



Path Models III

Modeling from theory



Path Models III

Today's goal:

How to create a full path model for your study, starting from theory

Outline:

- Modeling from theory



Modeling from theory

An example



Theory

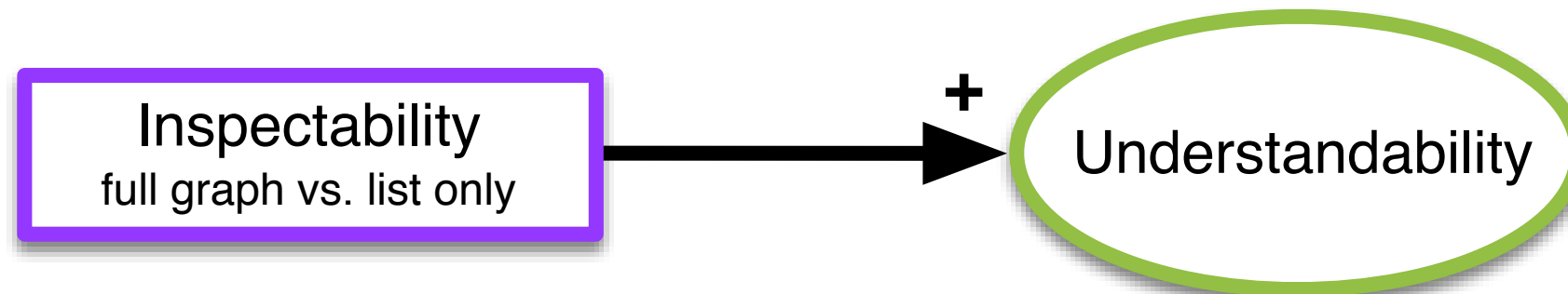
Steps:

1. Build a recursive model based on theory
2. Create a saturated (just-identified) model based on this model



Inspectability

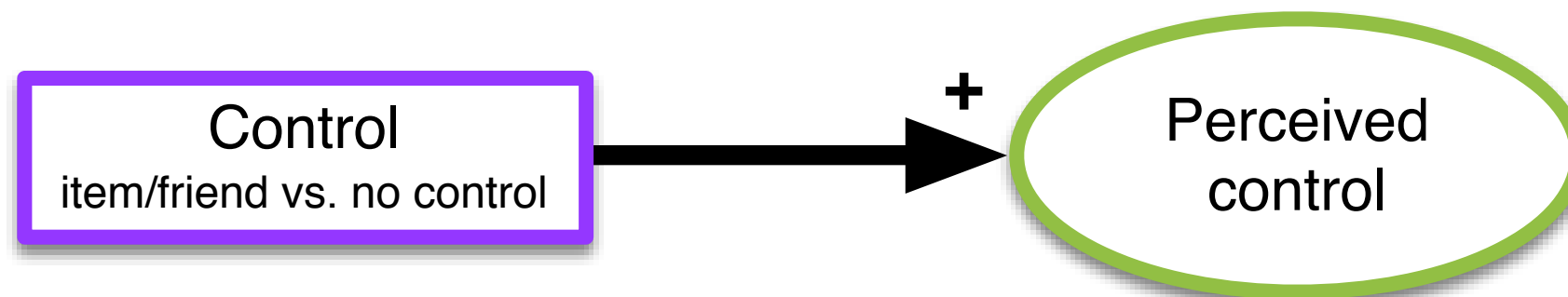
Herlocker argues that explanation provides transparency, “exposing the reasoning behind a recommendation”.





Control

Multiple studies highlight the benefits of interactive interfaces that support control over the recommendation process.

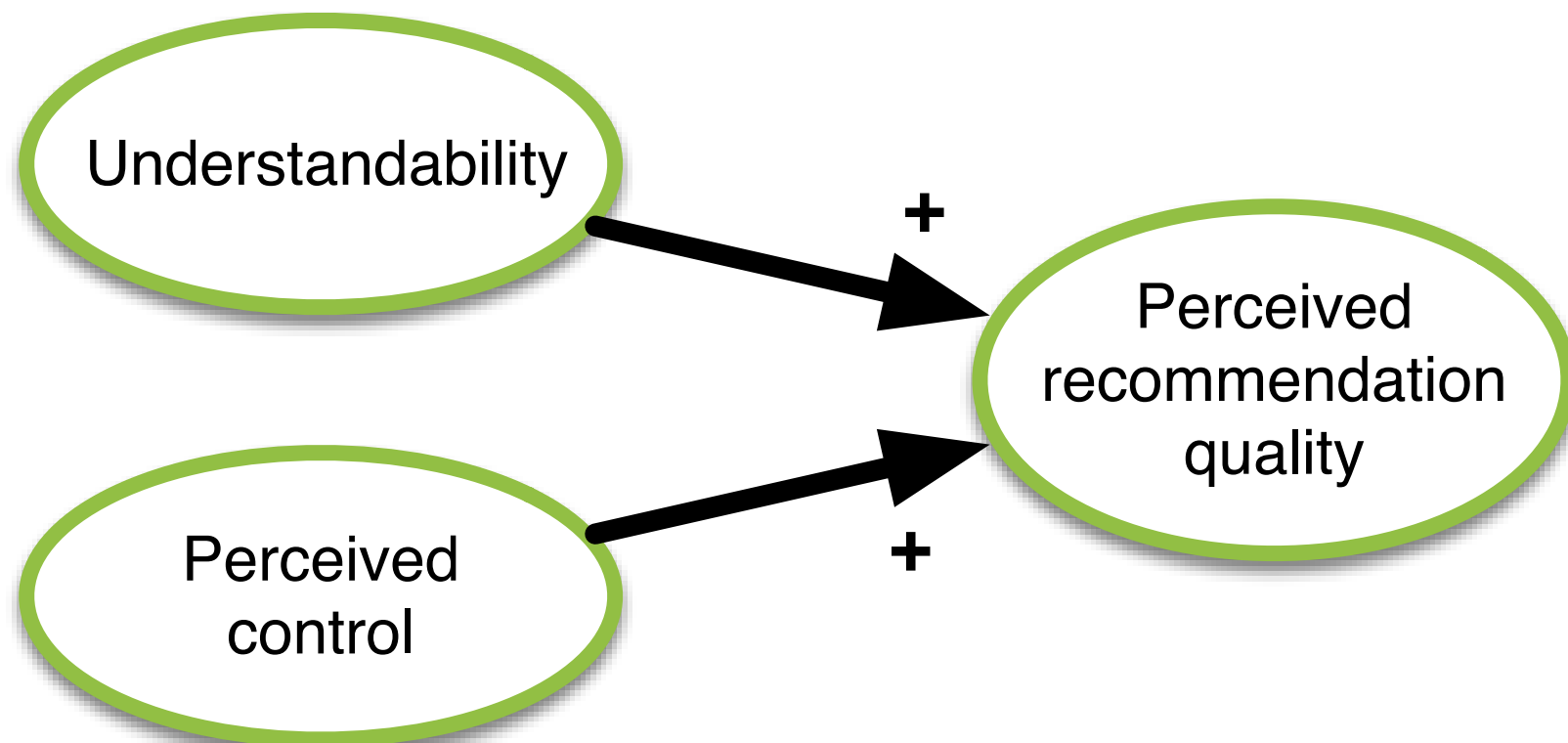




Perceived quality

Tintarev and Masthoff show that explanations make it easier to judge the quality of recommendations.

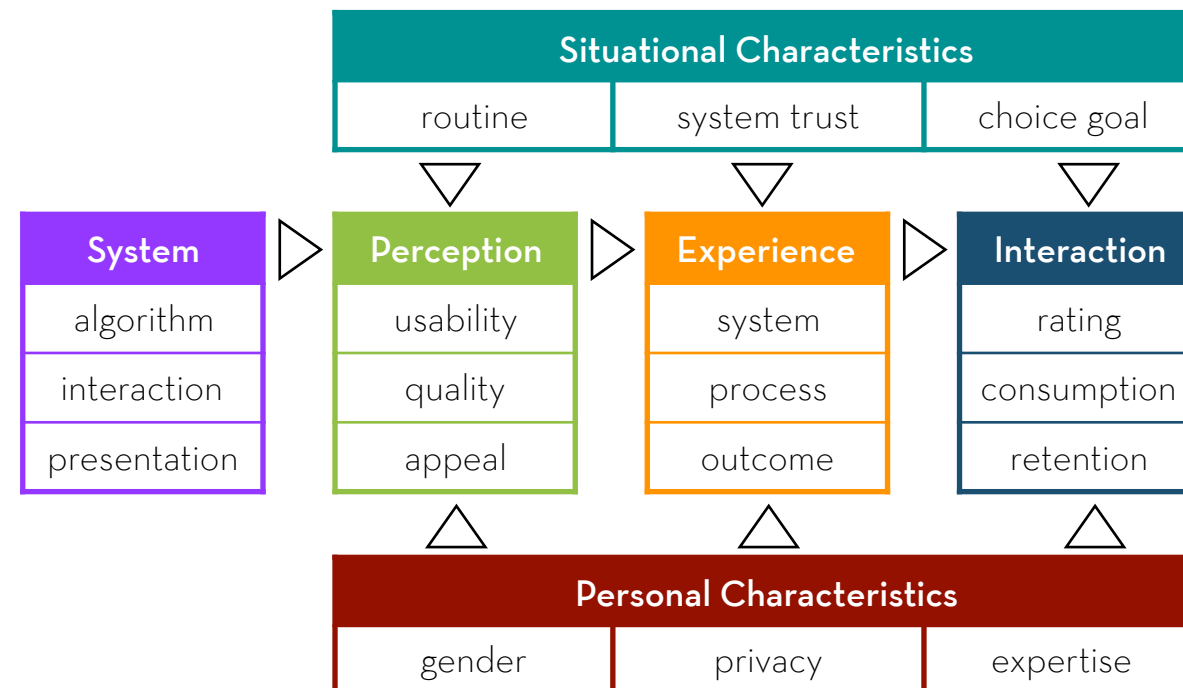
McNee et al. found that study participants preferred user-controlled interfaces because these systems “best understood their tastes”.





Satisfaction

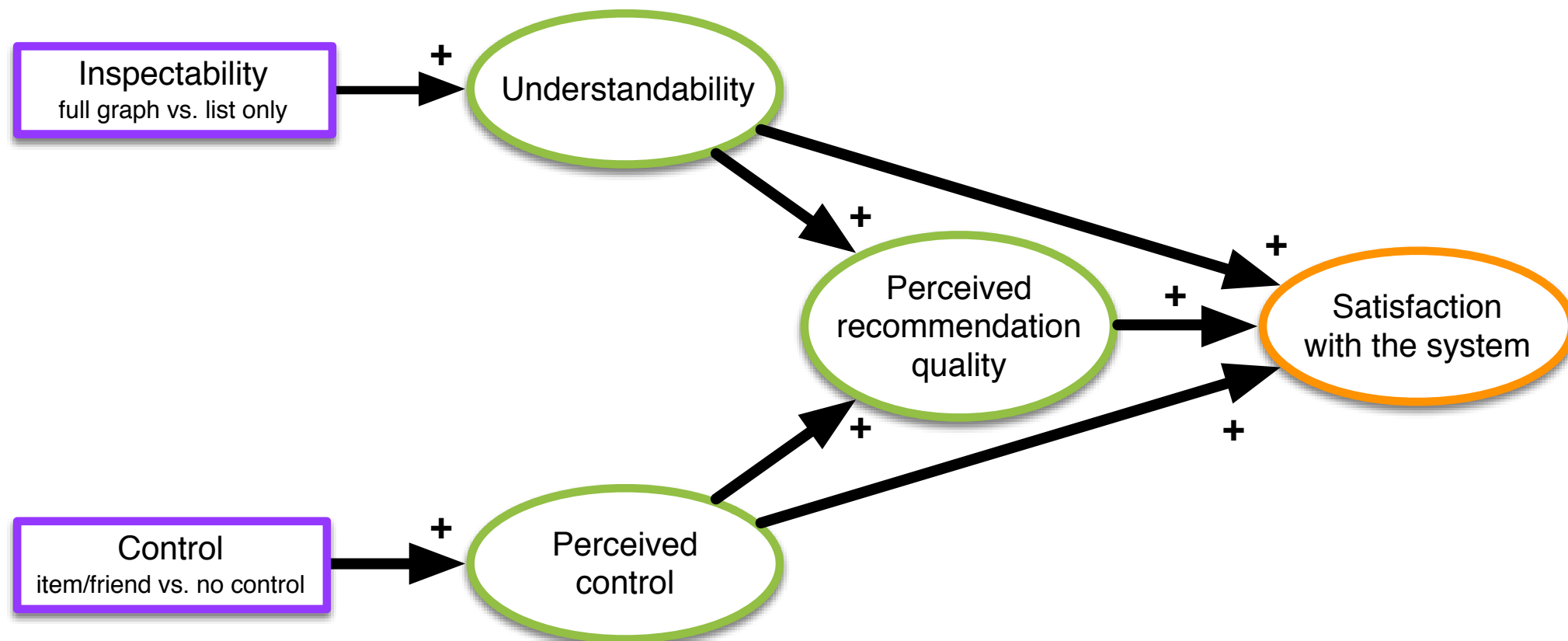
Knijnenburg et al. developed a framework that describes how certain manipulations influence subjective system aspects (i.e. understandability, perceived control and recommendation quality), which in turn influence user experience (i.e. system satisfaction).





Satisfaction

Knijnenburg et al. developed a framework that describes how certain manipulations influence subjective system aspects (i.e. understandability, perceived control and recommendation quality), which in turn influence user experience (i.e. system satisfaction).





Saturated model

Steps:

Determine the causal order of the theoretical model

Put in all the arrows that agree with the causal order

Trim the model, removing non-significant effects

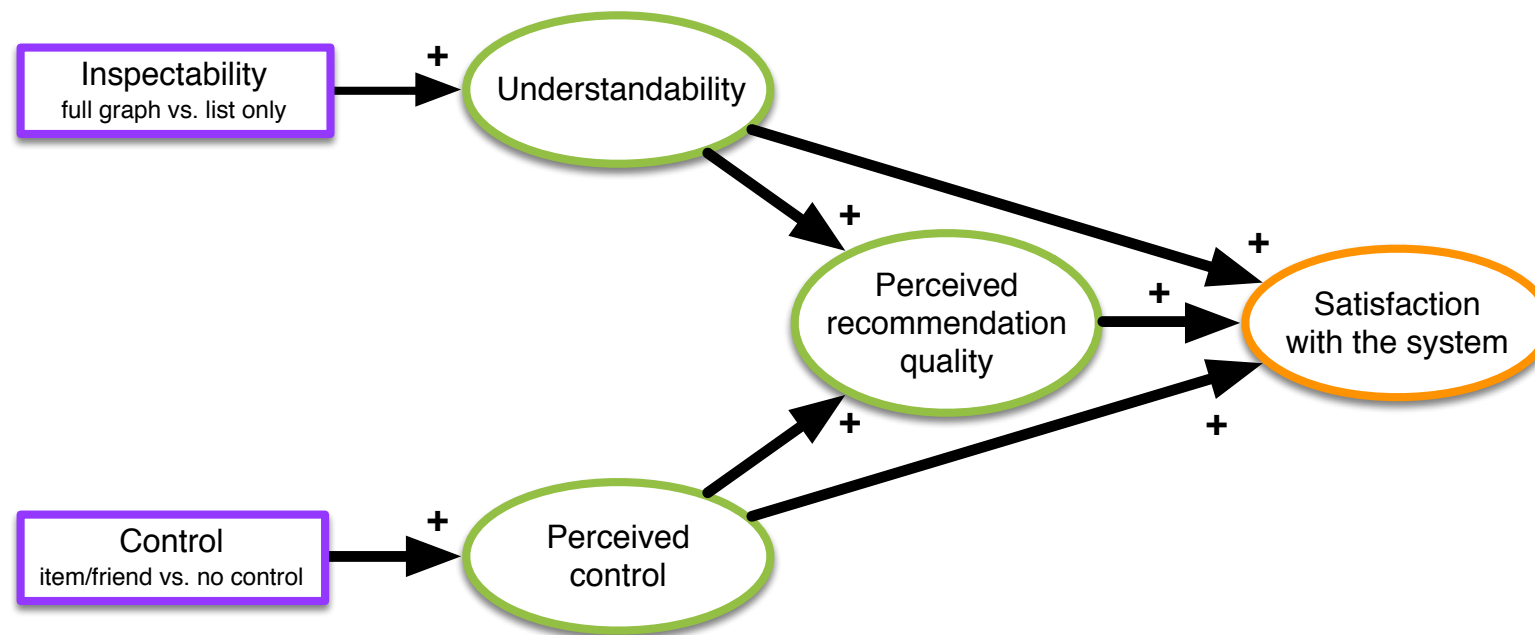
Try alternative specifications, pick the best alternative
(optional)



Causal order

Find the causal order of your model

(fill the gaps where necessary)

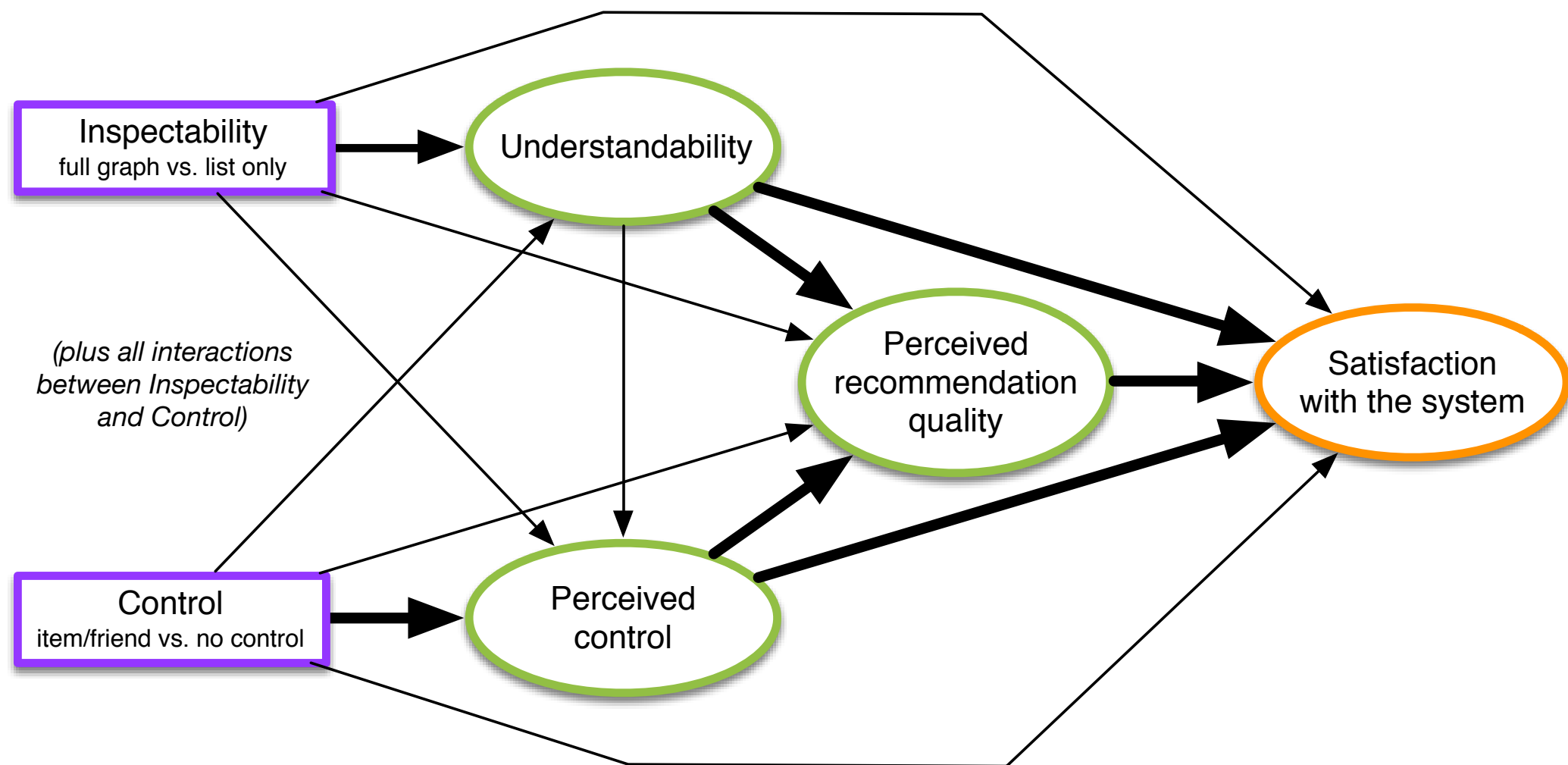


**conditions -> understandability ->
perceived control -> perceived
recommendation quality -> satisfaction**



Saturated model

Fill in all forward-going arrows





Homework 1

Specify this model and find out if it is identified

Trim the model

By removing non-significant effects

Report on the results



Trimming a model

Rules:

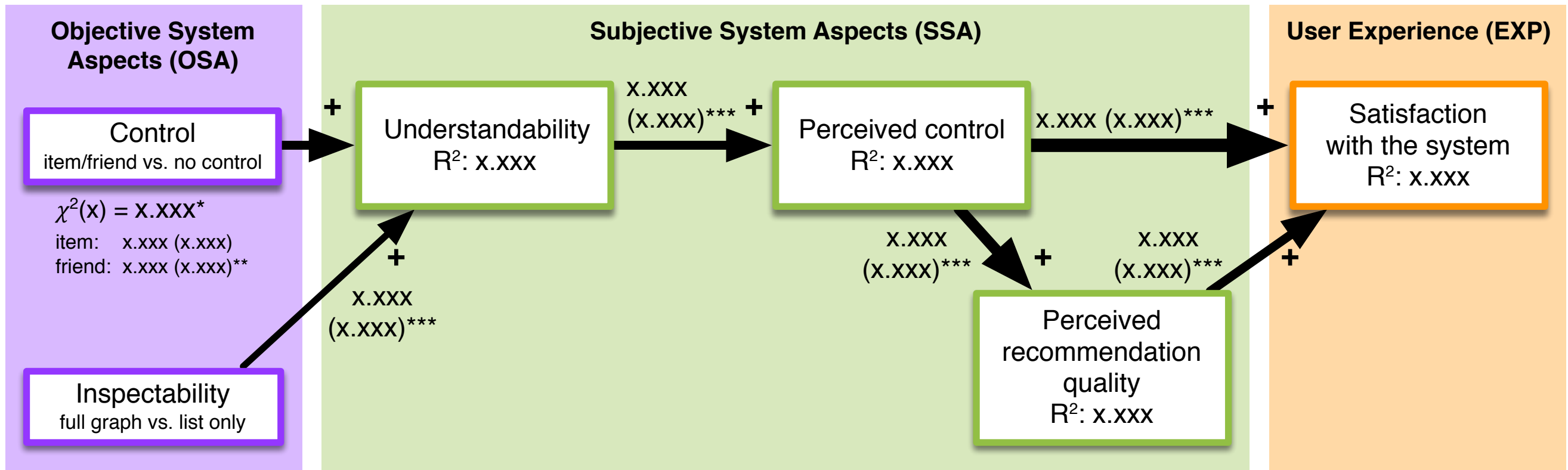
- Start with the least significant and least interesting effects (those that were added for saturation)
- Work iteratively
- Manipulations with >2 conditions: remove all dummies at once (if one is significant, keep the others as well)
- Interaction+main effects: never remove main effect before the interaction effect (if the interaction is significant, keep the main effect regardless)



Final model

Hint: this is what you'll end up with!

(you'll get to fill in the x'es...)



**“It is the mark of a truly intelligent person
to be moved by statistics.”**



George Bernard Shaw