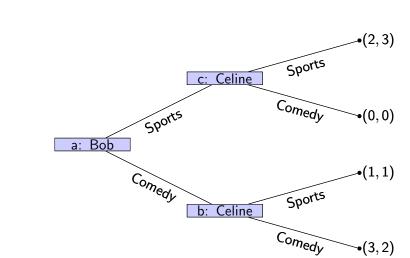
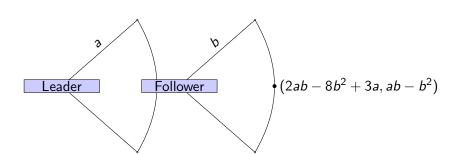
Extensive Form Games Game Theory

Vincent Knight



- ▶ **Sequential rationality:** An optimal strategy for a player should maximise that player's expected payoff, conditional on every information set at which that player has a decision.
- ► Backward induction: This is the process of analysing a game from back to front. At each information set we remove strategies that are dominated.



Leader Follower
$$(2ab-8b^2+3a,ab-b^2)$$

$$\frac{d}{db}(ab-b^2)=0 \Rightarrow b^*=\frac{a}{2}$$

Leader
$$(2ab - 8b^2 + 3a, ab - b^2)$$

$$b^* = a/2$$

$$(2ab - 8b^2 + 3a, ab - b^2)$$

Leader
$$(a^2 - 2a^2 + 3a, a^2/2 - a^2/4)$$

$$\frac{d}{da}(-a^2+3a)=0 \Rightarrow a^*=\frac{2}{3}$$

$$\bigvee$$

$$-a^2$$

$$-a^2$$

$$\frac{d}{da}(-a^2+3a)=0 \Rightarrow a^*=\frac{2}{3}$$

 $(a^2-2a^2+3a,a^2/2-a^2/4)$

 $(a^*, b^*) = (2/3, 2/6)$