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COALITION THEORY AND CHANNELS OF DISTRIBUTION:
AN ALTERNATIVE POWER STRATEGY

by

Michael George Harvey

A Dissertation Submitted to the Faculty of the
COMMITTEE ON BUSINESS ADMINISTRATION
In Partial Fulfillment of the Requirements
For the Degree of
DOCTOR OF PHILOSOPHY
In the Graduate College
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GRADUATE COLLEGE

I hereby recommend that this dissertation prepared under my
direction by Michael George Harvey
entitled Coalition Theory and Channels of Distribution:
An Alternative Power Strategy
be accepted as fulfilling the dissertation requirement of the
degree of Doctor of Philosophy

Robert B. Hauer
Dissertation Director

Mar. 26, 1976
Date

After inspection of the final copy of the dissertation, the
following members of the Final Examination Committee concur in
its approval and recommend its acceptance:*

R. L. Call
L. H. Stahman

Mar 17, 1976
March 26, 1976

Geary R. Miller

Mar. 12, 1976

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SIGNED: Michael G. Harvey

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ABSTRACT

In recent years channels of distribution have been viewed by marketing scholars as behavioral systems composed of interrelated sub-components. The subcomponents of a channel of distribution vary in size and, therefore, strength. When individuals or groups of individuals interact and one component has greater strength or power over the other component, conflict arises. This research was directed towards analyzing the concept of social power and in particular the power strategy of coalition formation in channels of distribution.

The first chapter of this research describes the relationship between the theory of social power and the theory of channels of distribution. A control continuum is developed indicating the varying importance of power in a channel of distribution when trying to reduce conflict. The collective grouping of channel members is illustrated to indicate the existence of small channel members combining their strength. The legal ramifications of collective channel behavior are analyzed to depict the control of the Federal Government on the exercising of power.

Chapter 2 relates the theory of coalition formation to power strategies in channels of distribution. The relationship between the theory of coalitions and the power strategies in channels of distribution is very similar. One of the direct similarities was discussed under the topic of tertius gaudens. Chapters 3 and 4 are an empirical investigation of the theory of social power and coalition formation in

a laboratory setting. A theoretical channel of distribution is established and the experimenter attempts to manipulate the coalition formation of the various group members.

Chapter 5 presents the results of the research indicating the formation of coalitions in experimental channels of distribution is significantly influenced by the initial distribution of power among the members. Weaker members of the experimental channel system coalesced a greater proportion of the time and received a disproportional amount of the rewards. This pilot investigation indicates the necessity to evaluate the formation of coalitions in actual channels of distribution.

CHAPTER 1

INTRODUCTION TO THE RESEARCH

One of the most basic tensions in man is rooted in the conflict between the urge to stand alone and the urge to stand together. Two words derived from Greek roots illustrate these two contrasting societal and human motivations. Monastasy designates the fundamental desire to be independent or to be different. On the other hand, systasy indicates the aspiration to stand together in the recognition that men standing together can accomplish tasks that would be beyond the strength or skills of any one individual. Competition and cooperation have therefore become alternative means to organizing the use of scarce resources to meet the needs of a society. This research investigates systastic behavior.

Throughout history man has formed groups to accomplish a variety of goals: social, political, economic. The tendency to develop collective groups illustrates the synergetic power generated by the consolidation of resources. Often the resulting combined social power is used to combat the power attempts of dominant social agents. For example, labor unions in the United States were formed to counteract the dominance of management over individual workers. By banding together, workers were able to increase their power vis-à-vis management to obtain economic and social goals. Collective bargaining illustrates the additive nature of social power to directly influence management.

Another example is the two-party political system in the United States which is based on the formation of distinct groups to express the philosophies of their constituents. By combining their votes, the parties elect officials and through these representatives exert social influence. This representative form of government fosters the concept of increasing one party's power by increasing its number of party members. Within each party, groups of individuals combine to represent majority as well as minority viewpoints, allowing the party to satisfy a wider variety of the constituents' needs. Also present in our political system are special interest groups which band together to effect political change. Lobbyists for these special interest groups attempt to influence legislators through the collective votes that they represent.

Professional organizations such as the American Medical Association (AMA) and the Certified Public Accountants (CPA) use their social coalitions to restrict membership to certain "qualified" individuals, to certify the proficiency of their members, and to penalize members who do not maintain the organization's standards. Also, the combined strength of the membership may be directed outwardly to influence society. For example, the AMA has directly or indirectly influenced the legal regulations of practicing medicine in the United States. The AMA's power is enhanced by the solidarity of their professionals against their critics.

The social units which combine to achieve common goals need not be individuals. For example, the combining of political and economic forces to exert influence and to protect the members of the group from

common enemies is seen in multi-national market groups such as the European Common Market and the Latin American Free Trade Association. Individually, the member nations of these groups cannot effectively negotiate with more powerful nations. By combining their economic forces through common tariffs and collective negotiations, these united nations can develop more equitable trade relations. They may also use their combined strength to receive disproportionately rewarding trade agreements.

Complex social systems may demand independent as well as interdependent behavior patterns from their members. Channels of distribution may be viewed as such a complex social system. The independent behavior of channel members is due to the fact that each member is legally and functionally a separate entity (if no integration is present in the system). Each channel member is primarily concerned with performing its own functions; each has its own philosophy of management and orientation to the environment; each is highly concerned with maintaining and increasing its own profits; and most are interested in maintaining their independence as business enterprises. Each channel member has a set of micro-objectives which may or may not be consistent with those of other channel members or with the system as a whole. It is this legal and functional independence and the attendant concerns with individual sub-goals and orientations that is the major source of conflict in marketing channels (Walker, 1970, p. 12).

Cooperation is essential in a channel of distribution. This is so because the channel members all have a commonly held objective. They have a common interest in providing a product, in the broadest sense of

the term, which satisfies the needs of the consumers and provides the channel members with a profit. Channel members are functionally interdependent in that each specializes in particular functions and the other members depend upon each member for their performance. The actions of any one member affect the level of output achieved by the others (Stern and Gorman, 1969, p. 156). A basic problem that reduces the cooperation within a channel evolves due to individual members placing their unit goals above those of the total system. Each channel member has a set of objectives established for his unit which may not be commensurate with the goals of other members. This lack of unit cooperation tends to reduce the efficiency of the channel of distribution as a whole.

Conflict in Channels of Distribution

The dichotomous behavior of independence and interdependence expected of channel members contributes to conflict in the channel system. The potential for conflict exists in channels of distribution when a channel member perceives the behavior of another member to be impeding the attainment of his goals or the total macro-objectives of the channel system. Conflict is a process composed of two broad classes of changes: (1) those that precipitate the conflict relationship or the "why" of conflict and (2) those which are a response to the precipitating change and which lead to conflict resolution or to the channel system's disintegration (the "what" of conflict).

Why conflict develops in a channel of distribution has been investigated by marketers to determine the causes of such conflict. Marketers who have investigated the causes of conflict in channels of distribution generally cited the root of conflict in the independence/

interdependence behavior of channel members. The broad issues that concern interaction among channel members and create conflict are:

1. role conflict among members;
2. the division of decision making powers between channel members;
3. perceptual differences of channel members;
4. expectation differences;
5. the division of scarce resources;
6. the basic goals and objectives of the channel; and
7. the lack of adequate information distributed to channel members (Stern and Gorman, 1969, pp. 156-160).

Conflict in channels of distribution has not been confined to any particular channel structure. Conflict has also occurred across industries including drug, automobile, petroleum, liquor and others. Table 1 illustrates the intensity of conflict present in a wide variety of industries and in differing channel structures. As indicated in Table 1, the level of conflict varies by issue, i.e., bypass wholesaler, bypass retailer, etc., and by channel structure. The industries presented (drug, automobile, petroleum, food and liquor) illustrate a variety of channel configurations and ownership patterns. When conflict exists in a channel of distribution, actions are taken by channel members to reduce the dysfunctional level of conflict.

When dysfunctional levels of conflict exist in a channel of distribution, overt and covert behavior occurs to reduce the level

Table 1. Recent Distributive Conflicts in Five Industries

Conflict Issue	Industries				
	Drug	Automobile	Petroleum	Food	Liquor ^b
Bypassing Wholesaler	VV ^a	*	VV	VV	V
Bypassing Retailer	V	VV	V	X	X
Chain vs. Independents	VV	*	*	VV	V
Discounters vs. Traditionalist	V	V	V	V	VV
Private vs. National Brands	VV	*	VV	VV	VV
Fair Trade	X	X	V	X	VV
Retail or Wholesale Inventory Levels	*	VV	VV	V	*
Too Many Dealers	V	VV	V	*	*
Price Discrimination or Discount Structure	X	V	VV	VV	V
Promotional Allowances	*	V	V	V	*
Service and Warranty	*	V	*	*	*
Franchise Cancellation	*	VV	V	*	*
Pressure to Accept Parts and Accessories	*	V	VV	*	*
Manufacturer Involvement in Store Management	X	VV	VV	V	X

Table 1--Continued

Conflict Issue	Industries				
	Drug	Automobile	Petroleum	Food	Liquor ^b
Overall Intensity of Conflict	VV	VV	VV	VV	VV
Intensity of Association					
Political Activities	VV	VV	VV	V	*

(Table adapted from Assael, 1968)

^a VV signifies intense conflict; V signifies moderate conflict; X signifies little or no conflict; * signifies not applicable to this industry.

^b Areas of conflict do not apply to 17 states where distribution is state-controlled.

of conflict. The conflict must be at a level where the members of the channel system anticipate a reduction in the efficiency or effectiveness of the channel. The "what" of reactions to conflict may be broadly conceptualized into two major categories: (1) intraorganizational change or (2) the exercising of power.

Intraorganizational change involves a behavior change by the channel member being frustrated by the conflict behavior of another channel member. The change in behavior by the frustrated channel member may include: (1) a change in goals, (2) change in behavior to accommodate the channel member creating the frustration, (3) bargaining with the frustrating channel member to adjust expectations and roles, and (4) implicit mediation through a member outside the channel system (typically a federal agency). Intraorganizational change is used when members have limited alternatives and therefore must adjust their behavior to conform to the changing social and economic environment of the channel of distribution.

The exercise of power by channel members as a reaction to conflict in the channel of distribution generally is directed toward altering the behavior of the channel member(s) creating the conflict. The power may be in the form of economic threats directed toward these channel members. However, such threats intended to reduce conflict are generally pathological responses, since they tend to elicit counter threats, thus increasing the degree of conflict (Beier and Stern, 1969, p. 92).

The pooling of resources by channel members is made possible because the attention of the members is focused on the common threat of the conflict generating unit and diverted from their individual differences. This pooling effect is the primary concern of the research and is experimentally treated in Chapter 4. The formation of collective groups in channels of distribution represents power strategy to reduce conflict or increase control.

A continuum of power may be developed (see Table 2) that relates the various marketing activities that are performed and different channel structures. To increase control and to reduce dysfunctional conflict, channel members may integrate (horizontally and vertically) their channel system. The loosely controlled independent channel depicts a channel system with very little control over marketing activities and a resulting high level of conflict. To gain control over marketing flows, channel members may develop a variety of channel structures illustrating different levels of integration. Table 2 indicates that maximum control and minimum conflict is obtained through vertically integrating a channel of distribution through common ownership. Achievement of a high level of control in a channel system is generally contingent on either common ownership or on the existence of a voluntarily integrated system.

In summary, due to the uneven distribution of power within channels of distribution, areas of conflict develop between units in the system. The interdependence of the members of the channel system coupled with the multiple objectives of various members may lead to suboptimization in loosely controlled independent channels of

Table 2. Power Continuum Related to Activities
in Channels of Distribution

Marketing Flows		Ordering	Negotiation	Payment	Financing	Promotion	Ownership	Physical Possession	Pricing
Max. Power Min. Conflict									
10	Fully Owned Channel	+	+	+	+	+	+	+	+
9									
8	Vertical/ Horizontal Integration	+	+	+	+	+	—	—	+
7									
6	Institutional Franchise	+	+	+	+	—	—	—	+
5									
4	Product/Service/ Territory Franchise	+	+	+	(+)	—	—	—	—
3									
2	Voluntary Chain	+	+	+	—	(+)	—	—	(+)
1	Loosely Controlled Independent Channel	—	—	—	—	—	—	—	—
Min. Power Max. Conflict									

+ indicates control by dominant member of channel "channel captain" or most powerful member of channel of distribution

(+) indicates control on occasion but not as general rule

10 max. control over marketing flows

1 min. control over marketing flows

(Table 2 developed with the assistance of Professor Robert S. Hancock and Professor Harvey W. Huegy during several discussions)

distribution. To reduce conflict and increase certainty of accomplishing system goals, channel members may band together to increase their power. Table 2 illustrates with increased power, marketing flows are controlled and therefore goal attainment is more likely to occur.

Collective Groups in Channels of Distribution

The concept of social power has been applied to marketing with regard to the interorganizational relationships found in channels of distribution. Empirical evidence indicates a significant relationship between the use of power by a channel member and the sources of power available to it (Miles, 1974, p. 192). Basically, the development of power is fundamental to understanding the means by which a channel member (either dominant or weak) can change or modify its position within its channel of distribution (Miles, 1957; Stern, 1967; Stern and Heskett, 1979). The organizations that develop within the channel do not necessarily create power. However, due to the hierarchical structure of organizations, power differences develop and vary from one interorganizational setting to another (see Table 2). The mutual dependency of organizations in a social system sets the stage for the development of power advantages and strategies.

Channel members may band together in an attempt to decrease conflict among channel members or to protect themselves against more dominant power figures in the channel of distribution. Dominance at one end of the distribution chain often stimulates grouping (coalitions) at the other end, because those subordinate to social power will

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Channel members may band together in an attempt to decrease conflict among channel members or to protect themselves against more dominant power figures in the channel of distribution. Dominance at one end of the distribution chain often stimulates grouping (coalitions) at the other end, because those subordinate to social power will

naturally tend to organize in an attempt to use their own economic or political power.

The banding together of channel members may take one of two forms: (1) vertical coalitions, or (2) horizontal coalitions. Vertical coalitions entail the joining of social agents from different levels of the distribution system against another within the system. The possible advantages to firms that adopt a vertical type of organization in their channels of distribution are numerous: (1) additional profit margins; (2) stability of operations; (3) certainty of materials and supply; (4) quality control of products; (5) lower costs; (6) prompt revision of production and distribution policies; (7) improved inventory control; (8) greater buying power; (9) improved resource management; and (10) ability to apply brand names to items produced and to enjoy the advantages therefrom (Wedding, 1952, p. 11). In addition, three potential major advantages that may be passed on to consumers through vertically integrated channels are: (1) lower prices; (2) maintenance of quality; and (3) better servicing of products.

Three major types of vertical systems have flourished in the past several decades. The corporate vertical system is centrally owned and operated as a unit and is generally synonymous with integrated chain store systems (e.g., Sears, Roebuck and Company, Firestone Tire and Rubber Company, and the like). This basically integrated type of channel system accounted for approximately thirty (30) percent of all retailing in the 1960's, with a continuously accelerating growth rate projected for the 1970's (Davidson, 1970, p. 7).

The contractual vertically integrated system involves voluntary integration of retail stores with other supply units at an antecedent channel level. It has been estimated that approximately thirty-five (35) to forty (40) percent of all retail trade is accounted for by forms of contractual channels of distribution (Davidson, 1970, p. 7). The administered vertically integrated system generally is associated with a product line or some classification of merchandise. There are no data of the overall significance for administrative systems. However, proprietary studies conducted clearly indicate that vertically coordinated programs are growing rapidly (Davidson, 1970, p. 8).

It becomes readily apparent that vertically integrated channels of distribution are becoming a significant means of controlling a distribution system. As illustrated in Table 2, the primary impetus for this form of integration would be to reduce conflict and to increase certainty of performance by various channel units. Implicit in this acceleration of vertically integrated systems is the cost efficiency of a controlled system as well as the competitive advantage of such a coordinated channel of distribution. By reducing conflict, the system may be managed as a unit striving for common goals. This reduction in cost to distribute the goods may then be translated into competitive advantage when compared to other non-integrated channel structures.

Horizontal coalitions typically take place at one level in the distribution system and the combined power is directed at another level in the system. Retailer cooperatives commonly put their greatest

emphasis on the advantages of group buying and have given less attention to retail management aids and services than do wholesaler-sponsored chains. The retail cooperative becomes, in effect, the wholesale buyer. The pressures toward the formation of large-scale buying groups have been so strong that very few unaffiliated retailers remain in such convenience goods as groceries, drugs, and hardware (Lewis, 1968, p. 71). Wholesalers, in order to strengthen their competitive position against retailers and manufacturers bypassing their level in the distribution system, have sponsored voluntary chains, notably in groceries, hardware and automotive products industries. The economic strength of the voluntary chain lies in presenting to the public the image of a group of stores coordinated by the wholesaler, standardized in appearance and general operations, which carry dependable merchandise in adequate variety and at reasonable prices. The wholesaler voluntary-chain organization performs many services for members, starting with selection of retail location, developing store layout, inventories, and even at times, helping with financing of the new venture.

Industry-wide horizontal coalitions have formed in many industries to act as a special interest group for the industry members. Trade associations have led to political actions in the drug, automobile, food, petroleum and television industries. Several of the more powerful trade associations, i.e., National Association of Retail Druggists, National Automobile Dealers Association, National Congress of Petroleum Retailers, United States Wholesale Grocers Association, have become

significant political lobbyist to curtail the power of more dominant channel members.

A special horizontal condition may exist which necessitates the development of coalitions, that being intertype competition. The competition that develops between newer creative forms of distribution and older channels sometimes leads to coalitions being formed by the older units to protect themselves with collective buying behavior. Chain stores use loss leaders that create economic conditions of conflict and cut deeply into independents' advantage, therefore, there is a likelihood that independents will group together (form coalitions) to combat the power of this newer form of distribution. Two major objectives are accomplished when retailers form coalitions: (1) there is a reduction in the uncertainty of horizontal competition allowing the retailer to concentrate its attentions on combating new forms of competition in the distribution of goods, and (2) the group places itself in a position to exert vertical power by manipulating the purchasing power of its members.

In summary, coalitions may form in channel systems either vertically (between levels) or horizontally (at the same level). A special case of horizontal coalition formation is due to intertype competition. There may be distribution situations where coalitions could not or do not form due to the conditions that exist in the system: e.g., if there are only two social agents in the system. By definition there must be three social units in the system to initiate the development of a coalition; or if the combined power of the two

coalescing members is ineffective against one very dominant channel member.

Legal Restrictions

Recognition of the collective power and influence of vertically integrated channels of distribution is evidenced by the fact that a great deal of federal and state legislation has been passed in an attempt to effect some degree of control over the expansion of this type of organization. Thus, a firm considering a vertically integrated system of operations not only must weigh all the possible advantages and disadvantages of such a system, but also must give detailed consideration to the federal and state laws governing integrated channels of distribution.

The channel of distribution activities which federal and state laws focus on may be categorized into five areas: (1) pricing constraints; (2) promotional constraints; (3) exclusive buying constraints; (4) exclusive selling constraints; (5) trademarks. Three major pieces of federal legislation were developed to reduce price discrimination by marketers: the Sherman Act, 1890; the Clayton Act, 1914; and Robinson-Patman Act, 1936. Promotion has been regulated by the Federal Trade Commission Act, 1914. This bill created the watchdog Federal Trade Commission as well as prohibiting unfair methods of competition including deceptive promotional practices. The Wheeler-Lea Act, 1938, amended the FTC Act and strengthened the surveillance of deceptive promotional practices in channels of distribution. Price and promotion constraints have been historically the two retail functions that have attracted the most legislative interest.

Additional areas of legislative concern have been the agreements between channel members and the functions performed in the channel system. Exclusive selling provisions may be questioned if a refusal to deal with certain channel members prevents the excluded firm from competing (*Klor's Inc. v Broadway-Hale Stores, Inc.*, 359 U. S. 207, 1959). Exclusive buying provisions can be considered either as requirement contracts or tying agreements. The requirement contracts are vulnerable under Section 3 of the Clayton Act and tying agreements may be attacked under Section 5 of the same act (*Dixon*, 1969, p. 78). The danger of the tying agreements between channel members is leverage used by a supplier who has a dominant position with one product to gain an advantage in selling another product (*Times-Picayune Publishing Co. v United States*, 345 U. S. 594, 605, 1953). The market of a product is thereby extended beyond the point which would be possible if the product competed solely on its own merits.

The use of trademarks has been viewed as a tying agreement where a producer is licensed to use a trademark. The issue of the use of trademarks was raised in three typical cases concerning agreements between oil companies and manufacturers selling sponsored TBA (tires, batteries and accessories) to companies' dealers. Although these contracts did not precisely fit the definition of tying agreements (related to trademark usage), the court found that the essential characteristics of a tying agreement "the utilization of economic power in one market to curtail competition in another" was present, even though the company did not supply the sponsored product (*Atlantic Refining Co. v Federal Trade Commission*, 381 U. S. 357, 369, 1965).

Several landmark court decisions illustrate a judicial intent to control the collective power of vertically integrated channels of distribution. The case of *U. S. v Arnold Schwinn and Co.* found that many previously common restrictions imposed by manufacturers on their distributors are illegal "per se." That is, the court does not have to examine the motives and determine the effect of such restrictions on the market prior to finding the restrictions illegal (*U. S. v Arnold Schwinn and Co.*, 388, U. S. 365, 1967). Vertical restrictions involve agreement between various levels in the distribution channel and may be classified two ways: (1) customer restrictions that guarantee to the manufacturers, selected distributors, or dealers certain accounts to which smaller dealers or distributors might otherwise sell; and (2) territorial restrictions that either confine distributors' sales to an assigned territory or an exclusive contract that establishes a closed territory. The court distinguished Schwinn's vertical power from horizontal restraints, such as those in the *Klor's, Inc.* case (*Klor's, Inc. v Broadway-Hale Stores, Inc.*, 359, U. S. 207, 1959) and the *General Motors* case (*U. S. v General Motors Corporation*, 372, U. S. 253, 1966). The Schwinn decision significantly curtailed the vertical power of channel members by limiting the use of customer and territorial restrictions.

Another landmark case involving the Sealy Mattress Company exemplified the court's concern with the power exerted through vertical integration. Sealy owned and controlled thirty (30) licensees of the Sealy trademark. These licensees agreed with Sealy and with each other; first, not to license other manufacturers in the licensee's territory; and second, not to manufacture or sell Sealy products

outside its designated area. However, they could sell products made under other trade names anywhere. Sealy and its licensee stockholders fixed and policed prices at retail outlets that sold Sealy products. The Supreme Court found that the territorial restriction emanated from both a horizontal and vertical conspiracy among Sealy and its licensees, and the court refused to apply the rule of reason since the combinations of price fixing and territorial exclusivity brought the case within the "per se" illegal rationale (U. S. v Sealy Mattress Co., 388, U. S. 350, 1967). The continuing concern of the courts and the lawmakers regarding the consolidation of power in channels of distribution directly influences the formation of vertical integration. These court decisions also emphasize the importance of vertical integration as a means to increasing a channel member's control, both over other channel members and over individuals outside the channel system.

Most legal difficulties are associated with horizontal or vertical channel mergers. Channel members are precluded by law from making channel arrangements which: (1) lessen competition; (2) act as an unreasonable restraint on trade; or (3) tend to create a monopoly. The foundation of federal law related to regulating marketing flows in channels of distribution is contained in the Sherman Act (Section 1 and 2) and the Clayton Act (Section 3 of the 1914 Act and Section 7 of the Anti-Merger Act of 1950). In addition, the Federal Trade Commission is empowered to act (under Section 5 of the Federal Trade Commission Act of 1914) in cases where distribution channels engage in activities which constitute unfair methods of competition. The

use of collective power in channels of distribution has been questioned concerning the customer and territorial restrictions.

It should not be construed that all vertical or horizontal integration in channels of distribution are illegal per se. There are many forms of legal integration both "forward" as well as "backward." To support the legality of vertical integration, retail outlets affiliated with vertical marketing systems account for approximately sixty-four (64) percent of the available retail market (Federal Trade Commission, 1966, pp. 177-179). These legal forms of integration have become a dominant force in the distribution of goods in the United States. Wholesale, retail and in some instances consumer cooperatives have functioned efficiently and well within the legal perimeters of both federal and state laws.

In summary, power may be exercised in channels of distribution to reduce conflict. Smaller channel entities may band together in coalitions to increase their power. Retail and wholesale cooperatives illustrate the additive nature of coalitions in channels of distribution. These organized (vertical and horizontal) coalitions account for a substantial amount of the retail trade in the United States. Coalition formations are effective to the point that they are deemed "unfair" and something to be regulated when they restrain trade.

Coalition formation is an important power strategy to analyze in channel systems because it is: (1) commonly observed in channels of distribution and (2) regarded as problematic to members of channels of distribution and to the government. Direct observation of coalitions

is a means to analyze their functions, but this type of observation is restricted due to the inability to change reward patterns and power strategies. An alternative approach to the analysis of coalition formation in channels of distribution is to establish artificial channels which can be manipulated by an experimenter. The empirical research described in Chapter 3 illustrates such an artificial environment to analyze coalitions.

Objectives, Definitions, Assumptions and Research Hypotheses

Objectives of the Research

The basic objectives of the research are: (1) to apply the theory of coalition formation to several channel configurations; (2) to test empirically one experimental channel of distribution in order to observe the predictability of the theory; (3) to illustrate that coalitions are power strategies typically developed by the weaker members of a channel of distribution; (4) to depict the weaker members of a coalition receiving disproportionate rewards; and (5) to indicate means by which coalitions can be controlled in channels of distribution. These objectives will be accomplished first through an analysis of coalition theory and adaptation of this theory to channels of distribution; and, second, through a controlled laboratory experiment to analyze the power of channel members in an experimental triad and to attempt to control their power.

Basic Definitions

The central terms used in this research are defined in this section. There are many definitions of key concepts discussed in this research in the literature. Every attempt has been made to use the existing definitions that would serve this research; the following working definitions are used:

Channel of distribution--a set of institutions which performs all of those activities (functions) utilized to move a product and its title from production to consumption (Bucklin, 1966, p. 5).

Power in channels of distribution--the ability to control the decision variables in the marketing strategy of another member in a given channel at the different level of distribution (El-Ansary, 1970, p. 47).

Conflict in channels of distribution--an outcome of inherent interdependence of system components, arising when one component impedes the aims of another (Stern and Heskett, 1969, p. 292).

Coalition in a channel of distribution--a temporary combination or union of institutions for joint action towards a common objective within a channel system.

Assumptions of the Theory of Coalitions

Due to the expanding conceptual base of marketing, the body of knowledge used in analyzing marketing functions has become multidisciplinary in nature. Marketing academicians have begun to utilize the research methodologies, concepts, and findings of the behavioral sciences such as, sociology, psychology, anthropology, social-psychology, and political science to explain the increasingly complex marketing process.

One of the areas in which these concepts and methodologies seems well suited is the analysis of collective power in channels of distribution. The theory which is potentially relevant is concerned with the formation of coalitions in small groups. Coalition formation is comparatively rare among social phenomena in that it can be studied experimentally. These coalitions are temporary, means-oriented, alliances among individuals or groups which differ in goals. In typical experimental tests of the theory an alliance uses its resources to achieve a given pay-off (Gamson, 1961a, p. 374). Four prerequisites to coalition formation have been established:

Assumption One: Members of a triad may differ in strength. A stronger member can control a weaker member, and will seek to do so.

Assumption Two: 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.

Assumption Three: Strength is additive. The strength of a coalition is equal to the sum of the strengths of its two members.

Assumption Four: The formation of coalitions takes place in an existing triadic situation so that there is a pre-coalition in every triad. Any attempt by a stronger member to coerce a weaker member into joining a non-advantageous coalition will provoke the formation of an advantageous coalition to oppose the coercion (Caplow, 1956, pp. 458-490).

The conditions necessary for the formation of a coalition will be discussed in Chapter 2. In addition, the basic assumptions of the theory of coalition formation in channels of distribution will also be discussed at that time.

General Hypotheses and Specific Corollary
Hypotheses to be Tested

The hypotheses to be tested are derived from the theories of coalition formation. The correspondence between the theoretical assumptions upon which coalition theory is based, and the pragmatic events taking place in channel systems suggests that some of the findings of coalition theory may be relevant to understanding the behavior of organizations in channels of distribution. As a first step, a group of hypotheses derived from coalition formation theories, but stated in terms of a marketing frame-of-reference will be tested. They are presented in null-hypotheses form with specific corollary hypotheses developed that are applicable to channels of distribution.

- H₀₁ The distribution of power (game resources or game points) to members of a triad will not influence the formation of coalitions among experimental triads above what could be expected by chance.
 - C₀₁ Channel of distribution members of unequal power will not coalesce an unequal number of times as expected by chance.
- H₀₂ The two weakest members of a triad will not coalesce a larger proportion of the time than what can be expected by chance if their combined power (game resources or game points) total more than the strongest triad member.
 - C₀₂ The weaker members of a channel of distribution will not attempt to combat the power of a stronger member(s) by coalescing with weaker members of the channel of distribution.
- H₀₃ The weakest member of the triad will not coalesce a larger proportion of the time above what could be expected by chance.

- ^C₀₃ The weakest member of a channel of distribution will not coalesce a larger proportion of the time above what could be expected by chance.
- ^H₀₄ The weakest member of a triad will not receive a disproportionate amount of the rewards obtained by the coalition.
- ^C₀₄ The weakest channel member will not receive disproportionate rewards for the assets he brings to a coalition or the functions he may perform after the coalition has been formed.
- ^H₀₅ The "illusory" power of the weakest member (least game resources or game points) of a triad cannot be controlled experimentally through manipulation of the distribution of rewards, by controlling the frequency and pattern of coalitions, or by stating the probability of success of each coalition before it is formed.
- ^C₀₅ The "illusory" power of the weakest member of a channel of distribution cannot be controlled by the channel captain through manipulation of the implicit rewards given to weaker members, by enforcement of the Anti-Trust and Unfair Sales Practice Acts or by stating the likely probability of success of certain coalitions to reach the macro-objectives of the total system.

CHAPTER 2

THEORY OF COALITION FORMATION AND ITS APPLICATION TO CHANNELS OF DISTRIBUTION

In his analysis of the development of coalitions in triadic laboratory environments, Theodore Caplow develops:

a model of a triad whose members are not identical in power and calls attention to a neglected feature of [coalition formation] . . . the formation being dependent upon the initial distribution of power in the triad and, other things being equal, may be predicted to some extent when the initial distribution of power is known (Caplow, 1956, p. 489).

A full-fledged coalition situation exists and the theory of coalitions applies when the following conditions are present among individuals or groups in a laboratory setting or in a real-life situation:

1. There is a decision to be made and there are more than two social units attempting to maximize their share of the rewards. In a zero-sum three-person situation or game where power is generally not distributed evenly, coalitions are frequently formed.
2. No single alternative will maximize the rewards to all participants, i.e., regardless of individual or group decision(s), one social unit will not receive maximum utilities.
3. No participant has dictatorial power, that is, no one has initial resources sufficient to control the decision(s)

himself. There will be uneven power distribution among social units, but not exclusive power where decision-making may be controlled by one individual so that the strongest member of the relationship may be controlled by a coalition of weaker members.

4. No participant has veto power, that is, no member must be included in any certain coalition.

Power Strategies in Channels of Distribution: Particular
Emphasis on the Development of Coalitions

The general purpose of a power strategy is to increase the range of outcomes through which one channel member O^1 can move another P and to decrease the range through which P can move O. Channel members who are being forced into making decisions may attempt to develop a power strategy to counter balance a more forceful member of the channel of distribution. In an attempt to reduce a weaker channel member P from developing a power strategy, the more power channel member O may:

1. Assure continued dependence of P on his services by blocking alternative suppliers of the service (or goods).
2. Prevent other P's from resorting to coercive forces to effect their demands by blocking access to political power. O discourages the formation of coalitions by weaker P's.
3. Remain indifferent to the benefits that P can offer him in exchange for his services. Therefore, the reward of P's return services are of low value when being exchanged for O's valued service.

¹Throughout this research dominant power holder is designated as being O and the weaker member in the relationship as P. This is a common designation among coalition theorists.

4. Fulfill the needs of other P's through his power O may therefore maintain his power position (Blau, 1964, pp. 119-121).

In most cases power strategies are developed by the dominant channel member, generally viewed from the manufacturer's or retailer's point of view, to obtain a higher degree of control over existing members of the channel of distribution. Several methods of domination of a channel of distribution by a manufacturer are:

1. Promotional--building of consumer loyalty through advertising, sales promotion, brand loyalty, and packaging. Middlemen obtain identification with the consumer through carrying manufacturer's accepted products.
2. Legal--resale price maintenance, franchises and consignment sales.
3. Negative methods--refusal to sell to uncooperative channel members (through Fair Trade Laws) and avoidance tactics (sales personnel neglect and delay in delivery).
4. Suggestives--price sheets, discounts, pre-ticketing and pre-marketing prices, recommended, suggested and advertised resale prices (Mallen, 1963, p. 181).

There are many examples of means used by retailers to dominate channel systems by aggregating their power through:

1. Building customer franchise--advertising retail outlets, sales promotion, and private branding.
2. Concentrating purchasing power--collective resale potential by forming associations or other buying units (coalitions).
3. Buying to specification--vertical integration, semi-production buying by bulk and packaging or private branding.
4. Increasing the number of suppliers--dilutes manufacturer's dominance by patronizing those with excess capacity and by using alternative suppliers (Mallen, 1963, p. 187).
5. Development of private brands--decreases manufacturer's control through customer loyalty to retail stores rather than branded products.

Power strategies developed by a stronger channel member O to build his control over weaker channel members P may be classified in one of the following ways:

1. Developing better alternatives for the stronger channel member O--Given that the manufacturer of a particular channel is the dominant component, he will constantly attempt to cultivate new retail outlets. This method of raising his comparison level alternatives keeps the original retailers within the acceptable range of behavior. By upgrading the expectations of each retailer, the manufacturer gains considerable power through this "quasi-competitive" power strategy.
2. Reducing P's alternatives--The dominant manufacturer O in a channel may reduce alternative suppliers to retailers P by giving more than the normally expected competitive incentives to carry his product. These may include cooperative advertising, rapid delivery, extended credit or other direct incentives to differentiate his product. By eliminating the retailer's P's alternatives, the manufacturer O prevents P from using the tactic discussed in number 1 on him.
3. Improving O's ability to deliver rewards to P--This strategy, which is different from most other strategies, is based on making the power that P has less usable rather than reducing P's power or increasing O's power. This type of informal power coalition is based on friendship among components in the system. The manufacturer (dominant member) uses his salesmen as

influence agents with retailers (weaker system members). The friendship of salesmen and retailers is a tool used to reduce the potential power of the weaker component, or to lower his acceptance of alternative sources of supply. The weaker member's power is not reduced by the dominant channel member but the weaker member is less likely to use what power he has available to him due to friendship.

4. Reducing P's skills--The stronger member O may interfere with, or distract from vital information to P, sabotaging P's ability to perform his functions within the system. The manufacturer (dominant) may withhold information vital to the efficient and/or effective operation of the retailer's (weak member) functions, therefore, making the retailer more dependent on the manufacturer.
5. Building up the value of O's product or service--This may consist of "propaganda" about O's product or service, or may involve creating the proper conditions for maximal appreciation of his P's rewards. A counter plot to this would be to devalue P's product through "propaganda." The manufacturer may promote the concept of maximum productivity for the total channel system which can only be achieved by promoting his particular product. This propaganda may take the form of "push money" or additional sales efforts by O's staff, and will frequently increase the value of the product to the retailer. Creating consumer demand through advertising may also

be seen as propaganda to increase the value of the manufacturer's product to the retailer. This method is commonly referred to as the "pull through" strategy of filling a channel of distribution with a particular product.

Application of the Theory of Coalitions to Experimental Channels of Distribution

The transition from the theory of coalition formation to the application of the theory to channels of distribution is a natural one. Because of the nature of the experiment described in Chapter 3, experimental channels of distribution need to be discussed. One should not assume that there is naturally a one-to-one relationship between experimental channels and real-life channels of distribution. Likewise, one should not conclude that the experiment described in Chapter 3 totally substantiates the specific behaviors of pragmatic channel members to react similarly to experimental triads.

To show the applicability of the theory of coalition formation to pragmatic channels of distribution, the basic assumptions of the theory will be related to the environment of channels of distribution (see Chapter 1, p. 23, for basic assumptions). These assumptions readily lend themselves to an analysis of channels of distribution.

1. Members of a triad differ in strength. Channel of distribution members are seldom of equal strength. El-Ansary (1972) attempted to measure power in channels of distribution and concluded that power is diffused throughout the channels of distribution (El-Ansary, 1972, p. 51). Due to the varying

sizes, functions performed, and other differentiating factors of middlemen, their power and degree of dependence on other channel members may vary. Shifts in the relative power of the channel members have accrued over time. Prior to the Civil War, in the United States, the wholesaler typically held the most powerful position in the channel system. Small retailers, and frequently small manufacturers, depended on wholesalers to carry stock and to give credit or financial support. After the Civil War, large scale retailers became the dominant power in the distribution of convenience goods. And more recently many manufacturers have grown larger and more powerful and as oligopolistic conditions have prevailed, the manufacturer has typically acquired the dominant power role in the channel.

2. Members of a channel seek to gain and maintain control of their own organization while trying to control the other members of the channel. The multidimensional character of marketing functions is directly concerned with the degree of control over those functions performed by each channel member. The movement toward vertically and horizontally integrated channels of distribution support this contention. The greatest degree of control over distribution is achieved through forward integration. By maintaining ownership of more than one level of distribution activity, the manufacturer performs the necessary distribution functions and can secure maximum control over the marketing mix.

3. The combined power and resources of channel members is additive. Distribution trade associations and cooperatives have often used political means through their combined power to achieve economic objectives for their memberships. By using their combined efforts (collective power), trade associations have created lobbies, sponsored Congressional legislation, and influenced governmental agencies (Assael, 1968, p. 21). The synergistic effect of combining the resources of several smaller channel members may be illustrated by wholesale chains. Wholesalers sought to regain their channel dominance they once maintained by forming voluntary chains. These wholesaler sponsored chains of the type found in groceries, hardware, automotive parts and variety lines enable the wholesaler to implement a wholesaler-retailer system to exert power and to maintain control. Many voluntary chains have been spectacularly successful due to their combined strength. They have achieved a status at least equivalent to that of centrally owned chains, department store groups, and general-mail-order houses (Lewis, 1968, p. 70).
4. There is a pre-coalition condition in every channel of distribution. Vertical integration can be viewed as a coalition that consists of a network of horizontally coordinated and vertically aligned components which are controlled as a system. The expected continued growth of vertical marketing systems will directly affect the control of distribution in the 1970's (Davidson, 1970, p. 7). Independent retailers in a normally competitive relationship have been known to band together when presented with a

common threat by their suppliers or by a new mode of competition, such as a chain store. Palamountain discussed in detail how automobile dealers formed their powerful trade organization, the National Automobile Dealers Association, in response to manufacturers' policies which tended to limit dealers' profits (Palamountain, 1955, pp. 32-58). He also described actions by similar coalitions in the drug and grocery trades.

Coalitions will not form unless the social environment is conducive to their formation. There are many social settings in channels of distribution which preclude the formation of coalitions in channels of distribution. Direct distribution from producer to consumer would not facilitate the formation of coalitions due to the absence of three social units. Likewise, when the combined strength of smaller social agents is not greater than the dominant member of the channel, coalitions will not form. But the four conditions necessary for the formation of a coalition and generally present in a channel system are;

1. A decision is to be made and that two or more channel members are attempting to maximize their utilities. Channels of distribution are established to make decisions through the allocation of marketing functions. One of the major problems in the management of channels of distribution is the objectives of individual components being placed ahead of the total system's objectives. The functions of marketing are divided among the members of the channel and their rewards are generally commensurate with the contribution to the functioning of the total

system. Each component theoretically attempts to maximize the outcomes for his particular organization, as well as for the total system.

2. No channel member has dictatorial power. Channels of distribution are not completely dominated by one channel member. partly because legal restraints reduce the "dictatorial" powers of any one channel member regardless of his size or potential. When one dominant channel member begins to use dictatorial power, channel members may select new channel relations or may band together to offset this power. There are situations where one channel member may control other channel members legally. These situations occur when channel members do not have alternative suppliers, or through combining their resources channel members would not equal the strength of the dominant member.
3. No single strategic decision maximizes the rewards of all participants. Decisions made to maximize the macro-objectives of the system generally do not maximize micro-objectives. The decisions by the system will not, therefore, be maximizing for each working component in the short-run. The absence of formal communication networks in many channels of distribution increases the probability of uncoordinated macro and micro-objectives. A primary contribution to this problem is the general lack of feedback loops in the channel of distribution.
4. No channel member has veto power. Channels of distribution being governed by federal and state laws typically do not allow

absolute control by one channel member unless fully owned and integrated systems are established. The quasi-democratic control of a channel of distribution is dislodged in only a few cases, such as permitted by Fair Trade Laws. These allow manufacturers to withhold shipments to wholesalers or retailers located in fair trade states, if they continue to discount the product below the stipulated minimum price stated by the manufacturer. In this case, the manufacturer (dominant member of the channel) is given "veto power" over the normal functioning channel system.

Various types of triadic situations can be found in pragmatic channels of distribution. These channels of distribution will have members of varying power and varying control over the total channel of distribution. It should be emphasized again at this point that not all channel systems have the conditions conducive to the formation of coalitions due to the lack of membership (direct channels) or due to the lack of combined strength of members if they were to form a coalition.

In interpreting the power differences among channel members in experimental triadic channels of distribution, varying game points (power index) are assigned to the channel members. These experimental channels resemble the triadic models developed by Caplow (1956). The discussion of the distribution of power among three social agents represent experimental channels of distribution and the probable coalitions that may form in vertical integration: P = producer, W = wholesaler, R = retailer. The following descriptions of coalition formations are

for vertical coalitions only. This concentration on vertical systems stems from the fact that this exploratory empirical research is primarily directed at analyzing vertical rather than horizontal coalition formation. In an attempt to limit the scope of the research in its empirical stage, vertical system coalitions were selected to be tested. There are a number of types of vertical coalitions which can form in channels of distribution provided at least three members are present. The following discussion describes several of these conditions.

Type One Coalition

$P = W = R$. The power of each member of the channel system is identical. This power does not have to be measured precisely but can be estimated by the researcher. Also, the behavior of all three system members within the distribution system is the least difficult to predict. The three social units are of equal strength, therefore, they are all equally likely to form coalitions. Typically, channels of distribution are characterized by an asymmetrical distribution of power, but if power would be evenly dispersed, each channel member would seek to form a coalition. This is the classic, but not the most common type of triad. The PW PR, and WR coalitions are all equally likely to form, and every component will strive to enter a coalition where he will both equal his ally and become stronger than the isolate.

Type Two Coalition

$P > W$: $W = R$ and $P < (W + R)$. The power of each member of the channel system could be approximated as follows: $P = 3$, $W = 2$, $R = 2$. The producer is stronger than the individual wholesaler and retailer,

but his strength is less than that of the wholesaler and retailer combined. Each member of this channel system would seek to enter into a coalition, since to be isolated (two channel members against one) is disadvantageous. An additional element develops in this coalition formation environment due to the possible outcomes of the alternative combination of power resources. The coalitions are no longer of equal advantage or final additive power. The following illustrations depict the problem of varying additive power of each coalition: (a) if W forms a coalition with P, he will have more decision-making power due to the alliance than does R; but within the coalition, the fact that W will have less power than P could affect the parity of the distribution of rewards; (b) if W forms a coalition with R, he will have more decision-making power due to the alliance than does P; at the same time W will be of equal strength with R, affecting a higher probability of an equitable distribution of rewards. Therefore, the WR coalition will normally form, and the individual triad member with the most pre-coalition power P will turn out to be the weakest member in the system after the formation of the coalition.

Type Three Coalition

$P < W; W = R$. The power of each member of the channel system could be approximated as follows: $P = 1, W = 2, R = 2$. Two members of the distribution system, W and R, are of equal strength and in the pre-coalition setting, are stronger than the remaining member P. Obviously, P may strengthen his position by forming a coalition with either W or R, and would be welcomed as an ally. P's acceptance as a coalition

partner by either W or R is due to the relative weakness of P after the formation of the coalition. W and R accept P as a coalition partner so that either can control two members in their channel system rather than only one component. On the other hand, if W were to join a coalition with R he would not improve his pre-coalition position of equality with R and superiority over P. W's only motive to enter into a coalition with R is to attempt to block a PR coalition. R's power position and coalition behavior is identical to W's. Thus, there are two probable coalitions to type three pre-coalition situations, a PW or a PR formation.

Type Four Coalition

$P > (W + R)$; $W = R$. The power of the channel system members is as follows: $P = 3$, $W = 1$, and $R = 1$. The power of P exceeds the combined power of W and R. Therefore, W and R will not be motivated to enter into a coalition due to the fact that, once formed, the coalition would still be weaker than P, and they would remain equal within the coalition. There would be no motivation for P to enter into a coalition, since he was already stronger than each of the other channel members and is not threatened by their coalition. Consequently, there would not be the necessary impetus for the formation of any coalitions among the channel system members.

Type Five Coalition

$P > W > R$; $P < (W + R)$. The power of the channel system members would be represented in the following relative power array: $P = 4$,

$W = 3, R = 2$. No two channel members are of equal strength but the combined power of any two members due to the formation of a coalition exceeds the power of the isolated member in the system. P will seek to form a coalition with either W or R to combat the additive power of a WR coalition. W has less incentive to enter a coalition with P due to the fact that the post-coalition situation favors P over W. Therefore, W has the greatest motivation to enter into a coalition with R so that their combined power is greater than that of P, thereby controlling P. At the same time, W controls R in the coalition due to his superior power. R will seek to form a coalition with either P or W due to the fact that, given the pre-coalition condition, he cannot control either of the triad members. The PR or WR coalitions allow R to control at least one other social unit in the system. The probable coalitions given in this situation are PR or WR.

Type Six Coalition

$P > W > R; P > (W + R)$. The power of each member of the channel system could be approximated as follows: $P = 4, W = 2, R = 1$. Like the previous type, the units in this channel system are unequal in power, but in the pre-coalition situation P is more powerful than the WR coalition. Therefore, there would be no incentive for any unit to form a coalition.

In an attempt to depict the possible coalitions that may form in various channels of distribution, Table 3 summarizes the distribution of power among the triad members and the coalitions likely to form.

Table 3. Coalition Predictions for Channels of Distribution

Triad Type	Power	Behavior Pattern
1) $P = W = R$	1-1-1	any
2) $P > W, W = R$ $P < (W + R)$	3-2-2	WR
3) $P < W, W = R$	1-2-2	PW or PR
4) $P > (W + R)$ $W = R$	3-1-1	none
5) $P > W > R$ $P < (W + R)$	4-3-2	PR or WR
6) $P > W > R$ $P > (W + R)$	4-2-1	none

The accuracy of prediction of channel members' behavior given the six pre-coalition situations, may be augmented by obtaining additional information about the channel system before the coalitions are formed.

1. The initial distribution of resources--In analyzing the function of coalitions, the relevant resources and relative distribution of power in the system must be determined.
2. The payoff of each coalition--The analysis must determine the payoff associated with each winning coalition.
3. Non-utilitarian strategy preference--The analysis must determine a rank ordering of each participant's inclination to join every other player, exclusive of the player's control of resources.
4. The effective decision-point--The necessary power to effect decision-making must be determined in order to evaluate the possible coalition formations.

When this additional information is gathered, the probability of each coalition forming in the channel system may be determined. The experimental channels of distribution depicted in these models may be related to the control continuum discussed in Table 2 in Chapter 1. Fully owned channels would be represented by types four and six when $P > (W + R)$. Vertically integrated channels would be represented by type three and five coalitions. In type three, either the wholesaler or the retailer is extending his control (power) through the channel by purchasing the producer (smaller, less powerful channel component). Type five represents the larger producer who, by vertically integrating his channel, eliminates uncertainty in the functions performed. For example, franchise channels would be represented by the type five model where the producer dominates the major decisions concerning channel policies. A loosely controlled independent channel is represented by the lack of control (power) illustrated in type one. In this case, the members of the channel are of equal strength and lack a dominant decision-making unit.

An important observation from the analysis of pre-coalition conditions is that the nature of the triadic situation often favors the weaker member in the triad over the stronger member (Caplow, 1956, p. 490). In those coalition types where a specific coalition is preferred (mathematically), the weaker members of the triad are generally included in the coalition (type 1, type 3, and type 5). Stryker and Psathas' close analysis of the power of the weak member of the triad illustrates the lack of understanding of this power situation:

In his discussion of tertius gaudens, Simmel contends that the weak man (tertius) in a triad including two equally strong partners can profit far out of proportion to his intrinsic power by aligning himself with one of the two more powerful members The context in which the weak may acquire maximal profit is, according to Simmel, one of the contentions between two more powerful members If the two are not in contention, the advantage of tertius is limited, since he no longer holds the balance of power. Moreover, tertius' possibility of deriving maximal profit depends on his freedom to choose which way he will throw his strength. If he is constrained in such choice, his hand is weakened (Stryker and Psathas, 1960, p. 219).

Using type five coalition $[P > W > R: P < (W + R)]$ as an example of the power of the weaker member, several arguments may be developed. The importance of this type of coalition to the theory of coalitions and to its application to channels of distribution is confirmed by Vinacke and Arkoff:

. . . the weakest member was found to be most often a member of the winning coalition; therefore, his share of the winnings was larger than his strength might seem to warrant mainly because there was competition for him, hence, more readily to be induced into partnership (Gamson, 1961b, p. 379).

The nature of R's (tertius) power is transitory, beginning with the initial bargaining for coalition partners in the triad situation and ending, to a large extent, when the coalition is formed. The weakest member (measured on the power index) is the channel member most likely to be included in the majority of the coalitions formed. Whether it be a group of weaker members joining together into a trade association or the "strong-weak" coalition between a producer and a small retailer through vertical integration, many cases exemplify tertius gaudens.

The similarities illustrated in this chapter between formal coalition theory and channel of distribution will be empirically tested in Chapter 4. Experimental laboratory channels of distribution will be

established to test the frequency of particular coalitions and the ability of the experimenter to control or manipulate the formation of coalitions. The laboratory channels of distribution are not exact replicas of pragmatic channels of distribution, but represent an application of coalition theory to experimental channels of distribution. Pragmatic channels of distribution should act similarly to the experimentally established channels if experimental bias (discussed in Chapter 3) is held at a minimum.

CHAPTER 3

EXPERIMENTAL DESIGN AND LIMITATIONS

The hypotheses to be tested are based on the theories of social power and coalition formation. The hypotheses were presented in null-hypotheses format with specific corollary hypotheses developed that pertain directly to channels of distribution (see Chapter 1). There are two reasons for the statement of the hypotheses to be tested in this particular format. First, the empirical data generated in the control laboratory do not specifically relate to pragmatic channels of distribution. Therefore, general hypotheses related to the formation of coalitions in experimental triads are tested. Corollary hypotheses are stated that imply the application or possible application of the experimental findings to actual or perceived channel of distribution situations.

The experiment serves the purpose of suggesting analogy to pragmatic channel problems. This type of pilot study is necessary to determine the applicability of the theory of coalitions to channels of distribution problems. The research experiment attempts to bridge the gap between a behavioral science theory and specific problems found in channels of distribution. Once this initial connection is established, further research can be conducted in actual channels of distribution. But, if there proves to be no theoretical connection, additional expensive and time-consuming studies would not be warranted.

The generality of the research findings is limited in their application to a laboratory setting. The empirical data generated are applicable only to students participating in a controlled laboratory game. This game has similar characteristics to actual channels of distribution as follows: (1) S_g are attempting to maximize the game points, similar to channels of distribution members attempting to maximize utility; (2) the players in the game are of uneven strength, depicting channel members of unequal strength. It may be hypothesized that in a channel of distribution, members at different levels of the system of distribution will vary in power (El-Ansary, 1970, pp 1-13). Therefore, when assigned varying power (game points) in the experimental triad, the subjects would behave in a manner similar to channel members; (3) there is a forced division of rewards similar to functional discounts found in channels of distribution; and (4) no one member of the game may totally dominate or have veto power over the other game participants. This situation is similar to the quasi-democratic relationships found in most channels of distribution regulated by federal and state laws.

Method of Data Collection

There were two methods used in collecting the primary data for this research. The first means of generating data was accomplished by designing and conducting a controlled laboratory experiment. This experiment was based on the participation of 120 business students in a controlled business game. The experiment, a business game, simulated a channel of distribution that was developed from Caplow's (1956) type five triadic model. This triad represents social agents of uneven power so

that the coalition of two weaker members can offset the dominant power of the strongest channel member.

The second thrust of data collection was gathered in a post-experiment questionnaire. The questionnaire's primary function was to determine the respondents' attitudes concerning: (1) their perception of the amount of power of each position (P, W, R) and (2) the effect of the asymmetrical power positions on the formations of particular coalitions. In summary, the collection of data was by a controlled laboratory experiment with 120 college students, and a post-experiment questionnaire was administered to them so as to determine the opinions of the respondents and to help determine the internal validity of the experiment.

Preliminary Data Collection Research

In an attempt to clarify the data collection procedure and the data collection forms, the experimental procedure was pretested. The pretest was conducted on 15 upper-division marketing students. The test of the data collection forms disclosed that several changes were needed. The formal procedure of the experiment was simplified and clarified, using suggestions given by the test group. The post-experiment questionnaire was unchanged and has been left in its original form. No internal testing bias was detected during the testing of the experimental data forms.

Data Collection Forms and Post-Experiment Questionnaire

The revised data collection form (Appendix A) used in the experiment systematically organizes the data necessary to test the five major

hypotheses of this research. The same data collection form was used for all four phases of the experiment. The only difference in the forms was the headings on each form. The first phase was headed Observation #1, the second phase was headed Observation #2, the third phase was headed Observation #3, and the fourth phase was headed Controlled Observation. Each column of information on the data collection form relates to a given hypothesis: (1) trials--the total number of trials was important in determining the size of each observation (600) and in determining the total number of observations (2,400); (2) coalition formed--this information was necessary to investigate hypotheses H_{01} , H_{02} ; (3) division of points--relates to H_{04} and the disproportional rewards of the weakest member as compared to the other group members; (4) accumulative score--was used to double check the responses on the post-experiment questionnaire considering the bargaining position for rewards by each member of the coalition.

The post-experiment questionnaire's (Appendix B) primary function was to determine bias that might affect the internal validity of the experiment. The questions attempt to gain an insight into the power perceptions of the participants. A secondary function of the post-experiment questionnaire was to show the logical decision-making process of the students, involving their selections, thereby illustrating the similarity to pragmatic channels of distribution.

Experimental Procedure

The post-test-only, control-group experimental design used 120 students from an introductory class in marketing at Southern Methodist University. The groups were selected randomly from 320 students in the

class. The control observation, as well as other treatments, had 30 group members, each randomly divided into 10 triads. The members were randomly assigned to particular triads by selection of match numbers. The independent variable was the various "treatments" to control the "illusory power" of the weakest triad member. The dependent variable was the type of coalition formed and the frequency of formation of the three possible coalitions.

Each player in the triad was randomly assigned weights (game points) of either four, three, or two points, depicting various levels in a channel of distribution. The type five coalition was selected because it represents a common type of channel of distribution where the producer is the dominant member of the channel and the wholesaler is larger than the retailer. The points were assigned randomly for each set of 20 trials among the members of the triad in order to reduce the possibility of externalities such as personality, friendship, male-female difference, etc., influencing the results of the coalition formation.

The task assigned each triad included a simple business decision-making game in which each player was president of a unit in the channel of distribution and each controlled a certain share of the market each month. The share of market controlled by each triad member was represented by his point resources. The total market was equal to the value of the points held by each member of the triad: $P = 4$, $W = 3$, $R = 2$. Each player's objective was to accumulate as many points for himself as possible without regard for how his decisions might affect the outcomes

of the other players. This particular task was selected to set several conditions: (1) it represented a decision-making situation where no one decision would maximize the utility for all three subjects; (2) it symbolized a maximization of micro-objectives similar to individual channel members' behavior; (3) it provided a game situation which created the necessary level of conflict and stimulated competitiveness necessary to create competition in a laboratory setting, parallel to that present in channels of distribution; and (4) it assigned subjects varying power (game points) implying differing levels of influence in decision-making in the triad.

The dependent variable was the type of coalition formed in a trial and the relative frequency various combinations appeared over the trials. At the beginning of a trial, any two subjects were given the opportunity to form a coalition which was established by written choice. When there were two reciprocal selections, a coalition was formed. For example, if P's written selection was R, W's written selection was R, and R's written selection was W; a WR coalition was formed based on the mutual agreement for that trial. This written selection procedure was followed for all treatments and for each trial. If there was not a reciprocal choice, the triad subjects were asked to reconsider their selections and try again. The members of the triads were forced into forming a coalition for each trial. Consequently, each trial had a coalition. The event of no coalition formation occurred infrequently and usually only in the earliest trials for each triad.

After a coalition was formed, the partners were given one-minute to decide on how to divide the ten game points among them. If they could not reach a mutual agreement within the one minute time period, they were given their original points for that trial. For example, if PW coalition has been formed, P and W had one minute to decide how to divide ten points. If they could not reach agreement, they would receive four and three points respectively since those were their original points: ($P = 4$, $W = 3$). One purpose of limiting the time was to discourage the weakest member of the coalition from stalling to gain power. The third member of the triad, the player not in the coalition, received an immediate payoff of the number of points equal to his own point value.

The procedure outlined above was used in each of the four treatments. The different treatments were: (1) Treatment 1--control observations; (2) Treatment 2--manipulation of rewards by experimenter; (3) Treatment 3--manipulation of frequency and pattern of coalition formation by experimenter; (4) Treatment 4--manipulation of the probability of success for each coalition by the experimenter. Prior to testing 1, subjects were given five trial attempts in forming coalitions in order to acquaint themselves with the rules and procedures of the game.

Treatment 1, the control observations, allowed free coalition formation among the members of the triad for 60 trials. This observation was used to determine whether the coalition formation among the individual players differed significantly from what could be expected by chance. Given the opportunity of freedom of choice, which of the members of the triad would be selected by his fellow triad members to enter into the

greatest number of coalitions? The first segment of the research design was directed at testing whether the weakest member entered into a greater number of coalitions than could be expected by chance, thus receiving a disproportionate amount of the rewards. The control observations allowed the members of the triad to select freely the partner they felt would be the most effective coalition partner. The control observations have implicit value by providing a base of comparison for the three manipulations by the experimenter in determining the effective means of controlling the power of the weakest member of the triad.

Treatment 2 fixed the reward distribution for each coalition at 50% of 10 points. Each member of the triad knew before he formed a coalition what his share of the rewards would be for that coalition. Each member of the coalition would receive five (5) points with no bargaining between the members. This manipulation discriminated against the weakest member of the triad because he brought the least amount of resources into the coalition and would receive 50% of the rewards.

The weaker member of the coalition was selected primarily because he normally would not demand as large a proportion of the rewards as a stronger member. This lack of parity of rewards would make the weakest member a poor choice for a coalition partner. Also, the weakest member lacked power (game points) to bring into the coalition. For the same expense (50% of the rewards) member P (4 points) could obtain member W (3 points) instead of member R (2 points), thereby reducing the attractiveness of R as a coalition partner.

In the third treatment, the experimenter manipulated the frequency and pattern of coalition formation by not allowing any member of a triad to form more than three consecutive coalitions with any single person. Thus, each coalition type could be formed only three times, then the isolated member of the triad was given the opportunity to participate in a coalition. In the following trial, the members were allowed to enter into any coalition they desired with the limit of three consecutive trials. This manipulation was used to disrupt the tendency of patterns of behavior not equitable to the isolated member.

In the fourth treatment, the experimenter manipulated the probability of success for each of the potential coalitions that could be formed in the triad. This was accomplished by stating the probability of each member of the triad increasing his share of the market before any of the coalitions were formed. The triads were instructed that an PW coalition would have a ninety (90) percent probability of increasing the market share of both members after the 20 trial period, whereas a WR or PR coalition would have only a seventy-five (75) percent chance of both members increasing their share of the market. These percentages were justified to the subjects by explaining the additional power of the stronger coalition $\lceil (P = 4) + (W = 3) = 7$ as compared to $(P = 4) + (R = 2) = 6$ or $(W = 3) + (R = 2) = 5 \rfloor$ would enable the members of the PW coalition to dominate the market because of their combined power. It was explained to the subjects that combined assets of a PW coalition would be significantly more powerful than in a PR or WR coalition.

Experimental Directions to Subjects

The instructions to each group of triads were read to the members to insure uniformity of procedure for all groups and to reduce any experimenter bias that might have been interjected by discussing the experiments. The procedures explained to the subjects were as follows: (1) Each member of a triad is president of a unit in a channel of distribution, controlling a certain share of the market each month which is represented by his game points. (2) Each corporate president's objective is to accumulate as many points for himself as possible; a triad member is not to compete with another, but each should attempt to maximize his own outcomes without regard to how his decisions might affect the outcomes of other triad members. (3) The triad members' weights (game points) represent the number of points each president may earn on each trial (month) if he chooses to play the game independently, i.e., P would receive four points, W would receive three points, and R would receive two points. (4) Any two members may form a coalition through written choices provided that there is mutual agreement within the triad. (5) If a coalition is formed, members have one minute to decide on the division of ten game points among the coalition. Ten points are divided because through the combined strength of the coalition members, a larger share of the market is controlled. The group member not in the coalition automatically receives his original game points. For example, if R were excluded from the PW coalition, he would automatically receive his two game points for that trial. (6) If the two members of the coalition do not reach a mutual agreement on the division of the ten game points within the one-minute

time period, they each receive their original game points for that trial.

(7) If there are no reciprocal choices for a trial, the subjects are to reconsider the game and their decisions concerning a coalition partner and make a second choice. There must be a coalition formed for every trial. (8) The trials will be divided into groups of 60: (a) treatment 1--the members of the triad may form any coalition they prefer and will determine the distribution of the rewards per trial. There are no restrictions on the formation of any coalition or the number of times a coalition may be formed in the 60 trials; (b) treatment 2--in all coalitions formed in this set of trials, the distribution of rewards will be on a 50-to-50 basis (the subjects were instructed to run the set of 60 trials).

After the two sets of 60 trials were run, subjects were instructed that (c) treatment 3--rewards did not have to be distributed on an equal basis. The condition for this set of 60 trials will be that coalitions may only be formed for a maximum of three trials in a row, then an alternative coalition must be formed. Next, the subjects were instructed to run 60 trials. After the third set of 60 trials, subjects were instructed about (d) treatment 4--there is not a limitation on the number of coalitions that may be formed in a row, but the probability of success of both members increasing their share of the market through a PW coalition is ninety (90) percent, while the probability of both members increasing their share of the market with a PR or WR coalition is seventy-five (75) percent. The subjects were instructed to run a set of 60 trials.

On completion of the trials each group of subjects was given the post-experiment questionnaire (see Appendix B) and each member of the triad was asked to complete the questionnaire without discussing it with other members of the triad. The questionnaires were collected and subjects were requested not to discuss the experiment with other members of the business school. There seemed to be limited interaction of subjects outside the experimental room. The groups of subjects were separated by only a few hours, and all trials were run within a two-day time span.

Statistical Test Used in Analysis of Data

Whenever the frequencies of various outcomes are available (ex anat), the chi-square (x^2) test can be used to test the significance of the difference between the patterns of the observed and expected frequencies (Kazmier, 1967, p. 206). The same situation exists with the hypotheses to be tested in this research, with the exception of H_{04} . The statistical test used to test the significance level for H_{04} was a test of proportion to test the distribution of rewards variance (explained in detail when applied to H_{04}). With the other hypotheses the observations were based on a predisposition of a "chance," i.e., equal probability, outcome before the hypothesis was tested. For example, in H_{01} there are three possible coalitions, and each is considered equally probable under the null-hypothesis. Therefore, the expected frequency for each is established at $33\text{-}1/3$ percent of the coalitions which are to be formed. The chi-square test of goodness of fit is used to determine whether an observed frequency distribution departs significantly from a hypothesized frequency distribution.

The significance level selected for this research and for testing the null-hypothesis is the 0.05 level or 95 percent level of significance, which provides for a suitable trade off between Type I error and Type II error for this type of research. The 0.05 significance level is the most used level in social science research.

In order to simplify the presentation of the individual χ^2 computations for the five major hypotheses to be tested, individual contingency tables will be used to present the data. An example of this type of table is as follows:

Coalition	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
PW					
PR					
WR					
Total	600	600	-0-		$\chi^2 =$

where

fo_i = observed frequency in each of i^{th} categories

fh_i = expected frequency in each of i^{th} categories

PW, PR, WR = possible coalitions

Limitations of the Data

Due to the variety of disciplines and research methodologies employed in the development of the concept of social power, the background

inputs for this study are very broad. The implementation of the concept in marketing must be preceded by a theoretical development of concepts and approaches used in other disciplines. Then general empirical data must be developed to indicate means of predicting and controlling the concept in non-laboratory settings. There is a possibility of a confounding effect created by the broad research base. This broad base will place some limitations on the research findings. There will be an attempt at all times to maintain both external and internal validity of the findings. But due to the nature of this investigation, external validity will be compromised to insure internal validity. The primary data which are generated will be valid for the laboratory setting with college students as subjects. The data will indicate other areas to be researched in the future to increase the external validity of the concept.

It is felt that this type of investigation concerned with theory development, empirically testing, and application to pragmatic marketing channels of distribution will substantially improve the existing research in marketing theory concerning coalition formations as a means of exercising social power. A unified approach should indicate the variety of uses for the concept.

The limitations of this research, therefore, are two-fold. The first set of limitations is concerned with the application of experimental data or laboratory findings to pragmatic marketing problems and situations. The second set of limitations of the research is based on the research methodology employed by the researcher.

Laboratory settings have been used extensively in many socio-science disciplines to analyze complex social situations. In an attempt to disclose the cause and effect relationship that exists between the power of one social agent and the formation of a coalition, a laboratory experiment will be used in this research. Several considerations indicated the need for the use of a laboratory experiment to obtain empirical data concerning coalitions and channels of distribution.

1. Controlled laboratory experiments had been successfully employed in many disciplines for pilot investigations.
2. A laboratory experiment will allow maximum utilization of sociological theories concerning social power and coalition formation, which are based primarily upon laboratory findings.
3. The theory of a social power and coalition formation has not been theoretically developed and a pragmatic investigation at this time may be premature.
4. A laboratory setting will permit study of the elements of social power in relatively a pure form, and such a study might provide useful analytical information despite its limited nature, and would provide a basis for further research.

Experimental laboratory research has become a more viable element in the research methodologies employed by marketers in recent years. The use of students due to their accessibility has become a common practice. The students to be used in this research are business students and therefore acquainted with general business problems and decision-making. It is the researcher's opinion, while this group of students was not

atypical, the generalization of the results of the experiment are limited. The research being viewed as a pilot project would indicate that the next possible test of the theory would be a controlled experiment with businessmen or even members of a channel of distribution. The experimental data may be limited in its application but the data has validity given its recognized limitations.

An additional limitation which may affect the empirical data was the laboratory facilities used in the experiment. Ideally, individualized modules for each triad would be optimal. The actual testing facility is a classroom with moveable desks. This arrangement allows one group to observe the actions of other groups, thereby influencing their decisions. The experimenter attempted to reduce inter-group interaction as much as possible. The short time limit for making triad decisions aided in the reduction of interaction between the various groups. But, when there were nine groups of three students confined in a classroom, all interaction could not be eliminated.

There was a time lag between the various runs of the experiment that may have affected the total results of the experiment. The various phases of the experiment were run on separate days. Students from the first groups may have had the opportunity to discuss the experiment with students in a later group. The experimenter requested that the students not discuss the details or the results of the experiment with other students for four days. Ideally, the various "runs" of the experiment should have taken place at the same time or the subjects should have been separated at all times. The intent of the experiment was explained to all subjects

when the experiment had been concluded. Prior to that time no indication of the intent of the experiment was given to the subjects.

The length of the experiment may affect the results generated by the subjects. The experiment lasted for two hours for each phase. This length of time may affect the subjects' response near the end of the experiment. But, the data generated during the last half hour was the information collected on the post-experiment questionnaire. While this information is important to determine internal validity, it was not directed toward the research hypotheses. In an informal discussion with the subjects after the experiment, no mention of fatigue was brought out by the subjects. Due to the rapid nature of the business game employed in the experiment, it is doubtful that the subjects lost interest or were bored with the experiment.

CHAPTER 4

ANALYSIS OF DATA AND PRESENTATION OF RESEARCH RESULTS

The data collected in the experiment are presented in the following table (see Table 4).

Table 4. Coalition Observations

Observations	Coalitions			Total
	PW	PR	WR	
Control Observations	148	200	252	600
Observation #1	269	138	193	600
Observation #2	166	179	255	600
Observation #3	430	99	71	600
Total Observations				2,400

The results of the individual observations will be presented in the following order: (1) statement of null-hypothesis, (2) chi-square analysis and analysis of variance of the data related to particular null-hypothesis, (3) conclusions developed from analysis of the data, and, finally (4) corollary hypotheses will be stated and discussed with regard to the analysis of the data.

Summary of Primary Data Collected

Distribution of Power and Coalition Formation

The null-hypothesis related to the effects of uneven power distribution in an experimental channel of distribution is:

H_{01} The distribution of power (game resources or game points) to members of a triad will not influence the formation of coalitions among experimental triads above what would be expected by chance.

Chi-square analysis. Under this null-hypothesis, equal probability of outcomes would make the expected frequencies of coalitions PW, PR and WR equal. Thus, for the 600 trials the expected frequency of each coalition (PW, PR, WR) would be 200. Table 4 shows the observed frequencies for the control data were 148 PW coalitions, 200 PR coalitions, and 252 WR coalitions. Table 5 gives the chi-square analysis of the observed and expected frequencies.

Table 5. Chi-square Analysis Related to H_{01}

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh}$
PW	148	200	-52	2704	+13.52
PR	200	200	-0-	-0-	-0-
WR	252	200	+52	2704	+13.52
	600	600	+ 0		$x^2 = 27.04$

df = n-1

df = 3-1 = 2

Significance level .05

The difference between the expected and the observed frequencies of a $27.04 \chi^2$ value was significant at the .05 level of significance. Therefore, the null-hypothesis is rejected. Rejecting the null-hypothesis implies there is a significant difference in frequency of the formation of coalitions due to the distribution of game resources.

Conclusion Developed from Analysis. The major conclusion derived from the observed experimental data was that the game points were viewed by the triad members as symbols of power for each member. Members who were all of different power and were forced into formation of coalition generally analyzed the situation on a reward/cost basis. The observed data supports the early contention in Chapter 3 that there would be more PR and WR coalitions, R being the universally accepted partner in the type five coalition model due to the low cost of obtaining him (his rewards after the coalition is formed) as a coalition partner.

If triad members analyze coalition formation on a rational basis (cost/reward), they are essentially maximizing their scarce resources. Because power is unequally distributed in the triad, members have rationally attempted to maximize control and reduce conflict in the triad. By offsetting the power of the strongest member of the triad (P), more certainty is brought to the triad.

Corollary Hypothesis. The corollary hypothesis that pertains to the distribution of power and the influence on coalition formation in channels of distribution is as follows:

- C₀₁ Channel of distribution members of unequal power will not coalesce an unequal number of times as expected by chance.

The data generated in the laboratory experiment do not specifically address itself to pragmatic channels of distribution. But there are similarities between the experimental triad and channels of distribution: (1) there is a decision to be made; (2) members attempt to maximize utility; (3) rational decision based on cost/benefit; (4) members are of unequal strength power; (5) members seek to reduce conflict; and (6) no one single member has veto power or authoritarian power. Therefore, there are several conclusions that can be drawn from the experimental data toward predicting the behavior of channels of distribution members.

First, if the channel of distribution is characterized by members of unequal strength, channel members will attempt to control other channel members. In their attempt to control other channel members, they will rationally appraise the cost of control and the potential benefits from a coalition. Reducing conflict in channels of distribution may be achieved by coalition formation. Second, channel members attempting to maximize their utilities (profits) will coalesce with channel members for three reasons: (1) to control more members of the channel system, (2) to reduce the possibility of being controlled by other channel members, and (3) to reduce conflict by equalizing the power distribution. The decision to form a coalition is not random and is based on the distribution of power within the channel of distribution. To determine the behavior pattern of channel of distribution members a relative measure of power is necessary for predictive purposes.

Two Weakest Member Coalesces Pattern

The null-hypothesis related to the frequency of coalitions being formed by the two weakest members of a triad is stated below:

H_{02} The two weakest members of a triad will not coalesce a larger proportion of the time than what can be expected by chance if their combined power (game resources or game points) total more than the strongest triad member.

Chi-square Analysis. The expected frequency of coalition WR would be one-third of the total coalitions, whereas the PW, PR combinations would constitute two-thirds of the coalitions formed. In referring to the original frequency data of coalitions (Table 4), there were 252 WR coalitions as compared to 348 PW, PR coalitions. Comparing the expected and observed frequencies, the following chi-square value in Table 6 was derived.

Table 6. Chi-square Analysis Related to H_{02}

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
WR	252	200	+52	2704	13.52
PW/PR	348	400	-52	2704	6.76
	600	600	-0-		$x^2 = 20.28$

df=n-1

df=2-1=1

Significance level

.05

The 20.28 chi-square value is significant at the .05 level and, therefore, the null-hypothesis is to be rejected. In rejecting the

null-hypothesis, it can be predicted that weaker members of a triad will coalesce to offset the power of a stronger member, if their combined power is greater than the strongest triad member.

Conclusions Developed from Analysis. The weaker members of a triad seek to reduce the number of members that control them and attempt to increase the number of members they control. The difference illustrated in the frequency of coalitions supports the logical (rational) decision-pattern of the subject on a cost/benefit basis.

Triad member R must coalesce with any member in order to obtain control over another member of the triad. Member W, on the other hand, accomplishes a dual purpose in forming a coalition with R, that is, (1) he maintains control over R, and (2) increases the number of members he controls by obtaining power over P through the WR coalition. Separating the number of PW/PR coalitions, this rationale is also supported. There were 52 more PR coalitions than PW, which illustrates that P attempts to obtain the cheapest coalition partner, R. In attempting to equalize the power, the two weakest members of the triad have reduced conflict in the triad by reducing the control of the most powerful agent. The overwhelming occurrence of R being in some coalition (452, PR or WR) alludes to the "illusory" power of the weakest member of the triad to be explored in later hypotheses.

Corollary Hypotheses. The corollary hypothesis pertaining to the frequency of the two weakest members of a channel of distribution coalescing is as follows:

C_{02} The weaker members of a channel will not attempt to combat the power of a stronger member(s) by coalescing with weaker member(s) of the channel of distribution.

The empirical data developed in this research did not support corollary hypothesis C_{02} . Therefore, we may predict that weaker members of a channel of distribution will coalesce to combat the power of a dominant channel member. This phenomenon is illustrated by weak retailers banding together in cooperatives and voluntary chains and by the high frequency of vertical integration observed in channels of distribution. By combining their individual power, weaker channel members offset the dominance of stronger channel members.

Knowing that weaker members tend to form coalitions, the dominant member of the channel of distribution may develop alternative channel members to be used as a threat to existing channel members. Alternative power strategies may be developed by the dominant channel member to guard against being controlled by weaker channel members. The awareness of possible coalitions places the dominant firm on the offensive to intervene or stop the formation of coalition of weaker members of the channel of distribution.

The weakest member of a channel of distribution is the primary target for other channel members to coalesce with in reducing conflict. Therefore, the weaker members of a triad will have a greater opportunity to receive a disproportional amount of the channel rewards. Both the dominant (manufacturer) and the larger member (wholesaler) are attempting to influence the weakest member (retailer) to coalesce with them. In holding a position of very little power (influence), the retailer obtains

control over the stronger channel members through "illusory" power or the low cost of coalescing with the retailer.

Weakest Member Coalitions

The null-hypothesis related to the weakest member of a triad coalescing a larger proportion of the time is stated below:

H_{03} The weakest member of the triad will not coalesce a larger proportion of the time above what could be expected by chance.

Chi-square Analysis. In determining the frequency of coalitions which the weakest member of a triad would appear by chance would be: PR and WR coalitions 400, whereas expected frequency of PW would be 200. The observed frequencies were 452 and 148 PW coalitions. The following table represents the chi-square analysis of observed and expected frequencies (see Table 7).

Table 7. Chi-square Analysis Related to H_{03}

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
PR/WR	452	400	52	2704	6.76
PW	148	200	-52	2704	13.52
	600	600	-0-		$x^2 = 20.28$

df = 2-1 = 1

Level of significance .05

The chi-square value of 20.28 was significant at the .05 level of significance, therefore, the null-hypothesis is rejected. Rejecting the null-hypothesis indicates that the weakest member of a coalition will coalesce a larger proportion of the time than can be expected by chance. This conclusion also supports the contention that the subjects used in this experiment acted in a rational manner concerning the selection of a coalition partner.

Conclusion Developed from Analysis. If the weakest member of a triad is included in a disproportional number of coalitions, he gains power. This power is developed through the combined strength of the coalition partners. The weakest member obtains control over other members of the triad, thereby obtaining power he did not formerly have before the coalition. The weakest man's power is derived from his low cost as a coalition partner and from his immediate recognition of the fact that without forming a coalition, he cannot gain power.

By coalescing a larger number of times than expected by chance, the weakest member has gained "illusory" power over stronger members of the triad. The explicit game resource power of the strongest members of the triad become coalition liabilities that affect that member's acceptability as a coalition partner. The weakness of triad member R ultimately serves as a bargaining device to gain admittance to the formulation of a coalition. By being a member of a large proportion of the coalitions, his rewards are increased without increasing his costs and at the same time increases his power.

Corollary Hypothesis. The corollary hypothesis pertaining to the frequency of the weakest member of a triad forming a coalition is as follows:

- C₀₃ The weakest member of a channel of distribution will not coalesce a larger proportion of the time above what could be expected by chance.

The empirical evidence collected in this research does not support corollary hypothesis C₀₃. The weakest member of the channel of distribution will join a coalition more frequently than the other members of a channel of distribution. The greater frequency of coalition by the weakest member is due to his inability to effectively control other members of the channel of distribution without coalescing. The weakest member of the channel is also an attractive channel member to others in the system due to the ease of control and to his inability to demand rewards after the coalition has been formed.

The stronger members in a channel system must predict the probability of the weakest member forming a coalition and determine how to control the formation of coalitions in the channel. The control of weaker members is imperative to P concerning the decision-making process and to reduce conflict in the channel of distribution. If a producer allows a retailer to participate in a larger proportion of coalitions, the weaker retailer obtains rewards that are not commensurate with his ability to efficiently and effectively perform his functions. Cooperatives obtain greater rewards due to the coalition they form but generally the individual member does not become more efficient. Therefore, the stronger member (producer) of the channel of distribution has been controlled by an inefficient, less powerful (individually) member of the channel.

Weakest Member and Disproportional Rewards

The null-hypothesis related to the weakest member of a triad receiving a disproportional amount of the rewards is as follows:

H_{O4} The weakest member of a triad will not receive a disproportionate amount of the rewards obtained by the coalition.

Chi-square Analysis. The problem of determining the proportion of rewards expected by each member of the triad was complicated by the variable amount of rewards for each trial. An illustration of this problem is depicted in the following examples of one triad: (1) Situation 1--A PW coalition is formed leaving R as the isolate member. The total point value for this example would be 12 points or 10 points divided among P and W with R receiving his two original points; (2) Situation 2--A PR coalition is formed leaving W as the isolate member. The total point value for this example would be 13 points or 10 points divided among P and R with W receiving his three original points; (3) Situation 3--A WR coalition is formed leaving P as the isolate member. The total point value for this example would be 14 points or 10 points divided among W and R with P receiving his four original points.

There are two methods of determining the expected proportion of rewards for each member of the triad. (1) Determine the probability of occurrence of each coalition and divide the rewards by the point values of the individual members, or (2) an ex-post analysis of the total rewards for 60 trials for the 120 subjects. Using the control data and totaling the accumulated rewards for each set of trials (7,752 total points), divide the total rewards generated by the triad members' proportional point values (game resources). The expected rewards for each

member would be as follows: (1) P = controls $\frac{4}{9}$ of the triads resources, therefore, expected proportion of total rewards would be $\frac{4}{9}$ of 7,752, or 3,445.34; (2) W controls $\frac{3}{9}$ of the triad resources, therefore, expected proportion of total reward would be $\frac{3}{9}$ of 7,752; (3) R controls $\frac{2}{9}$ of the triad resources, therefore, expected proportion of total reward would be $\frac{2}{9}$ of 7,752 or 1,722.66. Table 8 depicts the expected distribution of rewards as outlined above and the actual distribution of rewards.

Table 8. Distribution of Rewards in Triad

Triad Members	Expected Reward Distribution	Actual Reward Distribution
P	3445.34	2795
W	2587	2584
R	1722.66	2370
Total Points	7752	7752

A one sample test of a proportion was used to test the null-hypothesis H_{04} . This test was used to determine if members of the triad received disproportionate amounts of reward. Due to the large size of the sample observations (2,400) the normal distribution could be used as an approximation of the binomial and the use of a continuity correction became negligible (Clark and Schkade, 1974, p. 359).

I. Member R

1. H_{04} , expected reward total for member R = $1722/7752 = .22$
 $\therefore \pi = .22$
2. $\alpha = .05$, a two-tail test was used due to the nature of the null-hypothesis
3. Critical region: $Z = \pm 1.96$
4. Decision rule: reject H_{04} if $Z < -1.96$ or $Z > +1.96$
5. Test statistic: $Z = \frac{p - \pi}{\sigma p}$

where:

p = observed (sample) proportions: $2370/7752 = .31$

π = expected (universe) proportions: $1722/7752 = .22$

σp = standard error of the proportion p

$$\sigma p = \frac{p(1 - \pi)}{N}$$

6. Computation of test statistic:

$$Z = \frac{.31 - .22}{\frac{.22(.78)}{7752}}$$

$$Z = \frac{.09}{\frac{.1716}{7752}}$$

$$Z = \frac{.09}{.000022}$$

$$Z = \frac{.09}{.0047}$$

$$Z = +19.1489$$

7. $\therefore +19.1489 > +1.96$: H_{04} is rejected--R being the weakest member of the triad did receive a disproportionate (greater) amount of the rewards distributed in the triad.

II. Member W

1. H_{04} , expected reward total for W = $2584/7752 = .33$,
 $\therefore \pi = .33$
2. $\alpha = .05$, a two-tail test was used due to the non-directional nature of the null-hypothesis
3. Critical region: $Z = \pm 1.96$
4. Decision rule: reject H_{04} if $Z < -1.96$ or $Z > +1.96$
5. Test statistic: see member R for development of test statistic
6. Computation of test statistic:

$$Z = \frac{.33 - .33}{\frac{.33(.67)}{7752}}$$

$$Z = \frac{0}{\frac{.33(.67)}{7752}}$$

$$Z = 0$$
7. H_{04} is not rejected--W not being the weakest or the strongest member of the triad did not receive a disproportionate share of the rewards.

III. Member P

1. H_{04} , expected reward total for member P = $3445.34/7752 = .44$,
 $\therefore \pi = .44$

2. $\alpha = .05$, a two-tailed test was used due to the non-directional nature of the null-hypothesis

3. Critical region: $Z = \pm 1.96$

4. Decision rule: reject H_{04} if $Z < -1.96$ or $Z > +1.96$

5. Test statistic: see member R for development of test statistic

6. Computation of test statistic:

$$Z = \frac{.36 - .44}{\frac{.44(.56)}{7752}}$$

$$Z = \frac{-.08}{\frac{.2462}{7752}}$$

$$Z = \frac{-.08}{.000031}$$

$$Z = \frac{-.08}{.0055}$$

$$Z = -14.54$$

7. $\therefore -14.54 < 1.96$: H_{04} is rejected--P received significantly less rewards than could be expected.

Table 8 (p. 73) illustrates the expected division and the actual division of rewards by members of the triad. The expected rewards were based on the relative amount of power held by each triad member. The analysis of variance of reward received by triad members indicates that: (1) the weakest member of the triad R received a greater amount of the rewards than predicted. This disproportionate allocation of rewards to R was due to the fact that he coalesced a larger percentage of the time, being an acceptable partner to both P and W and due to R's inability to control others without coalescing with another triad member; (2) the strongest member of the triad P received less reward than predicted. Theoretically, P was not the primary coalition partner for either of the other triad members due to his power once the coalition was formed. Therefore, P coalesced a smaller percentage of the time and had to make reward concessions once the coalition was formed to maintain a good relationship with his coalition partner; (3) the middle strength member of the triad W received what was expected in the way of rewards during the trials.

Conclusion Developed from Analysis. The conclusion developed from the comparison of revised distribution was that the weakest member R of the triad was favored in the distribution of rewards. By coalescing a larger percentage of the time and by being an acceptable coalition partner with both of the other triad members, the weakest member of the triad developed "illusory" powers. R's power now is derived from his recognition of the fact that he has to coalesce with another triad member in order to control another and to increase his rewards.

Corollary Hypothesis. The corollary hypothesis pertaining to the weakest member of a channel of distribution receiving a disproportionate amount of the rewards is as follows:

- C₀₄ The weakest channel member will not receive disproportionate rewards for the assets he brings to a coalition or for the functions he may perform after the coalition has been formed.

The weakest member of a channel of distribution will receive disproportionate rewards due to his acceptability as a coalition partner and the larger number of coalitions of which he is a member. The reward distribution among the members of the channel of distribution will be directly affected by the distribution of power. The weakest member will derive a majority of his excess rewards from the strongest member of the channel of distribution. By obtaining disproportionate rewards, weaker channel members gain more power due to the fact that they gain resources by being in a large number of the coalitions formed in the channel of distribution.

Control of "Illusory" Power of Weakest Member

The null-hypothesis related to the control of the weakest member's power is stated below:

- H₀₅ The "illusory" power of the weakest member (least game resources or game points) of a triad cannot be controlled experimentally through manipulation of the distribution of rewards, by controlling the frequency and pattern of coalitions, or by stating the probability of success of each coalition before it is formed.

Null-hypothesis H₀₅ is composed of three manipulations to control the power of the weakest member R of the triad. The first attempt to control R's power was through stipulation of the distribution of rewards for each coalition. The experimenter stated that all coalition rewards should be divided evenly. An even division of rewards would make R a less

attractive coalition partner on a cost/reward basis. The second attempt to control R's power was through stating the maximum number of similar coalitions that may form consecutively. The experimenter stated that only three similar coalitions may form on consecutive trials, giving every triad member an opportunity to participate in coalition formation. The final attempt to control R's power was by stating the probability of success of each coalition type. Each coalition type was given a subjective probability of success for both coalition members increasing their share of the market at the end of the 20 month period.

Chi-square Analysis. The chi-square analysis of the expected and the observed frequencies of coalition formation concerned with null-hypothesis H_{05} will be divided into four separate computations: (1) Chi-square one--will be to determine if there is a significant difference in observed coalitions and those that can be expected by chance (illustrated by H_{01}); (2) Chi-square two--compares manipulation number one, fixed distribution of rewards, results against control data frequencies; (3) Chi-square three--compares manipulation number two, controlled number of coalitions, results against control data frequencies; and (4) Chi-square four--compares manipulation number three, stated probabilities of success for each coalition, results against control data frequencies.

The expected frequency of each coalition type would be one-third for each coalition or 200 PW, PR and WR coalitions. The even division of the 600 observations of coalition formation would be a chance division. Restating the chi-square analysis of the control data, it is determined that there is a significant difference in the expected and observed frequencies of coalitions formed. The level of significance for the x^2 value

of 27.04 is above the .05 level. Table 9 represents the chi-square analysis of the observed and expected frequencies.

Table 9. Chi-square Analysis of Expected and Observed Coalitions

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
PW	148	200	-52	2704	13.52
PR	200	200	-0-	-0-	-0-
WR	252	200	+52	2704	13.52
	600	600	-0-		$x^2 = 27.04$

df = n-1: df = 3-1 = 2 Level of significance .05

From the chi-square analysis of the control observations, null-hypothesis H_{05} was rejected, therefore, the formation of coalitions is not a chance occurrence. In determining the effectiveness of controlling the weakest member's power, the experimenter used the control data as the expected frequencies due to the fact that it had already been established that coalition formation was not a chance decision. Therefore, in the chi-square analysis the expected frequencies of coalition formation will be stated as the observed frequencies in the control observations.

Manipulation number one, to control R's power was accomplished by stating the distribution of rewards of each coalition. The expected

frequencies of coalition formation derived from the control data were: PW = 148, PR = 200, WR = 252. The observed frequencies were as follows: PW = 269, PR = 138, WR = 193, and a chi-square value of 132.05 was derived (see Table 10).

Table 10. Chi-square Analysis of Fixed Distribution of Rewards

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
PW	269	148	121	14,641	98.92
PR	138	200	-62	3,844	19.22
WR	193	252	-59	3,481	13.81
	600	600	-0-		$x^2 = 132.05$

df = 3-1 = 2

Level of significance .05

This section of the null-hypothesis concerned with not being able to control the formation of coalitions by stipulating distribution of rewards was rejected. By rejecting this part of this null-hypothesis, it is assumed that the experimenter can control coalitions by stating distribution of rewards.

Manipulation number two, to control R's power was accomplished by stating the frequency of coalitions that could form consecutively. The observed frequencies after this manipulation was instituted were: PW = 166, PR = 179, and WR = 255, yielding an x^2 value of 4.44 (see Table 11).

Table 11. Chi-square Analysis of Controlled Number of Coalitions

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
PW	166	148	18	324	2.19
PR	179	200	-21	441	2.21
WR	255	252	3	9	.04
	600	600	-0-		$x^2 = 4.44$

$$df = 3-1 = \underline{2}$$

Not significant at .05 level

This section of the null-hypothesis was not rejected. The power of R could not be controlled by stipulating the pattern of coalition formation. Therefore, it cannot be assumed that the experimenter can control R's power in this manner.

Manipulation number three, to control R's power was accomplished by stating the probability of success for each coalition. The observed frequencies of coalitions after this manipulation was instituted were: PW = 430, PR = 99, and WR = 71, yielding an x^2 value of 718.32.

Table 12. Chi-square Analysis Probabilities
of Success for Each Coalition

Coalitions	fo_i	fh_i	$fo_i - fh_i$	$(fo_i - fh_i)^2$	$\frac{(fo_i - fh_i)^2}{fh_i}$
PW	430	148	282	79,524	537.32
PR	99	200	-101	10,201	51.00
WR	71	252	-181	32,701	130.00
	600	600	-0-		$x^2 = 718.32$

$df = 3-1 = 2$

Significant at .001 level

This section of the null-hypothesis was rejected. The experimenter could drastically control the formation of coalitions and, therefore, the power of R by stipulating the probability of success being higher for coalition PW than PR or WR. It can, therefore, be assumed that R's "illusory" power can be controlled experimentally by stating subjective probabilities of success for certain coalitions.

In summary, the research findings concerning null-hypothesis H_{05} are as follows: (1) Section 1--not controlling R's power by stating distribution of rewards was rejected, (2) Section 2--not controlling R's power by stating frequency and pattern of coalitions was accepted, and, finally (3) Section 3--not controlling R's power by stating probability of success of each coalition was rejected.

Conclusions Developed from Analysis. The analysis of null-hypothesis H_{05} was divided into three separate chi-square goodness of fit tests. The conclusions drawn from this multi-treatment of the subjects will be presented in three parts.

The first chi-square analysis concluded that R's "illusory" power was controllable by stipulating a predetermined division of the rewards. The attractiveness of R as a coalition partner is partially derived from the fact that after the coalition is formed, he will not be able to demand a substantial amount of the rewards. R's lack of game resources attracts members who need his resources to control another member of the triad. By altering the distribution of rewards by stating a 50-50 division, there is no logical reason to coalesce with R. The resources that R brings to the coalition would be less than any other member, yet he still would receive 50 percent of the rewards. Under a condition of controlled distribution of rewards, the most acceptable coalition would be PW. This coalition brings the greatest amount of power together to control decision-making in the triad.

The second chi-square analysis concluded that R's "illusory" power could not be controlled by interrupting the pattern of coalition formation. It was felt that after a pattern of coalitions had been established that the isolated member of the triad would not have an opportunity to enter into a coalition. By limiting the coalitions that could form in a row, each triad member had the opportunity to enter into several coalitions. The stronger member of the triad P could not influence the rational cost/benefit analysis of the other members. The logical choice

for W would be R, and R the logical choice would be W, therefore, the PW or PR coalition was not frequently formed.

The third chi-square analysis concluded that R's "illusory" power could be controlled by predetermining the probability of success of each coalition. Triad members were most concerned with maximizing success at the end of the 20 trials. This supports the contention that the subjects acted as profit maximizers in attempting to increase their share of the market. Triad members overwhelmingly selected the PW coalition (430 trials) because each member (P and W) had a 90 percent chance of increasing his rewards at the end of the 20 trials. Whereas, with a PR or WR coalition, the probability was stated as being 75 percent chance of both members increasing their share of the market at the end of the 20 trials. The magnitude of difference ($x^2 = 718.32$) illustrates the power of this means to control R's "illusory" power. This means of controlling R's power was the most effective methodology.

Corollary Hypothesis. The corollary hypothesis pertaining to control of the "illusory" power of the weakest member of the channel of distribution is as follows:

- C₀₅ The "illusory" power of the weakest member of a channel of distribution cannot be controlled by the channel captains through manipulation of implicit rewards given to weaker members, by enforcement of the Anti-Trust and Unfair Sales Practice Acts, or by stating the likely probability of success of certain coalitions reach the macro-objectives of the total system.

The first and third sections of corollary null-hypothesis C₀₅ were rejected, whereas section two (anti-trust) was accepted. Channel members attempting to dominate or to gain maximum control of a channel may

most effectively deal with the weakest member by altering functional discounts and/or stipulating the probability of success for each possible coalition in the channel.

The manipulation of implicit rewards, i.e., rapid delivery, training personnel, more frequent contact by salespersons by the channel captain would be to favor the second weakest member of the channel of distribution. By giving this member a differential advantage for carrying the manufacturer's (dominant member) product, the probability of the wholesaler (second strongest member) coalescing with the retailer (weakest member) is reduced. The wholesaler obtains more rewards by forming a coalition with the dominant member due to the increase in his rewards. If the wholesaler were to coalesce with the retailer, the manufacturer could reduce the wholesaler's rewards. The greatest surety of rewards for W comes from coalescing with P. Therefore, this approval of controlling the retailer's "illusory" power is a viable alternative in the decision-making of the dominant firm to control unwanted coalitions.

The other means of controlling the weakest channel member's power was through subjective analysis of the probability of success for the total system. The dominant channel member must promote the concept of macro-system objectives above the individual micro-objectives. This type of persuasion may be accomplished by treating the channel members as integral parts of the total effectiveness of a coordinated channel of distribution and educating the channel members to the fact that the greatest efficiency for the total system may be accomplished through the direction of the dominant or strongest firm in the channel. Through forming a

coalition, smaller or weaker channel members would only create inefficiency in the channel and the macro-objectives of the channel would be reduced to a secondary concern for the channel members. The logical means of increasing efficiency in the channel system is to combine the greatest amount of strength to reduce conflict. By reducing conflict, the efficiency and effectiveness of a channel system will be increased.

Post-Experiment Questionnaire

The post-experiment questionnaire's (see Appendix B) primary function was to ascertain any internal bias that may have developed in the laboratory. The questions asked were to check the logical decision-making process of the triad members. The results of the questionnaire are not vital to rejecting or accepting the null-hypotheses tested in this research. The expected results of the questions were based on a logical cost/benefit rationale concerning the formation of coalitions. It was expected that each triad member would perceive a power differential between the individual members and would react accordingly to maximize his power. Maximizing individual power would be accomplished by either reducing those members who control you or increasing your power over a larger number of the triad members. In effect, each subject would follow a rational decision-making process to maximize his utilities.

A brief synopsis of the results of the post-experiment questionnaire will be presented to verify the rational decision-making process of the subjects. This implication is very important in extrapolating the experimental results to pragmatic power situations as a channel of distribution. The following format will be followed in presenting the data:

(1) post-experiment question, (2) subjects' responses, and (3) brief explanation as to the validity of the responses.

1. Did you feel that the group member assigned four points had greater potential to win, greater power and more influence on your decision?

The following responses were recorded by the subjects of the experiment:

Results: (1) Yes, 83 percent; (2) No, 10 percent;
(3) No opinion, 7 percent.

The subjects perceived the triad member assigned four points as having the greatest power in effective decision-making. Therefore, their decisions concerning coalition formation were based on an appraisal of power structure in the triad. It is important to establish that the behavior of the subjects represented rational decision-making in applying the results of the experiment to pragmatic channels of distribution. A channel system acts to maximize utilities of the macro-system, which is a rational behavior. In classifying P with great game power it is assumed that the triad members felt W had more power than R, therefore, a majority of the coalition decisions were completed on a cost/benefit analysis.

2. At any point in time did you analyze the actual power of each of the members of the triad (trial 1, 2, 3 or 4)? When did you make this decision and basically what did you decide?

Results: (1) trial one, 60% (4) trial four, 1%
 (2) trial two, 21% (5) never determine
 (3) trial three 5% difference, 13%

Basic conclusion: 84% that P had greater power than W and W had greater power than R.

This question was asked to determine if the experimenter or the experimental procedures biased the subjects into assessing the "illusory" power of triad member R. Very few triad members actually were concerned with the implicit power of R as being of value in determining coalition formations. Each triad member had the opportunity to be placed in each triad position, reducing personality bias concerning this question.

3. What point position did you feel had the best opportunity to win the game?

Results: (1) P = 75% (3) R = 18%
(2) W = 7%

This question was primarily a cross-check question to question one of the post-experiment questionnaires. Logically, if subjects answer question one as triad member P had greater potential, they should have answered question three in a similar manner. The percentages (75 and 83) are similar although not exact. The reason for the difference in the percentages could be due to chance or in the interpretation of the material.

4. Did you believe that you would receive equal treatment (reward distribution and fairness) from each member regardless of their game resources?

Results: (1) Yes, 5%, (2) No, 81%, (3) 14% no opinion

The subjects felt that they would receive more favorable treatment from members with less game resources. Their power (higher game resources) would enable them to more effectively bargain for division of the points of the coalition. This set of responses from the subjects reinforces the experimenter's contention that the cost of forming a coalition is considered by the triad members before selection of their coalition partner. The least expensive member is the most attractive coalition partner on a cost/reward basis in type coalitions.

5. What game resource position would you prefer to be in if you were able to select your game resources?

Results: (1) P, 80% (3) R, 1%
(2) W, 13% (4) No opinion, 6%

The subjects acting as profit maximizers selected the position which, in their perception, had the greatest potential to measure their power and win the game. This result supports the logical decision-making and the lack of internal bias affecting the subjects.

6. Do you believe that it would be easier to bargain for your share of the coalition rewards from the members with lower point values than yourself?

Results: (1) Yes, 90%, (2) No, 8%, (3) No opinion, 2%

This question was a cross-check question for question number four. The subjects felt they would not get equal treatment and that they could demand more rewards from triad members with less game points. This supports the rejection of null-hypothesis H_{01} based on the logical reasoning of the triad members as to who can be controlled most easily (R).

The preceding brief investigation of the post-experiment questionnaire did not disclose additional research information but did serve to support the reliability and validity of the primary data collected. The subjects did not respond to the questions in a biased manner.

The following chapter and the final chapter of this research includes a synopsis of the research undertaken, limitations of the research, and recommendations for improvements to the existing research.

CHAPTER 5

SUMMARY AND IMPLICATIONS

This chapter summarizes the application of coalition theory to channels of distribution, the methodology used to test general coalition hypotheses and corollary hypotheses related to channels of distribution and the research results. The implications of coalition formation as an alternative power strategy for channel management will be discussed.

Summary of the Study and Its Findings

The tendency for individuals to group together may be observed in many social settings. The formation of a coalition or the temporary combination of individuals for action towards a common objective is prevalent in channels of distribution. The growth of vertically as well as horizontally integrated channel systems illustrates this continuing trend to combine resources and to increase control in the channel of distribution. Often this power is investigated by the government to determine the legality of certain coalitions. Anti-trust laws regulate the extent of control that may be exerted through the combined strength of coalitions.

Channels of distribution, being a social system composed of inter-related but yet independent social units of unequal power stimulates conflict and power struggles. To reduce conflict and to increase control, channel members have grouped together to form these vertical and horizontal coalitions.

Models of Coalition Formation

To illustrate the functional interdependence of channel members, six pre-coalition situations were developed. Triads were used to depict channels of distribution with three channel members present. Although there are many channel configurations a typical system would include: (1) producer (P); (2) wholesaler (W); and (3) retailer (R). Coalitions would not form when two or less channel members are present, when one decision alternative would maximize the utilities of all social agents, or when one social agent has dictatorial or veto powers in the channel system.

The six coalition models illustrate the expected behavior of channel members given various symmetrical and asymmetrical initial allocations of power.

1. $P = W = R$: The predicted coalition behavior was that PW, PR and WR coalitions were equally likely to occur. This type of channel of distribution illustrates a very fractionated industry without dominant producers, wholesalers, or retailers. Several industries exemplify this power situation: clinical laboratories, chemical cleaning agents, etc. (Wedding, 1952, p. 35). It should not be assumed that power may be precisely measured but rather that the channel members are of similar size and power in the channel system. Therefore, predicting behavior of channel members could indicate that each would attempt to increase control through the formation of a coalition.
2. $P > W$: $W = R$ and $P < (W + R)$: The predicted coalition behavior was that the WR coalition would form. The vertical integration

of wholesalers and retailers is not an uncommon practice. Wholesalers developed voluntary chains to offset the centrally owned chain stores following World War I. The wholesaler forms the coalition with a group of retailers entitling them to a wide range of services beyond those normally supplied. The combined power of the wholesaler and retailer is used to obtain better prices from the manufacturer. The conflict in the channel system is reduced and the control from the view of the wholesaler and retailer is increased. Inter-type conflict is also reduced due to the increased power of the "older form" of distribution against the chain stores.

3. $P < W$: $W = R$: The predicted coalition behavior was that the PW and PR coalitions were likely to form. The producer being the weakest member of the channel system would strive to form a coalition to control at least one other member in the channel. As a defensive strategy, the wholesaler and the retailer would be responsive to forming a coalition with the producer to keep from being dominated. The PR coalition illustrates the movement to eliminate the wholesaler. This attempt to sell direct to retailers may be observed in some consumer goods that have limited outlets. Whenever the wholesaler is displaced in the channel system, there is a need to provide sales and warehouse facilities formerly supplied by the wholesaler. These field offices have developed extensively since World War II (Lewis, 1968, p. 85).

4. $P > (W + R)$: $W = R$: The predicted coalition behavior was that there would be no coalition formed in the channel system. The dominance of the producer cannot be offset by the combined resources of the wholesaler and the retailer.
5. $P > W > R$: $P < (W + R)$: The predicted coalition behavior was that there would either be a PR or a WR coalition formed. This pre-coalition model represents a "typical" channel of distribution with the producer assuming the "channel captain" position but not being powerful enough to withstand the combined power of the other channel members. There are many examples of retailers integrating backwards and buying out wholesalers to gain control and power in the channel system. Department stores, i.e., R. H. Macy and Co., Abraham & Straus, Marshall Field & Co., were some of the first of the integrated retailers to insure savings from their innovative channel design. This new vertically integrated retail system provided store management with the opportunity to reduce price or offer better services together with elegant decor and particularly fine quality (Bucklin, 1972, p. 59). At the same time, the department store effectively dictated price and terms to the once dominant producer. The grocery field has led the way in the development of cooperative relationships between wholesale and retail levels. The contractually integrated wholesale-retail system has virtually taken over all the general grocery trade not controlled by chain stores (Census of Business, Wholesale Trade, 1963, Tables 2-9).

6. $P > W > R$: $P > (W + R)$: The predicted coalition behavior was that there would be no coalitions formed, rationale being the same as discussed in situation four. Situations four and six illustrate that coalitions will not always form and that loosely coordinated independent channels will occur. It is also important to recognize that these channel systems have the highest degree of conflict and power struggles (see Table 2, Chapter 1).

Research Methodology

The coalition models suggest a number of conceptual propositions. Their central focus, however, is upon the prediction of channel members' behavior, given different initial power distribution. A secondary concern is the reward outcomes of weaker channel members due to the large number of coalitions that they were predicted to take part in by the pre-coalition models. A laboratory experiment was designed to test the internal validity of a number of hypotheses related to these conceptual propositions.

A post-test-only, control-group experimental design was used to test the predictions of the coalition models. Four treatments were observed in the experiment: (1) treatment one--control observations allowed "free" coalition formation; (2) treatment two--established a fixed reward distribution which was set at a 50 percent division; (3) treatment three--the frequency of coalitions were manipulated to control the pattern of coalition formations; and (4) treatment four--the probability of success for each coalition was predetermined. The subjects were instructed that the more powerful the coalition (the one with the largest combined game resources), the greater the likelihood of accomplishing their goals.

The subjects were randomly placed in triads and participated in 60 trials of one of the treatments. For example, one group was allowed to form free coalitions for 20 trials, then the power positions were switched. This procedure was followed for three sets of 20 trials to allow each subject the opportunity to hold each power position. A post-experiment questionnaire was administered to determine if the subjects perceived a power differential due to the assigned game points (they did) and to ascertain if the subjects acted in a rational manner when making their coalition choices (they did).

Experimental Results

The results of the experimental investigation were used to test five general hypotheses and five corollary hypotheses. The general hypotheses were used to analyze the basic assumptions of the coalition models and the corollary hypotheses indicated how the data from the laboratory experiment could be applied to pragmatic channels of distribution. In summarizing the results of the experiment, the general findings and the hypothesized applications to real channels of distribution will be presented.

1. Does the asymmetrical distribution of power affect the formation of coalitions?

There is an observed significant difference in the triad members' decision-making process concerning the formation of coalitions due to the individual power position of each. The formation of coalitions in the experimental triads did not follow a random process or what would be expected by chance. In the control observations or the free forming coalitions, the following frequencies were observed: PW = 148; PR = 200;

WR = 252. Had the coalitions been formed on a probability basis, there would have been 200 of each possible combination.

Corollary Hypothesis One indicates that channel of distribution members will assess their power as well as the power of other channel members before forming coalitions. In support of this contention, it may be noted that coalitions may be observed at all levels in channels of distribution. The formation of coalitions has not been isolated at the producer, wholesaler or retailer level. Also, the impetus for formation of coalitions has come from all three levels in the channel of distribution.

The development of the producer coalitions of either a vertical or horizontal nature are dramatically illustrated in the petroleum industry. Most individual refiners are at least partially integrated both forward and backward. And integration is not limited to the large refiners. Economists agree that integration in the channels of distribution of refiners has increased competition in the petroleum industry (Boatwright, 1952, pp. 136-137).

Vertical integration at the wholesale level may best be depicted by examining the wholesale grocery chains. Federal Trade Commission reports on general line food wholesalers show that between 1959 and 1963 the largest 15 voluntary chain type wholesalers acquired 27 companies with sales of \$435 million. These vertical acquisitions amounted to 24 percent of the wholesale chains' previous sales and to 41 percent of their overall growth during that period (Federal Trade Commission, 1966, pp. 177-179). The power of the food wholesaler through forward and backward integration has made it difficult for new firms to come into the industry,

particularly on a regional basis. Federal agencies have filed a number of complaints concerning this means of controlling competition and divestiture has been sought in some cases to stop these developments (Bucklin, 1972, p. 263).

Vertical integration initiated at the retail level has been extensive. Department stores, chain stores and catalogue retailers are examples of the growth of vertical integration at the retail level of distribution. Typically, these retail coalitions have also formed horizontal coalitions. These channels are, therefore, vertically and horizontally integrated. Following the Civil War, growth of integrated retail outlets was extensive: (1) department stores, e.g., H. T. Steward, 1863; R. H. Macy & Co., 1868; Jordan Marsh Co., 1869; (2) chain stores, e.g., Great Atlantic & Pacific Tea Co., 1859; American Stores, 1869; National Tea Co., 1880; and (3) catalogue retailers, e.g., Montgomery Ward & Co., 1872; Sears, Roebuck and Co., 1870; Spiegels, 1880. Shortly after the turn of the century, these integrated forms of retailing controlled a substantial proportion of the retail trade (Bucklin, 1972, pp. 55-65). The economic power of vertically and horizontally integrated businesses at all levels of distribution has been sustained in recent years.

2. Do the two weakest members of a triad form more coalitions than the strongest member?

The weaker members of the experimental triads formed a larger number of coalitions than did the strongest member. The weakest members of the triad attempted to reduce the number of members who had control over them. In an attempt to equalize the power in the triad, the two weakest members reduced the level of conflict.

Corollary Hypothesis Two indicates that weaker channel members will form coalitions to offset the power of a dominant channel member or to effectively compete with other channels of distribution. When a wholesaler takes the initiative and induces a number of retailers to affiliate with him contractually for the purpose of cooperative action in buying, advertising, or other merchandising activities, a wholesaler-sponsored voluntary chain is formed. This voluntary group is based on the sound economic assumption that if retailers become better managed, and if they cooperate as a group in order to secure economies of larger-scale operations the wholesaler as well as the retailer will be more likely to thrive, particularly against the competition of centrally owned chains (Lewis, 1968, p. 95).

This integration philosophy of a loosely formed coalition is built on the economic base of strengthening the wholesale-retail channel against large powerful producers as well as other more powerful retailing operations. Two weak members form the coalition against two separate but more powerful enemies at different levels in the distribution network. The result has been that these contractually integrated, wholesale-sponsored voluntary chains have virtually taken over all the general grocery trade not controlled by chain stores. The grocery field has led the way in the development of cooperative relationships between the wholesale and retail levels, and they have also been adopted in a number of other fields, e.g., drug, hardware, dental supplies and paper.

3. Does the weakest member of a triad form a greater number of coalitions than the two other social units?

The weakest member of the experimental triad enters into a disproportional number of coalitions. There were two major reasons for the large number of coalitions: (1) the weakest member could not control any triad member without forming a coalition; and (2) the weakest triad member was perceived as being unable to bargain for rewards after the formation of the coalition.

The weakest channel member has also formed many coalitions to offset the oppressive power of dominant channel members. The household (retail consumer) has generally been considered rather helpless in the struggle to exert influence or to control channels of distribution. As an individual, he is no match for those engaged in the distribution of goods; but cooperative integration is also available to him. The consumer cooperative can function as a retail organization, and when formed into a federation can operate as a wholesaler and perhaps engage in processing and manufacturing as well (Lewis, 1968, p. 71). Due to efficient and effective developments in the distribution of goods in the United States which the consumer benefited from, these organizations have not been as active as in other parts of the world (for example, in the British Isles and in Northern and Central Europe). But these integrated cooperatives illustrate the tendency for the weakest social agents to band together into a coalition.

The distribution of automobiles is an example of the dominance of the channel of distribution by the manufacturer. The automobile manufacturer is in a strategic position to bring about order and control in the

channel system. Most manufacturers seek to control the activities and functions of their middlemen (both dealers and suppliers). Some authors suggest that in order for the automobile distribution system to operate effectively as an integrated unit, there must be some administration of the system as a whole, not merely administration of the separate organizations within the system (Ridgeway, 1957, pp. 250-256). But manufacturers began to become oppressive in their control of dealers after World War II, forcing them to pay for shipments on deliveries, to maintain pricing and servicing standards set by the manufacturer, and were "assessed" part of the national advertising costs. This control extended by the manufacturers continued until the mid-1950's when two events shifted the power: (1) a slump in new car sales; and (2) the increased activity and consolidation of the National Automobile Dealers Association (NADA). The NADA represents 70 percent of all franchised dealers. The most politically active trade associations have been formed by the economically weakest segments in the channel structure (Assael, 1968, pp. 21-28). The capacity for group action provided by the NADA gave smaller retailers and suppliers a degree of countervailing power and a means of asserting common economic objectives. The weakest channel member has the most to gain from a coalition and therefore is motivated to join.

4. Does the weakest member of a triad receive disproportional rewards due to being a member of a coalition?

The weakest member of the triad received greater rewards than could be expected when analyzing the initial distribution of power. The weakest member joined a larger number of coalitions because he was an acceptable coalition partner to both of the other triad members. The

weakest member also recognized that he had to form a coalition to control any of the other members of the triad and to gain disproportional rewards.

Corollary Hypothesis Four indicates that the weakest members of a channel of distribution may receive rewards that are beyond what would be expected if he did not belong to a coalition. The franchise system of vertical integration may be used as an example of the benefits derived by weaker channel members due to their association with a franchise.

A franchise system is established when a franchiser grants a certain franchisee the right to sell his product or service, in generally defined areas, in exchange for a promise to promote and merchandise the product in a specific manner (Hewitt, 1958, p. 81). In January, 1972, there were 406,000 franchising units in the United States which generated \$131 billion a year in sales (Snyder, 1972, p. 19). The growth of franchise operations has been nothing short of phenomenal over the past 15 years. Some experts have estimated that up to 25 percent of total retail sales are accounted for by franchise outlets (Hunt, 1972, p. 178).

The franchise coalition offers rapid expansion at a relatively low cost to the franchiser because a substantial part of the investment is contributed by the franchise holder. The franchisee must follow extremely detailed operating procedures to retain the franchise. The control exercised by the franchiser accomplishes two purposes: (1) it enables people with no experience in the field, and perhaps with little or no business experience of any kind, to operate a business successfully; and (2) it provides for a degree of standardization in operations which increases public acceptance and patronage, and thus leads to greater success and

profitability for each unit as well as the whole venture (see Lewis and Hancock, 1963, for detailed description, pp. 1-15).

The benefits derived by a franchisee are: (1) lower cost due to large volume purchasing at a central office (although there have been counter arguments to the lower purchasing cost, see Hunt, 1972); (2) central record processing; (3) site selection services; (4) national advertising; and (5) a lower probability of business failure. The Industrial Conference Board noted that about 75 percent of the franchising companies reported business failure rates of less than five percent a year, well below the national average for independent small businesses (U. S. News and World Report, 1972, pp. 24-27). Therefore, for an initial purchase price, which may be financed by the franchiser over an extended period of time (Lewis and Hancock, 1963, p. 15), an inexperienced person may be relatively assured he will make a profit and not fail in business if he belongs to the franchise coalition. The inexperienced, sometimes inefficient, high risk businessman receives disproportionate rewards because he is a member of the coalition.

The franchise distribution networks are found at all levels in channels of distribution: (1) manufactured-sponsored retail franchise systems--automobile manufacturers and their dealers; (2) manufactured-sponsored wholesale franchise systems--commonly found in the soft drink industry in the licensing of wholesale bottlers; and (3) service-firm-sponsored retail franchise systems--auto rental business (Hertz, Avis), restaurant business (McDonald's, Burger King), and motel business (Howard Johnson, Ramada Inns). These examples would indicate that

weaker members at all levels within distribution channels could receive rewards beyond what would be expected if they were not part of a franchise coalition.

5. Can the "illusory" power of the weakest member of a triad be controlled by other social units and if so, how?

The weaker members and in particular the weakest member of a triad can gain power and rewards beyond a Paretian optimal division. Through the formation of a coalition, the weakest member may provoke a counter power strategy from other members of the triad. Likewise, control of the power of the weakest member may come from outside the social system. These sanctioning bodies may directly influence the ability of the weakest triad member from increasing his power.

To control weaker channel members, a dominant channel component may effectively manipulate the formation of coalitions by influencing the rewards given to each channel member. Federal regulations (primarily the Robinson-Patman Act) restrict the freedom to discriminate among channel members on most explicit rewards such as functional discounts, quantity discounts and cooperative advertising programs. But, there remain other implicit benefits that the dominant channel members may insure to those channel members that are high probability coalition prospects:

1. Preferential delivery schedules.
2. Training programs for sales personnel.
3. Short-term financing for expansion.
4. Personalized attention by salesmen.

The scheduling of orders to middlemen can be an incentive for smaller channel components to remain with a dominant channel member. If these small firms are assured of rapid, on time deliveries just as larger channel members are, this may reduce the incentive to form a coalition. Additional services that can be given to weaker channel members are organized training programs for their personnel. The training and retraining process can become a financial burden to the small channel member. If the dominant channel member assists in reducing this burden there is less chance of a coalition forming.

One of the major obstacles to small channel components' growth is generating sufficient capital. Larger channel members may help finance their smaller counterparts to increase the efficiency of the channel and at the same time to reduce the chance of a coalition being formed. Small independents are at a financial disadvantage to install innovative equipment for automation of the facilities (Bucklin, 1972, p. 168). Many producers have made second-hand equipment available on lease-purchase agreements in many industries to smaller channel members. By financially obligating these channel members they are less likely to form disadvantageous coalitions (Wedding, 1952, p. 103).

Another implicit reward that may be extended to high potential coalition prospects would be more frequent salesperson calls. Typically small channel members do not get the level or attention of salespersons as do the large, more productive channel members. The dominant channel member that is aware of the potential formation of a coalition may stress the necessity of salespersons to call on these small units.

Through maintaining a high interpersonal relation with the smaller firms the dominant channel member may prevent the formation of a coalition.

The major means for controlling the formation of coalitions as tested in the experimental conditions of this research were offering additional rewards or services to small high potential coalition members. Due to legal restrictions on explicit rewards to purchasers of like quantity and quality implicit rewards or personal services may be given to these firms. These personalized rewards would help insure the dominant position of the channel member.

The power of the weakest member of a triad can be controlled by stipulating the division of rewards once the coalition is formed. By evenly dividing the rewards among the coalition partners, the attractiveness of the weakest member is diminished. A second means of controlling the power of the weakest member can be accomplished through determining the probability of success of the various possible coalitions. Stronger members in the triad look less favorably on a coalition with the weakest member if their coalition would not be as effective in reaching macro-objectives.

Corollary Hypothesis Five indicates that the power of weaker channel members may be controlled through three methods: (1) manipulation of functional discounts; (2) enforcement of Anti-Trust Acts; and (3) communicating the success possibilities of one coalition over another. The two most effective means of controlling the weakest member's power were methods one and three. The external sanction of channel members through laws and regulations was the least effective.

The dominant channel member may also control the "illusory" power of the weakest member of the channel through promoting the probability of success of the total channel through coalescing with the dominant channel member. The macro-objectives of the total system may be obtained through the coordination and leadership of the dominant channel member. If the dominant channel member can communicate this concept to the weaker members, they may be willing to forego their micro-objectives in order to obtain the long-run macro-objectives of the total system. This type of moral suasion could be effectively handled through formal communications or sales personnel of the dominant channel member.

One of the major weaknesses of most channels of distribution is the lack of an adequate formal communication channel. Through its flows and contents, communication could convey meaning between and among channel members which would facilitate interactions. The economic rationale of establishing effective communications in channels of distribution is well documented (for example see: Balderson, 1958, pp. 154-171; Baligh and Richartz, 1964, pp. 667-689). Due to the bidirectional nature of communication in a channel of distribution, not only is a communication channel necessary, but also a feedback loop from the receiver of the message (Haney, 1964, p. 123). Communication could also be facilitated through properly trained sales personnel to thoroughly communicate the macro-objectives of the system and to formally feed back information to the operating unit in the channel system.

6. Was the behavior exhibited in the experimental triads rational and was a power differential perceived between members?

A post-experiment questionnaire was administered to determine if there was internal bias interjected into the experiment by the testing procedure or the experimenter. The results of the questionnaire did not indicate bias on the decision-making of the subjects. Also, the results demonstrated the fact that the subjects attempted to maximize their game points (utility) and made a vast majority of their decisions on a cost/benefit basis. The subjects viewed the game points as indicators of potential or actual power and determined their strategies accordingly. The rational decision-making of the experimental channels of distribution allows the results of the experiment to be generalized to pragmatic channels of distribution. The results were intended to indicate the possibility of coalition formation and the control of coalitions in pragmatic channels of distribution. This research should be looked upon as a pilot project and not as the final answer to the problems of coalition formation or control in "real world" channels.

The subjects were asked to evaluate the three triad positions and to select the position they would like to occupy. Logically the members selected position P (75 percent of the time) due to the seemingly higher power position. The subjects also confirmed their rational decision-making process by pressing the opinion that they would receive unequal treatment from the various triad members upon dividing the game points. The subjects felt they would receive less equitable treatment from members with more game points (power). This reinforced the experimenter's

contention that the subjects evaluate not only the benefit of potential conditions, but also the explicit and implicit costs.

The post-experiment questionnaire's primary function was to detect internal bias in the experimental procedures. It yielded no indications of bias. A secondary function of the questionnaire was to assess the decision-making process of the subjects. It was concluded that the subjects acted as rational decision-makers as much as their counterparts would in pragmatic channels of distribution. This is not to infer that there is a one-to-one relationship between the research findings and pragmatic channels of distribution. The empirical data are to be used as a possible indicator of events that may transpire in the real world.

Conclusions

Conflict is inevitable in channels of distribution due to the nature of the interdependence of the channel members. Power will be exercised by various channel members to reduce conflict and to increase the degree of control. When power is exerted by more powerful channel members, weaker channel members may try to combat this power through the formation of vertical and horizontal coalitions.

These coalitions have occurred in many industries and at every level in the channel of distribution. It may therefore be concluded that coalitions are alternative means for exerting power within the channel structure. Who does this power strategy favor?

It was determined through the controlled laboratory experiment that coalition formation favors the weaker members of a social system. Therefore, it may be concluded that smaller, weaker channel members may

also form a greater number of coalitions. Furthermore, the weakest member of the social system will receive rewards beyond his normal means. Can the "illusory" power of weaker channel members be controlled?

The means to control coalitions in channels of distribution may come within the system as well as from without. The control mechanism from without seems to be the least effective means. The internal control strategies are: (1) adjustments of functional discounts; and (2) improving communication channel flows among members. The most effective means appears to be through communications.

This research has served as a pilot project to illustrate the necessity to explore and understand the application of the concept of coalition formation to channels of distribution. Hopefully, it has shown sufficient empirical evidence that the theory of coalition formation will be viewed as an important concept to better understand pragmatic marketing problems.

APPENDIX A

DATA COLLECTION FORMS

APPENDIX B

POST-EXPERIMENT QUESTIONNAIRE

Exhibit Two

Post Questionnaire: Coalition Formation

1. Did you feel that the group member assigned four points had greater potential to win, greater power and more influence on your decisions?
2. At any point in time did you analyze the actual power of each of the members of the trial (trial 1, 2, 3, or 4)?
When did you make this decision and basically what did you decide?
3. What point position did you feel had the best opportunity to win the game?
4. Did you believe that you would receive equal treatment (reward distribution and fairness) from each member regardless of their game resources?
5. What game resource position would you prefer to be in if you were able to select your game resources?
6. Do you believe that it would be easier to bargain for your share of the coalition rewards from the members with lower point values than yourself?

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