



2011 – Odisea en el  
Ciberespacio

Diego Fernández Slezak

Depto. De Computación - FCEyN - UBA

Canal de Panamá  
20 millones de horas hombre

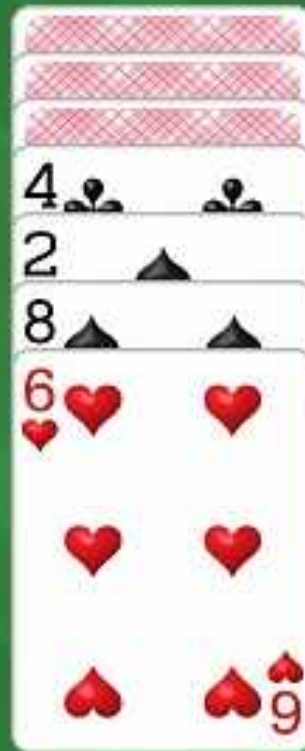


Empire State Building  
7 millones de horas hombre





9000 millones de horas  
hombre durante 2003



# Luis von Ahn, un pioniere

Computer Science, Professor at Carnegie Mellon University



# GWAP: Games With A Purpose (reusing human cycles)



Play the Games,  
Change the Web.

When you play a game at Gwap,  
you aren't just having fun.



# Reutilizando el cómputo humano...



**ICC**

**THE INTERNET CHESS CLUB**  
*OVER 200,000 memberships sold*

**Fics**

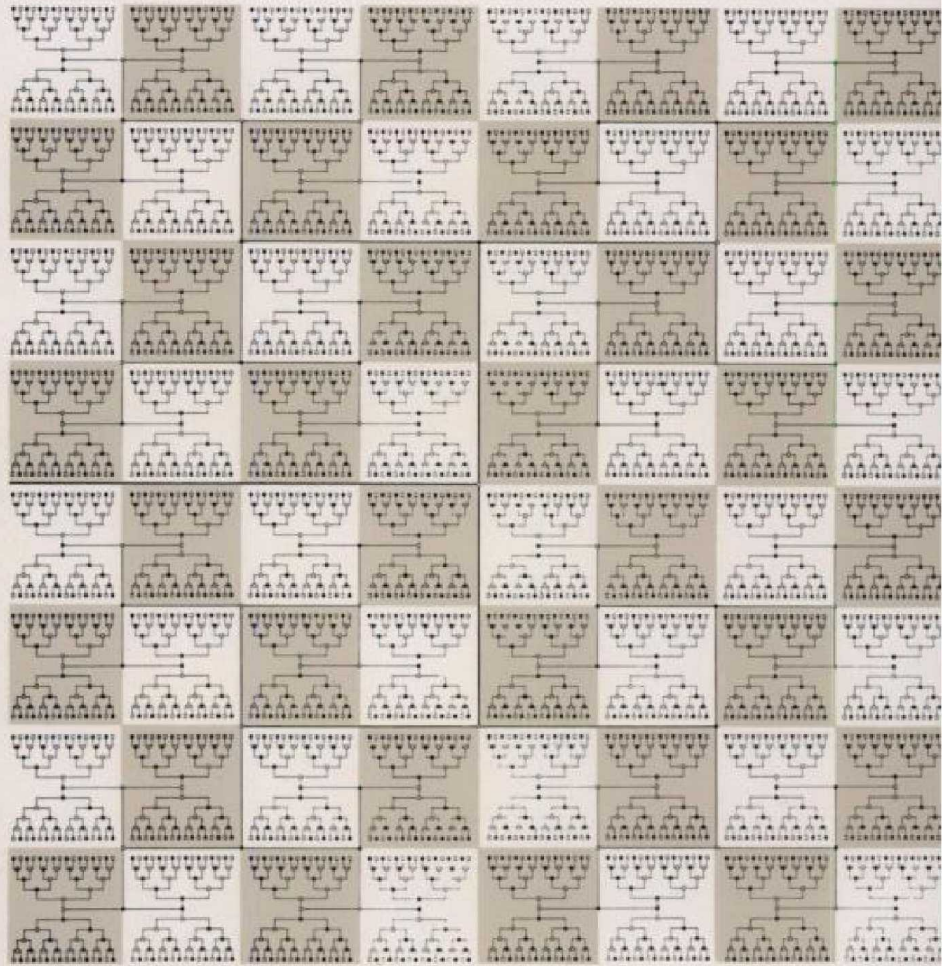
**Free Internet Chess Server**

We do it for the game, not the money.



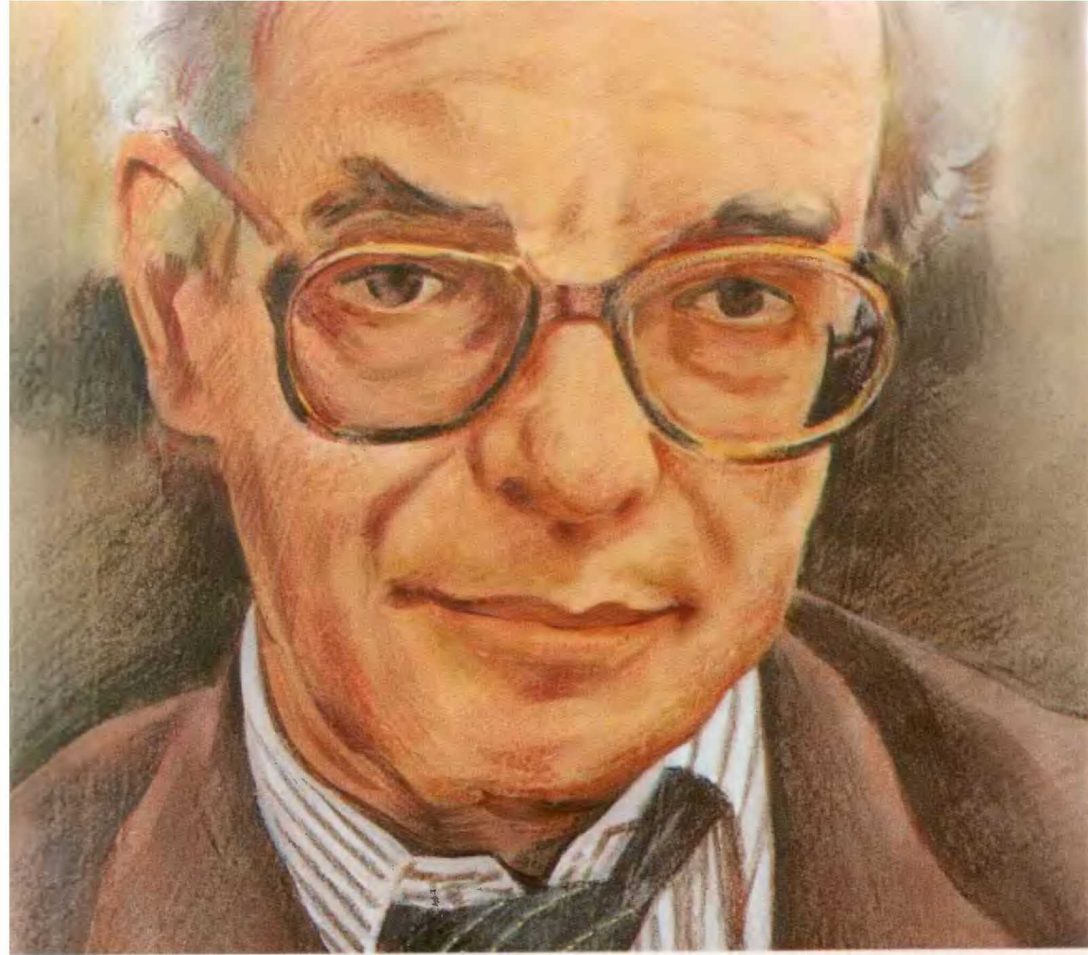


thought and  
choice  
in chess



a.d. de groot

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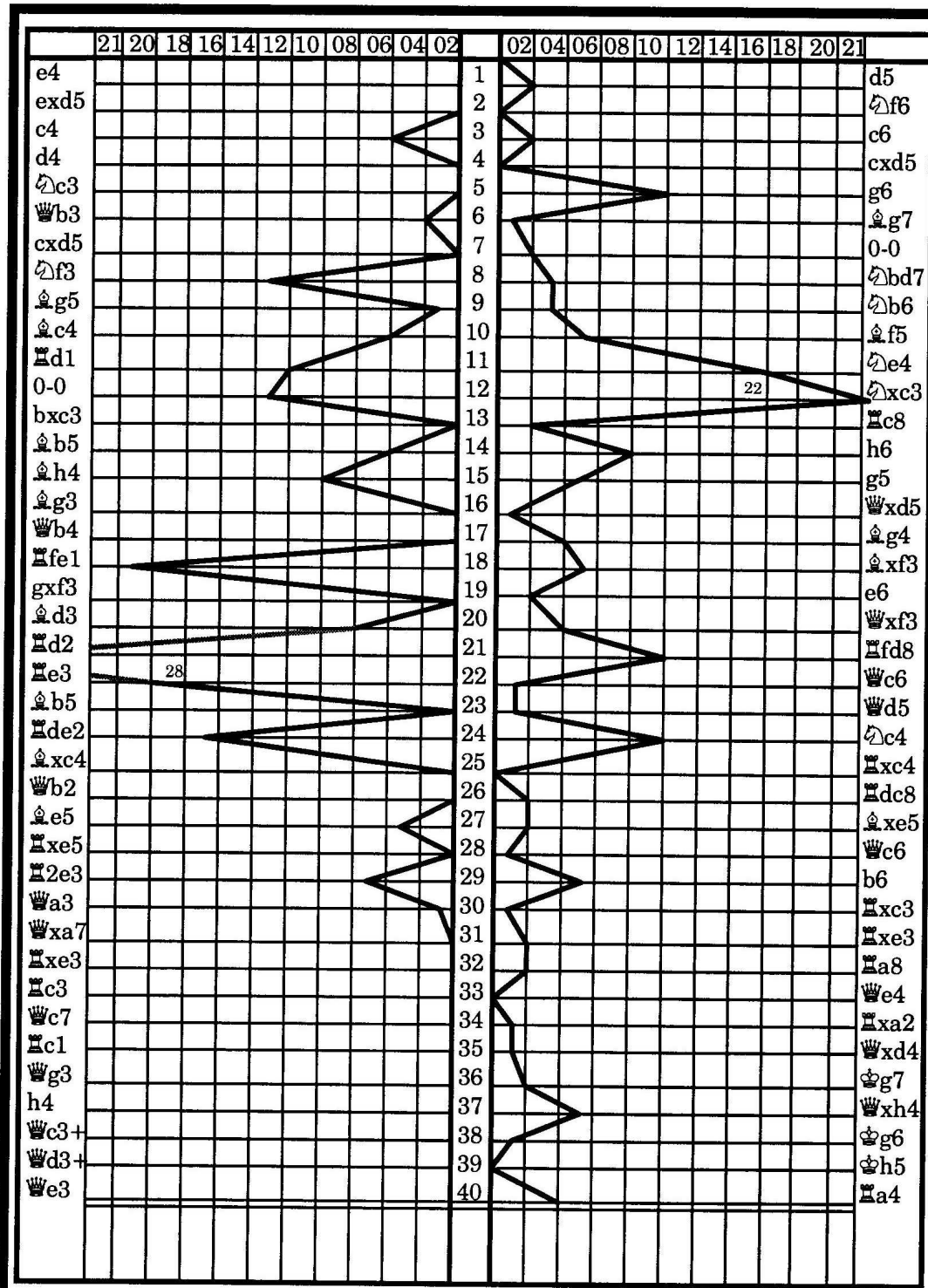
THE  
SORCERER'S  
APPRENTICE

DAVID BRONSTEIN  
and  
TOM FÜRSTENBERG

CADOGAN  
chess



# Time Graph Tal,M-Bronstein,D



# Un infierno de datos...



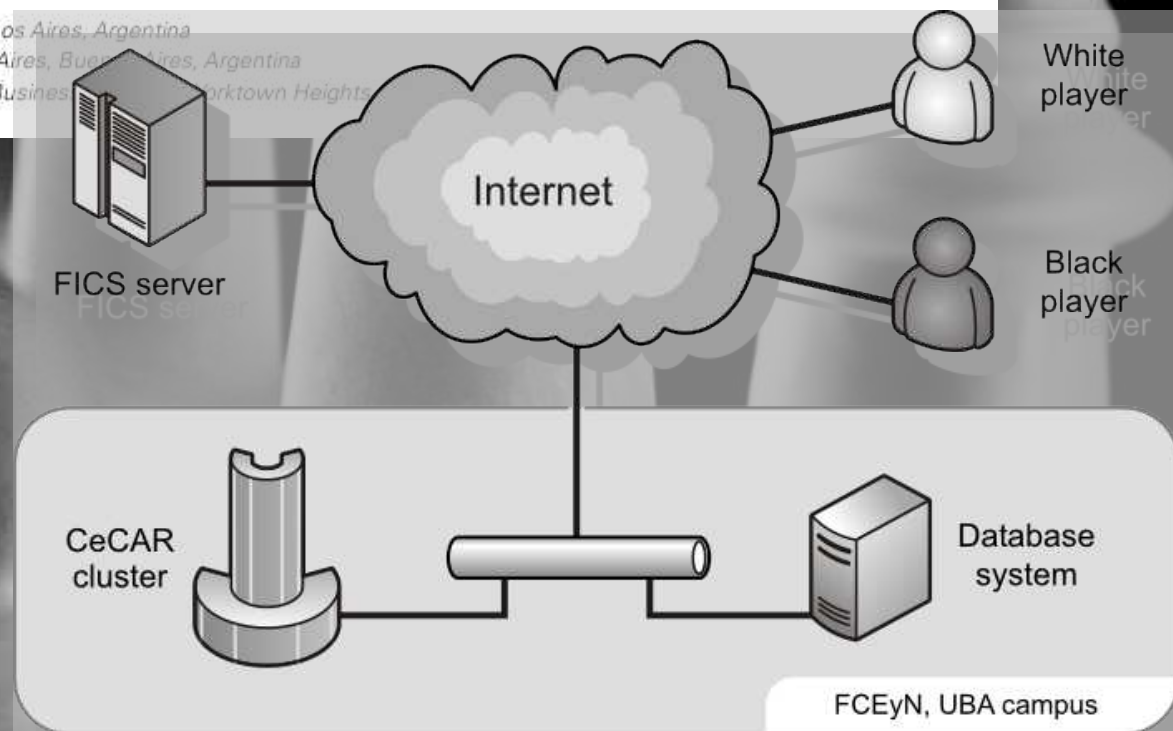
## Response time distributions in rapid chess: a large-scale decision making experiment

Mariano Sigman<sup>1\*</sup>, Pablo Etchemendy<sup>1</sup>, Diego Fernández Slezak<sup>2</sup> and Guillermo A. Cecchi<sup>3</sup>

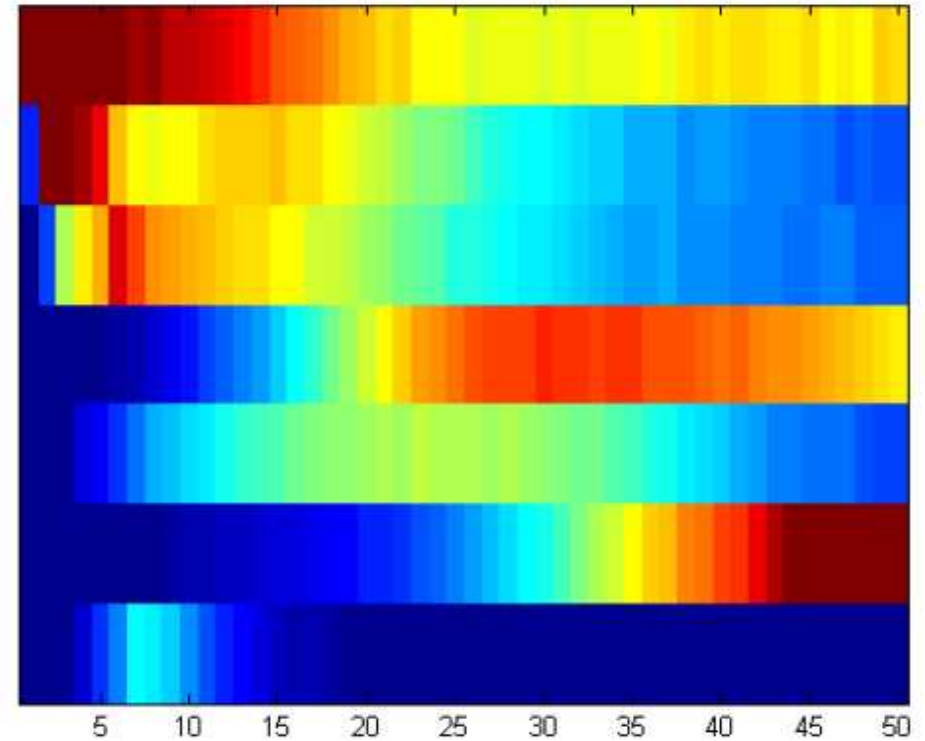
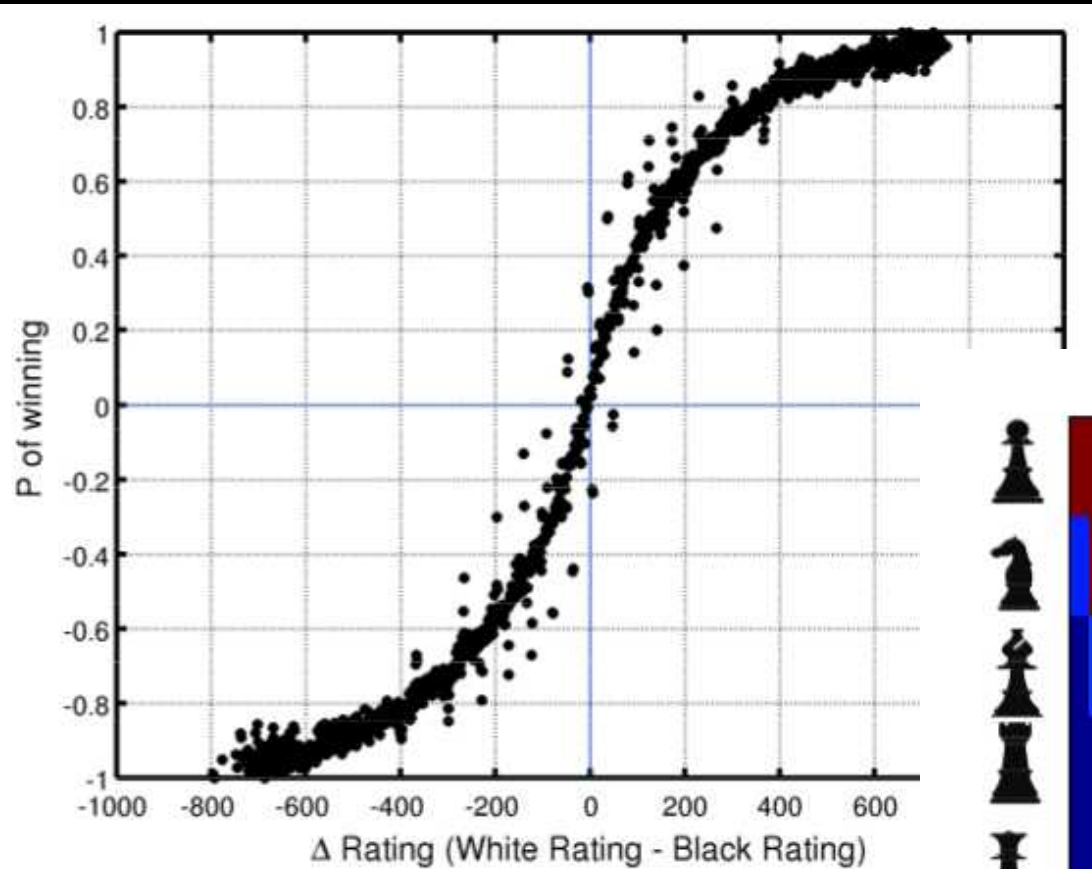
<sup>1</sup> Physics Department, School of Sciences, University of Buenos Aires, Buenos Aires, Argentina

<sup>2</sup> Computer Science Department, School of Sciences, University of Buenos Aires, Buenos Aires, Argentina

<sup>3</sup> Computational Biology Center, T.J. Watson Research Center, International Business Machines Corporation, Yorktown Heights, NY, USA

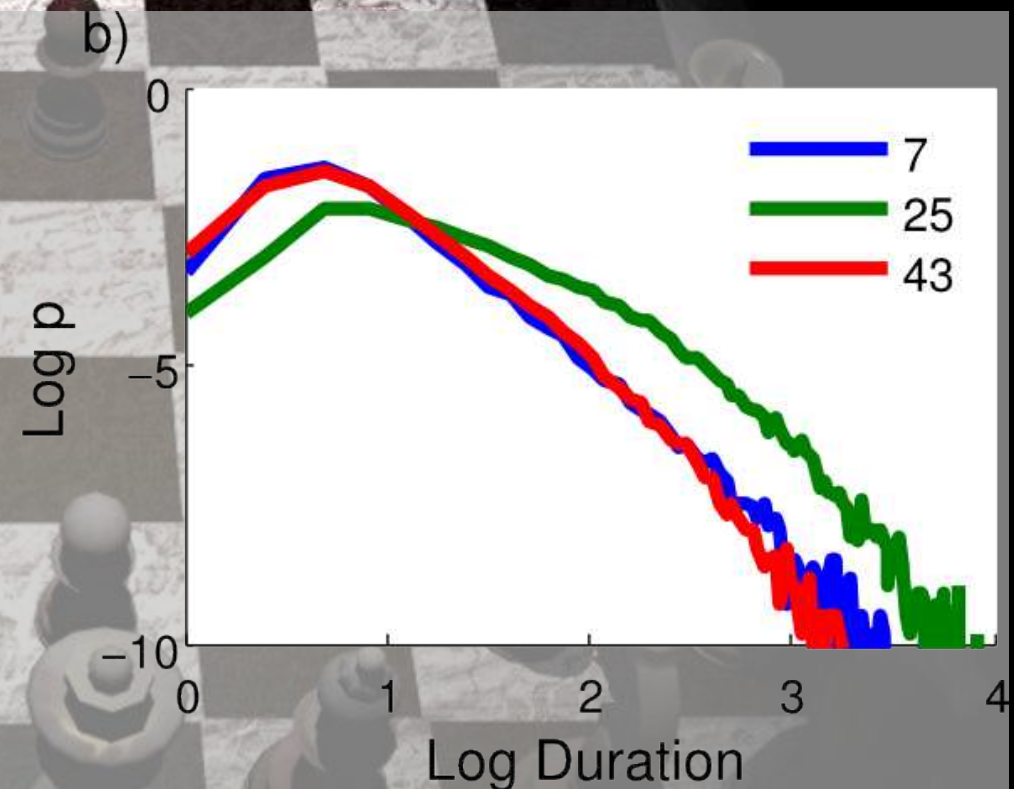
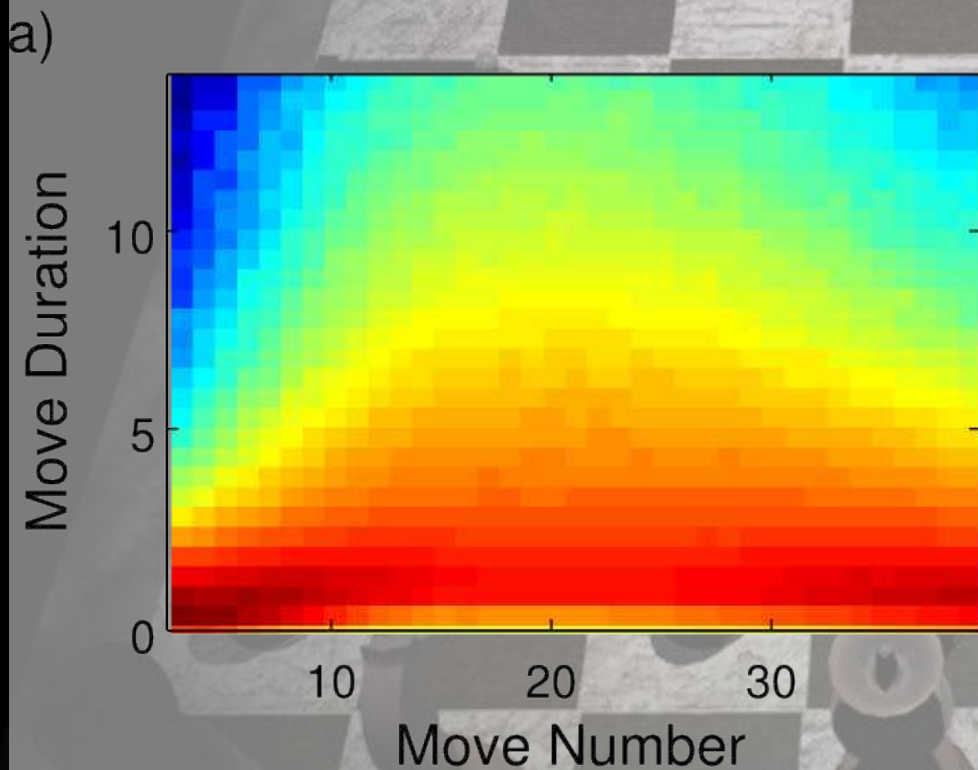


# ¿Qué podemos medir?

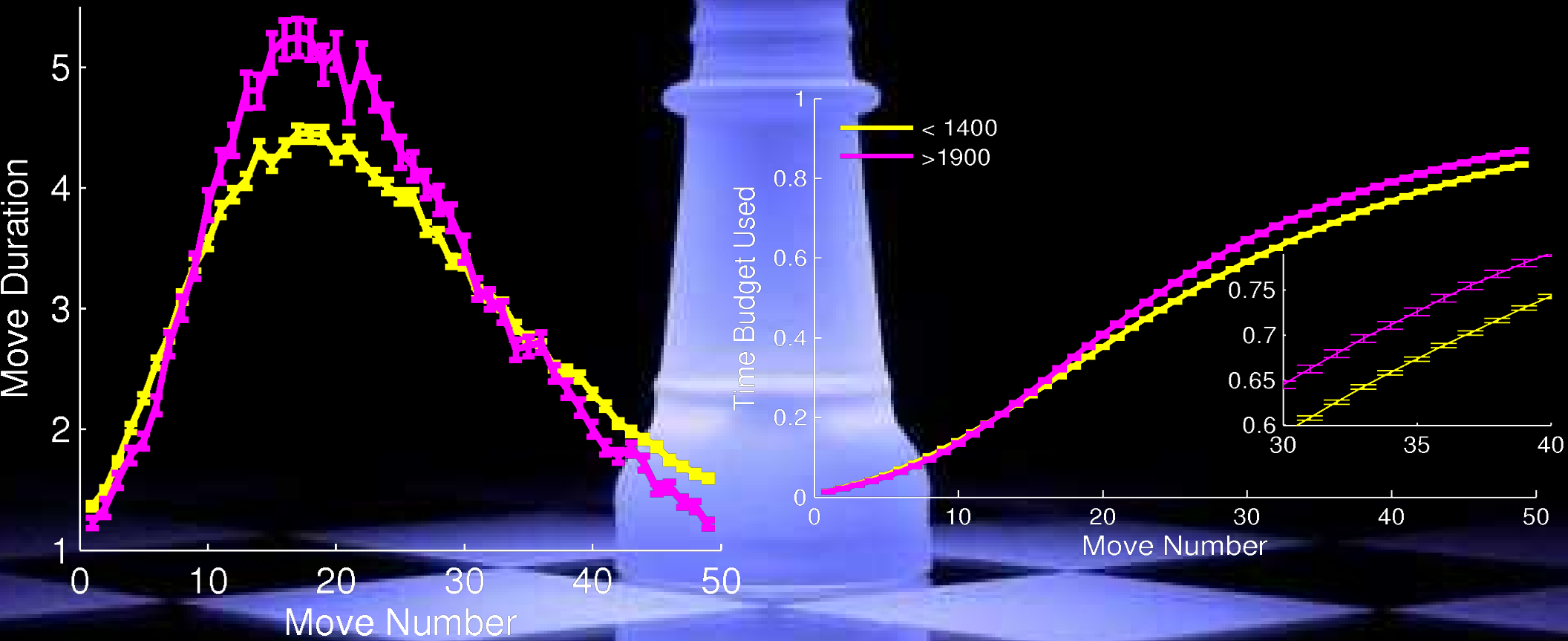




# Los tiempos de respuesta no son estacionarios



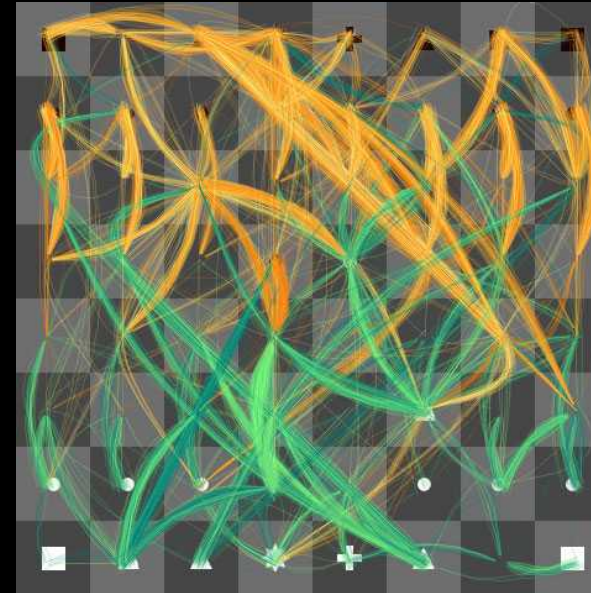
# Uso eficiente del tiempo



# ¿Cómo evaluamos las movidas?



Crafty Chess



# stockfish

open source chess engine

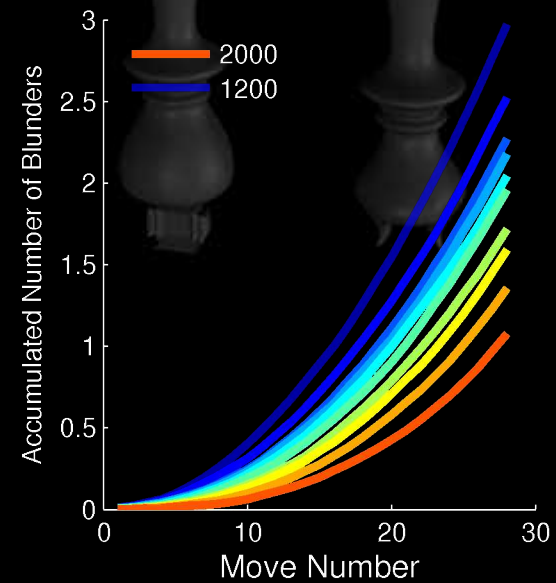
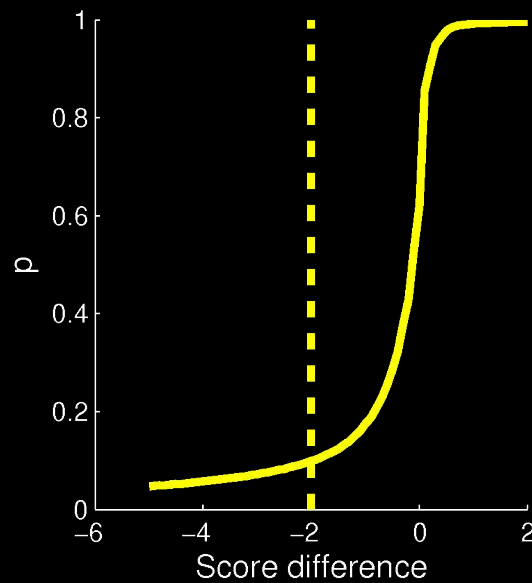
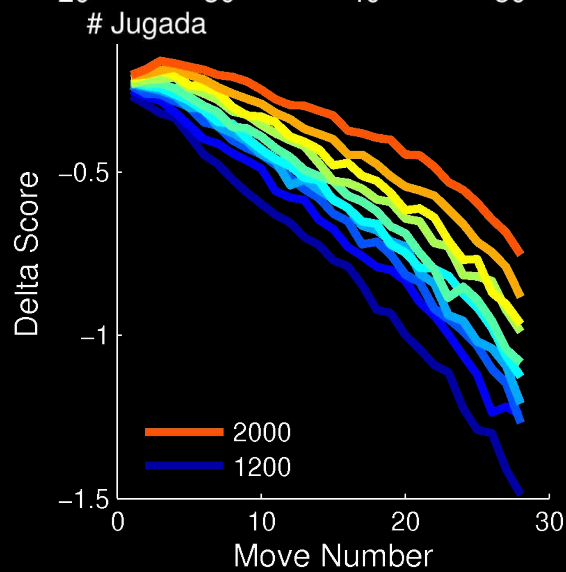
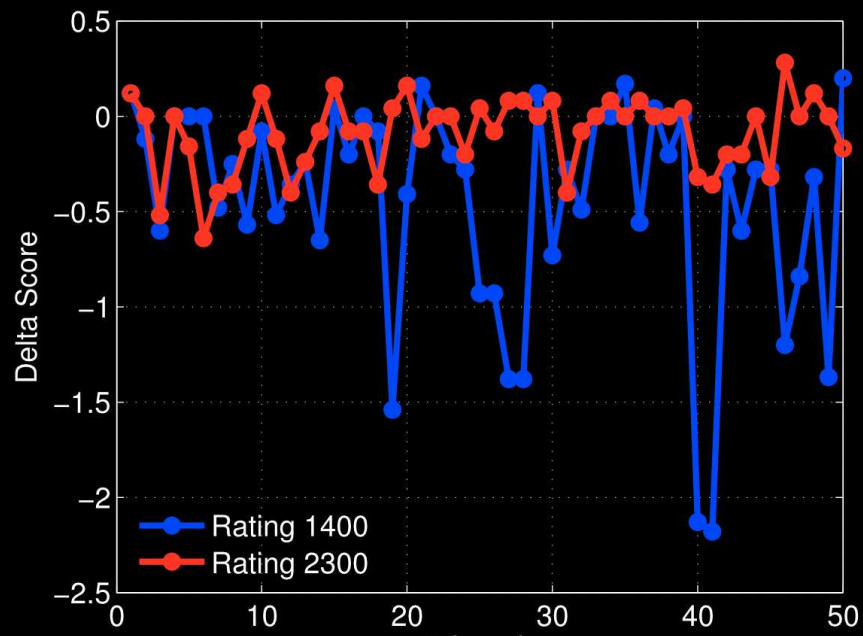
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version 1.9.1 for Linux  
see all versions





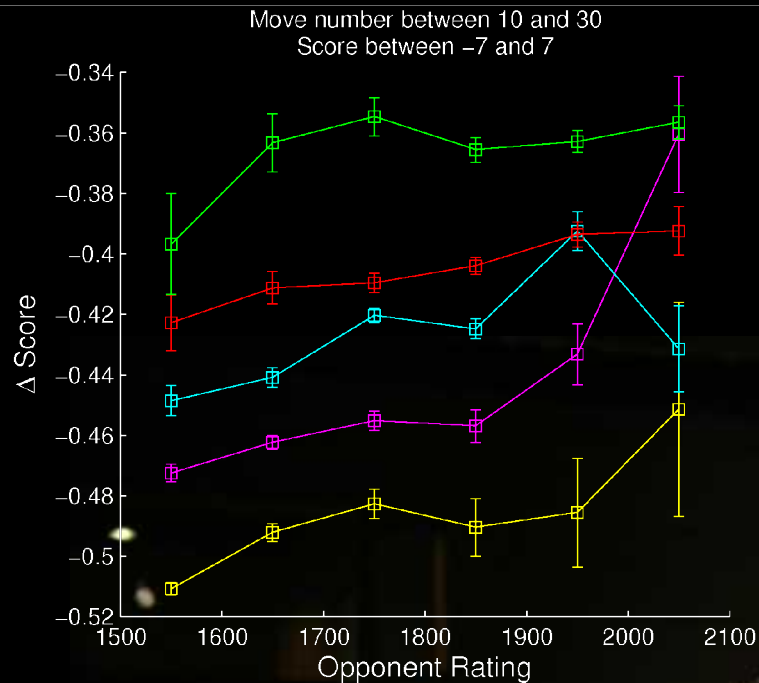
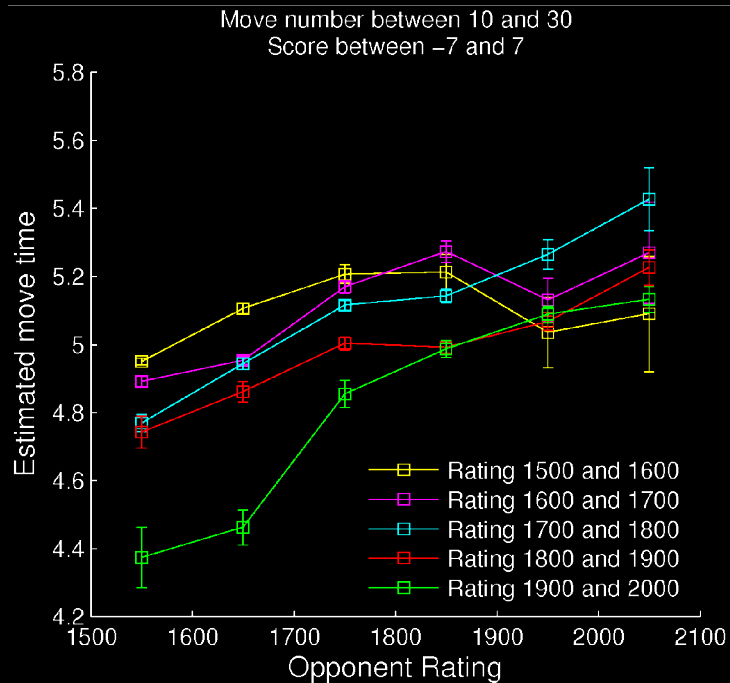
# ¿Cómo juegan los buenos jugadores?



¿Le tenés miedo a tu oponente?



# Efecto miedo

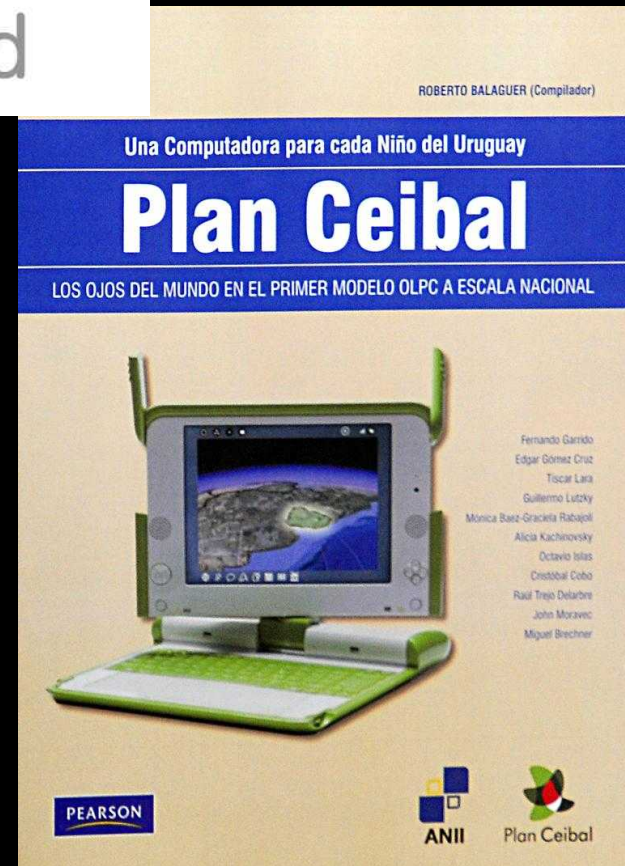


¿Es óptimo?





# Otros repositorios de datos



# ¿Y qué podemos hacer?



Child Development, November/December 2007, Volume 78, Number 6, Pages 1723 – 1743

## Is 27 a Big Number? Correlational and Causal Connections Among Numerical Categorization, Number Line Estimation, and Numerical Magnitude Comparison

Elida V. Laski and Robert S. Siegler  
*Carnegie Mellon University*

Video game play is ubiquitous



90% of the household individuals  
mean age of gamer: 33 years old  
(Entertainment software association, 2007)



9.8 million copies sold  
First week of release!



# Representación: de log a lineal

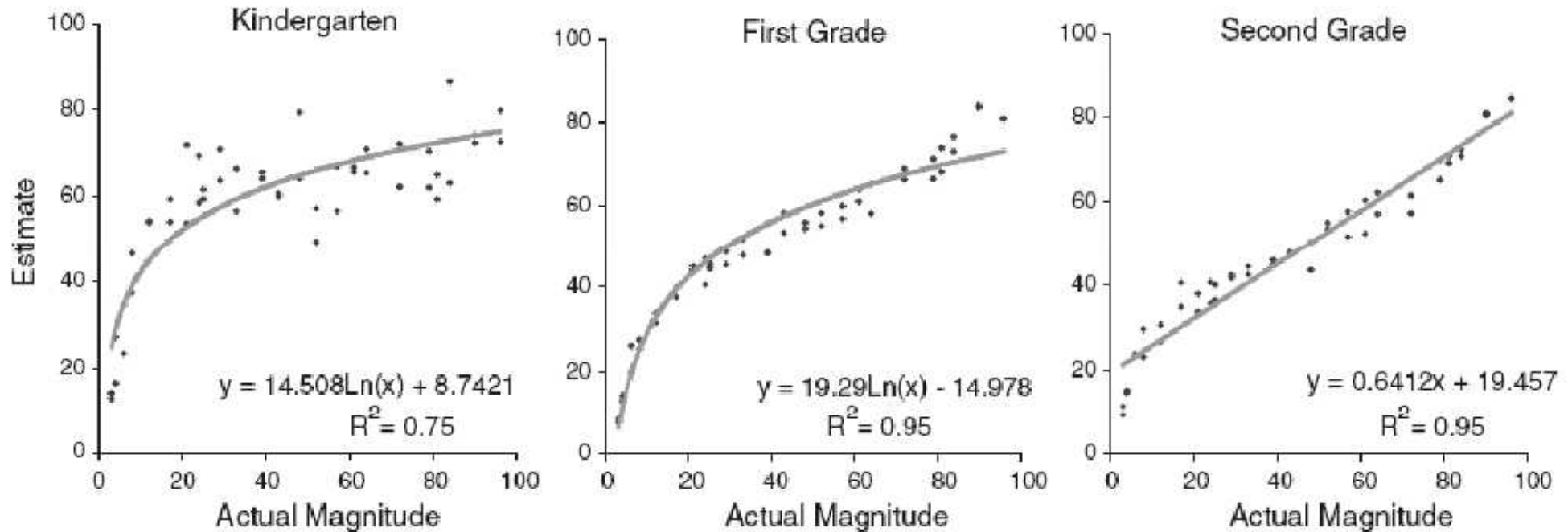


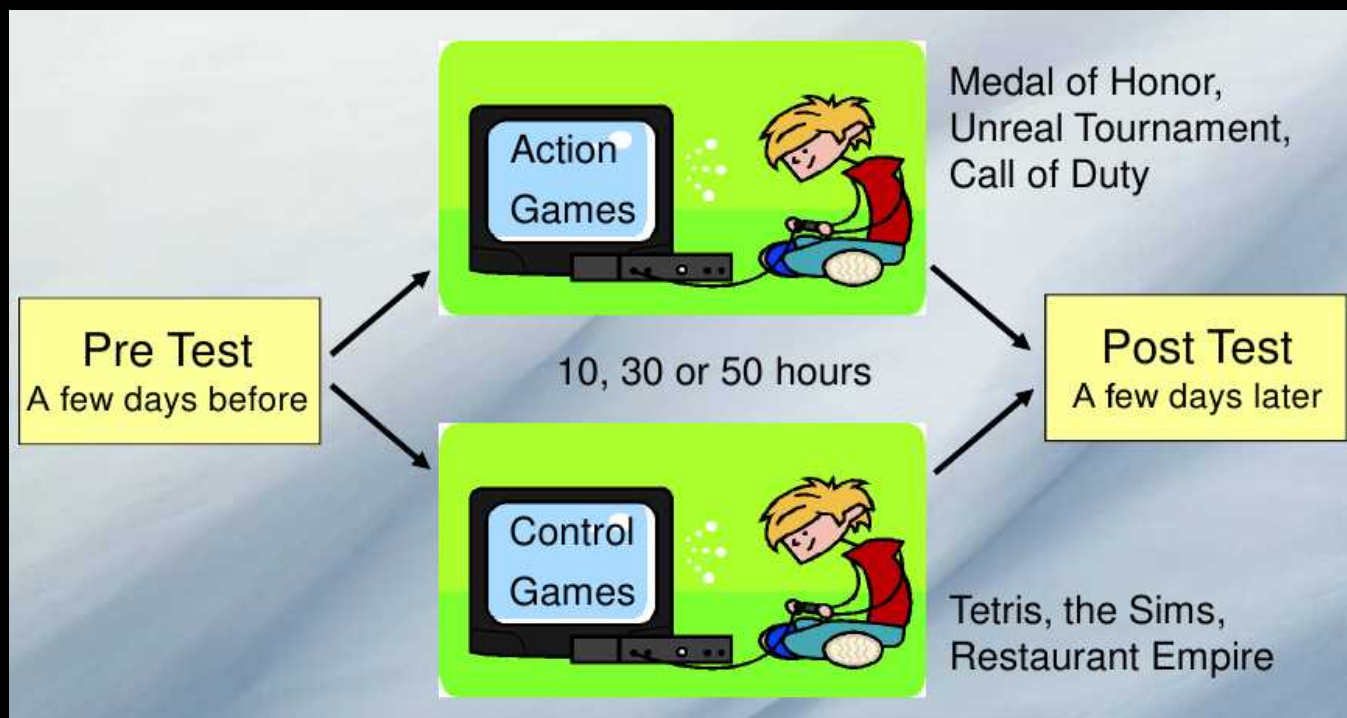
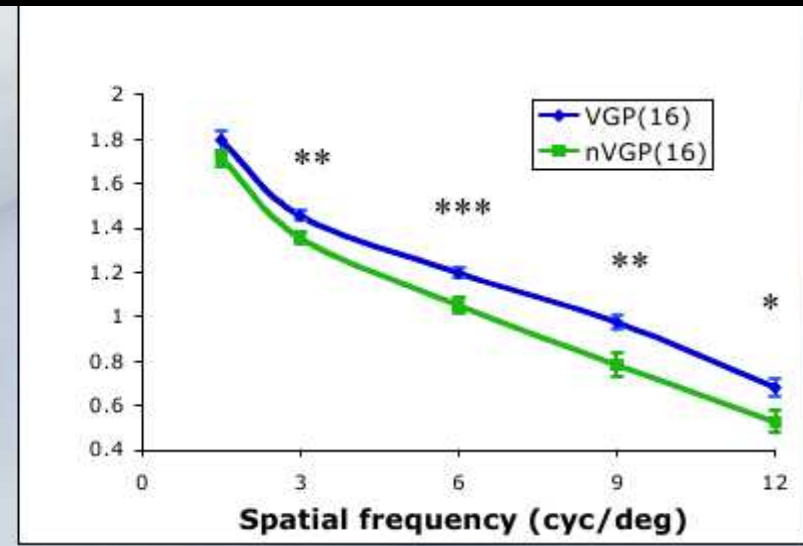
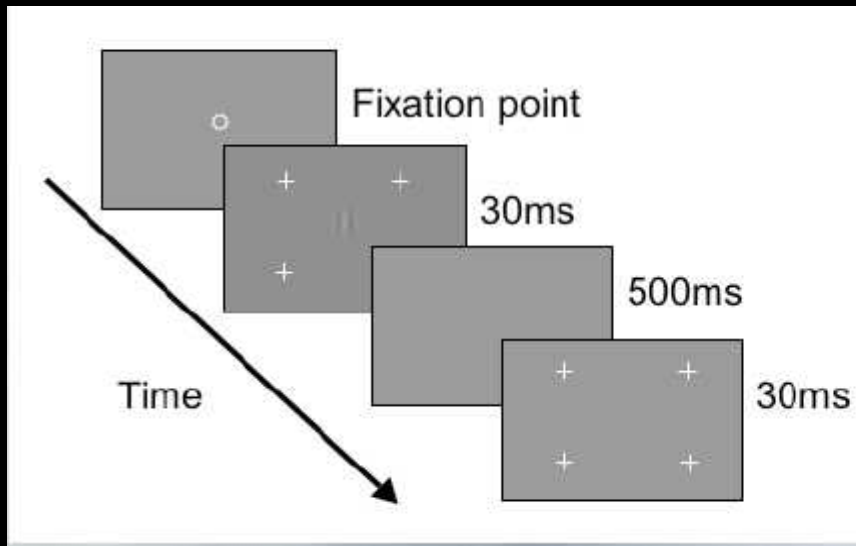
Figure 2. Progression from logarithmic pattern of median estimates among kindergartners (left panel) to linear pattern of estimates among second graders (right panel) in Experiment.



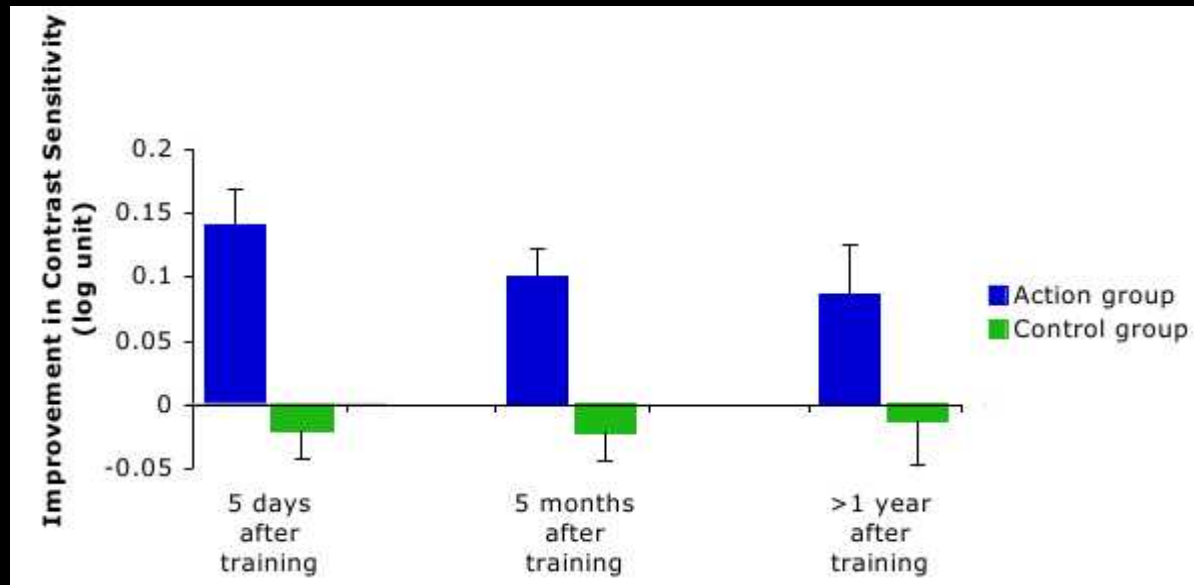
# **Log or Linear? Distinct Intuitions of the Number Scale in Western and Amazonian Indigene Cultures**

Stanislas Dehaene,<sup>1,2,3,4\*</sup> Véronique Izard,<sup>1,2,4,5</sup> Elizabeth Spelke,<sup>5</sup> Pierre Pica<sup>6</sup>

# Comparando juegos

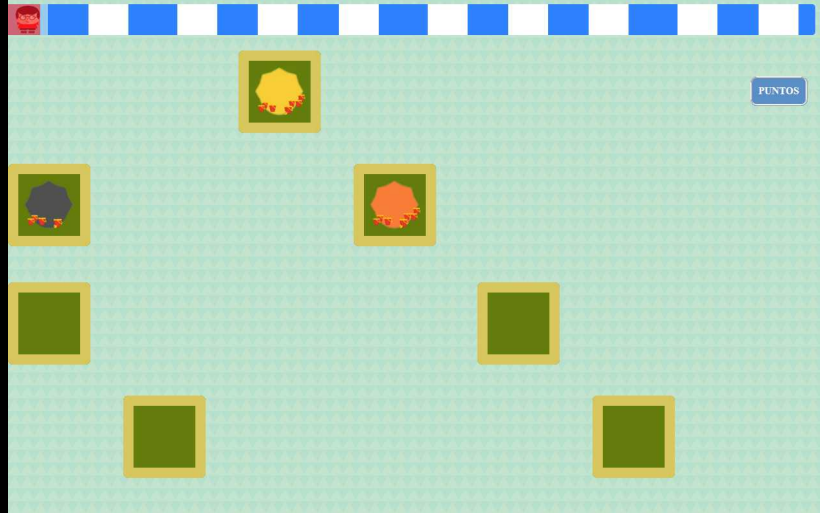


# Juguemos al counter...





# Mate Marote



# Evolución durante el ciclo educativo

Published Online 16 December 2010

*Science* 14 January 2011:

Vol. 331 no. 6014 pp. 176-182

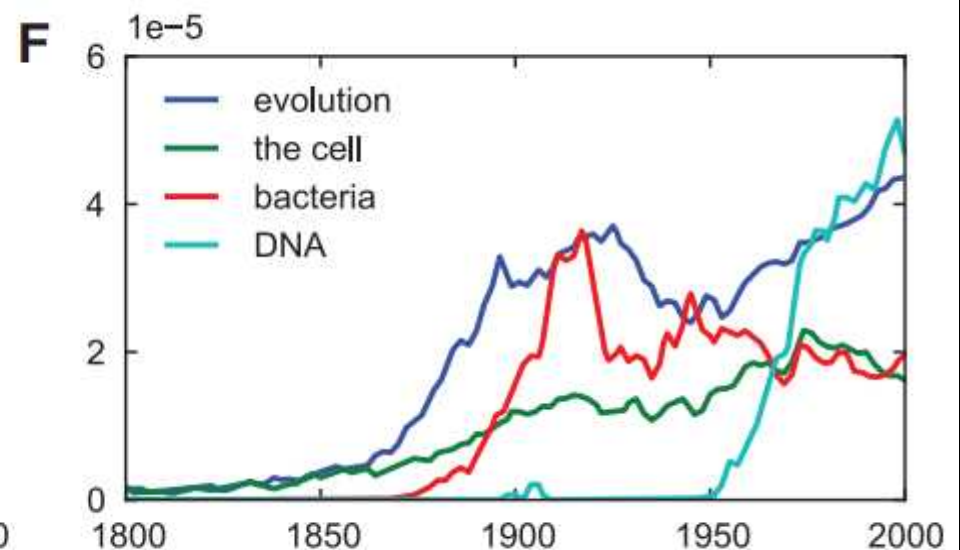
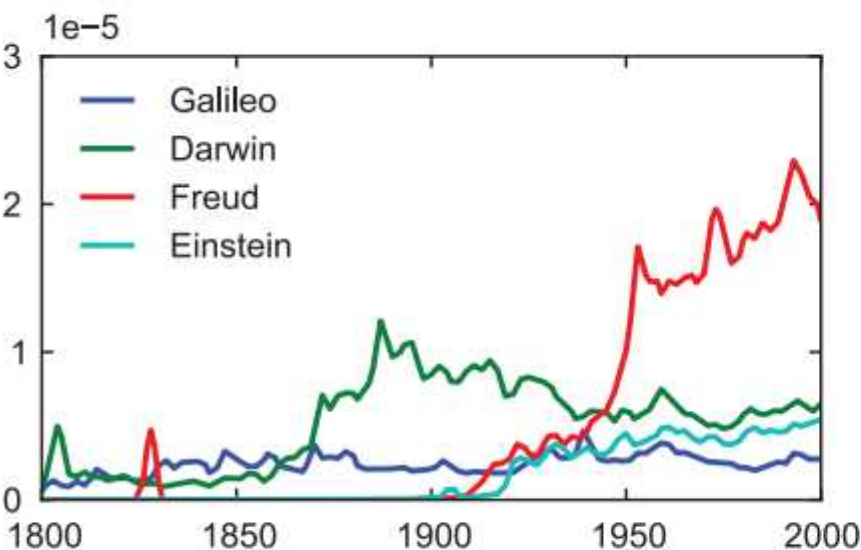
DOI: 10.1126/science.1199644

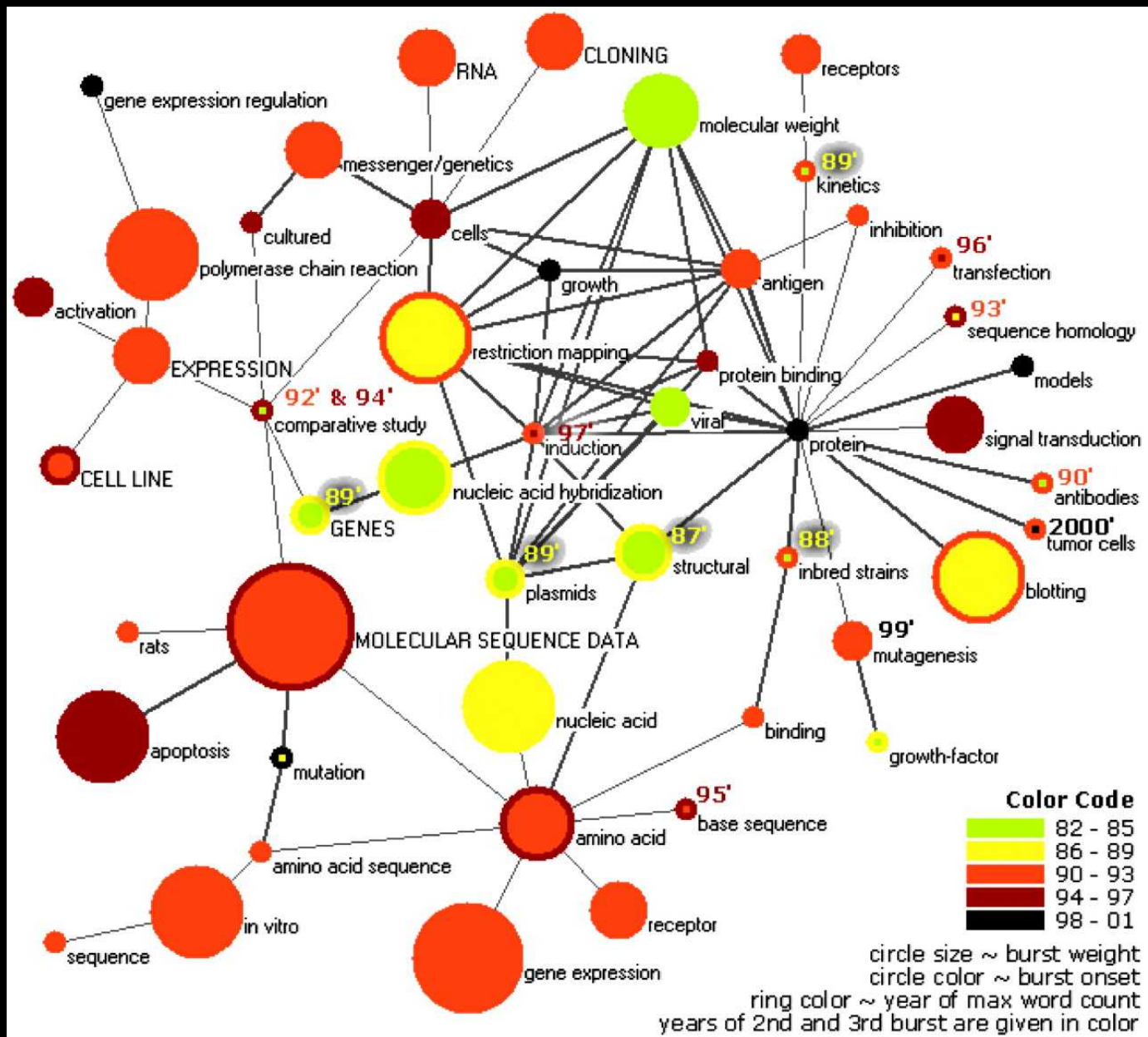
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## RESEARCH ARTICLE

### Quantitative Analysis of Culture Using Millions of Digitized Books

Jean-Baptiste Michel<sup>1,2,3,4,5,\*†</sup>, Yuan Kui Shen<sup>2,6,7</sup>, Aviva Presser Aiden<sup>2,6,8</sup>, Adrian Veres<sup>2,6,9</sup>, Matthew K. Gray<sup>10</sup>, The Google Books Team<sup>10</sup>, Joseph P. Pickett<sup>11</sup>, Dale Hoiberg<sup>12</sup>, Dan Clancy<sup>10</sup>, Peter Norvig<sup>10</sup>, Jon Orwant<sup>10</sup>, Steven Pinker<sup>5</sup>, Martin A. Nowak<sup>1,13,14</sup> and Erez Lieberman Aiden<sup>1,2,6,14,15,16,17,\*†</sup>













DEPARTAMENTO  
DE COMPUTACION

Facultad de Ciencias Exactas y Naturales - UBA

Muchas gracias

¿Preguntas?

