

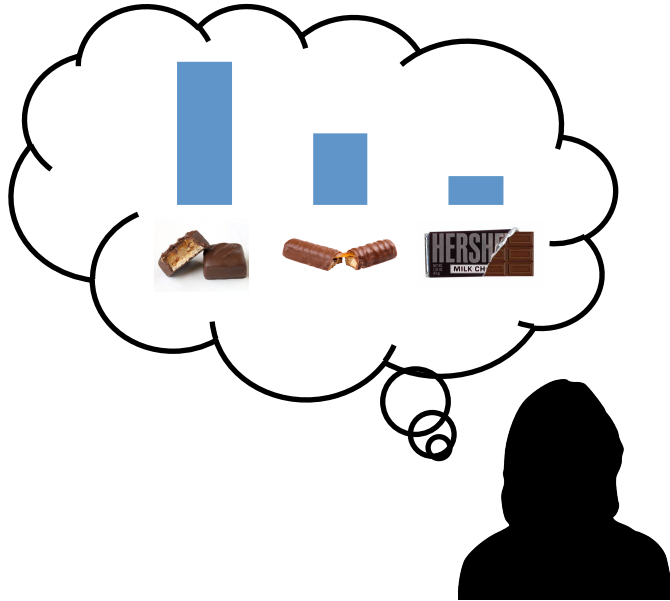
Evaluating the inverse decision-making approach to preference learning

Alan Jern

Christopher G. Lucas

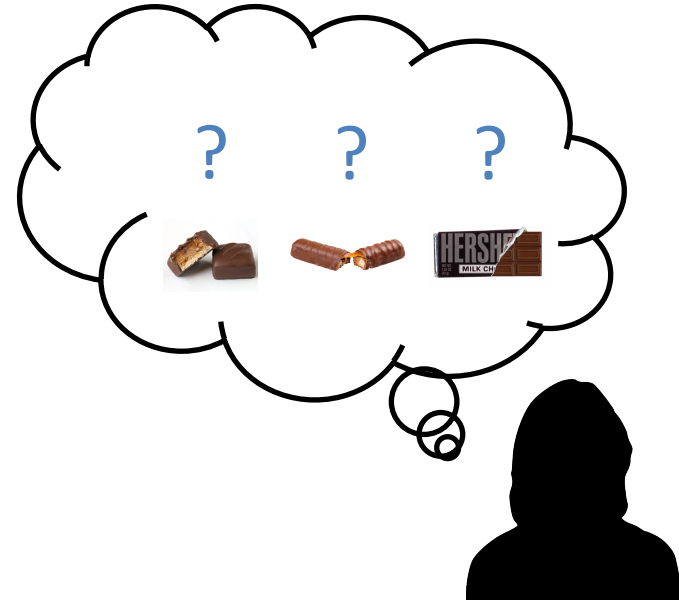
Charles Kemp

Know Alice's preferences



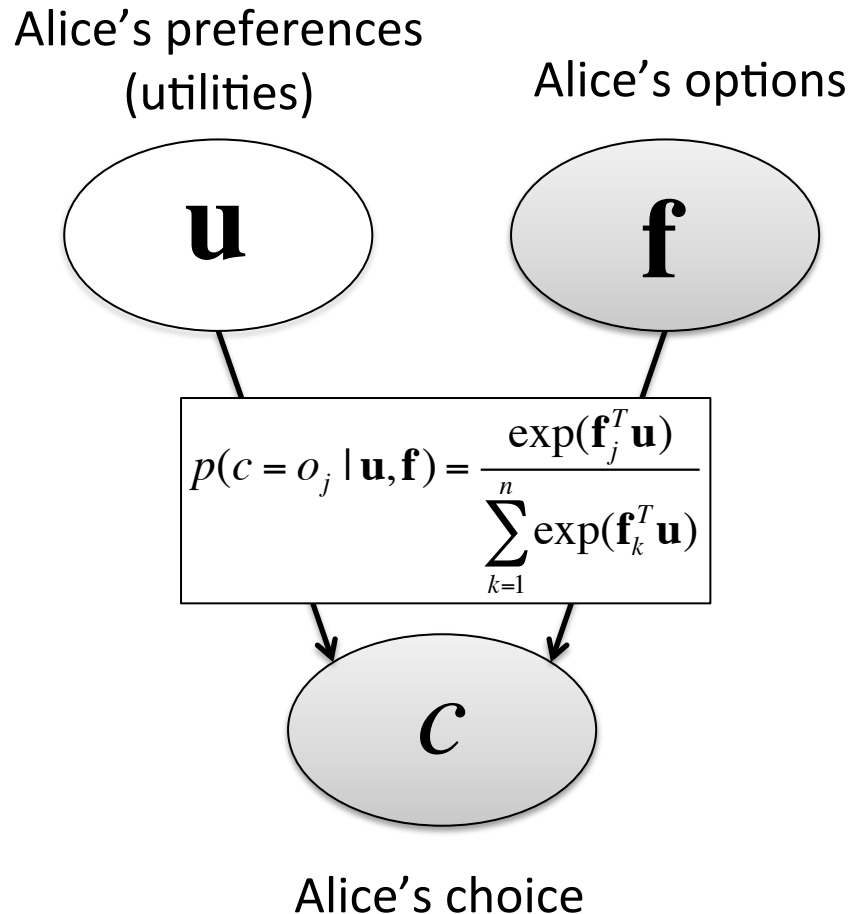
Predict Alice's choice behavior

Infer Alice's preferences

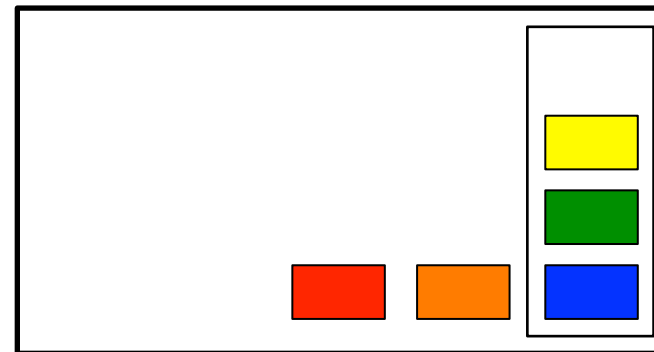


Observe Alice's choice behavior

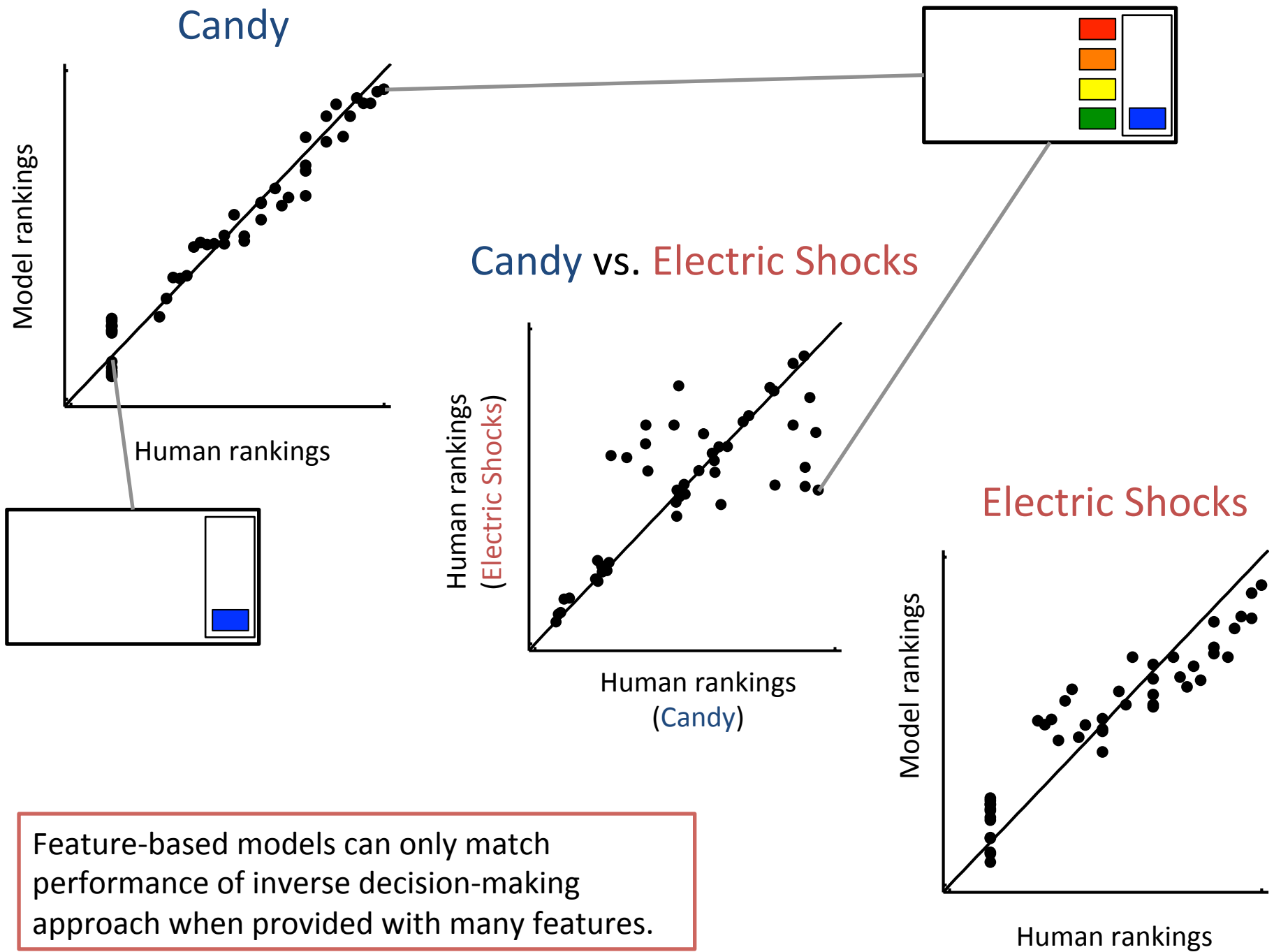
Inferring Alice's preferences



- Generative approach
 - Inverse decision-making (McFadden, 1973; Lucas, et al., 2009; Bergen, Evans, & Tenenbaum, 2010; Jern & Kemp, 2011)
- Discriminative approach
 - Feature-based mapping from decision “features” to preferences



Example decision



Feature-based models can only match performance of inverse decision-making approach when provided with many features.