

7 Network Centrality and International Conflict, 1816-2001: Does it Pay to Be Important?

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Abstract

The position of states in the international system has long been a topic of interest in the study of world politics. Previous studies investigating the relationship between status inconsistency and international conflict produced largely mixed results. We apply social network analysis to study the relationship between centrality, status inconsistency and conflict at the national, dyadic, and systemic level of analysis. We derive different indices of network centrality and status inconsistency using data on alliance, trade, IGO, religious, and linguistic networks. We find that centrality has some effect on national conflict involvement, but this relationship is not robust across centrality indices and network types. On the other hand, status inconsistency has a robust effect on dispute and war involvement at the national, dyadic, and systemic levels of analysis. We discuss the implications of these results.

Keywords: network centrality, international relations, conflict, status inconsistency

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7.1 Introduction

Studies of national behaviour typically focus on three types of factors that are said to affect the conflict involvement of states: (a) national attributes, such as military capabilities, economic power, regime structure, or ethnic diversity; (b) domestic political processes, such as processes of democratization, political instability, or economic downturns; and (c) external attributes and processes, such as the number of neighbour countries, the number of the state's alliances, or the political structure of the state's environment. In one form or another, each of these factors was shown to have an impact on conflict behaviour of individual states (Maoz, 1993; 1996; Bremer, 2000; Bennett and Stam, 2004).

Yet another, potential, aspect of a state's decision on whether to engage in conflict concerns *the structure of its relationships* with other states in the system or in its immediate environment. Initial explorations into such issues yielded mixed results. We offer a new approach to the relationship between a state's conflict behaviour and the structure of its relations with its environment. We focus on the *centrality* of states, as defined by the relationships they have with other states in a number of different areas. We address the following questions.

1. How does state's centrality affect its conflict behaviour?
2. Do different dimensions of relations have different effects on a state's behaviour? For example, does the centrality of states in terms of its alliance relations generate a different effect on the state's behaviour than the centrality of the state in terms of its trade relations?
3. Do different conceptions of centrality/status have different effects on national behaviour?
4. How is a state's conflict behaviour affected by the degree of status inconsistency it might experience? Are states experiencing sharp discrepancies between their capability-related rank and their centrality rank on a number of relational attributes more likely to engage in conflict than states that are structurally-balanced?

Studies that focused on the relationship between status inconsistency and conflict reveal a typical level-of-analysis puzzle: states that experience high status inconsistency are no more likely to engage in conflict than states that experience low levels of status inconsistency. However, as the levels of status inconsistency in the system increase, the probability of systemic conflict also tends to rise. This prompts us to investigate the relationship between status inconsistency and conflict at different levels of analysis, as follows:

5. Are members of dyads that experience high levels of status inconsistency more likely to fight each other than dyads that do not experience status inconsistency?
6. What, if any, are the systemic implications of status inconsistency on the level of conflict in the international system? Does the relationship between status inconsistency and conflict hold for the system level as well?

We start by discussing the literature on centrality, status inconsistency, and international conflict. Second, we offer an explanation linking the centrality of states and their status-consistency/inconsistency to conflict involvement. Third, we discuss different conceptions of centrality, as these are derived from social network analysis. This is followed by a presentation of our hypotheses, derived from the realist, liberal and constructivist approaches. Fourth, we specify the research design. Fifth, we report the findings on the relationship between state centrality, status consistency and conflict at the monadic, dyadic, and systemic levels. Finally, we discuss the theoretical and practical implications of our study.

7.2 The Study of Centrality and Status Inconsistency in World Politics

International status and centrality have long been a concern of world politics scholars¹. The preoccupation with national power and the fact that power – like wealth – is a relative commodity suggested that states strive to acquire and maintain power for many purposes. One of these goals is to attain status in world politics. Status is believed to make for respect, respect makes for influence, and influence allows a state to accomplish other goals it may have. Power hierarchies are important not only predictors of national behaviour; they are also taken to be the principal determinants of the structure of the international system. The pecking order of states is seen to be the principal organizing concept of system structure and of global processes (Mearsheimer, 2001: 44-45).

Rosenau (1966) found a correlation between a state's power-related status and its conflict and cooperation behaviour. We know from various studies (e.g., Maoz, 1993; 2004a) that a state's capabilities have a strong impact on its conflict behaviour. We also know that this relationship applies to the dyadic level (Bremer, 1992; 2000). The most powerful states in the international system are consistently the most conflict prone states and members of the most conflict prone dyads, accounting for a majority of the wars and Militarized Inter-state Disputes (MIDs) in the system (Maoz, 2005).

But we do not know whether and how other aspects of a state's centrality – especially centrality defined in terms of the state's relations with other states – affect its behaviour, and if so, in what ways.

An important aspect of the interest in relative position of states in the system has to do with the concept of *status inconsistency*. This concept has been widely used in psychology (e.g., Eagly and Karau, 2002), sociology (e.g., Berger, Norman, Balkwell, and Smith, 1992), and organizational behaviour (e.g., Bachrach, Bamberger, and Mundell, 1993) as a predictor of deviant behaviour. Applications of this concept to the study of international politics yielded mixed results. East (1971), Wallace (1973), Midlarsky (1975), and Volgy and Mayhall (2000, 1995) found evidence of a positive correlations between the extent of status inconsistency (measured as the correlation between capability-based or GDP-based ranking of states and the diplomatic ranking of states) and the level of war in the system. On the other hand, attempts to apply the same ideas to the national level of analysis showed no relationship between a state's level of status inconsistency and its war involvement (Ray, 1974; Gochman, 1975; 1980). Organski and Kugler's power transition theory (1980) also regarded status inconsistency as a source of national dissatisfaction with the status quo and thus a cause of war. Yet, they did not empirically examine the effect of status inconsistency on war. Later studies of power transition theory (e.g., Lemke and Kugler, 1996; Lemke and Reed, 1996) have emphasized other factors as measures of dissatisfaction with the status quo.

Status inconsistency was typically measured as a discrepancy between the capability-related ranking of states and their diplomatic status. This follows the practice of measuring status differences in sociology and psychology. But whereas psychologists and sociologists distinguish between objective and subjective aspects of status inconsistency (e.g., Bachrach, Bamberger, and Mundell, 1993), in world politics we resort to seemingly "objective" measures. This may well be a problem because states' self perception of the factors that determine their international status may not match "objective" measures of this concept.

Four principal problems afflict research on status inconsistency and international conflict. First, measures of status inconsistency distinguish between acquired and ascribed status. Acquired status is measured by a state's capabilities. Ascribed status is usually measured by diplomatic representation. There may be, however, multiple dimensions of ascribed status, based on different types of interstate interaction. The mixed findings may be due to the fact that different aspects of status inconsistency have different effects on war behaviour.

Second, diplomatic representation may not be a good indicator of ascribed status because a diplomatic mission is an inexpensive undertaking. On the other hand, alliance, trade, IGO membership may be better indications of a state's ascribed status. The actual discrepancy may be between acquired status, and multiple relational measures of centrality. Current measures of status inconsistency at the national and systemic level do not reflect this issue.

Third, from a theoretical perspective, it may be useful to think of different dimensions of status, and therefore of different dimensions of status inconsistency. Realists may consider alliance centrality as an indicator of ascribed status, because the state's alliance centrality is an indicator of how strategically important it is considered to be by others. Liberal theorists may view trade or IGO-related centrality as better indicators of ascribed status in an interdependent world. Finally, constructivists may consider states as more or less central in terms of their linguistic, religious, or ethnic affinities with other states.

Fourth, different paradigms may produce different predictions about the relationship between status, status inconsistency, and conflict. The theoretical and empirical literature on status inconsistency adopted the psychological and sociological notions about the effect of status inconsistency on conflict at the individual or group level. But this does not necessarily follow from the logic of the different paradigms of world politics.

In light of these problems, we attempt below to develop a more general argument linking the centrality of nations to their conflict behaviour. We use this conception of centrality as a basis of measures of status inconsistency. We examine the relationship between status inconsistency and conflict across levels of analysis.

7.3 Centrality, Status Inconsistency, and Conflict Behaviour

States were made equal under anarchy, that is, they seem to confront much the same challenges due to the fundamental condition of world politics. Yet, they are not equal in terms of their attributes, and hence they are not equal in terms of how they position themselves to meet the challenges of international life. Consequently, students of world politics assumed that states possess some pecking order under a central attribute. Typically this attribute was considered to be national capabilities, or some other definition of power. This is why there is such a sharp distinction in IR scholarship between major powers and minor ones (Mearsheimer, 2001).

The pecking order of states may be expressed, however, in different terms, just as the importance of individuals may be expressed in different terms. If the interaction among individuals is based on finance, status may be defined in terms of individual wealth. If interaction among individuals is based on the sharing of spiritual values, such as religion, then status may be defined in terms of religious standing. The most important people in terms of their status within a given religion are not usually the richest ones. Likewise, in world politics, status is not necessarily equal to power. In fact, since states interact with one another on different dimensions, national status may be defined differently on the basis of the specific realm of interaction. We can regard each dimension of interaction or affiliation among states as a system of networks (Maoz *et al.*, 2004). And we wish to examine how states are arranged in terms of their centrality in different systems of interactions.

Centrality may be important in world politics precisely due to the fact that this realm is characterized by the fundamental quality of anarchy. In a world where no authority exists that can determine the rights of individual states or their responsibilities towards each other, everything becomes relative. A state's power is measured in relation to the power of other states; a state's wealth is measured in relation to the wealth of other states, and so forth. Attributes that are not bound by rules and standards are relative. But so are relationships. Consequently, the centrality of states on certain type of relationships may have an important implication for their behaviour.

Because centrality indicates the position of a given state in a specific pecking order, it becomes an indicator of the state's prestige. To the extent that this pecking order is based on a specific relationship, the position of the state in that order may also tell us something about the interests of the state. If the pecking order is determined by the alliance status of the state, then we can learn something about the state's interests by looking at the patterns of its alliance commitments. If it is based on the state's trade relations, we may learn something about the state's relative position in terms of trade dependence, and so forth.

States may worry about their centrality because centrality indicates *ascribed status*; it is a symbol of prestige on a given dimension of the state's relations with other states. Centrality in terms of alliance commitments represents a degree of strategic interdependence with other states. Likewise, states are unlikely to forge trade ties with a state that is not a credible trading partner. So, the more states trade or align with a focal state, the greater the prestige of the latter.

The pursuit of status may be a powerful motivational force of state action. States may forge alliances, join international organizations, send and receive diplomatic missions, and even trade with each other not only for the sake of

political or military interests, but for the sake of establishing prestige as well. Prestige may be a useful asset; it may render future interactions of the state with its environment more profitable and beneficial, just as ascribed status of individuals makes it easier for them to deal with other individuals and institutions. Good credit rating makes it easier for individuals to get loans; academic prestige makes it easier for universities to attract donations. Likewise ascribed status may make a state's life easier in its international dealings on dimensions other than its power-based status.

Because of that, the pursuit of status – defined as centrality in terms of different relational ties – may be an important objective of a state's interaction with other states. Just as a reputation of resolve has an important value in deterrence theory, a state's reputation as a valuable alliance partner or as a credible trading partner may have important value for a state.

This brings us to the concept of status inconsistency. States pursue multiple goals in the international arena; hence they may be interested in establishing a balance between the rewards these pursuits generate. In particular, states wish to balance between *acquired* status and *ascribed* status. Acquired status is generated by a state's own actions or by its basic attributes. In international politics, the most important aspect of acquired status is the state's power. Ascribed status is the prestige accorded to the state by other states, as indicated by its relations with these states.

By saying that states wish to balance their acquired and ascribed status, we claim specifically that powerful states want to be accorded prominent status in terms of their relations with other states. So, in essence, powerful states wish to have high centrality scores in terms of their alliance and trade centrality. To some extent, this balance between acquired and ascribed status can be controlled by the focal state's actions, but not entirely. To accord a powerful state a high alliance or trade status, other states must be willing to align or to trade with the focal state. If a state is extremely powerful but few other states are willing to align with it, or if the states willing to align with it carry little weight in the international system, we can describe the focal state as a status inconsistent actor. Such an actor may be motivated to seek ways to balance its status, so as to make the level of ascribed status as high as its level of acquired status. The opposite is not necessarily true. A very weak state with a high centrality score is also status inconsistent, but it is highly satisfied with its ascribed status, and would seek to preserve it. This has implications for the manner in which status inconsistency may be related to patterns of national conflict involvement. We will get to this below.

Before doing that, however, the concept of network centrality is not as straightforward as it may appear in first blush. In fact, there may be quite a few ways to conceptualize and measure this construct. Since we focus on

relational dimensions of centrality, it is useful to deal with this concept as social network theorists have approached it.

Different Conceptions of Network Centrality

A discussion of different conceptions of network centrality requires defining the concept of an international network. An international network is defined as a set of states, some of which are linked to each other by a given rule, relationship, or affiliation. Each network is defined in terms of a specific relation, and it is this relationship (or affiliation) rule that distinguishes one international network from another. For example, an alliance network defines the formal alliance relations among states. A trade network defines the presence, absence, or magnitude of trade between states in the system at a given point in time. An IGO network defines the affiliation of states with a given set of IGOs. Also, the extent to which states are connected may vary across different networks. We need to conceptualize this by defining (a) how the manner in which states are tied with one another determines their centrality level, and (b) how to measure centrality.

Social network analysis (Wasserman and Faust, 1997) offers several conceptions of network centrality. The most obvious one, concerns the number of states to which a given focal state is connected; the higher the number of states to which a focal state is connected, the more central this state. This is *degree centrality*. To apply this concept in a manner allowing comparison across networks that vary in size, we normalize degree centrality by dividing this number by the maximum possible number of ties for a given member of a network. This is given by the following formula:

$$C_D^i = \frac{\sum_{j=1}^n a_{ij}}{n-1} \quad (1.1)$$

Where a_{ij} is one if states i and j have a relationship on the given property (have an alliance, trade with one another, exchange diplomatic missions, etc.), and zero otherwise, and n is the number of members (states) in the system.

Another concept of centrality focuses on the *closeness* of ties between a given state and any other state in the system. The relational distance between two states is defined in terms of the number of lines (geodesics) separating them. Thus, two states that are aligned with each other get closeness score of 1 (because there is one line separating them), the ally of my ally has a closeness score of 2, and the ally of the ally of my ally has a closeness score of 3, and so forth. The closer a given state to any other states in the system,

the more central the state. Here too, we normalize the closeness centrality by the maximum possible closeness score to obtain standardized measures. Closeness centrality is given by.

$$C_c^i = \frac{n-1}{\sum_{j=1}^n d(n_i, n_j)} \quad (1.2)$$

Where $d(n_i, n_j)$ is the distance between state i and state j . An important drawback of this measure is that it is defined only for members of the system that have some connection with other members.²

A third concept of centrality examines the significance of a given state as a bridge between other states in terms of a given relationship. This is *Betweenness Centrality*. An actor is considered central in this sense if it connects many other actors in the system. For example, in Figure 1, the United Kingdom seems to be a central member of the alliance and trade system not only because it is connected to many other states, but also because it serves as a bridge between quite a few other states that are otherwise not connected. Betweenness centrality (normalized) is defined as the proportion of states for which the focal state serves as a bridge, divided by the maximum possible bridging relationship for a system with n states. This is given by,

$$C_C^i = \frac{2 \sum_{j < k} g_{jk}(s_i) / g_{jk}}{(n-1)(n-2)} \quad (1.3)$$

Where $g_{jk}(s_i)$ is any path between states j and k that goes through state i , and g_{jk} is the total number of paths connecting states j and k . This magnitude is normalized by the possible number of paths for which state i can serve as a bridge (given by $(n-1)(n-2)/2$). This measure, like the standardized degree centrality index, takes on values between zero and one.

A number of measures of centrality attempt to tap the centrality of a given state not only in terms of the number of other states it is connected to but also in terms of the centrality of those states to which it is connected. One such measure is the concept of *Eigenvector Centrality*. It is measured by,

$$C_E^i = \frac{\alpha \sum_{j=1}^{n-1} a_{ij} C_D^j}{(n-1)^2} \quad (1.4)$$

Where α is a parameter (the reciprocal of the Eigenvalue of the matrix), a_{ij} is an adjacency score of the relationship between i and j , and gets a score of one

if the two states are tied, and zero otherwise, and C_D^j is the degree centrality of state j . Clearly the more ties a given states has to “central” states, the more central the state is.³

On the basis of this discussion we can talk about the expected relationship between a state’s centrality in different networks and its conflict behaviour. We can also deduce hypotheses on the relationship between status inconsistency and its behaviour.

First, it is important to note that a state’s centrality in a specific network of relationships may carry different implications for its conflict behaviour. Let us now interpret these measures of centrality in terms different paradigms of world politics. The *realist paradigm* suggests two different and contradictory hypotheses. First, for realists, alliances indicate common interests among states (Gowa, 1999). High alliance centrality implies that a state shares common interests with many other states, with many central states, and that it also mediates among a large number of states. This implies that the higher the alliance centrality of the state, the less enemies it has.

However, there is another realist conception from which we can deduce just the opposite relationship between alliance centrality and conflict. Mearsheimer (1994/1995; 2001) claims that states enter alliances only when they believe they cannot solve their security problems on their own. States are generally suspicious of other states, so that alliances are born out of necessity: the need to balance enemies. Thus, the extent of the alliance commitments of a state (and thus of its alliance centrality) indicates not only common interests, but the magnitude of the threat it faces. More allies mean a greater need to fend off threats. Leeds *et al.* (2002) distinguish between defense and offense pacts, claiming that quite a few alliances are offensive in nature. This certainly ties in with the conception of offensive realists who claim that states seek to maximize power in order to remove threats (Mearsheimer, 2001). So one would expect that alliance centrality will be *positively* linked to conflict.

Realists do not have explicit propositions regarding the effect of trade, IGO, or ethnic centrality on international conflict. However, they tend to downgrade the impact of institutional ties, economic interdependence, and identity-based factors on matters of peace and war. Hence, we may deduce propositions by default. Specifically, realists believe that the level of centrality of states in trade, IGO, or ethnicity networks would not significantly affect their conflict behaviour. Conflict is about power and security; when security interests coincide with economic or administrative interests, states will join IGOs, forge more trade ties, etc. They will live in peace because it is in their security interest to do so. When their interests change and they believe they can benefit from war, the extent of commercial

or institutional ties to other states matter very little. Likewise, when their national interest commands, they will care little whether they fight with culturally similar or culturally different states. Thus, we can sum up the realist perspective on these matters in the following hypotheses.

- RH1. The higher the alliance centrality score of a state, the less conflict it will experience.
- RH1.1. The higher the alliance centrality score of a state, the more conflict it will experience.
- RH2. The centrality score of states in trade, IGO, and cultural networks will not affect their conflict experience.

Liberal approaches have more consistent and more general predictions about network centrality and conflict behaviour. Specifically, alliances, trade, IGOs all represent cooperative ties among states. They also create constraints on problem-solving violent strategies. States with more and more central ties on these relationships will be more constrained and less inclined to break these ties by fighting other states. Thus, the liberal proposition is straightforward:

- LH1. The more central is a state in trade, alliance, and IGO networks, the less likely it is to engage in conflict behaviour.

Neither the liberal nor the realist approach has much to say about the cultural centrality of states. Again, by default, we can speculate that both paradigms imply that cultural centrality has little or no impact on a state's conflict behaviour. The constructivist approach, however, focuses on culture and cultural affinity as key concepts in determining states' identities, and thus their behaviour (Wendt, 1999; Jepperson, Wendt, and Katzenstein, 1996; Katzenstein, 1996). Surprisingly, so does the Huntingtonian thesis about the clash of civilizations (Huntington, 1996). These approaches suggest that cultural centrality implies cultural affinity with many other states, that a state serves as a cultural bridge between different cultures, and that it is connected to states that are also central in terms of their cultural identities. The general argument rests on the notion that shared identities make for common interests, and subsequently for cooperation (Maoz *et al.*, 2003). Thus, cultural similarities are considered to reduce the likelihood of conflict. Conversely cultural differences make for hate and increase the probability of conflict. Huntington's thesis has been subjected to empirical tests (Henderson, 1998; Russett, Oneal, and Cox, 2000). The findings are decidedly mixed. From this we can deduce the following hypothesis:

- CH1. The more culturally central a state, the less likely it is to experience international conflict.

We now turn to the effect of status inconsistency on conflict. As noted, centrality in cooperative networks indicates a measure of ascribed status. This must be compared to acquired status, that is, to the state's level of military capabilities. Status inconsistency thus represents a discrepancy between the state's ranking on military capabilities and its centrality-related ranking on any of the networks. Here we can formulate more consistent hypotheses based on the realist approach. Specifically, realists (e.g., Gilpin, 1980) or semi-realists (e.g., Organski and Kugler, 1980; Lemke and Kugler, 1996) all view dissatisfaction with the status quo as a cause of war. This must be backed up, of course, by sufficient power to render war profitable. Thus, we can deduce the following hypothesis.

RH3. Status inconsistency (a positive gap between the state's ranking on military capability and its ranking on alliance, trade, and/or IGO centrality) increases the probability of conflict experience of a state.

In general, it is difficult to find explicit predictions in the liberal or constructivist approach about the relationship between status inconsistency and conflict involvement of states. But it is fair to assume that these approaches would not disagree with these realist hypotheses. The key difference in these approaches lies in the type of relational or affiliational network that determines the element of ascribed status. Liberals would consider trade and IGO centrality to be major determinants of ascribed status. Constructivists/culturalists would consider cultural centrality to be a major determinant of ascribed status.

Since status inconsistency is expected to affect national conflict propensity, this may well spill over to the dyadic level. Dyads, the members of which are status inconsistent should be more likely to fight than those that are not characterized by a high shared level of status inconsistency. This leads us to the following hypothesis.

RH5. The higher the level of status inconsistency of members of a dyad, the more likely they are to fight each other.

We now turn to the systemic level. The studies on status inconsistency and systemic conflict all hypothesize that as the pecking order of states in the system in terms of capabilities diverges from the pecking order of state in terms of ascribed status, the magnitude and frequency of conflict in the system increases. We adopt the same hypothesis. Thus,

RH6. The higher the degree of status inconsistency in the system, the more conflict the system would experience.

7.4 Research Design

We conduct several analyses at different levels of aggregation. At the national level of analysis, the empirical domain consists of all independent member states in the system over the 1816-2001 period. Our unit of analysis is the nation-year. At the dyadic level our empirical domain includes all politically relevant dyads over the same period. A politically relevant dyad (Maoz and Russett, 1993) consists of states that are either (a) directly or indirectly contiguous (share a border, a colonial border, or are separated by a body of water less than 150 nautical miles), or (b) one of which is either a global power with a global reach capacity or a regional power with a regional reach capacity (Maoz, 1996: 139).⁴ Our unit of analysis is the dyad-year. At the system level our unit of analysis is the year, over the 1816-2001 period.

a. Data and Sources

Our spatial domain consists of all state-members of the interstate system during the 1816-2000 period. Data on specific attributes vary depending on the sources and variables used. The following datasets were employed in this study.

1. *Militarized Interstate Dispute (MID) dataset, version 3.02* (Ghosn and Palmer, 2003). These data cover all MIDs over the 1816-2001 period.
2. *Alliance Dataset* (Gibler and Sarkees, 2004). Covers the 1816-2000 alliances.
3. *Trade Dataset* (Barbieri, 2002; Barbieri, Khesk, and Pollins, 2003). Covers the 1870-1996 period for most states.
4. *IGO Dataset* (Pevenhouse, Nordstrom, and Warnke, 2004). Covers the 1815-2000 period and lists all state memberships in IGOs during this period.
5. *Capability Dataset* (Singer, 1990). Covers the 1816-2001 period.⁵ We used the Singer, Bremer, and Stuckey (1972) Composite Index of National Capabilities (CINC).
6. *Cultural Dataset*. Collected by Phil Shaffer at the University of Michigan. Consists of ethnic, religious, and linguistic breakdown of states over the period, 1820-1990. Data measured at ten-year intervals. In this study we employ only religious and linguistic data, due to incompatibilities in the ethnic groupings.
7. *Regime Characteristics of States* (Jagers and Gurr, 1995). POLITY IV dataset, available at: <http://www.cidcm.umd.edu/inscr/polity>. Covers the 1800-2002 period.

b. Measurement of Variables

The dependent variables are various measures of conflict behaviour. Several alternative measures are used. We report here only one measure. Results are fundamentally similar across all measures.

1. *Dichotomous MID/No MID*. An observation is coded as one if the state was involved in at least one MID during the year and zero otherwise. For the dyadic level we code this variable as one if the dyad experienced at least one MID during a year and zero otherwise.
2. *Dichotomous War/No War*. An observation is coded as one if the state/dyad was involved in at least one interstate war during the year, and zero otherwise.
3. *No. MIDs/Wars*. The number of MIDs or wars the state was involved in during a given year. These variables are aggregated over all dyadic MIDs/Wars for each year for the systemic level of analysis.
4. *Escalation*. A variable was coded as one if a state/dyad was involved in a war during the year, zero if a state/dyad was involved in a dispute, but not in a war, and missing otherwise. This variable allows testing the impact of both the independent and control variables on the propensity of dispute escalation.
5. *Dyad-Days of MID*. The duration of conflict in the system is measured by aggregating across dyadic MID durations for the systemic analyses.

Independent variables are measured as follows:

1. *Centrality Measures for Network Data*. All network data have been discussed elsewhere (Maoz *et al*, 2003). In general, we examine five networks to generate centrality measures: alliance networks, trade networks, IGO networks, linguistic networks, and religious networks. For each year, a network is created for each of these variables. Each of these networks is represented by a $n \times n$ matrix where n is the number of independent states for that year.

Alliance matrix. Each entry, a_{ij} in the matrix gets a score of 1 if states i and j had a formal alliance, and zero otherwise.

Trade matrix. Each entry t_{ij} gets a score of 1 if states i and j trade with each other (at a level of 5% or more of the combined trade of both states), and zero otherwise.

Linguistic/Religious matrix. These are affiliation networks generated from two separate datasets. Each dataset is measured once every decade, generating a $n \times k$ matrix, where n is the number of states and k is the number of linguistic/religious groups existing during that decade. These matrices are converted into adjacency matrices via matrix multiplication

operations (Maoz *et al.*, 2004). Each entry e_{ij} in the adjacency matrix gets a score of 1 if states i and j had at least one linguistic/religious group in common that accounted for 5% or more of their respective populations, and zero otherwise.

IGO matrix. IGO membership also generates an $n \times k$ affiliation matrix. It is measured once every five years over the 1815-1965 period and annually afterwards. Here too we convert the affiliation matrix into an adjacency matrix by multiplying it by its transpose (Wasserman and Faust, 1997: 307-309).

Centrality measures for each matrix and each year have been generated for each of the three networks using UCINET 6.0 (Borgatti, Everett, and Freeman, 2002). For religious, linguistic and IGO centrality scores, between-decade (half decade) centrality scores have been extrapolated from the decade centrality figures.⁶

2. *Status Inconsistency Indices.* We noted the problems with existing status inconsistency indices. Accordingly we use several alternative measures of status inconsistency. We start with a simple measure that taps the proportional discrepancy between capability-related rank and individual centrality scores. This measure is defined as:

$$SI_X^i = \frac{r_{cap}^i - r(C_X^i)}{n-1} \quad (1.5)$$

Where r_{cap}^i is the CINC rank of state i , and $r(C_X^i)$ is the state's centrality score using the measure x (x =Degree, Closeness, Betweenness, and Eigenvector Centrality). This status inconsistency score is computed for each of the centrality indices and for each of the networks. We also calculate an integrated status inconsistency score per network as follows.

$$SI_{INT}^i = \frac{r_{cap}^i - \frac{1}{k} \sum_{k=1}^m r(C_{Xk}^i)}{(n-1)} \quad (1.6)$$

Where k indexes the networks used in our study (trade, alliances, IGOs, language, religion). Again, this index varies from 1 to -1, with greater numbers indicating greater levels of status inconsistency (negative values may indicate status satisfaction).

Dyadic status inconsistency is measured via the weak link approach as the lowest of the national status inconsistency scores of the members of the dyad.

Other Independent Variables. National and dyadic conflict behaviour is affected by a complex set of factors beyond their network centrality or by their status inconsistency. Other factors were shown to have a significant

effect on their conflict-related decisions and actions. Rather than addressing these factors as control variables, as many of the current studies of conflict seem to suggest, we prefer to treat these variables as additional “causes” of conflict behaviour.

For the monadic analyses we include the following variables:

3. *Number of states in the focal state’s Politically Relevant International Environment (PRIE)*. The PRIE of a state (Maoz, 1996) indicates the state’s strategic reference group. It is composed of all states that are contiguous to the focal state, of all regional powers in the state’s region that possess regional force projection capacity, and all global powers with global reach capacity. The larger number of states in one’s PRIE, the more threats and opportunities exist for the focal state, hence the more likely it is to engage in conflict.
4. *The Regime Score of the focal state*. Following a large body of research on the democratic peace proposition, the findings on the effect of a state’s regime on national conflict behaviour are decidedly mixed. However, a recent study (Maoz, 2001) suggests that, in combination of another factor – the average regime in the state’s PRIE – it has a significant negative impact on the probability of conflict involvement. The measurement of regime score follows Maoz (1996).⁷
5. *The political stability of the state*. The stability of the state’s political system measured as the number of years of the current regime (Maoz, 1998).⁸
6. *Regime Score in the State’s PRIE*. Following Maoz (1996, 2001), the political structure of the state’s environment is said to have a significant effect on its behaviour. Democratic PRIEs tend to dampen the state’s propensity for conflict. Hence this variable is measured as the average regime score of the state’s PRIE (Maoz, 2001).
7. *Capability Ratio*. The capability ratio of the state to PRIE was found to affect a state’s conflict propensity. This variable is measured as the COW military capability score of the state divided by the sum of the capability scores of the states making up the focal state’s PRIE. It is used only in the analyses in which centrality scores are applied as independent variables but is not included in the analyses that include status inconsistency measures.

Dyadic Control Variables

We include the traditional variables of joint democracy (lowest of the respective democracy scores in the dyad), and contiguity (where contiguity is coded as one if members of the dyad were directly contiguous, and zero if

they were not directly contiguous but one of them was a major or a regional power). Other control variables (capability ratios, trade, International Governmental Organizations (IGO) memberships) are incorporated into our status inconsistency variables.

Systemic Measures of Conflict and Status Inconsistency.

We used several measures of conflict, following previous analyses that tested network hypotheses on system level status inconsistency and war (Volgy and Mayhall, 2000, 1995; Wallace, 1973; Ray, 1974; Midlarsky, 1975). We examined the raw number of MIDs and Wars in the system, the normalized number of MIDs/Wars (divided by the number of states), and the nation-months of MIDs/Wars.

Status inconsistency was measured in the following manner. For each year, we computed a correlation between measures of acquired and ascribed status. First, we used the correlation between the average relative ranking of states on alliance, trade, linguistic, religious, and IGO degree centrality, on the one hand, and their CINC scores, on the other. The second was a correlation between the average relative ranking of states on alliance, trade, and IGO eigenvector centrality and their CINC scores. These correlations measured the degree of status consistency in the system. High positive correlations imply that states' degree centrality scores matched their CINC scores; negative correlations imply high levels of status inconsistency in the system.

For the systemic analyses we used a number of control variables (e.g., Maoz et al., 2004; Maoz, 2004b). These include: the number of major powers in the system and the number of states in democratic networks (Maoz, 2001).

c. Estimation Methods

For the monadic and dyadic analyses, we perform two sets of estimation procedures, based on the structure of the dependent variables. First, for count variables we ran cross sectional time-series regression with a negative binomial link. For dichotomous occurrence variables we ran cross sectional time-series regressions with a logit link, both sets of regressions were done with a first-order autoregressive correlation structure. Second, we ran the regressions with dichotomous dependent variables using a simple logit model, employing the BTSCS procedure that applies cubic splines (Beck, Katz, and Tucker, 1998).

For the systemic analyses we applied an autoregressive Poisson event-count model for the count variables (no. MIDs/Wars in the system) and a straightforward time-series regression with Cochran-Orcutt correction for autocorrelation for the duration variable.

7.5 Empirical Results

We start by examining the relationships among the various measures of centrality. This is given in Table 1 below. To facilitate interpretation of the results, we highlighted the correlations that were larger than $|0.5|$. The correlations among different measures of centrality derived from the same network are not high; many of them are extremely low and some are even negative. The large N renders even small correlations statistically significant, but the strength of associations among different measures of centrality is generally weak. This suggests that different measures of centrality tap different aspects of the concept.⁹ Second, by and large, the correlations between centrality indices derived from different networks are also not very high, and those that are above (or below) $|0.5|$ do not suggest any systematic associations. This suggests that the relative position of states varies substantially across substantive domains. States that are central on one network are not necessarily central on other networks. Thus, we can examine the additive effect of different centrality indicators without dealing with multicollinearity in the multivariate analyses.

We start our inquiry into the relationship network between centrality and conflict by presenting an analysis linking different measures of centrality to conflict, and controlling for a number of variables. This is given in Table 2.¹⁰

The results in Table 2 suggest that the linkage between the various centrality measures and national conflict behaviour is not robust across indices and across dependent variables. Nevertheless, some relatively consistent relationships do exist between various centrality indices and conflict behaviour. Trade centrality seems to have a consistently negative effect on MID and war involvement. As a state's trade centrality goes up, the likelihood of its conflict involvement declines significantly. This also applies to the analysis of MID escalation to war that is not reported here. Religious centrality also appears to be inversely associated with the probability of MID and war involvement, although in some cases (e.g., closeness religious centrality) its effect on MID involvement is positive. The negative effects of trade and religious centrality on conflict appear to be in line with the hypotheses of the liberal and constructivist paradigm, but the support for these propositions is not robust. IGO betweenness and eigenvector centrality have a negative effect on MID participation. This is in line with the liberal hypothesis. Yet, IGO closeness centrality has a positive effect on MID participation and IGO eigenvector centrality has a positive effect on war participation, in stark contrast to the liberal expectation.

Table 1 Correlations between Measures of Network Centrality, 1816-2000

	TRD- DEG	TRD- CLO	TRD- BET	TRD- EGV	ALY- DEG	ALY- CLO	ALY- BET	ALY- EGV	LNG- DEG	LNG- CLO	LNG- BET	LNG- EGV	IGO- DEG	IGO- BET	IGO- CLO	IGO- EGV
TRDCLO	0.148															
TRDBET	0.349	0.151														
TRDEGV	0.590	0.171	0.460													
N	10,241	8,933	10,241													
ALYDEG	0.194	-0.057	0.033	0.022												
ALYCLO	0.016	0.127	0.116	0.216	0.416											
ALYBET	0.198	0.036	0.093	0.078	0.279	0.125										
ALYEGV	0.047	-0.08	0.021	0.010	0.563	0.219	0.076									
N	10,238	9,292	9,292	10,238	13,502	13,502	13,502									
LNGDEG	-0.285	-0.028	-0.105	-0.125	0.305	0.341	-0.031	0.228								
LNGCLO	-0.520	0.005	-0.044	-0.197	0.062	0.659	-0.084	0.011	0.559							
LNGBET	-0.058	-0.016	0.006	-0.004	0.083	0.133	0.064	0.051	0.239	0.224						
LNGEGV	-0.170	-0.040	0.010	0.065	0.275	0.243	0.034	0.176	0.005	0.127	0.159					
N	8,426	7,747	8,420	8,426	10,603	10,603	10,603	10,602	10,602	10,647	10,647					
RELDEG	-0.015	0.067	0.126	0.091	0.072	0.106	0.017	0.063	0.362	0.188	0.088	-0.146	-0.097	0.312	0.016	0.144
RELCLO	0.219	-0.239	-0.081	-0.110	0.052	-0.498	-0.006	0.007	-0.244	-0.349	-0.027	0.064	-0.178	0.587	0.017	-0.256
RELBET	-0.054	-0.046	-0.039	-0.063	0.025	-0.003	-0.009	-0.006	-0.029	0.031	0.035	0.058	0.087	-0.075	-0.014	-0.029
RELEGV	0.006	0.003	0.114	0.097	0.109	0.065	0.002	0.116	0.311	-0.069	0.031	-0.214	0.144	-0.256	-0.029	0.161
N	9,178	8,351	9,391	9,391	11,545	11,545	11,545	11,544	10,242	6,923	10,242	10,242	11,562	11,562	11,486	11,486
IGODEG	0.320	-0.098	-0.014	0.061	0.017	-0.518	0.039	-0.036	-0.275	-0.624	-0.159	-0.273				
IGOCLO	0.395	0.091	-0.120	-0.093	0.053	-0.544	0.053	-0.026	-0.358	0.524	-0.092	-0.012	0.707			
IGOBET	-0.045	0.101	0.270	0.267	-0.029	0.082	-0.004	-0.035	-0.004	0.087	-0.022	-0.011	-0.038	-0.116		
IGOEGV	-0.147	0.091	0.231	0.231	0.005	0.197	0.023	0.020	0.067	0.139	-0.033	-0.129	-0.029	-0.237	0.242	
N	10,233	8,890	10,233	10,233	12,898	12,898	12,898	12,897	10,419	6,985	10,419	10,419	11,486	11,486	11,486	

Table 2 The Effect of Centrality and Status Inconsistency on Conflict Behaviour, 1816-2000 – Cross Sectional Time Series Analysis

Centrality Indicator	MIDs				Wars			
	Degree C	Closeness C	Betweenness C	Eigenvector C	Degree C	Closeness C	Betweenness C	Eigenvector C
Regime Score	-0.002 (0.001)	-0.005* (0.002)	-0.003* (0.001)	-0.002 (0.001)	0.001 (0.003)	-0.001 (0.004)	-0.001 (0.002)	-0.001 (0.003)
Regime in PRIE	-0.006* (0.003)	-0.005 (0.005)	-0.008** (0.003)	-0.007* (0.003)	-0.007 (0.005)	-0.001 (0.008)	-0.011* (0.006)	-0.007 (0.005)
Rel. Mil. Cap.	5.763** (1.319)	6.468** (1.646)	7.252** (1.674)	6.590** (1.419)	4.384** (3.111)	4.211** (0.972)	6.294** (1.565)	5.049** (0.971)
Cumulative No. of past MIDs	0.013** (0.001)	0.012** (0.002)	0.012** (0.002)	0.013** (0.002)	0.005** (0.001)	0.007** (0.002)	0.002 (0.001)	0.004** (0.001)
Trade Centrality	-0.005* (0.002)	-0.017** (0.006)	-0.023 (0.013)	-0.009** (0.003)	-0.013** (0.004)	-0.012 (0.008)	0.011 (0.032)	-0.004 (0.009)
Alliance Centrality	-0.001 (0.006)	0.105 (0.074)	0.021 (0.045)	-0.006** (0.002)	0.006 (0.011)	0.110 (0.197)	0.014 (0.030)	0.003 (0.003)
Linguistic Centrality	-0.001 (0.006)	0.161* (0.082)	-0.066 (0.125)	-0.003 (0.002)	-0.017 (0.010)	-0.149 (0.137)	0.032 (0.170)	0.007 (0.006)
Religious Centrality	-0.009** (0.002)	-0.001 (0.003)	0.035 (0.044)	0.012* (0.005)	-0.016** (0.006)	-0.025* (0.011)	-0.004 (0.075)	-0.016 (0.010)
IGO Centrality	0.004 (0.003)	0.008** (0.002)	-1.453** (0.527)	-0.022* (0.011)	-0.002 (0.003)	0.004 (0.006)	-2.619* (1.319)	0.035* (0.015)
Constant	-0.827** (0.333)	-1.829** (0.339)	-0.993** (0.095)	-0.480* (0.206)	-1.806** (0.294)	-2.767** (0.724)	-2.931** (0.189)	-3.419** (0.340)
Model Statistics	N=7,403	N=4,292	N=7,392	N=7,391	N=7,403	N=4,292	N=7,392	N=7,391
* p<.01	States=128	States=87	States=128	States=128	States=128	States=87	States=128	States=128
** p<.05	$\chi^2=221.04^{**}$	$\chi^2=120.20^{**}$	$\chi^2=175.76^{**}$	$\chi^2=179.24^{**}$	$\chi^2=101.55^{**}$	$\chi^2=202.11^{**}$	$\chi^2=119.65^{**}$	$\chi^2=89.06^{**}$

Most noteworthy is the almost general lack of relationship between alliance network centrality and conflict behaviour. Neither of the two contradictory realist hypotheses about the effect of alliance centrality on conflict is supported by the data. The only case where one of the realist hypotheses (RH1) receives some support was in the equation testing the effect of eigenvector centrality on MIDs.

We now turn to an analysis of the impact of status inconsistency on national conflict involvement patterns. This is done in Table 3.

Table 3 Status Inconsistency and National Conflict Involvement, 1816-2000 Cross Sectional Time Series Analysis

Centrality Indicator	MIDs		Wars		Escalation	
	Different Networks	Average Status Incons.	Different Networks	Average Status Incons.	Different Networks	Average Status Incons.
Regime Score	-0.001 (0.001)	-0.002 (0.001)	0.003 (0.003)	-0.001 (0.003)	0.001 (0.003)	-0.001 (0.003)
Regime in PRIE	-0.009** (0.003)	-0.009** (0.003)	-0.014** (0.004)	-0.013** (0.005)	-0.006 (0.005)	-0.005 (0.005)
Cumulative No. of past MIDs	0.012** (0.001)	0.012** (0.002)	0.004** (0.001)	0.002 (0.001)	0.001 (0.001)	0.001 (0.001)
Cap-Alliance Status Incons.	0.439* (0.200)	–	0.487 (0.546)	–	0.129 (0.444)	–
Cap-Trade Status Incons.	1.097** (0.271)	–	2.495** (0.673)	–	1.585* (0.655)	–
Cap-IGO Status Incons.	0.196 (0.194)	–	0.008 (0.340)	–	0.022 (0.320)	–
Cap-Language Status Incons.	-0.365 (0.200)	–	0.351 (0.487)	–	0.402 (0.420)	–
Cap-Religion Status Inc.	0.509* (0.230)	–	0.008 (0.470)	–	-0.235 (0.426)	–
Cap-Coop Cent. Incons.	–	1.498** (0.267)	–	2.487** (0.461)	–	1.393** (0.447)
Constant	-0.905** (0.089)	-0.981** (0.089)	-3.127** (0.164)	-3.066** (0.145)	-1.906** (0.183)	-1.837** (0.163)
Model Statistics	N=7,456 States=129 $\chi^2=175.50^{**}$	N=7,441 States=129 $\chi^2=144.74^{**}$	N=7,456 States=129 $\chi^2=96.95^{**}$	N=7,441 States=129 $\chi^2=81.21^{**}$	N=2,631 States=120 $\chi^2=18.17^*$	N=2,631 States=120 $\chi^2=13.51^{**}$

* p<.01; ** p<.05

Table 3 shows that capability-trade inconsistency has the most robust effect on national conflict involvement and conflict escalation. Alliance- and religion-based status inconsistency indices have a positive impact on the probability of MID involvement, but not on the probability of war

involvement or on the probability of conflict escalation. However, integrated centrality scores¹¹ appear to have a significant impact on both the probability of MID involvement, war involvement, and on the probability of MID escalation to war.

Taken together, these results suggest that status inconsistency has a significant impact on the propensity of states to engage in conflict and to escalate low-level conflicts to war. This is perhaps the first study that connects status inconsistency to international conflict at the national level of analysis. Table 4 reports the relationship between status inconsistency and dyadic conflict.

The results of this analysis suggest that status inconsistency has a robust impact on the probability of dyadic conflict. As the level of status inconsistency in the dyad increases, the probability of dyadic MIDs and war increases. This effect obtains regardless of the specific measure of ascribed status that serves as a basis for the calculation of status inconsistency, and regardless of the measure of network centrality used to develop this index. This implies that the effect of status inconsistency on conflict can be extended from the monadic to the dyadic level of analysis. We now turn to a system-level analysis of status inconsistency and conflict.

Table 5 suggests again that status inconsistency at the system level has a significant impact on levels of systemic conflict.¹² This relationship is robust, but not across all measures of status inconsistency. The only measure of status inconsistency that has a robust negative impact on the dependent conflict variables is the alliance-CINC inconsistency. The IGO-CINC inconsistency index – though not as robust as the alliance-CINC inconsistency index – supports the hypotheses in some cases. However, in the 19th century, this index is positively correlated with MID and war frequency, and with conflict duration, in contrast to the hypothesis.

The integrated status inconsistency indices have a generally significant negative impact on the dependent variables, but this is based strictly on the data for the 20th century; for the 19th century the effect of status inconsistency on conflict is not statistically significant.

The control variables do not appear to have a consistent effect on the dependent variables, with the exception of the democratic cliques variables which – for the most part, but particularly in the 20th century – is inversely related to the frequency and duration of international conflict and war.

Table 4 Status Inconsistency and Dyadic Conflict Involvement: A Time-Series Cross-Sectional Analysis of Politically-Relevant Dyads, 1816-2001

Independent Variable	MID				War			
	Degree	Closeness	Between	Eigenvect.	Degree	Closeness	Between	Eigenvect.
Minimum Regime Score in Dyad	-0.009** (0.001)	-0.008** (0.001)	-0.008** (0.001)	-0.007** (0.001)	-0.010** (0.001)	-0.013** (0.003)	-0.013** (0.003)	-0.013** (0.003)
Contiguity	0.221** (0.018)	0.226** (0.022)	0.225** (0.022)	0.221** (0.022)	-0.074* (0.002)	-0.092* (0.043)	0.086* (0.043)	0.083* (0.043)
Degree Centrality Status Inconsistency	0.015** (0.001)	-	-	-	0.021** (0.002)	-	-	-
Closeness Centrality Status Inconsistency	-	0.014** (0.002)	-	-	-	0.014** (0.003)	-	-
Betweenness Centrality Status Inconsistency	-	-	0.012** (0.002)	-	-	-	0.008** (0.003)	-
Eigenvector Centrality Status Inconsistency	-	-	-	0.013** (0.002)	-	-	-	0.011** (0.003)
Model Statistics	N=66,159 D=1,395 $\chi^2=196.7^{**}$	N=66,159 D=1,395 $\chi^2=212.6^{**}$	N=66,159 D=1,395 $\chi^2=199.7^{**}$	N=66,159 D=1,395 $\chi^2=200.6^{**}$	N=59,553 D=1,273 $\chi^2=48.10^{**}$	N=59,542 D=1,273 $\chi^2=48.12^{**}$	N=59,542 D=1,273 $\chi^2=40.1^{**}$	N=59,542 D=1,273 $\chi^2=42.04^{**}$

Table 5 Status Inconsistency and International Conflict in the International System, 1816-2001 (** p<.01; * p<.05; + p<.10)

Independent Variable	No. MIDs			No. Wars			Dyad-Days Duration		
	Entire Period	19th Century	20th Century	Entire Period	19th Century	20th Century	Entire Period	19th Century	20th Century
No. Major Powers	0.137* (0.069)	-0.060 (0.145)	0.110+ (0.065)	0.312* (0.151)	-0.572 (0.400)	0.240* (0.120)	0.150 (0.113)	-0.306* (0.134)	0.129 (0.956)
Prop. Democratic Cliques	-0.404 (0.715)	1.762 (1.235)	-1.959** (0.700)	-4.538** (1.359)	5.225 (3.598)	-8.185** (1.288)	-2.120+ (1.168)	3.382** (1.149)	-4.551** (1.036)
Alliance-CINC	-2.481** (0.298)	-0.992 (0.708)	-1.937** (0.271)	-2.357** (0.723)	-7.160** (2.485)	-1.129* (0.548)	-2.729** (0.494)	-3.015** (1.149)	-1.742** (0.406)
Status Incons.	-1.331+ (0.769)	- ¹³	-0.943 (0.701)	-0.841 (1.658)	-	0.717 (1.346)	0.143 (1.287)	-	0.225 (1.068)
IGO-CINC Status Inconsistency	-1.186** (0.355)	1.862** (0.580)	-0.714* (0.354)	-1.586* (0.756)	10.098** (3.487)	-0.621 (0.655)	-1.999** (0.586)	3.989** (0.694)	-1.209* (0.530)
AR(1)	0.531** (0.066)	-0.002 (0.117)	0.622** (0.077)	0.554** (0.058)	0.518** (0.098)	0.717** (0.078)	0.588** (0.054)	0.424** (0.106)	0.745** (0.062)
Constant	5.315** (0.772)	0.772* (0.387)	0.622** (0.077)	4.353** (1.530)	-3.646 (2.815)	4.700** (1.151)	11.175** (1.256)	5.726** (0.707)	11.975** (1.003)
Model Statistics	N=124 $\bar{R}^2=0.630$	N=82 $\bar{R}^2=0.154$	N=96 $\bar{R}^2=0.630$	N=124 $\bar{R}^2=0.519$	N=82 $\bar{R}^2=0.299$	N=96 $\bar{R}^2=0.654$	N=124 $\bar{R}^2=0.581$	N=96 $\bar{R}^2=0.475$	N=96 $\bar{R}^2=0.660$
No. Major Powers	-0.021 (0.057)	-0.188 (0.149)	0.058 (0.039)	0.139 (0.155)	-0.691 (0.462)	0.285** (0.103)	-0.049 (0.077)	-0.427** (0.124)	0.079 (0.060)
Prop. Democratic Cliques	4.122** (0.449)	0.040 (1.288)	-0.181 (0.500)	2.543* (1.013)	1.508 (4.082)	-6.735** (1.311)	3.907** (0.575)	1.717 (1.087)	-2.737** (0.747)
Mean Centrality-CINC Incons.	-0.574* (0.234)	0.811 (0.604)	-1.100** (0.193)	-0.744 (0.617)	-0.423 (1.907)	-1.900** (0.486)	-0.616+ (0.347)	0.012 (0.520)	-1.489** (0.286)
AR(1)	0.745 (0.046)	0.141 (0.116)	0.839** (0.052)	0.525** (0.055)	0.532** (0.125)	0.606** (0.066)	0.704** (0.044)	0.702** (0.084)	0.831** (0.051)
Constant	1.443** (0.277)	2.050** (0.579)	3.994** (0.307)	-0.162 (0.647)	2.155 (1.779)	4.548** (0.700)	7.528** (0.417)	7.780** (0.497)	11.055** (0.439)
Model Statistics	N=179 $\bar{R}^2=0.630$	N=83 $\bar{R}^2=0.080$	N=96 $\bar{R}^2=0.771$	N=179 $\bar{R}^2=0.365$	N=83 $\bar{R}^2=0.169$	N=96 $\bar{R}^2=0.651$	N=179 $\bar{R}^2=0.674$	N=83 $\bar{R}^2=0.534$	N=96 $\bar{R}^2=0.776$

7.6 Conclusion

Status and status inconsistency have been important topics of inquiry in international politics. However, the empirical analyses of the effects of these concepts on conflict have been both conceptually and empirically inconsistent. This study applied the concept of network centrality in order to examine the extent to which a nation's status in the system affected its conflict behaviour, and – more importantly – to provide a renewed exploration into the relationship between status inconsistency and international conflict. We examined these relationships between centrality, status inconsistency and conflict at the national, dyadic, and systemic levels of analysis. The principal findings suggest the following points:

1. Trade centrality is the only type of status indicator that has a relatively robust negative effect on national conflict behaviour. Alliance centrality does not have a robust effect on national conflict behaviour. IGO, religious, and linguistic centrality indices likewise do not exhibit a significant relationship to national conflict behaviour. We can tentatively conclude that none of the hypotheses linking national status to conflict has received robust and unequivocal support.
2. The liberal hypotheses suggesting an inverse relationship between cooperative centrality and conflict received some support, but this is sensitive to the type of network from which centrality indices are derived and the specific type of centrality index. Neither the realist hypotheses, nor the cultural/constructivist ones were supported by the analysis linking centrality to conflict behaviour.
3. The level of status inconsistency appears to have a significant positive effect on the conflict propensity of states. This is particularly the case with respect to status inconsistency measured as the gap between capability-rank and trade centrality rank, but it also applies to some extent to status inconsistency based on capability-alliance centrality and capability-religious centrality versions. More importantly, a weighted status inconsistency index that takes into account the centrality of states in different network seems to have a robust effect on its conflict behaviour. As the level of status inconsistency of a state increases, the likelihood that it would engage in conflict goes up.
4. In contrast to the level-of-analysis puzzle that has characterized previous investigations on this matter, we find that the effect of status inconsistency on conflict is generalizable across levels of analysis. The same relationship between status inconsistency and conflict is found at the monadic, dyadic and systemic levels of analysis.

5. The effect of the control variables on conflict behaviour corroborates previous investigations on the correlates of conflict involvement of states, of dyadic conflict and of systemic conflict: A state's regime score does not have a significant impact on its conflict involvement. On the other hand, the regime structure of the states in the focal nation's PRIE does appear to have a consistently dampening effect on its conflict involvement propensity. Capability ratios of states-to-PRIE have a consistent effect on state's conflict involvement. The cumulative number of past MIDs has a consistent positive effect on the probability of present conflict.
6. Joint democracy reduces the probability of dyadic conflict, and direct contiguity increases that probability. Finally, at the system level, the proportion of states in democratic cliques reduces the probability of conflict in the system, while the number of major power does not have a robust and consistent effect on the frequency of conflict in the system.

This is one of the first studies that suggests a consistent cross-level link between status inconsistency and conflict involvement. As such, it provides support to the proposition that when states that are unhappy about their position in the system, and feel deprived because their capabilities far exceed their ascribed status, they tend to deal with this feeling of deprivation through the use of violent means. Moreover, as the correlation between the capability-based pecking order and the ascribed status pecking order of states declines, the frequency and magnitude of conflict in the system rises.

We started out with the assertion that network positions are important not only in and of themselves, but also as symbols of ascribed status. They indicate the structural importance of states in different networks. International relations scholars long felt that the arguments linking individual level status inconsistency to various deviant behaviours may well apply to the international arena. However, past investigations of these subjects generated inconclusive and non-generalizable results. The difference between our study and previous investigations on these matters is due primarily to the network analytic approach we employed. Social network analysis provided us with a new perspective on the concept of ascribed status. Consequently, we were able to develop new measures of status inconsistency which, in our view, better capture the essence of this concept in international politics. More importantly, we relied on different conceptualizations of ascribed status based on different measures of network centrality. These conceptualizations allowed us to address a broader range of status-related indices than has been attempted in the past.

Our findings, although tentative, are suggestive of the effect of structural position of states on their behaviour. This opens up an interesting array of questions for further research. For example, what are the factors that affect states' structural position in international networks? Given that structural network position affects a state's conflict propensity, is it possible that a state's conflict behaviour would have an effect on its structural position in certain networks? Second, how can we translate states' structural positions in various networks into system-level measures of status inconsistency? Are these levels of status inconsistency related to system-wide conflict patterns? The current study suggests that the relationship between national position in various networks, various forms status inconsistency, and national level conflict behaviour is sufficiently suggestive to warrant additional research on this matter in a broader context of a network analysis of international politics.

7.7 References

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¹ The term "status" is broadly used among various disciplines. We use it in a similar way to Harary (1959).

² In principal, for unconnected members, this measure is undefined (because the denominator is zero), though some algorithm, such as in UCINET 6 farness procedure do calculate it, but allocating to the isolate nodes a geodesic number, which is greater than the observed highest number of geodesic in the network

³ Other network centrality indices include information centrality, influence centrality, and power centrality (Wasserman and Faust, 1997: 194-198, 203-205; Mizruchi and Bunting, 1981). We use these measures in a different study.

⁴ We conducted dyadic analysis with the entire population of dyads, with basically similar results.

⁵ For actual dataset see <http://cow2.la.psu.edu/>.

⁶ Separate analyses were run with the non-extrapolated figures. Results were nearly identical to the analyses performed on extrapolated linguistic/religious, and International Governmental Organizations data.

⁷ Note that the Maoz-Russett (1993) regime score is obtained by $REG=(DEMOC-AUTOC)\times CONCN$, where DEMOC is the POLITY IV Democracy score, AUTOC is the autocracy score, and CONCN is the power concentration score of the state. Since there is no power concentration score in the POLITY IV dataset, it was generated using the POLITY II coding scheme on the POLITY IV regime characteristics.

⁸ Our measure of political stability differs from the one used by Bennett and Stam (2004) as an indicator of democratization. We believe that their measure is not a valid predictor of democratization because it does not distinguish between movement from an autocratic to an anocratic regime and movement from an anocratic to a democratic regime. See the arguments by Maoz (1998) vis-à-vis Mansfield and Snyder (1995, 1996) on this matter.

⁹ See Bolland (1988) for a discussion of differences among the various centrality measures on the basis of actual and simulated data.

¹⁰ We have conducted similar analyses for war frequencies and dichotomous measures of MID and war involvement. In addition, we ran the tests with dichotomous dependent variables using the Beck *et al.* (1998) BTSCS procedure using splines of years of peace. The results are largely similar to the ones reported in Table 2.

¹¹ We used only the cooperative indices (alliances, trade, and IGO) here, but the same applies to a general index of centrality that average across all five network centrality measures.

¹² Negative correlations between status inconsistency measures and conflict measures are in line with the hypotheses. This is so because the independent variables are measured as correlations between centrality and CINC rankings of states per year. This means that the higher the correlation between a centrality measure and CINC the more “status consistent” the system.

¹³ No trade-CINC inconsistency was applied for 19 century analysis; trade is available only from 1870 on. This is also why the number of years in the 19th and 20th century does not add up to the total period N.