

Examining the Relationship between Career Outcome Expectations and Physics Identity

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Outcome Expectations (OE)

- Student's aspirations in their careers
- Influences motivation and persistence
- Stereotype of "the lone physicist" does not line up with many social or economic OE [1,2]

Physics Identity (PI)

- Based on sub-constructs [3]:
 - Competence
 - Performance
 - Recognition and Interest

OPSCI Survey [4]

- First-year college students
- 15,847 students
- 27 institutions, nation-wide
- Included items for OE and PI

Research Questions

- How do student's OE relate to their PI for:
1. All students
 2. Students interested in pre-medical and engineering careers
 3. Female and male students

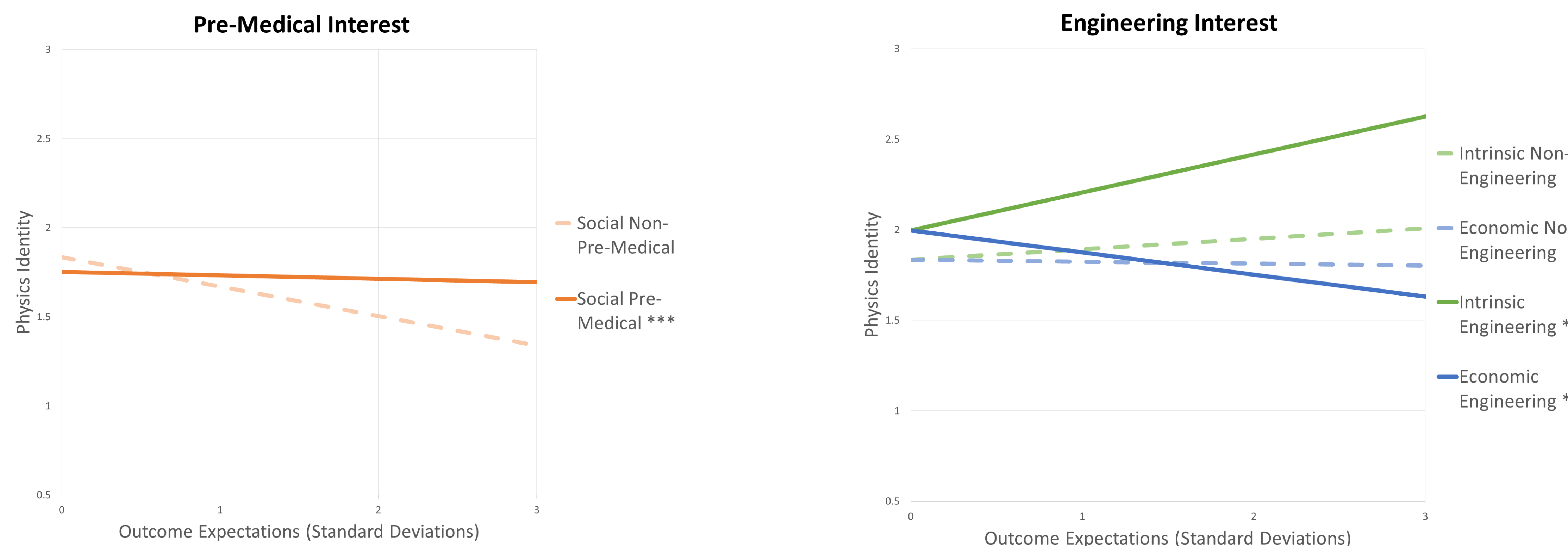
All Students



Model 1				
Outcome Expectations				
	Est.	Std. Err.	Sig.	Std. Est.
Intrinsic	0.13	0.02	***	0.07
Extrinsic Social	-0.25	0.01	***	-0.17
Extrinsic Economic	-0.01	0.02	ns	-0.006

- 15,847 students

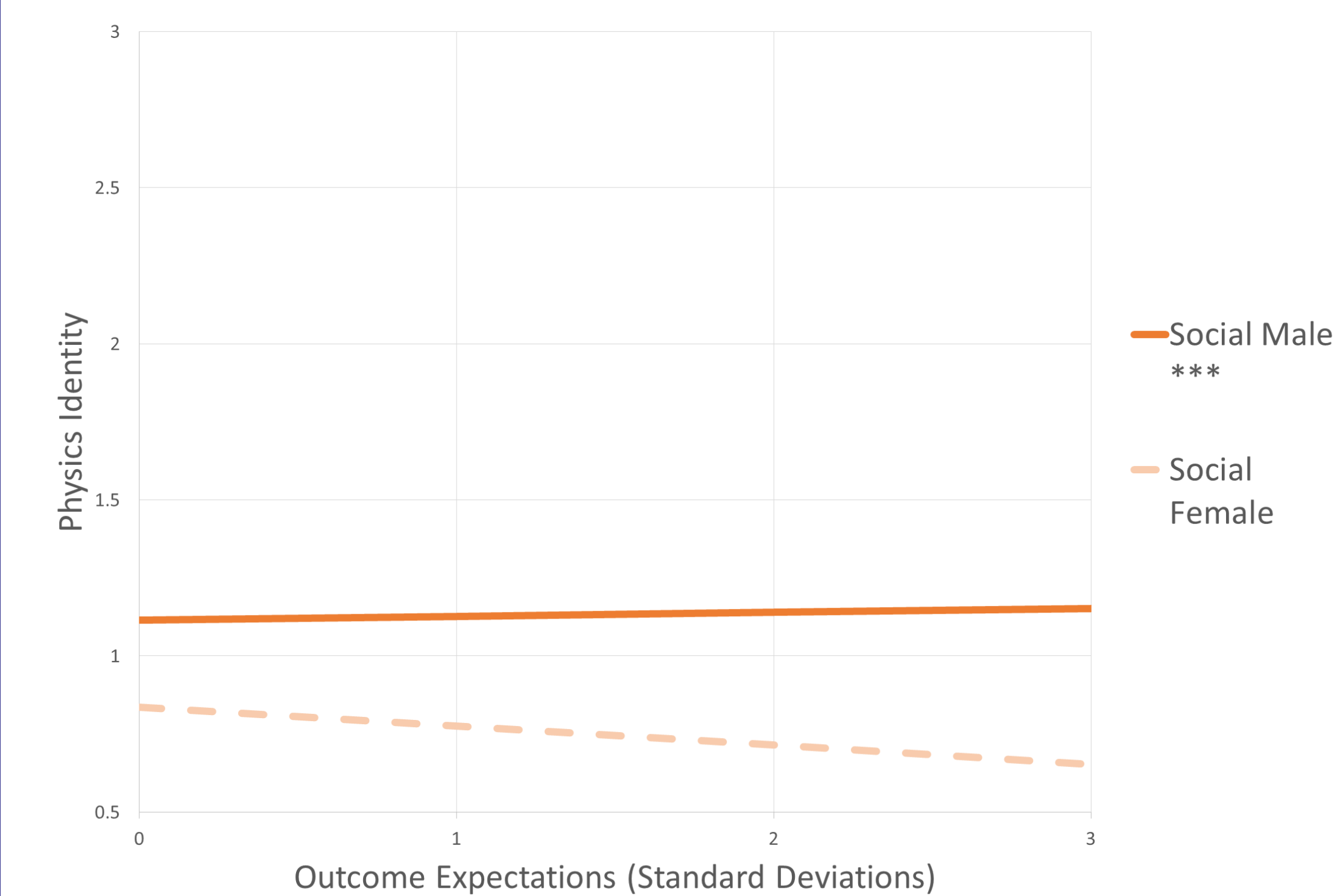
Pre-Medical and Engineering Career Interest



Model 2				
Career Choice				
	Est.	Std. Err.	Sig.	Std. Est.
Intrinsic	0.12	0.02	***	0.06
Extrinsic Social	-0.25	0.01	***	-0.17
Extrinsic Economic	-0.02	0.02	ns	-0.011
Pre-Medical	-0.34	0.18	.	-0.08
Engineers	1.19	0.48	*	0.16
Social * Pre-Medical	0.14	0.04	***	0.15
Intrinsic * Engineer	0.26	0.09	**	0.15
Economic * Engineer	-0.19	0.10	*	-0.11

- 2341 students interested in Medical career
- 596 students interested in Engineering
- 68 reporting interest in both careers

Female and Male Students



Model 3				
Gender				
	Est.	Std. Err.	Sig.	Std. Est.
Intrinsic	0.12	0.02	***	0.06
Extrinsic Social	-0.09	0.02	***	-0.06
Extrinsic Economic	-0.01	0.02	ns	-0.005
Gender	1.35	0.11	***	0.45
Social * Gender	-0.11	0.02	***	-0.14

- 8033 female students
- 6315 male students

Implications

- Physicist may be improperly portrayed as intrinsically motivated without having socially relevant goals and predominantly male
- Pre-Medical students may not see the importance of physics
- Engineering students who are intrinsically motivated may be drawn to physics more than those that are economically motivated students



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References
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 [3] Z. Hazari, G. Sonnert, P. M. Sadler, and M.-C. Shana-han, *Journal of Research in Science Teaching* 47, 978 (2010).
 [4] Z. Hazari, G. Sonnert, P. M. Sadler, and M.-C. Shanahan, *Journal of Research in Science Teaching* 47, 978 (2010).

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