

Verbal proficiency in intrasexual competition



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Structure

Theory

Method

Results

Discussion



Language as a sexually-selected trait

- Linguistic traits are highly heritable, e.g., lexicon size: $h^2 = .66$ (Bratko, 1996)
- Probably high mutational target size
- Verbal proficiency universally raises especially male status (Brown, 1991)





Language as a sexually-selected trait

- Many linguistic features appear to be handicaps and serve as a costly signal, e.g., rhymes in poetry or an extensively large vocabulary (Miller, 2000, Lange et al., 2014)
- If language evolved merely by means of natural selection, there would be no reason for it being more elaborate than a pidgin language* (Burling, 1986, 2005; Miller, 2000)



* Auxiliary languages: limited and unstable with respect to vocabulary and rudimentary especially with respect to grammatical structure and thus lack the complexity of normal languages



Language as a sexually-selected trait

- Most literature is produced by men at reproduction-relevant age
(Lange & Euler, 2014; Miller, 1999)

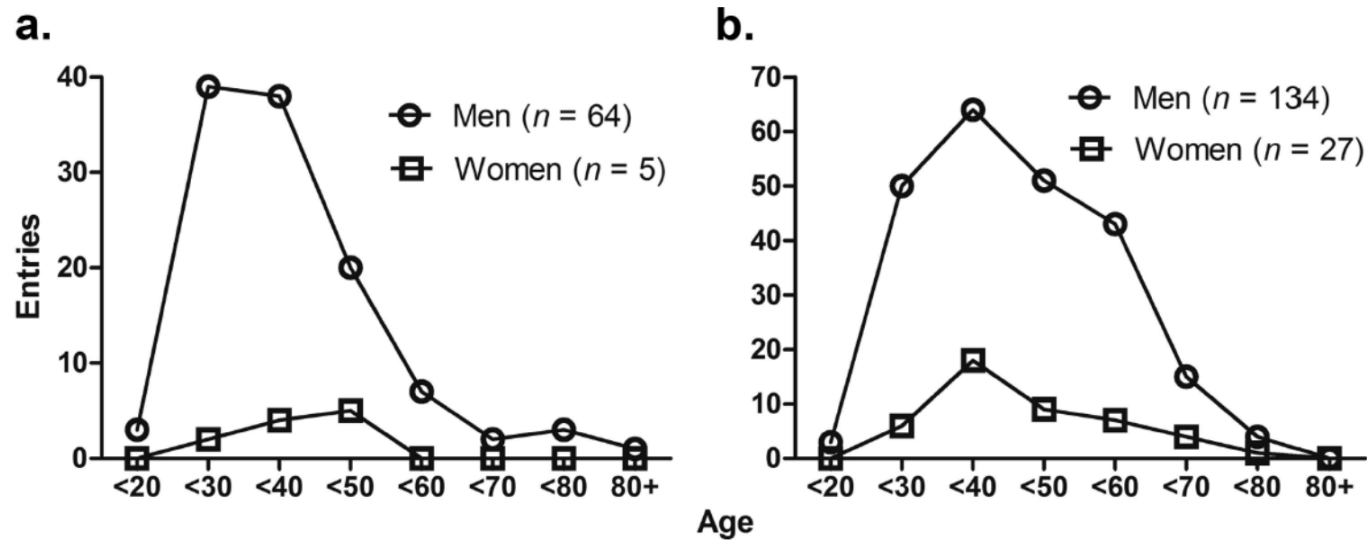


Figure 1. Number of entries by age and sex of the writers in the German literary canon (a) and in the American canon (b).

Figure taken from
Lange & Euler (2014, p. 24)



Male intrasexual competition

- Intersexual selection and intrasexual selection are closely related processes so that males constantly prove their (mate) quality in same-sex competition (Berglund et al., 1996)
- For instance, men are more likely to engage in conspicuous consumption when faced with a same sex competitor (Hennighausen et al., 2016)
- Male voice serve as dominance signals to competitors (Puts, Gaulin & Verdolini, 2006; Puts, Hodges, Cárdenas & Gaulin, 2007, Saxton, Mackey, McCarty & Neave, 2016) and evoke increased sexual jealousy (O'Connor & Feinberg, 2012) → however, focus on pitch, formant frequency



Female intrasexual competition

- Women also engage in female-female competition (Fisher, 2004, 2014)
- E.g., by means of indirect aggression (Vaillancourt & Sharma, 2011) or conspicuous consumption to promote their attractiveness in intrasexual competition (Hudders et al., 2014)





Research questions & hypotheses

RQ₁: Does VP play a role in male intrasexual competition?

Men will perceive another man showing high VP...

- H₁: more as a rival
- H₂: more as a mate poacher
- H₃: less as a friend

RQ₂: Does VP play a role in female intrasexual competition?



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Methods

Experimental questionnaire (online study)

VP (low vs. moderate vs. high) as **independent variable**

Dependent variables (7-pt-Likert scales):



- perceptions as a rival (H1), mate poacher (introduce speaker to romantic partner/let romantic partner spend time alone with speaker, H2) and friend (H3)
- desirability of the speaker as a short-term and long-term mate for the other sex
- perceived dominance, creativity, intelligence
- estimated no of mates in 10 years (proxy of expected mating success)
- estimated income in 10 years (proxy of expected mate value)



Stimuli, taken from Lange et al., 2016

18 audio files / 3 levels of verbal proficiency / male + female speakers
→ 3 audio files per level and sex

Table. Experimental design.

		Verbal proficiency		
		Low	Medium	High
Sex of the rated person	Female			
	Male			

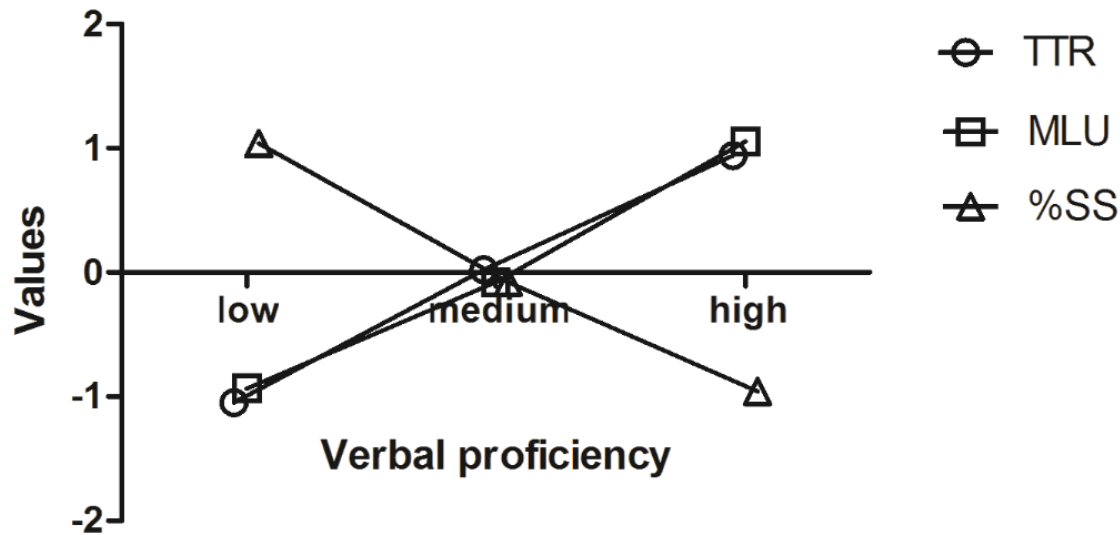
2 (male, female) x 3 (three levels of verbal proficiency)
between-subjects-design



Stimuli, taken from Lange et al., 2016

Linguistic analysis of the stimuli

Figure. Differences between the three levels of verbal proficiency with respect to lexical, grammatical, and speech-fluency features.



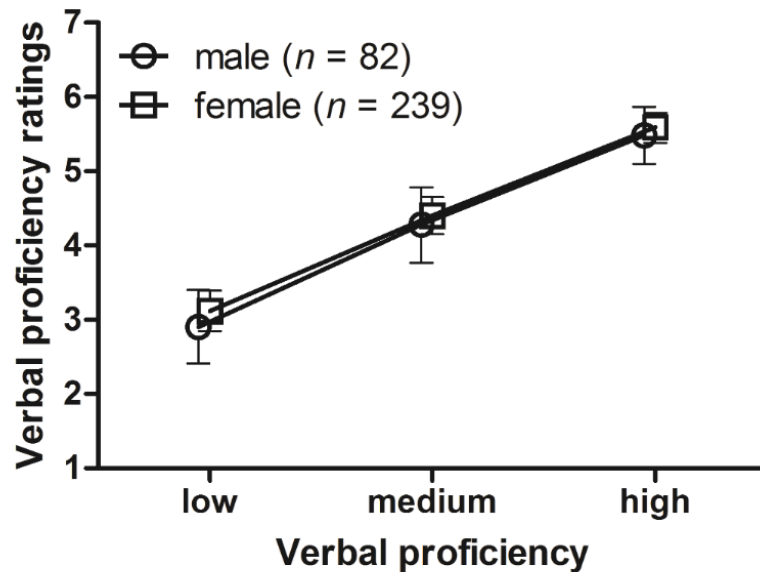
Note. z-transformed values are given for type-token ratio (TTR), mean length of utterance (MLU), and percentage of stuttered (i.e., disfluent) syllables (%SS).



Stimuli, taken from Lange et al., 2016

Pre-rating of the stimuli

Figure. Results of the pre-ratings of the audio files for verbal proficiency from 1 (low) to 7 (high), by sex of the rater.



Linguistic markers (TTR, MLU, %SS) highly correlate with the pre-rating scores ($r_s > (-).67, p > .001$)

Note. Given are mean values and error bars showing 95.0% CI of mean. Data units are nudged to prevent overlap.



Method - Sample

- $N = 331$ (62% female)
- $M_{age} = 26.0$, $SD = 8.0$
- 70% university students, 18% employees
- 93% heterosexual, 7% bisexual
- 38% single, 6% in a short-term relationship, 56% in a long-term relationship





Structure

Theory

Method

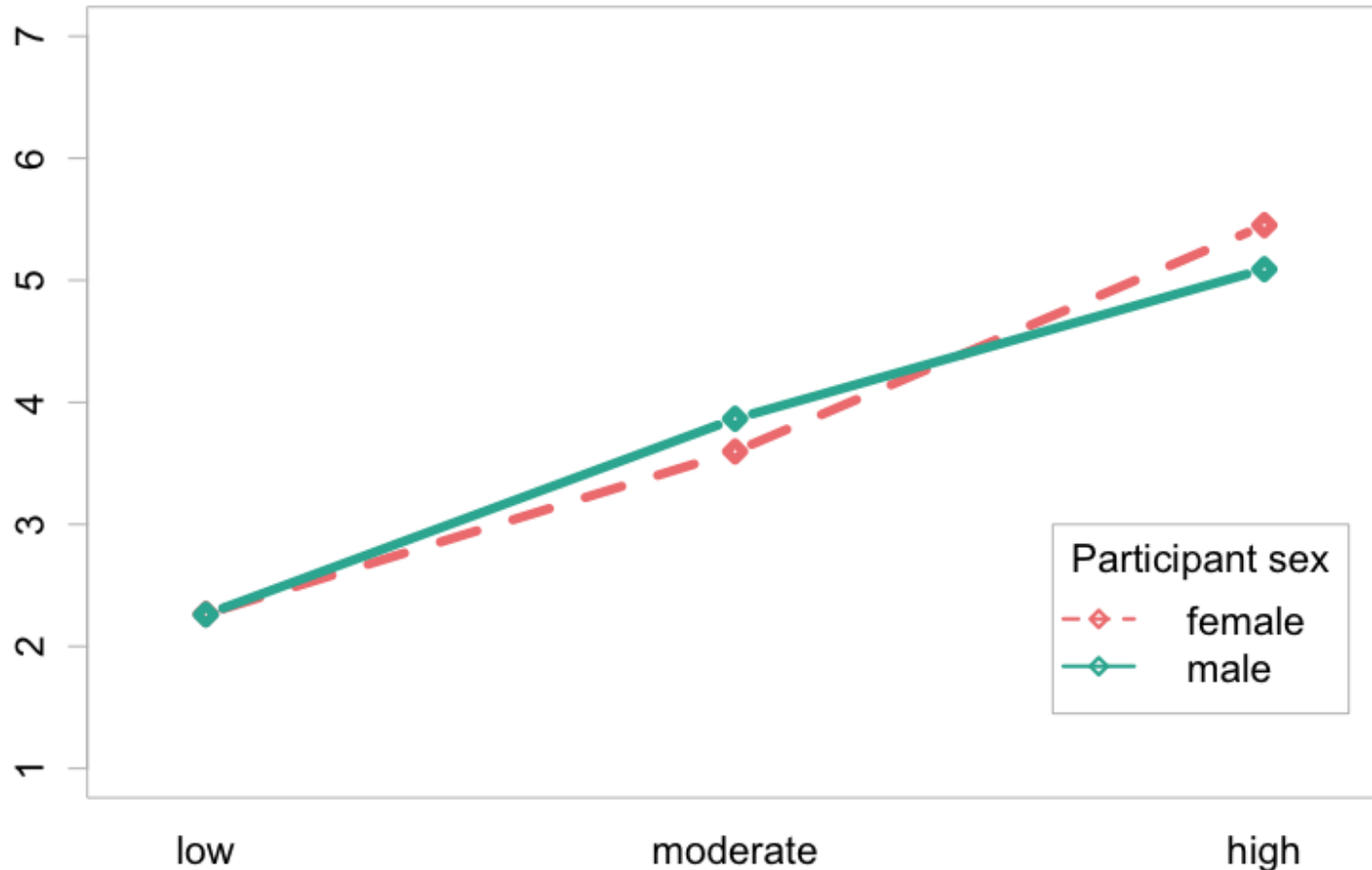
Results

Discussion



Manipulation Check of VP

Figure 1. Perceived level of VP

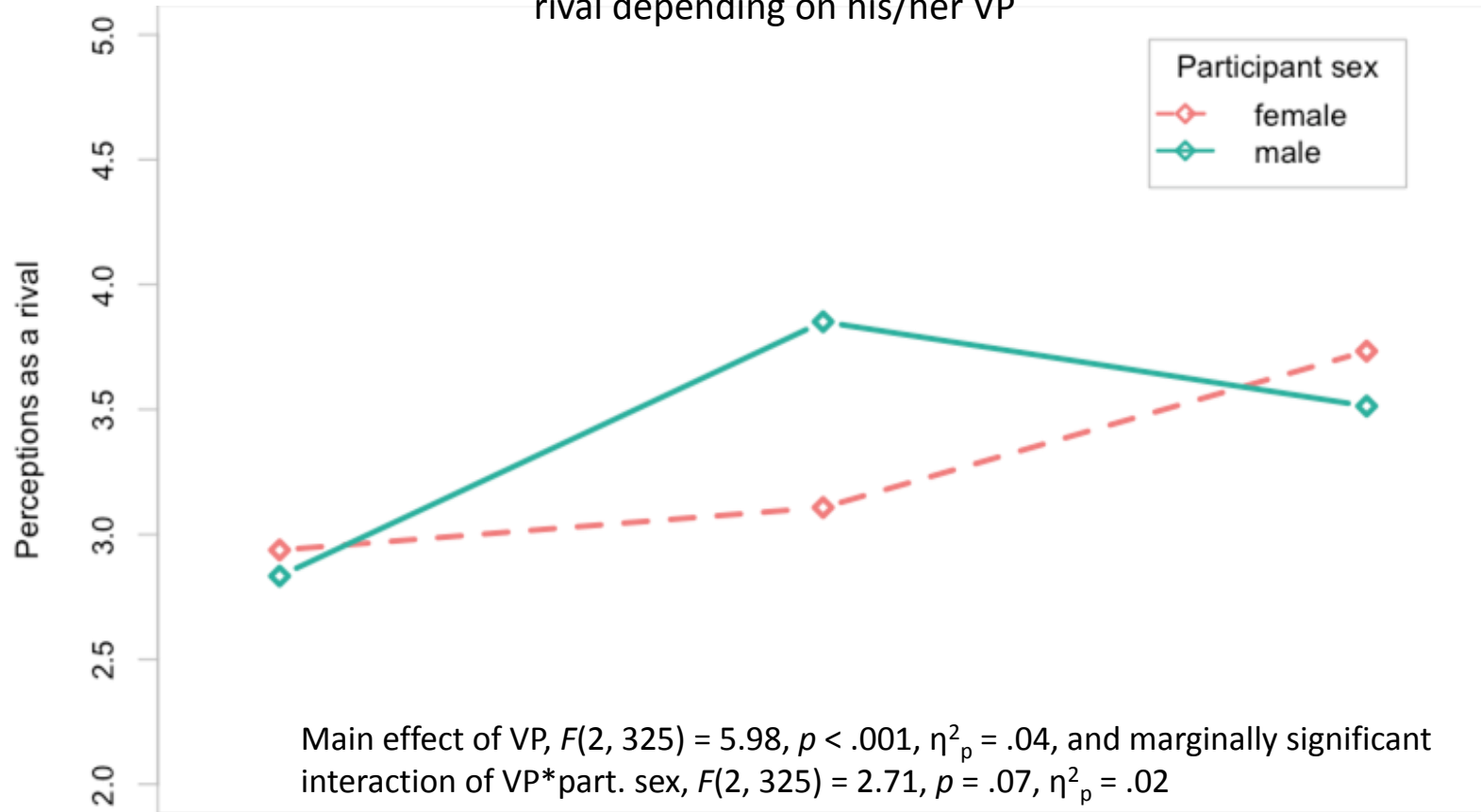


$F(5, 325) = 52.07, p < .001, \eta^2_p = .41, \text{low VP} < \text{moderate VP} < \text{high VP}$ ✓



H1: Perceptions as a rival

Figure 2. Perceptions of the same-sex speaker as a rival depending on his/her VP



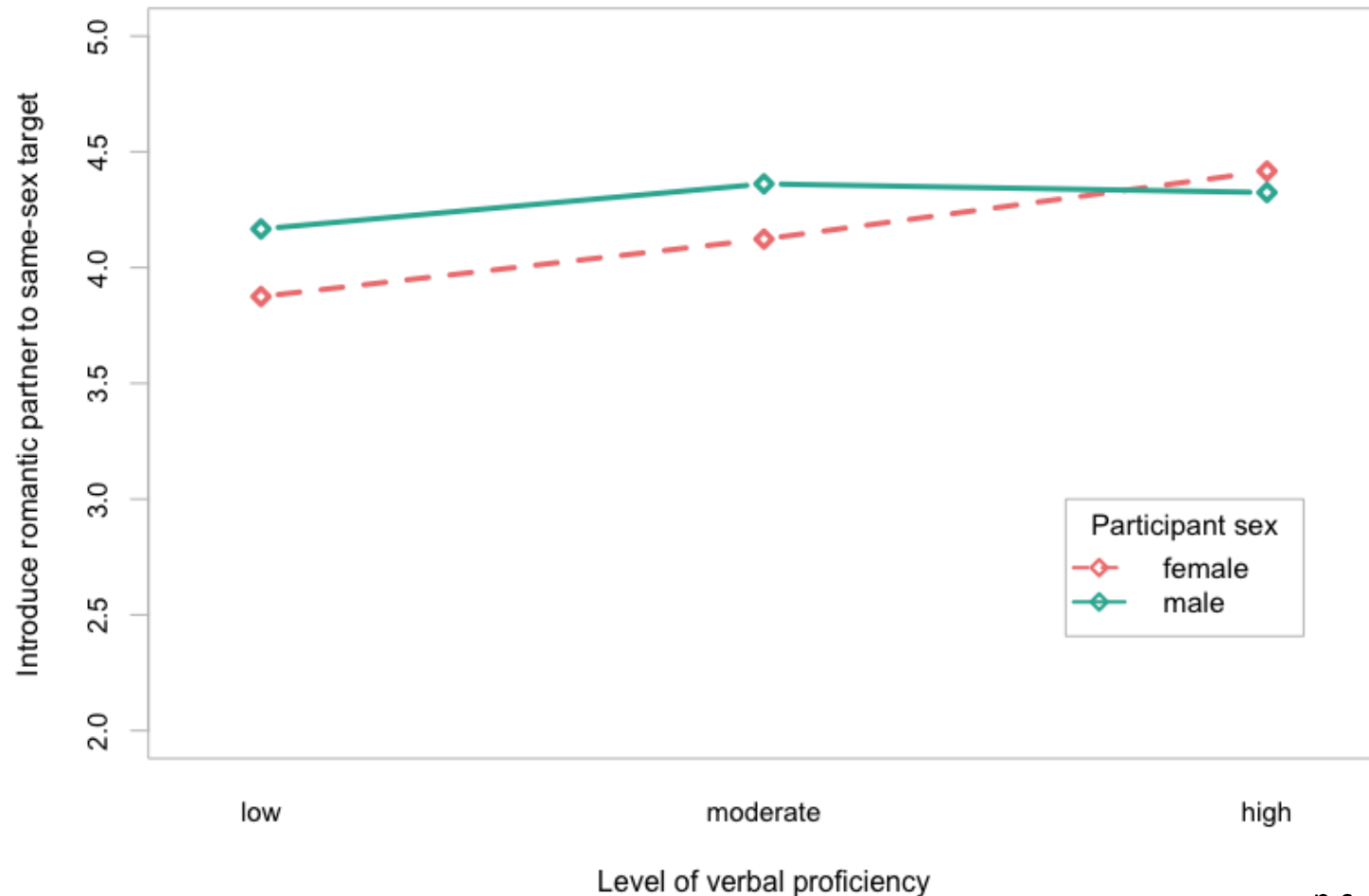
➔ Male participants perceive speaker with moderate VP as stronger rival compared to male target with low VP, for females no sign. differences





H2: Perceptions as a mate poacher I

Figure 3. Willingness to introduce romantic partner to same-sex speaker depending on his/her VP

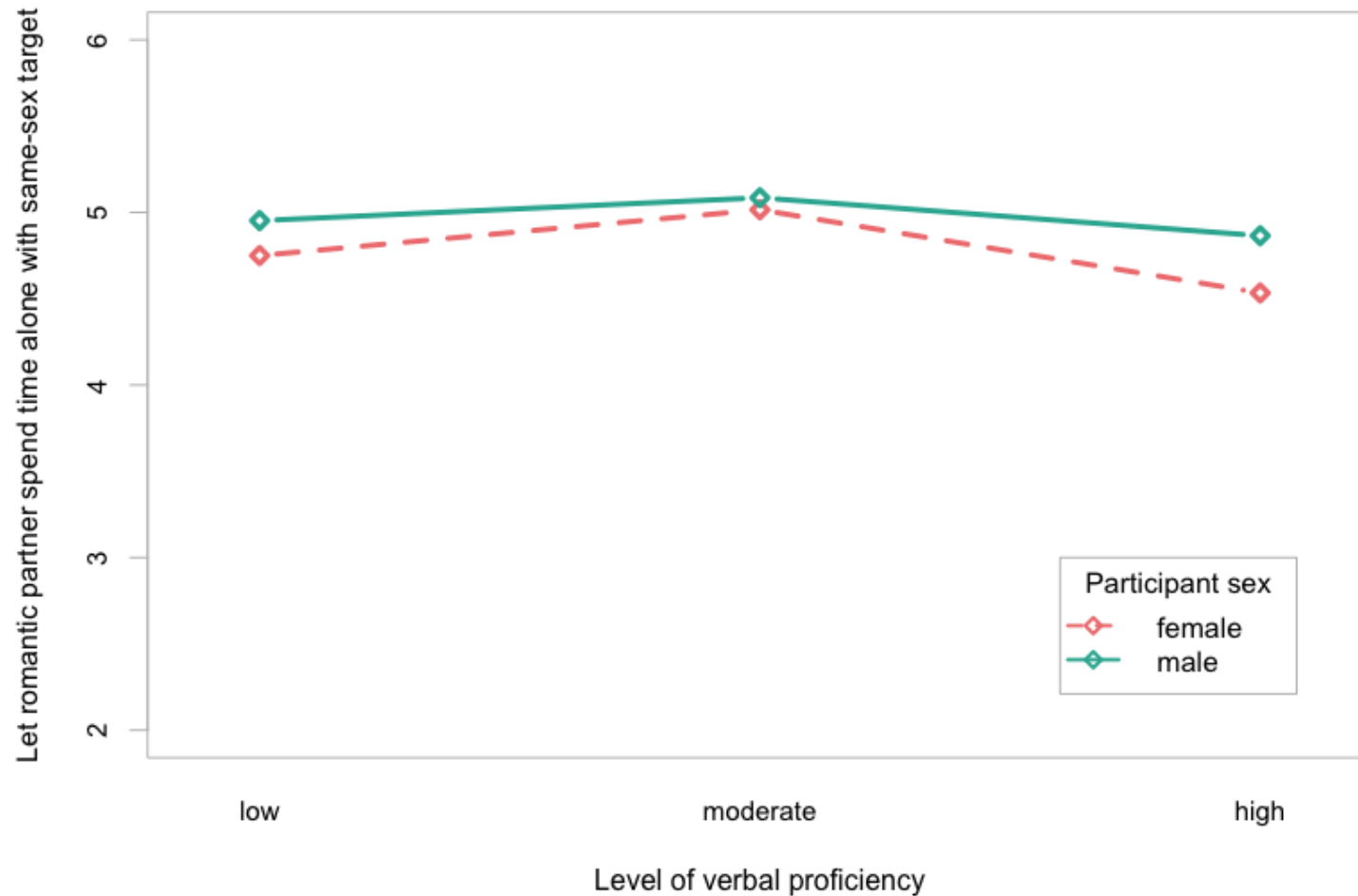


n.s. **X**



H2: Perceptions as a mate poacher II

Figure 4. Willingness to let romantic partner spend time alone with same-sex speaker depending on his/her VP

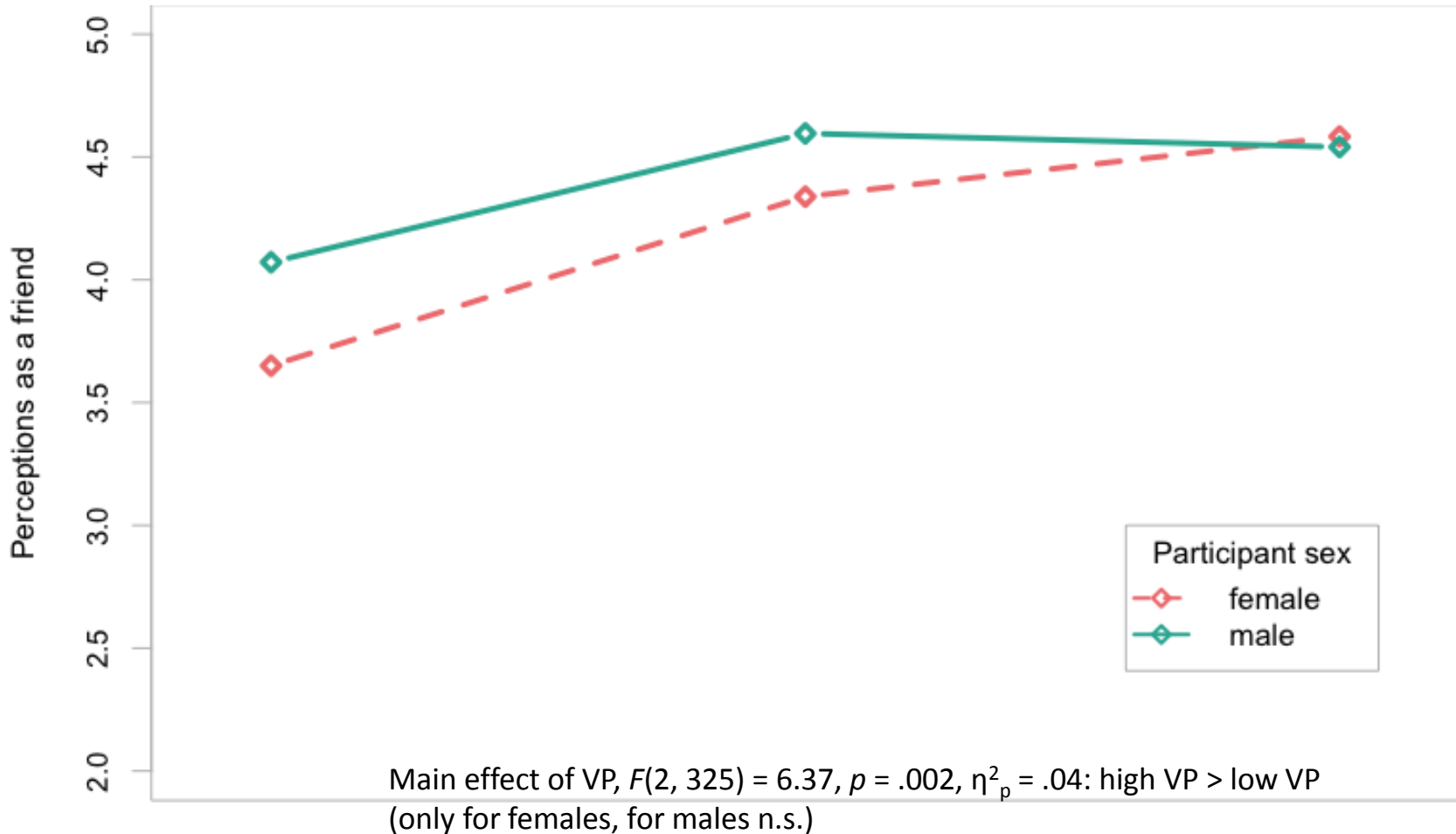


n.s. X



H3: Perceptions as friend

Figure 5. Perception of same-sex speaker as a friend depending on his/her VP





More results

A same-sex target with high VP is perceived as ..

more dominant (high > low), $F(2, 325) = 14.54, p < .001, \eta^2_p = .08$

more intelligent (high > moderate > low), $F(2, 325) = 35.55, p < .001, \eta^2_p = .18$

a more attractive long-term mate for the opposite sex (moderate > low),
 $F(2, 325) = 17.37, p < .001, \eta^2_p = .10$

a more attractive short-term mate for the opposite sex (females only,
 $F(2, 325) = 5.78, p = .003, \eta^2_p = .03$

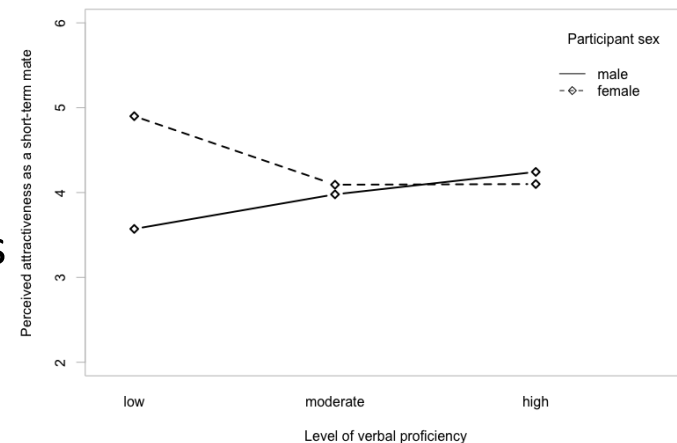
But...

not as more creative

no higher expected income in 10 yrs

no higher expected no of partners in 10 yrs

Perceived attractiveness of the same-sex target as a short-term mate for opposite sex depending on his/her verbal proficiency





Discussion – VP in male intrasexual competition

- H1 (✓) : VP increased perceptions of men as an intrasexual rival (however, only for low vs. moderate) → why no effects of high VP?
- H2 ✗: VP did not influence of men as a mate poacher
- H3 ✗ : VP did not influence perceptions of men as potential same-sex friends (however, men were also not more willing to become friends with male target with high VP)
- High VP increases perceptions of dominance and intelligence → increased mate value (more desirable long-term mate)



Discussion – VP in female intrasexual competition

- No effect of VP on women's perception of another female as a rival
- No effect of VP on women's perception of another female as a mate poacher
- Women reported a higher willingness to become friends with another women with high VP as compared to low VP
- High VP increases perceptions of dominance and intelligence of same-sex target → increased mate value (more desirable long-term mate)
- Women perceive same-sex speaker with low VP as more desirable short-term mate → competitor derogation?



Future research

- Repeat experiment using a sample with lower education and thus lower VP
→ effects on perceptions of same-sex speaker with high VP in intrasexual competition?
- Interplay between high VP and other traits signaling mate value (e.g., seize, facial characteristics) ?



Thank you very much for your attention!

Hallo, ich bin Christian/e. Ich bin 21 Jahre alt. Äh... Ich lebe ... äh ... im Süden von ... äh ... Deutschland. Ich bin Student/in. Ich bin Single.

Ich find' so das Leben auf der Uni ganz toll ... äh ... auch mit den ganzen andern Studenten und so. Aber ich bin ja auch ... äh ... noch ganz am ... äh ... Amfang.

Meine Professoren haben mich bisher meistens gut gefunden. Also ... äh ... Das macht mich ... äh ... mir Hoffnung für die Zukunft.

Ich bin wahnsinnig gerne unter Leute. Und ich gehe gerne viel weg oder ...äh... mach Sport. Ich komm ganz gut mit andere Leute klar und ... äh ... weil ich so ganz offen bin. Und Musik mach ich auch ... äh ... mit Klavier.

Ich bin also ... äh ... schon auch ... äh ... kulturell interessiert. Und ... äh ... ich besuch' verschiedene Veranstaltungen ... Aber so total viel davon muss ja auch nicht ... äh ... sein, ne?!

Ich bin nett und ... äh ... witzig und hab' ... äh ... Verständnis. Ich glaub', ich bin auch ... äh ... kreativ.



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