

OBJECTIVE ADMINISTRATION AND SCORING FOR THE THEMATIC APPERCEPTION TEST (TAT)¹

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Introduction

More than sixty years after the first public presentation of the Thematic Apperception Test (TAT) (Morgan and Murray, 1935) and of the Four Picture Test (FPT) (Van Lennep and Houwink, 1930) thematic techniques still hold a distinguished place in psychological assessment, mainly in clinical settings, all over the world. However, while thematic procedures assures confidence to clinical psychologists that use them, remains largely far of the research advancements reached during last decades on standardization and objective analyses by other projective techniques like Rorschach. TAT research achieves their main features during the fifties and the sixties (Eron, 1950; Murstein, 1963) but their further impact on the practice were inconsistent, lacking of further developments or refinements. In Europe in general, and specifically in Spain, TAT has had a lesser diffusion partly due to the absence of investigations. In the Spanish context very few authors (Siguan, 1953, 1954; Castilla del Pino, 1966; Fernandez-Ballesteros, 1973; and Ávila-Espada, 1976) could be cited out of barely half a dozen names until the last seventies, where only some qualitative advancements for thematic analyses developed by V. Shentoub in France introduces new research lines. Her work is well known by clinicians with psychoanalytic frame of reference (Shentoub et al., 1990).

Despite this historic lack of research, the last two decades has produced new European developments which have culminated with the appearance of an empirical and conceptual review (Ávila-Espada, 1983; 1990) and the edition of a new *Operative Manual* (Ávila-Espada, 1985a). This new manual presents a revised set of instructions and cards, and collects the normative, thematic, formal and stimulus value data for Murray's TAT. This chapter briefly describes the principles and characteristics of the innovative research conducted up trough the present time in Spain with TAT, regarding: a) the normative research with normal Spanish population; b) the principal standards of the stimulus value of the TAT; c) the proposal of a new set of instructions and cards for TAT administration, and d) the principal directions which form an *Integrative Analysis System* for the TAT recently presented (Ávila-Espada, Biezma & Rodriguez, 1998), that

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includes a variety of quantitative and qualitative strategies. All of these improvements favoring more accuracy of the TAT use, reducing an unnecessary high level of inference during TAT interpretation, and facilitating some new quantitative indexes in order to enrich more objective TAT reports.

Normative Research

Subjects and procedure.

The fact that in general the TAT is being used as a projective interview without take in mind for their administration and scoring its research history is a matter of concern both for clinicians and psychological assessment researchers. Moreover the importance of the implications of normative studies for scientific TAT analysis and test protocol interpretation (see Eron, 1950; Murstein, 1963), the absence of normative data for the TAT in the general Spanish Population are in the basis of our renewed interest and efforts oriented to continued normative research. After reviewing prior normative data with normal and psychiatric samples, (Rosenzweig & Fleming, 1949; Eron, 1950, 1953; Zubi, Eron & Schumer, 1965; Shentoub, 1961 ; Murstein, 1972) a study have been designed with a stratified and randomized sample of 100 subjects (49 males, 51 females) collected at the late seventies, with an average age of 25,84 and 25,69 respectively. Subject's ages ranged between 14 and 53; All were from a middle social-economic class, from all geographic regions of Spain, with different occupational levels, free from psychiatric illness or history. The obtained sample was reasonably representative of the normal Spanish Population, offering the possibility to study a wide collection of 2000 TAT card stories (Ávila-Espada, 1985b).

In this normative research the complete set of the Murray's TAT (cards and instructions) was administered to whole sample, controlling adequately the administration bias (examiner's effects). The scoring system used, a special form derived from the first Rosenzweig's norms choosed by Murray as reference frame for normative interpretation in their TAT complete manual, thus achieving satisfactory values for inter-judge reliability on coding protocols (93 to 98% of inter-judges agreement). Through a thorough statistical analyses we have evaluated the principal indicators of the Formal Variables (Reaction Time, Total Time, Word Count), Thematic Analysis Variables (themes and outcomes) as well as the stimulus value variable, following Murstein's recommendations (Murstein, 1963).

Spanish Normative Research Main Findings: New formal indexes.

The ' Classical ' variables Reaction time, Total time and Word Count showed highly consistent patterns for the description of response style of the

subjects and for the stimulus-subject interface. However their interpretation with clinical purposes is problematic and no clear criteria appears consistently. In order to improve the utility of these 'Classical formal variables' and derived from our empirical data, we propose two new quantitative indices: The *Expression Speed Index* (ESI) and the *Elaboration Rapidity Index* (ERI). The ESI is calculated (card by card) from the following formula:

$$\text{ESI} = \text{Words Count} / [\text{Total Time} \text{ minus } \text{Reaction Time}]$$

Also allowing the calculus of a mean-ESI score for all TAT cards. ESI focuses in cognitive ability to produce narratives mediated by defenses. Significant changes in intra-subject ESI pattern allows to detect shock related both with stimulus content and defensive processes. ESI scores over Q75 and below Q25 in the intra-subject ESI profile across all TAT cards are good predictors of whose cards must be main focus of qualitative analyses, due to that potential main changes in thematic content could be observed varying from normative narratives.

In a second step, the ERI percentage is expressed as:

$$\text{ERI} = 100 \times [\text{card Reaction Time} / \text{card Total Time}]$$

ERI provides a quantitative estimation of subject's cognitive ability to resolve the TAT task, by producing narratives facing stimulus impact of the cards. As with ESI, ERI intra-subject profile peaks (over Q75 and below Q25) allows to detect changes in processing narratives that can be related with structural variables like e.g. amount of affect evoked by cards. ESI and ERI values can be compared also with normative data, in order to explore specific styles relevant to clinical predictions.

Both together, these two indices are better predictors of the level of significance, shock effects and protocol productivity than the classical formal variables previously used. Table 1 shows the card-ESI and ERI values for the Spanish normal population.

A relevant conclusion derived from the thematic normative data is that Spanish Norms are not at all different from several U.S.A. or French norms, despite some specific cultural and situational elements. Such changes in the norms more likely reflect cultural cues in each country than objective stimulus properties.

Table 1

ESI and ERI values for TAT cards in Spanish Subjects

Cards	ESI values				ERI values			
	Males		Females		Males		Females	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
1	1,05	0,62	1,00	0,55	9,39	8,16	11,43	10,41
2	1,11	0,66	1,12	0,64	7,49	6,81	11,93	11,57
3BM/GF	1,07	0,72	1,14	0,64	11,89	12,17	12,95	11,19
4	1,27	0,83	1,25	0,80	8,34	9,20	11,90	11,09
5	1,23	0,88	1,29	0,65	11,72	12,65	13,69	14,44
6BM/GF	1,21	0,81	1,22	0,74	9,68	7,14	14,16	12,21
7BM/GF	1,15	0,67	1,24	0,75	11,42	9,20	9,76	8,83
8BM/GF	1,13	0,72	1,15	0,67	10,24	7,76	11,59	11,06
9BM/GF	1,18	0,75	1,15	0,67	11,02	8,43	12,43	9,34
10	1,09	0,77	1,11	0,70	10,19	8,89	11,70	11,12
11	1,04	0,70	0,95	0,57	10,88	10,73	12,53	12,65
14	1,14	0,70	1,12	0,67	10,65	9,78	11,44	8,69
15	1,13	0,69	1,09	0,59	11,82	11,46	11,11	10,46
16	1,18	1,10	0,96	0,59	6,90	6,78	9,86	9,81
17BM/GF	1,19	0,76	1,20	0,82	10,75	9,93	12,80	10,90
18BM/GF	1,32	0,99	1,18	0,77	11,47	9,12	12,13	9,83
19	1,09	0,72	1,13	0,77	11,42	9,69	13,57	14,04
20	1,20	0,78	1,09	0,60	11,01	10,33	10,41	8,59

A review of the Stimulus Value of the TAT

From the large number of TAT variables that could be studied, we have selected five with which to test the stimulus value of the TAT in the Spanish population. These are:

- 1) The *number of themes produced* (the absolute number of themes-subjects and the number of different themes, comparing our data with Eron's, 1950, 1953; Irving and Woude's, 1971; and Newmark and Flouranzano's, 1973) ;
- 2) The *verbal productivity* (comparing our data with Rosenzweig and Fleming's, 1949; Newbigging's, 1955; Ullman's, 1957 and Friedman's, 1972);
- 3) *Preferences and cards rejections* (similar to those proposed in Lebo 's, (1955) and Fisher and Shotwell's, (1961) studies);
- 4) The *turns and peculiar positions* of the cards produced by the subjects, and

5) Predominant characteristic thematic content areas in the stories produced.

Again our data do not show relevant discrepancies from previous research findings. Table 2 shows the ranks obtained by the different TAT's cards combined with respect to the first three variables. The turns and characteristic positions are only significant for cards 11, 16 and 19; This variable more clearly depend of the properties of the respective stimuli than on the characteristics of the studied sample.

Table 2

Stimulus Value of the TAT cards in Spanish Subjects
(Rank-order values)

Cards	Number of Themes				Verbal Productivity	
	<i>Absolute</i>		<i>Distincts</i>		<i>Males</i>	<i>Females</i>
	<i>Males</i>	<i>Females</i>	<i>Males</i>	<i>Females</i>		
13MF	1	1	1	1	7	6
1	2	3	6.5	12	18	20
2	16	14	4	5	1	4
10	5	6	2	2	10	13.5
14	8.5	5	4	3.5	20	17
20	8.5	16	4	3.5	15	7.5
4	11	8	8.5	8.5	5	12
15	17	11	11.5	15	14	9
11	18.5	14	10	8.5	9	7.5
19	18.5	18	14	15	2	10.5
5	14.5	19	14	19	13	13.5
16	20	20	11.5	8.5	4	18
12M/F	3	7	14	11	11	5
8BM/GF	4	17	6.5	20	6	19
3BM/GF	6.5	10	18.5	8.5	19	10.5
6BM/GF	6.5	12	8.5	18	3	15
18BM/GF	10	4	18.5	15	8	16
7BM/GF	12	2	16.5	6	12	2
9BM/GF	13	14	16.5	15	16	3
17BM/GF	14.5	9	20	15	17	1

With respect to the thematic content areas predominately evoked by the set of TAT's cards in the spanish population, table 3 shows the main thematic groups with their respective gender comparisons.

Table 3

Main themes elicited by the complete set of TAT cards in Spanish Subjects

<i>Thematic Area_Males</i>	<i>Females</i>						<i>Gender Comparison p (t)</i>
	<i>Mean</i>	<i>Median</i>	<i>V.C.</i>	<i>Mean</i>	<i>Median</i>	<i>V.C.</i>	
Aggression-Hostility	7,08	7,56	0,40	5,49	5,10	0,47	.001
Job-Study	5,94	5,28	0,43	4,88	4,42	0,50	.025
Descriptive	5,29	3,47	2,02	4,22	3,80	0,65	-
Parents-children	3,94	3,66	0,63	4,35	3,91	0,59	-
Depression	3,92	3,62	0,71	3,74	3,29	0,85	-
Marriage-love	3,49	3,26	0,49	4,88	4,89	0,51	.005
Sexual Content/relationships	1,47	1,32	0,74	1,27	0,85	1,47	-

A new set of cards and instructions for the TAT administration

From the analysis of the stimulus value of TAT cards, derived of the indices previously described, a new abbreviated normative set of cards is proposed. This set have been considered empirically equivalent to the complete TAT set with respect to its stimulus value in terms of the number and classification of themes produced, yet reduces notably the sex-role bias between the male and female series of the TAT.

The new set consists of 12 cards to which, others cards from the original set could eventually be added. The male set (adolescents and adults) is made up by the cards 1, 2, 3BM, 4, 6BM, 7BM, 8BM, 10, 13MF, 15, 18BM and 14. The female set (adolescents and adults) is constituted by the following cards: 1, 2, 3GF, 4, 6GF, 7GF, 9GF, 10, 13MF, 17GF, 18GF and 8GF. Table 4 shows these two sets in perspective, including Murray's card codes.

The administration instructions, now thoroughly translated to Spanish language are disposed according to a standardized pattern that eliminates suggestion or induction of Murray's themes without limiting verbal productivity. The new proposal provides alternatives for individual or collective administration, including options to use an strategy that allows use test instructions, with or without time pressure for the elaboration of the stories as a particular set of TAT administration. An additional protocol facilitates to the examiner adequately

recording of the formal and non verbal manifestations which will later be used as modulating variables in the content analysis.

Table 4

TAT Cards to be used: Suggested sequence of administration

Integrative System Rank order of TAT card administration	Murray's TAT Card codes	
	MALES	FEMALES
1	1	1
2	2	2
3	3BM	3GF
4	4	4
5	6BM	6GF
6	7BM	7GF
7	8BM	9GF
8	10	10
9	13MF	13MF
10	15	17GF
11	18BM	18GF
12	14	8GF
13 (optionally)	16	16

An extended version of the procedure is completely described in Ávila-Espada (1985a); Ávila-Espada & Biezma (1989) and Ávila-Espada, Biezma & Rodríguez (1998), but summarized in the following instruction cards, now specially adapted for Spanish speaking populations. This new set of TAT instructions offers a clear procedure to standardize TAT administration, reducing examiner bias and focusing ambiguity only on card's content.

TAT verbal instructions for TAT administration

(Standardized English version)

a) Now I am going to show you some pictures that illustrate different scenes or situations.

b) I would like you to tell me a story about each one

c) including the past, the background of each scene

d) the present, that is, the situation as you see it, as well as the thoughts, feelings and actions of the persons involved,

(Standardized Spanish version)

a) "A continuación le (te)³ voy a presentar algunas láminas en las que aparecen diversas escenas o situaciones.

b) Para cada una de ellas tiene (tienes) que relatar una historia,

c) que incluya el pasado de la escena -lo que sucedió antes-,

d) El presente -la situación y las acciones, pensamientos y sentimientos de los personajes-,

³ Between brackets () are included alternative terms in order that examiners could choose a more informal language expressions if needed.

- | | |
|---|--|
| e) and the future, in other words, what you think will happen later on or how the story ends. | e) y el futuro o lo que sucederá después, cómo terminará la historia. |
| f) There's no time-limit for telling me each story. | f) No tiene (tienes) límite de tiempo para narrar las historias. |
| f') You have five minutes for telling me each story. | f') Tiene (tienes) un máximo de cinco minutos para narrar cada historia. |
| g) I am going to take verbatim notes of your answers, so I would like you to speak slowly if possible, but without omitting any of your thoughts for this reason. | g) Tomaré nota literal de sus (tus) respuestas. Si le (te) es posible no hable (hables) muy deprisa, pero no omita (omitas) por eso todo lo que se le (te) ocurra. |
| g') To make things easy I am going to record your answers (on this tape recorder). | g') Sus (tus) respuestas, para una mayor facilidad, las grabaré en este magnetófono. |
| h) Have you understood? (Is all of this clear?) [Can be repeated in the same terms if Subject asks it] | h) ¿Ha (has) comprendido?. [Can be repeated in the same terms if Subject asks it] |
| i) Right, let's get started with the first picture; you can begin your story as soon as you wish. | i) Bien. Aquí tiene (tienes) la primera lámina. Puede (puedes) comenzar el relato. |

(Now, the first TAT card (code 1) is placed on the table, in front of the subject, close to him/her hands.).

Supporting questions: (only to be included as support phrases during the first and second card):

- | | |
|--|---|
| j) What happened before (that)? | j) ¿Qué ocurría antes? |
| j') What led (him/her/them) to this situation? | j') ¿Qué le (les) ha llevado a esta situación?. |
| k) What's happening to (him/her/them) now? | k) ¿Qué le (les) ocurre ahora?. |
| l) What's going to happen later? | l) ¿Qué ocurrirá después? |

Unintrusive verbal comments /answers that can be given by the examiner during the test administration

- | | |
|--------------------------------------|--|
| m) Any way you want (it to be). | m) Puede ser lo que usted (tú) quiera (quieras). |
| n) Say whatever comes to your mind. | n) Diga (dí) lo que le (te) parezca. |
| o) Go on. | o) Continúe (continúa). |
| p) Have you finished? | p) ¿Ha (has) terminado?. |
| q) You can end it whenever you want. | q) Termine (termina) cuando le (te) parezca. |

Recent developments: An Integrative Analysis System to the scoring and interpretation of the TAT.

The evolution of TAT scoring and interpretation systems have been marked with confusion since no clear guidelines and proposals for scoring and interpretation emerged from a prolix landscape. At the beginning, following Murray's recommendations, TAT use develops an unsatisfactory qualitative

analysis detecting in the narratives produced to TAT cards needs and environmental pressures of the figure labeled or attributed as "hero". Extremely dependent of manifest content of the TAT narratives, Murray's system - despite of their theoretical value - lacks of refinement, both neither quantitative or qualitative directions of scoring and interpretation. Two main strategies emerged during the fifties and sixties, trying to solve this essential weakness of TAT method. The first one was the *holistic qualitative way* (Bellak, 1993; Shentoub et al., 1990) that uses TAT like a projective interview with an unsystematic categorical system, deeply anchored in theoretical principles whose confirmation are searched in the TAT narrative content. This way have evoked strong criticisms (see Rossini & Moretti, 1997) because makes TAT extremely dependent of clinical expertise and reduces its utility to a small collection of sentences drawn of the manifest content of narratives taken as thought samples or some inferences related to defenses, conflictive areas, interpersonal dynamics and problem solving strategies.

The second one was the rough *quantitative scoring systems* developed by Eron (1959), Zubin, Eron & Schumer (1965) and Murstein (1963) and some refinements added later, that implies a very hard and time expensive scoring procedure without clear connections with clinical interpretation. After Vane (1981) review, no clear refinements or advancements have been added to TAT arena. In addition, notice of the culture of TAT research lacks in the training programs of psychological assessment students, reducing the interest payed to this relevant method of personality assessment (Moretti & Rossini, 1997). Ourselves are both witnesses and conductors of two decades of stimulus value research, potentially leading to many objective scores (see Cramer, 1996), but for a long time lacking of adequate integration within a coherent interpretative system for clinical use and report. The usual richness of TAT narratives produced by clinical subjects needs ways to take the advantage offered. Dana (1998) have recently summarized the wide array of potential information about psychological functioning that TAT offers comparing Shneidman's analysis (1951) with his own suggestions (Dana, 1986) and the cluster of potential scoring variables proposed by Teglassi (1993).

From those origins, in the last decade our research efforts have been directed to develop an *Integrative Analysis System* based on a critical review and collection of the several research reports (Fine, 1955; Eron, 1950; Zubin, Eron & Schumer, 1965; McClelland et al., 1953; Dana, 1959, 1984). Our aim is to achieve a reliable procedure for TAT scoring and interpretation of psychometric nature, which could reduce the cost of the analysis and reaches an optimal predictive and diagnostic value, without vasting the main features of the qualitative approach.

The procedure of the *Integrative Analysis System* includes the following phases:

1) The protocol preparation for the analysis; Includes a thoroughly developed procedure for transcription and coding verbal and non-verbal responses produced to the set of instructions previously presented.

2) Computation of the formal variables which modulate the thematic content analysis; Some formal indexes are usually computed (v.g. the new ESI and ERI, plus the classical Word Count, Reaction Time, and Total Time values) in order to detect shock patterns and other differential indexes between cards showed in an intra-subject profile.

3) Intra-subjects content analysis (quantitative, qualitative or both); Includes different strategies, all of them used, if possible:

a) Quantitative analysis of thematic content through a modified version of Eron System (Eron, 1950, 1953; Zubin, Eron & Schumer, 1965) (an introductory example, of the normative Spanish data can be viewed in table 5)

b) Quantitative estimations of Emotional Tone (under the concept and method formulated by Eron in Zubin, Eron & Schumer, 1965). (a descriptive cadre of the normative Spanish data can be viewed in table 6)

c) Quantitative estimations of specific needs (under the definitions and procedures for coding established by McClelland, 1953). The main needs included in our analysis are: Achievement, Aggression, Power, Sex and Affiliation.

d) Quantitative estimations of Interpersonal Relations Content (under the coding system developed by Fine, 1955).

e) Experiential-Integrative analysis of Content (adapted from Dana, 1984), the more qualitative phase of the analysis, complemented with an adaptation of Kernberg's criteria for personality structural organization that allows a distinction between Normal-Neurotic, Borderline and Psychotic Structural Organization.

f) Decoding the speech organization processes through the Shentoub's series (A: Control; B: Liability; C: Conflict Withdrawal; E: Primary Process emergence) (adapted from the method proposed by Shentoub et al., 1990). By this way we can detect defense processes and structural levels of organization that could be a validation of the inferences extracted from the Kernberg's criteria.

All those six strategies are articulated as the basis of a narrative TAT report.

4) Now, comparisons with the intra and inter-subject normative data are performed; Despite subjects TAT stories were codified, idiosyncratic responses could be compared with normative one (see v.g. Table 5). Thematic content that are out of normative patterns can be detected and could be introduced as a part of the narrative report. Those idiosyncratic phrases or terms could be chosen as foci for new qualitative assessment strategies.

Emotion categories	0	1	2	3	4	0	1	2	3	4	?	X
Males	2	34	32	20	12	0	16	32	32	14	6	0
Females	0	60	18	20	2	0	28	8	30	22	8	5

5) Lately, we can complete the analysis with an specific formal analysis; some traditional variables drawn from formal analysis procedures are performed. One of our main directions of research is the vocabulary analyses, computing base rates for all terms used in the stories across subjects, a procedure that allows normative comparisons across cards within subject, across subjects within each specific card.

6) After we have collected all the indexes, raw data, profiles and base rates, we can display it presenting the data in a TAT psychogram in a readable style;

7) Now, the discussion of the inferences derived directly from the psychogram data, could be added to the essential narrative TAT report.

8) Finally, the main interpretative estimations, closes the extended narrative report. A computer aided system to facilitate the TAT report of the IAS are now under preparation.

As a brief presentation of the reference frame for normative interpretation, the Spanish normative results for the T.A.T. Card 1 (boy with a violin), displayed under Eron's modified criteria for quantitative scoring of content analysis, have been showed in table 5, complemented with emotional tone indicators (see table 6). A more extended case record completely reported under this IAS procedure is now in preparation (Ávila-Espada et al., in preparation).

An extended description of a preliminary version of this system can be also found in Ávila-Espada (1985a, 1991) and a more complete one in Ávila-Espada, Biezma & Rodriguez (1998). Further research data (Ávila-Espada, 1990; Ávila-Espada & Rubí, 1990; Ávila-Espada, Biezma & Rodriguez, 1998) from this Analysis System shows how effectively it provides an improved procedure in the use of thematic techniques. The mayor advantage of this new *Integrative Analysis System* is that includes both quantitative scoring strategies based in a revision of well-known previous approaches (Eron, 1950; Murstein, 1963), integrating qualitative procedures oriented to content analysis derived from recent psychoanalytic developments contributed by French TAT school (Shentoub et al., 1990). TAT reports were by this way more complete and useful

for the clinician and the researcher, offering a more secure basis for interpretation in a way with more sensitivity and respect to cultural differences.

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