

Laboratorio 4

Curso de verano 2025

Presentaciones científicas en formato poster

Pablo Cobelli

Departamento de Física, FCEN UBA

 cobelli@df.uba.ar

 pablocobelli/laboratorio4

Formatos para presentar y/o difundir resultados científicos

- artículos de investigación
- press releases de artículos de investigación
- presentaciones orales en conferencias / congresos / workshops
- ***presentaciones de posters en conferencias / congresos / workshops***
- envío de abstracts a conferencias (para conference proceedings)
- libros o capítulos de libros
- tesis (tanto de licenciatura como de doctorado)
- habilitaciones [eg. HDR, Habilitationsschrift, ASN, AN, Doktor Nauk]
- reportes técnicos
- white papers

Por qué presentar un poster?

- comunicación breve y concisa
- engagement interactivo
- fácil distribución y acceso
- oportunidades de networking y colaboraciones
- visibilidad y exposición
- naturaleza visual
- presentación flexible / versátil
- feedback inmediato
- el entry-point más accesible a jóvenes investigadores
- antesala a peer-reviewing
- es lo más 'calentito' de la conferencia!

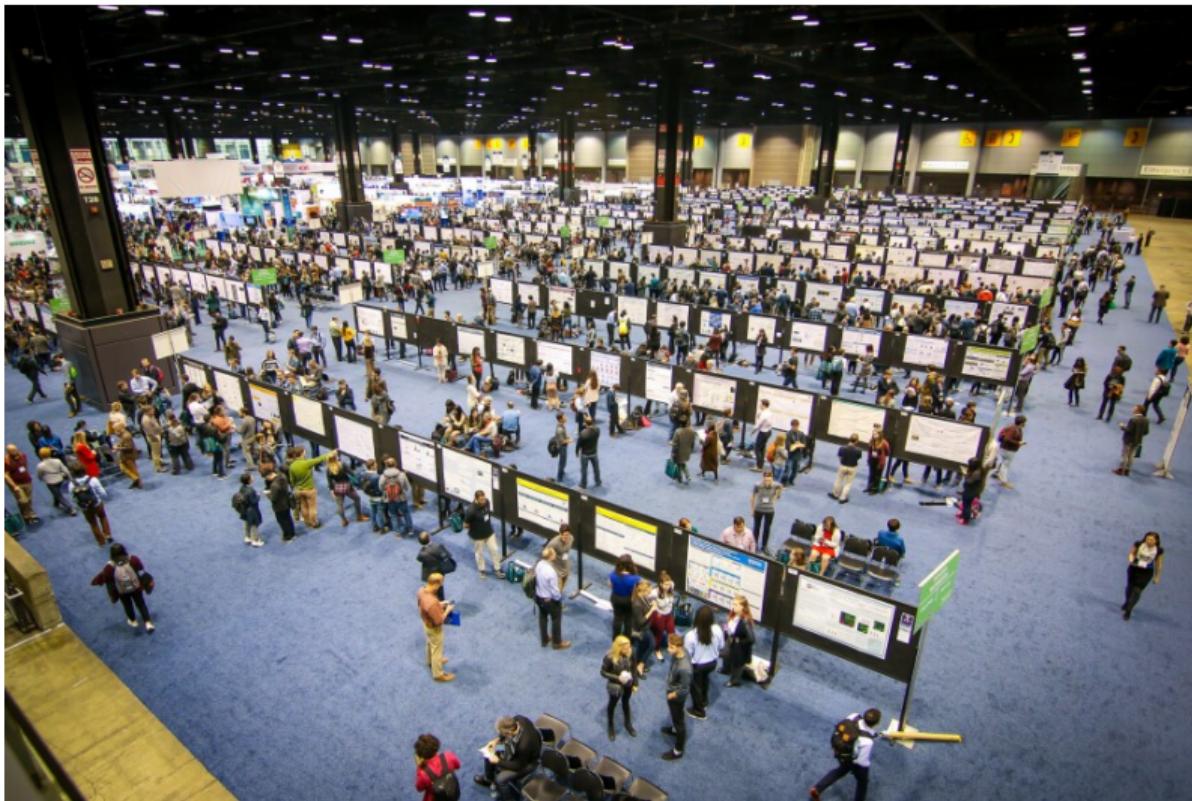
En serio alguien presenta posters hoy?

- APS March Meeting 2024
 - Sessions index link
 - 1340 posters en total
- AGU December Meeting 2024
 - Sessions & Events link
 - Poster sessions link
 - más de 1500 posters
- Reunión Anual de la Asociación Física Argentina 2024
 - Libro de resúmenes de la reunión
 - alrededor de 500 posters (total de todas las áreas)

Cómo se vé una sesión de posters en una conferencia?



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Cómo se vé una sesión de posters en una conferencia?



Premios a los mejores posters en cada conferencia

- Las conferencias más destacadas ofrecen premios a los mejores posters
- A menudo se premian en diferentes categorías (técnicos, visuales, de undergrads, de doctorandos)
- Premios? típicamente \approx 200 USD + invitación a publicar artículo breve*
- Ejemplos:
 - Student Poster Competition (APS)
 - Gallery of Fluid Motions (APS)
 - RAFA 2023 (DMB)
 - Premiados en varias conferencias (no sólo en física)



Cada conferencia tiene formato propio y una guía

[https://www.apsdfd2022.org/program-events/
instructions-for-presenters-session-chairs/](https://www.apsdfd2022.org/program-events/instructions-for-presenters-session-chairs/)

[https:
//www.agu.org/fall-meeting/pages/present/poster-sessions](https://www.agu.org/fall-meeting/pages/present/poster-sessions)

Guías en Nature, Science, APS, Harvard U

- 'Scientist's guide to poster presentations', by P. Gosling (1999)
- 'Presentations: billboard science', by K. Powell (2012)
- 'In praise of posters', editorial (2012)
- 'Conference presentations: lead the poster grade', by C. Woolston (2016)
- 'How to create a conference poster that people want to read', by M. Kuchner (2020)
- 'How to prepare a scientific poster', by E. Pain (2022)
- 'Tips for designing a poster presentation'; APS Careers' Advice column (2024)
- 'The Art and Science of Designing a Poster', by C. Vaughan; Harvard Univ (2024)

Desde hace poco, Nature ofrece también 'masterclasses' (pagas) sobre cómo crear posters de investigación (ver link)

Lineamientos para el poster de Laboratorio 4

- Sobre contenido
 - No es 'un poster': es una presentación con el poster como soporte
 - Un único mensaje en el poster
 - El flujo de información debe ser evidente
 - Usar la tipografía para establecer jerarquías
 - Separar en secciones claramente diferenciadas
 - Las figuras deben ser el foco de atención
 - Poco texto, énfasis principal en resultado(s) via figuras (esquemas y/o gráficos)
 - Preparar discurso asociado
- Sobre forma
 - Tamaños: debe poder leerse desde 1 m
 - Tipografía: 2/3 fonts, combinar serif & sans serif
 - Colores: una única paleta consistente en todo el poster
 - Gráficos: claros, amplios, sin complejidad innecesaria
 - Representación: vectorial (tanto tipografía como gráficos; cuidado con imágenes)
 - Incluir material para difusión (impresión a escala, QR)

Lineamientos de formato

Para nosotros el formato será:

- Poster en versión digital
- Formato “portrait” (vertical)
- Dimensiones: 122 x 68 cm²
- Relación de aspecto (aprox): 16:9
- Lo expondrán usando la TV 4K de Laboratorio 4
- No se podrá *zoomear* sobre el poster

Ejemplo de otra disciplina

(ver poster fuera de esta serie de diapositivas)

Ejemplo de otra disciplina

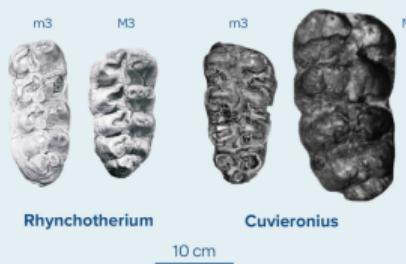
Occlusal variation in the third molars of two gomphotheres



Nuria Melisa Morales Garcia & Victor Manuel Bravo Cuevas

Gomphothere molars are difficult to distinguish between genera^[1].

This is a problem when trying to identify isolated fossil molars.



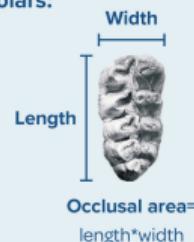
We wanted to see if we could distinguish them by size. To do so, we measured the occlusal area of their third molars:



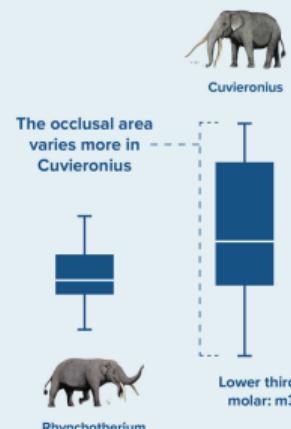
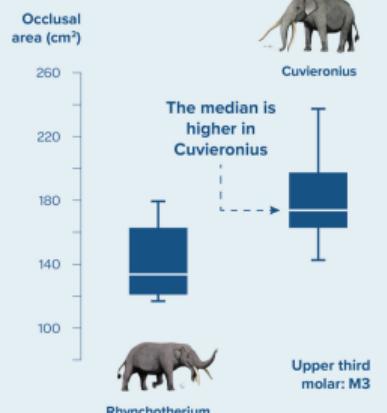
Rhynchotherium
11 M3 & 23 m3



Cuvieronius
19 M3 & 32 m3



We found that the occlusal area in the third molars of *Cuvieronius* tends to be larger than in *Rhynchotherium*



A Mann-Whitney test revealed significant differences in the occlusal area of the upper ($p=0.0064$) and lower ($p=0.00049$) third molars between both genera

When dealing with isolated teeth, the occlusal area of the third molars of gomphotheres can aid in their taxonomic identification

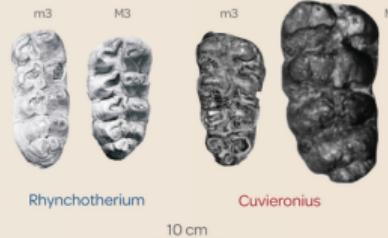
Ejemplo de otra disciplina

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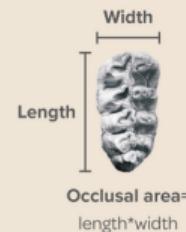
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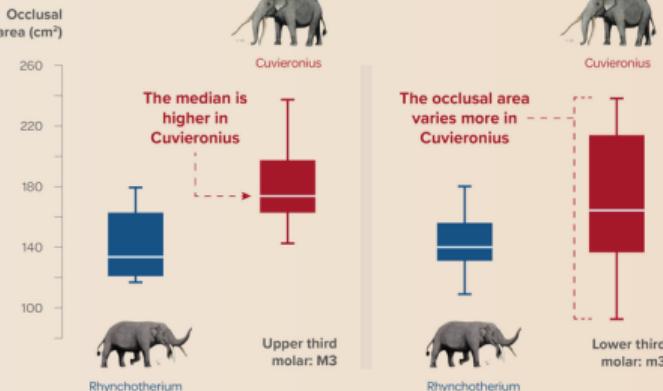
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Ejemplo: de clásico a 'posmoderno' (?)



Non-Cognitive Predictors of Student Success:

A Predictive Validity Comparison Between Domestic and International Students

Jacob Smith, Dr. Thea Schofield, Dr. Antonio Ibarra, Ianis Choi, Benn Mullins, Dr. Emily Williams



Abstract

Given increasing interest in utilizing non-cognitive predictors in the college admissions process and rising enrollment of international students, research is warranted to compare the predictive validity of these measures across domestic and international students. Results indicate some predictive validity differences do exist, and an explanation for this differential validity, as well as a moderator of these relationships, are tested.

Background

- Though cognitive predictors of student success (e.g. ACT, HSGPA) remain popular, there is increasing interest in non-cognitive predictors of student success (e.g. situational judgement, adaptability), and these have been found to predict student performance (Oswald et al., 2004; Keeney et al., 2009).
- From 05/06 to 15/16 academic year, the number of international students studying in U.S. increased yearly. In 2016, 5.2% of students international with over 1 million enrolled (Institute of International Education, 2016).
- Previous work by Prasad and colleagues (2016) found mean differences in non-cognitive measures across Chinese and Caucasian American students, along with differential validity for a Perseverance non-cognitive measure.
- The current research is an extension of Prasad et al., 2016, exploring differential validity in two large samples of students, testing an explanation for these differences in validity, and testing a possible moderator of these relationships between non-cognitive predictors and GPA.

Research Question & Hypotheses

Research Question 1: Will non-cognitive measures display differential validity between domestic and international students?

- Non-cognitive measures may be functioning as a proxy for English ability.
H1: Differential validity will be accounted for by English proficiency.

- Non-cognitive predictors may be more important for individuals from a more culturally distant country, as adjustment may be more difficult necessitating greater non-cognitive abilities.
H2: Non-cognitive measures will exhibit greater validity for international students from more culturally distant countries.

Method

Samples

Michigan State University

Method (cont.)

Measures:

Biographical Data – Standardized inventory of an individual's experiences, attitudes, and behavioral tendencies relevant to college student experience and performance.

- Consists of seven scales: Knowledge, Leadership, Social Responsibility, Adaptability, Perseverance, Continuous Learning, Academic Ethics.

Situational Judgement Test (SJT) – Presents typical situations college students would face and possible responses to situation, utilized to measure individuals ability to judge and react appropriately.

GPA – 1st semester cumulative GPA on 0.0 to 4.0 scale.

TOEFL – Standardized test to measure "ability to use and understand English at a university level" (ETS.org).

International Status – Dichotomous variable representing international status of student (Sample 1 – Based on residence code, Sample 2 – Based on residence country).

Cultural Distance – Euclidian distance between individual's residence country and United States, based on nine GLOBE cultural dimensions (House et al., 2004).

Perceived Cultural Distance – 12-item scale measuring perceptions regarding cultural differences between U.S. and home country on variety of aspects (e.g. values and beliefs, family life) (Demes & Geeraert, 2014)

Results

- Correlations between non-cognitive predictor scores and 1st semester GPA (Table 1) indicate stronger relationship for international students on seven of eight measures
- Regression results (Table 2) indicate consistent differential validity for international students for SJT, Continuous Learning, Social Responsibility, and Perseverance.
- Including TOEFL scores in regression, available for a subset of 663 individuals from Sample 1, did not substantially alter standardized regression weights ($\Delta B = -.012$ to $.018$) (Results not shown).
- Multilevel regression was utilized to test if cultural distance via GLOBE moderated validity for non-cognitive predictors utilizing subset of 765 international students from Sample 1 from 10 countries. Results indicate culture distance did not significantly moderate validity ($p > .05$) (Results not shown).
- Utilizing subset of 73 international students from Sample 2, did not find that perceived cultural distance moderated validity of non-cognitive predictors ($p > .05$) (Results not shown).
- Correlation between GLOBE cultural distance and perceived culture distance $r = -.113$, (n.s.)

Table 1: Relationship Between Non-Cognitive Predictors and 1st Semester GPA by Sample.

	Overall Sample 1	Overall Sample 2	Domestic Sample 1	Domestic Sample 2	International Sample 1	International Sample 2
SJT	0.14	0.18	0.08	0.10	0.21	0.24
Knowledge	0.15	0.15	0.13	0.13	0.18	0.19
Leadership	0.06	0.10	0.03	0.06	0.06	0.11
Social Responsibility	0.08	0.10	0.07	0.07	0.02	0.04
Adaptability	0.04	0.07	0.01	0.03	0.06	0.10
Perseverance	0.02	0.02	0.01	0.01	0.02	0.02
Continuous Learning	0.01	0.01	0.00	0.00	0.01	0.01
Academic Ethics	0.03	0.00	0.00	0.02	0.02	0.02

Table 2: Moderated Regression Results for Non-Cognitive Predictor Relationships with 1st Semester GPA.

	Sample 1	Step 1	Step 2	Sample 2	Step 1	Step 2
SJT		0.08	0.04		0.12	0.06
Knowledge		0.19	0.22		0.17	0.20
Leadership		0.04	0.03		0.07	0.07
Social Responsibility			0.05			0.03
Adaptability			-0.05			-0.03
Perseverance		0.02	-0.06		0.04	-0.06
Learning			-0.19		-0.18	-0.22
Academic Ethics		0.03	0.00		0.02	0.02
International Status				-0.15		-0.15
SJT X Int					0.04	0.08
Lead X Int					-0.01	0.00
Learn X Int					0.09	0.08
Know X Int					-0.04	-0.02
Adapt X Int					-0.04	0.00
Sjt X Int					-0.05	-0.06
Pers X Int					0.06	0.07
Ethics X Int					0.08	0.01
R Squared		0.06	0.09		0.08	0.12
N	7700	7700	7700	7670	7670	7670

** Bold numbers indicate significant relationships ($p < .05$)

Discussion

- Results indicate consistent differential validity for some non-cognitive measures for international students, specifically for SJT, Continuous Learning, Social Responsibility, and Perseverance.
- Differential validity for international students does not seem to be the results of functioning as a proxy for English language ability.
- Cultural distance does not seem to moderate validity of non-cognitive measures.

Implications

- Non-cognitive abilities may be useful in predicting international student performance, but differential validity may be an issue.
- Negative, non-significant relationship between cultural distance via GLOBE scores and perceived cultural distance warrants caution in generalizing country-level scores to individuals.
- More research is warranted to explain differential validity for

Ejemplo: de clásico a 'posmoderno' (?)

Non-Cognitive Predictors of Student Success: A Predictive Validity Comparison Between Domestic and International Students

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INTRO

- Increasing interest in utilizing non-cognitive predictors in the college admissions process
- Rising enrollment of international students

METHODS

- We compare the predictive validity of these measures across domestic and international students.
- Results indicate some predictive validity differences do exist and an explanation for this differential validity, as well as a moderator of these relationships, are tested.

RESULTS

- Consistent differential validity for some non-cognitive measures for international students, specifically for SJT, Continuous Learning, Social Responsibility, and Perseverance.
- Differential validity for international students does not seem to be the results of functioning as a proxy for English language ability.
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DISCUSSION

- Non-cognitive abilities may be useful in predicting international student performance, but differential validity may be an issue.
- Negative, non-significant relationship between cultural distance via GLOBE scores and perceived cultural distance warrants caution in generalizing country-level scores to individuals.
- More research is warranted to explain differential validity for international students.

For international students, perseverance and a sense of social responsibility are extra important for predicting first-year GPA.

	Sample 1		Sample 2	
	Step 1	Step 2	Step 1	Step 2
GPA	0.00	0.04	0.12	0.06
SJT	0.18	0.22	0.17	0.20
Leadership	0.04	0.03	0.07	0.07
Social Responsibility	0.05	0.06	0.05	0.05
Adaptability	-0.05	-0.03	-0.05	-0.02
Perseverance	0.02	-0.06	0.04	-0.06
Learning	-0.18	-0.15	-0.22	-0.24
Academic Ethics	0.01	0.05	0.01	0.02
International Status		-0.15		-0.15
SLT X Int		0.04		0.00
Lead X Int		-0.01		0.00
Learn X Int		0.00		0.00
SLT X SLT		0.04		0.01
Adapt X Int		-0.04		0.00
BR X Int		-0.05		-0.06
Perse X Int		0.06		0.07
Learn X Int		0.08		0.03
B-Squared	0.00	0.00	0.00	0.12
N	7500	7500	7670	7670

	Table 3. Beta-coefficients from Separate Predictions of 1 st Semester GPA by Domains				
	Overall Sample 1	Overall Sample 2	Domestic Sample 1	Domestic Sample 2	International Sample 1
GPA	0.21	0.18	0.08	0.10	0.12
SJT	0.01	0.01	0.01	0.01	0.00
Leadership	0.00	0.00	0.05	0.06	0.15
Social Responsibility	0.00	0.00	0.00	0.00	0.00
Adaptability	0.00	0.00	0.00	0.00	0.00
Perseverance	0.00	0.01	0.01	0.01	0.01
Learning	-0.01	-0.01	-0.01	-0.01	-0.01
Academic Ethics	0.11	0.12	0.07	0.09	0.25
N	7511 to 7701	7001	6802	6811	6711 to 6911

	Method				
	Sample 1	Sample 2	Domestic Sample 1	Domestic Sample 2	International Sample 1
Sample 1	7512 students at large, Midwestern university				
	- 14.1% (10.8%) Domestic				
	- 13.2% (13.0%) International (8.2% Chinese)				
Sample 2	7670 students at large, Midwestern university				
	- 12.3% (4.0%) Domestic				
	- 13.7% (4.0%) International (10.4% Chinese)				



Herramientas para construir un poster científico

- Basados en diseño (WYSIWYG)
 - Google Slides
 - Canva Free
 - Inkscape
 - GIMP
 - Scribus
 - Microsoft PowerPoint
 - Apple's Keynote
 - Adobe InDesign
 - Adobe Illustrator
- Basados en código (no WYSIWYG)
 - \LaTeX (via beamer or TikZ)
 - via instalación local
 - online via Overleaf [docs + templates]
 - R markdown
 - via posterdown
 - otras (varias) opciones disponibles