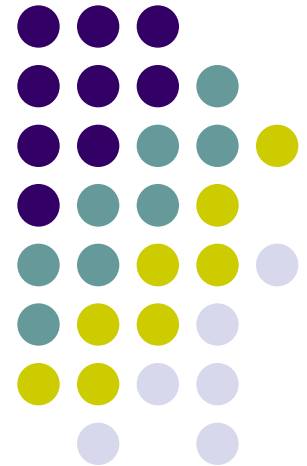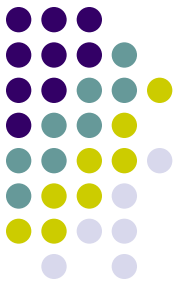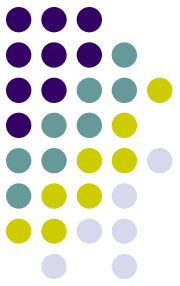# Polimetrics

The Core Party Theory

Core party

Starting assumption: political actors care about policy: either *directly* or *indirectly*…why 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
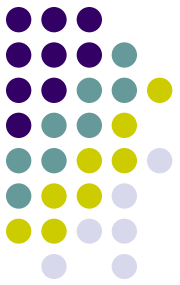
Core party in one dimension

Definition: What is a 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
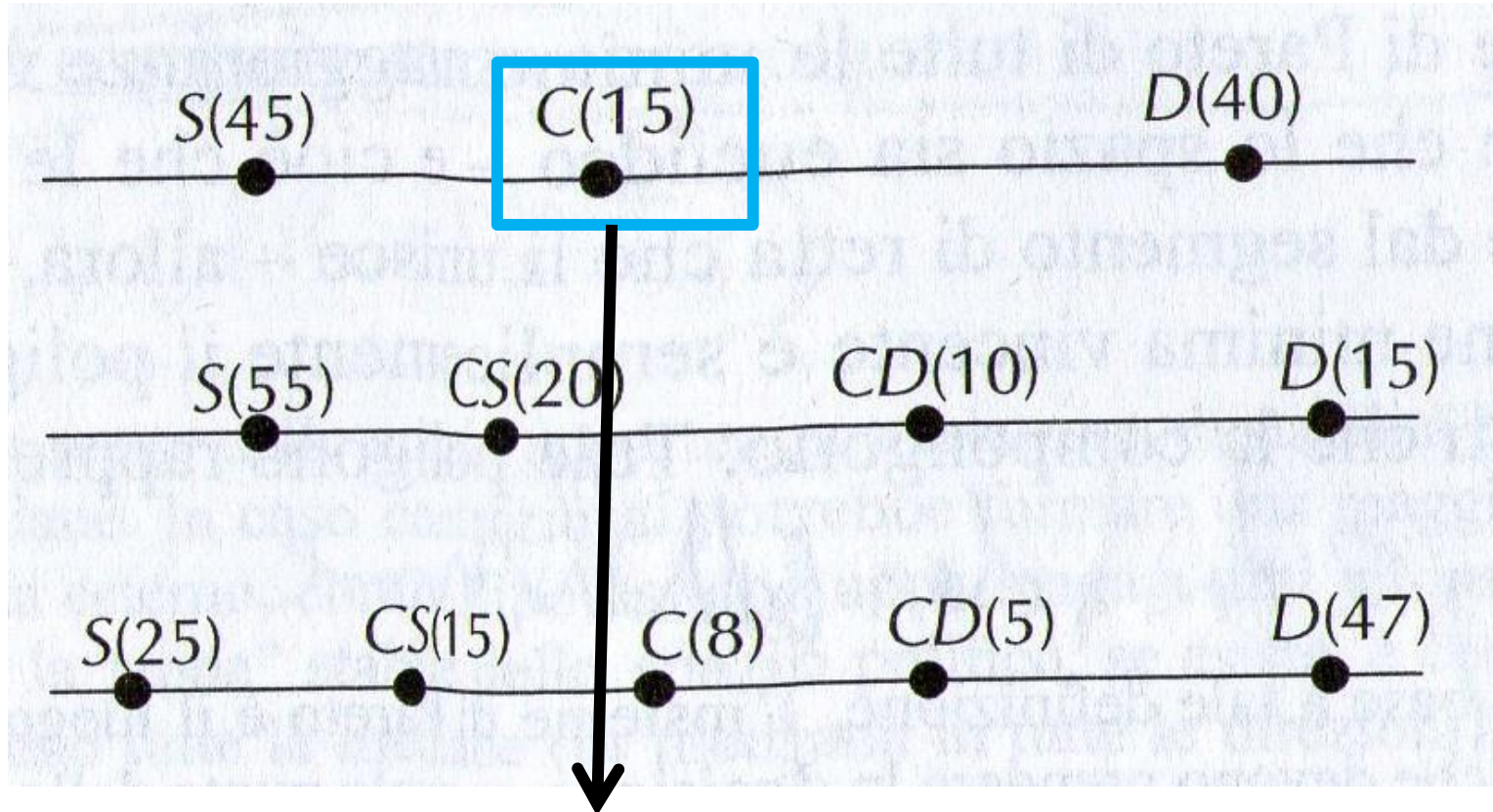
What is a median value?

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

S(45)	C(15)	D(40)

S(55)	CS(20)	CD(10)	D(15)

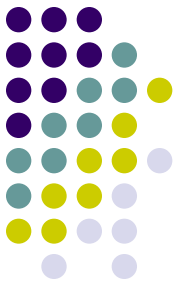| S(25)	CS(15)	C(8)	CD(5)	D(47)

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

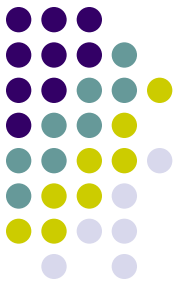# Core party in one dimension: a Parliament with 100 seats
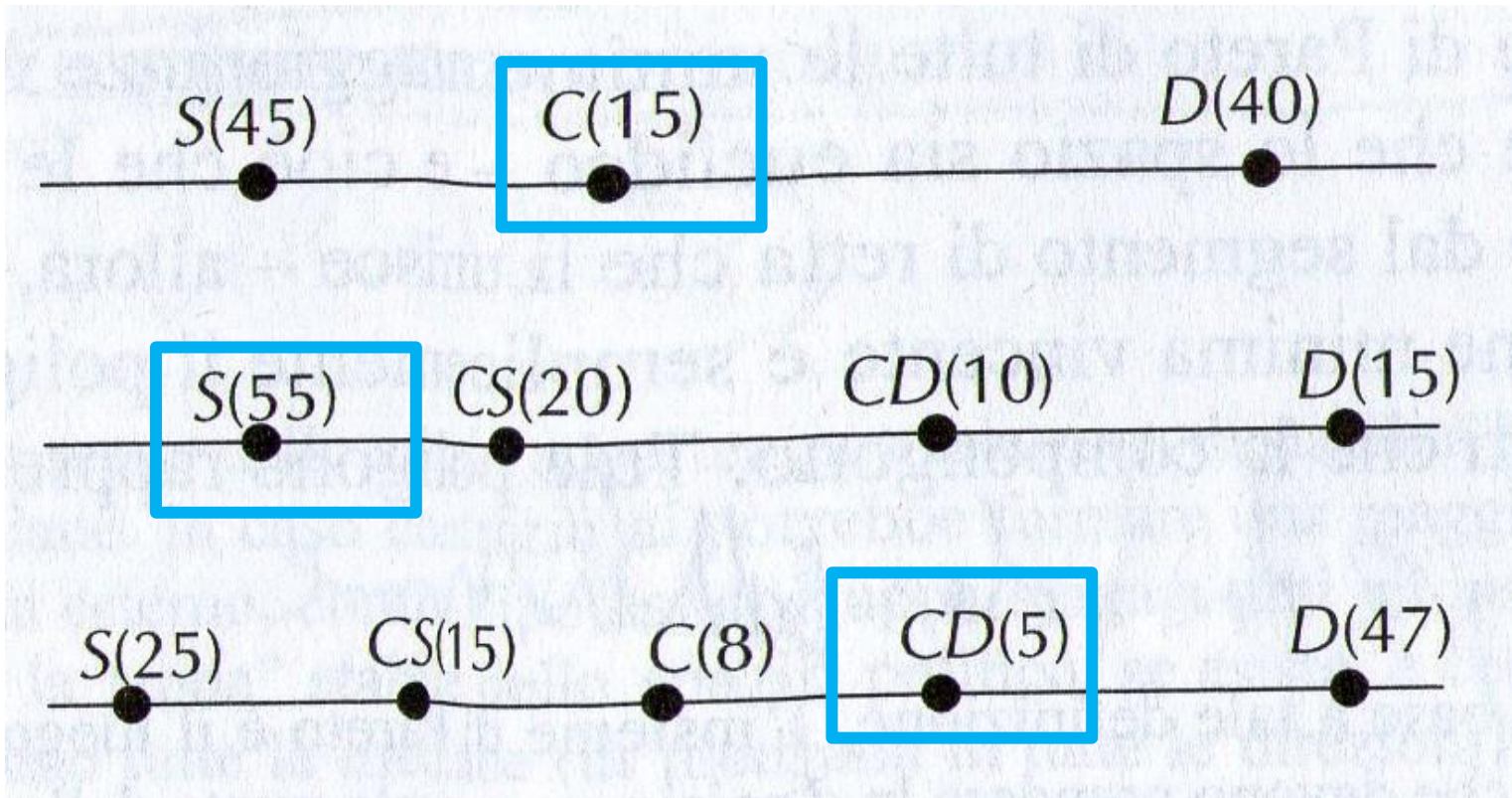
Core party in one dimension

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

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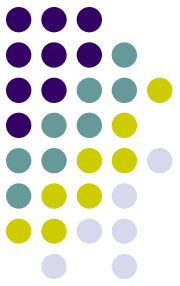
Core party in one dimension

But…

1) usually cabinet coalitions aggregate themselves **starting from large party** (while in one-dimension you can have also a very tiny core party…)

2) often cabinet coalitions are **not stable**

How to reconnect these two empirical facts to the theory? **Multidimensionality**!
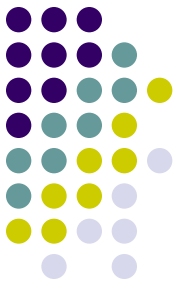
Core party in two dimensions

Definition of a **median line**: a line presenting a majority in both closed half spaces created by each line

In multiple dimensions, a core party **will only exist** when all **median lines intersect** at one party's ideal point, which for that reason is the **core party**

Core party in two dimensions

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 one-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**
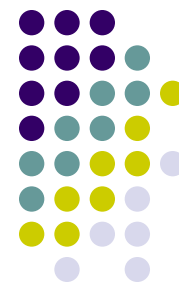
Pareto Set definition
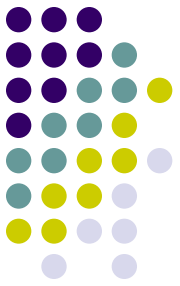
To understand this last point, we need to introduce the concept of "*Pareto Set*"

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

Pareto Set definition

Remember: each point **outside** the Pareto Set **can always be beaten unanimously** by a point within the Pareto Set

That is…for each point outside the Pareto Set, you can always find a point inside the Pareto Set that is favoured by **all the parties bounding such Pareto Set**
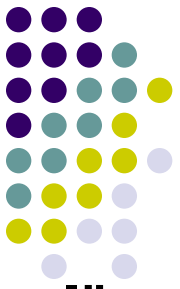
Let's consider now all the possible Pareto Sets involving a majority

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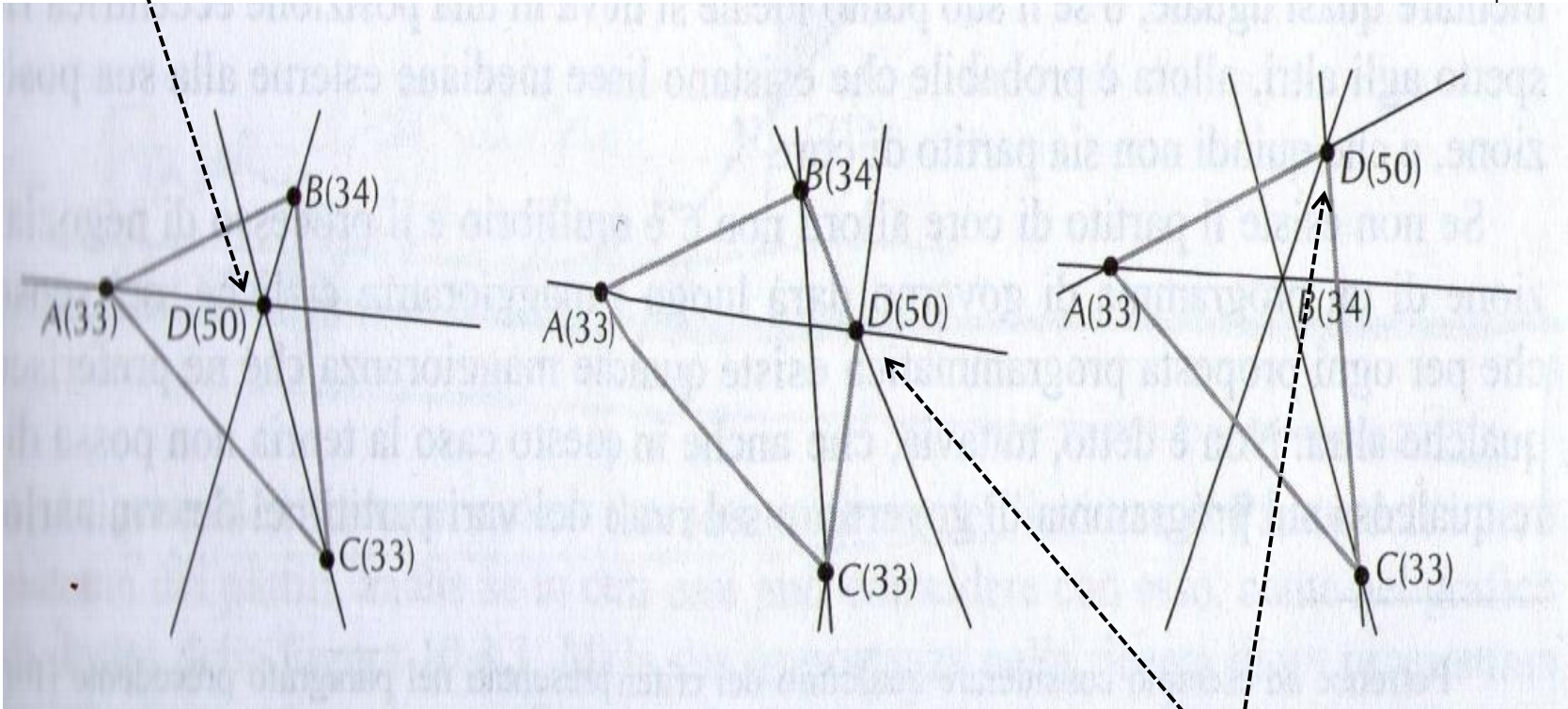
D is not a core party. In fact D lies outside the **Pareto set** of one parliamentary majority that excludes it (ABC)

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?
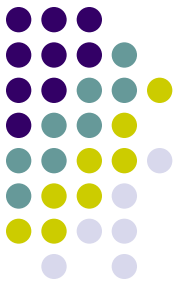
Stability and instability of a core

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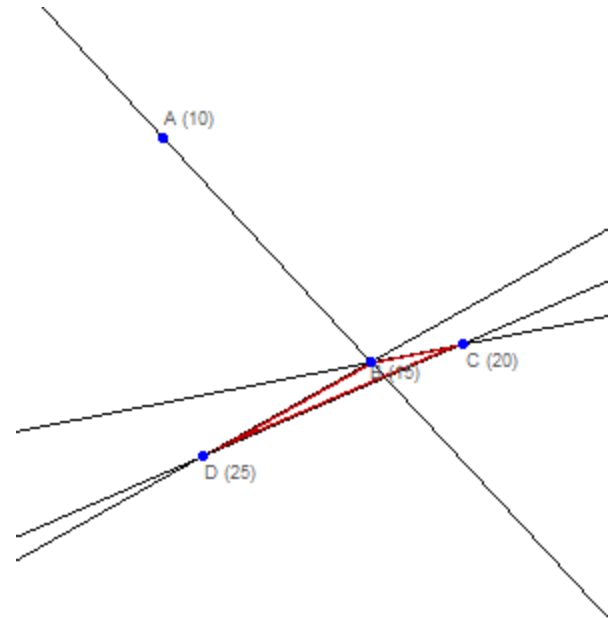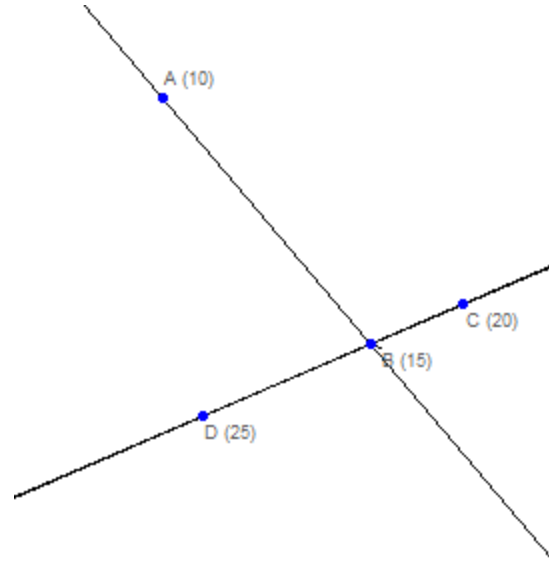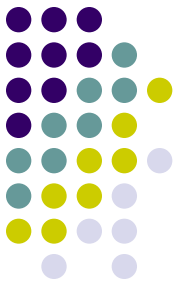
A structural unstable core

A structural stable core
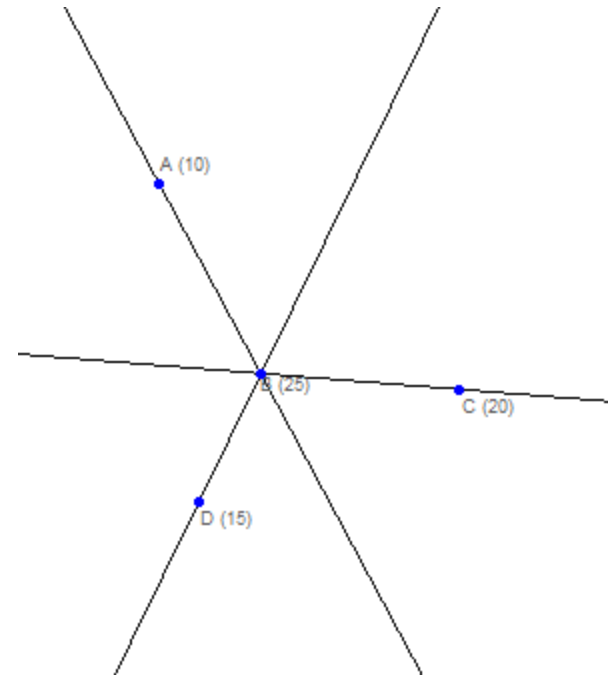
Stability and instability of a core

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

Empirically: given that a researcher 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
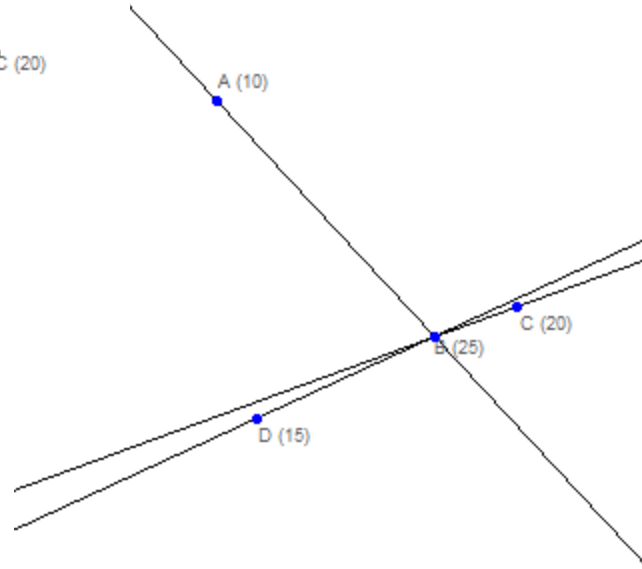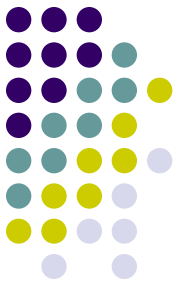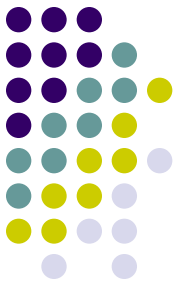
Stability and instability of a core

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

Theoretically: till now we have assumed perfect (the positions of all actors are common knowledge) and complete (everyone knows the utility function of the others) information. However, also a political actor can be **unsure** about the positions of the other actors (are they bluffing a bit?). So once again, better focusing on "strong core party" only!
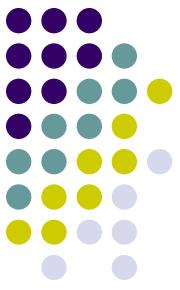
Core party in two dimensions

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

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

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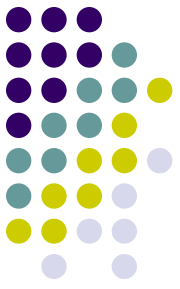
Still, assuming that **no policy proposals will be made** that can make all members of a majority coalition **worse off**, then **only the points** in the policy space that are *bounded by the median lines* **can be solutions** of the bargaining game among parties

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

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

The cycle set (50 seats Assembly)

A(10)

Cycle
Set

D(8)

z

B(20)

C(12)
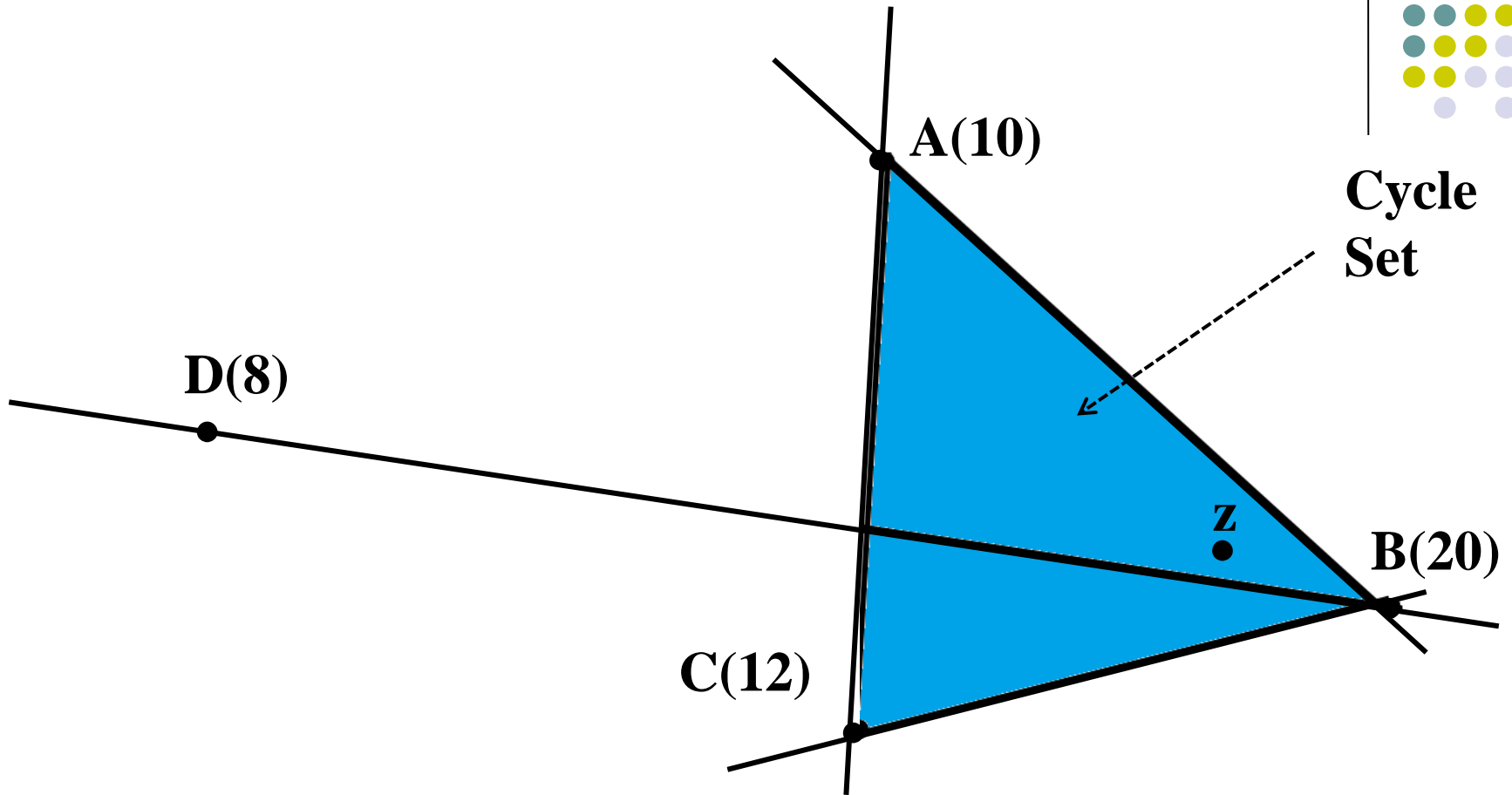
Any point **within** the cycle-set, i.e. **z**, can be beaten according to a majority rule, ONLY by some other point **that belongs to the cycle-set**, not by any point outside of it!

The cycle set (50 seats Assembly)
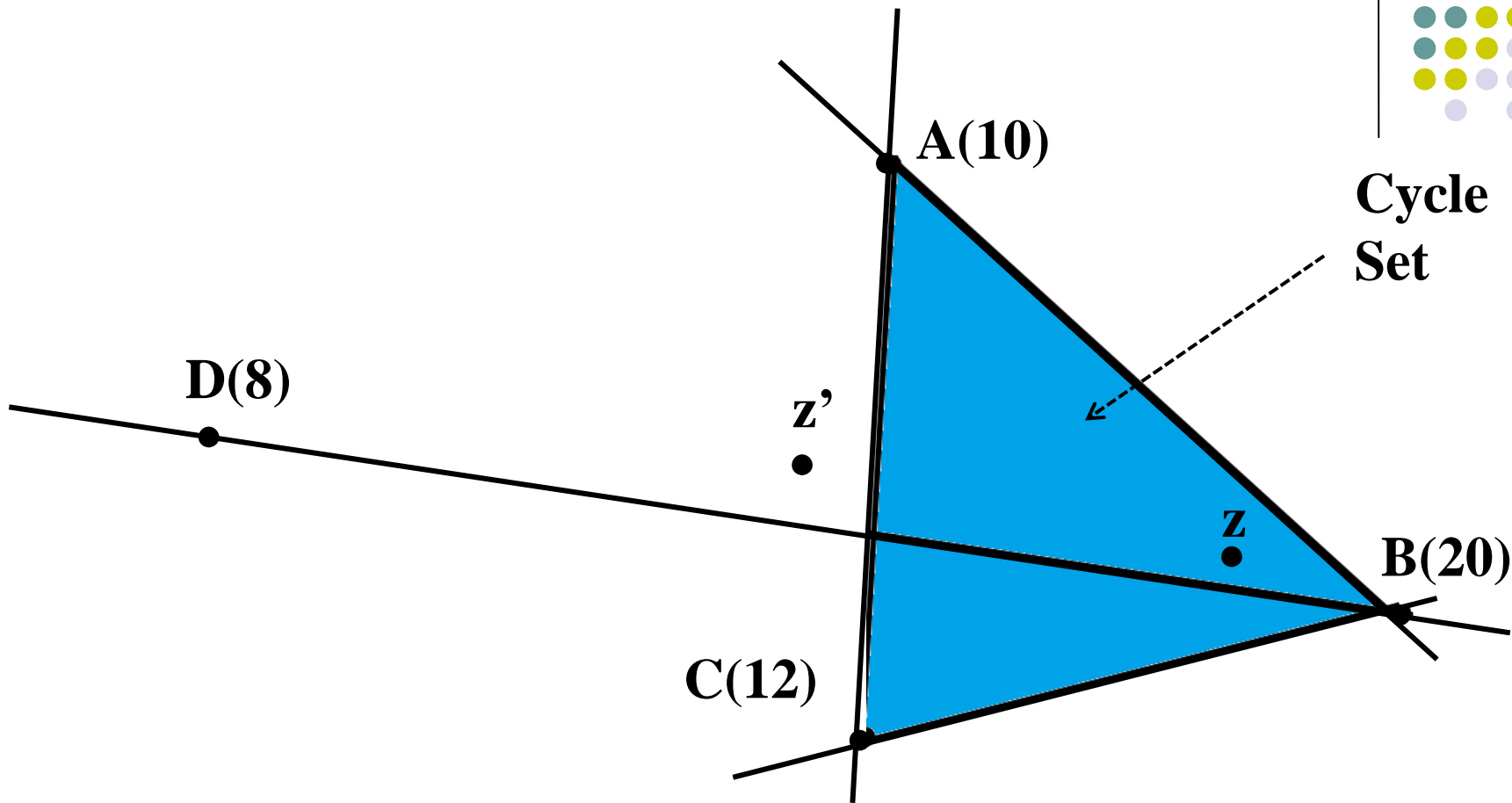
In contrast, any point outside the cycle-set, i.e. **z'**, **can never be the solution of the cabinet bargaining**! We can always find a point within the triangle ABC that beats it!
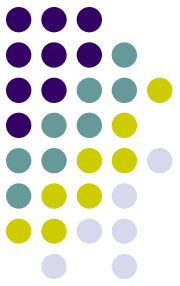
The cycle set

Which consequences?

Cabinet composition

1. The core party will always belong to any cabinet (and it can also forms a **minority cabinet**!)

The cycle set

Which consequences?

2. 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
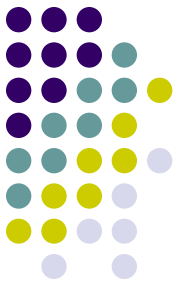
Why that?

The cycle set

Which consequences?

By confining the cycle set, only the former parties can in fact realistically propose an alternative policy point that can appeal to a majority coalition, i.e., they are the "active" players in the bargaining process, contrary to the peripheral ones

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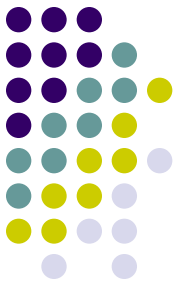
The cycle set

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

Why that?

The cycle set

Which consequences?

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**
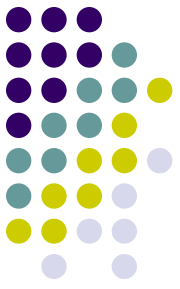
The cycle set

Which consequences?

Length of Cabinet bargaining: the existence of a core party should decrease the amount of time needed to form a cabinet
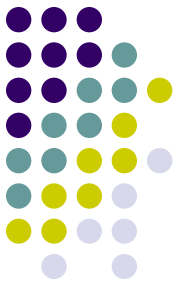
The cycle set

Which consequences?

Cabinet (& policy) stability: the existence of a core party may enhance cabinet stability (duration) 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
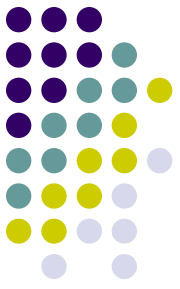
Which consequences?

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