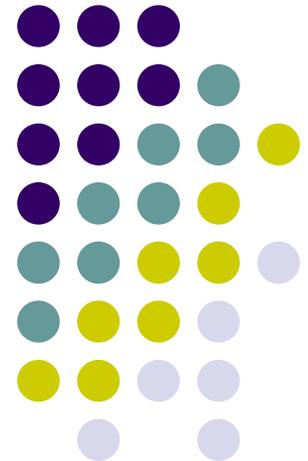
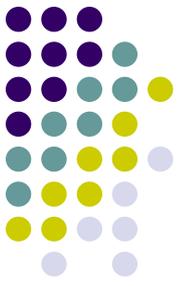


# Polimetrics

Spatial Theories (1):  
The Core Party Theory



# Core party



**Starting assumption:** political actors care about policy (either directly or indirectly...cause voters **do care** about policy after all !)

Therefore they **will try to influence** as much as possible the policy program of the prospective government

That is, parties' payoffs are **positively related** to the **spatial proximity** between their ideal points and the policy agreement pledged by the forthcoming government

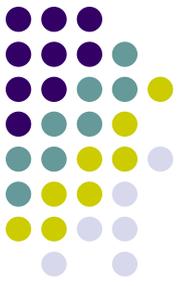
# Core party



Aim of the core-party theory: **finding the equilibrium of the negotiation strategies** that parties of a multiparty system undertake after an electoral event in order to give rise to a policy agreement among parties

Such theory maintains that **stability is assured** if a majority agreement among parties **cannot be threaten** by other majorities, finding a different agreement more valuable

# Core party in one dimension

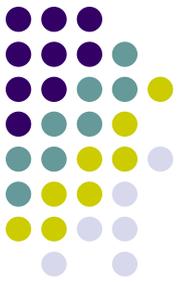


## The role of the **core party**

A core party is a party occupying a position in the policy space that **cannot be defeated** in a majority vote

In one dimension, the party that incorporates the **median voter** will be the core party

# What is a median value?



The middle number (in a sorted list of numbers)

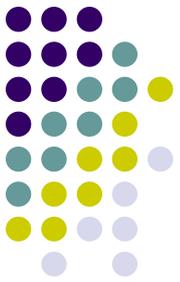
To find the Median, place the numbers you are given in value order and find the middle number

Example with an **odd series** of numbers: find the Median of {13, 23, 11, 16, 15, 10, 26}.

Put them in order: {10, 11, 13, 15, 16, 23, 26}

The middle number (i.e., (i.e., the number that occupies the position  $(n+1)/2=4$  ) is 15, so the median is 15

# What is a median value?

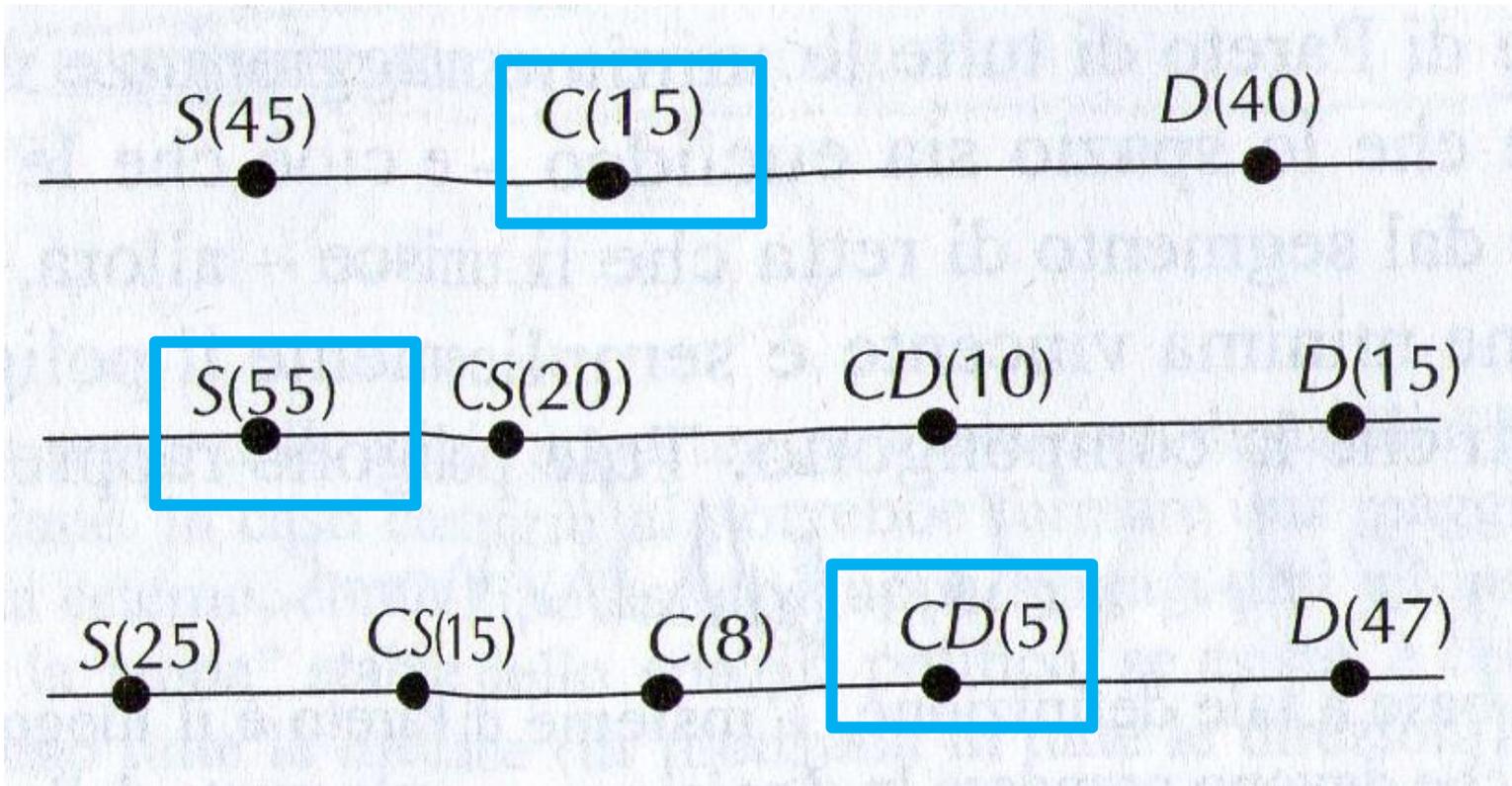
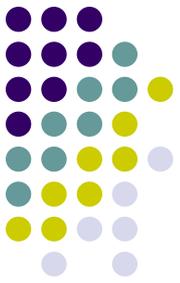


Example with an **even** series of numbers: find the Median of {10, 11, 13, 15, 16, 18, 23, 26}

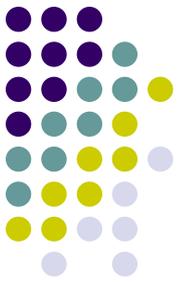
In this case the Median is estimated using the values of the two numbers occupying position  $(n/2)=4$  &  $(n/2)+1=5$

You then generally average them (in this case = 15.5)

# Core party in one dimension: a Parliament with 100 seats



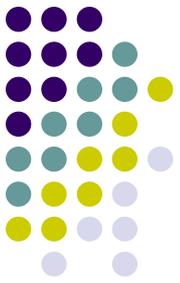
# Core party in one dimension



In one dimension, a core party **will always exist**

Therefore, in one dimension, we will have **always a policy equilibrium**

# Core party in one dimension

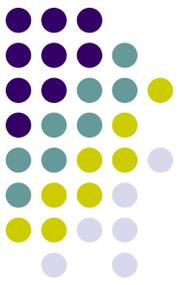


But...

- 1) usually cabinet coalitions aggregate themselves **starting from large party**
- 2) often cabinet coalitions are **not stable**

How to reconnect these two empirical facts to the theory? **Multidimensionality!**

# Core party in two dimensions

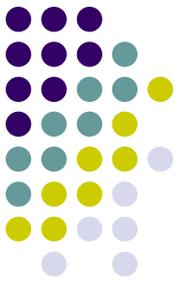


In multiple dimensions, a core party **will only exist** when all **median lines** (i.e., lines presenting a majority in both closed half spaces created by each line) **intersect** at one party's ideal point, which for that reason is the **core party**

When such a situation is verified, the negotiations among parties **will end** with a coalition government that has the **core party** as a **member** and its ideal point as a **policy program**

This happens because, as it happens in 1-dimension, the core party location in the policy space is **such that no other policy program will be preferred to it by some majority coalitions**

# Pareto Set definition

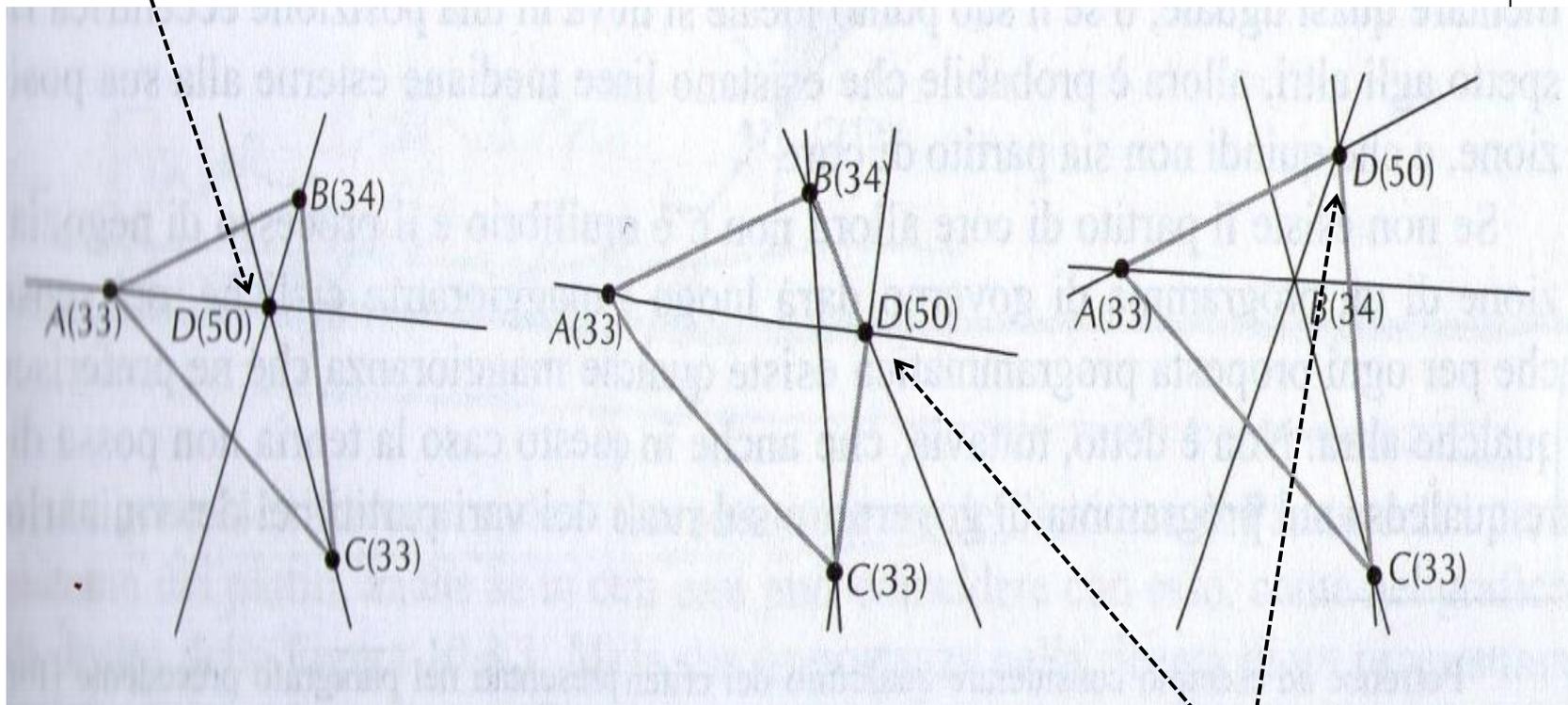


A **Pareto Set** is the smallest convex polygon with angles on a given set of parties' ideal points

It identifies the set of points that **cannot be beaten** if decisions are taken by unanimity by the parties bounding the Pareto Set

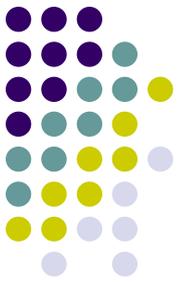
Each point outside the Pareto Set **can always be beaten unanimously** by a point within the Pareto Set

D is a core party. This can also be seen by noting that the D lies inside the **Pareto set** of all possible parliamentary majorities that excludes it.



D is not a core party. In fact D lies outside the **Pareto set** of one parliamentary majority that excludes it (ABC)

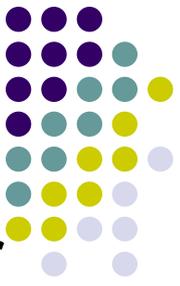
# Core party in two dimensions



In few words, a **core party** is party with a “**central**” ideological position in the system, relative to the position of the other parties

Moreover it must be the **largest one** in the space! Why that?

# Stability and instability of a core

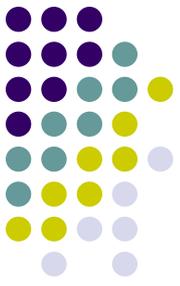


A core party can be **structurally stable** or **unstable**

We have a **structurally stable core** (or a strong/real core) when small changes in party locations do not affect its status. In general, only the **largest party** in the parliament can aspire to become a structurally stable core

A **structurally unstable** (or weak) core will collapse if such movements are allowed

# A structural unstable core



A (10)



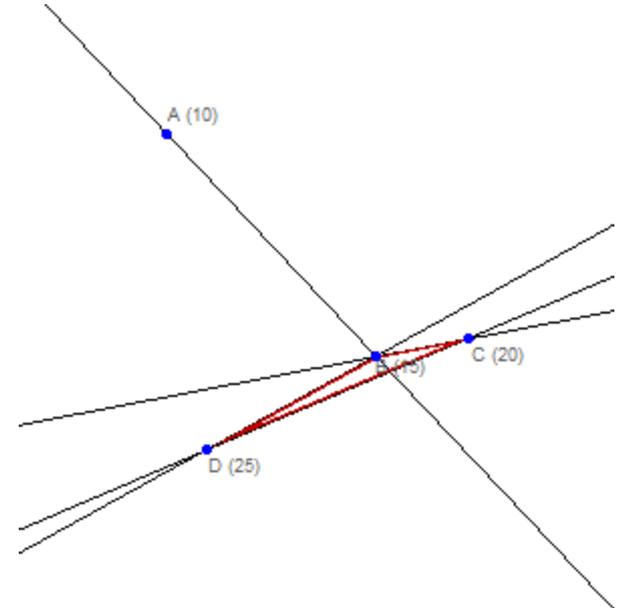
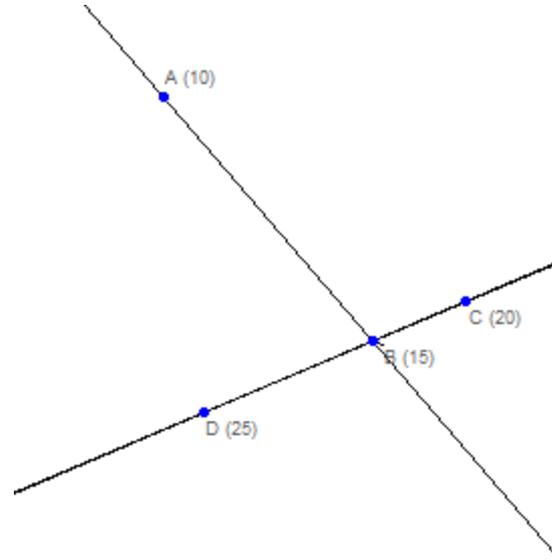
B (15)



C (20)



D (25)



# A structural stable core



A (10)

D (15)

B (25)

C (20)

A (10)

B (25)

C (20)

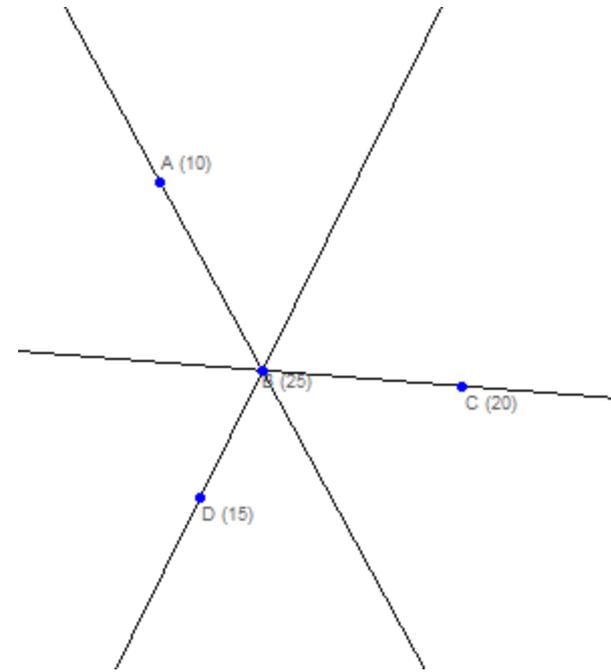
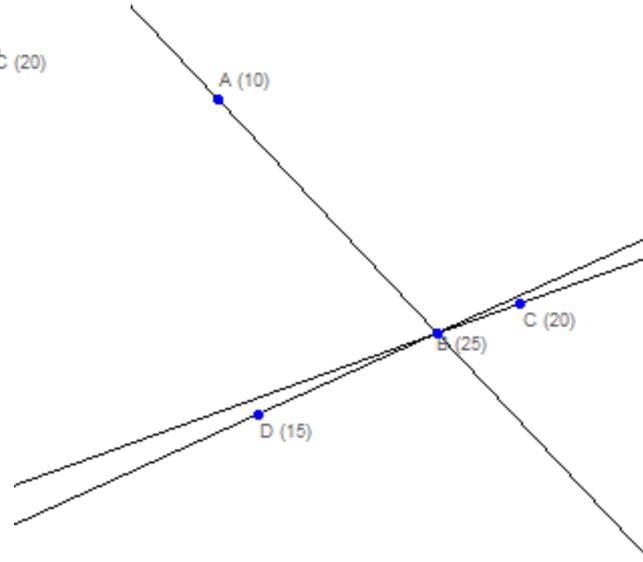
D (15)

A (10)

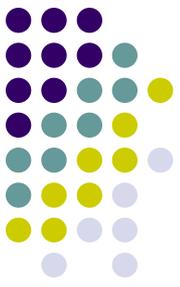
B (25)

C (20)

D (15)



# Stability and instability of a core



The **theoretical** and **empirical** importance of being structurally stable

Given that one is always **uncertain** (to a varying degree) about the precision of estimates of party policy scores, checking for this is crucial to be sure about the empirical implications of spatial theoretical models

# Core party in two dimensions



When a core party is **absent**, we expect **policy instability**

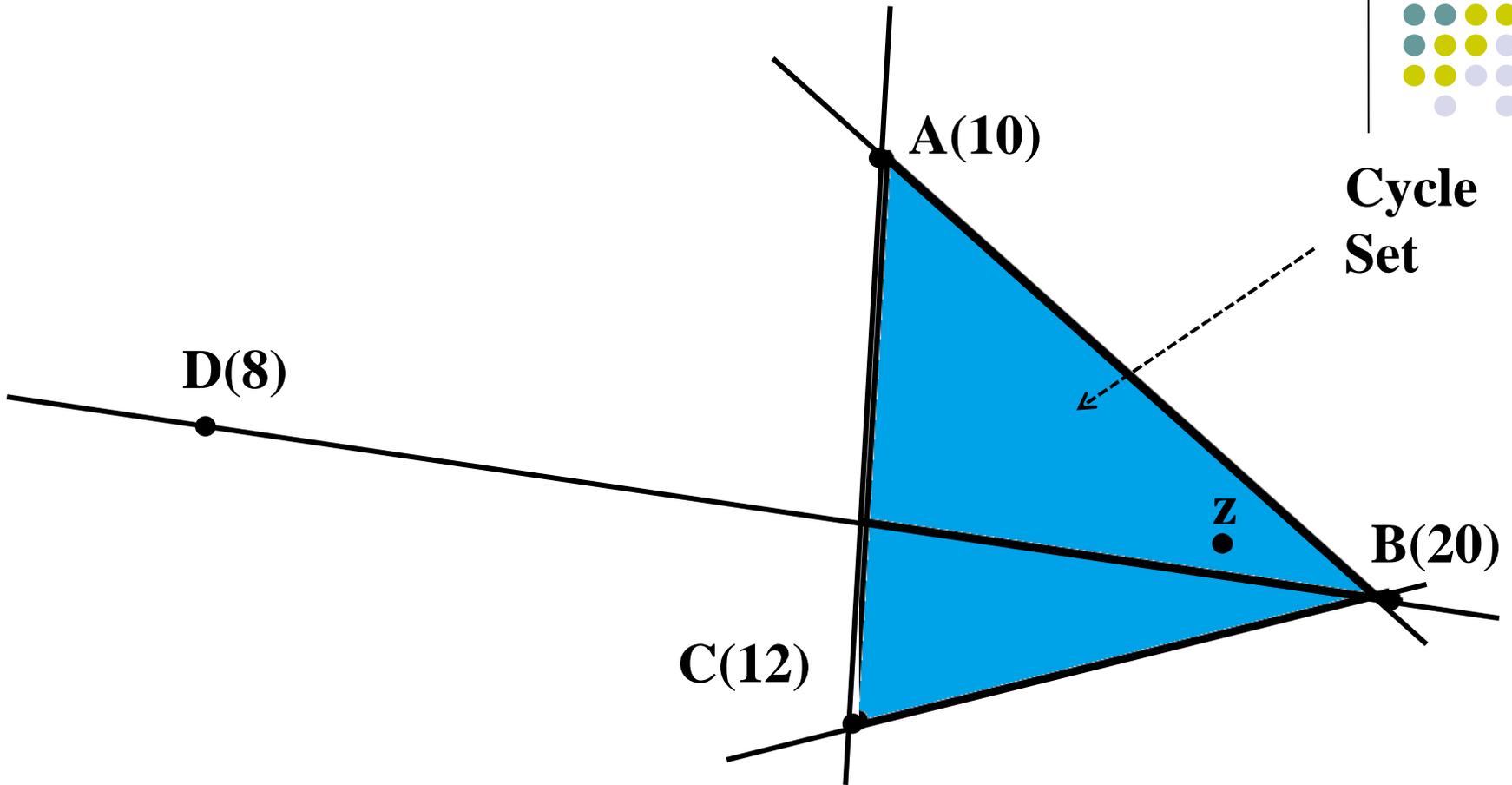
Because there is **no undominated** policy point in the space, any majority coalition that forms around a given point can be upset by another majority coalition whose members all prefer another policy point

Still, assuming that **no policy proposals will be made** that make all members of a majority coalition **worse off**, then **only the points** in the policy space that are bounded by the median lines **can be solutions** of the bargaining game among parties

The **cycling** will be confined to within such space locus

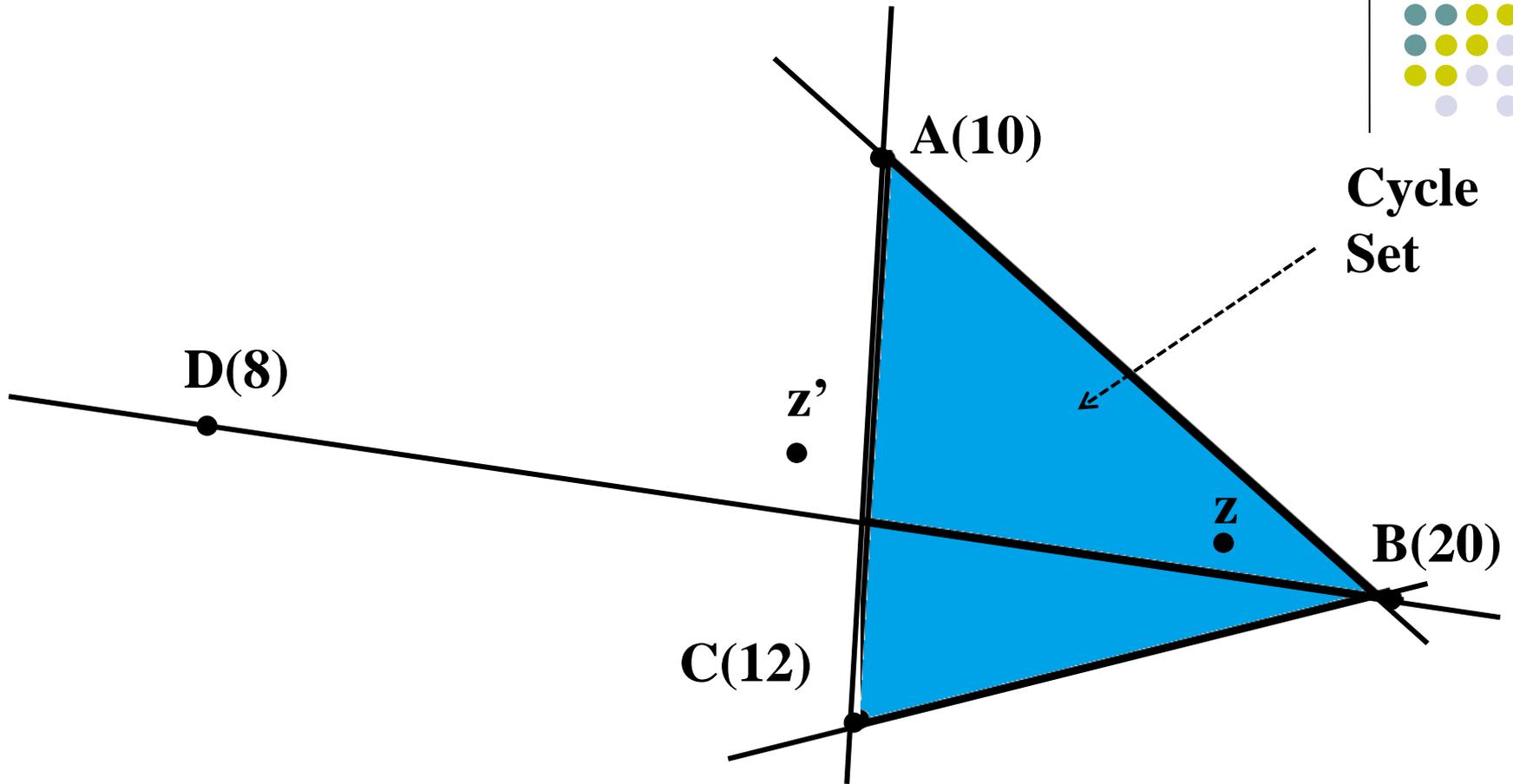
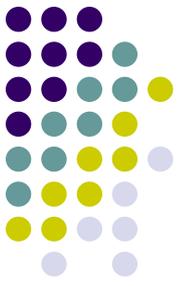
The space locus of these points is named **cycle set**

# The cycle set (40 seats Assembly)



Any point **within** the cycle-set, i.e. **z**, can be beaten according to a majority rule **ONLY** by some other point **that belongs to the cycle-set**

# The cycle set (40 seats Assembly)



**In contrast**, any point outside the cycle-set, i.e.  $z'$ , can **never be the solution of the cabinet bargaining!** We can always find points within the triangle ABC that beats it!

# The cycle set



Which consequences?

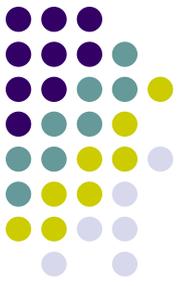
**Cabinet composition:** the core party will always belong to any cabinet

If there is a **cycle-set**, one expects that only the members on the boundary of the cycle-set (that we can call “**dominant**” **parties** in the policy space) will have a concrete voice in the definition of the cabinet program, contrary to “peripheral” parties

In fact, by confining the cycle set, only the former parties can realistically propose an alternative policy point that can appeal to a majority coalition

Precisely for that, we expect the coalition that eventually forms to contain **one or more members on the boundary of the cycle-set**

# The cycle set



## Which consequences?

We can also assign a **probability** to the different types of cabinet coalitions involved in the cycle set

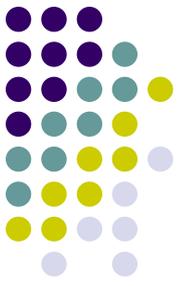
Such **probability decreases** as the spatial distance between dominant parties increases.

The reason for this expectation is **rather intuitive**: the closer two parties are to each other, the smaller the chance that any possible agreed-upon cabinet program will ever result in policies (too) far away from their respective ideal points

Therefore, if there are two possible coalitions involving party B, we can conclude that the coalition that will be formed is the one in which the least favorable possible outcome (in terms of cabinet programs) for party B is better than the alternative

This is true, in particular, if we assume that parties are (at least partly) **risk-adverse**

# The cycle set



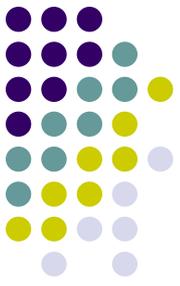
## Which consequences?

**Cabinet bargaining:** the existence of a core party should decrease the amount of time needed to form a cabinet

**Cabinet (& policy) stability:** the existence of a core party may enhance cabinet stability by giving the core party a **strong bargaining position** (Schofield, Grofman and Feld 1988; Curini 2011)

Such core party will extract the largest policy gains by the cabinet. Moreover, in such instance, the (expected degree of) policy change enacted by the cabinet should be larger (**as long as the status-quo** is located far away from the core-party)

# The cycle set



## Which consequences?

On the contrary the **absence of a core party** may lead to a **longer cabinet bargaining** & to more **cabinet instability** because there are competing winning coalitions that could form with outcomes preferred to that produced by the present coalition (Grofman 1989)

In this sense, the **size of the cycle set** should be inversely related to cabinet longevity