences should exist is not surprising. It is also possible that differences between diagnostic groups may exist, although the unreliability of psychiatric diagnosis renders this a difficult dimension to investigate properly. Certainly, more investigations of the BDHI with deviant and ethnic populations are necessary before definitive conclusions can be reached.

Previous work with projective techniques has also raised the possibility of different modes of expressing hostility. In an extensive investigation of the different patterns of personality, cognitive, and perceptual development of school children in Mexico and the United States (Holtzman et al., 1975), it is suggested that U.S. Anglo culture encourages the expression of hostility in various symbolic forms, particularly on the part of Anglo boys. The present study reveals no differences of this sort between the scores of Anglo and Hispanic patients, although it should be noted that the Hispanic patients in the present study are from the U.S. Mexican American population rather than from Mexico. The U.S. Mexican American population may more resemble the U.S. Anglo American cultural characteristics than it does those of Mexico.

Blacks in fact expressed more symbolic or attitudinal hostility on the BDHI than did Anglos, but Blacks scored lower on a projective measure of the same dimension. These conflicting and contradictory findings suggest that the concepts of attitudinal versus aggressive hostility are in need of more experimental verification before they may be used as a basis for hypothesizing differences between ethnic, nosological, or behavioral groups.

3. Finally, the relationship between measured hostility and other personality variables is in need of further exploration. The two BDHI factors isolated by Bendig (1961) were shown to be reasonably independent of some other personality variables, but their relationship to many others is unknown. Although the factorial structure of the HIT in the present sample was similar to that found with some other HIT populations (Holtzman & Swartz, 1983; Holtzman et al., 1961), some striking differences also exist. The relationship between the HIT Hostility and Anxiety scores is unusually high in this study (r s of .90, .83, and .84 for the Anglo, Hispanic, and Black patient groups, respectively). These high correlations are quite unlike those reported in studies of other patient groups and could be due to some characteristic of the forensic patient population, whether intellectual, emotional, or stylistic.

In summary, these results offer some suggestion that ethnic group differences may exist on both objective and projective measures of hostility. The paucity of previous research on this issue and the contradictory nature of many of the findings reported make firm conclusions difficult at this time. On the other hand, it does seem clear that ethnic factors need to be given consideration when interpreting test results, particularly with deviant populations. Certainly, it does appear that this neglected area is deserving of much more research attention.

REFERENCES

- Anastasi, A. (1982). *Psychological testing* (5th ed.). New York: Macmillan.
- Bendig, A. W. (1961). A factor analysis of scales of emotionality and hostility. *Journal of Clinical Psychology, 17*, 189–192.
- Bendig, A. W. (1962). A factor analysis of personality scales including the Buss–Durkee Hostility Inventory. *Journal of General Psychology, 66*, 179–183.
- Buss, A. H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Consulting Psychology, 21*, 343–349.
- Buss, A. H., Fischer, H., & Simmons, A. J. (1962). Aggression and hostility in psychiatric patients. *Journal of Consulting Psychology, 26*, 84–89.
- Gunn, J., & Gristwood, J. (1975). Use of the Buss–Durkee Hostility Inventory among British prisoners. *Journal of Consulting and Clinical Psychology, 43*, 590.
- Holland, T., Levi, M., & Beckett, G. (1983). Ethnicity, criminality, and the Buss–Durkee Hostility Inventory. *Journal of Personality Assessment, 47*, 375–379.
- Holtzman, W. H., Díaz-Guerrero, R., & Swartz, J. D. (1975). *Personality development in two cultures: A cross-cultural longitudinal study of school children in Mexico and the United States*. Austin: University of Texas Press.
- Holtzman, W. H., & Swartz, J. D. (1983). The Holtzman Inkblot Technique: A review of 25 years of research. *Zeitschrift für Differentielle und Diagnostische Psychologie, 4*, 241–259.
- Holtzman, W. H., Thorpe, J. S., Swartz, J. D., & Herron, E. W. (1961). *Inkblot perception and personality: Holtzman Inkblot Technique*. Austin: University of Texas Press.
- Leibowitz, G. (1968). Comparison of self-report and behavioral techniques of assessing aggression. *Journal of Consulting and Clinical Psychology, 32*, 21–25.
- Megargee, E. I. (1965). The performance of juvenile delinquents on the Holtzman Inkblot Technique: A normative study. *Journal of Projective Techniques and Personality Assessment, 29*, 504–512.
- Megargee, E. I. (1966). A comparison of the scores of white and Negro male juvenile delinquents on three projective tests. *Journal of Projective Techniques and Personality Assessment, 30*, 530–535.

- Mullen, J. M., & Reinehr, R. C. (1981). The mentally ill offender: A comparison of prison inmates, forensic psychiatric patients, and general psychiatric patients. *Journal of Psychiatry and Law, 9*, 203-207.
- Mullen, J. M., Reinehr, R. C., & Swartz, J. D. (1982). Performance of forensic patients on the Holtzman Inkblot Technique: A normative study. *Perceptual and Motor Skills, 54*, 275-280.
- Mullen, J. M., Reinehr, R. C., & Swartz, J. D. (1983). Holtzman Inkblot Technique scores of delinquent adolescents: A replication and extension. *Journal of Personality Assessment, 47*, 158-160.
- Rosenstiel, L. von (1973). Increase of hostility responses in the HIT after frustration. *Journal of Personality Assessment, 37*, 22-24.
- Swartz, J. D., Cleland, C. C., Drew, C. J., & Witzke, D. B. (1971). The Holtzman Inkblot Technique as a measure of perceptual development in mental retardation. *Journal of Personality Assessment, 35*, 320-325.
- Swartz, J. D., Reinehr, R. C., & Holtzman, W. H. (1983). Personality development through the lifespan: Assessment by means of the Holtzman Inkblot Technique. In C. D. Spielberger & J. N. Butcher (Eds.), *Advances in personality assessment* (Vol. 3) (pp. 35-51). New York: LEA.

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RESUMEN EXTENSO

Diferencias Étnicas en la Medición de la Hostilidad en Pacientes Forenses

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Se les aplicaron el Inventario de Hostilidad "Buss-Durkee" y la Técnica de Manchas de Tinta de Holtzman a 273 pacientes forenses, hombres adultos, quienes durante un período de 12 meses habían sido admitidos a la Unidad de Seguridad Máxima de un hospital mental grande del Estado de Texas, en los Estados Unidos de Norteamérica. (Un paciente forense es una persona que ha sido admitida a una facilidad de salud mental ya sea con el propósito de determinar si es lo suficientemente competente para ser puesto en juicio legal por alegaciones de actos criminales, o porque ya ha sido declarado incompetente para lo dicho o porque ha sido declarado no culpable de una acusación de criminal por razón de insania).

El Inventario "Buss-Durkee" es un inventario de la personalidad hecho en papel y lápiz para medir la hostilidad; consiste en 75 ítemes organizados en nueve escalas: Hostilidad Verbal, Culpa, Sospecha, Resentimiento, Irritabilidad, Hostilidad Indirecta, Asalto, Negativismo, y Hostilidad Total. La Técnica de Manchas de Tinta de Holtzman es una prueba de manchas de tinta que tiene dos formas paralelas, A y B; cada forma consiste en 45 tarjetas con manchas de tinta, a las cuales el sujeto da solamente una respuesta por tarjeta. La Forma A se utilizó en este estudio. Veintidós escalas estándares se usaron para calificar las respuestas a las manchas de tinta: Tiempo de Reacción, Rechazo, Localización, Espacio, Forma Definida, Forma Apropriadada, Color, Sombreado, Movimiento, Verbalización Patognomónica, Integración, Humano, Animal, Anatomía, Sexo, Abstracto, Ansiedad, Hostilidad, Barrera, Penetración, Balance y Popular.

De los 273 pacientes, 130 eran anglonorteamericanos, 109 negros norteamericanos y 34 hispanonorteamericanos (mexicanonorteamericanos). Los resultados mostraron que no hubo diferencias entre los anglonorteamericanos y los hispanonorteamericanos en ninguna escala. Sin embargo, hubo diferencias estadísticamente significativas entre los hispanonorteamericanos y los negros norteamericanos en dos escalas: Resentimiento y Forma Definida. Además, hubo diferencias significativas entre los anglonorteamericanos y los negros norteamericanos en tres escalas del Inventario de Hostilidad—Delito, Sospecha y Resentimiento—y

en siete escalas de la Técnica de Manchas de Tinta—Forma Definida, Forma Apropiada, Movimiento, Integración, Hostilidad, Barrera y Popular; comparados con los anglonorteamericanos, los negros norteamericanos obtuvieron valores más altos en estas tres escalas del Inventario de Hostilidad y valores más bajos en estas siete escalas de la Técnica de Manchas de Tinta.

Antes de poder ofrecer conclusiones firmes sobre estos resultados, será necesario obtener datos más extensos sobre poblaciones de pacientes y de otras personas. Aun así, diferencias entre grupos étnicos parecen ser factores importantes que se deben tomar en cuenta en la interpretación de respuestas a pruebas objetivas y proyectivas y en el uso de dichas respuestas para hacer predicciones estadísticas.

Self-Efficacy Theory Applied to a Case of School Phobia

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The case of a school-phobic child treated in 10 sessions with in vivo systematic desensitization is presented. Although the in vivo desensitization was the central intervention, several other elements may have contributed to the total treatment. The "narrow-band" behavioral approach, as opposed, for example, to self-efficacy theory, may thus be inadequate to explain fully the results of our behavioral interventions. A. Bandura's self-efficacy theory postulates that a person's perceptions of how well he or she can execute a course of action depends on four informational sources: (a) performance attainments, (b) vicarious experience, (c) verbal persuasion, and (d) physiological state. These four informational sources were available to the child and may have contributed to the treatment results. However, the limitations inherent in a single case study make it impossible to determine how much each source contributed to the treatment. The study also revealed the importance of the therapeutic relationship. It is argued that the therapist is an important source of information to the client and that the therapeutic relationship was responsible for the influence of verbal persuasion and modeling in the treatment.

When a child develops school phobia there is a warranted need for concern, since schooling is so important in our society. Systematic desensitization has been efficacious in dealing with this problem (Garvey & Hegrenes, 1966; Lazarus, Davison, & Polefka, 1965) and has enjoyed much success and popularity (Franks & Wilson, 1973). However, the theoretical rationale upon which this treatment was originally based has been substantially revised in light of new research evidence (Wilson & O'Leary, 1980). Systematic desensitization was originally developed by Wolpe (1958), who hypothesized that neurotic behavior was learned through classical conditioning. To diminish the likelihood of the undesirable behavior, Wolpe proposed a counterconditioning model, which he labeled *reciprocal inhibition*. In essence, reciprocal inhibition states that if a response antagonistic to the anxiety response occurs concomitantly, the connection between the stimulus and the anxiety response is weakened.

Rachman (1977) has pointed out, however, that the classical conditioning model does not adequately explain the development and maintenance of neurotic fears. Rachman summarizes the evidence against a strict classical conditioning model as follows: (a) many people who are exposed to intense fear-provoking conditions do not develop phobias; (b) in most cases, it is difficult or impossible to identify a specific traumatic experience that might have produced a conditioned fear; (c) certain types of stimuli are frequently associated with phobic reactions (e.g., heights, flying, closed spaces), whereas other stimuli with which we often come into contact and associate with trauma are not (e.g., hammers, nails, electrical outlets); (d) The development of phobias only at certain times in the client's life; (e) people with phobias frequently come into contact with their feared situations without any adverse effect, yet their fears do not extinguish, contrasting with laboratory findings that repeated presentation of a conditioned stimulus in the absence of the unconditioned stimulus leads to extinction; and (f) no conclusive evidence exists that lasting conditioned fear-reactions can be established in laboratories with humans.

Empirical findings have also challenged Wolpe's theoretical assumptions. Several studies show that neither graded exposure to aversive stimuli nor the presence of an antagonistic response to anxiety is necessary for systematic desensitization to occur (Wilson & O'Leary, 1980). Instead, the crucial variable affecting the efficacy of systematic desensitization seems to be whether this therapeutic technique is successful in strengthening the client's expectation of personal effectiveness, or what Bandura (1982) calls percepts of self-efficacy. Self-efficacy, according to social learning theory (Bandura, 1982), is determined by four sources of information. These informational sources include performance attainments, vicarious experience of observing the performance of others, verbal persuasion, and the person's physiological state. These informational sources, as we hope the study will show, were available to Peter, the patient, and may well have contributed to the treatment results.

Self-efficacy theory has been able to account for performance differences of subjects who have completed identical treatment. Bandura and Adams (1977)

found that snake-phobic subjects who had completed a systematic desensitization hierarchy and who had supposedly "thoroughly eliminated" their visualized fears still showed large dispersion in their performance scores. In contrast, when the subjects' percepts of self-efficacy, modified by the treatment, were assessed, a significantly better prediction of their posttreatment performance was obtained than when their performance was predicted on the basis of their completed desensitization hierarchy. Thus, these results contradict the counterconditioning model and support Bandura's self-efficacy theory.

Although the importance of the therapeutic relationship in behavior therapy has been recognized (Goldfried & Davison, 1976), it is unfortunate that this relationship tends to be de-emphasized. This de-emphasis of the therapeutic relationship in behavior therapy contrasts with other treatment orientations such as client-centered (Rogers, 1961) and dynamic (Singer, 1970) therapies, which emphasize the interpersonal relationship.

The following case of a school-phobic child treated by in vivo desensitization is presented and analyzed according to Bandura's (1982) theory of self-efficacy. As the case presentation will show, the therapeutic relationship was a major factor in the successful outcome. It is hoped that this study will illustrate the many variables that are responsible for an effective behavioral intervention.

TREATMENT

Peter was a six-year-old, excessively overweight Hispanic boy, who was enrolled in kindergarten. He was referred to the clinic by the school guidance counselor, and the presenting problem was school phobia. Peter, at the beginning of the academic year, refused to attend school, and his mother allowed him to stay home. She finally came to the clinic with Peter at the insistence of the school officials.

Peter lived alone with his mother. He had an older brother who was away in military service. Peter's mother, very isolated and socially inadequate, was a welfare recipient. She seldom took Peter outside to play, and consequently Peter had very little experience playing with other children. He spent much of his time at home with a cousin his age, whom the mother took care of. Initial assessment by the social worker at the clinic indicated that in addition to being school phobic, Peter was afraid to play with other children and to be separated from his mother.

Peter was treated in 10 sessions. Treatment goals consisted of getting him (a) to feel comfortable when away from his mother, (b) to play with other children at the clinic's playroom, and (c) to go back to school.

The first goal of treatment, enabling Peter to separate from his mother, was accomplished in the first two sessions. Initially, Peter was seen with his mother, and he became very apprehensive when she was asked to leave the therapist's

room. He was then assured that she would stay with him if he wished, but he was asked to sit next to her without clinging to her arm. He did so with some apprehension. He was then engaged in a conversation about his favorite television show and about the foods he liked best. Within a short time, he became involved in the conversation and relaxed. At that point, the mother was asked to move a few feet away from him until overt signs of anxiety reappeared in him. The conversation was again renewed until Peter became comfortable, at which point the mother was asked to move further away from him. This sequence of events was repeated until the mother stood by the office door and finally left the therapist's room. At that point, Peter was overtly comfortable, and he was able to relate to the therapist without apprehension. During subsequent sessions, he was able to come into the therapist's room alone without any noticeable difficulty.

The second goal of the treatment, getting Peter to play with other children in the clinic's playroom, was accomplished in four sessions. It should be noted that Peter possessed many of the social skills necessary to interact with other children, since he was accustomed to playing with his cousin. These sessions involved the transfer of established social skills to a new setting.

Several therapeutic techniques were used to accomplish this second goal. One technique that Peter enjoyed a great deal was emotive imagery (Lazarus & Abramovitz, 1962). Peter imagined himself to be with Fonz (a hero from his favorite television program, *Happy Days*), both of them going into the playroom and playing together. Another strategy of the treatment was to create games in which two or more children could play. Throughout this time, the different toys in the playroom were described for Peter by the therapist, who emphasized how much fun it would be to play there—the strategy of persuasion. During the fourth and fifth sessions, Peter was able to stand by the door of the playroom, but he did not go in. As he stood there, the different games in the playroom were pointed out to him.

In the sixth session, Peter went into the playroom with his cousin and the therapist. Peter was visibly excited by the different toys available. While he was engrossed in playing, two other children walked into the room, but Peter continued to play and did not seem to take notice of them. At that point, the therapist engaged Peter in a modified tic-tac-toe game, which he and the therapist had created during a previous session. This modified tic-tac-toe, which could now be played on the playroom's blackboard with different colored chalk, proved to be very useful. The game allowed more than one person to play at the same time, and the therapist was able gradually to integrate the two new children into the game. As the game progressed, the therapist slowly withdrew from the game and allowed Peter and the two children to play by themselves. From that time on, Peter was able to go into the playroom by himself with minimal or no help from the therapist. Peter never initiated any interaction while he was in the playroom but played with any child who approached him.

The third goal of treatment, getting Peter to attend school, was conceptualized as a process in which all his therapeutic gains were to be transferred to a new

setting: the school. In the remaining sessions, it was emphasized that in school Peter could meet other children with whom he could interact and enjoy different activities much in the same way as he had done in the playroom. During these sessions, Peter verbalized the fear that if he went to school, he would lose his mother. This irrational belief was corrected cognitively by the therapist and his mother. The therapist explained to Peter that just as he had come to the clinic and played in the playroom without losing his mother, so could he also attend school without losing her.

During the eighth session, Peter and the therapist walked to the school together but did not go in. In the ninth session, he was able to go into the school, to visit the guidance counselor's office, and to stand by the door of the teacher's room. In the tenth session, Peter entered the classroom with the therapist. In the classroom, the therapist helped him interact with other children, which task Peter did easily.

A follow-up one month and a half later (at the end of the school year) showed that Peter had been able to maintain his therapeutic gains. He had missed two days of classes during the first two weeks after therapy, but after the mother was counseled on the need to maintain Peter's daily attendance, he did not miss any more days. No adjustment difficulties during this follow-up period in the classroom were reported by his teacher or the guidance counselor.

DISCUSSION

As Campbell and Stanley (1963) have pointed out, the findings obtained from one case study can be the result of numerous uncontrolled variables. Hence, the following discussion should be seen as raising clinical questions and not as establishing generalizable relationships.

The first question concerns the accuracy of the diagnosis of school phobia, especially since the case was treated in only 10 sessions. Psychoanalytic writers have postulated that in school phobia the mother fosters an overdependency in the child. This dependency is said to create repressed hostility and separation anxiety in the child. These feelings are then displaced by the child onto the school (Schwartz & Johnson, 1981). Some behavioral therapists have also acknowledged the role of separation anxiety in school phobia. Garvey and Hegrenes (1966), for example, have stated that a child who fears losing his mother could become verbally conditioned to ideas about going to school where, in his mind, he would "lose" his mother. Hence, one might expect treatment to be of long duration.

The efficacy of short-term treatment of school phobic children with *in vivo* systematic desensitization is also supported by other reports (Garvey & Hegrenes, 1966; Lazarus, Davison, & Polefka, 1965). However, all school phobias may not be equally amenable to systematic desensitization. School

phobia may stem from fear of failure, fear of teachers, evaluation anxiety, fear of classmates, separation anxiety, and so forth (Schwartz & Johnson, 1981), and different treatment courses may be appropriate for different etiologies.

A second question is: What variables were responsible for getting Peter back to school? More than graded exposure appears to be involved in the total treatment. According to self-efficacy theory, several ingredients contributed synergistically to produce the results. Although it cannot be determined from the case study whether the four informational sources postulated by Bandura (1982) as determinants of self-efficacy were used by Peter, it is plausible that these were available to him.

First, the graded exposure to the feared situations allowed Peter to habituate himself to each new situation. In this manner, his physiological arousal was maintained at a low level—as evidenced by the absence of any overt sign of anxiety and by his report that he felt comfortable. In contrast, if these situations had been presented too quickly, it is plausible that Peter's level of physiological arousal would have become too intense. High arousal is usually an indicator of vulnerability, and people are less likely to expect success when they are beset by aversive arousal (Bandura, 1982).

Second, Peter accumulated a series of attainments in performance that were highlighted and reinforced by the therapist. He was gradually able to separate from his mother, to go into the clinic's playroom, and to socialize with other children. These accomplishments, because they were based on authentic experiences in mastering these relationships, were probably a source of information about his efficacy.

Vicarious experience was a third source of efficacy information to Peter: He observed other children interacting in the playroom. Research shows that observing one's peers perform successfully can raise efficacy expectations in the observer (Bandura, 1982). The therapist also modeled for Peter (consciously and probably unconsciously as well) different cognitive coping strategies that Peter may have assimilated and integrated into his cognitive repertoire. Kendall (1977) and Meichenbaum (1977) have shown that modeling cognitive strategies is one fruitful way to treat children suffering from a variety of clinical problems.

Finally, verbal persuasion was employed throughout the treatment. For example, when Peter was fearful that if he went to school his mother would never return, verbal persuasion was used to convince him that this idea was irrational. Also, verbal persuasion was used to highlight the potential reinforcers (e.g., toys and games) that he could obtain by going into the playroom and the classroom.

A further element of probable importance in the treatment was the therapeutic relationship. The therapist is an important source of information to the client, and the therapeutic relationship may be crucial to the effectiveness of the verbal persuasion and the cognitive modeling. Research in social psychology documents one's tendency to organize one's cognitions about persons and events in an internally consistent manner (Baron, Byrne, & Griffitt, 1974). Peter's

respect and liking for the therapist lent weight to the therapist's interventions and made possible the change in his cognitions from "I will lose my mother if I go to school" to "I will not lose my mother if I go to school."

In examining the constructive changes in Peter that are reported to have occurred during treatment and to have persisted thereafter, we must note additional resources that were recognized and drawn upon in his treatment by the therapist. Before therapy was begun, for example, Peter's mother reinforced Peter's school phobia by allowing him to stay home and by not allowing him to play outside the house. As a result of letters and meetings with the school guidance counselor and Peter's therapist, the mother began to allow Peter to play with other children in the neighborhood. Also, Peter entered therapy with personal assets that the therapist could make use of during the treatment sessions: Peter's already available social skills were transferred to new situations. For example, his ability to engage in imaginative play was used by the therapist for producing emotive imagery.

In essence, then, it is important to bear in mind that treatment results are probably dependent upon many factors, and that the described changes in Peter are not necessarily causally related, directly or indirectly, to the kind of interventions he received at the hands of his therapist. It is important to emphasize, therefore, how a multiplicity of factors can be deliberately brought to bear on the treatment. It is also important to determine whether a particular intervention facilitated a performance outcome and by how much. Also, it is important to bear in mind that treatment outcome was singled out for discussion; this emphasis consequently excluded from consideration other factors that may have affected Peter in the course of his treatment—for example, maturational factors and possible changes in his environment of which his therapist was unaware.

SUMMARY

The treatment of Peter, a school-phobic child, has been presented and discussed. It is argued that, although the *in vivo* desensitization was the central organizing intervention, several other elements besides graded exposure were responsible for the obtained results. Hence, an understanding of behavioral interventions outside the scope of a "narrow-band" behavioral perspective is necessary. Self-efficacy theory postulates that several information sources are responsible for a person's perception of how well he or she can execute a course of action. This theoretical model, therefore, is better able to account for the complexity of psychotherapy. The concept of *facilitation*, as opposed to *causation*, is proposed as a way to emphasize this complexity. The analysis also stresses that the therapist is an important source of information to the client, and thus the therapeutic relationship is of paramount importance.

REFERENCES

- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, *37*, 122-147.
- Bandura, A., & Adams, N. E. (1977). Analysis of self-efficacy theory of behavioral change. *Cognitive Theory and Research*, *1*, 287-308.
- Baron, R. A., Byrne, D., & Griffitt, W. (1974). *Social psychology: Understanding human interaction*. Boston: Allyn & Bacon.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Franks, C. M., & Wilson, G. T. (1973). *Behavior therapy: Theory and practice*. New York: Brunner/Mazel.
- Garvey, W. P., & Hegrenes, J. R. (1966). Desensitization techniques in the treatment of school phobia. *American Journal of Orthopsychiatry*, *36*, 147-152.
- Goldfried, M. R., & Davison, G. C. (1976). *Clinical behavior therapy*. New York: Holt, Rinehart and Winston.
- Kendall, P. C. (1977). On the efficacious use of verbal self-instructional procedures with children. *Cognitive Theory and Research*, *1*, 331-342.
- Lazarus, A. A., & Abramovitz, A. (1962). The use of "emotive imagery" in the treatment of children's phobias. *Journal of Mental Science*, *108*, 191-195.
- Lazarus, A. A., Davison, G. C., & Polefka, D. A. (1965). Classical and operant factors in the treatment of a school phobia. *Journal of Abnormal Psychology*, *70*, 225-229.
- Meichenbaum, D. (1977). *Cognitive-behavior modification: An integrative approach*. New York: Plenum.
- Rachman, S. (1977). The conditioning theory of fear-acquisition: A critical examination. *Behavior Research and Therapy*, *15*, 375-388.
- Rogers, C. R. (1961). *On becoming a person*. Boston: Houghton Mifflin.
- Schwartz, S., & Johnson, J. H. (1981). *Psychopathology of childhood: A clinical experimental approach*. New York: Pergamon.
- Singer, E. (1970). *Key concepts in psychotherapy*. New York: Basic Books.
- Wilson, G. T., & O'Leary, K. D. (1980). *Principles of behavior therapy*. Englewood Cliffs, NJ: Prentice-Hall.
- Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition*. Stanford, CA: Stanford University Press.

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RESUMEN EXTENSO

La Teoría de Auto-Eficacia Aplicada al Caso de un Niño con Fobia de Ir a la Escuela

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y

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Se ilustra el caso de un niño con fobia de ir a la escuela. El niño fue tratado en 10 sesiones con insensibilización sistemática. El proceso terapéutico muestra que varios elementos participaron en la totalidad del tratamiento a pesar de que la intervención central fue la insensibilización sistemática. El estudio sugiere que una teoría conductista rígida y ortodoxa es inadecuada para explicar y comprender la complejidad del proceso terapéutico.

La teoría de A. Bandura de auto-eficacia propone una mejor manera de entender el proceso terapéutico. La teoría de Bandura postula que la conducta de una persona depende de cuatro fuentes de información cuando se trata de predecir si la persona es o no capaz de llevar a cabo una acción. Estas fuentes son: (a) experiencias de logros que la persona ha tenido, (b) su estado fisiológico, (c) experiencias vicarias, y (d) persuasión verbal que la persona ha recibido. El caso presentado sugiere que estas cuatro fuentes de información estuvieron al alcance del paciente durante el proceso terapéutico y que, probablemente, contribuyeron a los cambios observados, aunque es imposible determinar hasta qué punto cada una de estas fuentes fueron responsables por los cambios que se observaron, dado las limitaciones de un solo caso clínico.

Hemos dado muestras de que la exposición gradual del paciente a cada nueva situación le dio oportunidad de que él se habituara a la misma y así su estado de ansiedad fisiológica se mantuvo en un nivel adecuado que probablemente le indicaba que él podía vencer su fobia. Se notó durante el proceso terapéutico que el paciente fue acumulando una serie de logros que aumentaron su percepción de auto-eficacia. Además, el paciente observó a otros niños en interacciones sociales, lo que probablemente le sirvió de una tercera fuente de información. Finalmente, el terapeuta trató constantemente de persuadir al paciente de la capacidad del paciente para afrontar sus propias dificultades.

Debe notarse que en el tratamiento se enfatizó la importancia de la relación terapéutica. Este factor ha sido reconocido ampliamente en otras orientaciones teóricas, pero no así en la presentación de casos tratados con métodos conductistas. En consecuencia, se ha creado la impresión de que el tratamiento conductista es frío y mecánico. Esta idea es errónea pues como este estudio señala, el terapeuta es una fuente importante de información para el paciente y la relación terapéutica juega un papel primordial en el efecto que el terapeuta tiene en eliminar creencias irracionales que tenga el paciente.

Autoshaping in Pigeons: Effects of Partial Reinforcement on Acquisition and Extinction

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The effects of partial reinforcement (25%) on acquisition and extinction of the pigeon's autoshaped key-peck for food-reinforcement was explored in three groups. One group, C/48/48, received 48-trial sessions under continuous reinforcement. A second group, P/12/48, received 48-trial sessions in which 12 trials (25%) were reinforced. A third group, P/48/192, had 192-trial sessions in which 48 trials (25%) were reinforced. P/12/48 had the same number of trials per session as C/48/48, and P/48/192 had the same number of pairings per session as C/48/48. Each group was conditioned until it met a specific criterion, thus allowing comparisons of performances in extinction. Acquisition was impaired by partial reinforcement when measured by trials, and also P/12/48 acquired faster than P/48/192, which suggests a trial-per-session effect. When acquisition was measured by reinforced trials, C/48/48 and P/12/48 showed more similar acquisition curves than each of these compared with P/48/192. Extinction performance was similar in all groups.

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Autoshaping of the pigeon's key-peck response is a widely used preparation in the study of a variety of aspects of Pavlovian conditioning (Locurto, Terrace, & Gibbon, 1981). This phenomenon, discovered by Brown and Jenkins (1968), consists of the development of key-peck responses toward a localized light (the conditioned stimulus, CS) that has been consistently paired with food (the unconditioned stimulus, US). Such key-pecks are emitted even though the CS-US pairings are response-independent (i.e., Pavlovian). Few experiments have dealt with the effects of partial reinforcement (PRF) on acquisition, maintenance, and extinction of autoshaped key-pecking (Gibbon, Farrell, Locurto, Duncan, & Terrace, 1980; Gonzalez, 1973, 1974; Papini & Overmier, 1984). Gonzalez (1973) conditioned two groups of pigeons, one with continuous reinforcement (CRF) and the other with 25% PRF; because the number of CS-US pairings per session was held constant, the PRF group received four times more trials per session than the CRF group. Gonzalez found that PRF animals learned more slowly and to a lower asymptote than the animals that were conditioned with CRF when performance was measured by trials. In addition, he found response latencies to be longer in the PRF animals. Similar results were reported by Gibbon et al. (1980). They carried out a factorial experiment involving five different percentages of reinforcement and five different inter-trial intervals in independent groups. In their experiment, too, the number of CS-US pairings per session was equated. Finally, Papini and Overmier (1984) conditioned several groups of pigeons at 25% PRF but in such a way as to make possible factorial comparisons of the effects on learning of equating *both* CS-US pairings per session and CS trials per session. They also found that CRF groups showed faster response acquisition than PRF groups when measured by trials, but the PRF groups differed according to the number of trials per session—those animals that received fewer trials showed faster acquisition than those that received relatively more trials per session. This fact suggests that a study of the effects of PRF on learning must include at least two PRF groups for comparison: one in which CS-US pairings per session are equated and another in which CS trials per session are equated.

PRF has been traditionally studied not only for empirical reasons but also because its effects on acquisition and on extinction have explicit theoretical implications. For example, the PRF extinction effect (higher resistance to extinction after PRF than after CRF) has been commonly reported in instrumental learning (Lewis, 1960; Mackintosh, 1974), but only sometimes observed in Pavlovian conditioning (Brimer & Dockrill, 1966; Fitzgerald, 1963; Hilton, 1969; Humphreys, 1939, 1940; Slivka & Bitterman, 1966). A number of experiments have failed to obtain it (Gonzalez, Longo, & Bitterman, 1961; Gormezano & Coleman, 1975; Longo, Milstein, & Bitterman, 1962; Schever, 1969; Thomas & Wagner, 1964; Wagner, Siegel, & Fein, 1967, Experiment 1). Because these effects attracted considerable theoretical attention in the instrumental domain (Amsel, 1958, 1962; Capaldi, 1966), the fact that they are difficult to obtain in Pavlovian conditioning situations has been interpreted by

some as suggesting a fundamental difference in the processes underlying these two forms of associative learning (Kimble, 1961). In fact, other effects produced by PRF, such as response patterning in single alternation schedules of reinforcement, may also be used to differentiate between Pavlovian and instrumental learning. Whereas response patterning has been observed in instrumental situations (Couvillon & Bitterman, 1981; Couvillon, Brandon, Woodard, & Bitterman, 1980; Tyler, Wortz, & Bitterman, 1953), it has consistently failed to appear in Pavlovian situations (Grant, Riopelle, & Hake, 1950; Leonard & Theios, 1967), including autoshaping in pigeons (Papini, 1983).

More recently, Gibbon et al. (1980) have used the PRF paradigm to test some predictions of the scalar expectancy theory of conditioning (Gibbon & Balsam, 1981). In this theory, the emergence of the Pavlovian conditioned response (e.g., key-peck behavior in autoshaping) is a function of the ratio between the expectancy of the US conditioned to the contextual stimuli (indexed by the inter-reinforcement cycle, C) and the expectancy conditioned to the signal (indexed by the CS duration per reinforcer, T). As the expectancy ratio, C/T , becomes larger, the emergence of the conditioned response occurs earlier. In the special case of PRF, the animal is assumed to compute C (the inter-reinforcement cycle) and to add all presentations of the signal during that period to obtain a value of T . One surprising consequence of this theory is that if the C/T ratio remains constant over CRF and PRF groups, all other things being equal, no differential effects of PRF are predicted. However, to evaluate this prediction, performance must be plotted as a function of reinforcements instead of trials. Gibbon et al. (1980) reported results consistent with this view, but Papini and Overmier (1984) found that CRF and PRF groups achieved final performance with a similar number of reinforcements *only* when they had the same number of trials per session; otherwise, groups with fewer trials per session reached asymptotic performance faster than groups with more trials per session, in spite of being equated in terms of C/T ratio.

The present experiment attempts to further replicate the pattern of results reported by Papini and Overmier, preserving comparison groups in both trials per session and pairings per session while controlling for a possible artifact arising from pre-session adaptation periods equal across groups. In addition, because here we used a behavioral criterion for asymptotic performance and the termination of the acquisition phase, we could safely explore the effects of PRF in autoshaping upon extinction. Extinction data on the effects of PRF in autoshaping have only been reported by Gibbon et al. (1980). They found extinction to be similar in PRF and CRF groups when plotted as a function of expected reinforcements. However, because their purpose was to obtain information relating extinction and expected reinforcements, they preserved the number of trials per session each group had received during acquisition; this resulted in dissimilar conditions between groups during extinction. Moreover, their PRF groups were performing at a higher asymptotic level than the CRF groups before extinction, and therefore the initial extinction levels are not strictly comparable.

METHOD

Subjects

Twelve naive pigeons were used. These were maintained under continuous illumination in individual cages with water freely available but deprived of food until they were at $80 \pm 4\%$ of the free-feeding weight. Additional amounts of food, beyond that provided in the sessions, were supplied from 20 to 120 min after the end of the session so as to maintain body weights within the critical ranges.

Apparatus

Two similar boxes (Coulbourn Instruments, Inc.) were used. The boxes measured 32.5 cm high, 24.1 cm wide, and 29.5 cm long. A ceiling lamp provided diffuse illumination throughout the session. A key (2.5 cm diameter) was located in the center of the front wall, approximately 20 cm above the floor. During the intertrial interval (ITI) the key was dark; during a trial the key was illuminated from behind with a green light. A hopper was placed at one side of the key, approximately 11 cm above the floor. A speaker located in the upper right corner of the front wall provided constant white noise, which together with the fan, achieved a level of approximately 80 dB (SPL, Scale B). Each box was enclosed in a sound-reducing cubicle (Coulbourn Instruments, Inc.).

Procedure

All the subjects were pretrained to approach and eat from the hopper in two successive sessions. During the first session, the animals were introduced in the box and allowed to eat from the hopper for 60–90 sec. Afterwards, they received 40 US presentations according to an FT 1-min schedule. US duration was gradually reduced from 30 to 3 sec as the birds became more immediately responsive to its presentation. During the second session, animals were introduced into the box and received 40 US presentations of a VT 1-min. Again, US duration was gradually reduced from 30 to 3 sec. A prompt, reliable approach response was observed in all birds at the end of the second session.

Acquisition started in the third day. Animals were assigned to one of three equal sized groups. Group C/48/48 received 48 trials per session under CRF. Group P/12/48 received 48 trials per session of which only 12 trials were reinforced (25%); this group received the same number of trials per session as the CRF group. Group P/48/192 received 192 trials per session in which 48 trials were reinforced (25%); this group received the same number of CS-US pairings per session as the CRF group.

In a conditioning session, an animal was introduced in the box and 30 sec later the house light was turned on and a 5-min adaptation period began. During a trial, the key was illuminated green for 8 sec and its termination was simultaneous with the presentation of the hopper, which made food accessible for

4 sec. On a nonreinforced trial, only the key was illuminated for 8 sec. The ITI was variable with a mean of 42.5 sec (\pm 24 sec). Ten seconds after the last trial in each session, the house light was automatically turned off and the animals were returned to their cages. All groups received acquisition training until they reached a criterion of at least 12 consecutive 12-trial blocks with a probability of response larger than 0.8. The animal continued until the end of the session if the criterion were met within it.

After this criterion was met, the groups began a series of five daily sessions of extinction in which there were 48 eight-second presentations of the CS followed by a four-second presentation of the empty hopper.

RESULTS

The analysis of results will focus separately upon acquisition and extinction. Statistical tests were two-tailed; the significance level was set at .05. The results were analyzed in terms of (a) the probability of at least one response on a trial and (b) the mean number of responses on a trial. Because both measures yielded the same results, data will be presented only in terms of the former.

Acquisition

Figure 1 displays the results obtained during the four initial 48-trial blocks. Group C/48/48 acquired the key-peck faster than any of the PRF groups, and P/12/48 showed a higher probability of response than P/48/192. A 3×4 (Groups \times 48-Trial Blocks) analysis of variance, with repeated measures on one factor, indicated that the groups differed significantly, $F(2, 9) = 11.78$, and so did the 48-trial blocks, $F(3, 27) = 21.11$, and the interaction, $F(6, 27) = 2.61$. A posteriori tests using Tukey's ratio indicated that all groups significantly differed from each other, $Q_s(3, 9) \geq 4.49$.

When the probability of at least one response per trial data from Figure 1 is replotted as a function of blocks of 12 reinforcements, a different pattern appears. This is shown in Figure 2. In this case, group C/48/48 learns similarly to group P/12/48, but both are faster than group P/48/192. This suggests that when number of trials per session and C/T ratios are equal, similar acquisition rates are obtained under CRF or PRF condition when measured by reinforced trials. However, when trials per session differ, acquisition rates as measured by reinforced trials differ even though C/T ratios are equal. The simple main effect of groups already approaches significance at block 2, $F(2, 36) = 2.23$, and while C/48/48 and P/12/48 do not differ from each other, $t(36) < 1$, they do differ from P/48/192, $t(36) = 1.95$, $p < .05$, one-tailed, in accordance with our expectations based upon our previous work (Papini & Overmier, 1984). This is corroborated by the data on the number of reinforcements until reaching the criterion of 4 successive trials with pecks in at least 3: C/48/48 = 18; P/12/48 = 16; P/48/192 = 57.

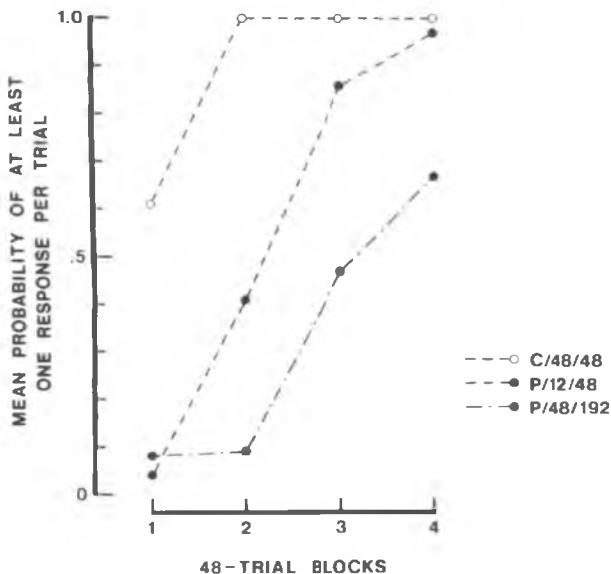


Figure 1. Mean probability of at least one response per trial as a function of 48-trial blocks and groups.

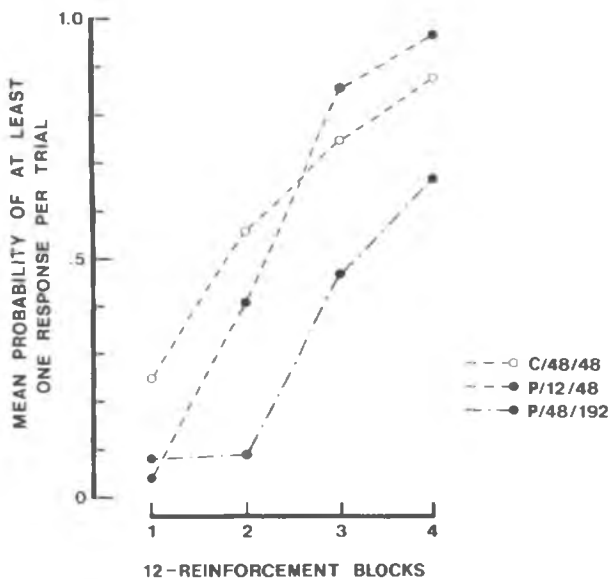


Figure 2. Mean probability of at least one response per trial as a function of 12-reinforcement blocks and groups.

Extinction

Figure 3 shows performance during the criterion run and extinction. There were no statistical differences between the groups during the last three 48-trial blocks of acquisition. PRF groups appear to have a higher probability of response, particularly during the first two sessions. However, the statistical analysis indicated that only the 48-trial blocks factor was significant, $F(4, 36) = 58.04$.

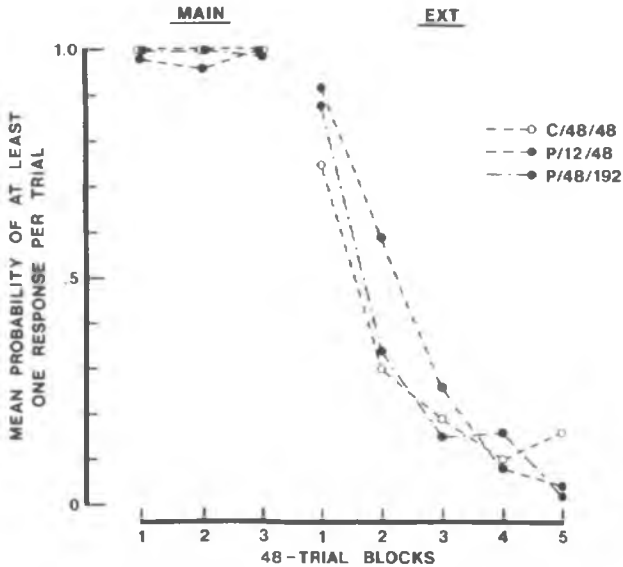


Figure 3. Mean probability of at least one response per trial as a function of 48-trial blocks and groups, during asymptote period (MAIN) and extinction period (EXT).

DISCUSSION

Acquisition, as measured by trials, was faster in the CRF group than in any of the PRF comparison groups. Retardation of acquisition in autoshaping under PRF was also reported by Gonzalez (1973) and Gibbon et al. (1980), and by Wasserman, Hunter, Gutowski, and Bader (1975), who showed autoshaped key-pecks in chicks with heat as the US. However, our PRF groups differed from each other in acquisition measured by trials *and* measured by reinforcements: the group with 48 trials per session performed better than the 192 trials per session group with which it was matched on C/T ratio. This difference is unexpected by scalar expectancy theory (Gibbon & Balsam, 1981) and implies that the theory must be augmented to incorporate this parameter. How this may be done is not

obvious. The present finding agrees with results reported by Papini and Overmier (1984), and although the differences were marginally significant, group performances were clearly ordered in the expected way. There is a high within-group variability in the data. Because the theoretically interesting result (Gibbon & Balsam, 1981) is to find no differences between CRF and PRF groups (i.e., to accept the null hypothesis), the data need to be free of any characteristic suggesting an effect (i.e., a trend). The pattern observed in our group values suggests that the number of trials per session is an important variable modulating the emergence of the key-peck, together with *C* and *T*.

Extinction performance in our experiment differed from that reported by Gibbon et al. (1980). We found no differences between CRF and PRF groups while they found higher performance in PRF animals when extinction was a function of trials. However, an important procedural difference may account for this lack of agreement. Gibbon et al. (1980) presented the CS alone in extinction trials in both the CRF and the PRF conditions. This procedure may favor the PRF groups because there is a smaller between-phase change for the PRF groups and hence less stimulus generalization decrement. In the procedure used in the present experiment, the CS was always followed by the *presentation* of an empty hopper. In terms of a generalization decrement account of extinction, our procedure favors the CRF condition (i.e., less change from acquisition for the CRF group). The differences between our pattern of extinction results and those of Gibbon et al. (1980) might be based on the differences in procedures. Alternatively, our results may more simply be taken to imply that PRF does not lead to more persistence of a Pavlovian conditioned key-peck. Additional research is needed to clarify this issue.

As far as these results are concerned, the retardation of acquisition produced by PRF on a trial and on a reinforcer basis suggests that autoshaping in pigeons might be strongly influenced by Pavlovian mechanisms, although "superstitious" instrumental reinforcement cannot be completely ruled out (Williams & Williams, 1969; Schwartz & Gamzu, 1977).

REFERENCES

- Amsel, A. (1958). The role of frustrative nonreward in noncontinuous reward situations. *Psychological Bulletin*, *55*, 102-119.
- Amsel, A. (1962). Frustrative nonreward in partial reinforcement and discrimination learning: Some recent history and a theoretical extension. *Psychological Review*, *69*, 306-328.
- Brimer, C. J., & Dockrill, F. J. (1966). Partial reinforcement and the CER. *Psychonomic Science*, *5*, 185-186.
- Brown, P. L., & Jenkins, H. M. (1968). Autoshaping of the pigeon's keypeck. *Journal of the Experimental Analysis of Behavior*, *11*, 1-8.

- Capaldi, E. J. (1966). Partial reinforcement: A hypothesis of sequential effects. *Psychological Review*, *73*, 459–477.
- Couvillon, P. A., & Bitterman, M. E. (1981). Analysis of alternation patterning in goldfish. *Animal Learning and Behavior*, *9*, 169–172.
- Couvillon, P. A., Brandon, S. E., Woodard, W. T., & Bitterman, M. E. (1980). Performance of pigeons in patterned sequences of rewarded and nonrewarded trials. *Journal of Experimental Psychology: Animal Behavior Processes*, *6*, 137–154.
- Fitzgerald, R. D. (1963). Effects of partial reinforcement with acid on the classically conditioned salivary response in dogs. *Journal of Comparative and Physiological Psychology*, *56*, 1056–1060.
- Gibbon, J., & Balsam, P. (1981). Spreading association in time. In C. M. Locurto, H. S. Terrace, & J. Gibbon (Eds.), *Autoshaping and conditioning theory*. New York: Academic.
- Gibbon, J., Farrell, L., Locurto, C. M., Duncan, H. J., & Terrace, H. S. (1980). Partial reinforcement in autoshaping with pigeons. *Animal Learning and Behavior*, *8*, 45–59.
- Gonzalez, F. A. (1973). Effects of partial reinforcement (25%) in an autoshaping procedure. *Bulletin of the Psychonomic Society*, *2*, 299–301.
- Gonzalez, F. A. (1974). Effects of varying the percentage of key illuminations paired with food in a positive automaintenance procedure. *Journal of the Experimental Analysis of Behavior*, *22*, 483–489.
- Gonzalez, R. C., Longo, N., & Bitterman, M. E. (1961). Classical conditioning in the fish: Exploratory studies of partial reinforcement. *Journal of Comparative and Physiological Psychology*, *54*, 452–456.
- Gormezano, I., & Coleman, S. R. (1975). Effects of partial reinforcement on conditioning, conditional probabilities, asymptotic performance, and extinction of the rabbit's nictitating membrane response. *Pavlovian Journal of Biological Science*, *10*, 13–22.
- Grant, D. A., Riopelle, A. J., & Hake, H. W. (1950). Resistance to extinction and the pattern of reinforcement. I. Alternation of reinforcement and the conditioned eyelid response. *Journal of Experimental Psychology*, *40*, 53–60.
- Hilton, A. (1969). Partial reinforcement of a conditioned emotional response in rats. *Journal of Comparative and Physiological Psychology*, *69*, 253–260.
- Humphreys, L. G. (1939). The effect of random alternation of reinforcement on the acquisition and extinction of conditioned eyelid reactions. *Journal of Experimental Psychology*, *25*, 141–158.

- Humphreys, L. G. (1940). Extinction of conditioned psychogalvanic responses following two conditions of reinforcement. *Journal of Experimental Psychology*, *27*, 71–75.
- Kimble, G. A. (1961). *Hilgard and Marquis' Conditioning and learning*. Englewood Cliffs, NJ: Prentice-Hall.
- Leonard, D. W., & Theios, J. (1967). Classical eyelid conditioning in rabbits under prolonged single alternation conditions of reinforcement. *Journal of Comparative and Physiological Psychology*, *64*, 273–276.
- Lewis, D. J. (1960). Partial reinforcement: A selective review of the literature since 1950. *Psychological Bulletin*, *57*, 1–28.
- Locurto, C. M., Terrace, H. S., & Gibbon, J. (Eds.). (1981). *Autoshaping and conditioning theory*. New York: Academic.
- Longo, N., Milstein, S., & Bitterman, M. E. (1962). Classical conditioning in the pigeon: Exploratory studies of partial reinforcement. *Journal of Comparative and Physiological Psychology*, *55*, 983–986.
- Mackintosh, N. J. (1974). *The psychology of animal learning*. London: Academic Press.
- Papini, M. R. (1983). Autoshaping and reinforcement patterning in the pigeon. *Revista Interamericana de Psicología/Interamerican Journal of Psychology*, *17*(1 & 2), 97–108.
- Papini, M. R., & Overmier, J. B. (1984). *Partial reinforcement and autoshaping of the pigeon's key-peck behavior*. Manuscript submitted for publication.
- Schever, C. (1969). Resistance to extinction of the CER as a function of shock-reinforcement training schedules. *Psychonomic Science*, *17*, 181–182.
- Schwartz, B., & Gamzu, E. (1977). Pavlovian control of operant behavior. In W. K. Honig & J. E. R. Staddon (Eds.), *Handbook of operant behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Slivka, R. M., & Bitterman, M. E. (1966). Classical appetitive conditioning in the pigeon: Partial reinforcement. *Psychonomic Science*, *4*, 181–182.
- Thomas, E., & Wagner, A. R. (1964). Partial reinforcement of the classically conditioned eyelid response in the rabbit. *Journal of Comparative and Physiological Psychology*, *58*, 157–158.
- Tyler, D. W., Wortz, E. C., & Bitterman, M. E. (1953). The effect of random and alternating partial reinforcement on resistance to extinction in the rat. *American Journal of Psychology*, *66*, 57–65.
- Wagner, A. R., Siegel, L. S., & Fein, G. G. (1967). Extinction of conditioned

fear as a function of percentage of reinforcement. *Journal of Comparative and Physiological Psychology*, 63, 160-164.

Wasserman, E. A., Hunter, N. B., Gutowski, K. A., & Bader, S. A. (1975). Autoshaping chicks with heat reinforcement: The role of stimulus-reinforcer and response-reinforcer relations. *Journal of Experimental Psychology: Animal Behavior Processes*, 104, 158-169.

Williams, D. R., & Williams, H. (1969). Auto-maintenance in the pigeon: Sustained pecking despite contingent nonreinforcement. *Journal of the Experimental Analysis of Behavior*, 12, 511-520.

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RESUMEN EXTENSO

Automoldeamiento en Palomas: Efectos del Reforzamiento Parcial en la Adquisición y la Extinción

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y

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Existen muy pocos estudios experimentales sobre los efectos del reforzamiento parcial (RFP) en la adquisición y, aun menos, en la extinción del picoteo automoldeado de la paloma. En este trabajo se estudió un programa de RFP del 25%. Se entrenaron tres grupos de palomas: El grupo C/48/48 recibió sesiones de 48 ensayos cada una bajo un programa de reforzamiento continuo (RFC). El grupo P/12/48 también recibió sesiones de 48 ensayos, pero en cada sesión sólo 12 ensayos (25%) fueron reforzados; los ensayos no reforzados consistieron en la presentación del estímulo condicionado solamente. El grupo P/48/192 recibió sesiones de 192 ensayos de los cuales 48 (25%) fueron reforzados. Este diseño permitió establecer comparaciones entre grupos con RFC y RFP igualados en el número de ensayos por sesión (p.ej., C/48/48 y P/12/48) e igualados en el número de apareamientos por sesión (p.ej., C/48/48 y P/48/192).

Durante la primera fase de adquisición, los grupos fueron entrenados hasta que cada animal completara un criterio de adquisición. Este criterio consistió en exhibir, durante al menos 12 bloques consecutivos de 12 ensayos cada uno, una probabilidad mayor a 0,80 de por lo menos una respuesta condicionada por ensayo. Si el criterio era completado durante una sesión, el animal continuaba hasta finalizar la sesión bajo la misma condición. Este criterio aseguró un comportamiento terminal similar entre los grupos y así permitió una comparación adecuada del curso de la extinción. Una vez completado el criterio, los animales fueron sometidos a una fase de extinción que consistió en 5 sesiones de 48 ensayos cada una; durante estas sesiones el estímulo condicionado iba seguido por la presentación del comedero y la luz del mismo, pero sin el alimento que había sido utilizado como reforzador.

La adquisición de la respuesta condicionada fue retardada por el RFP cuando ésta se expresó en función de ensayos. Cuando la adquisición se expresó en función del número de reforzamientos administrados, los grupos C/48/48 y P/12/48, con igual número de ensayos por sesión, mostraron valores medios similares y una curva más acelerada que el grupo P/48/192. Durante la extinción los tres grupos mostraron decrementos de la probabilidad de responder durante el estímulo condicionado muy similares, cualquiera que haya sido su experiencia previa. Los resultados se discuten en relación con la teoría escalar de la expectación y con las posibles diferencias entre condicionamiento pavloviano y aprendizaje instrumental.

Características Psicossociais de Crianças Brasileiras Mais e Menos Criativas

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Foi o objetivo do estudo investigar as características psicossociais de duas amostras de alunos de 3ª e 4ª séries do ensino de primeiro grau: uma composta por 23 alunos considerados mais criativos e outra composta por 14 alunos considerados menos criativos por seus professores. Obtiveram-se informações sobre nível de criatividade, interesses, aspirações bem como a respeito do tipo de aluno que estes sujeitos mais gostariam de ter como colegas, mais gostariam de ser, aquele preferido pelo professor e aquele com mais chances de ser bem sucedido após deixar a escola. Outras informações sobre traços e características desses sujeitos foram obtidas através de instrumentos respondidos por seus professores. Poucas diferenças foram observadas entre os dois grupos nos diversos aspectos investigados. Observou-se, entretanto, que o aluno com características criativas não é o tipo de aluno que estes sujeitos desejam ser e nem tão pouco é desejado pelo professor. Observou-se ainda que os alunos apontados como mais criativos preferiam ter colegas mais criativos mas não gostariam de sê-lo. Quanto às características de personalidade, observou-se que o grupo mais criativo foi apontado por seus professores como mais autoconfiantes que os seus colegas menos criativos. Observou-se ainda no primeiro grupo um maior número de sujeitos cujas mães trabalhavam fora do lar.

Criatividade constitui um tópico que tem sido o foco de muitos estudos e discussões por parte de psicólogos e educadores. Esta área, que esteve por longo tempo abandonada por parte da Psicologia, passou a atrair uma atenção

Esta pesquisa dependeu de inúmeras pessoas. A autora agradece especialmente à direção e professores das escolas-parques de Brasília, DF, Brasil.

crescente, desde o discurso de Guilford como presidente da Associação Americana de Psicologia na década de 1950, quando chamou a atenção para o reduzidíssimo número de estudos sobre criatividade. Desde então, inúmeros estudos foram realizados com vistas a responder, dentre outras, as seguintes questões: Quais as características cognitivas, motivacionais e de personalidade de indivíduos altamente criativos? Que fatores ambientais tendem a facilitar o desenvolvimento e manifestação da criatividade? Que atitudes imperam entre os agentes socializadores com relação à manifestação da criatividade da criança? Qual a relação entre a criatividade durante a infância e na vida adulta? Qual a relação entre a criatividade dos pais e professores e a dos alunos? Quais as principais barreiras ao desenvolvimento e manifestação da criatividade?

Pesquisas feitas no Brasil têm indicado que, apesar de haver um interesse por parte do sistema escolar em desenvolver o potencial criativo da criança desde os primeiros anos de frequência à escola, os níveis de criatividade de nossos alunos é baixo (Alencar, 1974) e que tentativas de estimular a criatividade através de atividades programadas têm sido bem sucedidas (Alencar, 1975; Forster, 1978; Guhur, 1976; Maia, 1975; Marin, 1976). Diferenças entre os sexos, classes sociais e séries foram também investigadas (Alencar, 1975; Rodrigues, 1979), observando-se um desempenho criativo superior por parte de alunos do sexo feminino, de nível sócio-econômico médio e de séries mais avançadas.

Entretanto, pouco se sabe a respeito das características, interesses e personalidade dos alunos que têm se destacado por um desempenho criativo superior. Os dados empíricos existentes nesta área são todos eles provenientes de outros contextos culturais (Dellas e Gaier, 1970) obtidos em sua maioria com amostras de adolescentes e adultos, o que não permite a sua generalização para o nosso contexto, antes que estudos sejam também aqui realizados. O conhecimento deste aspecto é, entretanto, importante pois poderia oferecer sugestões quanto aos traços e interesses que deveriam ser cultivados pelo sistema educacional e fatores que poderiam facilitar a expressão da criatividade.

Com relação a este aspecto, foi nosso objetivo realizar um estudo exploratório com vistas a investigar interesses, aspirações, nível de criatividade, traços de personalidade e comportamento em sala de aula de uma amostra de alunos considerados por seus professores como mais criativos, comparando-os com uma amostra composta por alunos considerados menos criativos.

MÉTODOS

Amostra

A amostra foi constituída por 25 alunos considerados por seus professores como mais criativos e 14 alunos considerados menos criativos. A idade média do

grupo mais criativo era 9,6 anos e a do grupo menos criativo era 10 anos. O grupo mais criativo era composto por 13 sujeitos do sexo masculino e 12 do sexo feminino. O grupo menos criativo era composto por 10 sujeitos do sexo masculino e 4 do sexo feminino. Do grupo mais criativo 20 eram alunos da 3ª série e 5 da 4ª série. Do menos criativo, 11 eram alunos da 3ª série e 3 da 4ª série.

A indicação dos alunos mais criativos e daqueles menos criativos foi feita pelos professores de escolas-parques da rede oficial de ensino do Distrito Federal (Brasil). Estas escolas são freqüentadas por alunos do ensino de primeiro grau das escolas públicas de Brasília, os quais têm um dia da semana reservado para atividades ligadas às artes e educação artística neste local. Esta indicação foi feita após os professores ouvirem uma palestra sobre criatividade proferida pela autora do presente estudo abordando definições, barreiras ao desenvolvimento da criatividade e meios de favorecer o seu desenvolvimento. Foi indicado também para estes professores a leitura do texto “A estimulação do pensamento criador” (Alencar, 1976). Estes professores tiveram ainda dois meses para observar os seus alunos antes de apontar aqueles que demonstravam maior grau ou menor grau de criatividade.

Instrumentos

Informações a respeito das características cognitivas, de personalidade e comportamento em sala de aula foram obtidas através dos seguintes instrumentos:

Testes de criatividade. Foram utilizados os testes “Círculos” e “Usos Inusitados” escolhidos dentre os testes de Pensamento Criativo de Torrance. O primeiro deles é de natureza figurativa. Nele, o aluno recebe uma série de círculos e é instruído a fazer o maior número de objetos ou de desenhos diferentes com estes círculos. Em “Usos Inusitados”, o aluno deve dar o maior número possível de usos novos e diferentes para caixas de papelão vazias. Em ambos os testes, além de se instruir o aluno a dar o maior número possível de respostas, os mesmos foram também incentivados a dar respostas diferentes e não usuais entre seus colegas. Cada um dos dois testes foi avaliado nas categorias de fluência, flexibilidade e originalidade, usando-se os procedimentos recomendados por Torrance (1966). Fluência é o número total de respostas relevantes, relevância sendo definida em termos dos requisitos das tarefas como apresentadas nas instruções. Flexibilidade é o número total de diferentes categorias em que as respostas dos sujeitos podem ser classificadas. Estas categorias são conceitos amplos, nos quais as respostas são classificadas. Como exemplo de categorias no teste “Círculos”, poder-se-iam citar letras do alfabeto, numerais, corpos celestes, flores. O mesmo sujeito poderia dar mais de uma resposta em uma determinada categoria. Por exemplo, a partir do círculo, o sujeito poderia desenhar um girassol, uma margarida e um cravo. Por esta razão, o seu escore em flexibilidade nunca é maior que o seu escore em fluência. Originalidade se baseia na raridade

estatística das idéias expressas. A raridade estatística é a frequência de ocorrência das respostas na população de respostas. Escores de 0, 1 e 2 foram dados de acordo com a originalidade da resposta. A aplicação dos testes de criatividade foi individual, tendo o aluno dez minutos para responder a cada um deles.

Traços desejáveis. Trata-se de uma adaptação de um instrumento utilizado por Getzels e Jackson (1962) em sua pesquisa com uma amostra de sujeitos mais criativos e mais inteligentes. Consiste na descrição de dez alunos hipotéticos que diferem entre si em alguns aspectos importantes. Os seguintes exemplos ilustram alguns tipos de alunos hipotéticos incluídos: Aluno A—este é o aluno que é popular, que tem muitos amigos e que se dá bem com todos os colegas; Aluno B—este é o aluno que tem mais senso de humor na escola; Aluno C—este é o melhor atleta da escola, que é bom em todos os esportes. Esta relação era lida pela pesquisadora junto a cada sujeito individualmente, solicitando-lhe para colocar o número 1 no espaço correspondente ao aluno que ele mais gostaria de ter como colega em sala de aula, o número 2 no espaço correspondente ao aluno que ele gostaria de ter como colega em segundo lugar e assim sucessivamente, colocando o número 10 junto ao aluno que ele menos gostaria de ter como membro de sua classe. Em seguida, esta mesma relação era lida para o sujeito, pedindo-lhe, então, para numerar novamente os diferentes alunos de acordo com o grau em que gostaria de ser como eles, ou seja, colocar o número 1 ao lado do tipo de aluno que mais gostaria de ser; o número 2 ao lado daquele que gostaria de ser em segundo lugar e assim sucessivamente até completar toda a lista. Lia-se, então, novamente a mesma relação de alunos, pedindo ao sujeito para colocar em ordem de acordo com o tipo de aluno que em sua opinião os professores mais gostariam de ter em sala de aula. Finalmente, pedia-lhe para numerar novamente os alunos descritos em função da característica que estaria mais relacionada ao sucesso na vida adulta. Aqui, o sujeito era instruído a colocar o número 1 ao lado do aluno com maiores chances de ser bem sucedido na vida quando se tornasse adulto, o número 2 ao lado daquele que estaria em segundo lugar quanto às chances de ser bem sucedido e assim sucessivamente até completar toda a lista.

Entrevista com a criança. Cada sujeito foi entrevistado com vistas a obter informações sobre os seguintes aspectos: Família—constelação familiar; profissão do pai e da mãe; quanto tempo a família mora em Brasília e em que cidades já morou. Escola—o que gosta mais e menos na escola; em quantas escolas já estudou e qual a escola que prefere (classe ou parque); quais as matérias preferidas. Recreação—leituras, programas de TV e divertimentos preferidos. Planos ocupacionais.

Entrevista com a professora. Informações sobre cada criança foram obtidas junto às professoras de classe. Para tal, fornecia-se à professora uma relação composta de 29 traços, como agressivo, afetuoso, independente, curioso, popular, corajoso, bem humorado, etc., solicitando-lhe para indicar os cinco traços mais típicos de cada criança da amostra. A seguir, pedia-se à professora para informar sobre o comportamento do aluno em sala de aula. Para tal, ela deveria escolher dentre três alternativas (*sempre, algumas vezes, raramente*)

aquela que melhor correspondesse ao comportamento do aluno quanto aos seguintes aspectos: absorve-se nas tarefas que realiza; executa as tarefas no prazo previsto; cumpre as tarefas solicitadas; é atento durante as atividades; esforça-se na realização das tarefas; demonstra interesse pelas atividades desenvolvidas em sala de aula; tem interesse pelas atividades extra-curriculares; aprende com facilidade o que é ensinado em sala de aula. Finalmente deveria indicar se a criança preferia trabalhar individualmente ou em grupo.

RESULTADOS

Desempenho nos Testes de Criatividade por parte dos Alunos Considerados como Mais Criativos e Menos Criativos por seus Professores

Os resultados relativos ao desempenho nos testes de criatividade por parte dos alunos apontados por seus professores como mais criativos e menos criativos estão sintetizados na Tabela 1. Tais resultados indicam que embora em todas as seis medidas de criatividade a média do grupo mais criativo tenha sido superior àquela do menos criativo, apenas em uma medida (fluência verbal) a diferença entre os dois grupos foi estatisticamente significativa. Observou-se uma grande dispersão nos escores de criatividade de ambos os grupos, o que sugere diferenças substanciais entre professores em sua habilidade de avaliar o nível de criatividade de seus alunos tal qual indicado através de testes.

Tabela 1

Médias e Desvios Padrões nos Testes de Criatividade dos Alunos Considerados Mais e Menos Criativos por seus Professores

Medidas de Criatividade	Nível de Criatividade	M	DP	t
Fluência (Círculo)	Mais criativos	12,16	5,10	0,37
	Menos criativos	11,57	3,91	
Flexibilidade (Não verbal)	Mais criativos	8,78	3,22	0,01
	Menos criativos	8,71	2,70	
Originalidade	Mais criativos	11,00	6,88	0,96
	Menos criativos	8,86	6,29	
Fluência (Usos Inusitados)	Mais criativos	20,00	9,17	3,1*
	Menos criativos	11,64	5,51	
Flexibilidade (Verbal)	Mais criativos	6,92	3,58	1,22
	Menos criativos	5,57	2,73	
Originalidade	Mais criativos	12,16	11,70	1,65
	Menos criativos	6,35	7,66	

Nota. Mais criativo, $n = 25$. Menos criativo, $n = 14$.

* $p < 0,01$.

Características do Grupo Mais e Menos Criativo

Não foram observadas diferenças entre os dois grupos quanto ao tempo de frequência à escola-parque (2,4 anos de frequência à escola-parque pelo grupo mais criativo e 2,5 anos pelo menos criativo) e quanto às preferências por disciplinas (ambos os grupos preferiam Matemática e Comunicação e Expressão). Ambos os grupos preferiam brincar com amigos e não sozinhos, ambos preferiam entre programas de televisão, desenhos animados e a leitura de revistas e livros. Ao serem questionados se a mãe trabalhava fora 56% dos sujeitos do grupo mais criativo e 21% dos sujeitos do grupo menos criativo responderam afirmativamente. Quanto às aspirações profissionais, observou-se uma preferência por parte da amostra feminina pela profissão do magistério e da amostra masculina pela medicina, independentemente de pertencerem ao grupo mais criativo ou menos criativo.

Traços Desejáveis por parte dos Alunos Mais e Menos Criativos

Um aspecto investigado no presente estudo diz respeito às diferenças entre os alunos considerados mais e menos criativos por seus professores quanto ao tipo de colega que mais gostaria de ter, quanto ao tipo de aluno que mais gostaria de ser, quanto ao tipo de aluno que em sua opinião é preferido por seus professores e quanto ao tipo de aluno que acredita ter mais chances de ser bem sucedido no futuro quando se tornar adulto.

Quanto ao tipo de colega que mais gostariam de ter em sala de aula, constataram-se poucas diferenças entre os dois grupos. Tanto um como outro preferiam ter como colegas alunos populares, que se dão bem com todos da classe, alunos que gostam de estudar e alunos honestos. Observou-se ainda que “o aluno que tem mais idéias, que está sempre inventando novas maneiras de fazer as coisas” não foi muito desejado por ambos os grupos. Este aluno foi escolhido em quinto lugar, dentre os dez, pela amostra mais criativa e em nono lugar pela amostra menos criativa, indicando, assim, que o aluno com características criativas é um dos que o grupo de menor criatividade menos gostaria de ter como colega. As três características menos desejadas em seus colegas por parte do grupo mais criativo foram: o aluno mais bonito, o mais querido pelos professores e o melhor atleta. Já o grupo menos criativo, considerou menos desejável como colega o aluno mais bonito, aquele que tem mais idéias e aquele que parece ser o mais feliz de todos e que não se preocupa com pequenas coisas.

Quanto ao tipo de aluno que mais gostaria de ser, observou-se também que tanto os alunos mais criativos como aqueles menos criativos preferiam ser o aluno que ganha as notas mais altas em todas as matérias, seguido por aquele de maior inteligência e maior popularidade. Observou-se que nem os alunos mais criativos nem aqueles menos criativos gostariam de ser criativos, uma vez que o aluno descrito como aquele que tem mais idéias, que está sempre inventando novas

maneiras de fazer as coisas, foi escolhido em nono lugar pelo grupo mais criativo e em oitavo lugar pelo menos criativo.

Quanto ao tipo de aluno preferido pelos professores, constataram-se aqui também respostas bem semelhantes as emitidas pelos alunos considerados por seus professores como mais criativos e por aqueles considerados menos criativos. Segundo estes dois grupos, o tipo de aluno preferido por seus professores é aquele que ganha notas mais altas, seguido pelo aluno mais inteligente e honesto. Rendimento acadêmico alto, inteligência e honestidade foram os três aspectos que na opinião da amostra os professores mais desejavam em seus alunos. Observou-se também que, segundo os sujeitos que constituíram a amostra do presente estudo, o aluno que tem muitas idéias, que está sempre inventando novas maneiras de fazer as coisas é um dos que os professores menos gostariam de ter em sala de aula.

Finalmente, quanto ao tipo de aluno com maior probabilidade de ter sucesso na vida adulta, constatou-se também uma grande semelhança nas respostas dadas tanto pelos alunos mais criativos como por aqueles considerados menos criativos. Para ambos os grupos, o aluno mais inteligente da escola, seguido por aquele que ganha notas mais altas e aquele que é o melhor atleta da escola terão mais chances de sucesso no futuro. Observou-se novamente aqui que o aluno que tem muitas idéias, que está sempre inventando novas maneiras de fazer as coisas, não foi considerado por estes sujeitos como tendo muitas chances no futuro. Tal aluno foi colocado no oitavo lugar pelo grupo mais criativo e em sétimo lugar por aquele menos criativo. Para o grupo mais criativo, os alunos com menos chance de ter sucesso na vida adulta dentre os dez alunos descritos foram aqueles descritos como o mais bonito, o mais feliz e aquele que tem mais idéias e está sempre inventando novas maneiras de fazer as coisas. Para o grupo menos criativo, os alunos com menos chances de ter sucesso na vida adulta foram aqueles descritos como tendo mais senso de humor, o aluno mais bonito e aquele mais querido pelos professores.

Traços e Comportamento em Sala de Aula dos Alunos Mais Criativos e Menos Criativos

Quanto aos traços dominantes apontados pelos professores desses sujeitos, o único traço que realmente se destacou na amostra mais criativa foi a auto-confiança: enquanto 41,7% dos sujeitos mais criativos foram considerados como auto-confiantes por seus professores de classe, apenas 9,1% dos sujeitos menos criativos foram apontados como auto-confiantes por seus professores.

Com relação aos outros aspectos sobre os quais a professora informou, grande semelhança foi também constatada entre um grupo e outro. Não foram observadas diferenças significativas quanto ao esforço e atenção na realização das tarefas, quanto ao interesse demonstrado pelas atividades desenvolvidas em sala de aula, quanto à execução das tarefas no prazo previsto, quanto ao interesse

pelas atividades extracurriculares e quanto à facilidade com que aprendem o que é ensinado em sala de aula, embora o grupo mais criativo apresentou-se em todos os aspectos examinados como mais interessado, mais atento, tendo maior facilidade para aprender o que era ensinado em sala de aula e mais pontual na execução das tarefas.

Quanto à preferência pelo trabalho individual ou de grupo, os professores informaram que 65% do grupo mais criativo e 50% do menos criativo preferiam trabalhar em grupo.

DISCUSSÃO

Os resultados obtidos no presente estudo indicaram poucas diferenças entre os alunos apontados por seus professores como mais criativos e aqueles considerados menos criativos, tanto no desempenho em testes de criatividade, como nos traços, características e comportamento em sala de aula.

Nos testes de criatividade, observou-se que, embora o grupo mais criativo tenha tido uma média superior à do menos criativo em todas as seis medidas de criatividade, apenas em uma delas tal diferença foi significativa.

Várias hipóteses podem ser levantadas para explicar tais resultados, sugerindo novos aspectos a serem investigados em futuras pesquisas. É possível que o período de dois meses tenha sido pouco para uma observação adequada do nível de criatividade do aluno pelos professores de escola-parque, que têm um contato muito reduzido com os alunos (apenas uma vez por semana).

Os possíveis critérios utilizados pelo professores para indicar os alunos mais e menos criativos é um outro aspecto que pode explicar os resultados aqui obtidos. Pesquisas anteriores (Treffinger, Feldhusen e Thomas, 1970) indicaram que a avaliação da criatividade do aluno é influenciada por outras habilidades desse sujeito como sua inteligência. Outros aspectos, como interesse, atenção e participação em sala podem também ter afetado a avaliação do professor quanto ao nível de criatividade de seus alunos. No presente estudo, observou-se inclusive que a amostra mais criativa apresentava-se como mais atenta, mais interessada e pontual na realização das tarefas solicitadas pelos professores. A escolha do grupo mais criativo pode ter sido, pois, afetada pelo interesse e participação em sala de aula.

Quanto aos resultados relativos aos traços mais desejados por esses alunos, os dados mais salientes obtidos foram as poucas diferenças nas preferências dos dois grupos (mais e menos criativo) quanto ao tipo de aluno que os professores preferem e quanto aquele com mais chance de ser bem sucedido na vida adulta.

Observou-se ainda que “o aluno que tem muitas idéias, que está sempre inventando novas maneiras de fazer as coisas” não é o tipo de aluno que estes sujeitos desejam ser. Muito pelo contrário. Ele foi um dos últimos escolhidos

quando se lhes apresentou a descrição dos dez tipos de alunos. Foi também o aluno que na opinião da amostra os professores menos gostam de ter em sala de aula. Também não é uma característica que facilita o sucesso na vida adulta segundo a opinião desses sujeitos.

Observou-se também que enquanto a amostra menos criativa colocou o aluno que tem muitas idéias, que está sempre inventando novas maneiras de fazer as coisas em nono lugar tanto em sua preferência em termos de colega como quando lhe foi solicitado para indicar o tipo de aluno que mais gostaria de ser, para a amostra mais criativa, o aluno que tem mais idéias e que está sempre inventando novas maneiras de fazer as coisas foi colocado em quinto lugar em sua preferência como colega.

Tais resultados possivelmente refletem os valores dominantes em nossa escola, onde os traços usualmente associados à criatividade são desencorajados pelo professor, o qual está mais preocupado com a transmissão, assimilação e verificação do conhecimento por parte do aluno e menos interessado em utilizar métodos e princípios que estimulem a produção de novas idéias e a apresentação de produtos criativos nas diferentes disciplinas ministradas.

Eles estão de acordo com resultados obtidos em pesquisa anterior (Alencar e Rodrigues, 1978), quando ao se solicitar aos professores para indicar as características que eles mais gostariam que os seus alunos apresentassem e aquelas que em sua opinião deveriam ser punidas ou desencorajadas em sala de aula, observou-se que o aluno mais desejado por nosso professor é aquele que é obediente, sincero, trabalhador, atencioso para com as pessoas e bem aceito pelos colegas. Observou-se nesse estudo que traços comumente associados à criatividade, como alto pensamento divergente, julgamento e pensamento próprios, não aceitação pronta e imediata da autoridade, tendem a ser desencorajados pelo professor.

Resultados bem diferentes dos aqui obtidos quanto aos traços desejados por parte de estudantes mais criativos foram observados por Getzels e Jackson em seu estudo com uma amostra de adolescentes com um alto grau de criatividade e outra com um alto grau de inteligência. Em seu estudo, Getzels e Jackson (1962) observaram uma grande semelhança entre os sujeitos mais inteligentes quanto aos traços que desejavam para si e aqueles que em sua opinião os seus professores preferiam nos alunos e também aqueles com maior probabilidade de levar ao sucesso na vida adulta. Já os estudantes mais criativos desejavam para si qualidades que não tinham relação com aquelas que em sua opinião levariam ao sucesso na vida adulta e diferentes daquelas que em sua opinião seus professores gostavam mais. Estes autores observaram, por exemplo, que senso de humor foi uma das qualidades mais desejadas por sua amostra mais criativa e uma das menos desejadas pelo grupo mais inteligente. No presente estudo, esta qualidade foi uma das menos desejadas para si por parte dos sujeitos mais criativos (oitavo lugar) e também por parte daqueles menos criativos (sexto lugar).

Outros dados salientes que foram observados no presente estudo e que merecem ser aqui discutidos diz respeito ao sexo dos sujeitos que constituíram a

amostra e a diferença entre um grupo e outro quanto à mãe trabalhar ou não fora do lar.

Quanto ao primeiro aspecto, observou-se que enquanto o grupo mais criativo era composto por 13 sujeitos do sexo masculino e 12 do sexo feminino, o grupo menos criativo era composto por 10 sujeitos do sexo masculino e apenas 4 do sexo feminino. Resultados semelhantes a este foram observados em estudos feitos no Brasil (Alencar, 1975; Rodrigues, 1979) e em outros contextos (Burgess, 1970; Cacha, 1971; McDaniel, 1974; Ogletree e Ujlaki, 1973; Ray, 1974) os quais observaram diferenças significativas no desempenho em testes de criatividade entre alunos do sexo masculino e feminino.

No presente estudo como a indicação dos alunos foi feita pelos professores da escola-parque, poder-se-ia especular que talvez o aluno do sexo masculino tenha um menor interesse pelas atividades artísticas. Isto poderia refletir em seu desempenho, o que explicaria a sua indicação em maior número para o grupo menos criativo. Sabe-se ainda que é o aluno do sexo masculino aquele que menos se conforma com as normas vigentes na escola e que apresenta maior número de características consideradas indesejáveis por seus professores das primeiras séries. As características comportamentais desses alunos podem ter influenciado a avaliação feita pelo professor quanto ao seu desempenho criativo.

Observou-se ainda diferença entre o grupo mais e menos criativo quanto ao número de sujeitos cujas mães trabalhavam fora do lar. Foi constatado que 56% das mães do grupo apontado como mais criativo e 21% das mães do grupo apontado como menos criativo trabalhavam fora do lar. Sabe-se que as repercussões psicológicas do trabalho fora da mãe sobre a criança é um tema que tem sido objeto de muitas pesquisas (Hoffman, 1979; Pasquali e Callegari, 1978; Yarrow, Scott, Leeuw e Heinig, 1979, entre outros). Os resultados destes estudos têm sido, porém, inconclusivos e isto possivelmente se deve à complexidade do tema e às inúmeras variáveis que podem afetar os resultados obtidos nas investigações.

O fato de maior número de sujeitos mais criativos terem mães que trabalham fora do lar é mais um dado a sugerir que nem sempre o trabalho fora do lar pela mãe se relaciona com um desempenho inferior pela criança, especialmente em famílias de classe média que dispõem de maiores recursos para um atendimento substituto adequado à criança.

Observou-se também no presente estudo que o grupo mais criativo foi apontado por seus professores de classe como mais auto-confiante do que os seus colegas menos criativos. Salienta-se que esta é uma das características apontadas pelos pesquisadores (Barron, 1969; Gowan, Demos e Torrance, 1967; Torrance, 1965) que têm investigado traços de personalidade de crianças e adultos mais criativos. O que os dados já obtidos nesta área sugerem é que o indivíduo que confia em si mesmo aproveita melhor as oportunidades para explorar as suas idéias, para levantar questões, para criticar e avaliar o que lhe é ensinado.

Salienta-se ainda que a curiosidade não foi um traço apontado como mais freqüente nem no grupo mais criativo nem naquele menos criativo. Este dado possivelmente reflete mais uma vez os valores dominantes em nossa escola onde

diante de um programa extenso a cumprir, da presença dos alunos por apenas um número muito reduzido de horas na escola, de grupos heterogêneos de crianças em uma mesma sala, a tendência é se ater a um modelo tradicional de ensino com ênfase na transmissão e reprodução de conhecimento. O nosso ensino muito raramente é um convite à exploração e à descoberta, e a curiosidade, de modo geral, é inibida e bloqueada.

REFERÊNCIAS

- Alencar, E. M. L. S. (1974). Um estudo de criatividade. *Arquivos Brasileiros de Psicologia Aplicada*, 26, 59-69.
- Alencar, E. M. L. S. (1975). Efeitos de um programa de criatividade em alunos de 4ª e 5ª séries. *Arquivos Brasileiros de Psicologia Aplicada*, 27, 3-15.
- Alencar, E. M. L. S. (1976). A estimulação do pensamento criador. *Educação*, 22, 12-19.
- Alencar, E. M. L. S., & Rodrigues, C. J. S. (1978). Relação entre tempo de ensino, localidade da escola e características comportamentais consideradas desejáveis e indesejáveis por professores do ensino do primeiro grau. *Arquivos Brasileiros de Psicologia Aplicada*, 30, 75-94.
- Barron, F. (1969). *Creative person and creative process*. New York: Holt, Rinehart & Winston.
- Burgess, W. V. (1970). The analysis of teacher creativity, pupil age, and pupil sex as sources of variation among elementary pupils' performances on pre-tests and post-tests of creative thinking. *Dissertation Abstracts International*, 32(2-A), 747-748.
- Cacha, F. B. (1971) A study of the relation of creative thinking abilities to personality factors and peer nominations of fifth grade children. *Dissertation Abstracts International*, 32(3-A), 1329.
- Dellas, M., & Gaier, E. L. (1970). Identification of creativity in the individual. *Psychological Bulletin*, 73, 55-73.
- Forster, M. M. (1978). *Efeitos da avaliação formativa sobre criatividade de universitários*. Dissertação de mestrado. Universidade Federal do Rio Grande do Sul.
- Getzels, J. E., & Jackson, P. W. (1962). *Creativity and intelligence*. New York: Wiley.
- Guhur, J. V. M. (1976). *Efeitos de modelação e instruções sobre o comportamento criativo em adolescentes*. Dissertação de mestrado. Universidade Federal do Rio Grande do Sul.

- Gowan, J. C., Demos, G. D., & Torrance, E. P. (1967). *Creativity: Its educational implications*. New York: Wiley.
- Hoffman, L. E. (1979). Efeitos do emprego da mãe sobre a criança: Uma revisão de pesquisas. Em H. Bee, *Psicologia do desenvolvimento: Questões sociais*. Rio de Janeiro: Interamericana.
- Maia, I. R. R. R. (1975). *Efeito do reforço no desenvolvimento da criatividade verbal em escolares*. Dissertação de mestrado. Universidade Federal do Rio Grande do Sul.
- Marin, F. J. (1976). *Educação, arte e criatividade*. São Paulo: Pioneira.
- McDaniel, E. R. (1974). An investigation of the relationship between creativity and socioeconomic status, race and sex of seventh grade pupils. *Dissertation Abstracts International*, 34(7-A), 3997-3998.
- Ogletree, E. J., & Ujlaki, W. (1973). Effects of social class status on creative behavior. *Journal of Educational Research*, 67, 149-152.
- Pasquali, L., & Callegari, A. I. (1978). Working mothers and daughters' sex-role identification in Brazil. *Child Development*, 49, 902-905.
- Ray, G. A. (1974). A study of the relationship between teacher educational attitude and sanction of student creative potential and preference for creative behavior. *Dissertation Abstracts International*, 35(5-A), 2548-2549.
- Rodrigues, C. J. S. (1979). *Um estudo do pensamento criativo em alunos do primeiro grau*. Dissertação de mestrado. Universidade de Brasília.
- Torrance, E. P. (1965). *Rewarding creativity behavior: Experiments in classroom creativity*. Englewood Cliffs, NJ: Prentice-Hall.
- Torrance, E. P. (1966). *Torrance Tests of Creative Thinking. Norms-technical manual. Research edition*. Princeton, NJ: Personnel Press. (Available from Scholastic Testing Service.)
- Treffinger, D. J., Feldhusen, J. F., & Thomas, S. B. (1970). Relationship between teachers' divergent thinking abilities and their ratings of pupils' creative thinking abilities. *Measurement and Evaluation in Guidance*, 3, 169-176.
- Yarrow, M. R., Scott, P., de Leeuw, L., & Heinig, C. (1979). A criação do filho em famílias de mães que trabalham. Em H. Bee, *Psicologia do desenvolvimento: Questões sociais*. Rio de Janeiro: Interamericana.

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EXTENDED SUMMARY

Psychosocial Characteristics of High- and Low-Creativity Brazilian Children

EUNICE M. L. SORIANO DE ALENCAR

The study was designed to compare high- and low-creativity children on several psychological and social variables. The sample consisted of third- and fourth-grade public school students in Brasilia, Brazil, identified by their teachers as highly creative ($n = 25$) and least creative ($n = 14$). The teachers first listened to a lecture on creativity and read an article about ways to stimulate creative thinking, so they might better discriminate among high- and low-creativity students. Figural and verbal subtests of the Torrance Tests of Creative Thinking were administered to these students. The students were also interviewed, answering questions about their families, interests, aspirations, and recreational activities (preferred readings, TV programs, and hobbies). They were then asked to order ten statements describing different types of student and to show which they would like to have as classmates, which they themselves would like to be, which they thought teachers would prefer to have in their classes, and which they thought would be more successful in adult life. In addition, teachers described the classroom behavior of these two samples of students and used a checklist to indicate their students' most apparent personality characteristics. The results showed that although the students selected by their teachers as creative scored higher than the others on the Torrance Tests of Creative Thinking, only in verbal fluency did the difference prove to be statistically significant. The students in both samples indicated that the type of student who is creative is not the type of student they themselves would like to be. Rather, they preferred to be the type of student who attains high academic grades and is highly intelligent. Also, the students in both samples were of the opinion that teachers do not particularly like creative students but prefer those who get the highest marks and are the most intelligent and honest. The students considered creative by the teachers gave higher priority to having creative classmates than to being creative students themselves. The high-creativity group was also rated by the teachers as more self-confident than was the other group. Among this high-creativity group, the greater number had mothers who worked outside the home, while in the low-creativity group the greater number of students were male.

Libros/Books

APORTACIONES DE LA PSICOLOGÍA INDUSTRIAL

Cómo Hacer Desarrollo de Personal en las Empresas Colombianas, por Orlando Urdaneta Ballén. Bogotá, Colombia: Editorial Legis, 1984. 171 pp.

El autor del presente libro es el Presidente de la Federación Colombiana de Psicología y un distinguido psicólogo industrial de Bogotá. Su entrenamiento europeo (en Bélgica) lo ha complementado con información acerca de la psicología del trabajo en otros contextos culturales, ante todo en los Estados Unidos y en América Latina.

El libro es una importante adición a la literatura en psicología industrial escrita originalmente en español. Dicha literatura es muy escasa. Nuestros psicólogos industriales no son muy dados a publicar libros ni artículos científicos. De ahí la doble importancia del libro que reseñamos.

El contenido está dividido en cuatro partes: conceptos básicos y filosofía del desarrollo de personal; principios psicológicos del desarrollo de personal; medios de acción e instrumentos de diagnóstico para una oficina de desarrollo de personal; control, evaluación y seguimiento de los programas de desarrollo.

La obra se centra en las organizaciones modernas, en su desarrollo y en sus dificultades. Presenta un programa de desarrollo de personal, con su metodología y sus aplicaciones. El énfasis es en las organizaciones de tamaño mediano o grande, con alto número de empleados, con metas y objetivos claramente definidos y delimitados.

Urdaneta define desarrollo de personal como "aquel proceso que conduce al hombre trabajador mediante el conocimiento de sí mismo, a la plena actualización y optimización de sus posibilidades latentes" (p. 9). Con base en este fundamento desarrolla su sistema de trabajo. Se centra fundamentalmente en la psicología, aunque sin desconocer el aporte de otras disciplinas que también tienen que ver con el desarrollo del personal. El tratamiento es moderno, integrado y de naturaleza práctica. En pocas páginas se presenta desde la filosofía hasta las estrategias a utilizar en el desarrollo del personal.

No hay muchos trabajos sobre psicología industrial y organizacional publicados originalmente en Colombia ni en Latinoamérica. Es de desear que nuestros psicólogos industriales coloquen por escrito sus ideas y sus conceptos, que mucho se necesitan en la sociedad moderna. Orlando Urdaneta ha iniciado muy acertadamente este camino.

RUBÉN ARDILA

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SYMPOSIUM SOBRE TERAPIAS DEL COMPORTAMIENTO

Terapias del Comportamiento: Aspectos Clínicos y Experimentales, Universidad de Cádiz, Instituto de Ciencias de la Educación, editor. Cádiz, España: Servicio de Publicaciones de la Universidad de Cádiz, 1982. 135 pp.

La presente obra reúne ocho trabajos, teóricos y aplicados que fueron presentados en el Symposium Nacional sobre Terapias del Comportamiento, realizado en Cádiz (España) en noviembre de 1982. Estos trabajos versan sobre el papel de la psicología en el campo de la salud, problemas sexuales, toxicomanías, técnicas combinadas, depresión, terapia racional-emotiva, farmacología de la ansiedad y técnicas de biorretroalimentación.

El mantenimiento de la salud y la prevención de enfermedades en aspectos como la reducción en el consumo de tabaco, alcohol y otras drogas, hábitos alimenticios sanos, ejercicio regular, hábitos de sueño y descanso adecuado, son preocupación manifestada en el primer trabajo (escrito por Ramón Bayés). Se centra el autor en el análisis de factores psicológicos involucrados en la aparición y/o desarrollo del cáncer, así como de factores ambientales y del stress.

El segundo trabajo (Carroles es su autor) presenta un programa para la prevención y tratamiento de problemas sexuales. Incluye también una lista de mitos y falacias sexuales.

A continuación es presentado el desarrollo de las terapias del comportamiento, bajo un enfoque multidisciplinario, en el análisis de las toxicomanías (Freixa). Las fases de desintoxicación, deshabitación, rehabilitación y reinserción, son analizadas dentro del sistema de tratamiento.

La combinación de las técnicas psicodinámicas y de modificación de conducta a través de enfoques como el de Wachtel, de Feather y Rohades y la nueva terapia sexual de Kaplan, es discutida en el cuarto trabajo (Gómez Beneyto).

En el quinto trabajo (Navarro Guzmán) se analizan las perspectivas experimentales de los modelos conductuales de depresión, a través de los modelos de aislamiento social de Harlow, con sus experimentos sobre depresiones anaclíticas, aislamiento social no maternal, aislamiento total en la cámara vertical y separación de la familia nuclear. Igualmente analiza el modelo experimental de desesperanza aprendida de Seligman, con base en el cual el autor ha elaborado un cuadro resumen de los rasgos comunes a la desesperanza aprendida y a la depresión.

La psicoterapia racional-emotiva, cuyo proponente, Albert Ellis, de ferviente psicoanalista ortodoxo fue pasando progresivamente hacia técnicas del aprendizaje, es analizada en el sexto trabajo (Ortiz Zabala) a través de las áreas de "necesidad-perturbadora" y de la forma como esta terapia se encamina a identificar, debatir, enseñar y practicar conductualmente los principales pensamientos o ideas irracionales del cliente.

El séptimo trabajo (Pérez) analiza los efectos conductuales de los fármacos ansiolíticos, los mecanismos sinápticos y moleculares de acción de las benzodiazepinas, así como sus efectos secundarios. Termina el trabajo con la discusión sobre el empleo de antidepresivos tricíclicos y los beta-bloqueadores.

El último trabajo (Vila) es una revisión sobre las aplicaciones clínicas de las técnicas de biorretroalimentación. Hace una evaluación sobre la efectividad y estado actual de éstas técnicas como procedimientos de tratamiento clínico. Se refiere a las aplicaciones clínicas de la retroalimentación cardiovascular electroencefalográfica y de la retroalimentación esquelética-muscular. También resalta algunos de los problemas teóricos y metodológicos más relevantes en esta área y señala las principales líneas de investigación futura.

La obra tiene el mérito de presentar trabajos en el área de la modificación del comportamiento realizados por importantes psicólogos españoles. Los trabajos están escritos en un lenguaje sencillo y ameno, sin que por ello deje de tener un gran valor técnico y científico.

Su lectura es recomendable para los científicos del comportamiento, especialmente para aquellos profesionales dedicados al área de la salud. Estamos seguros de que su lectura nos dejará valiosas enseñanzas e inquietudes, pues los autores de cada uno de los artículos nos muestran cuan actualizados estamos en el mundo de habla hispana.

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MAYR'S MAGNUM OPUS

The Growth of Biological Thought: Diversity, Evolution, and Inheritance, by Ernst Mayr. Cambridge, Massachusetts, U.S.A.: Harvard University Press, 1982. xiv + 974 pp. \$30.00.

When confronted by a tome of nearly a thousand pages, including 31 pages of notes and 62 of references (two full pages of which are the author's own works), the reviewer immediately dusts off adjectives such as *monumental*, *definitive*, and even *encyclopedic*. A handsomely produced volume, *The Growth of Biological Thought* is as good and solid in content as it is physically impressive. It will endure as a major contribution not only to biology but to intellectual history in general and to our understanding of the path by which we have acquired and are acquiring biological knowledge.

Mayr, Alexander Agassiz Professor of Zoology, Emeritus, at Harvard, spent some ten years in writing his magnum opus and a lifetime in preparing himself to write it. In it he covers with admirable completeness the development of ideas in the minds of life scientists and probes fully the effects that those ideas have had on their work. Admitting early on that he rejects the dominance of physical sciences as the model for all scientific enterprise, he has produced a model of intellectual history that is accessible to both the layman and the scientist.

For psychologists, certain sections have greater relevance than others. As might be expected, he comes down firmly on the "nature" side of the "nature versus nurture" controversy, as evidenced by his chapter, "The Chemical Basis of Inheritance." Elsewhere he states that "almost all human characteristics may

have a partial genetic base" (p. 827), but he acknowledges much earlier that it would be "simple-minded and dangerous" to treat humans as merely biological creatures (p. 81). The final section, "Toward a Science of Science," is an especially effective call for a synthesis of the physical, biological, and social sciences.

Yet, despite such a call, he slights the work of his Harvard colleague, E. O. Wilson, and other sociobiologists whose work is a highly promising synthesis of precisely what he is urging. Psychologists come in for a scolding for still using "such undefinable terms" as "intentions" and "consciousness" (p. 51). On occasion, his style betrays a Germanic origin in its awkward syntax, and he (or his editor) shows little understanding of the linguistic capabilities of his readers in his frequent inclusion of untranslated German (pp. 31 & 75) or even Greek (p. 830) phrases. Yet at one point (p. 874) he finds it necessary to translate *Weltanschauung!* The brief glossary is curiously selective and thus somewhat ineffective; it includes, for example, *plate tectonics* but excludes *quinarianism* and *ethology*. His tone occasionally wavers: sometimes he insists on the formality of "the author," whereas elsewhere (p. 819) "I" speaks to us. In a work of this magnitude, however, the reader should not be particularly put off by lapses that an editor should have caught.

These are minor flaws, of course, when measured against the great achievement of Mayr's book. He understands as few scientists do the importance of ideology: "The growth of science is the growth of the ideas of scientists" (p. 830). At the outset he states his willingness to be controversial if necessary, and at times his dogmatism will surely offend the physical scientists whom he lambastes for their attitudes of dominance and their overemphasis on experimentalism, which "has caused research to move into unsuitable directions" in biology.

Mayr's work, particularly in genetics and evolution, has won him great respect for decades. His present effort, possibly to be followed by a similar second volume, clearly establishes him as a master of his discipline to whom modern learning is indebted. This latest, and possibly greatest, of his achievements deserves reading by virtually everyone using the label scientist or social scientist, as well as the educated reader.

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INSTRUCCIONES PARA LOS AUTORES

Los autores deben presentar los manuscritos en cuadruplicado. Todas las copias deben ser claras, legibles y en papel de buena calidad de 8 y $\frac{1}{2}$ × 11 pulgadas (22 × 28 cm) de tamaño. Los manuscritos deben estar escritos a máquina con márgenes de 1 pulgada y $\frac{1}{2}$ (4 cm); siempre a doble espacio. No divida las palabras al final de la línea. Para obtener uniformidad en el formato, los autores deben seguir estrictamente las instrucciones para la preparación del manuscrito (incluyendo el estilo para hacer referencias de citas, pie de imprenta, preparación de tablas, figuras, etc.) que se describen en *Publication Manual* (Manual de Publicación) (1983, 3rd edition) de la American Psychological Association (Order Department, 1200 Seventeenth Street, N.W., Washington, DC 20036, U.S.A.). Todos los manuscritos, sea cual fuere la lengua en que estén escritos, deben estar de acuerdo con este formato en cuanto a la preparación y la escritura a máquina; de otra forma se toma el riesgo que los mismos sean devueltos para ser revisados. Los manuscritos pueden ser presentados en inglés, español o portugués; se publicarán en la misma lengua en la que son aceptados. Los autores deben controlar cuidadosamente la escritura a máquina de la copia final. Todos los manuscritos, además de un resumen de 200 palabras en la misma lengua en que están escritos, deben ser acompañados por un resumen extenso (400 a 600 palabras) en una lengua diferente: los que están en español o portugués deberán tener un resumen extenso en inglés; los manuscritos en inglés deberán tener el resumen extenso en español o portugués.

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La pruebas de galera, junto con el manuscrito editado para imprimir, serán enviados al autor principal con el objeto de que el mismo autor pueda controlar las pruebas.

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Authors should submit manuscripts in quadruplicate. All copies should be very clear, readable, and on good quality paper of size $8\frac{1}{2} \times 11$ inches (22×28 cm). Manuscripts must be typewritten, with $1\frac{1}{2}$ -inch (4 cm) margins; all typing must be double-spaced. Do not divide words at the end of a line; let a line run short or long rather than break a word at the end of a line. To achieve uniformity of format, authors must strictly follow the instructions for manuscript preparation (including style of referencing citations, footnotes, preparation of tables, figures, etc.) described in the *Publication Manual* (1983, 3rd edition) of the American Psychological Association (Order Department, 1200 Seventeenth Street, NW, Washington, DC 20036, U.S.A.). All manuscripts, regardless of the language in which they are written, must conform to this format of typing and manuscript preparation; otherwise they may be returned for revision. Manuscripts may be submitted in English, Spanish, or Portuguese; manuscripts will be published in the same language in which they are accepted. Authors should check carefully the typing of the final copy. In addition to a 200-word abstract in the same language as that of the manuscript, all manuscripts must be accompanied by an extended summary (400 to 600 words) in a different language: Manuscripts in Spanish or Portuguese must have an extended summary in English; manuscripts in English must have one in Spanish or Portuguese.

Mail manuscripts to the Editor: Luis M. Laosa, Educational Testing Service, Princeton, New Jersey 08541, U.S.A. The Editor normally will forward the manuscript to at least two, very often more, reviewers. The review process normally takes about three to four months. Regardless of the category to which they belong, scientific and scholarly excellence are the main criteria used in reviewing and evaluating manuscripts. A policy of this journal prohibits authors from submitting manuscripts that are published elsewhere and from submitting the same manuscript for concurrent consideration to two or more publications.

Galley proofs along with the manuscript copyedited for printing will be sent to the principal author so that the authors can proof the galleys.

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Os autores devem submeter os manuscritos em quatro cópias. Todas as cópias devem ser claras, legíveis e em papel de boa qualidade no tamanho de 22 × 28 cm (8½ × 11 polegadas). Os manuscritos devem ser datilografados, com margem de 4 cm (1½ polegada) e com duplo espaço. As palavras não devem ser divididas no fim da linha. É preferível se ter linhas de comprimentos diferentes do que palavras divididas no fim da linha. A fim de se obter um formato uniforme, os autores devem seguir fielmente as instruções para a preparação de manuscritos (inclusive o formato das citações, notas de pé de página, preparação de tabelas, figuras, etc.) descritas no *Publication Manual* (1983, 3rd edition) da American Psychological Association (Order Department, 1200 Seventeenth Street, N.W., Washington, DC 20036, U.S.A.). Todos os manuscritos, independentemente da língua em que forem escritos, devem ser datilografados de acordo com o formato acima descrito e seguir as regras de preparação indicadas; pois do contrário os mesmos serão devolvidos para revisão. Os manuscritos podem ser submetidos em inglês, espanhol ou português e, uma vez aceitos, serão publicados na língua em que foram escritos. Os autores devem fazer uma revisão cuidadosa da cópia final. Além de um sumário de 200 palavras na língua original do manuscrito, todos os manuscritos devem ser acompanhados de um sumário mais extenso (de 400 a 600 palavras) numa outra língua: manuscritos em espanhol ou português devem ter um sumário extenso em inglês; manuscritos em inglês devem ter um sumário extenso em espanhol ou português.

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Por decisión de la Junta Directiva de la SIP/ISP, el Volumen 18 (1984) de esta *Revista* consiste exclusivamente de este número doble. El próximo número será el Número 1 del Volumen 19 (1985). Generalmente se publicarán dos números separados (números 1 y 2) para cada volumen—un volumen cada año.

NOTE TO LIBRARIANS

By decision of the SIP/ISP Board of Governors, Volume 18 (1984) of this *Journal* is composed exclusively of this double issue. The next issue will be Number 1 of Volume 19 (1985). Generally, there will be two separate issues (numbers 1 and 2, respectively) per volume—one volume per calendar year.

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