Using multilevel modeling in acculturation measurement: Data from the Culture Day Reconstruction Method

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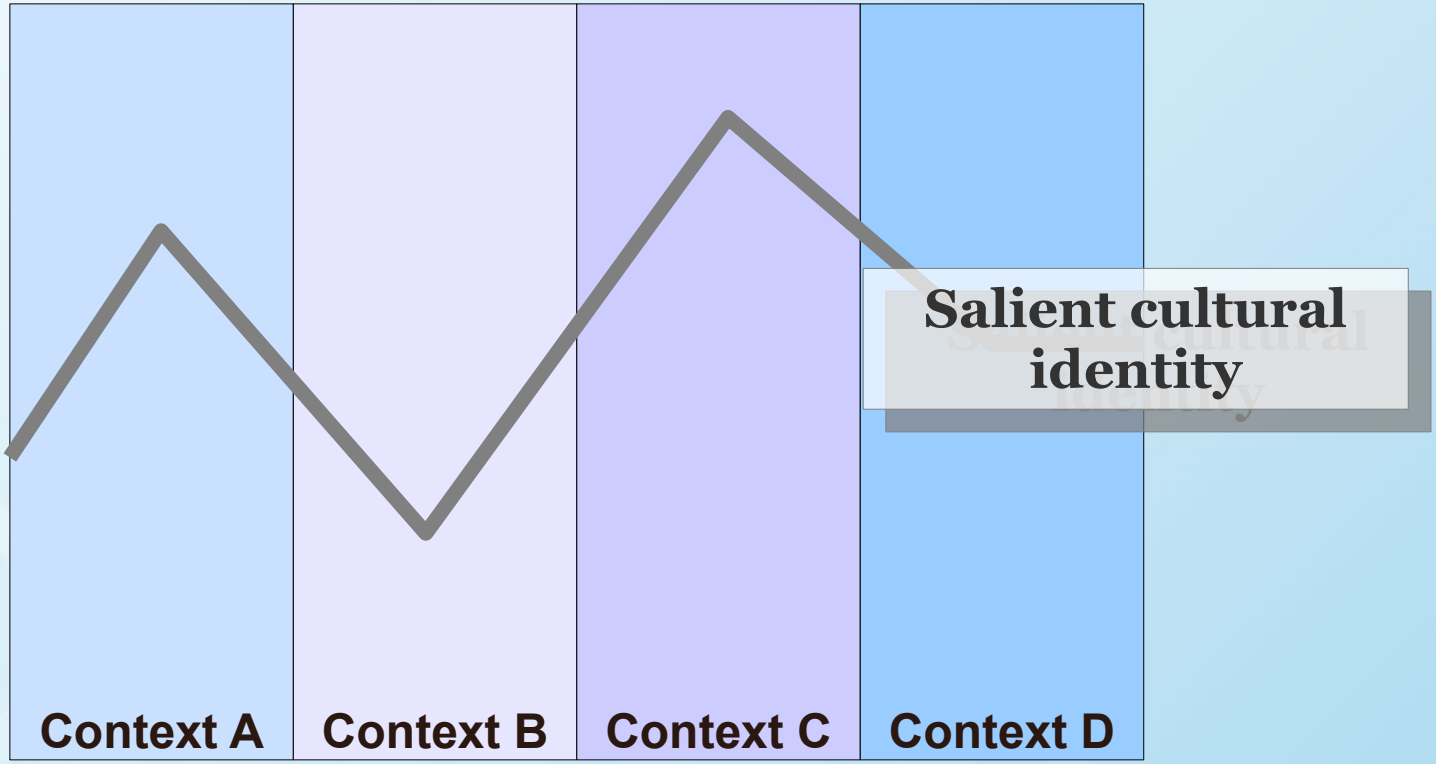
Acculturation

Psychological changes resulting from prolonged cross-cultural experience

Issues

- Theorizing vs. measuring
- Acculturation as trait!?!
- Daily life: shifts, flux, and variability

Goal of the study



Day Reconstruction Method

- Kahneman et al. (2004)
  - Diurnal patterns of affect
  - Day as series of episodes
- Cultural adaptation of DRM (C-DRM)
  - Additional questions on culture and language

Morning

(from waking up until just before lunch)

What happened? Episode Name	Time it Began	Time it Ended	Notes to yourself: What did you feel
Breakfast 1M (First morning episode)	7:30	8:15	Good
Finished assignment 2M	8:45	9:30	Busy
Take bus 3M	9:45	10:15	In a hurry!
In class 4M	10:15	11:30	Worst class ever
Java-U with friend 5M	11:45	13:00	Happy, comfortable

1a. If applicable, what was the main language used during the activity? (*e.g., watching TV in Spanish, online chat in Chinese)*

English

2. Where were you?

___ at school ___√___ at home ___ at work ___ somewhere else

3. Were you interacting with anyone? *(e.g., in person, on the phone, internet chat – text and/or video, etc.)*

___√___ Yes ___ No → *if no one, skip to Question 4.*

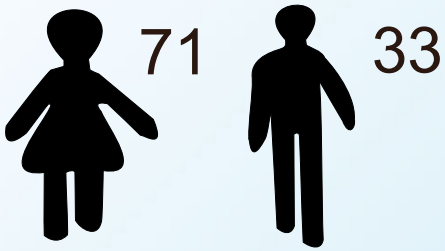
3a. If you were interacting with someone (please check all that apply)

___ spouse/significant other
___ my child/children
___ parent(s)/relative(s)
___√___ friend(s)
___ classmate(s)
___ co-worker(s)
___√___ other: roommates

Their cultural background

___√___ English-Canadian
___ Someone/people from my heritage culture
___ French-Canadian
___ Other: _____

Sample (N=104, 563 episodes)



Multicultural Concordia Students

Mean age = 24 (*SD*=6)

Place of birth: 76 outside Canada, 28 in Canada

Average time in Canada: 10 years (*SD*=12)

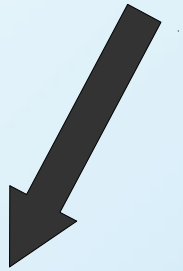
Ethnic composition: 20 European descent, 13 Arabic descent, 24 Chinese descent, 47 other

Nested data

Multi-level analysis

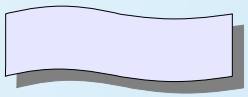
Macrolevel predictors

Acculturation, perceived discrimination levels...



Criterion

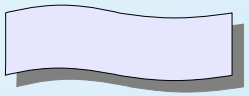
Cultural affiliation



Microlevel predictors

Location of episode, culture of interlocutor...

Cultural affiliation

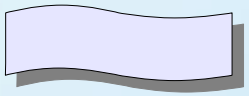


Mainstream

v.s

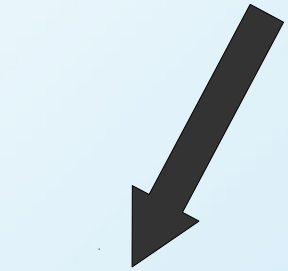
Heritage

Cultural affiliation



Where + Food + Language + Culture int.

VIA-m + VIA-h + PERDS

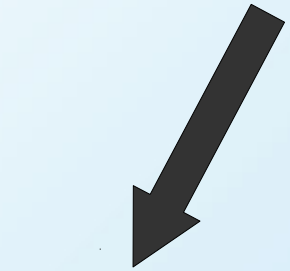


Cultural affiliation

Where + Food + Language + Culture int.

VIA-m + VIA-h + PERDS

Step 2



Cultural affiliation

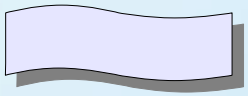
Where + Food + Language + Culture int.

Step 1

VIA-m + VIA-h + PERDS

Step 2

Cultural affiliation



Where + Food + Language + Culture int.

Step 1

Generalized linear mixed model (logistic)

Fit by Laplace approximation and adaptive Gauss-Hermite quadrature

Null model

- H_0: no random effects: bootstrapped *p*=.0000 (3000)
- Need to model random effects

Results of hierarchical entry

Variables Micro

- Somers' D = .89
- Res. deviance χ^2 = 150 (df=8), *p*<.0001

Variables Macro

- Reduction in intercept variance =18%
- Res. deviance χ^2 = 18 (df=3), *p*=.0004

Full model: model fit

	Full model	Null model
AIC	1770	1811
BIC	1826	1824
Log Likelihood	-872	-902
Deviance	1717	1802
REML deviance	1744	1805

Full model: random effects

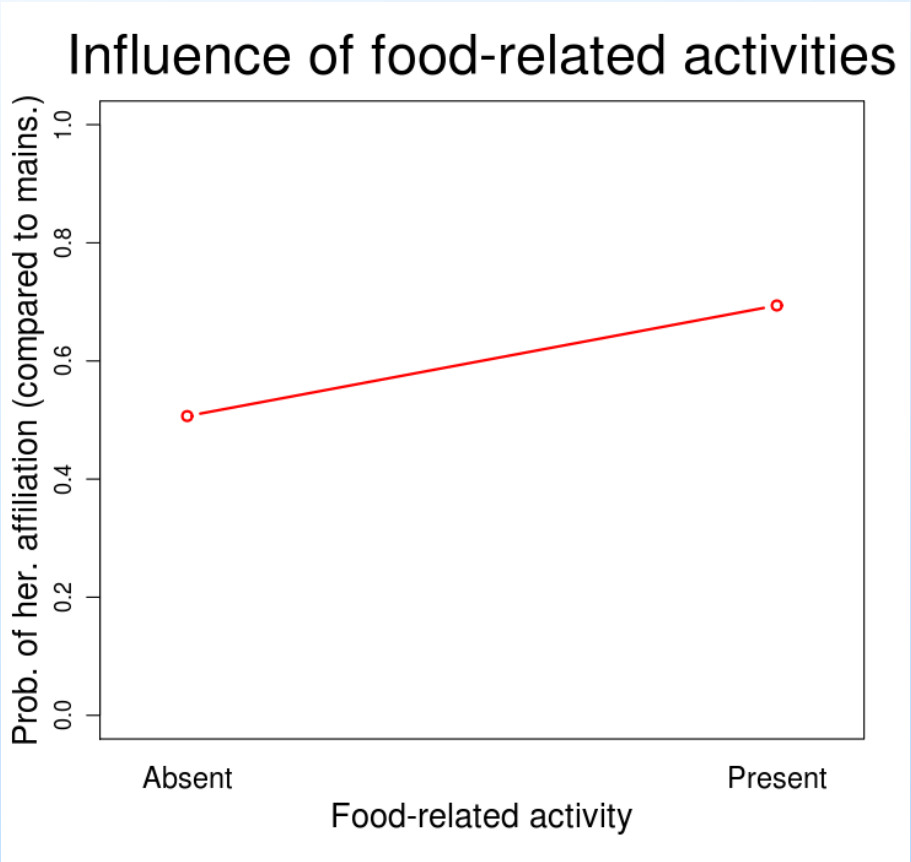
Component	Variance	HDP95 lower	HPD95 higher
Intercept	.47	.38	.57
Residuals	1.02	1.00	1.14

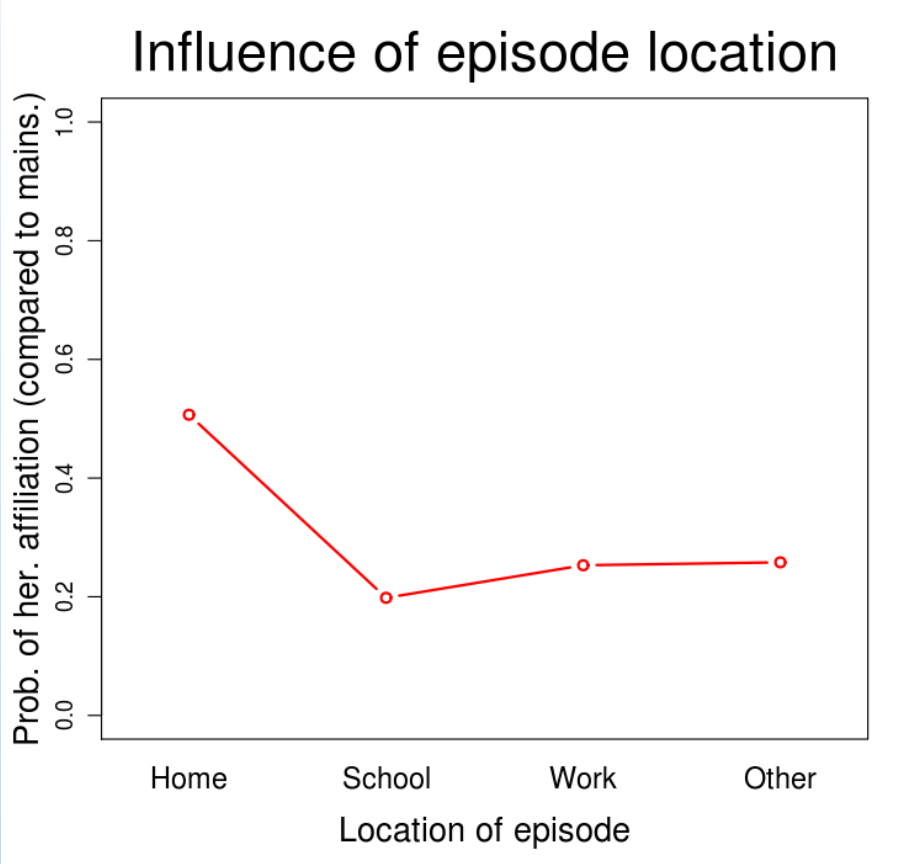
Compared to null model:

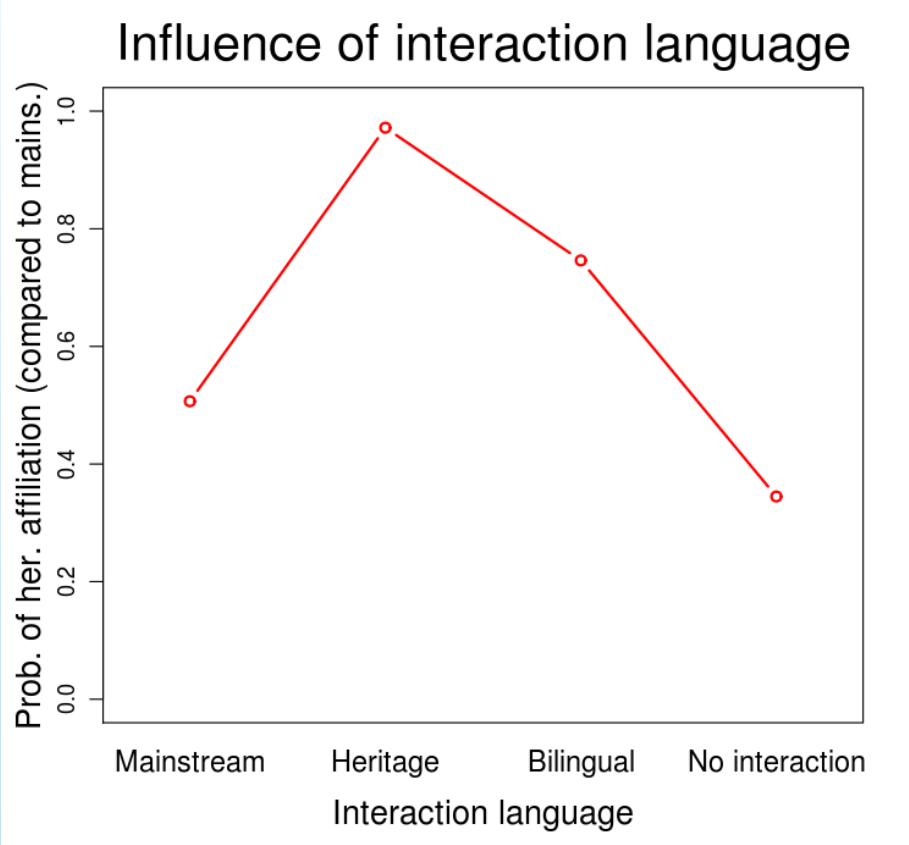
- 34% decrease in intercept variance overall
- 10% decrease in residual variance overall

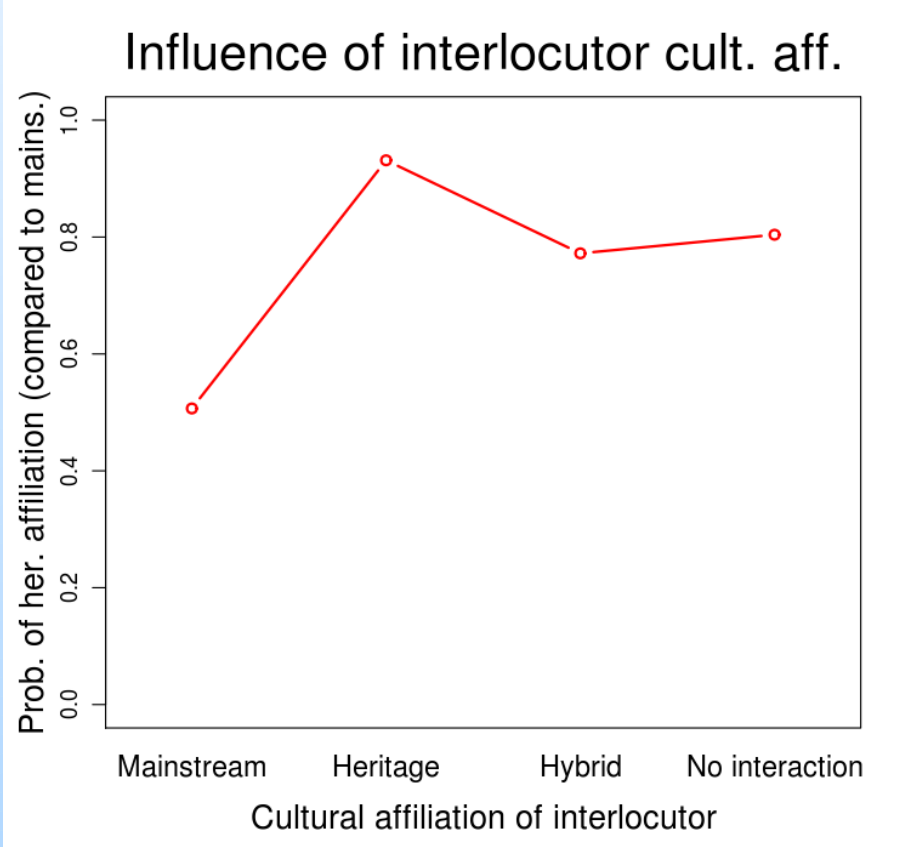
Full model: fixed effects

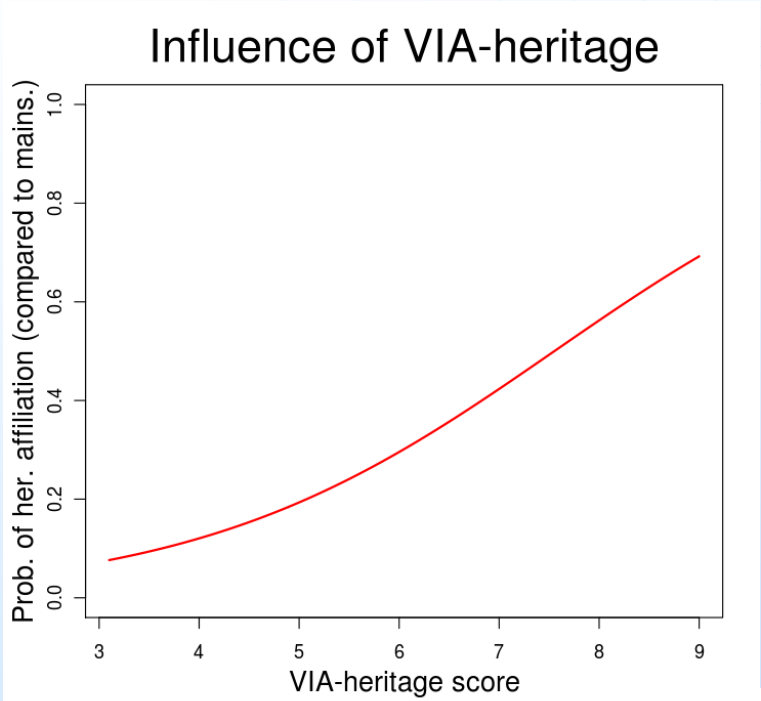
Predictor	Estimate	Stand. error	Boot. lower end 95% CI	Boot. higher end 95% CI	p value
Intercept	.18	1.95	-2.7	3.59	.93
Food act: Yes	.79	.31	.21	1.45	.01
Where: other	-1.08	.36	-1.84	-.50	.002
Where: school	-1.42	.40	-2.00	-.82	.0004
Where: work	-1.11	.78	-2.43	.27	.15
Lan. int.: heritage	3.51	.97	2.46	17.44	.0003
Lan. int.: bilingual	1.05	.58	.57	2.61	.07
Lan. int.: no inter.	-.67	.60	-1.98	.36	.26
Cul. int.: heritage	2.58	.49	1.77	3.41	.0000
Cul. int.: hybrid	1.19	.45	.48	1.83	.008
Cul. int.: no inter.	1.39	.61	.56	2.56	.02
VIA heritage	-.82	.24	-1.46	-.48	.0008
VIA mainstream	.56	.20	.21	.95	.004
PERDS	.66	.66	.09	1.42	.06

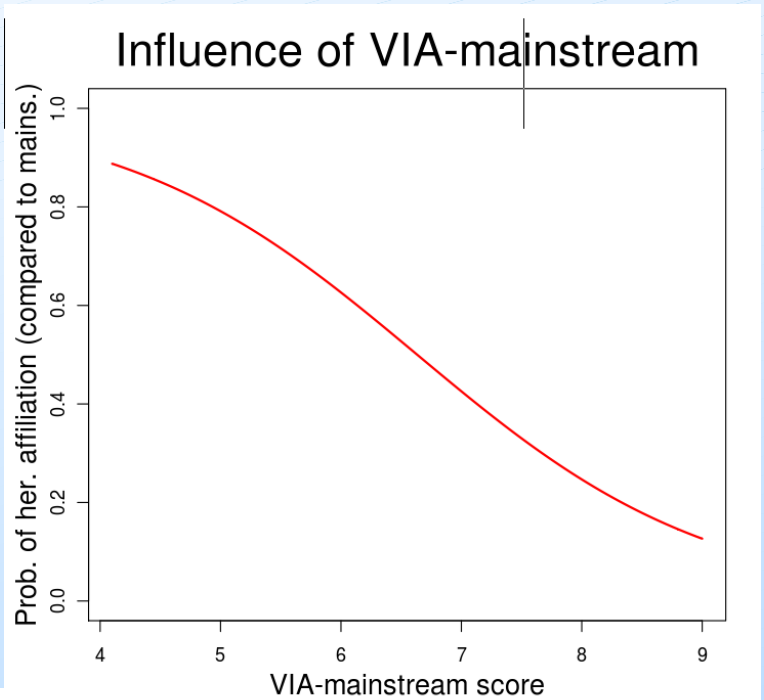

Influence of food-related activities
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
Absent
Present
Food-related activity

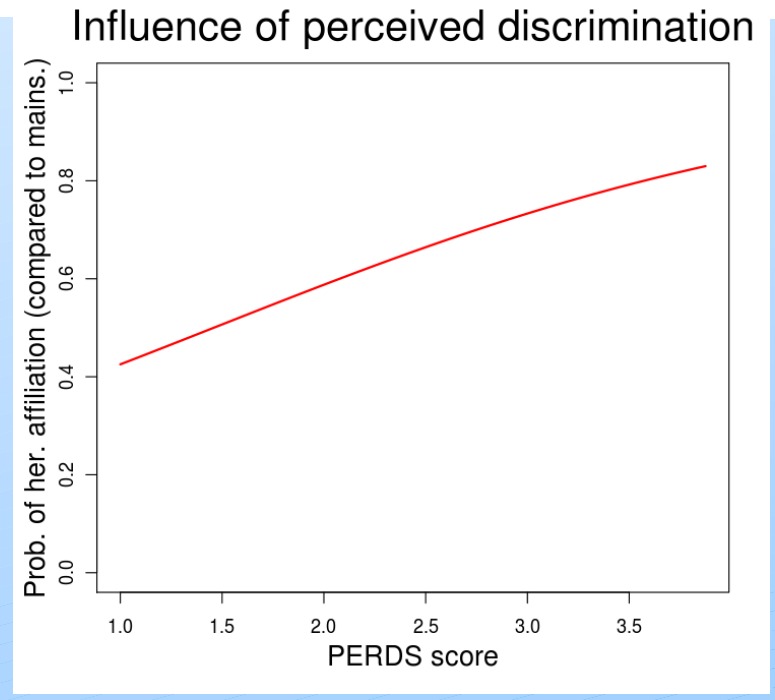

Influence of episode location
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
Home
School
Work
Other
Location of episode

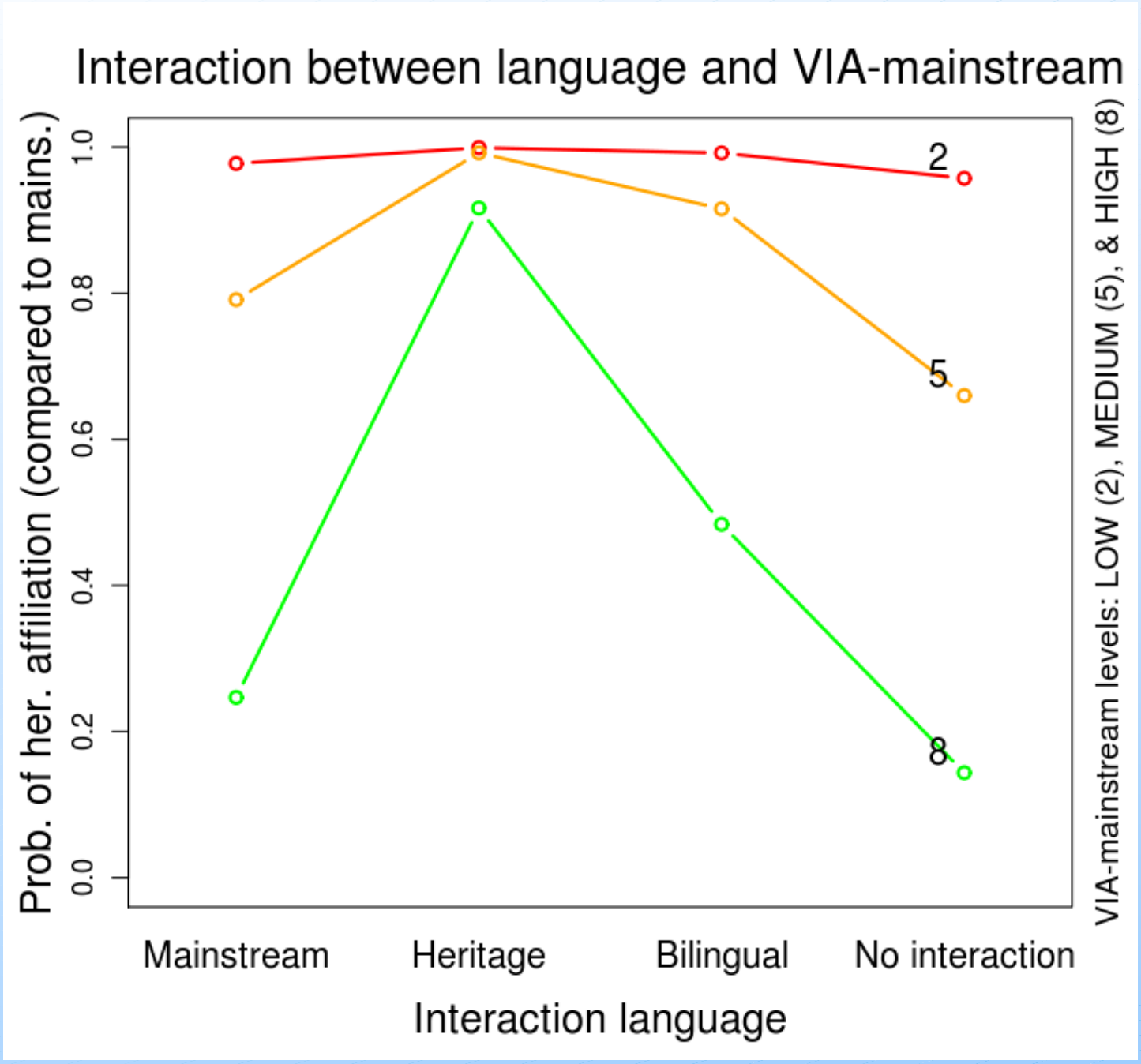

Influence of interaction language
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
Mainstream
Heritage
Bilingual
No interaction
Interaction language


Influence of interlocutor cult. aff.
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
Mainstream
Heritage
Hybrid
No interaction
Cultural affiliation of interlocutor


Influence of VIA-heritage
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
3
4
5
6
7
8
9
VIA-heritage score


Influence of VIA-mainstream
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
4
5
6
7
8
9
VIA-mainstream score


Influence of perceived discrimination
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
1.0
1.5
2.0
2.5
3.0
3.5
PERDS score


Interaction between language and VIA-mainstream
Prob. of her. affiliation (compared to mains.)
0.0
0.2
0.4
0.6
0.8
1.0
2
5
8
VIA-mainstream levels: LOW (2), MEDIUM (5), & HIGH (8)
Mainstream
Heritage
Bilingual
No interaction
Interaction language

Discussion

- Joint role of general attitudes and specific context
- Importance of physical and social environment

Future directions

- Online administration
- C-DRM over days

Thank you!

Questions? Comments?

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