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POWER AND CONFLICT:
THE TERTIUS GAUDENS IN THE
SINO-SOVIET-AMERICAN
TRIAD

BY

Alec Campbell

A thesis submitted to the Faculty of Graduate
Studies and Research in partial fulfillment
of the requirements for the degree of
Master of Arts

Norman Paterson School of International Affairs
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Ottawa, Ontario
June 1984

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ABSTRACT

The tertius gaudens, or "enjoying third", is the member of the triad that each of the other members would prefer as a partner in a coalition against the third, and which uses this fact to its own ends. This study compares two perspectives on the tertius gaudens role. Theodore Caplow suggests that it is governed by the distribution of power in the triadic system. Carsten Holbraad suggests that in international triads it is related to the distribution of conflict in the triad at any given time. The Sino-Soviet-American triad from 1967 to 1976 is the triad in question. Data from the World Event/Interaction Survey and the U.S. Arms Control and Disarmament Agency are analysed, using OLS regression methods. Results suggest that the Caplow perspective cannot be usefully applied to this triad. The Holbraad perspective, while not fully supported, cannot be conclusively rejected.

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1. INTRODUCTION

1.1 Overview of the Study

1.1.1 The tertius gaudens -- perspectives by Caplow and Holbraad

The role of the third party in triangular systems, particularly in the context of coalition formation, has been the subject of some considerable speculation and discussion. In the international arena, the debate has often centred on the impact of the third party on dyadic relations between a pair of states. One component of the third party's role in triads dominated by a dyad in which the third party is not a member relates to attempts by each of the dominant dyads to solicit the third party in some form of coalition to obtain a superior position vis-a-vis the other member of the dyad. This third party function was called the "tertius gaudens", or "enjoying third", by Georg Simmel (1950). The tertius gaudens is the member of a triad who enjoys the favorable attention of both other members, by virtue of their mutual desire to see the other as the object of a two-party coalition allied against it.

This study examines the tertius gaudens function in the Sino-Soviet-American (CH-SU-US) triad. Coalition formation in the triad, the extent to which the triad can be viewed in systemic terms, the methodologies and issues involved in ranking states

according to the influence they can exert on other states, and many other issues which impinge on the study of the tertius gaudens role in international interaction, have all been discussed in the literature. These discussions and studies form the backbone of this study. I have, however, a different question in mind. It has to do with the genesis of the tertius gaudens role in this particular triad.

The tertius gaudens function can be seen to arise in at least two quite different, and for the most part mutually exclusive, ways. One possibility was put forward by Theodore Caplow (1956, 1968) in his seminal work on coalition formation in the triad. Subsequent chapters will delve into the Caplow perspective in much more detail; basically, though, he perceives the tertius gaudens role to be a function of the triad's power distribution. Assuming that one member of the triad is significantly less powerful than the other two, and that neither of them can dominate the triad alone, Caplow's perspective suggests that the weakest member will almost always be the one that either of the others call upon when they are looking for a coalition partner. The definition of power in the triad, and thus of the term 'weakest', Caplow leaves as an empirical question, but he sees the power distribution of the triad as one of its intrinsic characteristics and something that, while changeable, would not normally be subject to short-term (however 'short-term' is defined) fluctuation. In a triadic system composed of nation-

states, the Caplow perspective would lead one to expect the power distribution within the system to be a relatively constant characteristic.

The other perspective on the tertius gaudens function with which I am concerned is advanced by Carsten Holbraad (1973). He views coalition behavior in the triadic international system as a far more transitory, issue-related phenomenon. Rather than being largely a function of a relatively constant distribution of power in the triad, he sees the tertius gaudens role as something that falls in a temporary way to the member which happens to be least involved in the major conflictual issues with which the triad is dealing at any given time. When members A and B are involved in a dyadic conflict, member C will enjoy the tertius gaudens role. When the conflict is between members B and C, the role will fall to member A, and so forth. When all members have a vested interest in the matter(s) at hand, the tertius gaudens role will not surface, or will only do so after one member indicates a willingness to be convinced. Holbraad, therefore, sees the tertius gaudens role switching from member to member, based not on the overall distribution of power in the triad but on the arena in which the system faces maximum tension at any given time. The tertius gaudens role is primarily a function not of system characteristics but of the environment in which the system functions.

It should be noted at this point that the tertius gaudens concept is in large part an analogy for the process of change in

levels of hostility along the axes of the triad over time. It would be much more, if it were not for the fact that the tertius, gaudens member need never exercise the influence its position affords it:

"The advantages of the tertius gaudens accrue to it not only from outright fight, but from the mere tension and latent antagonism between the other two: the advantages derive from the mere possibility of deciding in favor of one or the other, even if the matter does not come to an open contest." (Simmel, 1950: 158)

This aspect of the tertius gaudens role makes it difficult to distinguish the role as an observable component of interaction in the triad; a "tertius gaudens strategy", as it were, cannot be isolated because it exists as much in potential as in actuality. It does not, however, in any way diminish the utility of the concept as a theoretical construct through which to view one component of interaction in the triad, namely the tendency for one member to profit from conflict between the other two. As such, it allows us to visualize the ebb and flow of tension and hostility in the triad under certain structural conditions and from certain theoretical perspectives. For this reason, and because it is one central component of both the Caplow and Holbraad perspectives, I have employed it as the foundation of my comparison of them, even though it may exist more clearly in the

eye of the observer than in those of the triad's members.

The analogous nature of the tertius gaudens function extends to the process of coalition formation itself. A full-fledged coalition need never occur for its benefits (or its detriments, depending on one's perspective) to be realized. A tendency toward coalition formation may alone be sufficient for that purpose. A perception on the part of the Soviet Union that China was leaning toward the United States, for example, could be as effective for the realization of the objectives of China or the USA as an actual coalition, and would not involve the demands of coalition maintenance. It is therefore necessary to remember that any discussion of coalition behavior, including this one, must refer to a spectrum of behavior, of which coalition formation is only the most obvious extreme. By the same argument, the tertius gaudens role, as a subset of the set of behaviors involved in coalition behavior, may be no more than an ideal against which the activity of the third party in the triad can be evaluated.

This study is an attempt to shed some light on the tertius gaudens role in the CH-SU-US triad. It addresses the issues related to the determination of the distribution of power in the triad, in order to assess the utility of the Caplow perspective in the analysis of triadic interactions between the three states. It also incorporates data on instances of dyadic tension in the triad and presents analysis based on the Holbraad viewpoint. It then compares the results of the two perspectives in an attempt

to determine whether one perspective is more useful than the other in the analysis of dynamic interaction in the Sino-Soviet-American triad.

1.1.2 Other Perspectives

In an attempt to determine whether any other perspectives on the genesis of the tertius gaudens role in inter-state triads had been advanced in the literature, I reviewed several bodies of theory dealing with coalition behavior in inter-state systems. In addition to Caplow and other authors working from his basic premises (Vinacke and Arkoff 1957; Gamson 1961a, 1961b; Chertkoff 1970; Stryker and Psathas 1960), I reviewed cognitive balance theory (Taylor 1977; Bobrow 1972) and balance of power theory (Kaplan 1957; Zinnes 1970; Hoffmann 1968). The review was limited to articles dealing specifically with triadic situations, and therefore did not include bargaining or game theory. Of these theoretical perspectives, only those put forward by Caplow and Holbraad appear relevant to coalition behavior in the Sino-Soviet-American triad.

Cognitive balance theory must be rejected because of the limitations imposed by its scope conditions. These conditions render the theory inapplicable for certain kinds of "international communications phenomena" (Bobrow 1972:50). The

optimal balance, which is central to cognitive balance theory, may not apply in systems in which military superiority plays a role. In the section on the distribution of power in the Sino-Soviet-American triad I will make the case that military considerations must, for primarily methodological reasons, be assumed to play a paramount role in the members' assessment of each other's relative power.

Balance of power theory, as expressed by Kaplan (1957) and Zinnes (1970), is not of great assistance in the analysis of triadic interaction. The reasons are twofold. First, a balance of power system cannot function with fewer than a minimum number of members. That limit may vary, but Kaplan states that five is probably the minimum. In any case, he notes that the pressure for coalition formation in a system of three states is too great for there to be a balance of power, since one of the characteristics of a balance of power system is that it acts to oppose "any coalition or single actor which tends to assume a position of predominance with respect to the rest of the system" (Kaplan 1957:23).

Second, the Sino-Soviet-American triad should in theory display no tendency toward coalition formation, according to Zinnes' definition of balance of power:

"A balance of power is defined as that distribution of power over the states and that alliance configuration such that the power of every unit in the system -- state or alliance

of states -- is less than the combined power of all the remaining units in the system." (Zinnes 1970:353)

I will present evidence to show that the situation of which Zinnes speaks was in effect during the period between 1967 and 1976 inclusive, the period with which this study is concerned. Although Zinnes and Kaplan differ somewhat in their expectations regarding coalition formation in a triad such as the Sino-Soviet-American one, they agree that the balance of power perspective is not generally appropriate for the study of triadic international systems.

It appears, then, that neither cognitive balance theory nor balance of power theory are adequate to provide a framework for the analysis of Sino-Soviet-American coalition behavior. I have therefore limited my analysis to the viewpoints expressed by Caplow and Holbraad. These perspectives will be examined in detail in the rest of this section.

This study deals with interaction in the triad from 1967 through 1976. Standard statistical techniques form most of the analysis. The methodology is explained in detail in Section 2. Section 3 presents the analyses, conducted separately from the perspectives of Caplow (and his successors) and Holbraad. Section 4 presents the conclusions drawn from the comparison of the two perspectives and some suggestions for future research.

1.2 The Caplow Perspective

The tertius gaudens role is one of two which may be adopted by the third party in the triad. The other one Caplow calls, using Simmel's terms (Simmel 1950), the mediator. The mediator is just that; it is non-partisan and engages itself between the other two parties to keep them from conflict, and tries to preserve the unity of the group. [Simmel, in fact, distinguishes between the mediator and the arbitrator (1950: 154-153). Both roles arise out of the same structural conditions, but the arbitrator has the advantage of prior agreement by the two quarrelling members to abide by its decision, which the mediator does not have.] The tertius gaudens is the party wanted by both of the other members as a coalition partner when they have rejected the possibility of a coalition between themselves, and which uses this fact to its own advantage.

Simmel (1950) makes a distinction between two sets of circumstances in which the tertius gaudens role can arise. The role depends on the fact that the combined power of the other members of the triad is paralysed because it is committed to the conflict between them. The tertius gaudens role can take two forms, based on this fact. Either the third party takes advantage of an existing paralysis of power, or it creates sufficient conflict to produce the paralysis. The tertius gaudens uses the conflict between the other members in its own

interest; it is concerned with coalition formation only insofar as it might endanger its own position in the triad. Unlike the mediator, the tertius gaudens will view the formation of a coalition between the other two parties with extreme disfavor.

The tertius gaudens role, according to Theodore Caplow (1956; 1968), arises in the triad as a function of the distribution of power among the triad's members. Caplow makes four central assumptions regarding the behavior of the members of a triad:

(a) Members of a triad may differ in strength. A strong member can control a weaker member and will seek to do so.

(b) Each member of the triad seeks control over the others. Control over two others is preferred to control over one other. Control over one other is preferred to control over none.

(c) The strength of the coalition is equal to the strength of its two members.

(d) The formation of coalitions takes place in an existing triad, so there is a pre-coalitional condition in every triad. Any attempt by a

stronger member to coerce a weaker member in the pre-coalitional condition will provoke the formation of a coalition to oppose the coercion (Quoted in Goldmann 1979:13).

These four assumptions lead Caplow to state that the formation of coalitions "depends upon the initial distribution of power, and, other things being equal, may be predicted under [the above] assumptions when the initial distribution of power is known" (Caplow 1956:490). Caplow distinguishes six different power distributions in the triad. They are displayed in Table 1.1, which shows which of the member states in the triad could be expected to form coalitions under differing power distributions.

In Section 3.1, I will present my argument that the Sino-Soviet-American triad, during the period under study, displayed the characteristics of both the Type V and Type VI power distributions. The Type V triad is of the form

USA > USSR > China
USA < (USSR + China)

while the Type VI triad is of the form

USA > USSR > China
USA > (USSR + China)

Table 1.1
Caplow's Coalition Predictions

<u>Triad Type</u>	<u>Power Distribution</u>	<u>Coalition Prediction</u>
I	$a = b = c$	Any
II	$a > b$ $b = c$ $a < (b + c)$	$b + c$
III	$a < b$ $b = c$	$a + c, a + b$
IV	$a > (b + c)$ $b = c$	None
V	$a > b > c$ $a < (b + c)$	$a + c, b + c$
VI	$a > b > c$ $a > (b + c)$	None
VII	$a > b > c$ $a = (b + c)$	$a + b, a + c$
VIII	$a = (b + c)$ $b = c$	$a + b, a + c$

From Caplow 1968:22

The two distributions result in somewhat different coalition predictions. In the first case, Caplow would predict either a Sino-Soviet or a Sino-American coalition. In the second case, Caplow predicts that no coalition will form, since one member is sufficiently powerful to dominate the other two without a coalition partner.

Thus, Caplow's distribution of power perspective results in the prediction that China will enjoy the tertius gaudens role as long as the distribution of power in the triad is of Type V. Both the USA and the USSR will see China as the only feasible partner. There will be no tendency for the USA and the USSR to ally themselves against China. China is simply too weak. Therefore, since neither the USA nor the USSR will ever be the object of coalition-directed overtures from both of the other members of the triad, neither will ever be allowed to adopt the tertius gaudens role.

The reasons for China's high level of desirability are, in the Caplow perspective, reasonably straightforward. A coalition of the USA and the USSR would require each to accept one-half the "spoils", as it were, and would include the very high probability of future extended conflict between two more or less equal antagonists. A coalition with China, however, would offer a larger share of the "spoils" to the more powerful partner and would include the possibility (albeit a remote one) of obtaining everything by the subjugation of China sometime in the future.

The USSR, in particular, has nothing to gain from a coalition with the USA. In no case will it be able to control the coalition and, if the Type V power distribution is the correct one for this triad, there would even be the likelihood of being subject to a certain degree of control from the USA as the stronger partner.

In a Type V triad, China should favor a coalition with either the USA or the USSR, but should have no preference for one over the other. China starts out in the pre-coalitional phase with no control and as the weakest member, subject to domination by either of them. A coalition improves its position greatly. A coalition gains for China considerable power over the member left out of the coalition and a measure of control over its coalition partner, since it can withdraw from the coalition and cross over to the other side if it finds itself in strong disagreement with its partner.

From a more pragmatic standpoint, however, China may not have to actually form a coalition with either of the other members. Just as the U.N. Security Council veto can be an effective deterrent even if not used, so the threat of coalition formation may be sufficient for China to exercise sufficient intra-triadic influence for the attainment of its foreign policy objectives. Such a strategy is not accounted for by Caplow, but it would involve China's increasing receptiveness to overtures from the USA when it is displeased with the USSR and vice-versa. Its receptiveness would seldom be sufficient for the formation of

a coalition and would cease or be reduced if the excluded member acted to reduce whatever conflict had prompted the threat.

In general it can be said that both coalition formation and the threat of coalition formation would result in distinctive patterns of communication between the members. Since these patterns of communication are my primary indicators of change in policy orientation, the difference between threat and action is of little concern. The anticipation of either threat or action, before it actually occurs, may be a source of methodological concern, insofar as it involves no discernible change in communications by the object of such anticipation. I address this point in the introduction and in the conclusions section.

In the Type VI triad, China's role as the *tertius gaudens* is not so certain. The USA has sufficient power to dominate both the USSR and China, so the formation of any coalition seems unlikely. Nevertheless, it seems that, if it is to be expected at all, the *tertius gaudens* role should fall to China. There is nothing in the Caplow perspective to lead one to expect that it would fall to either the USA or the USSR.

The appearance of Caplow's first theoretical paper in 1956 prompted considerable research into coalition behavior in the triad and several revisions to Caplow's theory by other authors. (See Caplow 1968, and Groennings, et al. (eds) 1970, for extensive discussions of this literature.) Little of this research dealt with issues related to the study of the *tertius gaudens* role. Several studies, however, should be mentioned,

since they resulted in modified coalition predictions for the Type V triad.

Perhaps the most pertinent adjunct to the Caplow theory for the study of Sino-Soviet-American relations is Gamson's concept of the "minimum winning coalition" (Gamson 1961). Gamson proposes a theory to account for some the discrepancies between Caplow's predictions and experimental results. The Type V triad had been the subject of several studies that found that the B+C (i.e., Sino-Soviet) coalition was the most likely to occur (Vinacke and Arkoff 1957; Kelly and Arrowood 1960; Chertkoff 1966). Caplow's theory stated that the B+C and A+C (Sino-American) coalitions were equally likely. Gamson made the following assumptions:

(a) Any participant will expect others to demand from a coalition a share of the payoff proportional to the amount of resources they contribute to the coalition. This is called the parity norm.

(b) A person will maximize his payoff by maximizing his share. Thus, where the total payoff is held constant, he will favor the cheapest winning coalition.

(c) A coalition will form only if there are reciprocal strategy choices between two participants (Chertkoff 1970:307).

These assumptions result in the same predictions as Caplow makes for all power distributions except Type V. In the Type V case (where $a > b > c$, $a < (b + c)$), Gamson does not predict equal probabilities of $a+c$ and $b+c$ coalitions, as Caplow does. Instead, he predicts that only $b+c$ coalitions will take place. In the case of the Sino-Soviet-American triad, this means that the Sino-American coalition is no longer a possibility. If the power distribution is of the type

USA > USSR > China
USA < (USSR + China)

then the only predicted coalition is a Sino-Soviet one against the USA. If the power distribution is of the type

USA > USSR > China
USA > (USSR + China)

then any coalition remains unlikely.

In a second theoretical paper, Caplow (1959) expanded his theory by adding two more types of power distributions, which have no bearing on this study, and discussing three different situations in which different sets of strategies govern the

formation of coalitions. Chertkoff (1970) expresses the three situations as follows:

Continuous: Here the object of a coalition is to control the joint activity of the triad and to secure control over rewards which are found within the situation itself. Compare the sibling triad in childhood.

Episodic: The membership of the triad is stable, and the contest for power continues over an extended time, but the object of a coalition is to secure an advantage in episodic distributions of rewards which occur periodically and under predetermined conditions.

Terminal: The coalition is directed toward a single redistribution of power, terminal either because it dissolves the triad or because it leads to a state of equilibrium which precludes further redistributions. The best example and most important case is that composed of three hostile sovereign powers contemplating war (Chertkoff 1970:306).

Each of the above situations change the assumptions upon which Caplow's coalition predictions are based. Recall the list of assumptions on page 10. Assumptions (a), (c), and (d) remain the same in all situations. Assumption (b) remains the same in the continuous situation, to which Caplow was referring in the 1956 article, but changes in the other two situations. In the episodic situation, assumption (b) becomes:

(b) "Each member of the triad seeks a position of advantage with respect to each distribution of reward. A larger share of reward is preferred to a smaller share; any share is preferred to 'no share' (Caplow 1959:489).

In the terminal situation, assumption (b) becomes:

(b) "Each member of the triad seeks to destroy the others and add their strength to his own. A large increase in strength is preferred to no increase, no increase is preferred to a loss, and a loss of strength is preferred to complete destruction" (Caplow 1959:490).

It seems most unlikely that the terminal situation applies in the case of the Sino-Soviet-American triad. If it did, all

three states would have to be planning and working toward all-out nuclear war. Assuming that they are not, the remaining alternatives for the triad are the continuous and episodic situations. Unfortunately, Caplow offers no assistance when it comes to determining when conditions inside and outside the triad represent a given situation. This is especially true when one attempts to distinguish between episodic and continuous situations (Chertkoff 1970:306). Nevertheless, it appears most appropriate to treat the Sino-Soviet-American triad as one that operates in a continuous situation. While there are certainly episodic rewards available in the triad on a periodic basis -- diplomatic successes achieved at the expense of another member of the triad, for example -- they are not available on any regular basis and do not take place under predetermined conditions. Since the continuous situation is the one to which Caplow referred in the original 1956 article, I will continue to employ the original four assumptions.

The research findings (Stryker and Psathas 1960; Gamson 1961, 1964; Kelley and Arrowood 1960; Chertkoff 1966, 1967, 1970) are substantially in agreement with Caplow, except in the case of the Type V triad. In that power distribution, Caplow suggests that coalitions between the USA and China and between the USSR and China are equally likely, since China stands to gain equally with either partner. The experimental results suggest, however, that in the Type V distribution a coalition between China and the

USA would be unlikely. The reason for these results may be related to the "minimum winning coalition" suggested by Gamson, which would suggest that China would be unlikely to enter into a coalition with the USA when the USSR could provide all the combined power necessary and leave a larger share of the rewards to China.

1.3 The Holbraad Perspective

Transience is the central component of Carsten Holbraad's (1973, 1979) perspective on the Sino-Soviet-American triad. He sees the triad itself as a transitional stage between the bipolar, superpower-oriented system, dividing the states of the world into the USA, the USSR and everyone else, and a multipolar system consisting of the USA, the USSR, China, Japan, and the major Western European states acting in concert. In addition, his view of the tertius gaudens role in the triad is more transitory than Caplow's. Holbraad sees the tertius gaudens role as an issue-related phenomenon, rather than as the relatively constant systemic component advanced by Caplow.

The distribution of power in the triad is not considered by Holbraad in his assessment of the tertius gaudens role. It seems to be his opinion that the distribution of power is a factor in the formation of the triad as a relatively independent system, but that thereafter it is not a central component in the assignment of the tertius gaudens role to its members. What is central is the involvement of the members in conflictual issues and the arena in which the major such issues fall at a given point in time. The difference between the Caplow and Holbraad perspectives is clearly expressed in the following statement by Holbraad:

"Since the principal area of open great-power conflict since the emergence of the triangle has been between the Soviet Union and China, it has not been necessary for the United States to make much trouble between them; it has been able to enjoy the position of *tertius gaudens* with relatively little such effort on its part". (Holbraad 1979:128).

The Caplow perspective would result in the conclusion that China, by virtue of its inferior power position in the triad, would most often be awarded the *tertius gaudens* role. (I assume here that the power distribution in the triad in fact establishes that China is in the inferior power position and that the USA is in the superior position. I make the necessary supporting arguments in subsection 3.1.) The USA, as the most powerful member of the triad, would be highly unlikely to ever be placed in such a position. Holbraad, however, ignores such considerations. In his mind the conflict arena is paramount.

Holbraad briefly considers the various positions that may be taken by the *tertius gaudens* member. It can attempt to ensure that the rivalry between the other two members continues, in order that its own advantageous position be maintained. It can perform a mediation role if it fears the dissolution of the system through war or other major upheavals. This position is not considered by Simmel to be part of the *tertius gaudens* role. It may choose to take a stand in the issue and support one member over the other, even though this will mean foregoing the *tertius gaudens* role. Finally, it may keep itself removed from the

conflict entirely. In any event, Holbraad says, its relations with both of the others will be better than their relations with each other. (This would not necessarily apply in the case of the third alternative, a fact which Holbraad does not seem to consider.)

The *tertius gaudens* role arises, in the Holbraad perspective, in the context of one of two "lopsided" triangular situations. The first, which does not give rise to the *tertius gaudens* role, is that in which two powers cooperate against the other. This is, in other words, the situation in which coalitions in the triad are the order of the day. The second "lopsided" situation occurs when two of the members are engaged in conflict while the third keeps its distance. It is this situation that gives rise to the *tertius gaudens* role.

In the former situation, Holbraad distinguishes between three patterns of coalition-related behavior in the Sino-Soviet-American triad. These patterns are based on the substantive nature of this particular triad, not on any generalization about the nature of such triads in general. The first pattern involves the USSR and China, as the two communist countries, allied against the USA as the world's principal capitalist nation. The second involves an alliance between the USSR and the USA, as the two "have" states, against China as the "have-not" state. The third pattern involves a conflict between the two *status quo* powers and one power that becomes too expansionist.

The first pattern, says Holbraad, "dominated international

politics before the Sino-Soviet split" (Holbraad 1973:125). The second pattern (in the discussion of which Holbraad includes nuclear capability as well as economic strength in his definition of "have" and "have-not" states), was latent during the period of Soviet-American detente, especially from the point of view of the Chinese. The third pattern has not yet materialized, but it remains a possibility. It would most likely arise, Holbraad thinks, in the event of a perceived expansion of Soviet influence, especially if that expansion was seen to occur in a region that China considered important to its interests. (This is a particularly interesting point in view of recent events in Afghanistan and Poland and the apparent Sino-American rapprochement in the last several years. Holbraad, of course, was writing before the Afghanistan and Poland incidents.)

The tertius gaudens role, then, can be placed in counterpoint to the coalition configuration in the triad. While not mutually exclusive in the strict sense of the term, perhaps, the two configurations have a tendency to discourage each other. Unlike the balance of power theorists, Holbraad appears to find it conceivable that a balance of power could evolve in the triad. Such a balance would arise out of the mixed motivations each member of the triad faces. If, as Holbraad suggests, the main alternatives are either to have a coalition of two against one or a rivalry of one against one with a third playing the tertius gaudens role, then each state's strategy is both fairly obvious

and fairly fixed. On the one hand, it must avoid becoming the object of a coalition by the other two members. On the other hand, it must attempt to foster enough rivalry between the other two powers to attain the tertius gaudens role. In Holbraad's words:

"The element of conflict on each of the three sides of such a triangle will stem partly from the natural clash of interests between the two parties, and partly from the efforts of the third party to produce friction in that relationship. The element of detente, or even a degree of cooperation, on each side will spring partly from the general interests of all the powers in avoiding major war and in protecting their system against internal and external challenges and partly from the efforts of each of them to maintain good enough relations with the others to stop them from ganging up against it" (Holbraad 1979:127).

Holbraad raises the possibility that the "lopsided" triad may not, in fact, be the structure that the Sino-Soviet-American triad actually takes. If so, the emergence of the tertius gaudens role might never take place. The "equilateral" patterns, as Holbraad calls them, may, like the "lopsided" ones, take three forms. These forms consist of a concert of three, trilateral conflict, and a trilateral mixture of cooperation and conflict.

In the concert of three, the members of the triad attempt to "manage international politics by habitually consulting each other and by occasionally concerting their measures" (Holbraad 1979:123). They do not engage in joint action, per se, but they

try to anticipate and account for the positions of the other members when dealing with issues of joint concern. However, Holbraad considers it unlikely that a concert will come to be in the Sino-Soviet-American triad as it exists today, since most of the necessary prerequisites for such a system do not exist. (See Holbraad 1979:142-45 for a discussion.)

Trilateral conflict is at the opposite end of the spectrum from a concert of three. In this pattern, all three states engage in continual conflict of an intense nature, although it falls short of complete war. This too is seen by Holbraad to be unlikely. The threat of nuclear war is a constant menace in such a pattern, and so also is the chance that other major powers could capitalize on the continual rivalry. This interest in containing any attempt to in any way usurp the triad's pre-eminence in world affairs would grow stronger with time and the increasing acceptance by all members of the fact of the triadic system's existence. Furthermore, the previously discussed balance between rivalry and the danger for each member of an unfavorable coalition would act to preclude long-term serious conflict of a trilateral nature.

Located somewhere between concert and trilateral conflict is a mixture of the two. Holbraad speculates that such a pattern might manifest itself in a tendency for all three members to "export" intra-triadic conflict to other areas of the globe while keeping formal relations between themselves relatively non-

conflictual. Such "proxy wars" have indeed been a characteristic of the foreign policies of all three states, but it would be overly simplistic to consider them a central indicator of the state of relations in the triad. This mixture of unbridled rivalry and tacit understanding could, however, form a backdrop for the manoeuvring that would be characteristic of the patterns displayed in a "lopsided" triadic structure.

To summarize, Holbraad's conception of the Sino-Soviet-American triad includes a tertius gaudens function, but one quite unlike the one visualized by Caplow. Rather than being a function of a relatively constant power distribution, the tertius gaudens role is seen here to arise out of the shifting dyadic conflicts which arise in the triad. The member least involved in the major conflicts of the day will enjoy the tertius gaudens function. Each member will be continually working to, on the one hand, prevent an alliance of the other members against it and, on the other, encourage enough rivalry between the other members to attain or retain the tertius gaudens role. Since at any one time all members of the triad will be employing the same strategy, the net effect will be a system in which rivalry is constant and coalitions both shallow and temporary.

1.4 The Sino-Soviet-American Triad as a System

While both Caplow and Holbraad implicitly assume that the triad must form a system for coalition behavior to occur in the way they predict, neither really says what he considers a system to be in structural terms. The term 'system' is problematic in the social sciences because of the wide variety of meanings assigned to it. It is defined here as a set of factors in which the primary referent is a state of equilibrium. While it would be a mistake to assume that the Sino-Soviet-American system is or ever has been in a state of equilibrium, equilibrium is the state against which the dynamics of a system are most commonly judged. The behavior of any part of a system will affect all of its parts. The sum of opposing forces in a completely interdependent system will always be zero; equilibrium will have been achieved. Where parts function completely independently there is no interdependence, no equilibrium, and no system.

A large literature exists on the theory of systems and systemic interaction in international affairs. It is far beyond the scope of this study to delve deeply into this literature, and I have not done so. A brief discussion of some of the issues surrounding the assumption that the Sino-Soviet-American triad constitutes a system appears below. This discussion is in no way exhaustive, but it presents the reasoning behind the decision to treat the Sino-Soviet-American triad as a system appropriate for

the application of theoretical perspectives that are systemic in nature.

A structural system is defined here as a set of interdependent entities that are distinct from their environment. The action of one will have an effect on the actions of the others, and an external stimulus directed at one entity will be felt throughout the system. In the case of a system composed of nation-states it helps, although it is not necessary, that the members themselves recognize its existence; interaction in the system is, to some extent, dependent on the perceptions of the countries involved. Perception alone is not sufficient, however, since there must be some set of interdependencies which sets the system apart from its environment.

Goldmann (1979) distinguishes between nine types of analysis dealing with the system in international affairs at some level. His typology is displayed in Table 1.2. Goldmann notes that if the system is conceived as an aggregate of actors with some degree of interdependence, three levels of analysis can be discerned: the actor level, the dyadic level, and the system level (Goldmann 1979: 1). Table 1.2 is a crosstabulation of the ways in which these levels of analysis can interact. Some authors

Table 1.2 Nine Types of Analysis Employing the System

Explanatory Factors	Attributes to be explained		
	Actor	Dyad	System
Actor	1	2	3
Dyad	4	5	6
System	7	8	9

(From Goldmann 1979: 2)

feel that true systemic analysis is limited to Type 9 in the table (Goldmann 1979: 2; Little 1977: 282), but this narrow view does not apply in most analyses, where either the dependent or independent variables must be expressed at the level of the nation-state (Goldmann 1979: 1-6).

In Section 3.1, I present a Type 7 analysis when I assess the impact of the distribution of power in the Sino-Soviet-American triadic system on the tendency of its actors to assume the *tertius gaudens* role. The Holbraad analysis in Section 3.2 is somewhat less systemic, in that it deals with extra-systemic influences as well as those arising within the system. Even so, it is largely a Type 7 analysis as well; given external events, it asks how the structure and dynamics of the system combine to influence the behavior of individual members.

In the following paragraphs I will examine the issues surrounding the question of whether or not the Sino-Soviet-American triad constitutes a system in the structural sense assumed by Caplow and, more implicitly, by Holbraad. Although a system may function without the knowledge of its constituent parts, it must have an 'identity' which distinguishes it from its environment. In this case, the collective actors are themselves probably in the best position to judge whether such an identity exists, if only because the governments of the states in question have more information about interaction in the triad than anyone else. This does not ignore the possibility of misperception on

the part of one or more actors, as I will show.

The first question to arise in consideration of the system aspects of the triad is whether China is in the same 'league' as the superpowers. China is a more minor power than either the USA or the USSR by almost any indicator, except population, but it is nevertheless a considerable force in the world's affairs. China was the object of "a considerable amount of American military power, diplomatic effort, and economic treasure" during the twenty years between the Korean War and the American defeat in Vietnam (Yahuda 1982). At the same time, it has managed to concern the USSR to the extent that perhaps 20 percent of Soviet military power is displayed on the Sino-Soviet border (Yahuda 1982). No other state has exerted such influence on the two superpowers single-handedly.

A more difficult question, and the one around which most of the debate has centred, is the question of whether the members of the triad have themselves come to view it as such and, if so, when. A variety of opinions have been expressed in this regard. It has been argued that the triad was a de facto reality long before either the USSR or the USA recognized it as such (Segal 1982). China appears to have been thinking in trilateral terms for almost 25 years, since the breakdown of its alliance with the USSR in the early 1960's. Even so, not all authors agree that this indicates a recognition of the existence of anything like a triadic system in the structural sense, even on the part of the Chinese.

The USSR and the USA seem to have been slower than the Chinese to think in trilateral terms, let alone of a triadic system. Kissinger argues the most common American position -- that the triadic relationship was only beginning to emerge in 1969 (Kissinger 1979). Segal suggests that the USSR recognized the existence of the triad years after the Chinese, but that it had become an accomplished player of triadic games before the USA had begun to think in such terms (Segal 1982).

China was almost certainly the first of the triad's members to recognize the significance of tripolar interaction. China has had to deal with pressure from the two superpowers for several decades, and was early to adopt a policy of tilting toward one to balance pressure from the other (Yahuda 1982: 19). This policy had been forced on China by its weakness relative to the superpowers, but its insistence that it has the capability to successfully wage a defensive war against either one may have given it the confidence to maintain an individualist stance in its relations with them (Yahuda 1982: 21). Even before 1949, Mao's analysis of the post-World War II world assigned China an important role in the maintenance of world peace (Yahuda 1982: 22). While this was not at that time to be achieved in the context of a tripolar world, China was seen to occupy a central position in the struggle between the two superpowers.

By 1949-50 there were indications that the Mao regime had begun to think in triadic terms. It has been reported that in

June 1949 Mao asserted that in the event of a war between the USA and the USSR, China was committed to join the USSR. Zhou Enlai told American diplomats that same summer that, while China's foreign policy would lean toward the USSR, there was flexibility in the extent to which that occurred, depending on the actions of the USA. He is also reported to have appealed secretly to the USA for aid so that China could mediate between the West and the USSR (Yahuda 1982: 26-27).

China's ties with the USSR were close during the period between the Sino-Soviet Alliance of 1950 and the severance of economic cooperation in 1960 (Levine 1976). During that decade it was either unable or unwilling, or both, to assert its independence to the extent necessary to bring a triadic foreign policy into play. By 1962, Mao was prepared to embark on such a course. In January, he said in an address to a Communist Party of China conference that "the Party and State leadership of the Soviet Union has now been usurped by the revisionists" (Schram 1974: 181). This statement and others in the same speech have been interpreted as a declaration of independence from the USSR in world politics (Yahuda 1982: 28). China's test of a nuclear device 22 months later confirmed this declaration, as did its condemnation of the Nuclear Test Ban Treaty of 1963 as a "US-Soviet alliance against China pure and simple" (Yahuda 1982: 28-29).

The three central themes of China's relations with the rest of the world since 1949 have been independence,

modernization and revolution (Wang 1977). Because of disagreement within the party regarding the relative emphasis to be placed on them, China's policy toward the triad was, like those of the other members, marked by uncertainty. The influence of Mao's opinions and China's relative military and economic inferiority in the triad did, however, place it under constraints not faced by the superpowers.

"In Mao's perspective an embattled China had few options except to confront the superpowers or enter into a kind of dependency with the Soviet Union... The central issues for China's leaders have not been about the establishment of a preferred pattern of global politics as such. Rather they have concerned questions vital to China's national security as a relatively weak power with great power aspirations confronted by the military and technological superiority of one or the other of the superpowers" (Yahuda 1982: 30-31).

Ideologically, China was accustomed to thinking in terms conducive to interaction in the triad. Mao saw the world as a great system of conflicts and contradictions, especially the latter. The identification of friend and foe was dependent on the identification of the principal contradiction from among the universe of them. (This was closely related to the idea of the "principal antagonist" that was a central feature of early Marxist-Leninist political philosophy.) That contradiction would define the pattern of forces, and therefore of actors, at any given time (Ra'anani 1975; Yahuda 1982). When a given principal

contradiction / was replaced by another, more important one, the pattern of forces and of alliances or alignments might also change (Yahuda 1982; Ra'anan 1975). A triadic system was therefore natural to Mao. A system in which the principal contradiction, which must intrinsically involve two positions, was represented by two world superpowers was almost made to order.

Mao's conception of the role of the principal contradiction in the triad was not tied to particular nation-states in as simplistic a way as I have suggested; furthermore, it changed over time (Yahuda 1982; Segal 1982; Ra'anan 1975). Nevertheless, the opposition of forces, as suggested by his conception of power politics, led him to see China as a central player in the drama being acted out by the USA and USSR (Levine 1976). This position was reinforced by the determination of the Chinese leadership not to allow China to become dependent in any way upon any other nation, especially either of the superpowers. The declaration of independence from Soviet policy and the subsequent denouncing of the Test Ban Treaty were, therefore, followed in 1964 by Mao's decision to confront both the USA and the USSR rather than allow China to be associated with the USSR over American actions in Vietnam (Yahuda 1982: 25). He was also concerned that any movement toward one or the other would weaken China by internal factionalism (Snow 1972: 19-20).

In general, then, China was the first to recognize the

potentially triadic nature of its relations with the USA and the USSR, as early as the early 1950's. It was not able or prepared to exercise the independence from the Soviet Union that was necessary to allow the triad to come into existence until the early 1960's. By 1965, however, Mao had made it clear that the position of China on any issue would in no way be tied to the position of the USSR and was asserting that China had a role to play in a tripolar world.

A number of authors have concluded that the USSR played the tertius gaudens role, or a variant thereof, during the early years of the triad's existence in the 1960's. Segal (1982) refers to the "pivot" power in the triangular relationship in which the USSR, China, and the USA found themselves beginning sometime during that decade. While the pivot power is not precisely what Simmel defined the tertius gaudens power to be, it plays the predominant role in the dynamics of intra-triadic communication by "tilting" toward one or the other of the other two powers. It is the member with, overall, the least conflictual relations with the other members of the triad and which is for that reason most likely to form what Segal calls "loose alignments" with one or the other.

The 1960's were, according to Segal, "dominated by Moscow's attempt to tread the careful path between the US and China" (1982:11). The pivotal role of the USSR was complicated, however, by the failure of the US, and to a lesser extent the USSR, to recognize the existence of the triad at that time. Also,

all three members had little freedom of action; none could afford major policy initiatives directed at the management of relations in the triad (Segal 1982: 47). Segal maintains that the USSR held the pivotal role in the triad until the early 1970's, when the triad entered its "second phase" with the emergence of the USA as the pivotal power as a result of the widening of the Sino-Soviet rift and a "nascent" Sino-American detente (1982: 47).

As is the case in the USA, and to a lesser extent in China, there is no consensus among Soviet policy-makers about the proper tactics to be employed in the triad (Segal 1982: 65). This has resulted in a shifting policy toward the triad and ambiguity in response to initiatives from either of the other members. Moscow rejects the triad on ideological grounds, arguing that bipolar relations between it and the USA are paramount. It rejects the "three worlds" theory of the Chinese as having "nothing in common with the actual alignment of class forces in the modern world" (Segal 1982: 67). At the same time, though, the USSR recognizes the de facto existence of the triad. It treats the triad as a symptom of short-term problems that do not negate the Soviet view that the ultimate struggle is between the USA as the leader of the capitalist West and the Soviet Union as the nation at the forefront of the Marxist-Leninist march of history (Segal 1982: 67). Thus "the USSR came to engage in effect in tripolar politics, all the while denying that it was doing so" (Segal 1982: 157). The 'hidden' nature of the triad in

the 1960's was recognized by Khrushchev:

"Even if you cannot see your nose, that does not mean that it does not exist" (Segal 1982: 159).

The single most important facet of the triad from the Soviet point of view is the necessity for the USSR to confront the possibility of having to fight a two-front war (Yahuda 1982: 19). Thus, in Segal's words, "...the single most salient trip wire for Moscow's concerns about Sino-American collusion is the question of arms sales by the West. For the USSR it is apparent that China desires the arms so as to modernize its defences and obtain great power status" (1982: 50). This even had an impact on bilateral arms negotiations between the USA and the USSR, particularly in the context of the SALT talks in the 1970's. It is difficult to tell, however, just how the USSR perceived the connection.

"The precise linkage of SALT to the China factor is difficult to ascertain as it is by no means clear whether the USSR perceives a 'China dividend' (military expenditure now freed for the China front) or an increasing problem as SALT limits the Soviet's ability to deal simultaneously with threats from the US and PRC" (Segal 1982: 51).

The USA was probably the last of the triad's members to recognize its existence, and was certainly the last to begin to

implement a foreign policy to deal with relations in the triad. In the minds of many, if not most, American policy-makers the triad did not come into existence until the 1970's and the Sino-American detente. Garrett voices this opinion with the statement that "The Nixon administration, by responding to Chinese feelers for rapprochement, made the triangular relationship operative with both China and the Soviet Union seeking to improve their ties with Washington in the 1971-73 period" (Garret 1982: 76).

In fact, the triad had probably been operative for some time previous to 1971. It is likely that while the USA refused to admit the existence of the triad, it had already been having an effect on US relations with the other two members for some years.

"For most of the period when Moscow was struggling as the pivot power between the competing demands of the US and China, Washington was oblivious that a type of great power triangle was already in operation... The fact that the US only 'discovered' the triangle in the 1970's, does not mean that is when it first became important... We can speak of a great power triangle in a general sense as a relationship among three crucial states, but the actors would probably not agree on the origins and development of the triangle, let alone what was the best policy to pursue under those conditions" (Segal 1982: 153).

Even if the USSR was not as pivotal during the 1960's as Segal believes, his point is valid. The fact that the USA did not until the 1970's recognize the impact of the triadic policies of the USSR and China does not mean that such an impact did not

exist or, for that matter, that the USA did not respond to those policies without being fully aware of what it was doing.

There has been no hesitation in the USA to recognize the triad since 1971, whatever the opinion was before then. Indeed, the quickness of American analysts to discuss the triad suggests that there may be some recognition that the discussions were overdue. By 1975 Michael Pillsbury raised the possibility of Sino-American military ties and the idea, while rejected by most at the time, was widely and seriously discussed in Washington, Moscow and, probably, in Peking (Segal 1982; Pillsbury 1975, 1977).

This represented a major turnaround in a country whose leaders had, until the end of the 1960's, tended to view China as part of a monolithic Communist movement that also included the USSR. Although the Sino-Soviet tensions of the same period were recognized, they were seen to place a distant second to the bipolar conflict between the USSR and the USA. More important, Chinese and Soviet positions toward each other were frequently seen by Western analysts to be mirror images; it was assumed that what China thought of the USSR, the USSR thought of China, and vice-versa (Ra'anan 1975: 829). In such an atmosphere, the recognition of triangular forces at work was difficult, since Sino-Soviet relations appeared to be highly reflexive in nature.

In summary, it seems fairly clear that the Chinese leadership had, by 1967 -- possibly as early as 1962 -- come to the conclusion that China's foreign policy had to be carried out

in the context of triadic relations with the USA and USSR. There was no choice, since to ally themselves with the Soviet leadership was no longer possible for ideological and strategic reasons. Whether the choice really was as clear cut as it apparently seemed to Mao is not certain; there is some evidence that Peking exaggerated the possibility of a Sino-American alliance against it. (The condemnation of the Test Ban Treaty, for example.) In any event, there is little doubt that China perceived a triadic system during the entire 1967-76 period.

Although the evidence is less clear for the USSR than it is for China, it is not too far-fetched to conclude that the USSR also recognized the triad, although it did not like it, shortly after the Sino-Soviet split. If so, it also was thinking in terms of a triadic system by 1967. Also, Khrushchev recognized the possibility that even the Soviets might have been late to recognize the triad in the statement quoted above, although it is not clear this was what he was thinking when he made it. On balance, I think it is safe to assume that the USSR was consciously operating in a triadic system by 1967, even if it would have preferred otherwise.

It is clear that the USA did not recognize the existence of the triad until well after 1967. The earliest date for the formation of the triad in common usage seems to be Kissinger's, which is 1969. In this case it seems that the actor was operating in a system of which it was unaware. There is reason to

suspect that American policy-makers and analysts recognized the lateness of the American recognition of the triad. The speed with which it became a 'hot item' in foreign affairs circles provides some of that reason, as does the fact that the USSR and China had been using triadic tactics since the mid-1960's (Segal 1982) and it is unlikely that the USA could have been completely unaffected. Whether it knew it or not, the triad played a role in USA policy before 1970, even if only by provoking reaction to Chinese and Soviet ~~triangular~~ manoeuvring.

In summary, there seems to be sufficient evidence to justify a systemic analysis of the triad's behavior during the 1967-76 period, where the analysis is of the type called Type 7 by Goldmann.

"Whatever the subjective notions of the actors, in the eye of the beholder, especially a political scientist used to thinking in terms of models, they [the USSR, USA, and China] may still form a system, in the sense that they may develop observable patterns of interaction that stand out from the general background of international relations" (Holbraad 1973: 83).

There is little disagreement with the idea that Sino-Soviet-American relations occurred within a systemic context from about 1970 to 1976. The assertion that they did so from 1967 to 1970 is more contentious, but I believe that the evidence is sufficient to establish that systemic interactions had at least begun to emerge by 1967. I have therefore assumed the existence

of a triadic system for the entire ten-year period between 1967 and 1976.

1.5 Hypotheses

The hypotheses to be tested appear below. The net positivity score is explained in Section 2.1; it is a measure of the summed tension indicators for all events during a given quarter for each directed dyad. The hypotheses are stated in such a way that China is assumed to have been awarded the tertius gaudens function by the power distribution. This is actually an empirical question that is addressed in Section 3.1. The assumption does not materially affect the hypotheses; it merely makes them easier to state. China happens to be the weakest state in the triad according to the power indicators I have used. If this were not the case, whichever member was weakest would take China's place in the hypotheses.

Each hypothesis is followed by the rationale for its inclusion. The rationale is derived from the general hypothesis, which in turn is derived from the discussions in Sections 1.1 to 1.4 above.

(1) From Caplow (1956; 1968):

General hypothesis:

There will be a long-term trend toward the solicitation of support from the weakest member of the triad by each of the two

stronger members, whenever the distribution of power in the triad is such that a tendency toward coalition behavior, and therefore the emergence of the tertius gaudens role, is predicted by the Caplow perspective.

Working hypotheses:

- (a) There will be a positive correlation between net positivity scores for the China>USA and China>USSR directed dyads.

Rationale: China will wish to protect its tertius gaudens position by remaining relatively equidistant from the USSR and the USA.

- (b) There will be a correlation between positivity scores for the USA>China directed dyad and the USSR>China directed dyad. The correlation may be either negative or positive.

Rationale: The USSR will respond to USA>China moves. Positive USA>China

positivity scores might provoke either positive (conciliatory) or negative (threatening) USSR>China scores, but they will provoke some reaction.

- (c) There will be a correlation between positivity scores for the USSR>China directed dyad and USA>China positivity scores. The correlation may be either positive or negative.

Rationale: See Hypothesis 1(b), reversing the positions of the USA and the USSR.

- (d) There will be a positive correlation between China>USSR positivity scores and USA>China positivity scores.

Rationale: The USA will react positively to positive China>USSR positivity scores, and vice-versa.

- (e) There will be a positive correlation

between China>USA positivity scores and
USSR>China positivity scores.

Rationale: The USSR will react positively to
positive China>USA positivity
scores, and vice-versa.

(f) USSR>USA and USA>USSR positivity scores
will display a negative correlation with
positivity scores for the USA>China and
USSR>China directed dyads respectively.

Rationale: Soviet-American relations will
deteriorate with any strong moves
by either the USA or the USSR
toward a coalition with China.

(2) From Holbraad (1973; 1979):

General Hypothesis:

Periods of high tension between any two
members of the triad will result in attempts
by each of them to improve relations with the

third member, by virtue of that member's temporary tertius gaudens position.

Working hypotheses:

- (a) USA>China and USSR>China positivity scores will be negatively correlated with positivity scores in the Soviet-American non-directed dyad when the latter are more than one standard deviation below the mean for the time series.
- (b) China>USA and USSR>USA positivity scores will be negatively correlated with positivity scores in the Sino-Soviet non-directed dyad when the latter are more than one standard deviation below the mean for the time series.
- (c) US>USSR and China>USSR positivity scores will be negatively correlated with positivity scores in the Sino-American non-directed dyad when the latter are more than one standard deviation below

the mean for the time series.

Rationale: (For (a); (b) and (c)) See general hypothesis above.

Any long-term trend toward the soliciting of support from the weakest member of the triad (I have assumed for clarity's sake that this member is China, according to the distribution of power) by the other two members can be interpreted as support for the Caplow viewpoint. On the other hand, the absence of such a long-term trend combined with shifts in support-seeking behavior that are correlated with periods of high dyadic tension can be interpreted as support for the Holbraad viewpoint.

It should be noted that the hypotheses do not require that the tertius gaudens member reciprocate when its support is solicited by one or both of the other members; all that is required is that the solicitation occur. In other words, it is not necessary that the tertius gaudens member be more friendly toward either of the other members. All that is required is that one or both of them be especially friendly towards it.

Overall, then, support for the Caplow viewpoint results from higher tension between the two non-tertius gaudens members than between either of them and the tertius gaudens member. The weakest member is assumed to play the tertius gaudens role and will retain that role over the entire time series unless the

distribution of power changes sufficiently that another member becomes the weakest. Support for the Holbraad viewpoint comes from evidence that the tertius gaudens role was played by different members over the course of the time series without the necessary (according to Caplow) shift in the power distribution. The relationship between two arguing members and the tertius gaudens member can be expected to be the same as Caplow would predict, but the tertius gaudens role will switch from member to member according to the pattern of dyadic tension and will not be directly related to the distribution of power.

2. DATA AND METHODS: POWER AND TENSION IN THE SINO-SOVIET-AMERICAN TRIAD

2.1 Measuring Triadic Tension Using WEIS Event Data

In order to determine which of the three members of the triad are performing the *tertius gaudens* role, it is necessary to determine what signals they are sending each other. The essence of coalition behavior is communication. The study of such behavior must concentrate on communication between the members of the triad, especially when the consequences of that behavior are unclear, as is the case with the Sino-Soviet-American triad. Event data offer access to the semantic content of the communication between the members of the triad. They can make possible the construction of an index to provide a measure, albeit an imperfect one, of the extent to which communications are hostile or friendly. Such a measure can, in turn, provide an indication of the extent to which one member is (or is not) "tilting" toward another member, the reaction of members to such tilting, and the shifts in orientation that may result.

The event data for this study are drawn from the World Event/Interaction Survey (WEIS) database. By 1975 the WEIS database was the most commonly used and investigated machine-readable source of event data available (Mowlana 1975). (A full description of the WEIS database can be found in Charles

McClelland, et al., (1971), McClelland (1978), and Fitzsimmons, et al. (1969).)

Conceived and initiated by Charles McClelland, it contains summary descriptions of all international events reported in the city edition of the New York Times beginning in 1966 and, in the version I have used, ending in 1977 (McClelland et al. 1971; McClelland 1978). Roughly 100,000 events are included, and are coded by actor, target, date, and type of event. The complete codebook can be found in McClelland (1978).

Only those events in which both the actor and the target were members of the Sino-Soviet-American triad were employed in this study. The WEIS data are coded into 22 summary event categories, each of which I assigned a value according to the weightings described by Sigler (1971). He arrived at these values by applying the two-dimensional semantic space scale developed by Calhoun (1971). The values for each of the 22 summary WEIS categories appear in Table 2.1.

The most positive (friendly or conciliatory) act is reward, while the most negative (antagonistic or threatening) is the use of force. The summation of these values for all events for a given unit of the time series constitutes the "net positivity score" described by Sigler (1971) from Driver (1969).

The selection of only those events that had as both target and actor a member of the triad resulted in a dataset consisting of 4006 events spanning the ten years between 1967 and 1976

Table 2.1 Calhoun Semantic Space Weights for
WEIS Summary Event Categories

Reward	3.385	Force	-4.044
Consult	2.942	Seize	-3.503
Agree	2.780	Threaten	-3.342
Propose	2.568	Demand	-3.181
Grant	2.518	Expel	-3.061
Approve	2.514	Reject	-2.844
Request	1.241	Accuse	-2.653
Promise	1.108	Protest	-1.982
Yield	0.720	Deny	-1.866
Comment	0.108	Demonstrate	-1.807
		Warn	-1.668
		Reduce	
		Relations	-1.070

From Sigler (1971)

inclusive. The years 1966 and 1977 were not included in the dataset, even though they were available from WEIS, because of limitations on the power distribution data necessary for the Caplow analysis. The power distribution data are explained in Section 2.2.

The 4006 events were aggregated on a quarterly basis for each of the ten years in the time series. This resulted in a total of 40 points in the series, each of which contained an average of approximately 100 events. In order to account for variation among the directed dyads in mean and standard deviation for the number of events per time series point, the net positivity scores, i.e. the values shown above summed for all events during the quarter, were converted to Z-scores. The net result was a single standardized net positivity score for each directed dyad for each of the 40 quarters in the time series. This value was used as the measure of 'tension' (the presence or absence of hostility in dyadic communications, and its degree, as measured by the sign and value of the Z-score) in a given directed dyad at a given time. By summing the net positivity scores for each of their component directed dyads, an overall score could be obtained for each non-directed dyad.

Rothe (1981) notes that the WEIS database was and is firmly anchored to a systems approach to the study of international interaction. This is confirmed by McClelland (1976), who recalls that the WEIS project was originally

designed to provide an answer to critics of the systems approach who suggested that it had no data upon which to base solid research results. Other researchers have since set up machine-readable event databases, known by such acronyms as DON (Rummel 1966), COPDAB (Azar 1970; 1971) and CREON (Hermann et al. 1971). Some, such as CREON, had much more elaborate coding schemes than WEIS did, but had to sample intertemporally and geographically to support the extensive coding for each event required by such schemes (Burgess and Lawton 1972). Given that there have been conflicting reports concerning the intercoder reliability of the data recorded by the WEIS database, which employs a relatively simple coding scheme (Sigler 1972), the efficacy of elaborate coding schemes may be worthy of reconsideration.

The issues of source coverage and validity are sources of considerable debate concerning the efficacy of research employing event data. I will not attempt to delve into the extensive literature on the validity of event data in general. The reader is referred to Munton (1978) for detailed discussions of this issue and for further references. This discussion will focus on the reliability of event data from the New York Times, upon which the WEIS database relies exclusively. I will not attempt to make a case for or against the use of the New York Times in event research; my intention is simply to provide a background against which the reader can judge the reliability of the findings to be presented in upcoming sections.

Leng (1978) found that the New York Times compared

favorably with diplomatic accounts of events and concluded that the advantages of using diplomatic sources over elite journalistic sources might not be significant in the post-World War I world. Gamson and Modigliani (1971) found that The New York Times was a satisfactory source for measuring levels of conflict and cooperation in US-USSR relations. Salmore (1972) decided, on the basis of a study of conflict events in the WEIS dataset, that the use of the New York Times was adequate except in the case of countries reporting very few events. McClelland and Hoggard (1969) and McClelland and Young (1970) found that the reporting of events by the New York Times and the Times of London were substantially concurrent. Hill and Fenn (1974) also compared The New York Times and the Times of London and found that they reported conflictual events in consistently similar ways, although they had different "reporting styles" during periods of little or no conflict.

Smith (1969) compared the New York Times and the Indian White Papers, concluding that, in terms of one-year aggregates, the New York Times Index was a valid source in comparison with the collection of diplomatic notes. Smith tested the following six hypotheses:

- (1) Events which are started and finished within a 24 hour period are most likely to be reported in a daily newspaper.

(2) The more dramatic the event the more likely it will be reported and more about it is likely to be reported.

(3) The less ambiguous the event, the greater the likelihood that it will be reported.

(4) The greater the expectation of certain kinds of events, the more likely they are to be perceived and thus to be reported.

(5) The more events occurring in a given category of the White Papers, the smaller will be the percentage of those events reported in the New York Times. That is, a direct relationship between rarity and percentage of material reported was predicted.

(6) The more negative an event in its consequences, the more probable that it will become a news item (Smith 1969: 26-33).

The first four hypotheses were supported; the last two were not. The New York Times showed no tendency to report rare kinds of events to the exclusion of common ones, nor did it favor negative over positive events to a significant degree. It did tend to over-report brief, dramatic, unambiguous and expected events. Smith concluded that the newspaper reported international relations as if they were "comprised of a series of simple, discrete, and dramatic events, whose nature is such as to confirm our expectations of what will happen" (1969: 35).

Azar (1972), in an eight-source comparison of data regarding Egypt-Israel interactions, found that the New York Times provided more data than any other single source, but as much as 90 percent of the material in the Middle East Journal did not appear in it. The six other sources could account for only ten percent of the total dataset. McClelland and Young (1970) also found that The New York Times provided a greater amount of data than other single sources, but that the Times of London provided greater coverage of certain regions, notably Western Europe and Africa.

Bobrow et al. (1977) compared event data from the New York Times Index, the People's Daily, and the Comparative Research on the Events of Nations (CREON) dataset. They examined the USA-China and USA-North Vietnam dyads and reported the number of events reported for each dyad by each source. The People's Daily was found to report many more events than the New York Times.

Index or the CREON dataset for each dyad. The three sources were found to display different standards for the inclusion of events as well as for the context in which they were reported.

These authors raise the main issues involved in the event data debate. The central questions concern source coverage and the extent to which the accounts appearing in a given source are reflective of some 'reality'. The second issue, which is the one of validity, is beyond the scope of this study. I will assume that the events reported by the New York Times constitute its 'reality'. Given the intrinsically subjective nature of any reality, it seems unlikely that the validity issue will ever be settled to the satisfaction of all.

The issue of source coverage can be briefly addressed here. The literature suggests that maximum coverage is to be obtained when datasets are drawn from multiple sources and include sources native to the region or nation in question. If this is not possible, however, the single best source is probably The New York Times. It has the best coverage, in terms of the total number of events reported, of any single source and is slightly more globally oriented than any other source (Hoggard 1973).

There is no evidence that clearly indicates the superiority of governmental or historical sources over journalistic sources, when only single sources are available (Leng 1978; Jenks 1978; Smith 1969). Again, it is clear that, whenever possible, a combination of sources should be used, but

that if such a combination is not available one is as well off using journalistic sources (with the proviso that they be derived from the 'elite' newspapers) as any other kind. Of the elite newspapers, the New York Times probably has a slight edge over the other two major elite newspapers in the event data literature -- the Times of London and Le Monde.

In summary, the literature suggests that, if possible, a multi-source dataset is to be preferred over a single-source dataset such as WEIS, providing sources indigenous to the region(s) being studied are included. In the absence of multiple sources, however, findings from source comparison studies indicate that the New York Times is the most suitable for research involving major world powers. Since no multi-source datasets specializing in Sino-Soviet-American issues or including American, Soviet and Chinese sources were available, the WEIS dataset was probably the best to use under the circumstances, at least in terms of the volume of events reported for the triad.

2.2 The Triadic Power Distribution

Caplow bases his coalition formation predictions on the nature of the power distribution in the triad and the context in which the triad operates (the continuous, episodic and terminal situations). No other factors are important to the predictions. This means that the failure to properly identify the triad type with which one is dealing will invalidate any predictions based on the Caplow perspective. The distribution of power is central to any analysis of the tertius gaudens role employing the Caplow perspective, but Caplow provides no assistance in the determination of the nature of that distribution in a given triad. For this reason a considerable portion of this study is devoted to the determination of the distribution of power in the triad, even though that distribution is only indirectly related to the hypotheses.

Two problems arise. The first, which I call the inclusion problem, is the perennial question of what constitutes power in an international system. Is it military might, economic capacity, resources, population, geopolitical advantage, industrial capability, the charisma of leaders, ideology, or some combination of these and perhaps other factors as well? If, as seems likely, it is a combination of factors, just what combination is it? In what proportions do individual factors contribute to the overall power of a nation in an international

system?

An illuminating discussion of power, influence, force and authority is provided by Bachrach and Baratz (1963). They define three characteristics of power. Ferris (1973) expresses these three characteristics as follows:

- (1) There must be a conflict of interests or values between two or more persons or groups.
- (2) One group, A, must threaten sanctions to be applied to the second group, B, if B does not conform to A's wishes.
- (3) 'B' must be aware of what is expected, must regard the threatened sanctions as a deprivation, and must accede to the wishes of A because greater value would be sacrificed should it disobey rather than comply. If B is aware and does regard the threatened sanctions as a deprivation, but refuses to obey, then A's attempt to effect a power relationship collapses. It collapses because A fails to control B's behavior. 'A' may accept the failure or can again seek to assert a power relationship by using force to make B comply.

(Ferris 1973: 4).

Force, influence, and authority constitute relationships different from power, according to Bachrach and Baratz. Force involves the actual application of sanctions as opposed to the threat of their use, and results in a power relationship only if the object of the force gives in because of it (1963: 633-36). Influence involves the conformity of the influenced party to the influencer's wishes, but not as a result of the threatened or actual use of sanctions. Instead, the influenced party goes along with the wishes of the influencer because it perceives some reward or advantage to be obtained (1963: 637-38). An authority relationship exists when one party conforms to another's wishes because it considers acquiescence reasonable under the terms of a value system it accepts as rightful (1963: 638-39).

Ferris raises the possibility of criticism of these distinctions. On the one hand, a country may perceive a threat of force when such a threat does not actually exist, eliminating the distinction between power and force. Lockhart (1973) provides a discussion of the many ways in which threats may be misperceived through inaccurate communication. On the other hand power, force, influence and authority are all present in many relationships and it is therefore difficult, perhaps impossible, to distinguish between them in reality.

Ferris responds to the first objection by noting that that

the anticipation of the threat of force does not necessarily ensure compliance, and that therefore the distinction between force and power remains valid (1973: 5). For example, Lockhart, following Rapoport (1960), notes that the target of a threat, even if that threat is misperceived, may be so incensed by the threat that it "abandons a rational or strategic approach and strikes out blindly at its adversary with little thought for the mutual disaster entailed in escalated conflict" (1973: 10). In response to the second objection Ferris notes that, while a combination of elements may indeed be present in a given relationship, there is no certainty that all will be present. The important thing, therefore, is to know the effects of different combinations, and for that the individual elements must be known (1973: 5-6).

Given the above interpretation of power, power capabilities can be defined as the ability of one state to apply sanctions over another (Ferris 1973: 6). Since military force is the most drastic sanction one state can apply against another, military force becomes the single most important factor in assessing a systemic power distribution. Factors that influence military capability were, therefore, chosen as the indicators of power for this study. This does not mean that economic, social, and demographic indicators are ignored, since they contribute toward a state's ability to wage war (Ferris 1973: 33-36).

The response to the inclusion problem is, then, that since

power involves the threat of sanctions and since military action is the most forceful sanction a state can exercise, the military capabilities of a state are likely to be the best indicators of the state's power relative to other states. This response is by no means perfect, since non-military factors also contribute to the overall ability of a state to apply sanctions against other states. Nevertheless, in an age of nuclear weapons and massive standing armies maintained by superpowers the military factor so outweighs other possible sanctions (such as the cessation of trade) that they pale in comparison. It seems feasible to rely on military factors for the assessment of power, especially when the objects of attention are nuclear powers such as the USA, the USSR, and the People's Republic of China.

I chose a slightly modified version of the index devised by Ferris (1973) to measure the distribution of power in the triad. (The modifications will be explained later.) He has designed and empirically tested an index of power based on military, economic, and demographic data. The Ferris index consists of eight central variables:

(1) area	(5) trade value
(2) population logged	(6) armed forces personnel
(3) govt. revenue	(7) govt. revenue per capita
(4) defence expenditure	(8) defence expenditure
per capita

All eight variables were included because they in some way affect a state's capacity to wage war. The variables that could have a potential affect on such a capacity are numerous, ranging from the size of the armed forces and the quality of their equipment to abstruse things such as the efficacy of intelligence functions, which are almost impossible to operationalize (Ferris 1973: 33). Area was included in the index because it reflects the people, motivation, and skills necessary to keep it under a single government. Land area also usually reflects the variety and quantity of natural resources available to the government. A large population is essential to maintain a modern industrial economy; it reflects the "total resource pool" upon which a state can draw in time of war. Population was logged because Ferris found that the non-logged populations of such nations as China and India gave them unrealistically high scores in early tests of the index (1973: 37-39).

Government revenue was intended to reflect, if only indirectly, the wealth of a state's economy, on the assumption that wealth enlarges the the pool of resources available for taxation (1973: 35). Defence expenditure, of course, is directly related to a state's military capability, as is the size of its armed forces. Trade value, the sum of a country's imports and exports, was included as an indicator of economic capacity -- due to its ability to increase the nation's national product -- and as an indicator of administrative capacity, which is required to manage and maintain international trade. Ferris admits that

trade may be a weakness as well, if the country depends on it for essential goods and has it cut off, but maintains that any nation would take such a possibility into account before engaging itself in military hostilities (1973: 35-36). Defence expenditure per capita and government revenue per capita were intended to provide proxy measures of technological development. The reasoning here was that, as the per capita measures increase, so will the abilities of the country to "allocate resources" to "the administration of the country in general and the defence establishment in particular" (Ferris 1973: 39). These variables also served to balance a bias against states with both large populations and relatively high levels of development, which was introduced by logging the population variable (1973: 39).

Two stages were involved in the construction of the index. The details are available in Ferris (1973); I will only summarize. In the first stage the eight variables were rescaled into percentage form to deal with a problem presented by uneven inflationary growth over the entire system of states. Uneven inflation occurs in spite of the conversion of currencies to a standard currency, since that standard currency may fluctuate in value over time. Inflation across the system distorts percentage change figures over time for any given country, since both the standard currency and the home currency inflate and the two do not necessarily inflate at the same rate (Ferris 1973: 43-45). The score for each state is, after the rescaling, expressed as a

proportion of the sum of the scores of all states in the system.

The second stage was to derive constant weights for the variables on the basis of each variable's loading on the dimension Ferris calls the "power capabilities dimension" arrived at from the principal component analysis of twenty-four sample years from the period between 1850 and 1960 inclusive. The weight of each variable represents the mean percent of variation it has in common with the power capabilities dimension for the sample years (Ferris 1973: 114). Since Ferris calculated his weights from more years spanning a much longer series than was available for this study, I have applied the Ferris weights unchanged, even though the period with which I am concerned was not included. The weights appear in Table 2.2.

Finally, Ferris calculated the index score for each state by multiplying the state's score on each variable by the associated weighting factor from Table 2-2, summing the resultant figures, and multiplying by 100 million (1973: 49). Ferris found it necessary use a large number as the multiplier because of the large number of states with which he was dealing. Since this study is concerned with the total power of a system of only three states, I chose to use a multiplier of 10,000 instead. It is large enough to provide the necessary discrimination but less extravagant in its use of computing resources during analysis. The Sino-Soviet-American triad will be visualized for analytical purposes as consisting of a total of approximately 1,000,000 power units, of which each nation will have a share such that no

Table 2.2

Ferris Weighting Factors for Eight Variables Selected
to Measure Power Capabilities

Variables	Mean Percent of Variation Weighting Factors	Adjusted Weighting Factors (Set Equal to Unity)
AREA	27.9	0.0615
LOGPOP	45.3	0.0998
GOVREV	86.4	0.1905
DEFEXP	85.5	0.1885
TRDVAL	72.1	0.1589
ARMFCS	50.9	0.1122
GRPCAP	34.6	0.0762
DEPCAP	50.8	0.1120

LOGPOP = Population logged

GOVREV = Government revenue

DEFEXP = Defence expenditure

TRDVAL = Total value of trade

ARMFCS = Armed forces size

GRPCAP = Government revenue per capita

DEPCAP = Defence expenditure per capita

From Ferris (1973: 50)

units are left over. In short, I assume that the distribution of power in the triad occurs in the context of a zero-sum environment.

The the second problem to arise in connection with the distribution of power in the triad is what I call simply the data problem. Once a decision has been made about which factors to include in the assessment of power, one must find data that represent each factor as accurately as possible. The most complete source of data available for the period with which this study is concerned is World Military Expenditures and Arms Transfers: 1967-1976, published by the US Arms Control and Disarmament Agency (ACDA 1978). This publication contains data on military expenditures and related figures such the size of the armed forces and volume of trade in armaments; gross economic indicators including GNP, total imports and total exports; figures on social expenditures such as education and health; and demographic data such as population and the number of teachers and physicians in the country.

The ACDA figures have the advantage that they are updated for the previous ten years whenever changes are made in the estimation or compilation procedures employed. This means that each annual publication contains ten years' worth of data that are strictly comparable across years. For this reason I chose to limit my time series to the years 1967-76 inclusive even though the WEIS data were available for 1966 through 1977; I could in this way be reasonably sure of temporal comparability.

Detailed discussion of the ACDA data is in order here because techniques used in their compilation can have a considerable effect on the reliability of the findings. There is much debate regarding the appropriate methods to be used in the generation of data, especially economic data, to be used in cross-national comparisons. Problems of both reliability and validity arise and these problems are further exacerbated by the necessity, when dealing with the USSR and China, of using estimates for most of the variables. As was the case with the reliability and validity issues surrounding the use of event data, the best that can be done in a study of limited scope is to provide an overview of the relevant issues so as to establish a background against which the results of the analyses can be judged.

The ACDA data contain all the information necessary to generate the eight Ferris variables, with the exception of area and government revenue (both raw and per capita figures). Area is available from any good atlas or almanac (I used the World Almanac and Book of Facts) but government revenue is difficult, largely because of an almost complete lack of such data for China. China does not release any such figures and never has (Chen 1975) and there are no reliable estimates available for the 1967-76 period.

Therefore it was necessary to replace the government revenue variable with some other equivalent variable, or

eliminate it altogether. Ferris states that the purpose of the variable was to provide an indicator for both the overall wealth of the nation and its administrative capacity (1973: 35). His rationale is that the more wealthy a country, the more resources will be available for taxation by the state and that a country with a large government revenue requires a relatively well-developed administrative capacity to manage it.

Ferris does not rely exclusively on the government revenue variable to assess either economic capacity or administrative capacity, so the loss of the government revenue variable would not result in the complete loss of these factors, although their effects would be reduced by an undetermined amount in the final index. The other variable for both administrative and economic capacity was trade value. It would have been unwise to rely on trade value alone for the assessment of these two factors, especially in the case of China, which under Mao never engaged in extensive participation in world trade relative to its size. Also, the government revenue per capita variable served as a control on the previously mentioned bias introduced by the logging of the population variable.

The best available replacement seemed to be central government expenditure (CGE). ACDA figures included CGE for the USA and USSR, but not for China. Estimated figures were derived for China by calculating the ratio of Soviet CGE to Soviet GNP and multiplying Chinese GNP figures by this amount. This method required that the ratio of CGE to GNP be the same in China and

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the USSR, an assumption that was impossible to prove correct. There is a large margin of error in Soviet CGE and GNP estimates, and this error was multiplied by estimation error in Chinese GNP figures. Nevertheless, the estimated CGE figure for China was preferable to eliminating the government revenue/expenditure figure from the calculation of the power variable, for the reasons outlined above. Certainly government expenditure is the closest approximation of government revenue, since the two should be approximately equal (in the absence of government deficits or surpluses).

So as not to assign the CGE and CGE per capita variables more or less influence in the new index than the government expenditure and government expenditure per capita variables had in the original index, the weights Ferris used for the latter variables were assigned to the new variables on an a priori basis. The alternative would have been to conduct a new principal components analysis to derive new weights for all the variables. This was not desirable because any such analysis would have been available only for the ten years in the ACDA-based dataset, whereas Ferris had 24 years sampled from a much longer total period. He also derived the weights based on a far larger number of nations, whereas a new analysis would use only the members of the Sino-Soviet-American triad. The Ferris weights could be assumed to be of greater validity for more nations, over a longer period of time, than weights calculated from a far smaller group of nations.

and based on fewer data covering a much shorter period.

Table 2.2 shows that the government revenue variable accounted for 19 percent of the Ferris index's total 'power units', while the government revenue per capita variable accounted for about eight percent. The unchanged variables would account for 73 percent of the new index scores; the CGE-based variables would account for 27 percent. Any deleterious effects of the switch from government revenue to CGE would be confined to the 27 percent of the total pool of power units affected by the change. While this was a significant percentage, I considered it sufficiently low to retain the original Ferris weighting factors when it was balanced against the alternative need to recalculate new weights from inferior data, in which case the entire pool of power units would have been affected.

A full discussion of the sources and methods used in the compilation of the ACDA data is available in ACDA (1978: 13-26). The reader may refer to that source for details on the procedures I will briefly describe below.

Military expenditure figures were obtained from NATO publications in the case of the USA, and are based on NATO definitions. Chinese and Soviet data were estimated by applying dollar prices to detailed CIA estimates of forces, weapons programs and activities (ACDA 1978: 21). The resulting figures are intended to show what it would cost to maintain similar forces in the USA. They are independent of Soviet figures announced by the USSR (China releases no such figures). There

is a substantial range of error in such estimates (ACDA 1978: 21).

The CGE figures for the USA were obtained from International Bank for Reconstruction and Development, while Soviet figures are CIA estimates which are publicly available. See ACDA (1978) for references. Chinese CGE figures were estimated by the procedure previously explained. Both military expenditure and CGE figures were broken down into quarterly figures by assuming that they represented calendar year totals and were evenly distributed over the year. Quarterly figures are one-quarter of the annual figures reported by ACDA.

Population estimates for all three states were supplied by the US Department of Commerce. All are mid-year estimates. In the breakdown of these estimates into quarterly figures, I assumed that the ACDA figures applied to the second quarter, i.e., the end of June. Figures for the first, third and fourth quarters were based on linear estimates derived from the adjacent second-quarter figures. The equation was as follows:

$$Q_x = Q_p + ((Q_n - Q_p) / 4)(X)$$

Where:

Q_x = current quarter at point X

Q_p = previous ACDA figure for second quarter

Q_n = next ACDA figure for second quarter

X = number where 1 equals the first quarter after Q_p , 2 equals the second and 3 equals the third

Figures for the size of the armed forces refer to personnel on active duty, including paramilitary forces that resemble regular units but not including reserve forces. Figures for the USA are from the US Department of Defence, while Chinese and Soviet figures were obtained from "U.S. Government sources" (ACDA 1978: 23). I assumed that these figures also represented mid-year force complements and estimated quarterly figures using the same procedure described for the population estimates.

The value of trade for each nation is the sum of its imports and exports for the quarter. Import and export figures were obtained from ACDA, which obtained the American figures from the International Monetary Fund. Chinese and Soviet figures were obtained from public CIA documents (ACDA 1978: 24). ACDA cautions that arms trade figures may not be included in the import and export figures (1978: 24). Quarterly figures were derived by the same procedure described for military expenditure and CGE.

The source data for military expenditure and CGE figures were obtained in local currencies and subsequently "deflated" to local 1975 currency values, after which they were converted to 1975 US dollar equivalents. A 1975 exchange rate was used for the conversion to US dollars. The rate used was the par/market exchange rate as supplied by the International Bank for Reconstruction and Development (ACDA 1978: 24).

The ACDA expenditure data are based on an exchange rate conversion to American dollars. The alternative method is to use a conversion based on purchasing power parities. The main problem with the use of exchange rate conversions are that such rates are based only on those commodities that are internationally traded. This means that figures based on such conversions (of which there are several types, depending on the source of the exchange rates employed) can only be considered approximations of the rates that would obtain if they were based on all the commodities, goods, and services produced in the country (UN Centre for Disarmament 1981: 44). The United Nations has undertaken a study to establish a set of purchasing power parities (PPP's) which would be used instead of exchange rates to measure gross domestic product per capita. A UN study concluded that the ratio of PPP's to exchange rates was quite variable, depending on the country, and that exchange rate conversions tended to overestimate military expenditures, as measured using PPP's (UN Centre for Disarmament 1981: 45-46). Similar results have been obtained by the OECD (SIPRI 1973).

The derivation of a set of PPP's will depend, however, on information provided via a standardized reporting instrument by each country (UN report 1976). Until the all members of the triad agree to provide such information, PPP's for the assessment of military expenditures and other economic sectors will remain unavailable. The reliance upon national reporting systems could

introduce a margin of error of its own. There is strong evidence, for example, that while the Chinese central authorities do not attempt to falsify economic statistics for propaganda purposes, such falsification has been extensive at lower levels (Chen 1975).

Another factor to be considered in the interpretation of military expenditure data is what is known as the index number problem. Since they have different resource bases and different technologies, countries have a tendency to employ a given resource in different amounts. The tendency is to use whatever resource is the cheapest (Central Intelligence Agency 1978). There is therefore a tendency for a comparison expressed in the currency of one country to overstate the relative value of the activities of the other (Central Intelligence Agency 1978: 3). Both the index number problem and the issues surrounding the use of exchange rates versus PPP's necessitate the use of caution in the interpretation of international comparisons of military expenditure.

In summary, the assessment of the distribution of power in the triad, which is essential to the Caplow analysis, depended on the nature of the solutions, such as they were, to the inclusion and data problems. The inclusion problem was addressed by deciding, on the basis of the viewpoint toward power taken by Ferris (1978) from Bachrach and Baratz (1963). This perspective leads to the conclusion that, since power involves the threat of sanctions and military force is the greatest sanction a state can

exercise, the best indicator of power in the triad is the military capabilities of its members. While concentrating on military might, this approach does not completely ignore non-military factors in the power equation, since these factors have their own effects on military capabilities. The Ferris index, incorporating eight variables related to military capability, was chosen as the index of power for this study.

Once this response had been made to the questions arising out of the inclusion problem, the data problem had to be addressed. The primary source for this study is the set of figures produced by the US Arms Control and Disarmament Agency (ACDA 1978). The ACDA data were chosen because they include most of the information required by the Ferris index of power and because they provided a degree of temporal comparability not available in other datasets. Since one of Ferris' variables, government revenue, required data which were not available for China, this variable was replaced with CGE but the original weighting factors, for the variables based on government revenue, were retained. This procedure reduced the reliability of the index but was considered preferable to a recalculation of the weights based on data that were inferior to those used by Ferris for this purpose.

The final part of the section was concerned with the compilation of data by ACDA, the modifications required to convert them from annual to quarterly data, the assumptions used

in this process, and relevant issues. The outcome of the distribution of power assessment is reported in Section 3.1 on the Caplow analysis.

2.3 The Time Series Issue

The choice of analytical methods can be difficult in a study of this nature. The core of the difficulty lies in the debate over the use of time-series methods, notably Box-Jenkins techniques, versus probability methods originally designed for cross-sectional studies. In other words, are cross-sectional designs ever appropriate for the study of data that are ordered in time and, if so, when? A subsidiary question involved the need to decide whether to employ lag variables in the analysis.

My first inclination was to apply ordinary least-squares (OLS) regression methods, because I was searching for interrelationships among variables that were not intrinsically time oriented. I had no need for the predictive capabilities that comprise a large part of time-series methods. At the same time, however, it was clear that the fact that the cases in my dataset were ordered in time could introduce complications that an OLS regression analysis might have difficulty dealing with, most notably the possibility of high levels of autocorrelation.

In addition to the decision regarding the use of time-series or regression methods, there was the question of whether variables could be lagged in a way that would increase the utility of the analysis in the comparison of the Caplow and Holbraad perspectives. The issue here was related to the reaction times involved in diplomatic interaction between the

members of the triad. The reaction time of an event is the length of time it takes the leadership of one state to respond to the actions or statements of another state or non-state actor. Reaction time is a central concept in the analysis of international communication, since it defines the temporal scale on which international interaction takes place. If, for example, the reaction time associated with a series of events averages a week, those events will in all likelihood appear to be simultaneous in a time series in which the standard interval is several months long. If, on the other hand, the average reaction time is two months, that same time series will register most events in intervals subsequent to the intervals in which the respective stimulus events -- or 'causes' -- are registered.

* The lagging of variables is not a solution to the problem of diplomatic reaction times. The reason is that, whether or not the reaction time to international communication in the triad is known, it is not possible to tie one event to another in a stimulus-response relationship. Because of the numerous and many-faceted factors that can be assumed to link any given event with other events, it would seem highly unlikely that a certain event could be identified as either the cause or effect of any other particular event. Certainly such an attempt would be far beyond the scope of this study. Even if this linkage were successful, the determination of the reaction time between events would be dependent on the coding of, for each event, the dates of all stimulus events, all reaction events, and the event

itself. Assuming multiple stimuli and responses, such a coding scheme could rapidly become unmanageable.

Apart from the stimulus-response and coding difficulties, the reaction time issue is clouded by the fact that the subjective perception of time by decision makers is variable depending on a range of circumstances, among them the number of decisions they have to make in a given time frame and the seriousness with which they view those decisions (Hilton 1971; Ornstein 1975). Reaction time will be a function of this subjective perception of time, not some objectively measured 'real' time (Allan 1983). Thus reaction time, as measured by a standard calendar, will seem variable depending on the nature and seriousness of the events being considered.

If more data had been available, there might have been the possibility of ameliorating the reaction time problem somewhat by extending the time series and reducing the size of the intervals used. Because of the lack of the necessary data, however, this alternative was not available. The data were aggregated on a quarterly basis, in order to provide a reasonable number of points on the series without requiring too much interpolative estimation for the power distribution variables. Intervals of more than a quarter would have resulted in too few time points for a reliable analysis, while intervals of less than a quarter would have meant that some intervals would have contained very few events or none at all. It was decided not to increase the

level of intertemporal aggregation of the data, since the time series could not be lengthened to compensate. I have noted in previous sections that I wanted to restrict the analysis to the 1967-1976 period in order to take advantage of the updated estimates provided by ACDA. In any event, changes to the time series would have had little or no effect on the subjective nature of diplomatic time.

The result of this variability and uncertainty regarding reaction time is that it renders the substantive usefulness of lagged variables virtually negligible. Aside from the purely methodological autocorrelation issue, the lagging of variables in an event-based analysis results from the idea that the 'stimulus' for an event precedes it in time and that its 'response' follows it. The researcher therefore expects to find correlations between lagged and unlagged time series, on the assumption that the lagged series contain stimuli while the unlagged series contain responses. In light of the theoretical and methodological problems involved, such assumptions are probably not justified in most instances.

In keeping with my original inclinations, I chose to employ an OLS regression approach to the analysis of the data. The autocorrelation problem was dealt with by removing the serially correlated component from the time series, using the transformation suggested by Yamane (1973: 1006-1009).

The Yamane procedure is as follows: First, the Durbin-Watson statistic 'd' is computed. (Since SPSS provides 'd' as

part of the regression package, I will not go into it further. For details see Yamane (1973: 1000-1006)). If it indicates the presence of autocorrelation, the estimated autocorrelation coefficient 'r' is computed as follows:

$$r = \frac{\sum (e_i e_{i-1})}{\sum (e_{i-1}^2)}$$

where $e_i = Y_i - Y'_i$ (the error term)

The data are transformed as follows to remove the autocorrelation:

$$\begin{aligned} Y'_2 &= Y_2 - rY_1 & X'_2 &= X_2 - rX_1 \\ Y'_3 &= Y_3 - rY_2 & X'_3 &= X_3 - rX_2 \\ &\dots & &\dots \\ Y'_n &= Y_n - rY_{n-1} & X'_n &= X_n - rX_{n-1} \end{aligned}$$

A least-squares regression of Y'' on X'' (or multiples of X'') and the Durbin-Watson statistic are again computed. If it shows that autocorrelation remains, the process is repeated until the Durbin-Watson statistic indicates that autocorrelation no

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longer remains. If the estimated correlation coefficient 'r' is close to unity, 'r' can simply be set equal to 1 and Y'' and X'' can be calculated as the first differences of the variables:

$$Y''_t = Y_t - Y_{t-1} \quad X''_t = X_t - X_{t-1}$$

The use of the Yamane transformation allowed me to apply regression methods intended for cross-sectional designs to autocorrelated data, while at the same time dealing with the effects of that autocorrelation in the equations. The use of lagged variables was limited to the tests for autocorrelation and the resultant data transformations. No lagged variables were used in the analyses of the Caplow and Holbraad perspectives. Because of the difficulties outlined above, it was assumed that stimulus and response, to the extent that they exist in such a unidimensional sense in international relations, occur within the same three-month period.

3 ANALYSES: THE TERTIUS GAUDENS IN THE SINO-SOVIET-AMERICAN TRIAD

3.1 The Caplow Analysis

The Caplow-based analysis of the tertius gaudens role in the triad involved two stages. The first, which was introduced in subsection 1.2, was the determination of the triadic power distribution. The second was the testing of the hypotheses generated by Caplow's perspective on triadic coalition formation. This subsection will deal with the two stages in order.

The reader will recall that one of two power distributions was expected to apply in the Sino-Soviet-American triad. These distributions were those referred to by Caplow as the Type VI and Type V triads. The Type VI triad takes the form

$$\begin{array}{l} \text{USA} > \text{USSR} > \text{China} \\ \text{USA} > (\text{USSR} + \text{China}) \end{array}$$

while the Type V triad takes the form

$$\begin{array}{l} \text{USA} > \text{USSR} > \text{China} \\ \text{USA} < (\text{USSR} + \text{China}) \end{array}$$

The Type VI triad results in the prediction that no member

will play the *tertius gaudens* role, since no tendency toward coalition formation is to be expected. The Type V triad results in the prediction that China, being the weakest member of the triad (an assumption, so far) will play the *tertius gaudens* role. Slightly different coalition predictions result from the reformulation of the Caplow perspective put forward by Gamson (1961), in which an attempt is made to reconcile differences between Caplow's predictions and certain contradictory experimental results (which are discussed in subsection 1.2 as well). Several studies found that the Type V triad was most likely to result in a B+C, or Sino-Soviet, coalition. This was different from the prediction made by the Caplow perspective, which was that Sino-Soviet and Sino-American coalitions were equally likely.

It was therefore necessary to determine which of the two power distributions was applicable for the Sino-Soviet-American triad during the period under study, by assessing the triad's power distribution through the generation of "power units" which, for the purposes of the analysis, were assigned to each member on a zero-sum basis. The procedure employed for this determination, which involved the construction of an index of power by the method proposed by Ferris (1973), is explained in subsection 2.2 and will not be repeated here. Table 3.1 displays the power scores for each state during each of the quarters in the time series. Mean scores for each of the three states are as follows:

Table 3.1

Distribution of Power by Quarter

Quarter	Power				
	China	USSR /	USA	TOTAL	USSR+China
01	137769	326836	534978	999583	464605
02	137680	326897	535012	999589	464577
03	137582	326953	535057	999592	464535
04	137496	327010	535093	999599	464506
05	135580	329081	534933	999594	464661
06	135485	329143	534965	999593	464628
07	135535	329351	534704	999590	464886
08	135594	329564	534436	999594	465158
09	139954	337475	522160	999589	477429
10	139997	337687	521905	999589	477684
11	140241	338259	521091	999591	478500
12	140502	338832	520259	999593	479334
13	146793	351364	501428	999585	498157
14	147059	351954	500578	999591	499013
15	147482	352387	499728	999597	499869
16	147921	352818	498850	999589	500739
17	151858	361184	486547	999589	513042
18	152301	361620	485666	999589	513921
19	152767	362034	484791	999592	514801
20	153251	362438	483893	999582	515689
21	152279	368835	478467	999581	521114
22	152766	369269	477554	999589	522035
23	153153	369204	477234	999591	522357
24	153531	369155	476899	999585	522686
25	157323	376864	465408	999595	534187
26	157684	376816	465090	999590	534500
27	159697	375619	464272	999588	535316
28	161605	374482	463488	999575	536087
29	164376	378753	456464	999593	543129
30	166131	377717	455745	999593	543848
31	166065	377923	455605	999593	543988
32	166007	378117	455472	999596	544124

(cont'd ...)

Table 3.1 (... cont'd)

Distribution of Power by Quarter

Quarter	Power				
	China	USSR	USA	TOTAL	USSR+China
33	166905	386018	446675	999598	552923
34	166848	386214	446538	999600	553062
35	166969	386359	446263	999591	553328
36	167095	386513	445985	999593	553608
37	164933	392850	441810	999593	557783
38	165058	393056	441477	999591	558114
39	165188	393195	441216	999599	558383
40	165316	393349	440932	999597	558665
<hr/>					
Mean Value	152294	361080	486217	999591	513374
<hr/>					

China = 152294

USSR = 361080

USA = 486217

and

China + USSR = 513374

On average, over the period under study, the Sino-Soviet-American triad displayed a Type V distribution of power. Table 3.1 shows the distribution of power for each quarter, along with mean values for the time series and the summation of power scores for China and the USSR. The Sino-Soviet-American triad had a Type V power distribution after the fourteenth quarter, but before that time the combined USSR-China share of power units did not exceed the US share, rendering the Type V power distribution inapplicable. Reference to Table 1.1 in subsection 1.2 reveals that before the fourteenth quarter the power distribution was of Type VI, in which no coalition formation is predicted. The Type VI power distribution is as follows:

USA > USSR > China

USA > (USSR + China)

Because the Caplow perspective predicts no coalition formation in the triad in these circumstances, the analysis was supplemented by the generation of several regression equations in which the first through fourteenth quarters were eliminated from

consideration. These equations were based on the expectation that, because no tendency toward coalition behavior was to be expected in the first fourteen quarters, their elimination might uncover previously-masked tendencies in the fifteenth through fortieth quarters. The results are reported later in this subsection.

The difference between the USSR and the USA, which continued to narrow over the years, is worthy of note. The USA had approximately 53.5 percent of the total pool of power units in the first quarter of 1967, compared to 32.7 percent for the USSR. By the last quarter of 1976 the USA had only 44.1 percent of the pool, while the USSR had increased its share to about 39.3 percent. Part of the reduction in the US share of the pool was also taken up by China, which managed to increase its share from about 13.8 percent in the first quarter of 1967 to roughly 16.5 percent in the last quarter of 1976.

A methodological note is in order at this point. Four of the six directed dyads contained no events for at least one quarter in the series. The greatest number of missing quarters for any directed dyad was three, but listwise deletion of missing data could have resulted in the loss of as many as eight quarters for any one equation. In order to maintain the integrity of the time series, quarters in which no events were reported were considered neutral; they had neither negative nor positive net positivity scores (NPS's). They were therefore each assigned a value of zero on the applicable NPS variables.

The first set of equations for the Caplow analysis, shown in Table 3.2, used the NPS for each directed dyad, in turn, as the dependent variable in stepwise regression equations using the scores for the remaining directed dyads as the independent variables. This analysis revealed a trend toward reciprocity in communications between the triad's members. The Durbin-Watson test showed no autocorrelation for four of the six equations. In the other two equations -- those using the USA:China and USA:USSR directed dyads as the dependent variables -- autocorrelation was present. The data were transformed using the Yamané method described in subsection 2.3 and the equations were re-run. The Durbin-Watson statistic showed an absence of autocorrelation after the data transformation. Tables 3.2 through 3.5 show results for transformed data, obtained by the same procedure.

The directed dyad analysis seemed to indicate that NPS's for any one directed dyad could be largely accounted for by NPS's in the opposite directed dyad, but were marred by the fact that each set of independent variables contained intercorrelated variables for this very reason.

In order to eliminate the effects of intercorrelation among directed dyads, two further sets of equations were generated. The first did the same thing as had been done for the directed dyads (using each in turn as the dependent variable in an equation employing the others as independent variables), but

Table 3.2

Directed Dyad Regression Analysis of Net Positivity Scores

Dependent Variable	Indep. Variable	Mult. R	R Sq.	IR-Sq. Chg	Simple R	Beta	F Ratio
China>USSR	USSR>China	.8092	.6548	.6548	.8092	.8092	72.0858
China>USA	USA>China	.6041	.365	.365	.6041	.4985	17.8396
	China>USSR	.67	.449	.084	.2933	.3557	10.4917
	USSR>USA	.7403	.5481	.0991	.4585	.6669	12.8988
	USA>USSR	.776	.6021	.054	-.2691	-.4057	4.7512
USSR>China	China>USSR	.8092	.6548	.6548	.8092	.8092	72.0858
USSR>USA	USA>USSR	.8152	.6646	.6646	.8152	.7459	69.7558
	China>USSR	.8522	.7263	.0617	.4585	.2578	8.3337
USA>China	China>USA	.5554	.3085	.3085	.5554	.5554	16.5058
USA>USSR	USSR>USA	.7804	.609	.609	.7804	.7804	57.6296

Notes:

All Y-intercepts = 0.00

All F-ratios significant at 0.05 level.

did so for the non-directed dyads. This eliminated any possibility of bilateral intercorrelation among directed dyads. The second set of equations also eliminated this possibility, but did so by using non-directed dyads as predictors for directed dyads. Tables 3.3 and 3.4 display the results of these two analyses respectively.

Table 3.3 shows the equations using only non-directed dyads. All data have been transformed to remove autocorrelation. Because the Yamane transformation requires the generation of lagged variables, the number of quarters available for analysis was reduced to 39. Tension in two of the three non-directed dyads was significantly correlated with tension in one or more of the other non-directed dyads. The Sino-Soviet dyad's NPS's were unrelated to NPS's in the other dyads. Neither of them contributed to the variance in Sino-Soviet scores at the 0.05 level of significance.

Table 3.4 displays results of a set of equations which employed directed dyads as dependent variables and non-directed dyads (those not including the dependent directed dyad) as the independent variables. Results were most illuminating. Four of the six directed dyads had tension scores that could not be accounted for by scores in the respective non-directed dyads. These were the USSR>China, USA>USSR, USA>China and China>USSR directed dyads. The USSR>USA and China>USA dyads had scores that were significantly correlated with scores in both of the opposite

Table 3.3

Non-Directed Dyad Regression Analysis of Net Positivity Scores

Dependent Variable	Indep. Variable	Mult. R	R Sq.	R-Sq. Chg	Simple R	Beta	F Ratio
USA:USSR	USA:China	.3541	.1254	.1254	.3541	.3888	6.8772
	USSR:China	.4673	.2183	.093	-.2629	-.3069	4.2821
USA:China	USA:USSR	.3541	.1254	.1254	.3541	.3541	5.3038
USSR:China	None						

Notes:

All Y-intercepts = 0.00

All F-ratios significant at 0.05 level.

Table 3.4

Directed/Non-Directed Dyad Regression Analysis of
Net Positivity Scores

Dependent Variable	Indep. Variable	Mult. R	R Sq.	IR-Sq. Chg.	Simple R	Beta	F Ratio
USSR>USA	USA:China	.4889	.239	.239	.4889	.5197	14.7222
	USSR:China	.5877	.3454	.1064	-.2788	-.3276	5.85
China>USA	USSR:USA	.3438	.1182	.1182	.3438	.4391	8.2428
	USSR:China	.4737	.2244	.1062	.2163	.3396	4.9298
USSR>China	None						
USA>USSR	None						
USA>China	None						
China>USSR	None						

Notes:

All Y-intercepts = 0.00

All F-ratios significant at 0.05 level.

Symbols: > = directed dyad

: = non-directed dyad

so USA>USSR = directed
USA:USSR = non-directed

non-directed dyads.

The Caplow analysis was based upon six hypotheses, which were drawn from the Caplow perspective on coalition behavior and the role of the tertius gaudens member in the triad (Caplow 1956; 1968). The discussion that follows compares the findings of this study against those that to be expected from these hypotheses. Each hypothesis, with the applicable findings, is discussed in order.

The first hypothesis was expressed as follows:

- (a) There will be positive correlation between NPS's for the China>USA and China>USSR directed dyads.

The expectation here was that the tertius gaudens member (recall that China was assumed to be that member for purposes of clarity; the distribution of power findings supported this assumption) would have an interest in maintaining the tertius gaudens role, since that role allowed it to exert more influence than would otherwise have been possible, via its function as a "king-maker", so to speak. It would therefore display a tendency not to take sides too strongly vis-a-vis the positions of the two more powerful members of the triad.

This is true in either the Type V or Type VI triads. In

the former, Caplow predicts either a Sino-Soviet or Sino-American coalition, considering either one equally possible. In the latter triad type, Caplow predicts no coalition formation at all, since the most powerful member of the triad is more powerful than the other two members combined. There is no incentive for the most powerful member to enter into a coalition and no advantage for the two weaker members to form one. In the Type VI triad, one would not, therefore, expect that the tertius gaudens role would arise, since there is no overall pressure toward coalition formation in the triad.

The hypothesis was only partially supported by the analyses. Table 3.2 shows that, while China>USA NPS's were predicted by China>USSR scores, among others, the reverse was not the case. China>USSR NPS's were predicted by USSR>China scores; there were no other significant independent variables. Table 3.3 shows that NPS's for the Sino-American non-directed dyad were correlated with NPS's for the Soviet-American non-directed dyad, but not with those for the Sino-Soviet non-directed dyad. Sino-Soviet NPS's were uncorrelated with NPS's in either of the other two non-directed dyads. Table 3.4 indicates that, while NPS's for the China>USA directed dyad were correlated with NPS's for both the Soviet-American and Sino-Soviet non-directed dyads, NPS's for the China>USSR directed dyad had no significant predictors among the non-directed dyads.

The second and third Caplow hypotheses were stated as follows:

(b) There will be correlation between positivity scores for the USA>China directed dyad and the USSR>China directed dyad. The correlation may be either negative or positive.

(c) There will be correlation between positivity scores for the USSR>China directed dyad and USA>China positivity scores. The correlation may be either positive or negative.

These two hypotheses were founded on the idea that both the USSR and the USA would respond to moves on each other's part toward China. Changes in the level of hostility in Soviet communications directed at China would provoke reaction from the USA, and vice-versa. The Caplow perspective is not sufficiently detailed to allow the exact prediction of Soviet or American strategies in such circumstances, so it was not possible to predict whether such reactions would be reflected in positive or negative correlations. It was expected, however, that there would be significant correlations. The United States would want to discourage moves by the USSR toward China, and it would want

to encourage moves by the the USSR away from China. The Soviet Union would have the same basic interests in mind.

The findings did not fully support these expectations. Table 3.2 shows that NPS's for the USSR>USA directed dyad showed no correlation with NPS's for the USA>China directed dyad, nor were USA>USSR NPS's correlated with NPS's for the USSR>China directed dyad. Table 3.3 indicates that NPS's for the Soviet-American non-directed dyad were correlated with NPS's for the Sino-Soviet non-directed dyad, and Table 3.4 shows that the USSR>USA directed dyad did respond to changes in the NPS for the Sino-American non-directed dyad. These findings seem to indicate that there was a tendency for the USSR to respond to changes in Sino-American relations by fluctuating the level of hostility it displayed in the communications it sent the USA, but there is no evidence that the USA did so when changes in Sino-Soviet relations occurred. It is interesting to note that the Sino-American non-directed dyad had a greater effect on USSR>USA NPS's than the Sino-Soviet non-directed dyad did, but that both correlations were significant. The USA>USSR directed dyad's NPS's, on the other hand, were not correlated with NPS's in the Sino-American or Sino-Soviet non-directed dyads.

The fourth and fifth Caplow hypotheses had to do with the expectation that both the USA and the USSR would react to changes in the NPS of communications directed by China toward the other superpower. They were stated as follows:

(d) There will be negative correlation between China>USSR positivity scores and USA>China positivity scores.

(e) There will be negative correlation between China>USA positivity scores and USSR>China positivity scores.

The rationale for these hypotheses was very similar to the rationale for the second and third hypotheses. The Caplow perspective would lead one to expect that, given the negative impact of a coalition involving China and a superpower on the second superpower, the second one would attempt to forestall any such coalition and would, at the same time, encourage China to enter into a coalition with it against the other superpower. The tendency would therefore be for the USA to respond positively to a deterioration in relations between the USSR and China, and vice-versa. The USSR would display similar responses to changes in relations between the USA and China.

Again, these expectations were not confirmed. There was no correlation between China>USSR and USA>China NPS's, nor was there any correlation between USSR>China and China>USA NPS's, as Table 3.2 shows. Table 3.4 shows that no correlation existed

between either the USSR/China or the USA China directed dyads and exogenous non-directed dyads. These findings seem to indicate that any reaction to changes in China's communications to a superpower were not reflected in the communications the other superpower directed at China. The findings from the second and third hypotheses indicate that such reactions were directed from superpower to superpower, but not to the extent that the hypotheses predicted. More specifically, the USSR reacted to changes in relations between the USA and China by altering its communication directed at the USA, but the USA did not alter its communications directed at the USSR when confronted with changes in the Sino-Soviet relationship.

The second hypothesis was concerned with how Soviet communication directed at China would be affected by changes in American communication directed at China, while the third hypothesis was concerned with the effect of similar changes on American communication directed at China. The fourth hypothesis was concerned with the effect of changes in Chinese communications directed at the USSR on American communications directed at China, while the fifth hypothesis dealt with the reverse of the fourth hypothesis. The sixth and final Caplow hypothesis dealt with the effect of communications directed from the superpowers to China on communications between the superpowers. It was stated as follows:

(f) USSR>USA and USA>USSR positivity scores will display negative correlation with positivity scores for the USA>China and USSR>China directed dyads respectively.

It was expected that the NPS for the USSR>USA directed dyad would be negatively correlated with the NPS for the USA>China directed dyad; similarly, the NPS for the USA>USSR directed dyad would be negatively correlated with the NPS for the USSR>China directed dyad. The USSR and the USA would each display lower (i.e., less friendly) NPS's toward the other superpower when that superpower displayed higher NPS's in its communication directed at China. The hypothesis was not supported.

It can be seen from Table 3.2 that USA>USSR NPS's were dependent only on USSR>USA NPS's, not on NPS's for the USSR>China directed dyad. In the USSR>USA directed dyad, NPS's were dependent on NPS's for the USA>USSR and China>USSR directed dyads, but not on USA>China NPS's. As I have mentioned, Table 3.3 does show a relationship between NPS's for the Soviet-American non-directed dyad and both the Sino-Soviet and Sino-American non-directed dyads. Table 3.4 narrows these findings, showing relationships between USSR>USA directed dyad NPS's and those for both the Sino-American and Sino-Soviet non-directed dyads, but no similar relationships for the USA>USSR directed

dyad. The directed dyad analysis in Table 3.2 belies even these limited findings, showing that it is communications directed outward from China, not those directed to China, that are responsible for the relationships in Table 3.4.

A distinct pattern was visible in all these results. In the case of analysis employing only non-directed dyads, it was those dyads involving the USA that were affected by tension scores in other non-directed dyads. The dyad that did not include the USA -- the Sino-Soviet dyad -- was unaffected by tension in the other two dyads. Tension in this dyad seemed to be a largely reactive phenomenon, in which external forces within the triad had little or no effect. On the other hand, those dyads that did involve the USA were affected by tension in other dyads. In the case of the Soviet-American dyad, tension scores were affected by scores in both of the other non-directed dyads. In the case of the Sino-American dyad, only tension in the Soviet-American dyad had any effect; there was no significant effect from the Sino-Soviet dyad. The Sino-Soviet dyad apparently operated in semi-isolation insofar as the triad was concerned; it affected both other dyads (its effects on the Sino-American dyad were not revealed in the first part of the analysis but became apparent in the second) but was affected by neither.

The second part of the analysis showed that the effects of tension in the non-directed dyads were more limited than the first part seemed to indicate. In only two of the six directed dyads was tension found to be affected by tension in the opposite

non-directed dyads. Both of the Sino-Soviet directed dyads were unaffected by tension elsewhere in the triad, as the first part of the analysis led one to expect. In the Soviet-American dyad, only one of the component directed dyads was affected by external tension. Tension in the USSR-USA directed dyad was positively correlated with tension in the Sino-American dyad and negatively correlated with tension in the Sino-Soviet dyad. (The latter correlation revealed an effect not revealed in the first part of the analysis, namely that the Sino-American dyad was not free of influence from the Sino-Soviet dyad.) Tension in the China-USA directed dyad was positively correlated with tension in both the Soviet-American and Sino-Soviet dyads. All other directed dyads were unaffected by tension in their opposite non-directed dyads.

This showed that not only was tension in those dyads involving the USA most subject to effects from other dyads, but that these effects were restricted to those directed dyads in which the USA was the recipient of the communication. The level of tension displayed in Chinese and Soviet communication directed at the United States was influenced by the level of tension on other arms of the triad, but US communication directed at them was not similarly affected, nor were their communications with each other.

In order to account for the fact that the Type VI power distribution of the first 14 quarters resulted in a prediction of the absence of coalition-formation tendencies, a supplementary

set of equations eliminating these quarters was generated. Table 3.5 displays the results of the supplementary analysis. It was expected that, if the Caplow perspective was operative (which early results seemed to reject), the likelihood of obtaining results supportive of the hypotheses would be greater in the final 26 quarters than in the complete time series.

This was not the case. The supplementary equations employed the directed dyads as dependent variables and their opposite non-directed dyads as predictors. When the effects of autocorrelation were removed, only one directed dyad had any significant predictors among the non-directed dyads. This was the USSR>USA dyad, in which tension was significantly correlated with tension in the Sino-American non-directed dyad. These results were less informative than those generated by the principal analyses, and it seemed that any tendency toward coalition formation, or the operation of a tertius gaudens role, was greater in the complete time series than in the abbreviated version suggested by the power distribution data. This line of enquiry did not present any reason to pursue the analysis of the abbreviated time series.

What can be determined from these findings? It seems that the USA was in fact viewed by the Chinese and Soviets as the pivotal member of the triad, as Segal (1982) suggests. It is not clear whether the US did not recognize the fact that it was viewed in this light -- that it did not recognize the triad as a system -- or that it simply did not respond to the actions of the

Table 3.5

Directed/Non-Directed Dyad Regression Analysis of
Net Positivity Scores for 15th through 40th Quarters

Dependent Variable	Indep. Variable	Multi. R	R Sq.	IR-Sq. Chg	Simple R	Beta	F Ratio
USSR>USA	USA:China	.4926	.2426	.2426	.4926	.4926	7.6891
China>USA	None						
USSR>China	None						
USA>USSR	None						
USA>China	None						
China>USSR	None						

Notes:

All Y-intercepts ≥ 0.00

All F-ratios significant at 0.05 level.

Symbols: > = directed dyad

: = non-directed dyad

so USA>USSR = directed
USA:USSR = non-directed

other two members. One thing seems clear, though; according to these data, China never played the tertius gaudens role for any significant length of time during the period under study. If the tertius gaudens role fell to any one member, that member was the United States. The Caplow-based idea that the tertius gaudens role is a function of the power distribution does not appear to apply in this case, although it may apply elsewhere in the international system.

3.2 The Holbraad Analysis

You will recall that Carsten Holbraad envisions the dynamics of interaction in the Sino-Soviet-American triad in different terms than Theodore Caplow does. The Holbraad perspective sees the ebb and flow of tension related to specific issue areas and concerning specific dyads as the primary factor in coalition-related behavior in the triad. Since there has been relatively less tension between the USA and the other two members of the triad than there has been between them, in Holbraad's mind, it is his view that the tertius gaudens role has, for the most part, fallen to the United States.

The distribution of power is of little concern to Holbraad, although there are indications in his writing that he sees, as a necessary element in the formation of the triad, the fact that each member has considerable respect for the power of the others in the international community. He is not specific on this point. The Caplow analysis indicates that, at least in this triad, the tertius gaudens role is not determined by the distribution of power in the triad. Perhaps, then, it is related to fluctuations in tension levels along the three arms of the triad, as Holbraad suggests.

The first stage in the Holbraad analysis was to graphically display fluctuations in the level of tension in each directed and non-directed dyad over the course of the time series. Scattergrams of the standardized net positivity scores

for each directed and non-directed dyad appear in Figures 3.1 and 3.2. Figure 3.1 presents data for the non-directed dyads, while Figure 3.2 presents data for the directed dyads.

It should be kept in mind, when examining the scattergrams, that the vertical axis is oriented with maximum friendliness at the top of the scale and maximum hostility at the bottom. Thus, when I speak of "high tension" periods, I am referring to low points on the scattergrams. It is also important to remember that the scattergrams present scores for the standardized variables, so increments on the vertical axis are standard deviation units, not raw net positivity scores.

Although it is not possible to say so with certainty and is not central to the analysis, it appears that the two major events in the triad during the period under consideration were the Sino-American Soviet-American summit talks, both of which occurred shortly before the peaks visible in the scattergrams for all directed dyads except the Sino-Soviet ones. These peaks, which reflect unusually low levels of tension, show up at about the 26th quarter (give or take a quarter) in the China>USA, USSR>USA, USA>China, and USA>USSR directed dyads. They are also visible in the USSR:USA and USA:China non-directed dyads.

Fluctuations in tension for the non-directed dyads appear in Figure 3.1. The Sino-Soviet dyad shows low points (meaning high tension) at the first and ninth quarters, with a sudden lessening of tension during the 25th, 26th, and 27th quarters.

FIGURE 3.1

Scattergram of Non-Directed Dyads Plotted Against the Time Series

SCATTERGRAM: (DOWN) USSR:CHINA NON-DIRECTED DYAD NET POS. SCORE
(ACROSS) QUARTER/YEAR

STATISTICS..
CORRELATION (R) = .49794
R SQUARED = .24794
SIGNIFICANCE = .00054
STD ERR OF EST = .87855
INTERCEPT (A) = -.87317
SLOPE (B) = .04259

FIGURE 3.1 (...cont'd)

SCATTERGRAM: (DOWN) USSR:USA NON-DIRECTED DYAD NET POS SCORE
(ACROSS) QUARTER/YEAR

STATISTICS..

CORRELATION (R) = .25769
R SQUARED = .06640
SIGNIFICANCE = .05421
STD ERR OF EST = .97886
INTERCEPT (A) = -.45188
SLOPE (B) = .02204

FIGURE 3.1 (...cont'd)

SCATTERGRAM: (DOWN) USA:CHINA NON-DIRECTED DYAD NET POS. SCORE.
(ACROSS) QUARTER/YEAR

STATISTICS..
CORRELATION (R) = .51208
R SQUARED = .26222
SIGNIFICANCE = .00037
STD ERR OF EST = .87017
INTERCEPT (A) = -.89796
SLOPE (B) = .04380

The trend line is slightly upward, with an intercept of -0.87 and a slope of 0.04 . (The scattergrams present data for the standardized net positivity variables, so they can only be interpreted as fluctuations around the mean level for a given dyad over the course of the time series, which is zero in all cases.)

The Soviet-American non-directed dyad displays a relatively flat trend from the first to 22nd quarters, except for a dramatic increase in tension around the 17th quarter. After the 22nd quarter a general improvement in the level of tension begins, which culminates at the 26th quarter. From that point on, the trend is downward, so that by the end of the time series the level of tension is about the same as it was during the first 20 quarters or so. The overall trend is quite flat, with an intercept of -0.45 and a slope of 0.02 . Note that tension in the Soviet-American dyad is not correlated with the time series at the 0.05 level of significance.

The Sino-American non-directed dyad shows a gradually upward trend during the whole of the time series, except for a sudden improvement in the level of tension at the 25th through 27th quarters. The amplitude of the fluctuation in tension is greater after this point than before it, with high points at the 32nd and 36th quarters. The overall trend is highly significant ($p=0.0004$), with an intercept of -0.90 and a slope of 0.04 .

All non-directed dyads show evidence of the same lessening

of tension around the 26th quarter, but in different contexts. In the Sino-Soviet dyad, the improvement is less than in the other two dyads, which at that point in the series show net positivity scores of almost three standard deviations above the norm, whereas in the Sino-Soviet dyad the highest point is slightly less than two. In the case of the Soviet-American dyad, the peak appears to be the product of a gradual improvement in relations. From the 17th quarter, when tension between the two countries was at its highest during the time series, there is an upward trend which spans nine quarters, or a little more than two years. This trend is not maintained, though, and tension increases after the 26th quarter. In the Sino-American dyad the 26th-quarter peak spans three-quarters of a year, but cannot be sustained thereafter. In this case, however, there is no steady decline after the 26th quarter; tension increases to its previous levels but then resumes the trend toward reduced tension that began early in the time series.

Scattergrams for the directed dyads appear in Figure 3.2. I will only briefly discuss these plots, since the directed dyads are, for the most part, reflective of their non-directed counterparts. Plots for the China>USSR and USSR>China directed dyads are generally flat, with unusual hostility displayed in the first, ninth and 27th-28th quarters. The plots for the USA>USSR, USA>China and USSR>USA all show the same pattern, with increasing friendliness peaking at around the 25th-27th quarters, and decreasing friendliness thereafter. The USA>China plot shows

greater fluctuation than the other two in this group. The China-USA plot is quite anomalous; it shows a fluctuating but consistent trend toward increased friendliness throughout the time series. The reciprocal nature of much of the dyadic communication, which appeared in the course of the Caplow analysis, finds graphic support in these scattergrams. The scattergram for the USSR-USA directed dyad is very similar to the one for the USA-USSR dyad, and so forth. This is the case in all three pairs of directed dyads, although it is perhaps least obvious in the Sino-American directed dyads.

The second phase of the Holbraad analysis was to test the hypotheses presented in subsection 1.5. The fact that the time series was limited to 40 quarters meant that the hypotheses had to be tested by a somewhat roundabout route, since there were few quarters in which net positivity scores for any given directed or non-directed dyad were lower than one standard deviation below the mean. This meant that no regression equations were possible using only those quarters. The alternative was to construct a dichotomous variable for each dyad, which took a value of zero if the standardized net positivity score was more than one standard deviation below the mean and a value of one otherwise. These variables were then employed as independent variables in the regression equations. This technique eliminated the need to run regression equations on only five or six cases, which would have rendered the results virtually meaningless.

Figure 3.2

Scattergrams for Directed Dyads Plotted Against the Time Series

SCATTERGRAM: (DOWN) TENSION Z SCORE CHINA/USSR

(ACROSS) QUARTER/YEAR

STATISTICS..
 CORRELATION (R) = .34219
 R SQUARED = .11710
 SIGNIFICANCE = .01534
 STD ERR OF EST = .95191
 INTERCEPT (A) = -.60006
 SLOPE (B) = .02927

FIGURE 3.2 (...cont'd)

SCATTERGRAM: (DOWN) TENSION Z SCORE CHINA>USA
(ACROSS) QUARTER/YEAR

STATISTICS..

CORRELATION (R)= .59457

R SQUARED = .35351

SIGNIFICANCE = .00003

STD ERR OF EST = .81455

INTERCEPT (A) = -1.04262

SLOPE (B) = .05086

FIGURE 3.2 (...cont'd)

SCATTERGRAM: (DOWN) TENSION Z SCORE USSR/CHINA
(ACROSS) QUARTER/YEAR

STATISTICS..
CORRELATION (R) = .20063
R SQUARED = .04025
SIGNIFICANCE = .10724
STD ERR OF EST = .99247
INTERCEPT (A) = -.35182
SLOPE (B) = .01716

FIGURE 3.2 (...cont'd)

SCATTERGRAM: (DOWN) TENSION Z SCORE USSR>USA
(ACROSS) QUARTER/YEAR

STATISTICS:
CORRELATION (R) = .33583
R SQUARED = .11278
SIGNIFICANCE = .01706
STD ERR OF EST = .95424
INTERCEPT (A) = -.58889
SLOPE (B) = .02873

FIGURE 3.2 (...cont'd)

SCATTERGRAM: (DOWN) TENSION Z SCORE USA-CHINA
(ACROSS) QUARTER/YEAR

STATISTICS..

CORRELATION (R)= .26104

R SQUARED = .06814

SIGNIFICANCE = .05187

STD ERR OF EST = .97795

INTERCEPT (A) = -.45775

SLOPE (B) = .02233

FIGURE 3.2 (...cont'd)

SCATTERGRAM: (DOWN) TENSION Z SCORE USA>USSR
(ACROSS) QUARTER/YEAR

STATISTICS..

CORRELATION (R) = .12845
R SQUARED = .01650
SIGNIFICANCE = .21478
STD ERR OF EST = 1.00468
INTERCEPT (A) = -.22525
SLOPE (B) = .01099

Two sets of equations were run. The first employed non-directed dyads as both dependent and independent variables, while the second employed directed dyads as dependent variables and non-directed dyads as independents. The Holbraad analysis did not make use of equations employing directed dyads as independent variables, since the Holbraad perspective was taken to refer to the perception by one country of the state of relations between the other two countries. Because the state of relations between two countries is, by necessity, an amalgam of the perceptions of each country toward the other, the non-directed dyad seemed the most appropriate unit to employ as the independent variable.

The Holbraad hypotheses appear below, with the results of the Holbraad analyses for each one. The first hypothesis was as follows:

- (a) USA>China and USSR>China positivity scores will be negatively correlated with positivity scores in the Soviet-American non-directed dyad when the latter are more than one standard deviation below the mean for the time series.

The findings could not support this hypothesis. Neither directed dyad was significantly correlated with periods of high tension in the Soviet-American non-directed dyad. Table 3.6

shows that periods of high tension in neither the Sino-Soviet nor the Sino-American non-directed dyad were correlated with NPS's in the Soviet-American non-directed dyad. This finding is supported by Table 3.7, which shows that NPS's in the USA-China directed dyad were correlated with periods of high tension in none of the non-directed dyads. Net positivity scores in the USSR-China directed dyad were correlated with high-tension periods in the Sino-American non-directed dyad but not with those in the Soviet-American non-directed dyad, as hypothesized.

The second Holbraad hypothesis involved the expectation that Chinese and Soviet communications directed at the United States would be especially friendly when there were high levels of hostility in communications between the USSR and China. This would occur because of attempts by both the USSR and China to solicit the United States as a coalition partner to assist in the Sino-Soviet dispute(s). The hypothesis was stated as follows:

- (b) China/USA and USSR/USA positivity scores will be negatively correlated with positivity scores in the Sino-Soviet non-directed dyad when the latter are more than one standard deviation below the mean for the time series.

This hypothesis was also unsupported by the findings.

Table 3.6

Regression Analysis of Non-Directed Dyad
Net Positivity Scores With Dummy Variables

Dependent Variable	Indep. Variable	Mult. R	R Sq.	IR-Sq. Chg	Simple R	Beta	F Ratio
USSR:China	USA:China*	.6644	.4414	.4414	.6644	.6644	30.0267
USA:China	USSR:China*	.3645	.1328	.1328	.3645	.3645	5.6674
USSR:USA	None						

Notes:

All Y-intercepts = 0.00

All F-ratios significant at 0.05 level.

*Independent variables refer to dichotomous dummy variables:

Value = 0 if net positivity Z-score less than -1
Value = 1, if net positivity Z-score greater than
or equal to -1

Table 3.7

Regression Analysis of Directed Dyad
Net Positivity Scores with Dummy Variables

Dependent Variable	Indep. Variable	Mult. R	R Sq.	IR-Sq. Chg	Simple R	Beta	F Ratio
USSR>China	USA:China*	.4052	.1642	.1642	.4052	.4052	7.4632
China>USSR	USA:China*	.3653	.1334	.1334	.3653	.3653	5.6979
China>USA	USSR:China*	.56	.3136	.3136	.56	.56	16.9027
USSR>USA	None						
USA>USSR	None						
USA>China	None						

Notes:

All Y-intercepts = 0.00

All F-ratios significant at 0.05 level.

*Independent variables refer to dichotomous dummy variables:

Value = 0 if net positivity Z-score less than -1
Value = 1 if net positivity Z-score greater than
or equal to -1

Table 3.6 shows a positive correlation between tension in the Sino-American non-directed dyad and high-tension periods in the Sino-Soviet non-directed dyad, but to support the hypothesis the correlation would have had to be negative. Tension in the Soviet-American non-directed dyad was unrelated to periods of high tension in either of the other non-directed dyads. Table 3.7 shows that tension in the China>USA directed dyad was correlated with periods of high tension in the Sino-Soviet non-directed dyad, but the relationship was positive, not negative. There was no correlation between tension in the USSR>USA directed dyad and high-tension periods in the Sino-Soviet dyad.

The final Holbraad hypothesis arose out of the expectation that both the USA and China would solicit the support of the USSR during periods of high tension in the Sino-American non-directed dyad. It was stated as follows:

- (c) US>USSR and China>USSR positivity scores will be negatively correlated with positivity scores in the Sino-American non-directed dyad when the latter are more than one standard deviation below the mean for the time series.

The third hypothesis, like the others, was not supported

by the results of the analysis. Table 3.6 shows that there was no correlation between tension in the Soviet-American non-directed dyad and periods of high tension in either of the other non-directed dyads, as I have mentioned. Tension in the Sino-Soviet non-directed dyad was correlated with high-tension periods but, as I have also noted, this correlation was positive, not negative. Table 3.7 displays data showing that there was no significant correlation between tension in the USA USSR directed dyad and high-tension periods in the Sino-American non-directed dyad. Although there was a correlation between tension in the China/USSR directed dyad and the Sino-American non-directed dyad, once again the correlation was positive, not negative.

These results were quite different than those obtained from the Caplow analysis. In that analysis, the United States appeared to play the key role, by virtue of the fact that only in those directed dyads in which it was the recipient of communication from another member of the triad was tension correlated with tension in another non-directed dyad. Tension in all three non-directed dyads was in some way correlated with the level of tension in communication directed at the United States. The Holbraad analysis, which was only concerned with relations when tension in the predictor variables was more than one standard deviation below the mean for the time series, revealed a different set of relationships.

First, the Holbraad analysis revealed that periods of high tension in the Soviet-American non-directed dyad were

Uncorrelated with tension in any of the other four directed dyads, which was further evidence that communication in the Soviet-American non-directed dyad was largely reciprocal and relatively isolated from communication occurring on the other arms of the triad. Neither the Soviet Union nor the United States appear to have wanted to bring relations with China into the Soviet-American relationship, which is consistent with the idea that neither were in any hurry to grant China equal membership in a superpower triangle. Second, tension in both of the directed dyads in the Sino-Soviet non-directed dyad was correlated with periods of high tension in the Sino-American non-directed dyad. This relationship did not appear in the explicit analysis.

No clear tertius gaudens role emerged from the Holbraad analysis. It was interesting to note that all three directed dyads in which tension was correlated with periods of high tension in an opposite non-directed dyad involved China. Tension in the China-USSR and USSR-China directed dyads was correlated with high-tension periods in the Sino-American non-directed dyad, while tension in the China>USA directed dyad was correlated with high-tension periods in the Sino-Soviet non-directed dyad. However, tension in the USA>China directed dyad was not correlated with high tension in the Soviet-American non-directed dyad, which one would expect if China was playing the tertius gaudens role.

The Soviet-American non-directed dyad appeared to ignore the triad as a system when experiencing periods of high tension, treating such periods as purely bilateral phenomena. China's relations with the USA were correlated with its relations with the USSR, and the USSR's communications directed at China were colored by China's relations with the USA. Both of these correlations were positive, though, while a "pure" tertius gaudens function would lead one to expect them to be negative.

The next section discusses the findings of the Caplow and Holbraad analyses further, and considers the implications of those findings for the study of the tertius gaudens role in international triads. While the hypotheses were generally unsupported, there are nevertheless conclusions to be drawn from the results, as well as directions that future research into coalition behavior in the Sino-Soviet-American and other triads might take.

4 CONCLUSIONS

In the introduction to this paper, I said that the *tertius gaudens* function is in large part an analogy for the fluctuation in tension levels that occurs along the three axes of the triad over time. It allows the visualization of a complex dynamic, but it may in fact exist more in the eye of the observer than in the behavior of the triad's members. The difficulty associated with the *tertius gaudens* function is that it may never have to exist in actuality to exist in effect. The Caplow and Holbraad analyses appear to have run headlong into this difficulty.

It is apparent that the dynamics of interaction in the Sino-Soviet-American triad are neither readily explainable nor immutable. The Caplow perspective, which sees these dynamics as a function of the triad's distribution of power, was unable to predict how tension levels in the dyads were related. Five of the six Caplow-based hypotheses were unsupported, and the remaining one received only partial support. While the Caplow perspective predicted that, at least in the final 26 quarters of the time series, China would be cast in the *tertius gaudens* role, the sole member of the triad to display any of the characteristics to be expected of a member playing this role was the United States.

Figure 4.1 displays in graphic form the results of the Caplow-based regression equations using the directed dyads as

Figure 4.1

Correlation Coefficients for Directed Dyads
with Non-Directed Dyad Independent Variables

NOTE:

Correlations refer to non-directed dyads as independent variables; arrows culminate at the directed dyads but originate with the non-directed dyads.

dependent variables and the non-directed dyads as independent variables, which most readily illustrate inter-dyadic interaction in the triad. (In the figure all arrows originate in the large rectangles, representing the non-directed dyads, and point to the small rectangles, representing the directed dyads. The arrows illustrate significant correlations between the non-directed dyads as independent variables and the directed dyads as dependent variables.) The level of tension in communication directed at the United States by both the Soviet Union and China was related to the level of tension in other non-directed dyads in the system, much as one would expect if the USA were playing the *tertius gaudens* role.

The question about American recognition of the *tertius gaudens* role leads back to questions related to American recognition of the triad itself. In subsection 1.4, the history of American, Chinese and Soviet perceptions of the Sino-Soviet-American triad were discussed. While it is impossible to provide much in the way of empirical evidence for the arguments presented there, they indicate that the United States was the last to recognize the systemic nature of interaction in the triad, although once it did, it embarked on a triadic strategy very quickly.

By the time the USA consciously entered into interaction in the triad, the other members, most notably China, had been engaged in triadic maneuvering for several years. China had begun to see the triad as a system particularly early, since such

a perception was well-suited to both its interests and Mao's political philosophy. The USSR was somewhat slower, but by the early to mid-1960's was probably engaged in a triadic strategy.

The United States seems to have been particularly slow to engage in such a strategy. This may have been, in part, due to a monolithic view of Sino-Soviet interaction, which tended to interpret interaction in that dyad as a purely reciprocal phenomenon, largely unrelated to either Chinese or Soviet relations with the USA. There was also a tendency to perceive the Chinese and the Soviets as a communist monolith, and to therefore direct policy at the two of them jointly on that basis. Whatever the reasons for the late recognition of the triadic system on the part of the USA, it had by the early 1970's made the adjustment. Improvements in Sino-American relations, culminating in the Nixon visit to China in February of 1972, when combined with Nixon's visit to Moscow only three months later, are evidence of a strategic shift toward a systemic view of the triad.

The United States, though, appears to have been a key player in the triad before this point. When the time series was broken into two segments, before and after the 15th quarter (the last quarter of 1970), and regression equations using only the last 26 quarters were run, the role of the United States in the triad was reduced, not increased. In fact, the roles of all members were reduced. This indicated that triadic interaction

involving the USA took place in the late 1960's as well as the 1970's, and that it might in fact have been stronger in the early years than in the later ones. In any case, the USA appears to have been involved in the triad, and in a major role, some time before it explicitly adopted a strategy for that involvement.

Tension in communication directed from the USSR to the USA was directly related to tension in the Sino-Soviet and Sino-American non-directed dyads. At the same time, tension in communication directed from China to the USA was directly related to tension in the Soviet-American and Sino-Soviet non-directed dyads. What is immediately noticeable in these relationships is that, of all the directed dyads, the only ones to show significant correlations with any of the non-directed dyads were the two in which the USA was the recipient of communication from the other two members of the triad. Furthermore, each of these two directed dyads was correlated with tension in both of the opposite non-directed dyads. There were no missing links. Finally, all the correlations were positive and quite strong.

These findings suggest that, contrary to the Caplow hypotheses, the USA was the pivotal actor in the triad. However, it did not play the tertius gaudens role actively. It may not have done so at all; the USSR and China may have been using it as a foil for strategies primarily aimed at Sino-Soviet relations. This does not seem likely, though. It is more likely that the USA recognized what was happening, but had no need to actively become involved. It was in the position referred to by

Simmel, in which a role is as effective in potential as it is in practice. Simmel was referring to the tertius gaudens role, but it does not appear that the tertius gaudens role, as Simmel and Caplow use the concept, was the role played by the United States.

The tertius gaudens role was not fully developed in the triad in the 1967-76 period. The fact that all correlations were positive is clear evidence for this conclusion. Communications directed at the USA were merely reflective of tensions elsewhere in the triad. If they had been attempts to affect those tensions, there would have been some negative correlations, as members sought to balance or change relations elsewhere in the triad with compensating actions of their own. Recall, though, that the tertius gaudens role is only one point on a spectrum of possibilities for third-party behavior in the triad. While the USA did not play the tertius gaudens role, per se, it was clearly the pivot point around which communication in the triad revolved. The role it played seems to have been, however, a largely passive one, and perhaps one of which it was not fully aware.

Whether or not the USA played the tertius gaudens role, the Caplow perspective failed to apply in the Sino-Soviet-American triad, since its prediction that China would play that role received no support whatsoever. Tension in USA and USSR communication directed at China was uncorrelated with tension in other dyads in the triad. Tension in the China>USA directed dyad was correlated with tension in the Sino-Soviet non-directed dyad,

but tension in the China>USSR directed dyad was uncorrelated with tension in either the Soviet-American or Sino-American dyad.

The failure of the Caplow perspective to predict the role of the USA in the triad, and the fact that the China's central role failed to emerge as predicted, places in serious doubt the applicability of the Caplow perspective in the analysis of the Sino-Soviet-American triad, at least during the time period in question. Its applicability to other triads composed of actors at the nation-state level cannot be directly addressed here, of course, but it should be noted that this triad was very well suited, in structural terms, to a Caplow-based analysis. The failure of the perspective in this instance does not bode well for its success in predicting interaction in other international triads.

The Holbraad analysis was based on Holbraad's assertion that, during times of particularly high tension between the members of a given non-directed dyad, the member of the triad that was not a member of the dyad in question would enjoy the *tertius gaudens* role. This would occur because of the desire of each member of the conflictual dyad to solicit the support of the uninvolved member in a coalition against the other member of the conflictual dyad. The analysis was therefore based on the extent to which tension in each of the directed dyads was correlated with variables which isolated high-tension quarters in the non-directed dyads.

The Holbraad perspective generated alternative hypotheses

to those generated by the Caplow perspective. These hypotheses said, basically, that when tension in a given non-directed dyad worsened, each of its members would reduce the level of tension in the communications they directed at the uninvolved member of the triad. That member would be in a *tertius gaudens* position for the duration of the dispute between the other two members, but the role would be terminated when tension in the conflictual dyad was reduced to near-normal levels. Operationally, "high tension" was defined as tension that was more than one standard deviation higher than the mean for the time series in the given dyad. The results of the Holbraad analysis are displayed in Figure 4.2.

None of the Holbraad hypotheses were supported, and the reasons for this lack of support deserve some attention. The hypotheses predicted that tension in each directed dyad would be correlated with the variable that isolated periods of high tension in the non-directed dyad of which its receiving member (ie. the member which was the recipient of the communication in the dyad) was not a member. For example, tension in the China>USA directed dyad was predicted to display a significant correlation with the variable that isolated periods of high tension in the Sino-Soviet non-directed dyad, since the USA was not a member of that dyad. This correlation was predicted to be negative, reflecting a reduction in hostility toward the uninvolved member of the triad during periods of high tension.

Figure 4.2

Correlation Coefficients for Directed Dyads
with Non-Directed Dummy Variables

NOTE:

Correlations refer to the non-directed dyads as independent variables; arrows culminate at the directed dyads but originate with the non-directed dyads.

between the other two members. The expectation of negative correlation was based on the assumption that the members of the conflictual dyad would be more friendly toward the member of the triad that they were attempting to solicit for help in the conflict.

If one ignores, for the moment, the sign of the correlation, one notices that two of the three observed correlations between directed dyads and the high-tension variables were of the type predicted by the Holbraad perspective. Both involved directed dyads in which China was the member which originated communication. When tension between China and the United States increased to levels much higher than normal, tension between China and the Soviet Union increased as well. Sino-American tension was not similarly affected by abnormally high tension between the Soviet Union and China, although tension in Chinese communications directed at the USA did display such an effect.

The implications of positive correlation between tension in the directed dyads and the high-tension variables is not clear. China was the only member of the triad whose communications to other members were affected by periods of high tension between them. Neither the USA nor the USSR were similarly affected. Because the correlation was positive, it cannot be construed as support for the hypotheses, which predicted negative correlations.

The absence of correlations between other directed dyads

and high-tension variables is also problematic, although they may be related to deficiencies in the data. These deficiencies were discussed in some detail in Section 2. The other factor which may have had an effect on the Holbraad analysis is that there were several events of major importance in the triad at roughly the mid-point of the time series. These events involved all three non-directed dyads and occurred quite near each other on the time series. Their effects can be seen in the scattergrams presented in subsection 3.2. Especially visible is a dramatic reduction in tension in the Sino-American and Soviet-American dyads around the 26th quarter (the second quarter of 1973). The Sino-Soviet non-directed dyad does not show this same dramatic shift in tension levels, but there was a less noticeable improvement in Sino-Soviet relations at about the same time.

The fact that there were great improvements in tension in two of the non-directed dyads, and lesser improvements in the third, at approximately the same time in the series may have distorted the results of the Holbraad analysis. Without a "control" time series with which to compare the results, it is impossible to know what results might have been obtained had these events not taken place, or had they taken place at more widely separated points on the series.

In general, the results of the Caplow and Holbraad analyses raised many more questions than they answered. The Caplow analysis established that the *tertius gaudens* role

certainly did not fall to China, as the hypotheses predicted. The triad's power distribution was suited to a Chinese tertius gaudens actor, at least in the final 26 quarters of the time series, but China was not awarded the role. Instead, a watered-down version of the tertius gaudens role seems to have been awarded to the United States, but there remains considerable doubt that the USA recognized it at the time. Nevertheless, communication directed at the USA from the other two members of the triad was definitely correlated with American involvement elsewhere in the triad.

These findings did not apply, however, in instances of extreme tension along one or more arms of the triad. Findings related to the high-tension dummy variables used to test the Holbraad hypotheses are cast in some doubt by the occurrence of virtually simultaneous improvement in two of the three non-directed dyads, and to some extent in the third as well. The fact that two of the three observed interactions between tension in directed dyads and the high-tension variables for the non-directed dyads were of the type predicted by the Holbraad hypotheses, even though the signs of the coefficients were wrong, suggests that the Holbraad perspective should not yet be completely discarded.

It may be that the hypotheses did not take into account strategies which, although not involving the classical tertius gaudens role, might legitimately fit into the Holbraad perspective. For example, if one strategy was to increase the

involvement of all members of the triad in affairs concerning the triad (i.e., to reduce the number of bilateral interactions and increase the number of trilateral ones), the result might very well be to generate triad-wide increases and decreases in tension, similar to those observed in these data. The *tertius gaudens* concept does not explicitly allow for such strategies, but one of the triad's members could nevertheless play a pivotal role in the bargaining that would accompany such a strategy. It is beyond the scope of this paper to do so, but the triad-wide shifts in tension that are so obvious in these data deserve further study. Perhaps the most interesting aspect of the triadic interactions revealed by these analyses is the apparent tendency for shifts in tension in the triad to be both concurrent and unidirectional. The expected negative correlation between tension levels along different arms of the triad is conspicuous by its absence.

One point was made clear by the analyses. Interaction in the triad was a largely bilateral phenomenon during most of the time series. There were very high correlations between net positivity scores for the two directed dyads involved in any given non-directed dyad. Table 3.2 in subsection 3.1 illustrates the extent of this reciprocal interaction. The magnitude of the correlation coefficients obtained in these analyses support the idea that the triad does indeed represent a system in structural terms, but the bilateral nature of much of the interaction in the

triad cannot be forgotten.

The data give no support to an active "tilting" strategy which is inherent in the playing of a full-fledged tertius gaudens role. There is evidence, though, that a more primitive form of the tertius gaudens role was played by the United States throughout most of the time period under consideration, including the earlier years when the USA had not yet explicitly recognized the existence of a Sino-Soviet-American triad in structural terms. The fact that the USSR and China had both done so, in all probability, lends support to the idea that this largely passive role was created by the perceptions extant in the Sino-Soviet dyad, not by American perceptions.

This study would have derived great benefit from a longer time series, preferably one extending as far into the 1980's as possible. Because of concurrent improvements in tension levels on all arms of the triad, it was difficult to isolate quarters in which tension were particularly high or particularly low along only one arm of the triad in sufficient numbers for fruitful analysis. Future studies employing longer time series might be able to determine whether these concurrent shifts in tension are a product of strategy or of chance. The use of longer time series would also allow the isolation of subseries based on particular incidents, which this study was unable to do. Such an approach might be able to compare these subseries in order to determine how the different actors in the triad respond to similar strategic opportunities. There may very well be multiple

strategies in operation at the same time, which would confound any attempt, such as this one, to isolate structural determinants of behavior in the triad.

Finally, a longer time series might allow the examination in more detail of the American role in the triad. If the role the USA seems to have played was part of some general family of behaviors that include the tertius gaudens role, there is the possibility that it might later evolve into something more closely resembling the tertius gaudens role as envisioned by Simmel, Caplow and Holbraad. While this study's data seem to have rejected the Caplow perspective on the genesis of the tertius gaudens role, they have not conclusively rejected the Holbraad perspective. Perhaps future studies will be able to generate data more suited to the analysis of the Holbraad perspective. To do so, they will need a time series in which highly conflictual periods can be isolated in time and in the web of intra-triadic interactions.

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APPENDIX:

Z-SCORE VALUES AND NUMBER OF CASES,

BY QUARTER

Table A1.

Net Positivity Z-Scores for Directed Dyads, by Quarter

Quarter	Directed Dyad					
	China> USSR	China> USA	USA> China	USA> USSR	USSR> China	USSR> USA
1	-2.61	-1.45	-.40	.17	-3.38	-.07
2	-.54	-2.51	-.79	-.39	.62	-1.36
3	-.32	-1.25	-.82	-1.02	-.04	-.63
4	.58	.54	-.91	-.22	.59	-.30
5	.54	-.83	-.68	-.64	.68	-1.27
6	.25	.22	-.48	.01	-.24	-.78
7	-.65	.10	-.68	-1.23	.14	-.47
8	-.08	-1.19	-.67	-1.08	.50	-.23
9	-3.66	-1.70	-.47	.64	-3.16	.85
10	-1.32	-.65	-.68	-.45	-.28	.25
11	-1.47	-.53	-.25	-.27	-.42	.09
12	.49	.00	.27	.20	.95	-.20
13	.83	.20	.50	-.90	-.28	-1.16
14	.27	-.26	-.46	.57	-.25	-.19
15	.57	-.90	-.37	.83	.96	-.09
16	1.59	-.63	-.47	-.30	1.66	-.87
17	.85	-.51	-.63	-2.38	.62	-2.78
18	.68	-.04	1.24	-.47	.41	-.48
19	.47	-.28	-.24	.28	-.26	.58
20	-.46	.00	.22	.08	-.87	-.64
21	.70	-.23	1.86	-.37	.29	-.68
22	.25	-1.44	-.44	.33	.68	.18
23	-.01	-.13	-1.36	1.20	-.34	1.13
24	-.32	-1.39	.24	.19	-.34	.02

Note: All figures have been rounded to two decimal places.

(cont'd....)

Table A1 (...cont'd)

Quarter	Directed Dyad					
	China USSR	China USA	USA China	USA USSR	USSR China	USSR USA
25	-.25	1.78	2.85	1.64	.45	.95
26	.55	1.89	2.55	2.15	.41	2.86
27	-1.41	1.99	2.19	.74	-.07	.99
28	-.87	1.03	1.10	2.16	-2.30	1.96
29	-.57	-.25	-.73	1.45	-.56	.03
30	.55	.63	-.42	1.45	.61	1.24
31	.54	.40	-.60	.59	.40	1.62
32	.46	1.54	1.34	.66	.00	.86
33	.97	.41	-.47	.12	.62	.19
34	.82	.33	-.58	-.05	.28	.01
35	.69	.43	-.19	-.22	.42	.46
36	.11	1.54	.97	-.51	.31	-.20
37	.27	.30	-.25	-1.36	-.56	-.66
38	.20	.40	-.65	-1.67	.18	-1.02
39	.82	.55	-.60	-.89	.68	-.30
40	.29	.71	-.06	-1.01	.91	.13

Note: All figures have been rounded to two decimal places.

Table A2.

Net Positivity Z-Scores for Non-Directed Dyads, by Quarter

Quarter	Non-Directed Dyad		
	China:USSR	China:USA	USA:USSR
1	-3.16	-1.14	.04
2	.05	-2.02	-.99
3	-.19	-1.20	-.84
4	.62	-.04	-.28
5	.64	-.85	-1.05
6	.00	-.07	-.46
7	-.26	-.24	-.84
8	.31	-.31	-.63
9	-3.58	-1.34	.78
10	-.83	-.73	-.06
11	-.99	-.47	-.07
12	.76	.12	-.03
13	.28	.35	-1.10
14	.01	-.38	.15
15	.81	-.76	.32
16	1.71	-.63	-.65
17	.77	-.62	-2.77
18	.57	.53	-.50
19	.11	-.29	.47
20	-.71	.10	-.34
21	.52	.67	-.57
22	.49	-1.15	.26
23	-.18	-.69	1.22
24	-.35	-.82	.10

Note: All figures have been rounded to two decimal places.

(cont'd ...)

Table A2 (... cont'd)

Quarter	Non-Directed Dyad		
	China:USSR	China:USA	USA:USSR
25	.11	2.46	1.31
26	.50	2.40	2.67
27	-.77	2.30	.92
28	-1.68	1.18	2.15
29	-.59	-.49	.68
30	.61	.23	1.40
31	.49	.00	1.23
32	.24	1.62	.81
33	.84	.06	.17
34	.57	-.04	-.02
35	.58	.20	.17
36	.22	1.46	-.35
37	-.16	.09	-1.01
38	.20	-.03	-1.36
39	.79	.10	-.59
40	.64	.45	-.38

Note: All figures have been rounded to two decimal places.

Figure A1.

Scattergrams of Number of Cases for Directed Dyads, by Quarter

SCATTERGRAM: (DOWN) NUMBER OF CASES FOR CHINA>USSR
(ACROSS) QUARTER

STATISTICS..

CORRELATION (R) = -.36486
 R SQUARED = .13313
 SIGNIFICANCE = .01031
 STD ERR OF EST = 7.47890
 INTERCEPT (A) = 13.62308
 SLOPE (B) = -.24747

PLOTTED VALUES= 40 EXCLUDED VALUES=0 MISSING VALUES= 0

Figure A1 (... cont'd)

SCATTERGRAM: (DOWN) NUMBER OF CASES FOR USSR/CHINA
(ACROSS) QUARTER

STATISTICS..

CORRELATION (R) = -.34538
 R SQUARED = .11929
 SIGNIFICANCE = .01453
 STD ERR OF EST = 7.40509
 INTERCEPT (A) = 13.44231
 SLOPE (B) = -.23011

PLOTTED VALUES= 40 EXCLUDED VALUES=0 MISSING VALUES= 0

Figure A1 (... cont'd)

SCATTERGRAM: (DOWN) NUMBER OF CASES FOR USA:USSR
(ACROSS) QUARTER

STATISTICS...

CORRELATION (R) = .17289
 R SQUARED = .02989
 SIGNIFICANCE = .14303
 STD ERR OF EST = 19.01373
 INTERCEPT (A) = 26.57308
 SLOPE (B) = .28180

PLOTED VALUES= 40

EXCLUDED VALUES=0

MISSING VALUES= 0

Figure A1 (... cont'd)

SCATTERGRAM: (DOWN) NUMBER OF CASES FOR USSR USA
(ACROSS) QUARTER

STATISTICS..

CORRELATION (R)= .00596
 R SQUARED = .00004
 SIGNIFICANCE = .48543
 STD ERR OF EST = 18.63121
 INTERCEPT (A) = 35.45769
 SLOPE (B) = .00938

PLOTTED VALUES= 40

EXCLUDED VALUES=0

MISSING VALUES= 0

Figure A1 (... cont'd)

SCATTERGRAM: (DOWN) NUMBER OF CASES FOR USA>CHINA
(ACROSS) QUARTER

STATISTICS..

CORRELATION (R) = .06237
 R SQUARED = .00389
 SIGNIFICANCE = .35112
 STD ERR OF EST = 6.13401
 INTERCEPT (A) = 4.71154
 SLOPE (B) = .03236

PLOTTED VALUES= 40

EXCLUDED VALUES=0

MISSING VALUES= 0

Figure A1 (... cont'd)

SCATTERGRAM: (DOWN) NUMBER OF CASES FOR CHINA/USA
(ACROSS) QUARTER

STATISTICS..

CORRELATION (R) = -.19205

R SQUARED = .03688

SIGNIFICANCE = .11758

STD ERR OF EST = 7.83477

INTERCEPT (A) = 13.60385

SLOPE (B) = -.12946

PLOTED VALUES= 40

EXCLUDED VALUES=0

MISSING VALUES= 0

END

05-06-86

FIN