

Appearing smart, confident and motivated: A lens model approach to teachers' judgment accuracy

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On which behavioral and physical cues do teachers rely when forming impressions about their students' characteristics?

... and on which cues should they rely?

Perceiver Subjects

N = 102 student teachers ($n_t=78$) and psychology undergraduate students ($n_{ps}=24$)

- Age: 18 to 34 years, $M = 23.12$, $SD = 2.82$
- 71 % female

Stimuli

N = 45 non-verbal videos showing 10th grade students of a German grammar school working on a complex physics task

- Age: 14 to 17 years, $M = 23.12$, $SD = .68$
- 42 % female

Criterion (Self-Report-) Measures

- **Intelligence** (IST-Screening)
- **Academic Self-Concept** 4 Items (IPN-Scale), e.g. "I perform well in the physics classroom"
- **Intrinsic Motivation** 4 Items (PISA 2006), e.g. "I enjoy attending physics lessons in school"

Judgments of students' characteristics

- **Intelligence:** 1 Item, "In your opinion, how intelligent is this student?"
- **Academic Self-Concept:** 3 Items, e.g. "The student thinks...I perform well in the physics classroom"
- **Intrinsic Motivation:** 2 Items, e.g. "The student thinks...I enjoy attending physics lessons in school"

Analyses

Nonverbal and physical cues were extracted from the stimulus material by two independent raters and then aggregated following a Principal Axis Factor Analysis. Inter-rater reliability was high with $\alpha = .84$ for nonverbal and $\alpha = .89$ for physical cues. Data was analyzed based on Brunswik's lens model (Brunswik, 1956) using a regression approach.

Table 1. Factor Loadings and Item-Total Correlations of Single-Cue Measures

Cue Aggregate	Cue Measure	Loadings on Factor	r_{it}
Attractiveness	Orderliness	.90	.92
	Physical attractiveness	.76	.83
	Modernity of dress	.58	.72
Femininity	Length of hair	.56	.80
	Strictness of hair	-.64	.77
	Masculinity	-.56	.72
Distinctiveness	Physical presence	.64	.80
	Distinctiveness of body	.71	.80
	Expressivity	.79	.89
Expressivity	Self-assured gesture	.74	.85
	Expressive gesture	.71	.83
	Expressivity of hands	.71	.83
Friendliness	Agreeable gesture	.60	.83
	Friendly facial expression	.59	.83
	Negative affect in gesture	-.71	.87
Shyness	Shy gesture	.64	.84
	Shy facial expression	.60	.80
	Self-assured expression	-.73	.82

Note. Sex of students, Social background, Eyeglasses, Body size and Likeability were treated as independent cues.

Lens Model Parameters

Ecological Validity: The link between the observable cue and students' actual level on the particular criterion

Functional Validity: Accuracy level obtained by the teachers

Cue Utilization: The link between the observable cue and teachers' judgments

Cue Sensitivity: The degree to which a teacher uses valid cues to infer the unobservable criterion

Lens Model 1: Students' Intelligence

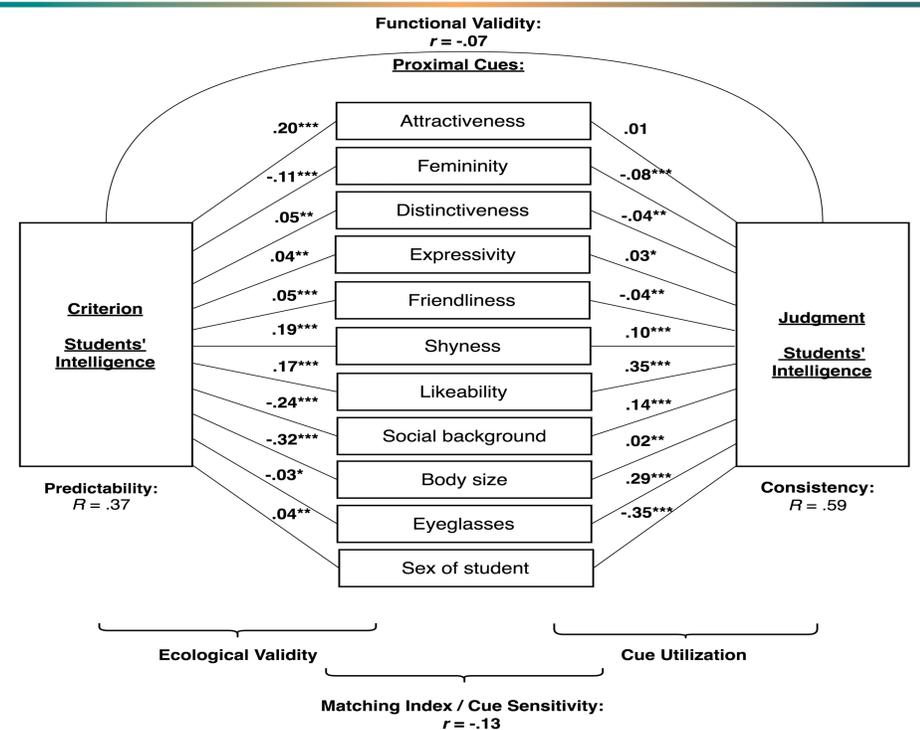


Figure 1. Results of lens model parameter analysis for students' intelligence

Lens Model 2: Students' Academic Self-Concept

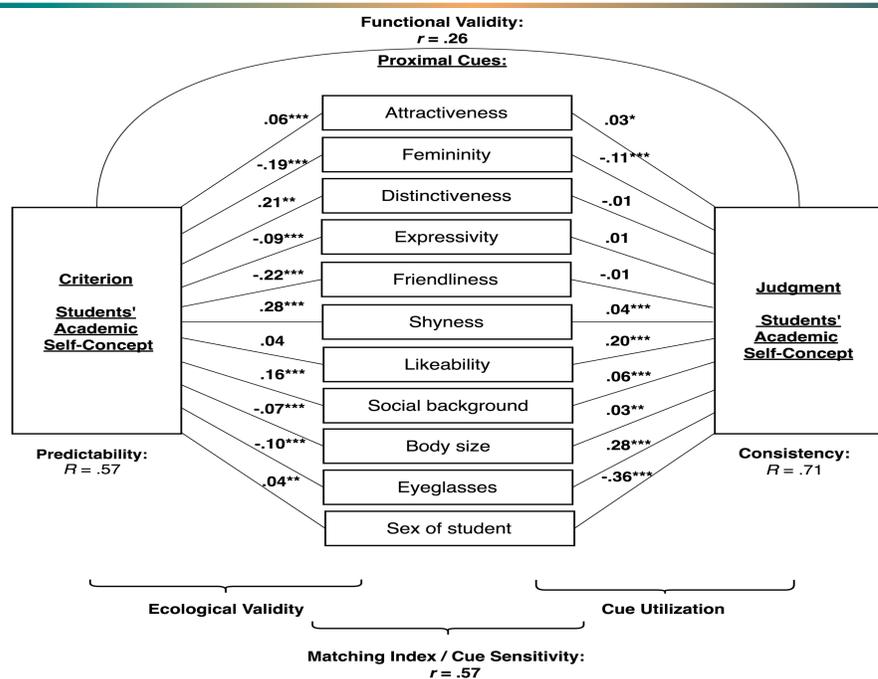


Figure 2. Results of lens model parameter analysis for students' academic self-concept in physics

Lens Model 3: Students' Intrinsic Motivation

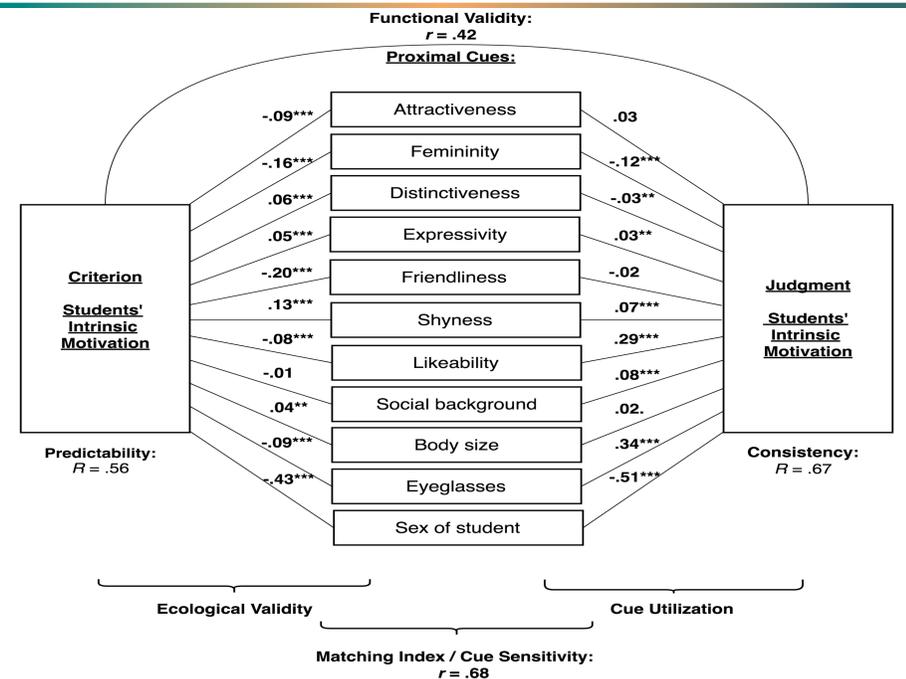


Figure 3. Results of lens model parameter analysis for students' intrinsic motivation in physics

Major Findings

Our findings indicate that teachers strongly rely on students' sex, likeability and social background in their judgments. Particularly female students were rated less favorably, while liking of a student was related to more positive evaluations of students' intelligence, intrinsic motivation and academic-self-concept.