

# Physics and Psychology – an interdisciplinarity journey

Kitty B Dumont (Unisa)

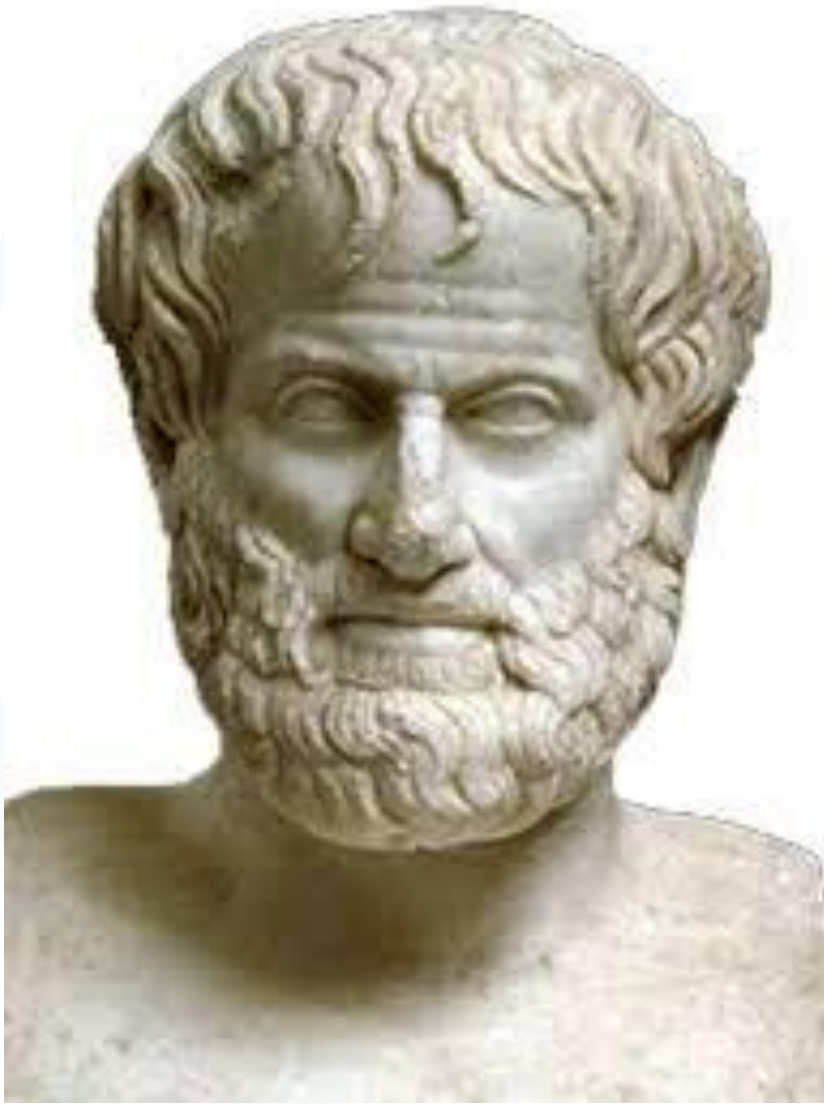


UNISA



“The scientific disciplines such as physics, chemistry, biology and, in the social sciences, psychology, sociology and economics shape not only our perception of the sciences proper but also of the world around us as if they were given structures of the world”

(Weingart, 2010, p. 3).



Aristotle

384 BC – 322 BC



Francis Bacon  
1561 - 1626

CAROLI LINNÆI  
 EQVITIS DE STELLA POLARI,  
 ARCHIATRI REGII, MED. & BOTAN. PROFESS. UPSAL. I  
 ACAD. UPSAL. HÖLMB. PETROPOL. BEROL. IMPER.  
 LOND. MÖSSIL. TOLOS. FLORENT. SOC.

# SYSTEMA NATURÆ

PER  
 REGNA TRIA NATURÆ,  
 SECVNDVM  
 CLASSES, ORDINES,  
 GENERA, SPECIES,  
 CVM  
 CHARACTERIBVS, DIFFERENTIIS,  
 SYNONYMIS, LOCIS.

TOMVS I.

EDITIO DECIMA, REFORMATA.

Cam Privilegio Sæcæ Rœe Mæi Sæcæ.

HOLMIÆ.

IMPENSIS DIRECT. LAURENTII SALVII,  
 1760.





Gustav Theodor  
Fechner  
1801 - 1887

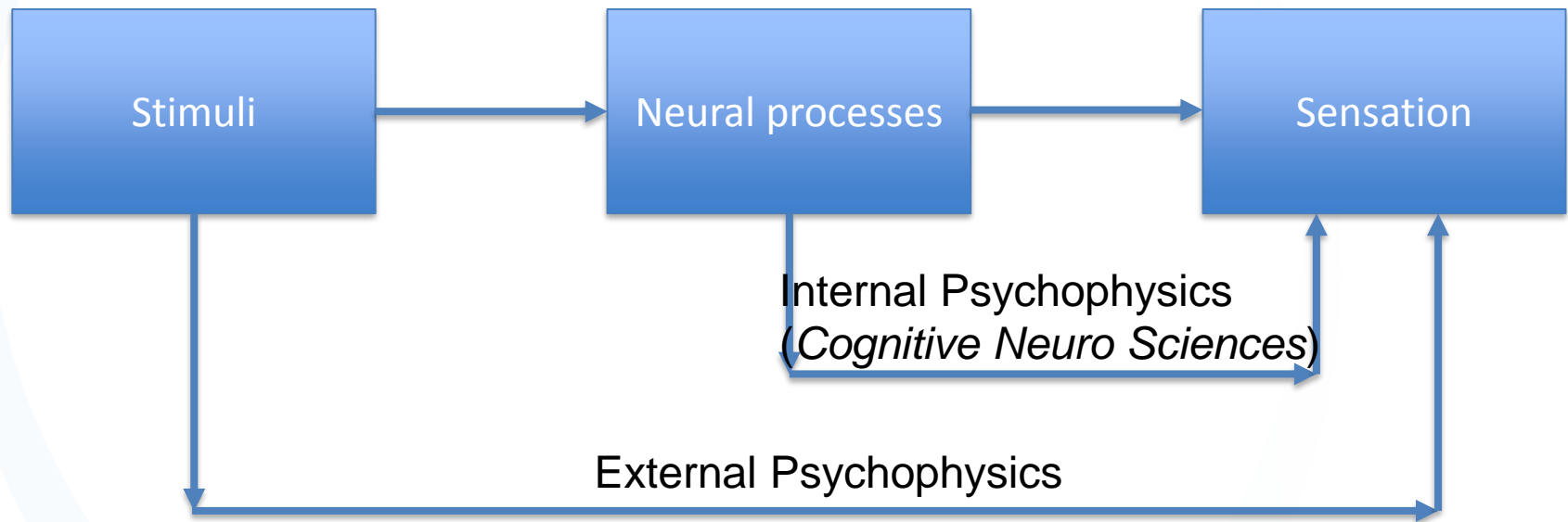
ELEMENTE  
DER  
PSYCHOPHYSIK

VON  
GUSTAV THEODOR FECHNER.

ERSTER THEIL.

PUBLIC LIBRARY  
OF THE  
CITY OF BOSTON

LEIPZIG,  
DRUCK UND VERLAG VON BREITKOPF UND HÄRTEL.  
1860.

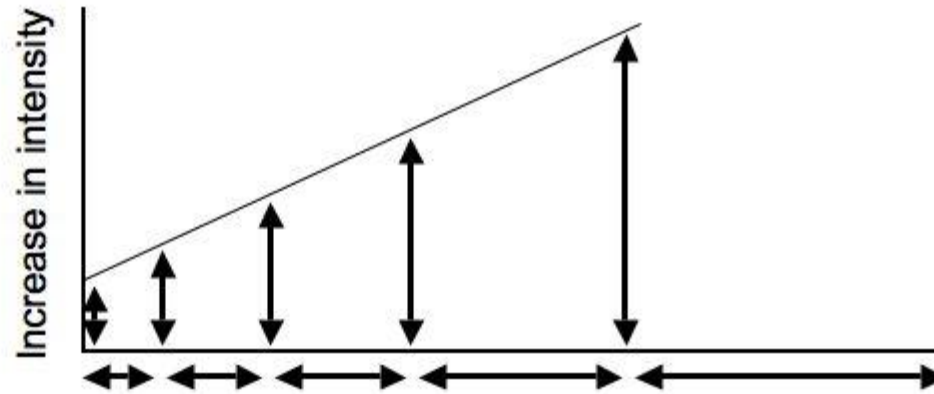




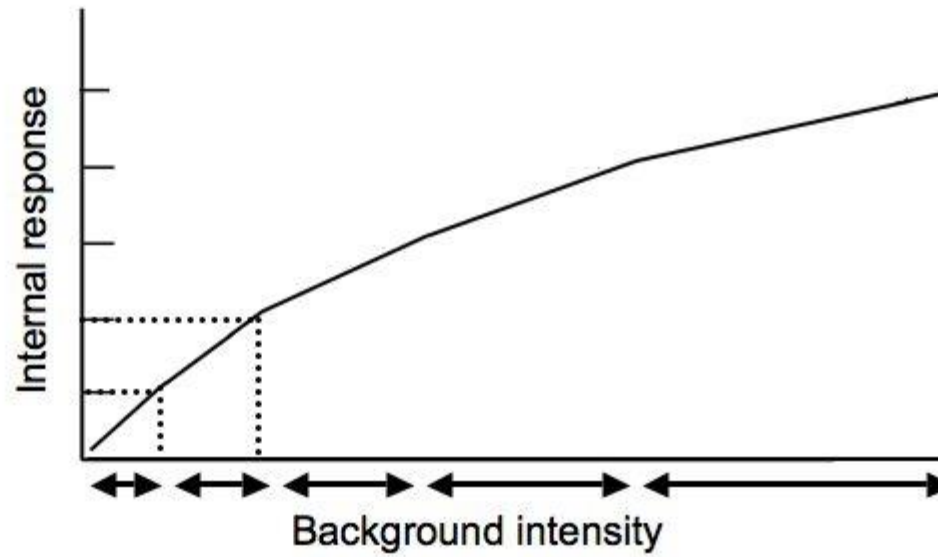
# THE MIND-BODY PROBLEM



Weber's law



Fechner's analysis





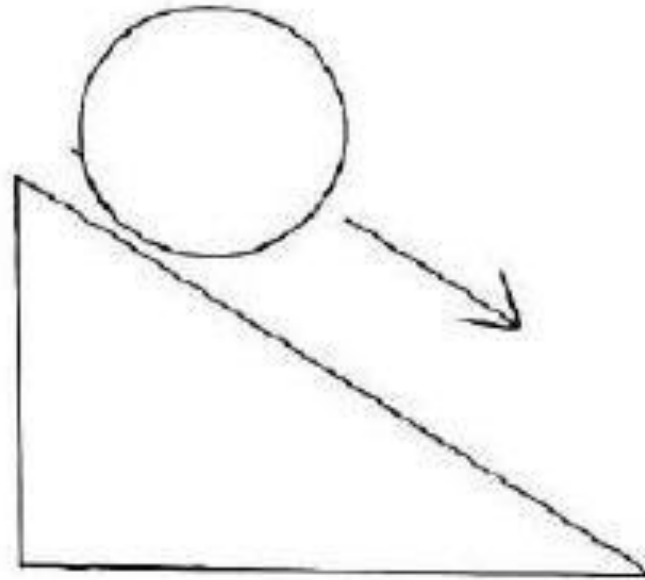
Kurt Lewin  
1890 - 1947



**Aristotle**

**(Essentialist)**

-VS.-



**Galileo**

**(Conditional)**



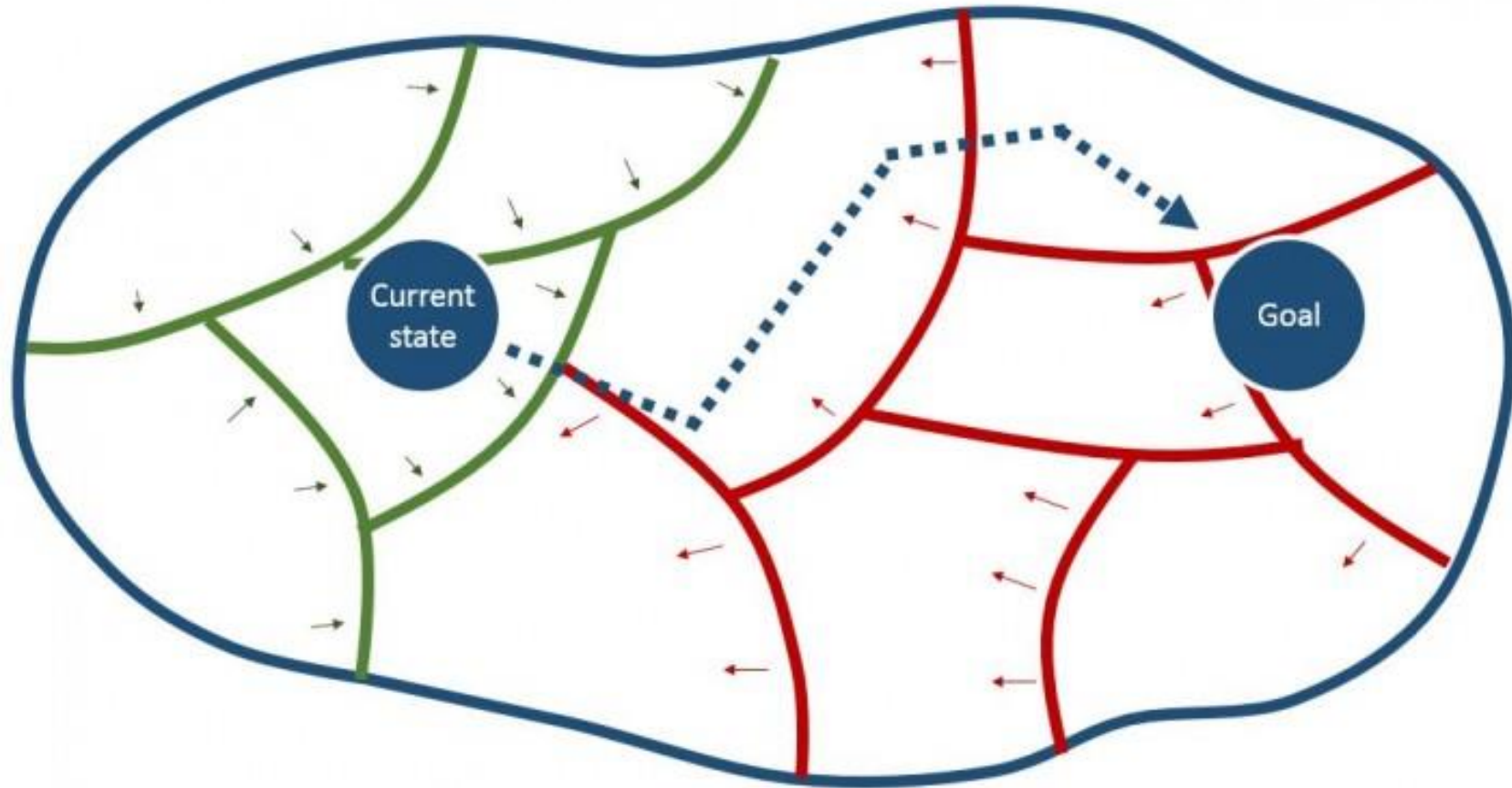
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A depiction of a life space, reflecting Kurt Lewin's field theory



Adapted from Burnes & Cook (2013), Kurt Lewin's Field Theory: A Review and Re-evaluation, International Journal of Management Reviews, Vol. 15, 408-425

[www.sidewaysthoughts.com](http://www.sidewaysthoughts.com)

# Four models of relationships

Communal  
Sharing

Authority  
Ranking

Equality  
Matching

Market  
Pricing

Relational Models Theory: <http://www.sscnet.ucla.edu/anthro/faculty/fiske/reimodov.htm>

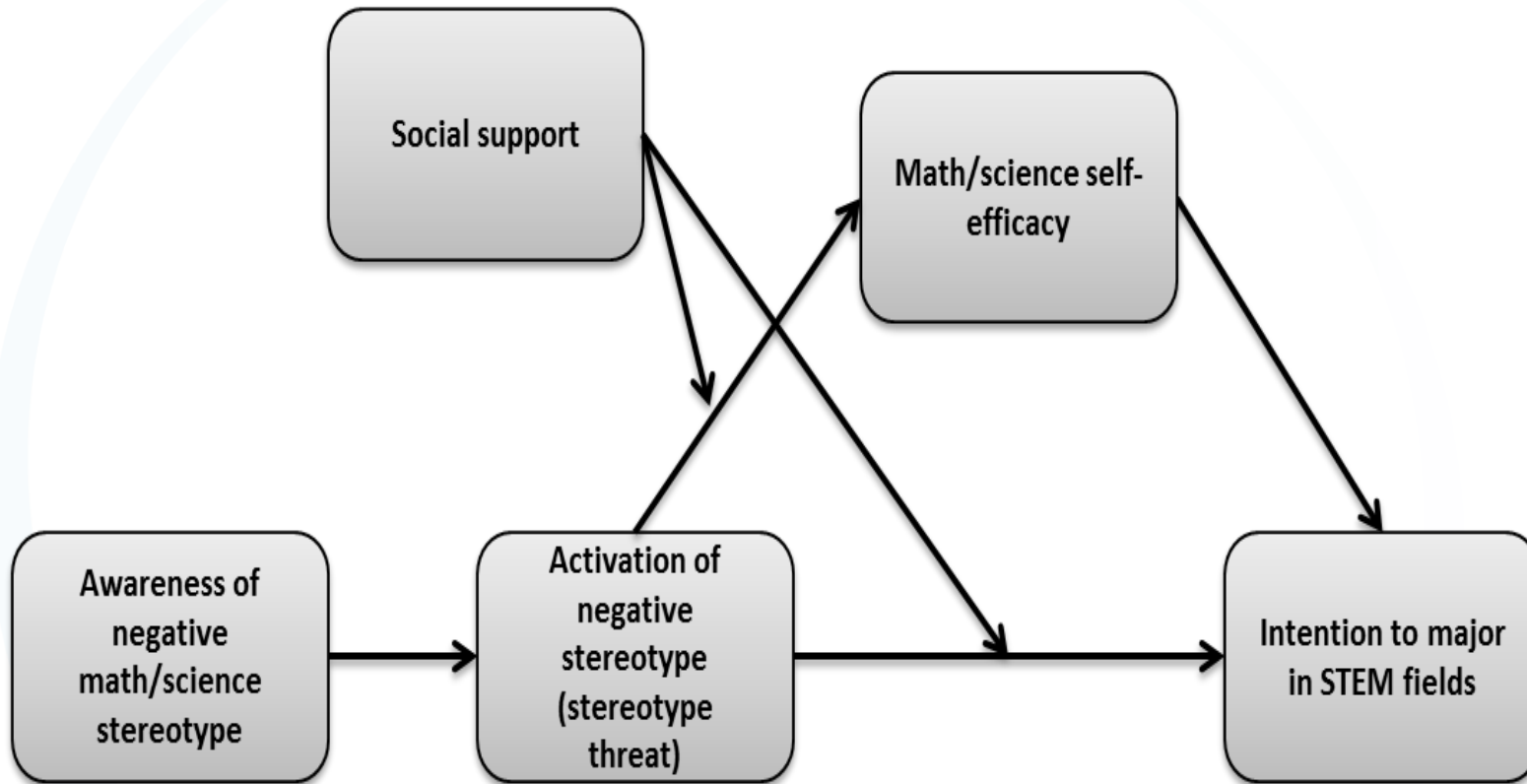
**Table 2.** Descriptive and Inferential Statistics for all Scale-Based Items.

	N		M (SD)		t	df <sup>a</sup>	d
	Physics	Psychology	Physics	Psychology			
My discipline is a science	130	203	6.98 (0.124)	6.51 (0.817)	8.10**	216.27	0.80
My discipline has a strong theoretical foundation	127	202	6.91 (0.32)	5.97 (1.15)	10.91**	247.45	1.11
My discipline has a strong empirical foundation	127	202	6.86 (0.449)	6.22 (0.978)	8.05**	303.94	0.84
I wish my discipline were more scientific	126	201	1.94 (1.263)	3.95 (1.75)	-12.03**	318.52	1.16
Students who obtain a bachelor's degree in my discipline have similar knowledge foundations regardless of the institution they attend	129	202	3.86 (1.713)	3.49 (1.565)	2.02*	329.00	0.23
Academics in my discipline agree with what the most important findings are	130	203	5.33 (1.399)	3.72 (1.488)	9.86**	329.00	1.43

Note. \* $p < .05$ , \*\* $p < .001$ .

<sup>a</sup>The *dfs* are not whole because they are corrected for unequal variance between groups.







End