

Discussion Exercise for Selection

August 25, 2004

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(do parts I, II, and III by yourself)

I. Example Selection Model

The generic model for selection is (ignoring time sequence)

$$\log\left(\frac{p[w_{ii'}=1]}{1-p[w_{ii'}=1]}\right) = \theta_0 - \theta_1|y_i - y_{i'}| \quad . \quad (1)$$

A) write down a model of whether two actors talked as a function of whether they are the same race and whether they are the same gender.

Here,

$w_{ii'}$, represents whether i and i' talked,

y_i represents the gender of i (0 if male, 1 if female), and

z_i represents the race of i (0 if white, 1 if African American)

You'll need one term for effects associated with gender, and another for race

B) Assume Bob that and Lisa are African American and that Jane and Bill are white. Bill and Bob are Male and Lisa and Jane are female.

Calculate the independent variables based on race and gender for Bob with each of his interaction partners:

(Bob, Lisa): same gender = _____; same race = _____

(Bob, Jane): same gender = _____; same race = _____

(Bob, Bill): same gender = _____; same race = _____

Assuming the values of the θ 's are positive and that the effect of race is stronger than gender, who is Bob most likely to talk to?

C) try to include a term capturing the interaction of similarity of race and gender

III) Your own Selection Model (drawing on last week if you like)

A) Identify a network in which you are interested

B) Characterize the theoretical processes through which actors select other with whom to interact. Are there different mechanisms for different types of interactions?

C) write down a model of selection. Define each term.

1) How many different factors affect the selection process?

2) How would you model the stability of interactions over time?

Critiquing the selection model with a partner

I) Compare your calculations for the example selection model

II) One person explain his or her selection model

III) Others critique the selection model

A) Do the terms in model capture aspects of the selection process?

B) Are there terms missing from the model that should be there?

IV) switch roles and repeat II and III.

V) What criteria did you use to choose your interaction partner?