

What is Politics?

**Politics** is the subset of human behavior that involves the use of power or influence.

Power is involved whenever individuals can't accomplish their goals without either trying to influence the behavior of others or trying to wrestle free from the influence exerted by others.

Who has power, where does it come from, and when is it used?

## How will a citizen react to a negative change in their environment?

- The government increases taxes.
- The government imposes a ban on handguns.
- The Supreme Court rules that prayer in public schools is unconstitutional.
- The quality of peaches at their local fruit stand declines.

**Exit:** Accept the negative change but alter one's behavior to optimize in the new environment.

**Voice:** Do not accept the negative change and seek to 'persuade' the government to reinstate the original environment.

**Loyalty:** Accept the negative change and make no change to one's pre-existing behavior.

Stimulus	Exit	Voice	Loyalty
The government increases taxes.	Reallocate portfolio to avoid tax increase	Organize tax revolt	Continue to pay taxes, keep your mouth shut
There is a decline in the quality of peaches at the local fruit stand.	Buy mangoes, or buy peaches somewhere else	Complain to the store owner	Continue to eat peaches, keep your mouth shut
The Supreme Court rules that prayer in public schools is unconstitutional.	Homeschool your children	Lobby the government to change the Constitution	Keep your children in the public school system, keep your mouth shut
Your state outlaws handguns.	Move to a different state	Join the NRA or a militia group to put pressure on the state to allow handguns	Turn in your handguns, keep your mouth shut

So, how should the citizen react to the negative change in their environment?

So, how should the citizen react to the negative change in their environment?

Much presumably depends on what the citizen thinks the government will do.



**Respond:** Respond positively and reinstate the original environment.

**Ignore:** Ignore the citizen and maintain the new environment.

Game theory is a fundamental tool for analyzing strategic situations.

In a strategic situation, the choices of one actor depend on the choices made by other actors.

We can think of the decisions to be made by the citizen and the government as a game.

A **game** is a situation in which an individual's ability to achieve their goals depends on the choices made by other actors.

Games have players and rules about how decisions are made.

The basic rule is that players choose to do what they believe is in their best interest.

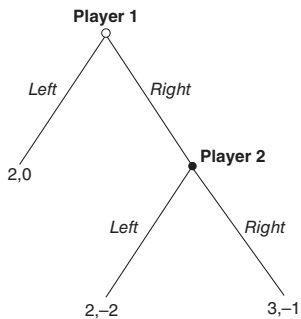
The interests of the players are reflected in the **payoffs** associated with each of the possible outcomes in a game.

Players prefer outcomes with higher payoffs.

Two common ways of modeling strategic interactions:

**Extensive Form Games** → sequential choices.

**Normal Form Games** → simultaneous choices.



Extensive Form Game

		2	
		<i>L</i>	<i>R</i>
1	<i>U</i>	3, 3	1, 4
	<i>D</i>	4, 1	2, 2

Normal Form Game

An extensive form game consists of choice nodes linked in a sequence.

A **choice node** is a point in the game at which a player must choose an action.

The **initial node** is the place where the game begins.

The **branches** represent the actions that can be taken at the choice nodes.

A **game tree** is the entire specification of choice nodes, branches, and payoffs.

## The Exit, Voice, and Loyalty (EVL) Game



## Prehistory ...

- There's been a negative shock resulting in a transfer of some benefit from the citizen to the government.
- The negative shock might be a tax increase.

Citizen must decide whether to **exit**, use **voice**, or remain **loyal**.

O1: Government keeps benefit;  
citizen opts for some substitute

*Exit*   **Citizen**   *Loyalty*

O2: Government keeps  
benefit; citizen suffers loss

*Voice*

**Government**

*Respond*

*Ignore*

O3: Government returns  
benefit to citizen

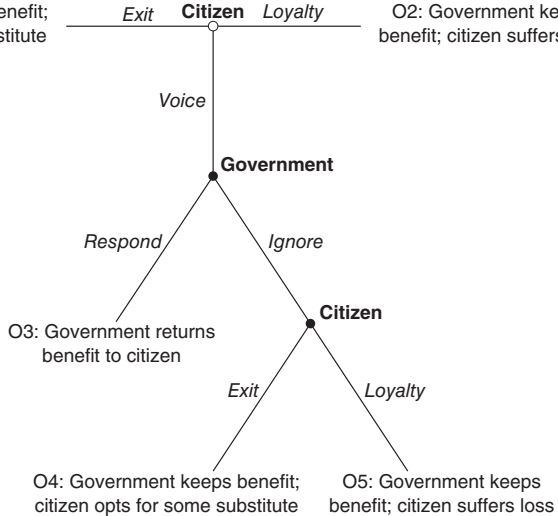
**Citizen**

*Exit*

*Loyalty*

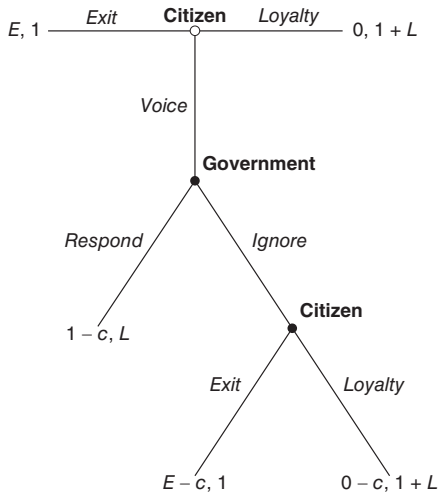
O4: Government keeps benefit;  
citizen opts for some substitute

O5: Government keeps  
benefit; citizen suffers loss



## Turning Outcomes into Payoffs

Outcome	Description	Citizen	Government
01	The government keeps the benefit but loses the support of the citizen. The citizen opts for some substitute.	$E$	1
02	The government keeps both the benefit and the support of the citizen. The citizen suffers their loss in silence.	0	$1 + L$
03	The government returns the benefit to the citizen and keeps their support.	$1 - c$	$L$
04	The government keeps the benefit but loses the support of the citizen. Having used their voice, the citizen opts for some substitute.	$E - c$	1
05	The government keeps both the benefit and the support of the citizen. Having used their voice, the citizen suffers their loss.	$0 - c$	$1 + L$



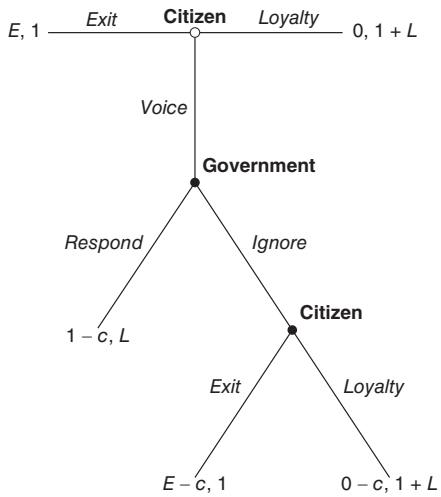
## Solving the EVL Game

A **rational player** does what they believe is in their best interest given what they know at the time.

A **subgame perfect equilibrium** is an important solution concept for extensive form games in which all actors do the best they can at every point where they could possibly make a decision.

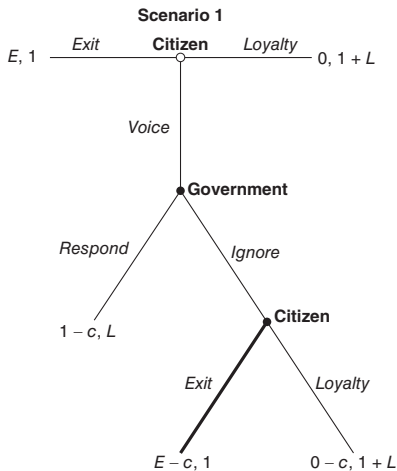
A **subgame perfect equilibrium** can be found using a method known as backward induction.

**Backward induction** is the process of reasoning backward, from the end of the game or situation to the beginning, in order to determine an optimal course of action.

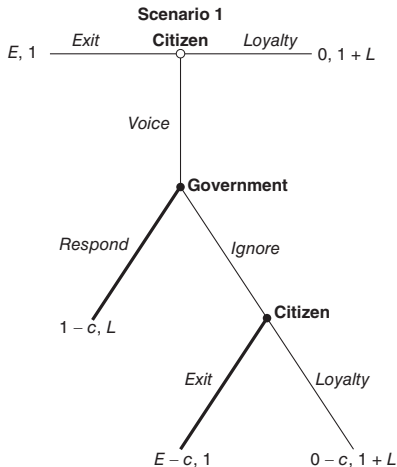




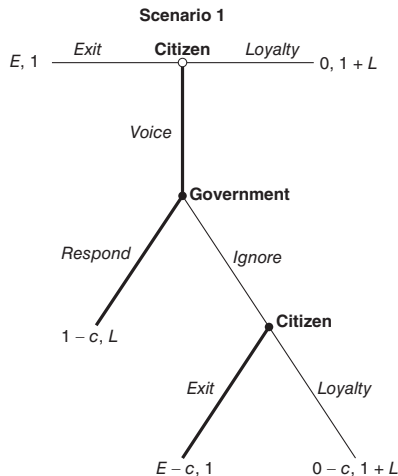
Solving the EVL Game when the citizen has a credible exit threat ( $E > 0$ ):  
Step 1



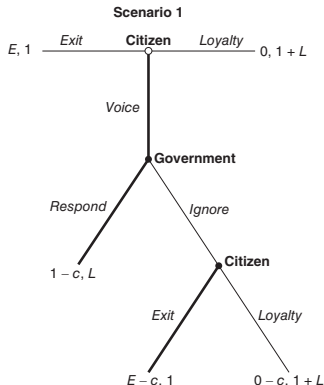
Solving the EVL Game when the citizen has a credible exit threat ( $E > 0$ ) and the government is dependent ( $L > 1$ ): Step 2



Solving the EVL Game when the citizen has a credible exit threat ( $E > 0$ ), the government is dependent ( $L > 1$ ), and  $E < 1 - c$ : Step 3



Solving the EVL Game when the citizen does have a credible exit threat ( $E > 0$ ), the government is dependent ( $L > 1$ ), and  $E < 1 - c$

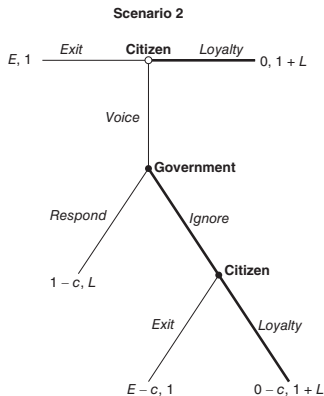


**Subgame perfect equilibrium:** (Voice, Exit; Respond)

**Observed outcome:** Citizen uses voice and government responds.

**Payoffs:** Citizen obtains  $1 - c$  and government obtains  $L$ .

Solving the EVL Game when the citizen does not have a credible exit threat ( $E < 0$ ), the government is dependent ( $L > 1$ ), and  $E < 1 - c$

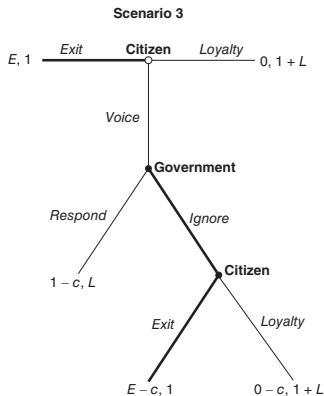


**Subgame perfect equilibrium:** (Loyalty, Loyalty; Ignore)

**Observed outcome:** Citizen remains loyal.

**Payoffs:** Citizen obtains 0 and government obtains  $1 + L$ .

Solving the EVL Game when the citizen does have a credible exit threat ( $E > 0$ ), the government is autonomous ( $L < 1$ ), and  $E < 1 - c$

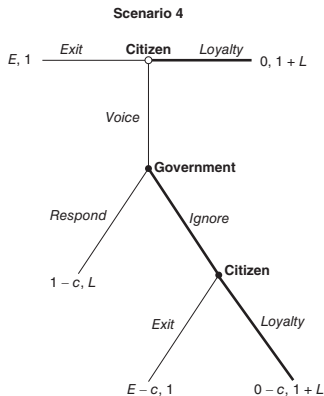


**Subgame perfect equilibrium:** (Exit, Exit; Ignore)

**Observed outcome:** Citizen exits.

**Payoffs:** Citizen obtains  $E$  and government obtains 1.

Solving the EVL Game when the citizen does not have a credible exit threat ( $E < 0$ ), the government is autonomous ( $L < 1$ ), and  $E < 1 - c$



**Subgame perfect equilibrium:** (Loyalty, Loyalty; Ignore)

**Observed outcome:** Citizen remains loyal.

**Payoffs:** Citizen obtains 0 and government obtains  $1 + L$ .

## Summary of Subgame Perfect Equilibria and Outcomes

	The Government	
	Is autonomous ( $L < 1$ )	Is dependent ( $L > 1$ )
The citizen		
Has a credible exit threat ( $E > 0$ )	(Exit, Exit; Ignore) Outcome 1	(Voice, Exit; Respond) Outcome 3
Has no credible exit threat ( $E < 0$ )	(Loyalty, Loyalty; Ignore) Outcome 2	(Loyalty, Loyalty; Ignore) Outcome 2



## Evaluating the EVL Game

The government responds positively to voice only if

1. the citizen has a credible exit threat

*and*

2. the government is dependent on the citizen.

Think about what this means for your life!

In the absence of a credible exit threat, the citizen is a sitting duck!

The government can take away their benefits, and there's nothing they can do about it but accept the new state of affairs.

It's sometimes difficult to draw inferences from real-world observations.

While it's always possible to infer the citizen's type by observing their actions, this isn't the case with the government.

Voice, or the lack thereof, can't be taken as a straightforward revelation of citizen preferences.

Why would a dependent state ever take a benefit away from citizens with credible exit threats?

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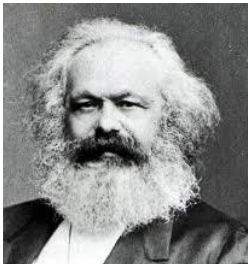
It wouldn't!

Power isn't always observable.

This poses a big problem for empirical political science.

When power is most potent, it's least likely to be used.

- Voice  $\neq$  Power.
- Presidential vetos.



- Structural dependence of the state on capital.



- Different economic sectors.
- 2008 US Bailout, click [▶ here](#)



The model suggests that citizens use voice only when it's effective.

**But** we often see governments ignoring citizens who are protesting.  
Why?

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The model suggests that citizens use voice only when it's effective.

**But** we often see governments ignoring citizens who are protesting.  
Why?

1. Voice may be a benefit rather than a cost.
2. Incomplete information.