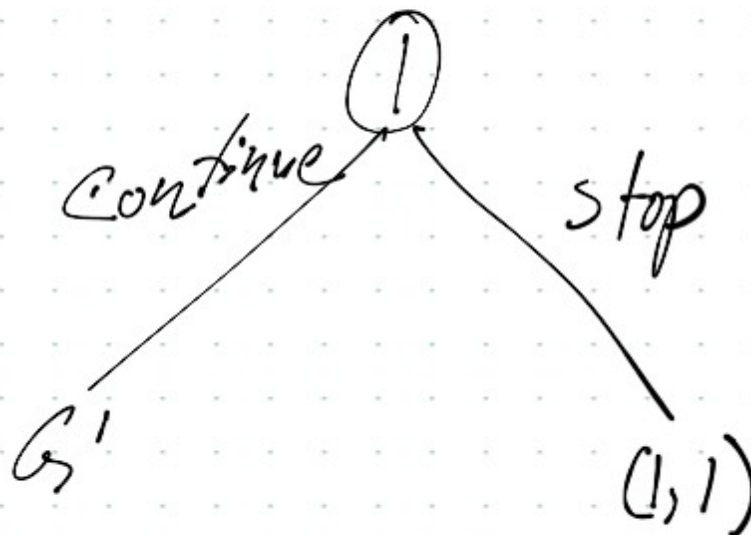


Osborne-Rubinstein103.2

OR 103.2



G' $a_1 \in [0, 1, 2, \dots, \infty]$
 $a_2 \in [0, 1, 2, \dots, \infty]$

| | 0 | 1 | 2 | 3 | ... |
|-----|-----|-----|-----|-----|-----|
| 0 | 0 | 0 | 0 | 0 | ... |
| 1 | 0 | 1 | 2 | 3 | ... |
| 2 | 0 | 2 | ... | ... | ... |
| ... | ... | ... | ... | ... | ... |

or NB in Ω . Conjecture
an equilibrium with $a_1, a_2 = (n, m)$.
4 cases to check:

$$\textcircled{1} a_1 = a_2 = 0$$

$$\textcircled{2} a_1 = 0, a_2 = m > 0$$

$$\textcircled{3} a_2 = 0, a_1 = n > 0$$

$$\textcircled{4} a_1 = n > 0, a_2 = m > 0$$

First check 4, then 2/3, then
1.

$$\textcircled{4} u(a_1 = n) = nm$$

$$< u(a_1' = n+1)$$

$$= (n+1)m$$

$$\begin{aligned} (2/3) \quad u(a_1=0) &= 0 \cdot m \\ &< u(a_1=1) \\ &= m \end{aligned}$$

\Rightarrow not a NE, and $n=1$
returns us to case (4)

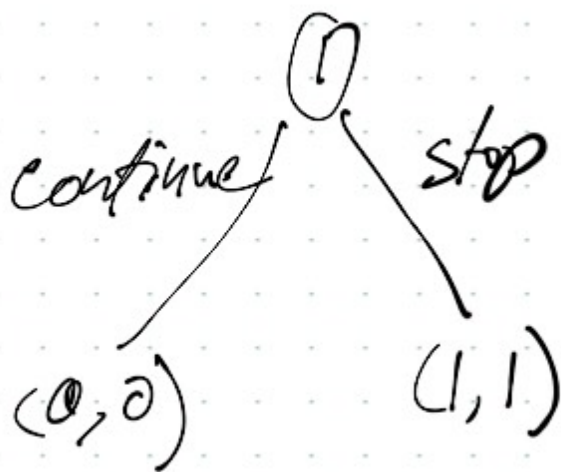
$$\begin{aligned} \textcircled{1} \quad u_1(a_1=0) &= 0 \cdot (m=0) \\ &= 0 \end{aligned}$$

$$\begin{aligned} u_1(a_1=1) &= 1 \cdot 0 \\ &= 0 \end{aligned}$$

$$\boxed{u_1(a_1=0) \geq u_1(a_1 \neq 0)} \quad *$$

Same for u_2, a_2 .

the unique NE of this subgame.
Now back to the whole game

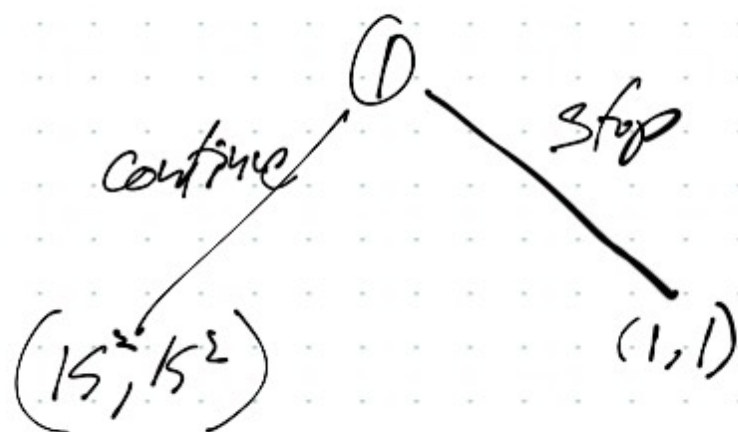


$1 > 0 \Rightarrow a_1 = \text{stop}$ is the
unique NE

For an interesting aside,
note that if we change

we have a new NE in G ,
 $a_1 = a_2 > k$, $u_i(k) = k^2$

We can use CE or something
 similar to pick the NE, \Rightarrow



$\Rightarrow \{(continue, k), (k)\}$ is also a
 SPNE

