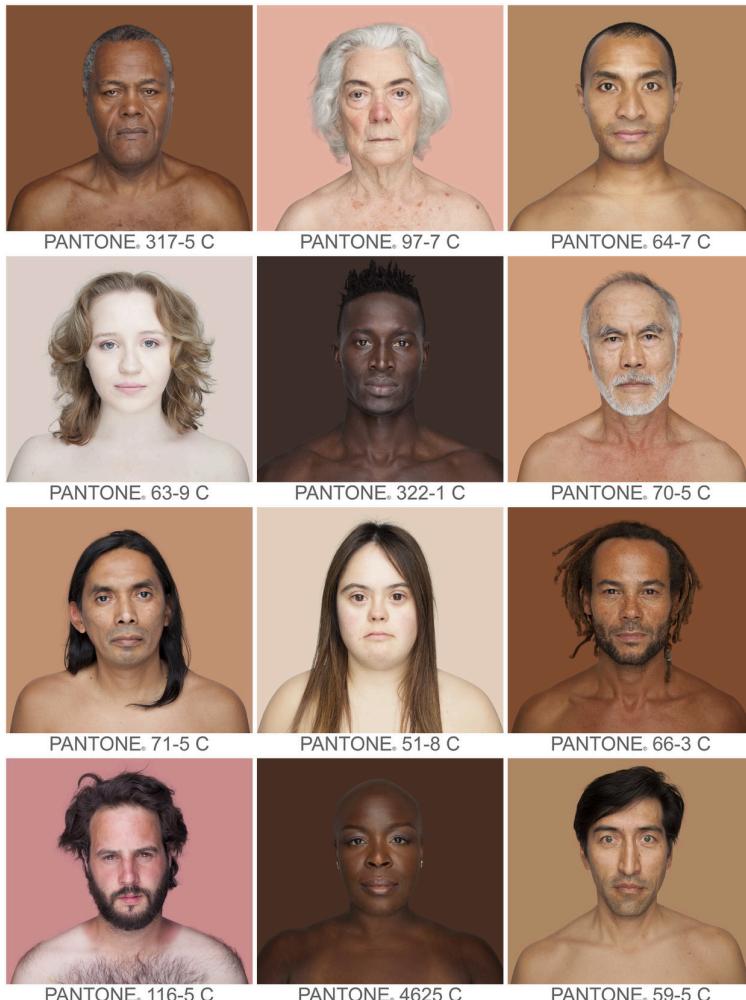


Discovering Social Groups
via Latent Structure Learning

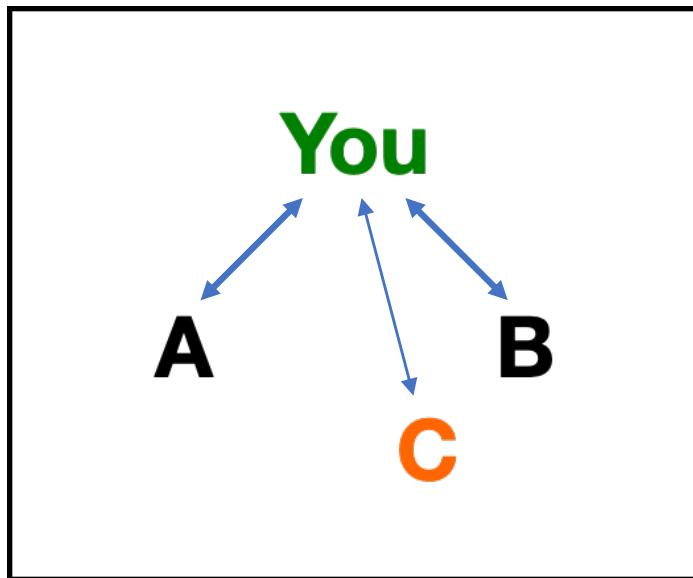
Tatiana Lau

Previous research focused on explicit, single groups

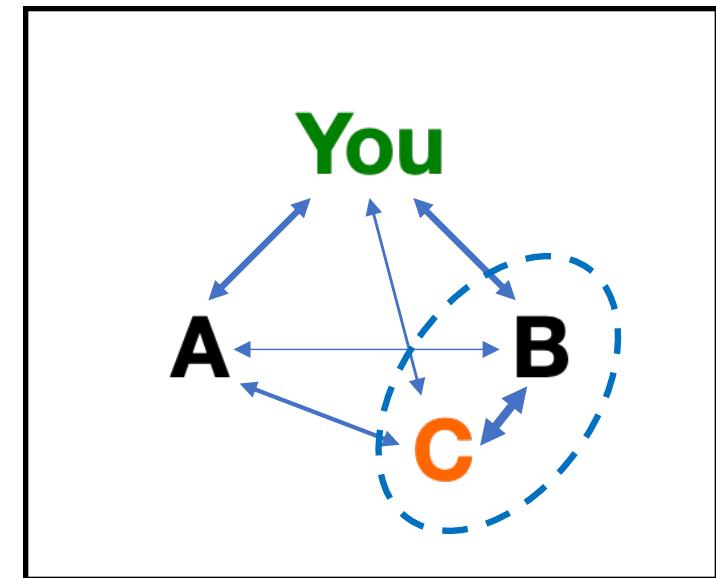


Amodio (2014), Ito & Bartholow (2009), Kubota, Banaji, & Phelps (2012), Golby, Gabrieli, Chiao, & Eberhardt (2001), Hart et al. (2000), Lieberman, Hariri, Jarcho, Eisenberger, & Bookheimer (2005), Cikara & Van Bavel (2014)

How do we gather information to infer “us” and “them”?

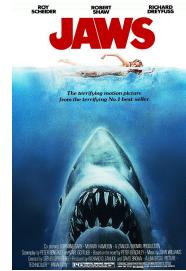
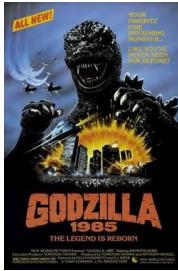


H1: Use dyadic similarity with each person in the environment?



H2: Infer latent group structures amongst people in the environment?

H1: Dyadic Similarity

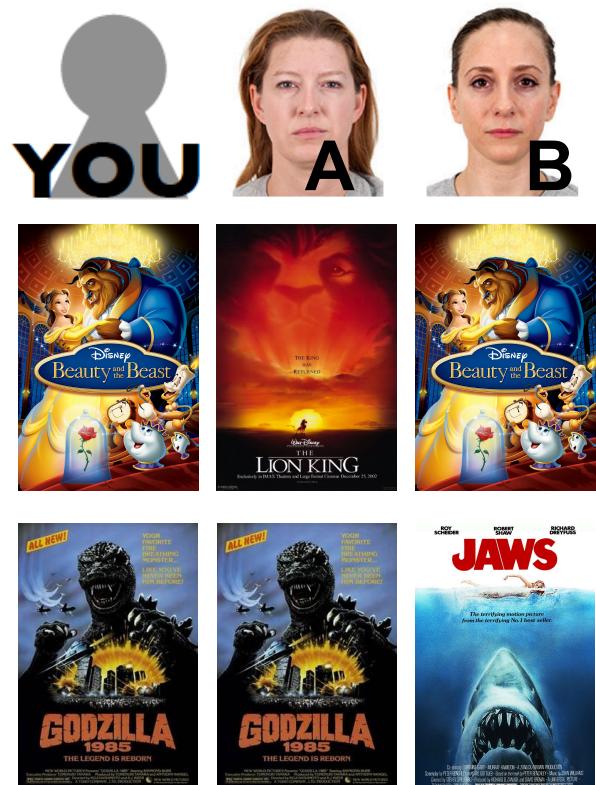


Total

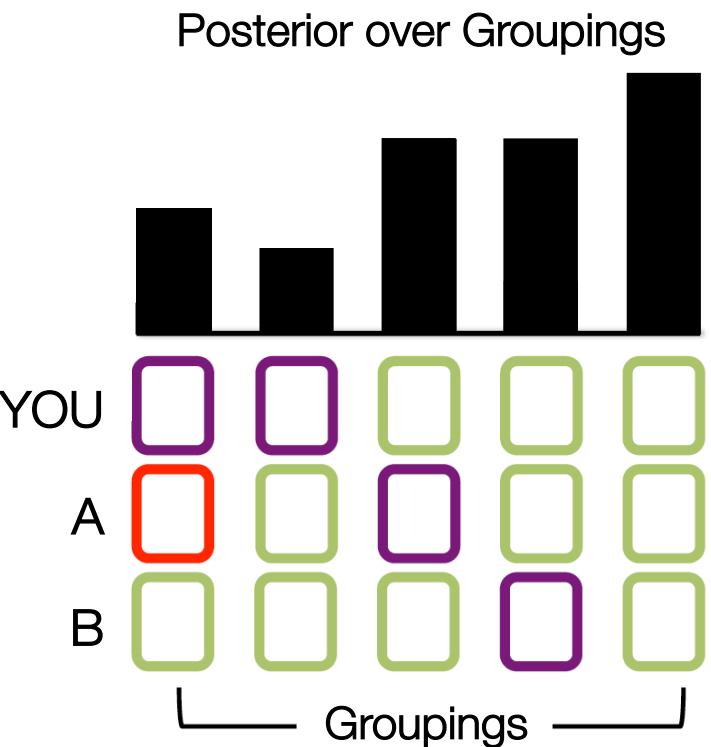
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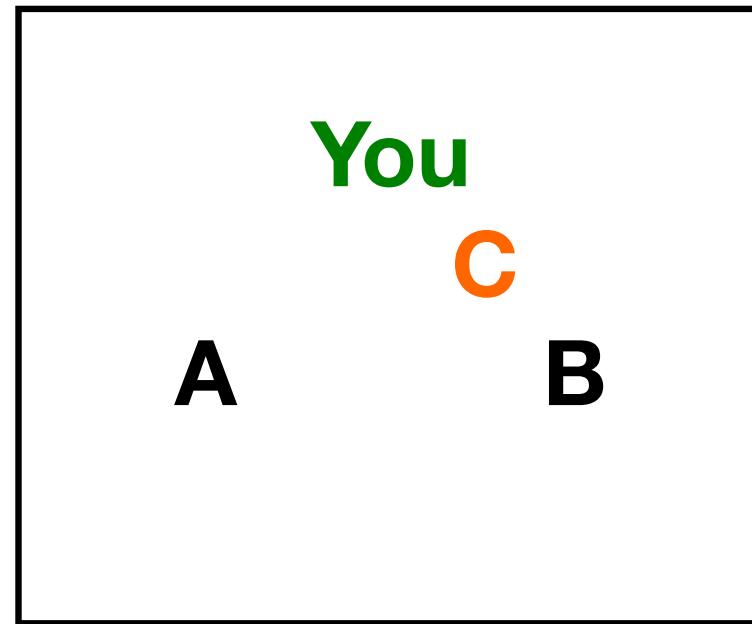
H2: Bayesian Latent Structure Learning



Bayes Rule

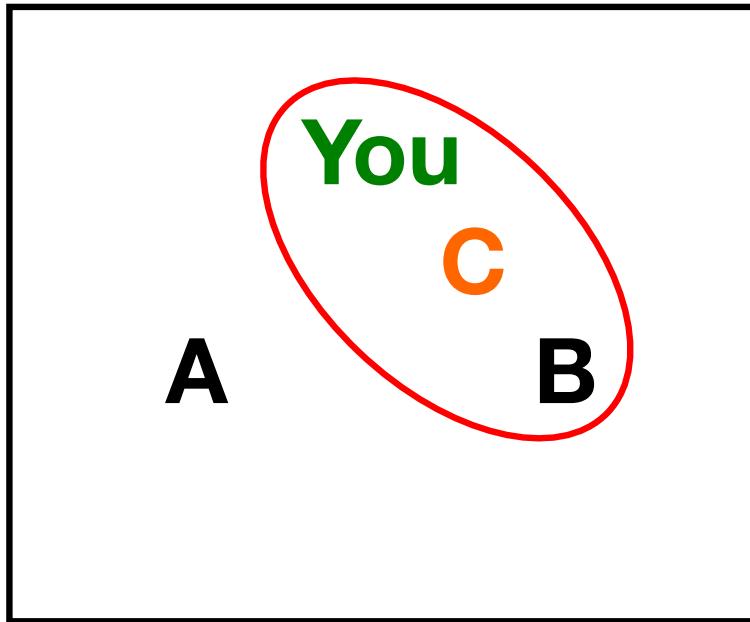


Dyadic Similarity

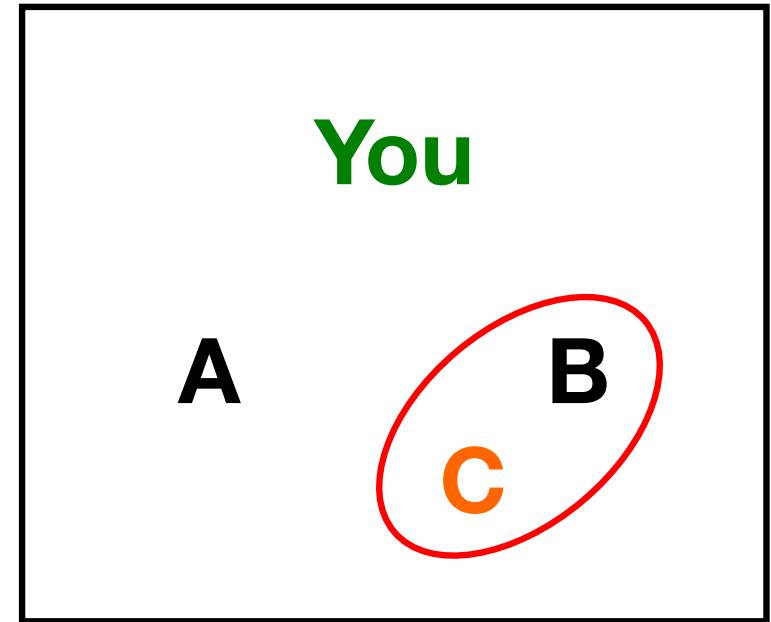


Bayesian Latent Structure Learning

High C-agreement



Low C-agreement



EXPERIMENTAL DESIGN



GMO Labels

Should producers be required to label genetically engineered foods (GMOs)?

6,659,055 votes



Federal Reserve

Should the Federal Reserve Bank be audited by Congress?

1,829,140 votes



Equal Pay

Should employers be required to pay men and women the same salary for the same job?

13,960,765 votes

Should employers be required to pay men and women the same salary for the same job?

Which do you think Carol chose?

E



NO

I



YES

INCORRECT



Carol



You Annie Betsy Carol





Annie

Betsy

A B C

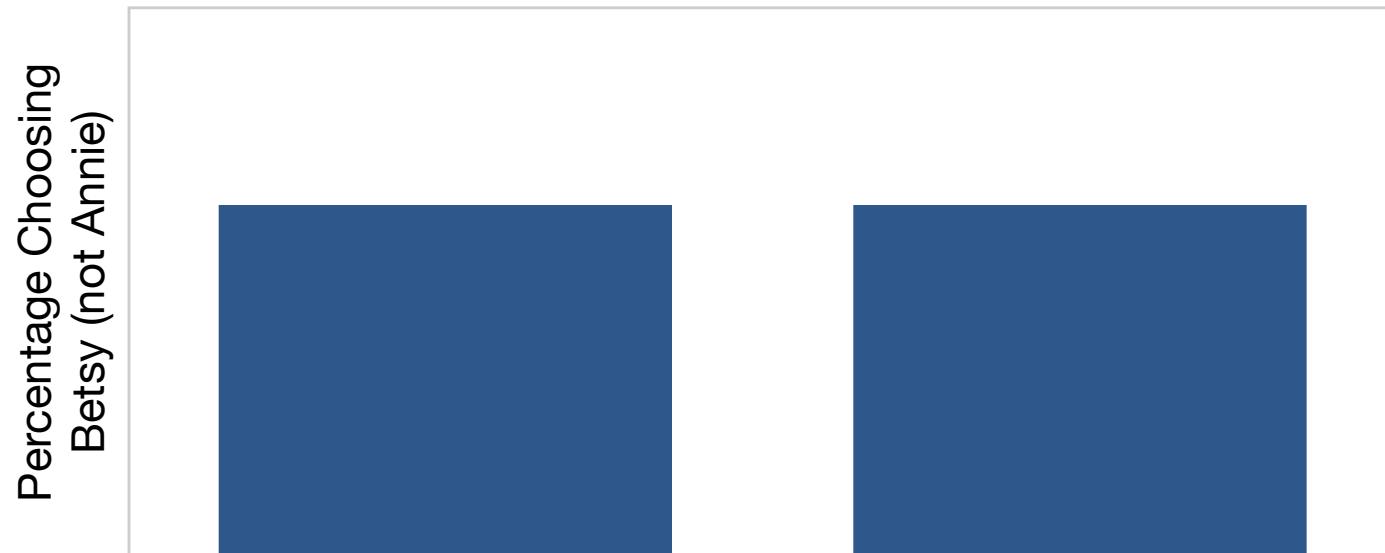


You Annie Betsy Carol

	0	1	1
	0	1	1
	1	0	1
	0	1	1
	0	1	1
	1	0	1
	1	0	1
	1	0	0

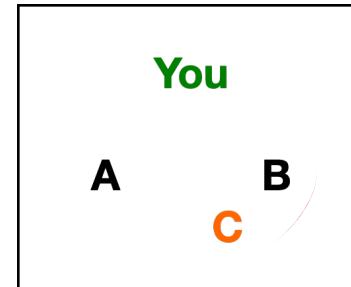
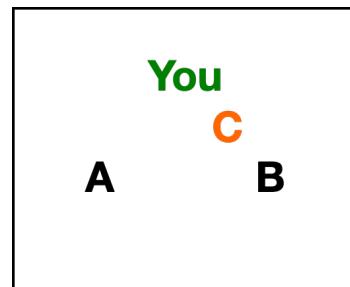
1: Agreement with you
0: Disagreement with you

Dyadic Similarity

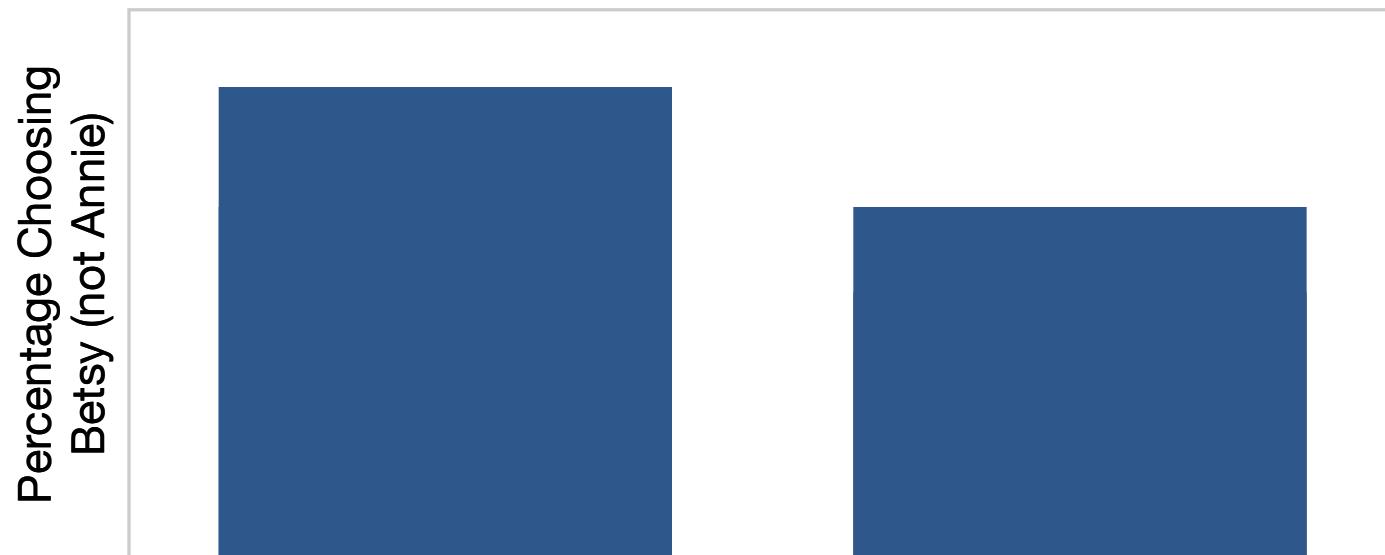


High C-agreement

Low C-agreement

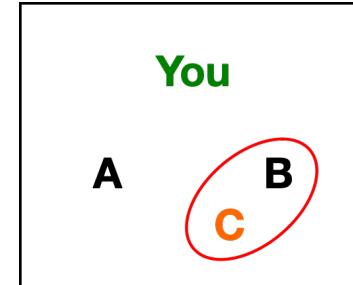
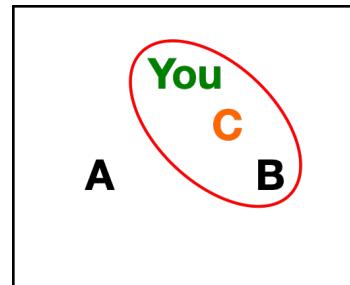


Bayesian Latent Structure Learning



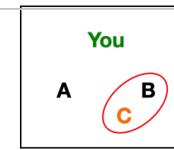
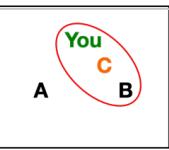
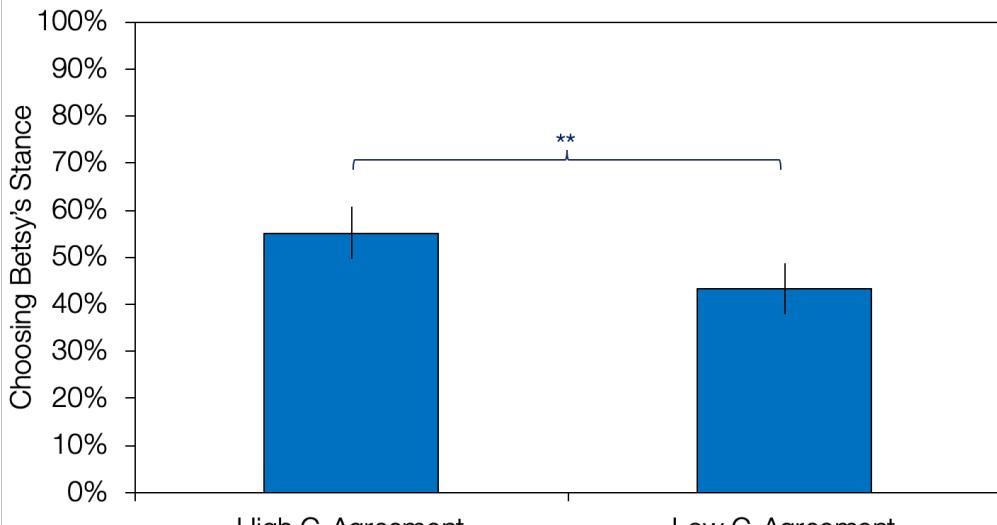
High C-agreement

Low C-agreement



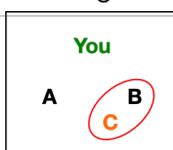
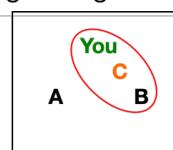
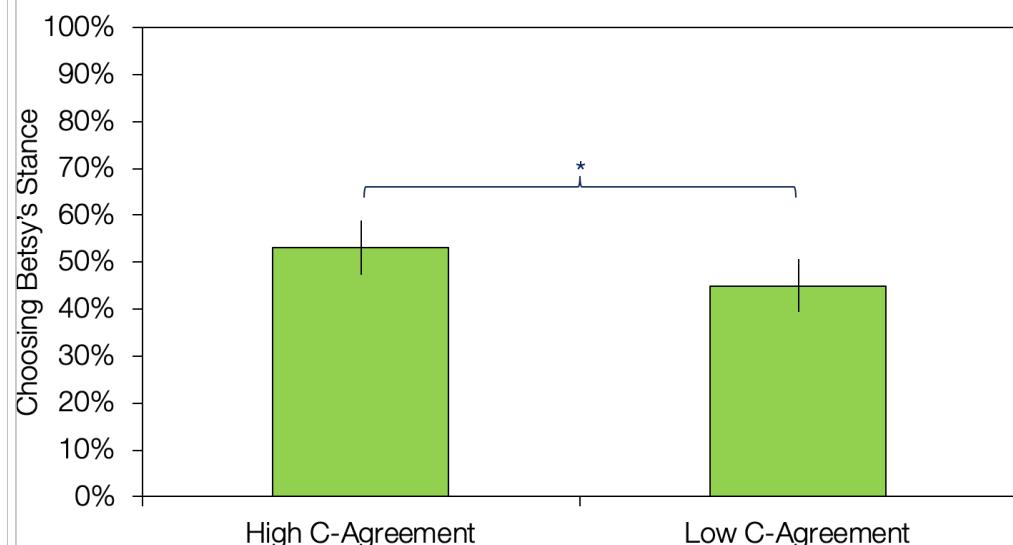
RESULTS

Exp. 1: Mystery Choice Trial



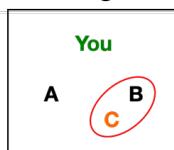
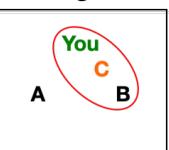
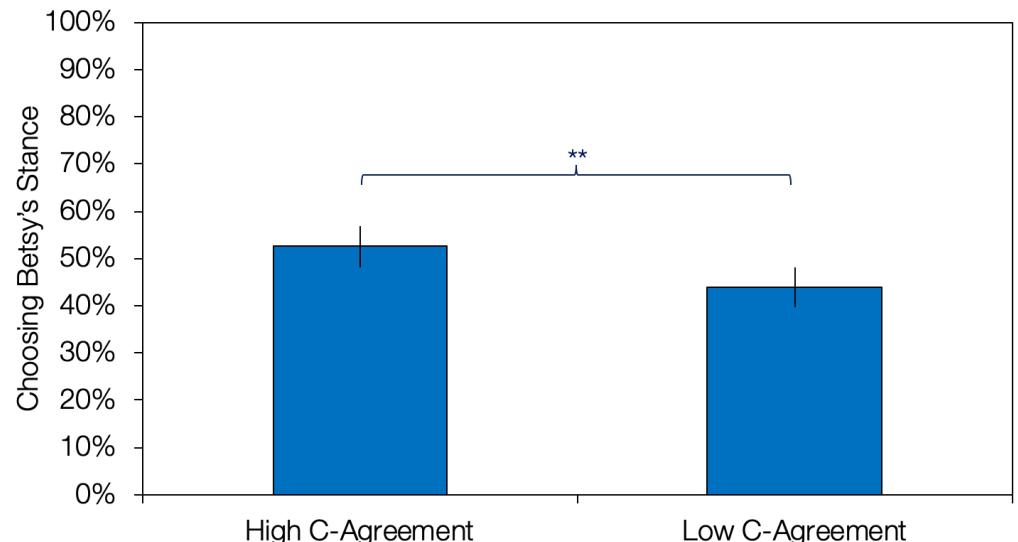
Wald's $z = 2.952$
 $p = 0.003$
 $N = 622$

Exp. 2: Mystery Choice Trial



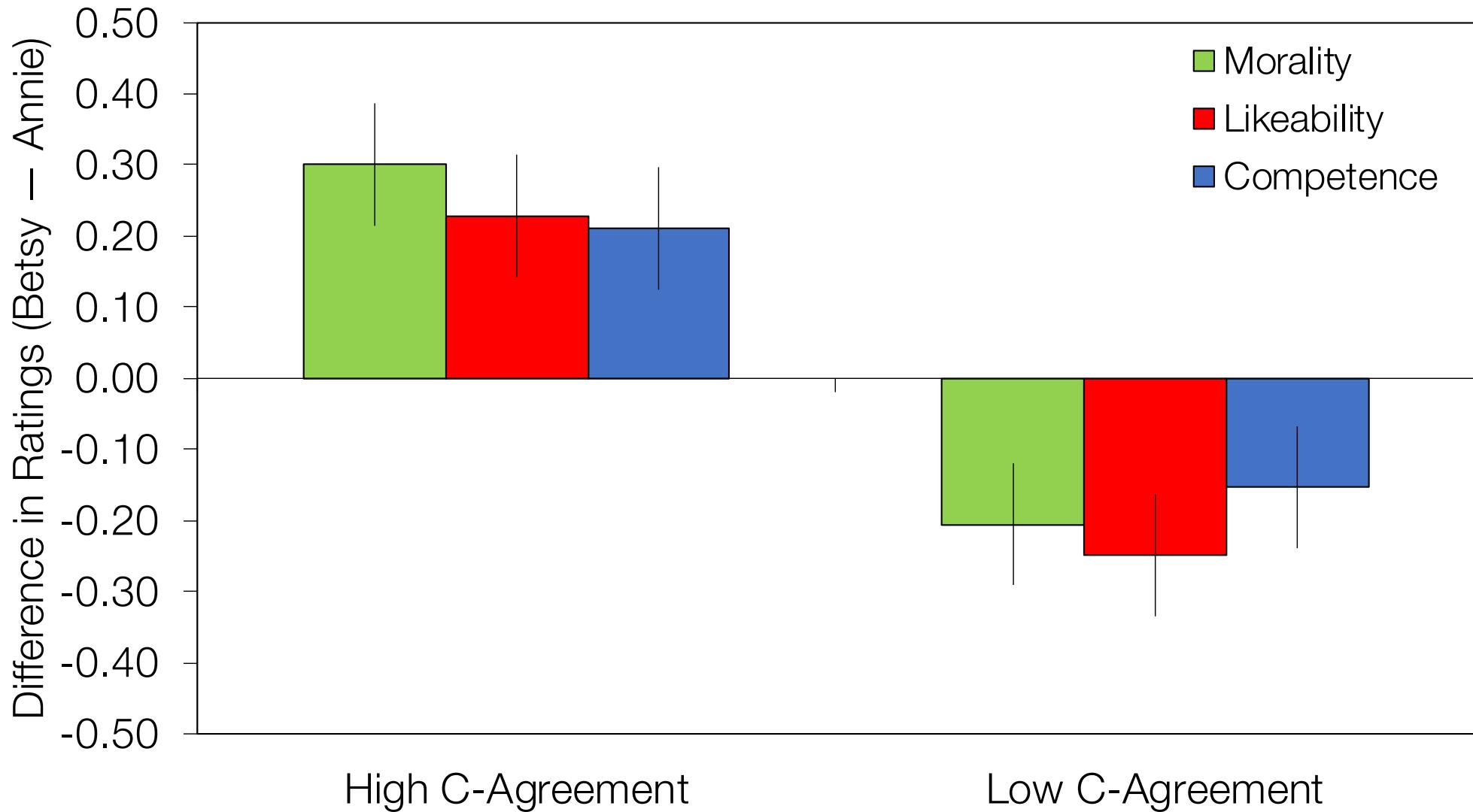
Wald's $z = 2.05$
 $p = 0.041$
 $N = 591$

Exp. 3: Mystery Choice Trial

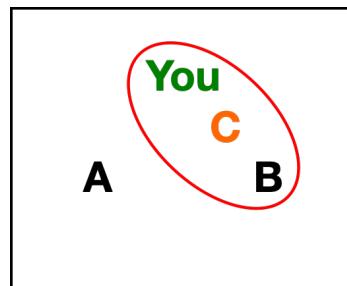


Wald's $z = 2.78$
 $p = 0.005$
 $N = 1034$

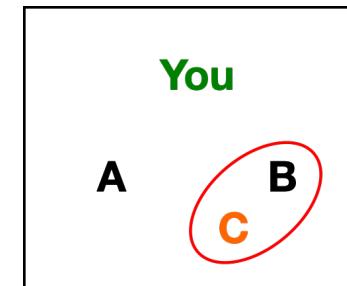
Exp. 3: Trait Ratings



High C-Agreement



Low C-Agreement



$$F(1, 2881.8) = 26.14$$
$$t_{high} = 4.74 \quad t_{low} = -2.50$$
$$p < 0.001 \quad p = 0.013$$

Exp. 4 (Conflicting, Explicit Team Assignments)



Betsy



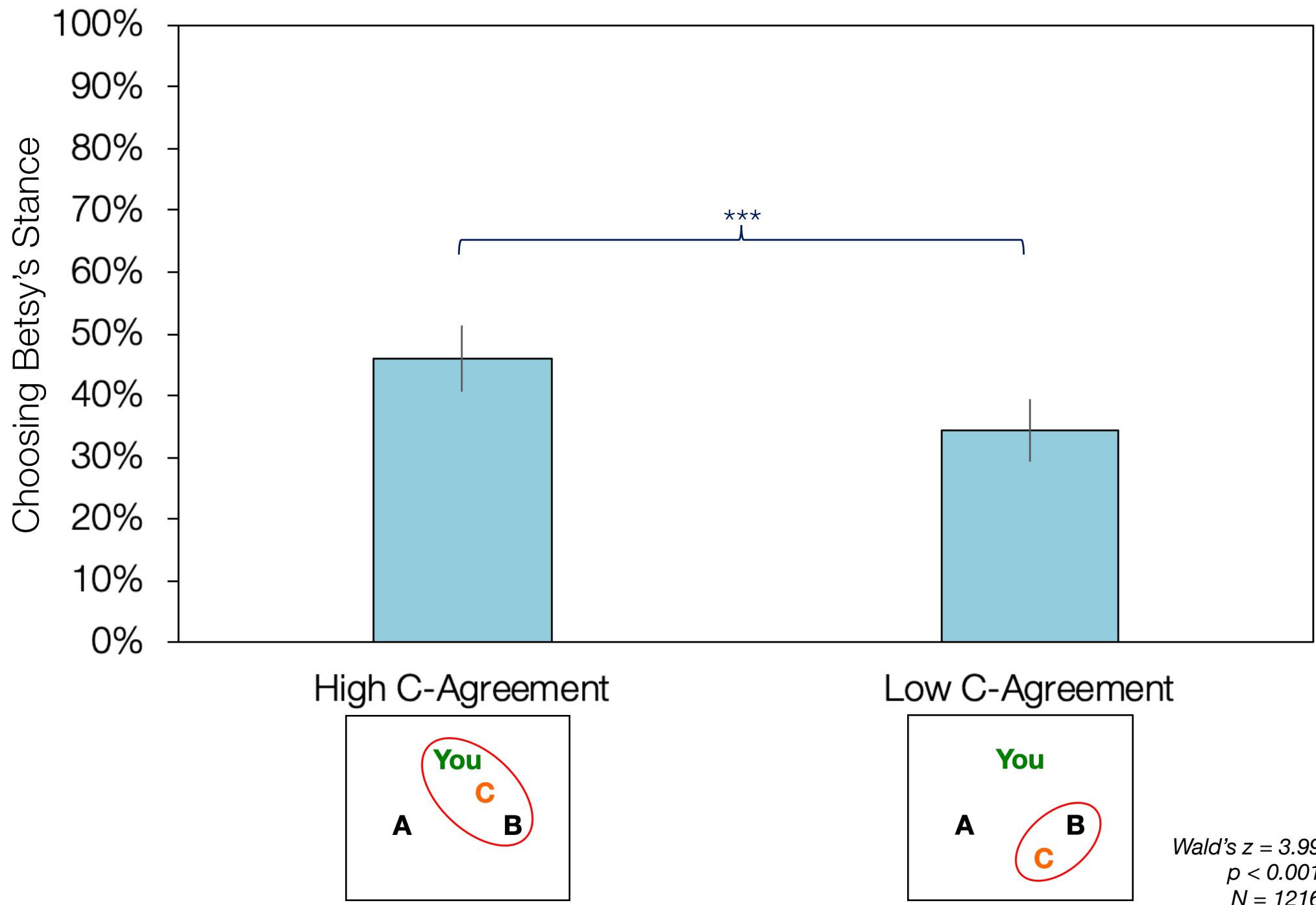
Annie



You Annie Betsy Carol

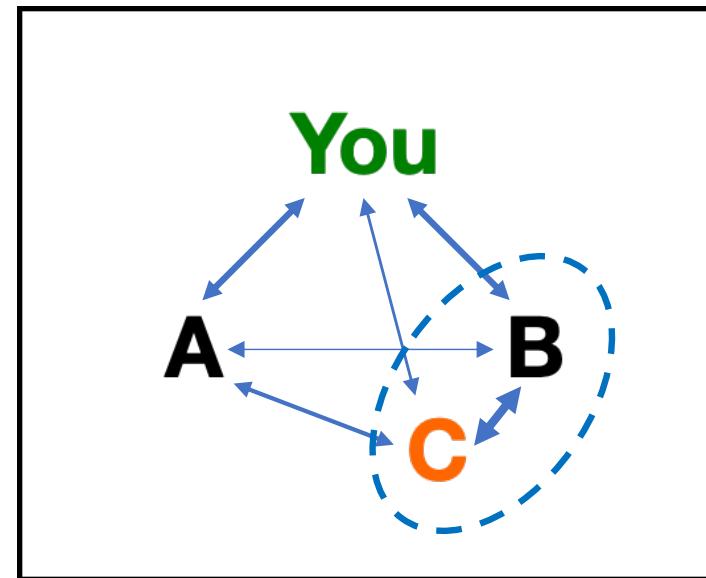


Exp. 4: Mystery Choice Trial



Consequences

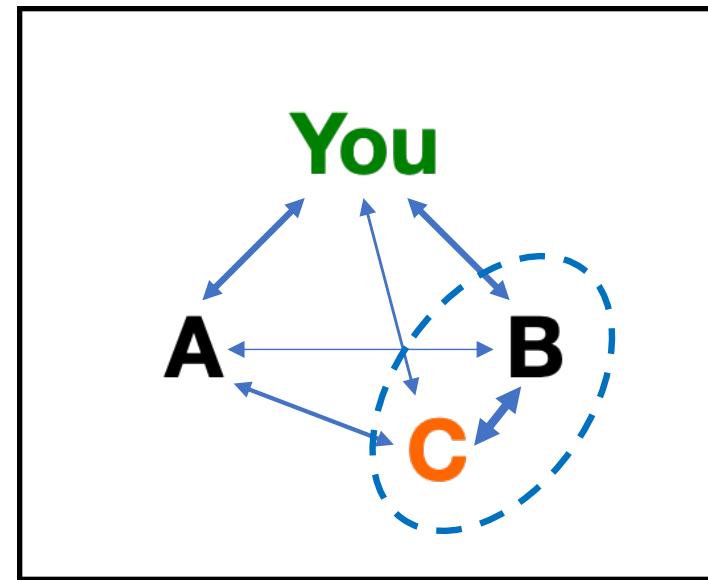
- Ally choices
- Trait judgements
 - Morality
 - Competence
 - Likeability
- Influence despite explicit group membership information conflicting with latent structure



Latent grouping structures

Bigger Picture

- Balance Theory
- Generalized predictions about others
- Moving beyond preferences to interactions



Latent grouping structures

Thanks!

Mina
Cikara

Sam
Gershman

Zach
Ingbretsen

Thomas
Pouncy



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