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Theory of center parties and cabinet formations: With an application to the Dutch parliamentary system

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Onderzoek

Theories of center parties and cabinet formations: With an application to the Dutch parliamentary system

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1. Introduction

The concept of center party is frequently used in political analysis. In the Dutch political system, for example, it is readily associated with the Christian-Democratic party CDA. However, the questions what a center party exactly is and what role such a center party plays in cabinet formation processes are seldom answered. The aim of this article is to provide some answers. We present a number of theories in which the concept of center party is explicated and that explain the role of this actor in cabinet formation processes. These theories will all be formulated in game-theoretical terms. Further, we apply these theories to the Dutch multi-party parliamentary system.

There is a well established tradition of studying cabinet formation processes in parliamentary systems with the aid of game theory. For an informal overview consider Van Roozendaal (1989). In this article, we will continue a research line set out by the work of the game theorist Peleg (Peleg 1981). In his work, Peleg presents a theory that takes, as a point of departure, a particular actor called 'dominant player'. It is predicted by Peleg that this player has a decisive influence on the coalition formation process that takes place in a game. With this theory, he introduces a new dimension in the game-theoretical study of political coalitions. His approach is actor-oriented.[1]

Our theories too will be actor-oriented. The center of a political system will be viewed as a particular actor that has a decisive influence on the coalition formation processes in that system. However, there is an important difference from Peleg's theory. His theory is policy-blind. Policy positions of the players are not used as explanatory variables. In contrast, our theories are policy-oriented. The policy positions of the players will be used to define the concept of center and the related political concepts of left and right. These variables are therefore essential to our theories.

This article is divided into two parts. The first part is theoretical in nature. In this part we first present the pertinent concepts of game theory. Subsequently, the concept of center player is worked out. As a starting point for this concept elaboration we will use the works of De Swaan (1973, 1985) and Einy (1985). Finally we present the several theories of center players and coalition formation. Since we proceed in an axiomatic-deductive way, this part will be rather abstract.

The second part of this paper is more empirical in nature. In this part a number of hypotheses about cabinet formation in multi-party parliamentary systems are derived from the theories. With the aid of these hypotheses, predictions are made about the cabinet that has to be formed in the Dutch system after the recent election of September 6. 1989. Further, these hypotheses will be confronted with data about cabinet formations that have taken place in the Dutch political system since the entry of the Christian Democratic party CDA in the Dutch political arena. The aim of this confrontation is to explain the sources of power of the CDA and its role in cabinet formation processes in the Dutch political system.

2. Game-theoretical concepts

Parliaments are systems in which losing or winning (forming a cabinet or being relegated to the opposition, getting a bill through or not etc.) and therefore power and political control are important. Payoffs and strategies only play a minor role. For this reason we will represent parliaments by simple games. The theory of these games has its origin in the celebrated work on game theory by Von Neumann and Morgenstern (1947: Ch. X). A further development and refinement of this theory is given in Shapley (1962). See also Ordeshook (1986), Shubik (1982) or Van Deemen (1989, 1990). The vocabulary we use is mainly taken from Shapley's work.

Let N denote the set of players. A *coalition* is a subset of N. Characteristic of simple games is that there are only two types of coalitions, namely *winning* and *losing*. A winning coalition has all power to control a game while a losing coalition has no power at all.

A *simple game* G is an ordered pair of sets (N, W) where W is the set of winning coalitions. The coalitions which are not in W are the losing ones. The set of these coalitions will be denoted by L. In the sequel, we assume that W satisfies the following conditions:

Condition 1 (Monotonicity): Any coalition that contains a winning subcoalition is itself winning.

Condition 2 (Non-Triviality): • There is a winning coalition. • The empty set is not winning.

The condition of monotonicity is intuitively acceptable. If a coalition wins, then it is reasonable that any coalition that contains that winning coalition is also winning. The condition of Non-Triviality excludes trivial games. It says that there is something to talk about (namely a winning coalition) and that some players are important (the empty set of players is precluded from winning).

The *complement* of a coalition is the set of players that are not in that coalition. A simple game is said to be *proper* if the complement of a winning coalition is always losing. Parliaments are usually represented as proper simple games.

A *blocking* coalition is a losing coalition whose complement is also losing. Such a coalition is not effective in forcing a decision since it is losing. However, it can prevent the formation of a winning coalition and with that obstruct the decision making process. A simple game is called *strong* if no blocking coalition can occur. A game that is both proper and strong is called *decisive* (Shubik 1982). Decisive games are the equivalent of the so-called constant-sum games in traditional game theory. In fact, Von Neumann and Morgenstern (1947) defined and studied only this class of simple games.

A *weighted majority game* is a special kind of a simple game. In these games a weight is assigned to each player representing his decision power or voting strength. A coalition is winning if the sum of the weights of the members of that coalition exceeds a prescribed number. This number is called the *quota* or also the *threshold* of the game. Denoting the quota of a game with q, and the weight of player i with w_i, a weighted majority game G with n players can be represented by

$$G = [q; w_1, w_2, \ldots, w_n].$$

A coalition S is winning if

$$\sum_{i \in S} w_i \geq q.$$

$\Sigma_{i\in} w_i$ is called the *size* of coalition S. This will be denoted by $w(S)$.

Weighted majority games are useful to represent decision making bodies in which power is unequally distributed. Examples of this are parliaments, political parties, families, shareholder meetings. In the case of parliaments, the players are usually identified with political parties and their weights with the number of seats.

A winning coalition is said to be *minimal winning* if every proper subcoalition of it is losing. The set of minimal winning coalitions of a game G will be denoted with W^{min}. Because of monotonicity, knowledge of W^{min} is sufficient to specify the whole game.

A *dummy* is a player who is in no minimal winning coalition. Such a player can neither turn a losing coalition into a winning coalition, nor change a winning coalition into a losing one. In this sense a dummy is a completely powerless player. Such players are easily found among small parties in parliamentary systems.

A *vetoer* is a player who is in every minimal winning coalition. Such a player can turn a winning coalition into a losing coalition by leaving it. Further, no coalition can win without this player. Clearly, the complement of a losing coalition that contains a vetoer is also losing. This means that a losing coalition with a vetoer is always blocking. For this reason, a game with a vetoer can never be strong and will therefore be called *weak*.

So far we have introduced some basic game-theoretical concepts. In the next section we present a theory of simple games in which a center is essential. This theory will be used to analyze the role of center parties in cabinet formation processes in the Dutch parliamentary system.

3. Coalition formation in centralized games

The origin of the notion of center player can be found in the important work of De Swaan (1973) and in Einy (1985). For a first elaboration of the concept, see Van Deemen (1987). A more sophisticated and rather mathematical elaboration of the notion is given in Van Deemen (1990). For an informal account consider Van Roozendaal (1989).

Informally, a center player is a player that can form winning coalitions with players to the right of him, with players to the left of him or with players to both sides of him in a ranking of policy positions. In this sense, the center player can hold the balance of the whole game. His policy position is like an unfolding point in the ranking. A further important feature of this player is that his position is unique. There are no other players who can bend to the left, to the right or to both sides of the scale to form a majority coalition.

More formally, let $G = (N, W)$ be a simple game. It is assumed that each player takes in a policy position that can be compared with the policy position of each other player. Further it is assumed that each player will have a different policy position. Ties are not allowed.[2] 'Policy position' as

used in these assumptions is a primitive term, that is, a term that will not be explicated but that will be used in other definitions.[3]

Let p_i denote the policy position of player i and let P be the set of policy positions, one and only one for each player. A *policy order Θ relevant to G* is a binary relation on P satisfying:

1. *Anti-symmetry*. For all p_i, p_j in P: if $p_i \Theta p_j$ and $p_j \Theta p_i$; then $p_i = p_j$.
2. *Completeness*. For all p_i, p_j in P: $p_i \Theta p_j$ or $p_j \Theta p_i$;
3. *Transitivity*. For all p_i, p_j, p_k in P: if $p_i \Theta p_j$ and $p_j \Theta p_k$, then $p_i \Theta p_k$.

A relation that satisfies these properties is called a linear order in mathematics. We shall denote a simple game with a relevant policy order Θ with G_Θ.

A player i is said to be *to the left* of player j if $p_i \Theta p_j$, that is, if the policy position of i preceeds that of j. A player i is *to the right* of j if $p_j \Theta p_i$, i.e. if the position of i succeeds that of j.

Thanks to the properties of Θ, it is possible to assign to each player i in a coalition S a set of other players who are members of S and who are all to the left of i and a set of other players who are members of S and who are all to the right of i. The first set is denoted with $Le(i,S)_\Theta$, the second one with $Ri(i,S)_\Theta$.

We are now ready to define the concept of a center player (cf. Einy 1985, Van Deemen 1987, Van Deemen 1990). A player i is said to be a *center player* in a game G_Θ if

1. $Le(i,N)_\Theta$ is losing, while $Le(i,N)_\Theta$ together with $\{i\}$ is winning and
2. $Ri(i,N)_\Theta$ is losing, while $Ri(i,N)_\Theta$ together with $\{i\}$ is winning.

In other words, a player is center if the set of all players to the left of him is losing but winning if he joins it and if the set of all players to the right of him is losing but winning when he joins it.

A simple game with a relevant policy order can have at most one center player. Further, if a game is decisive, then a center player will exist. A simple game for which a center player exists, will be called a *centralised policy game* (Van Deemen 1987, Van Deemen 1990).

Prediction principle 3.1 Let G_Θ be a centralized policy game. Then only coalitions with the center player will be formed.

The set of winning coalitions with the center player will be denoted with C. Hence, prediction principle 3.1 says that only coalitions from this set will be formed.

In general, C will be rather large.[4] This indicates that the theory developed so far is too rough. To reduce the prediction set in a theoretically acceptable way, we must increase the information content of the theory. This can be done by extending the theory in a consistent way, that is, by adding new concepts and assumptions that are not in contradiction with the concepts and assumptions already in use. In the next sections we present a number of such extensions.

4. Theory of balanced coalitions

Fundamental in this theory will be De Swaan's concept of pivotal player (De Swaan 1973: 89, 93–4). Let G_Θ be a policy game and S be a coalition. A player i is said to be *pivotal* in S if

$$| w(Le(i, S)_\Theta) - w(Ri(i, S)_\Theta) | \leq w_i.$$

Thus, a player i is pivotal in a coalition S if the absolute value of the difference between the size of the subcoalition of members from S to the left of i and the size of the subcoalition of members from S to the right of i is equal or less thant the weight of i.

A pivotal player owes his power in a coalition to the fact that he is able to play off the left side of that coalition against the right side. If the left is in opposition to the right in a coalition and neither side can outvote the other, then the pivotal player can throw out this balance. He then has a decisive influence on the decision making process in that coalition.

4.1 *Balanced coalitions* – A coalition S is *balanced* in a centralized policy game G_Θ if S is winning and if the center player is pivotal in S. It is called *nonbalanced* if it is not balanced. The set of balanced coalitions for G_Θ will be denoted with $\mathbf{B}_\Theta$ or, if the context is clear, with $\mathbf{B}$. It is easy to verify that $\mathbf{B}$ is not empty.

If each member of such a coalition supports the policy proposals that best accord with his own policy position, then the policy proposal of the center player can never be outvoted in a balanced coalition. His policy position will, therefore, be decisive in such a coalition. For these reasons, it is plausible to assume that a center player will strive to form a balanced coalition.

Prediction principle 4.1 Let G_Θ be a centralized policy game. Then only balanced coalitions will be formed.

An illustration of this principle is given in section 6.3 below. According to table 4, column 2, the set $\mathbf{C}$ is reduced, for that case, by 3.

4.2 *Maximally balanced coalitions* – Intuitively, some coalitions will be more balanced than others. We formalize this intuition by using the concept of *balance excess*. Let G_Θ be a centralized game and let c be the center player. The *balance excess* of a balanced *coalition S*, notation *bal (S)*, is

$$bal(S) = | \ w(Le(c, S)) - w(Ri(c, S)) \ | .$$

That is, if S is a coalition with the center player c, then the balance excess of a coalition S is the absolute value of the difference between the size of the subcoalition of players in S who are to the left of c and the size of the subcoalition of players in S who are to the right of c[5]. The balance excess shows to what extent a coalition with the center player is in equilibrium. The greater the balance excess of a coalition, the easier it is to disturb the equilibrium of that coalition and, hence, the more instable this coalition will be. For this reason, it is plausible to assume that a center player will prefer a coalition with a lower balance excess to a coalition with a greater balance excess.

It is possible to determine the balance excess for each balanced coalition. Therefore, the set $\mathbf{B}$ can be ordered in a complete and transitive way. That is, for every balanced coalition S and T, it is possible to say whether $bal(S) \leq bal(T)$ or $bal(T) \leq bal(S)$. Further, it must be true that for *all* $S, T, U \in \mathbf{B}$, if $bal(S) \leq bal(T)$ and $bal(T) \leq bal(U)$, then $bal(S) \leq bal(U)$. A coalition S is said to be *maximally balanced* if S is balanced and $bal(S) \leq bal(T)$ for every balanced coalition T. The set of maximally balanced coalitions for a policy game G_Θ will be denoted with $\mathbf{B}^{max}$. Of course, $\mathbf{B}^{max}$ is a subset of $\mathbf{B}$. Further, thanks to the properties of transitivity and completeness, the set $\mathbf{B}^{max}$ is not empty.

If a center player is rational, he will strive to form a maximally balanced coalition. In such a coalition, he is in the best position to control the policy formation process. Thus,

Prediction principle 4.2 Let G_Θ be a centralized policy game. Then only maximally balanced coalitions will be formed.

What about the preferences of the other players? Clearly, each player prefers a winning coalition in which he is pivotal to a winning coalition in which he is not. Therefore, the players who are not center will prefer coalitions in which the center player is not pivotal. However, the center player can, if the assumption of his control potential is plausible, block the formation of such coalitions. He is able to enforce the formation of maximally balanced coalitions. So the decision problem of the other players is reduced to the question whether they want to participate in a maximally balanced coalition or not. If they are rational, they will. Losing coalitions have nothing to offer.

A maximally balanced coalition is a balanced coalition and a balanced coalition is a coalition that contains the center player. Thus, if G_Θ is a centralized policy game, then $\mathbf{B}^{max}$ is a subset of **B** and **B** is a subset of **C**. The converse, however, is not true. Hence, the theory of maximally balanced coalitions, which yields $\mathbf{B}^{max}$ as the prediction set, is more restrictive than the theory of balanced coalitions which is, at its turn, more restrictive than the theory of centralized policy games. More restrictive theories are more interesting, since such theories contain more empirical content and are, therefore, easier to falsify. In this sense, the theory of maximally balanced coalitions is the most interesting presented so far.

4.3 *Closed (maximally) balanced coalitions* – This is a variation of the theory of maximally balanced coalitions. To formulate this variation we need some additional concepts. A player *k* is said to be *between i* and *j* if $p_i \Theta p_k$ and $p_k \Theta p_j$. Two players *i* en *j* are *neighbours* if there is no other player *k* between them. A coalition *S* is defined to be *closed* if *S* consists only of neighbours. A coalition which is not closed is said to be *open*.

The introduction of the notion of closed coalitions is in some sense a logical step within the center player perspective. So far, we assumed that a center player owes his potential to take the initiative to forming coalitions to his position in a relevant policy ranking. From this position, he is able to bend to the left, to the right or to both sides. However, it can be argued that all this has limited foundation the other players have little propensity to form closed coalitions. If the left side or right side players of a center player are indifferent with respect to the open or closed character of coalitions or if they prefer, for some reason or another, open coalitions to closed ones, then they can do pretty well without the center player. They are not, then, inhibited from making policy jumps in order to form winning coalitions. The consequence of this will therefore be a decline of the center player's power potential.

The first theory that uses the idea of closed coalitions is, as far as we know. Axelrod's conflict of interest theory (Axelrod 1970, De Swaan 1973).[6] Also De Swaan formulates a closed version of his policy distance theory (De Swaan 1973: 117-119). When applied to cabinet formation processes in multi-party systems, these theories perform the best (see the classical works of De Swaan 1973 and Taylor and Laver 1973). This increases the relevance of a closed version of the theory of balanced coalitions.

Let G_Θ be a centralized policy game. A coalition which is simultaneously closed and (maximally) balanced will be called a *closed (maximally) balanced coalition*. Let $\mathbf{C}_{cl}$ denote the set of closed winning coalitions that contain the center player. It is not difficult to verify that this set is not empty. Clearly, the propensity of the players from the left or the right to form closed coalitions, only provides a power base for the center player. It does not imply that only closed coalitions will be formed. The center player might have other preferences. To present a real variation, we therefore have to assume that the propensity of forming closed coalitions is a general behavioral pattern that applies to each player, including the center player.

The relevant prediction principles then are:

Prediction principle 4.3 Let G_Θ be a centralized policy game. Then only closed balanced coalitions will be formed.

and

Prediction principle 4.4 Let G_Θ be a centralized policy game. Then only closed maximally balanced coalitions will be formed.

Let $\mathbf{B}_{cl}$ and $\mathbf{B}_{cl}^{max}$ denote, respectively, the set of closed balanced coalitions and the set of simultaneously closed and maximally balanced coalitions. Clearly, there are balanced coalitions that are not closed. Therefore, prediction principle 4.3 is more restrictive than the corresponding prediction principle in the open version. The same is true for prediction principle 4.4. However, note that principle 4.4 might yield results that are in contradiction with the corresponding principle 4.2 in the open version. That is, a coalition from $\mathbf{B}_{cl}^{max}$ need not be a member of $\mathbf{B}^{max}$ or conversely.

5. Theory of power excess coalitions

The theory of balanced coalitions is based on the idea that a center player strives to form coalitions in which he can control the internal opposition by using his relative policy position in that coalition. The theory of power excess as presented in this section will have another point of departure. It is based on the idea that a center player strives to form a coalition in which he can control the internal opposition purely on a numeric power base. The relative policy position of the center player in the coalition to be formed only plays a minor role.

Fundamental to this theory is the notion of power excess. Let G_Θ be a centralized policy game, let *c* be the center player and let $S \in \mathbf{C}$. The *power* *excess* of *c* in *S*, notation *pow(c, S)*[7], is defined as

$$pow\ (c, S) = w_c - w\ (S/\{c\}).$$

In other words, the power excess of the center player in a coalition is the weight of the center player minus the size of the internal opposition for the center player in that coalition.

The center player in a centralized policy game can control the internal opposition of a coalition he is a member of if he has a positive power excess in that coalition. Therefore it is plausible to assume that a center player strives to form a coalition in which he has a positive power excess.

Prediction principle 5.1. Let G_Θ be a centralized policy game. Then only coalitions with positive power excess will be formed.

Let $\mathbf{C}^{pos}$ denote the set of winning coalitions in which the center player has positive power excess. Hence prediction principle 5.1 says that only coalitions from this set will be formed. Clearly, $\mathbf{C}^{pos}$ is empty when each coalition with the center player has a nonnegative power excess. In this case, principle 5.1 will fail in producing a prediction.

For every *S*, $T \in \mathbf{C}$ it is possible to say whether $pow\ (c, S) \geq pow\ (c, T)$ or pow (c, S) $\geq pow\ (c, S)$. Further, for every *S*, *T*, $U \in \mathbf{C}$ we must have, if $pow\ (c, T) \geq pow\ (c, T)$ and $pow\ (c, T) \geq pow\ (c, U)$, then $pow\ (c, S) \geq pow\ (c, U)$. These properties are called, respectively, *completeness* and *transitivity*. A coalition *S* is said to have maximal power excess for *c* if there is no coalition *T* such that $pow\ (c, T) > pow\ (c, S)$. The set of coalitions with maximal power excess for *c* will be denoted with $\mathbf{C}^{max}$. Thanks to completeness and transitivity, this set is not empty. That is, in a centralized policy game there is always a coalition with maximal power excess for *c*.

The greater the power excess of a center player in a coalition, the better he can countervail the internal opposition in that coalition. The better he can countervail, the greater his influence on the decision-making process and hence the better he can enforce his own policy preferences. Therefore, if a center player is rational, he will strive to form a coalition with maximal power excess.

Prediction principle 5.2 Let G_Θ be a centralized policy game. Then only coalitions with maximal power excess for the center player will be formed.

What about the preferences of the other players? Let the definition of power excess and the subsequent definitions be valid not only for the center player but for every player. It happens, then, that each player has maximal power excess in a coalition in which the center player also has maximal

power excess.[8] Hence the prediction principle yields coalitions that are the best for each member with respect to their power excess.

A coalition with positive power excess for the center player must be balanced. The converse, however, is not necessarily true. Further, a maximally balanced coalition is not necessarily a coalition with a maximal power excess. It is also easy to verify that maximal power excess coalition is minimal winning. Taking out one player from such a coalition makes it losing. Otherwise the size of the internal opposition is not minimal and hence the power excess for the center player is not maximal.

5.1 *Theory of power excess coalitions: closed version* – Just as in the case of the theory of balanced coalitions we also present a closed version of the power excess theory. The motivation given in section 4.3 for using this property applies with equal force to this theory. Let G_Θ be a centralized policy game. Let $\mathbf{C}_{cl}$ denote the set of closed winning coalitions with player and let $\mathbf{C}_{cl}^{pos}$ be the set of closed and winning coalitions in which the center player has positive power excess. The closed version of principle 5.1 says that only coalitions from this set will be formed.

Prediction principle 5.3 Let G_Θ be a centralized policy game. Then only closed coalitions with positive power excess will be formed.

Just as in the open version $\mathbf{C}_{cl}$ can be ordered in a complete and transitive way by using the power excess numbers for the center player. Therefore, the set of closed and winning coalitions in which the center player has maximal power excess is not empty. This set will be denoted with $\mathbf{C}_{cl}^{max}$. The closed version of principle 5.2 is:

Prediction principle 5.4 Let G_Θ be a centralized policy game. Then only closed and winning coalitions with maximal power excess for the center player will be formed.

Hence, according to this principle, the set $\mathbf{C}_{cl}^{max}$ is the prediction set.

There are coalitions in $\mathbf{C}$ that are not closed. Therefore, the set $\mathbf{C}_{cl}$ is more restrictive that the set $\mathbf{C}$. More important, a closed winning coalition with maximal power excess does not necessarily belong to $\mathbf{C}_{cl}^{max}$. Hence, the predictions yielded by the open version of the theory of power excess coalitions might be in contradiction with the predictions yielded by the closed version.

6. Applications: The CDA and cabinet formations

In this section we derive a number of hypotheses about cabinet formation in parliamentary systems. These hypotheses will be confronted with cabinet formation processes in the Netherlands since the entry of the Christian-Democratic party CDA in the Dutch political arena. The aim of this confrontation is to achieve a theoretically founded insight into the position of the center party CDA in Dutch politics.

6.1 *Hypotheses about cabinet formation in parliamentary systems* – A weighted majority game with a relevant policy order can be interpreted as a parliamentary system. The players, then, are interpreted as political parties and their weight is the number of seats in parliament. The order of the players is the order of their policy position. Thus, the policy order of party i is to the left of the policy order of party $i+1$ etc. A coalition is referred to as a *cabinet*. Since it is assumed that the policy positions are ordered in a linear way (cf. section 3), ties between the policy positions of the parties are not allowed. Though it is possible to work with tied policy positions, there is an obvious reason to prohibite them. In Downsian terms (cf. Downs 1957), the party differential between two parties with a tied policy position will vanish. Hence, tied policy positions make the concerned parties indisguishable for the voter. The quota of the game is the number of seats necessary to form a majority cabinet. To adjust the other terms, a center player will, in this interpretation, be called a *center party*. A parliamentary system with a center party will be called a *centralized parliament*.

Prediction principle 3.1, now, can be translated into the following hypothesis about cabinet formation in multi-party parliamentary systems.

Hypothesis 1 In centralized parliamentary systems, only cabinets with the center party will be formed.

The theory of balanced coalitions yields the following hypotheses:

Hypothesis 2 In centralized parliamentary systems, only balanced cabinets will be formed.

A stronger hypothesis is (see principle 4.2),

Hypothesis 3 In centralized parliamentary systems, only maximally balanced cabinets will be formed.

The closed version of the theory of balanced coalitions leads to the hypothesis that

Hypothesis 4 In centralized parliamentary systems, only closed and balanced cabinets will be formed.

and to the more restrictive hypothesis that

Hypothesis 5 In centralized parliamentary systems, only closed and maximally balanced cabinets will be formed.

Principle 5.1 of power excess theory is translated into the following hypothesis:

Hypothesis 6 In centralized parliamentary systems, only cabinets in which the center party has positive power excess will be formed.

The following hypothesis has more empirical content:

Hypothesis 7 In centralized parliamentary systems, only cabinets in which the center party has maximal power excess will be formed.

The closed version of power excess theory yields:

Hypothesis 8 In centralized parliamentary systems, only closed cabinets in which the center party has positive power excess will be formed.

More information is contained in the following hypothesis:

Hypothesis 9 In centralized parliamentary systems, only closed cabinets in which the center party has maximal power excess will be formed.

To illustrate the working of these hypotheses, we provide a computation example.

6.2 *Computation example: The Dutch election of September 6. 1989* – Consider the game representation of the Dutch parliament according to the election of September 6. 1989:

$$[76; 6, 49, 12, 54, 22].$$

The parties are, from left to right, GL (Green Left), PvdA (Social Democrats), D66 (Left Liberals), CDA (Christian Democrats) and VVD (Conservative Liberals). The policy positions of these parties are accordingly ordered from left to right. Parties with less than 2.5% of the total number of votes have been left out. These parties, which are all to the right of the conservative liberals, are dummies that will have no influence on the cabinet formation process.

The CDA is the center party (see p. 191 for the definition of center party). To check this, take the sum of the weights of the parties which are to the left of the CDA. This sum is less than 76. The sum of the parties to the right of the CDA is also less than 76. Hence any combination of parties to the left or to the right of the CDA needs the CDA to form a closed majority cabinet. Neither side can form a majority cabinet on its own. In contrast, the CDA can form a majority cabinet either with parties from the left or with parties from the right. Notice that

$$|w(Le) - w(Ri)| = 45 < w_{CDA} = 54,$$

where $w(Le)$ and $w(Ri)$ are, respectively, the sizes of left and right for the CDA.

Let us determine the preference of the CDA between two cabinets by using the theory of maximally balanced coalitions. Consider the coalition {CDA, VVD, D66}. This coalition is winning since its size is 54 + 22 + 12 = 88. It is also balanced since VVD is to the right of CDA and D66 is to the left of CDA and $|w_{D66} - w_{VVD}| < w_{CDA}$. The balance excess for the CDA in this cabinet is $|w_{D66} - w_{VVD}| = 10$. Compare this with coalition {CDA, VVD}. This also is a winning coalition and again the CDA is the pivotal player. The balance excess is 22. Therefore, according to the theory of maximally balanced coalitions, the CDA will prefer the cabinet {CDA, VVD, D66} to the cabinet {CDA, VVD}. Also compare the {CDA, D66, VVD} combination with the {CDA, PvdA} combination. In the last combination, the balance excess of the CDA is 49. Hence, for the CDA it is far more difficult to keep the balance in this cabinet than in a cabinet with D66 and VVD. However, the CDA prefers a cabinet {CDA, PvdA} to a cabinet {CDA, D66, PvdA}. In this last cabinet, D66 is the pivotal party and, hence, the CDA will prevent the formation of this combination.

The full set of cabinets with the center party CDA is given in table 1. This table also indicates which of these cabinets is balanced, what the

Table 1: Majority cabinets with the center party CDA

Cabinets with center party	Pivotal player	Balance excess	Power excess
CDA, VVD	CDA	22	32
CDA, VVD, D66	CDA	10	20
CDA, VVD, D66, PvdA	CDA	39	-29
CDA, VVD, D66,PvdA, GL	CDA	45	-35
CDA, VVD, PvdA	CDA	27	-17
CDA, VVD, GL	CDA	16	26
CDA, VVD, D66, GL	CDA	4	14
CDA, D66, PvdA	D66		-7
CDA, D66, PvdA, GL	D66		-13
CDA, PvdA	CDA	49	5
CDA, PvdA, GL	PvdA		-1

balance excess is of a balanced cabinet and what the power excess is of a cabinet with the CDA.[9]

According to hypothesis 1, one of the cabinets in the first column of this table will be formed. In fact, the combination {CDA, PvdA} has been formed. Hence, this hypothesis is correct for this case.

From table 1, column 2 the set of balanced coalitions can be read off. This set is, in order of increasing balance of excess, { {CDA, VVD, D66, GL}, {CDA, VVD, D66}, {CDA, VVD, GL}, {CDA, VVD}, {CDA, VVD, PvdA}, {CDA, VVD, D66, PvdA}, {CDA, VVD, D66, PvdA, GL}, {CDA, PvdA} }. According to hypothesis 2, one of these cabinets will be formed. Since the cabinet {CDA, PvdA} is formed, hypothesis 2 is correct for this case.

Hypothesis 3 is far more restrictive. Looking again at the table, we see that {CDA, VVD, D66, GL} is the cabinet with the least balance excess and, hence, is maximally balanced. The set of maximally balanced cabinets consists only of this cabinet. So the theory of maximally balanced coalitions leads to the unique prediction of the cabinet {CDA, VVD, D66, GL}. Clearly, hypothesis 3 fails for this case. Unfortunately, it is more than just a failure. Notice that, according to column 2 of table 1, the formed cabinet {CDA, PvdA} has the greatest balance excess. Hence, it is the most difficult cabinet for the CDA to hold in balance. Therefore, according to the theory of maximally balanced coalitions, there is very little reason for the CDA to form this cabinet.

The picture changes when the notion of closed cabinets is introduced. The set of closed cabinets with the CDA is given in table 2 together with information about their balance excess and power excess.

Table 2: Closed majority cabinets with the center party CDA

Closed cabinets with Center parties	Pivotal party	Balances excess	Power excess
CDA, VVD	CDA	22	32
CDA, VVD, D66	CDA	10	20
CDA, VVD,D66, PvdA	CDA	39	-29
CDA, VVD, D66, PvdA, GL	CDA	45	-35
CDA, D66,PvdA	D66		-7
CDA, D66, PvdA, GL	D66		-13

According to hypothesis 4, only closed and balanced cabinets will be formed. Hence, the prediction is that one of the first four cabinets in the first column of table 2 will be formed. Since D66 is not a member, the formed cabinet of PvdA and CDA is open and, therefore, this hypothesis must fail for this case.

The maximally balanced cabinet now is {CDA, VVD, D66}. The theory of closed and maximally balanced coalitions says that the CDA mostly prefers this combination. According to hypothesis 5, this cabinet must have been formed. Also this hypothesis fails.

The theory of power excess coalitions yields contradicting results when compared with the theories in which the notion of balance is basic. Consider for example the power excess for the CDA in a {CDA, VVD, D66} cabinet: $w_{CDA} - w$ {VVD, D66} = 54 – 34 = 20. The power excess for the CDA in the cabinet {CDA, VVD} will be 32. Since this is greater, the CDA prefers, according to the theory of power excess coalitions, the cabinet {CDA, VVD} to the cabinet {CDA, D66, VVD}. This is in contrast with the result of applying the theory of balanced coalitions.

According to hypothesis 6, only cabinets with positive power excess for the CDA will be formed. From table 1 column 4, the power excess of the CDA in the several cabinets can be read off. We see that the cabinets in which the CDA has positive power excess are {CDA, VVD}, {CDA, VVD, D66}, {CDA, VVD, GL}, {CDA, VVD, D66, GL} and {CDA, PvdA}. Thus, according to this hypothesis, one of these cabinets will be formed, which indeed, has happened. Hence, hypothesis 6 is correct for this case.

Hypothesis 7 predicts that only cabinets will be formed in which the CDA has maximal power excess. According to table 1 column 4, the set of cabinets with the CDA, in order of decreasing power excess numbers is {CDA, VVD}, {CDA, VVD, GL}, {CDA, VVD, D66}, {CDA, VVD, D66, GL}, {CDA, PvdA}, {CDA, PvdA, GL}, {CDA, D66, PvdA}, {CDA, D66, PvdA, GL}, {CDA, VVD, PvdA}, {CDA, VVD, D66, PvdA}, {CDA, VVD, D66, PvdA, GL}. The only cabinet with maximal power excess is {CDA, VVD}. Thus, the theory of power excess coalitions yields the unique prediction that this cabinet will be formed (cf. hypothesis 7). Unfortunately, another cabinet has been formed. Hence, hypothesis 7 fails.

The power excess theory also can explain why the CDA prefers the cabinet {CDA, PvdA} to a cabinet {CDA, D66, PvdA}. In the last combination, the power excess for the CDA is less than its power excess in the combination {CDA, PvdA}. Hence, according to the theory, it can better control the {CDA, PvdA} combination and with that better realize its policy preferences.

Hypothesis 8 says that a closed coalition with a positive power excess for the CDA will be formed. Looking at table 2 column 4, we see that the closed coalitions in which the CDA has positive power excess are {CDA, VVD} and {CDA, VVD, D66}. Since none of these coalitions has been formed, hypothesis 8 fails for this case.

According to hypothesis 9, a closed cabinet with maximal power excess for the CDA must have been formed. Again, this is for this case the combination {CDA, VVD} (see table 2, column 4). Since this cabinet has not been formed, this hypothesis also fails. Note that the {CDA, VVD} combination is also the best possibility for the VVD. Adding more parties (e.g. D66) only would increase the internal opposition for the VVD and hence decrease its influence on the decision-making processes in that coalition. Notice further that the {CDA, VVD} combination also is of minimum size. That is, there is no other cabinet with a size that is at least as great as the size of this cabinet. But this happens to be an accidental fact.

6.3 *Application* – In this section we confront the hypotheses with cabinet formation processes in The Netherlands since the rise of the Christian-Democratic party CDA. The CDA was from 1973 to 1980 a federation of the catholic party KVP, the Christian Anti-revolutionaries ARP and the Christian-Historical CHU. In the election of 1977, these parties participated, for the first time, with a so called 'gezamenlijke kandidatenlijst' (collective list of candidates) under the name Christian-Democratic Appeal (CDA). In the end of 1980, the federation was converted in a fusion, making the CDA into an official political party. Since an election is the most important event in a parliamentary system, we let the CDA enter the political arena in 1977.

In Daudt (1980), a hypothesis about cabinet formation in Dutch politics is formulated that should be mentioned here. This hypothesis says that the CDA only forms cabinets with parties to the left of the CDA only in utter necessity, that is, if and only if a cabinet with parties to the right of the CDA is not feasible. Of course, the problem is what to count as 'feasible'. If we understand this as 'workable majority', then the Daudt hypothesis need not be in line with the theories as presented here. The theory of balanced coalitions says that the CDA will strive to form a coalition in which it has maximal balance of excess. This does not preclude the possibility of a combination with parties to the right of the CDA with a workable majority. The same is true for the power excess theory. To illustrate this last point, consider the election result of September 6 1989 (see table 3). Suppose now, with some imagination, that by some miracle the VVD had obtained 49 seats instead of 22 and that the PvdA had obtained 22 instead of 49. Assume that the policy positions of both parties remain invariant. Now the CDA can form a cabinet with a very workable majority with the VVD and, hence, according to the Daudt hypothesis, no coalition with a left party will be formed. However, according to power excess theory, the CDA will prefer a cabinet with the PvdA since in this cabinet it will have a maximal power excess (see the calculations in section 6.2). In the cabinet with the big VVD it will have a very heavy opposition.

The next table contains the results of the several elections since the rise of the CDA in 1977. The data are taken from Daalder and Schuyt (1988) *Compendium Politiek en Samenleving*.

Table 3: Distributions of seats in Parliament (Tweede Kamer der Staten-Generaal) since 1977.

	1977	1981	1982	1986	1989
CDA	49	48	45	54	54
SGP	3	3	3	3	3
PvdA	53	44	47	52	49
CPN	2	3	3		
VVD	28	26	36	27	22
GPV	1	1	1	1	2
PSP	1	3	3	1	
BP	1				
D66	8	17	6	9	12
PPR	3	3	2	2	
DS'70	1				
RPF		2	2	1	1
EVP			1		
CP			1		
CD					1
GL					6

For our calculations we use the policy ranking *PvdA, D66, CDA, VVD*. In this we follow, for example, Castle and Mair (1984).[10] Parties with less than 2.5 percent of the total number of votes will be left out.[11] These small parties are all dummies, as can be readily checked, and play no role in cabinet formation processes. We assume the same policy rank order of the relevant parties from 1977 onwards. This rank order invariance is a rather demanding constraint and we are fully aware of its shortcomings. It implies a perhaps unjustified strong stability in political or ideological orientations in the Dutch political system.

The next table contains the cabinets that have been formed since 1977 plus their composition. The cabinet Van Agt III (CDA, D66) has been left out. This minority cabinet emerged after a crisis in cabinet Van Agt II on a financial policy issue. It only had to watch over current policy affairs, with the aid of the parliamentary support of the VVD, until the planned election of 1982.

Table 4: Cabinets formed since 1977.

Cabinet	Year	Composition
Van Agt I	1977–1981	CDA, VVD
Van Agt II	1981–1982	CDA, PvdA, D66
Lubbers I	1982–1986	CDA, VVD
Lubbers II	1986–1989	CDA, VVD
Lubbers III	1989–	CDA, PvdA

The next table shows the veracity of the hypotheses for the several cases. In this table, 'H' is the abbreviation of 'Hypothesis'. The hypotheses are numbered in the order as presented in section 6.1.

Table 5

Cabinet	H1	H2	H3	H4	H5	H6	H7	H8	H9
Van Agt I	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Van Agt II	Yes	No	No	No	No	No	No	No	No
Lubbers I	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Lubbers II	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Lubbers III	Yes	Yes	No	No	No	Yes	No	No	No

According to this table, hypothesis 1 works very well. Since its entry the CDA has been a center party. It also participated in every formed cabinet since then.

Hypothesis 2 only fails for the election of 1981. In this election of 1981, the {CDA, VVD} combination loses its majority. The CDA clearly prefers the combination {CDA, VVD, D66}. However this cabinet is blocked by D66. Since there is no feasible alternative for the CDA, it has to accept a cabinet with parties from the left. The result is the cabinet Van Agt II: {CDA, D66, PvdA}. However, this cabinet had a short life (duration: 260 days). This can be explained by using our theories. Firstly, in this cabinet the CDA has a negative power excess of -13. It would have had a positive and moreover a maximal power excess in a {CDA, D66, VVD} combination. This combination also would have been maximally balanced. Further, in the actually formed cabinet of CDA, D66 and PvdA, D66 is pivotal. Hence, this party can exercise a relatively great influence in the decision-making processes in that cabinet. Therefore, the cabinet formed is a bad result for the center party CDA.

Hypothesis 4 fails for two of the five cases, namely for the cabinet Van Agt II and for the cabinet Lubbers III. This last case is the most interesting one. The cabinet Lubbers II stumbled over a financial issue in the environmental policy field. In the election that followed, the VVD lost 5 seats in parliament. It is remarkable that from 1982 onwards this party loses steadily a considerable number of seats: from 36 in 1982 it dropped to 27 in 1986 and to 22 in 1989. Apparantly, participation in a cabinet in which the CDA has maximal power excess pays off badly. The CDA after the election of September 6. formed a cabinet with the PvdA. The real surprise of this cabinet is its open character. Looking at the database in De Swaan (1973), we count 3 open cabinets for the Netherlands since 1918. Using table 4 as additional source, we see that Lubbers III is the fourth open cabinet in this century. See for a computation and the pros and cons of the several hypotheses for this case subsection 6.2.

Clearly, the hypotheses about maximally balanced and closed maximally balanced cabinets – hypothesis 3 and 5 – do not apply. In connection with the performance of hypothesis 2 and 4, the conclusion therefore is that the CDA strives to form cabinets in which it can hold the balance but that it does not maximize balance. It seems to be satisfied just with the ability to hold the balance.

Hypothesis 6 works for every case with the exception of Van Agt II. After the election of 1981, a possible cabinet with positive power excess for the CDA was {CDA, PvdA}. However, this option was not feasible then. The conclusion is that the CDA has a *strong* propensity to form cabinets in which it has positive power excess.

Hypothesis 8 about closed coalitions with positive power excess for the CDA does not work for the cabinets Van Agt II and Lubbers III. This last cabinet is, as we already have discussed, an open cabinet.

The hypotheses about coalitions with maximal power excess and about closed coalitions with maximal power excess only work for the cabinets Van Agt I, Lubbers I and Lubbers II. In connection with the performance of hypothesis 6, we conclude therefore that the CDA has a strong propensity to form cabinets in which it has positive power excess and that it has a weaker but nevertheless existing propensity of forming cabinets with a maximal power excess.

Notes

1. For a presentation of Peleg's theory, consider Peleg (1981) or Van Deemen (1989).
2. To contrast, cf. De Swaan 1973: Ch. 4.4.
3. Some care must be taken with the interpretation of the term 'policy position'. It might be a point on a one-dimensional socio-economic scale or on an ideological scale. However, there is no prohibition on interpreting the policy positions as points in some multi-dimensional space. In this case, the assumption that the policy positions can be ordered in a linear way in this space (see below) is, of course, extremely strong. But, according to Popperian logic of science, this is also the most interesting case. Working with less structured spaces leads to less informative propositions that are therefore more difficult to falsify. For a review of spatial models of collective choice, consider Krehbiel 1988. Also cf. Schofield e.a. 1988.
4. Consider, for example, the computation of this set in section 6.2, table 1, below.
5. This concept is also used in De Swaan's policy distance theory (see De Swaan 1973: Assumption 5, p. 96). There the name 'absolute excess' is used instead of 'balance excess'.
6. Axelrod speaks of connected coalitions instead of closed coalitions. We prefer to use the terms closed coalition. These terms are also used in De Swaan.
7. The symbol *c* is superfluous in this notation since the definition is only concerned with the center player. We only take it up as a memory aid.
8. A proof of this proposition is given in Van Deemen (1990).
9. Since we defined the notion of balance excess only for combinations for which a center player is pivotal (see section 4.2), the combinations for which the CDA is not pivotal will not have a balance excess.
10. De Swaan (1973) uses a nonmetric notion of distance. In our theories presented sofar any notion of distance is superfluous. But, of course, it is allowed to enrich the theories by using additional assumptions about metric or nonmetric policy distances.
11. A similar convention is adopted in De Swaan 1973.

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Literatuur

Oost-Europa: de satellieten gaan hun eigen weg*

door Ben Wempe

Overzichtsartikel naar aanleiding van:

Kolankiewicz, G., en P. Lewis, 1988, *Poland: Politics, Economics and Society*. (Londen: Frances Pinter)

Lendvai, P., 1988, *Hungary: The Art of Survival*. (Londen: I.B. Tauris)

Rotschild, J., 1989, *Return to Diversity: A Political History of East Central Europe Since World War II*. (Oxford: Oxford University Press)

Zielonka, J., 1989, *Political Ideas in Contemporary Poland*. (Aldershot: Avebury)

1989 was in vele opzichten een historisch jaar voor de communistische wereld, met name in Oost-Europa. De turbulente ontwikkelingen in deze regio doen ons gemakkelijk vergeten dat men bondgenoten van de Sovjetunie tot voor kort placht aan te duiden met de enigszins denigrerende benaming 'satellietstaten'. Maar sinds het aantreden van partijleider Gorbatsjov heeft zich een opmerkelijke verandering voorgedaan in de verhouding tussen de bondgenoten in het Warschaupact. Het 'nieuwe denken' in Moskou bracht de buurlanden in Oost-Europa een ongekende mate van vrijheid. Bij diverse ontmoetingen met andere leiders van het Warschaupact maakte Gorbatsjov duidelijk dat hij niet van plan was zich nog langer te bemoeien met de ideologische koers van de bondgenoten. Het gevolg was een zich steeds duidelijker aftekenende verscheidenheid tussen de afzonderlijke landen in het oostblok. In Hongarije, waar de radicaalste hervormers in het Politburo zelf zaten, hief de communistische partij zichzelf op en ontdeed men zich van de status van volksrepubliek, een typische staatsrechtelijke constructie van Sovjet-makelij, nog daterend uit de periode direct na de Tweede Wereldoorlog waarin de Sovjet-hegemonie over Oost-Europa werd gevestigd. Inmiddels bereidt Hongarije zich voor op de meest vrije algemene verkiezingen sinds 1945 op basis van een meerpartijenstelsel. In Polen kreeg de zittende communistische partij een gevoelige nederlaag te incasseren bij de in juni 1989 gehouden semi-vrije verkiezingen. Daarmee werd de weg vrij gemaakt voor de eerste niet-communistische regering in Oost-Europa in veertig jaar.

Nieuw evolutionisme – Tegen deze achtergrond is de publikatie van een bundel essays over politieke ideeën in Polen in de jaren na 1980 uiterst actueel. De uit Polen afkomstige politicoloog Jan Zielonka heeft zich onder