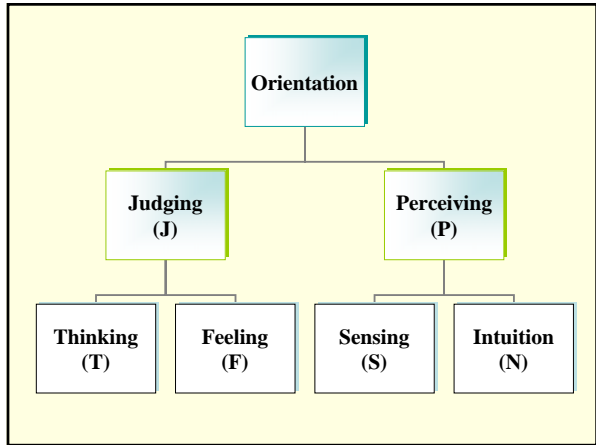
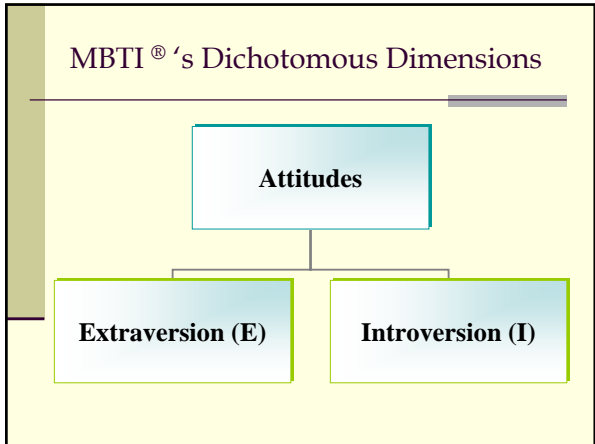


**Spanish Translation of the MBTI®
for Puerto Rico and its Implications
for Education, Counseling, and
Institutional Research**

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		Sensing		Intuitive	
		Thinking	Feeling	Feeling	Thinking
Introverted	Judging	ISTJ	ISFJ	INFJ	INTJ
	Perceiving	ISTP	ISFP	INFP	INTP
Extraverted	Perceiving	ESTP	ESFP	ENFP	ENTP
	Judging	ESTJ	ESFJ	ENFJ	ENTJ

- Objectives**
1. Translation and adaptation for Puerto Rico of the Myers-Briggs Type Indicator (MBTI®), Form M
 2. Evaluation of psychometric properties in terms of internal reliability and construct validity
 3. Comparison of translation's properties with those documented in studies using the MBTI®
 4. Describe the conceptual typology and learning styles of a sample UPRM students
 5. Discuss the implications of the study's results for institutional research and the potential use of the theory of psychological types and the MBTI® for education

- Hypotheses**
1. Reliability:
 - a. Moderately high or high internal reliability coefficient for the MBTI®
 - b. Moderately high or high internal reliability coefficients for the items that form the four scales of the MBTI®
 2. Validity:
 - a. Items will be grouped on the four factors that correspond to Briggs & Myers' interpretation of Carl Jung's theory of psychological types

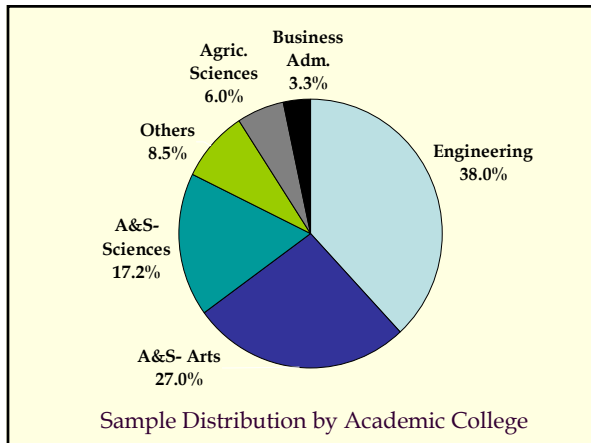
Hypotheses

2. Validity (cont.):

- b. Low intercorrelations amongst four scales' continuous scores, except for S-N & J-P where it will be moderate
- c. Preferences for the dimensions of the scales will be negatively correlated
- d. Significant differences amongst the continuous scores of each scale as a function of gender, major, and year of study

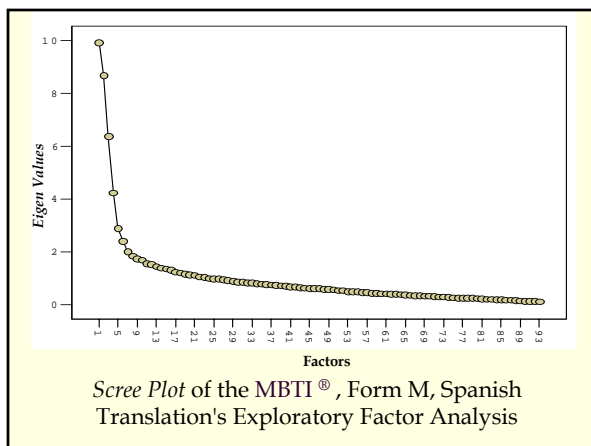
Sample: 366 UPRM Students

- Academic Level:
 - 89.6% undergraduates
 - 3.0% graduates
 - 7.4% unidentified
- Age:
 - 46.7% ≤ 20 yrs
 - 53.3% ≥ 21 yrs
- Gender:
 - 60.9% ♀
 - 39.1% ♂
- Year of Study:
 - 1st 14.2%
 - 2nd 24.7%
 - 3rd 14.8%
 - ≥4th 46.3%



Instrument and Scales' Internal Reliability Coefficients

Scale	Alpha
MBTI [®]	.85
E-I	.88
S-N	.81
T-F	.87
J-P	.89



Alpha Coefficients of the Factors Produced by the Spanish Translation of the MBTI[®]

Factor	Alpha
1	.66
2	.88
3	.88
4	.72
5	.63

Intercorrelations Amongst Scales' Continuous Scores

Scale	S-N	T-F	J-P
E-I	-.02	-.15**	-0.06
S-N		-.17**	.30**
T-F			.17**

** $p < 0.01$.

Intercorrelations of the Eight Dimensions' Preference Scores

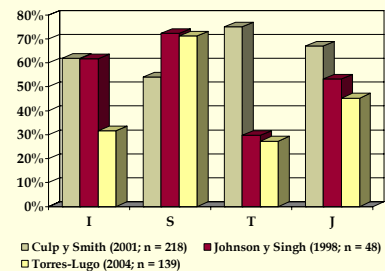
Pole	I	S	N	T	F	J	P
E	-1.00**	-.01	.03	-.15**	.16**	-.05	.05
I		.02	-.03	.15**	-.15**	.06	-.06
S			-.97**	-.15**	.19**	.30**	-.30**
N				.17**	-.15**	-.29**	.29**
T					-.97**	.18**	-.18**
F						-.16**	.16**
J							-1.00**

** $p < .01$.

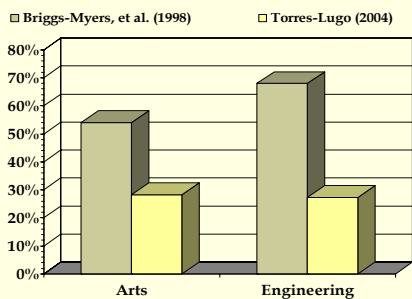
Some Significant Differences:

- Females preferred S and F significantly more ($p < .001$; $p < .05$) than males
- Men were significantly more perceptive (P) than females ($p < .01$)
- Students from Agricultural Sciences more perceptive (S) than Science students ($p < .05$)
- 2nd year students less sensing than 4th, 5th, 6th year students ($p < .01$)

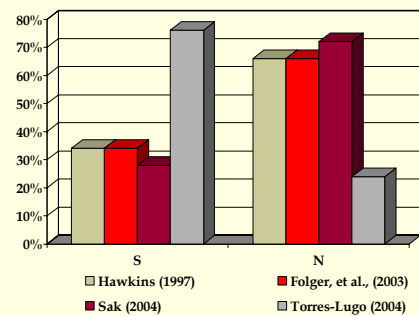
Comparison of the Documented Preferences of Engineers



Arts & Engineering Students' Preference for Thinking (T)



Preferences on the S-N Scale of "Talented" vs. UPRM Students



Analysis of the Hierarchical Preference for Thinking

	f	%		
S (d) T (a)	27	7.38		
N (d) T (a)	20	5.46		
T (d) S (a)	27	7.38		
T (d) N (a)	16	4.37		
T as Dominant or Auxiliary	90	24.59	vs.	43.00% f = 40
S (d) F (a)	113	30.87		
N (d) F (a)	32	8.74		
F (d) S (a)	110	30.05		
F (d) N (a)	21	5.74		
T as Tertiary or Inferior	276	75.41	vs.	57.00% f = 53

Folger, W.A., Kanitz, H.E., Knudsen, A.E., & Mchenry, S. (2003)

UPRM Students' Conceptual Profile

- Male learners (ESFP)
 - Rarely make plans in advance
 - Enjoy being part of immediate experiences
 - Easygoing individuals
 - Prefer learning through practice and environmental interactions
 - Lack of interest in theories and written explanations
 - Traditional teaching methods would result highly difficult for them to grasp

UPRM Students' Conceptual Profile

- Female learners (ESFJ):
 - Enjoy organizing and structuring situations prior to handling them in a timely fashion
 - Prefer to do things in a more traditional way
 - Not attracted to learning styles that require dominating abstract ideas or impersonal analysis.
 - Enjoy learning through practice
 - Require clear and precise instructions and prefer professors who demonstrate support and individual recognition

Conclusions

- Reliable Instrument:
 - MBTI® alpha = .80
 - Scales' alpha = .81 - .89
- Valid Instrument for Measuring Preferences:
 - Independent scales
 - Bipolarity of the scales
 - Significant differences between groups
 - Homogeneous grouping of items on each factor
- Differences found between this study's preferences and those documented are indicative of importance of developing norms for the Puerto Rican population

Limitations

- Sample not representative of the UPRM student body (3%)
- IRT could not be used as a result of using the self scorable form
- Despite the aspiration of cultural adaptation, it was not carried out to the extent outlined by Bravo, et al., (1993) and the ITC (2000)

Strengths

- One of the first studies in PR with the MBTI®
- Provides evidence of the need to develop norms for different populations, along with any translation and adaptation process
- It serves as a reference for future studies about the MBTI® and psychological types due to its abundance of references on the matter

Future Studies

- Development of a databank of results from previous administrations of the MBTI® in PR and submit it to similar analysis as those performed in this study
- If permission were granted, administer the instrument developed to a larger sample
- Development of an instrument for Puerto Rico to measure Carl Jung's concepts of psychological preferences in a "non-forced choice" format