

# POWER in the Community

FILE COPY  
DO NOT REMOVE

MICHIGAN STATE UNIVERSITY



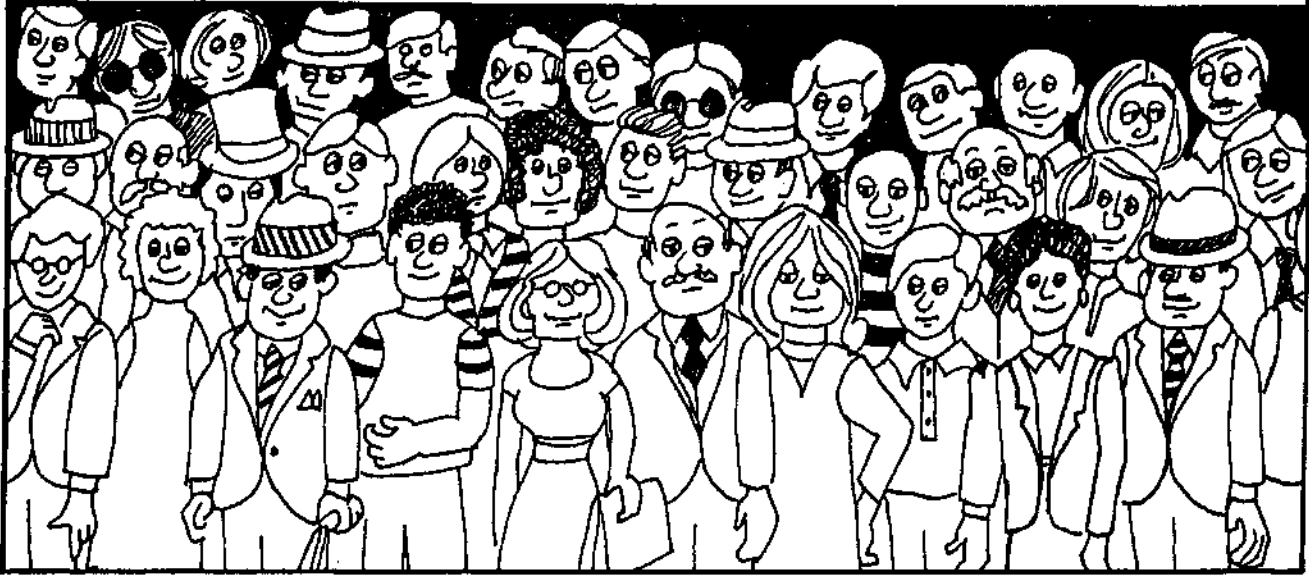
## Acknowledgements

The author wishes to acknowledge the contributions of Rochelle Elstein, who spent many hours helping to edit and re-edit manuscripts for this publication and did much of the usual necessary detail work associated with its production. Appreciation is also extended to Jan Van Cleve and Karen Bean for the artwork and to Don Gregg for his many helpful suggestions regarding layout and design. Partial support for the production of this publication came from a grant of funds from Title V of the Rural Development Act of 1972.

## Table of Contents

	Page No.
Introduction .....	3
Social Power .....	4
Sources of Social Power .....	4
Why Do Only A Few Participate? .....	5
How is Social Power Exercised? .....	6
Power Actors .....	7
Who Are Power Actors? .....	7
Some Comments About Power Actors .....	7
Power Structures .....	9
Kinds of Power Structures .....	9
Some Characteristics of Power Structures ...	11
Identifying Power Actors and Power Structures .....	12
The Positional Method .....	12
The Reputational Method .....	12
The Event Analysis or Decisional Method ...	12
The Social Participation Method .....	12
Power Actors, Power Structures, and Community Decision Making .....	14
Selected Readings .....	15

# who decides...?



## POWER in the Community

by Manfred Thullen

Extension Specialist, Community Development, Department of  
Resource Development

### INTRODUCTION

POWER — who has it, who uses it to shape the future of the community, who really makes the decisions that affect your life — is an enduring concern for those who become community leaders and for those who are led. Cornell University political scientist, Alan Hahn, discovered that the proportion of citizens who choose to participate is usually small and that the decision makers are a very small minority of the eligible adults of any community. In his research on community decision making, Hahn revealed that generally:

- Less than 5 percent of the eligible adult population is **actively and directly involved** in community decision making. These are the people

who run for elective office, are actively involved in community boards and commissions, regularly attend boards and commissions and participate in decision-making deliberations.

- Only 20 to 25 percent of eligible adults **vote and engage** in some community decision-making activities. These are the people who occasionally attend community board or commission meetings, who occasionally write or call their elected officials, who play volunteer roles for candidates for elective offices and so on.
- Another 20 to 25 percent of adults **vote only** and do **not involve** themselves in any other community decision-making activities.

— Almost 50 percent of the population is **not involved** in any community decision-making activity, not even voting. They will become active only under unusual circumstances.

This discussion will focus on the people who choose to get involved — those who are active in a variety of community decision-making activities — and will emphasize the actual process by which some become community influentials. It will only briefly touch upon the issue of whether the system of community decision making, dominated by so few individuals, can or should be changed.

In the following sections, we will briefly discuss:

- What is **social power** — what are its sources and how is it exercised?
- What are **power actors** — who are they?
- What are **power structures** — are there different kinds?
- How can **power actors** and **power structures** be identified?
- How do **power actors** and **power structures** fit in with community decision-making principles of representation and participation?

## SOCIAL POWER

We will begin with two definitions describing social power:

*"The capacity to control the actions of others."*  
Charles P. Loomis, *Social Systems*, p. 20.\*

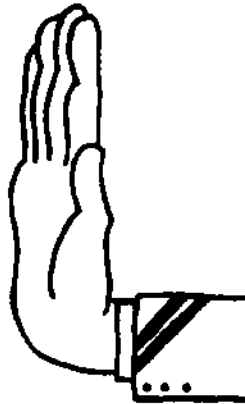
*"A party's capacity for acting in such a manner as to significantly affect or condition another's response."*  
James B. Cook, *Citizen Participation: A Concepts Battery*, p. 2.\*

In brief, a person with social power can influence those with less social power to do something they would not otherwise do.

### Sources of Social Power

The two major sources of social power are **authority** and the **control of resources**. Many who have and exercise social power will use a combination of both.

**AUTHORITY** is the **right** to control others, usually resulting from a **position** or **occupation** which gives authority to the person who occupies it. Examples of such positions or occupations are: city mayor, police chief or county sheriff, chairperson of a legislative committee, president of an organization, fire inspector, and so forth.



\* See selected readings list on p. 15 for more complete information on these quotations and for detailed bibliographical information on all research studies mentioned in this bulletin.

**CONTROL OF RESOURCES** gives an individual the **potential** to influence or control others. Any person controlling key resources necessary for making or implementing decisions has social power.



Resources in community decision making have usually been thought of in terms of wealth or material goods. However, there are many other resources

which can be crucial in today's highly complex, urbanized, and interdependent society. Different resources that can be used to influence others would include:

- **SPECIAL SKILLS** that an individual might possess, such as the ability to work with a computer; mastery of certain accounting or budgeting procedures; or human relations skills for negotiating with unions or management.
- **KNOWLEDGE**, especially highly specialized or technical knowledge that is so often necessary in current decision making and action. It is this specialized knowledge that gives certain "bureaucrats" social power today. Examples of people who possess specialized knowledge are planning consultants, civil engineers, economic analysts, and "grantsmen" — those who know where grant money is available and how to get it.

- **REPUTATION** and **SOCIAL STANDING** have traditionally been sources of social power. Witness the “old” or “aristocratic” families who always have members actively involved in public affairs.
- **MATERIAL RESOURCES**, as already mentioned, have usually been rightly perceived as giving individuals social power. These can be money, land, or other sources of wealth.
- **OBLIGATIONS** that an individual may “collect” from others, and “cash in” at certain crucial moments. These are not monetary debts but debts of favors. Most skillful politicians are very adept at this process; one of the most renowned was the late President Lyndon Johnson when he was United States Senate majority leader.
- **CONTROL OVER JOBS** is an obvious source of social power. Many corporation executives and business owners have used this resource to their advantage, some very skillfully, other less so.
- **CONTROL OVER CREDIT** is a similar resource. Witness the popular cartoon of the evil banker foreclosing the mortgage of the poor but beautiful widow, in order to force her to submit ...! Thus bankers and banks have usually been perceived as having such social power. However, today there are many other sources of credit, such as union pension funds, commercial loan companies, and even government agencies.
- **CONTROL OVER MORALITY** is very often an overlooked source of social power, but can be very powerful. A community where most residents belong to a strict religion can be dominated by that church’s leaders, both laity and clergy. The emerging “Moral Majority” movement in the United States is another example. “Blue laws” are a manifestation of such social power in many communities.

**COMBINING AUTHORITY AND CONTROL** of resources. Usually, when one analyzes people who have social power, it becomes apparent that most of them will use a subtle combination of authority and control of resources. There is often an interplay between these two sources of social power. People who have resources will often use their resources to obtain positions of authority. Other individuals will use a position of authority in order to increase their control of resources.

## Why Do Only A Few Participate?

A different way of asking “where does social power come from” is to ask, as Hahn did, “why do some participate, while many others do not?” The answers to this question yield a somewhat different perspective on the sources of social power. According to Hahn, active participants in community decision making exhibit three significant qualities:

### **First** — the **ABILITY** to participate.

Active participation is dependent upon several factors:

- having the **TIME** to participate (to go to meetings, to work on projects, etc.).
- having the **ENERGY**, mental and physical, to participate.
- being **AWARE** of where, why, how, and when to participate, that is, knowing the “ins and outs” of participating in a community.
- **UNDERSTANDING** the issues and **HOW TO INFLUENCE** directions of decisions.
- having **COMMUNICATION SKILLS**, and being able to bring ideas and views to bear on decision making effectively.
- having access to **INFORMATION** that is useful for decision making.
- possessing the **SELF-CONFIDENCE** to participate with others and in public.

These attributes are usually characteristic of the more educated and higher socioeconomic “classes.”

### **Second** — a **SENSE OF OBLIGATION** to participate.

This is a key characteristic of those actively involved in decision making. A sense of obligation means:

- having a **SENSE OF CIVIC RESPONSIBILITY** and consequently becoming involved in public affairs.
- being **CONCERNED WITH LONG-RANGE** (and frequently abstract) **PUBLIC PROBLEMS AND ISSUES**.

This sense of obligation results from a number of factors: education, affluence, and especially family socialization influences. These attributes are also usually correlated with higher levels of education and higher socioeconomic groups.

### **Third** — **SELF-INTEREST**.

As a major motivational factor influencing individuals to become involved in decision making,

self-interest is usually associated with a desire to preserve:

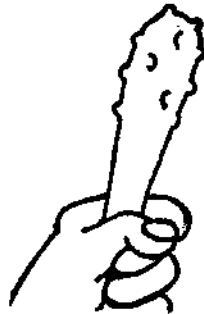
- MATERIAL GOODS, such as monetary or real wealth.
- the SOCIAL STANDING one has within the community; or the reputation the family has developed over time.
- the CONTROL OF RESOURCES, such as those already mentioned earlier.
- IDEALS, BELIEFS, and VALUES that prevail and are held by those active in decision making.

As with ability and sense of obligation, this attribute is more prevalent among the upper socioeconomic and educational groups. However, self-interest has recently proved to be the major motivation for the involvement of less educated, less wealthy, and lower-status individuals. Hahn and others argue that self-interest is the key force in motivating disadvantaged people to become involved in their communities. Once involved, they can develop the other requisite qualities which will facilitate continued participation.

## How is Social Power Exercised?

Social power is exercised in three major ways: by coercion, by influence, and by a blend of both.

By COERCION, we mean the use of raw power — that is, the power to force people to do something they would not ordinarily do. Thus, arm twisting, threats (actual or implied, subtle or overt) and intimidation are some of the methods used to force people to accept or do something they would not normally do or accept.



By INFLUENCE, we mean the use of controlled power — that is, the power of persuasion — using resources and authority to influence people to do certain things willingly. Thus, reasoning, providing information, educating, and giving rewards (extrinsic and intrinsic) are some of the methods used. Personal charisma is also a key factor in persuasion.



The most common approach in exercising social power is to use BOTH COERCION and INFLUENCE. The most effective users of social power, those who are able to hold it for a long time, are those who are able to achieve a proper balance between the two, with a broader emphasis on influence. In most cases where the two are blended, coercion is exercised very carefully and subtly.

In using social power in community decision making, whether by influence, coercion, or a blend of the two, individuals can do one of two things; they can either FACILITATE or BLOCK decisions and actions.

Thus, individuals using social power can help determine the outcome of community decisions. They can FACILITATE or promote certain decisions, or they can DELAY these decisions.

These individuals with social power can also help determine the kind of resources that can be used for making and implementing decisions. They can FACILITATE or BLOCK access to needed resources.

Further, they can help determine the nature and scope of efforts by those outside the community. Again, they can FACILITATE or promote, or they can BLOCK or delay access to outside assistance. This latter operation has become more apparent in recent years in our interdependent society and governmental assistance programs — both on the federal and state levels.

### Summary

*SOCIAL POWER is influence over others' behavior. It rests upon authority and control of resources, and requires: 1) ability, 2) a sense of obligation, and 3) self-interest. It is exercised by a combination of coercion and influence within the process of making and implementing community decisions.*

# POWER ACTORS

The term **power actors**, developed by Iowa State University social scientist, Ronald Powers and his co-workers, is used to designate those individuals who **HAVE** social power and who **EXERCISE** their social power in making community decisions. **People who have social power BUT DO NOT use it CANNOT be considered power actors.**

## Who Are Power Actors?

Studies by Powers on social power in midwestern corn belt communities have revealed that power actors:

- are usually males; very few women are found, though this is changing somewhat.
- are usually older than the average adults; they are generally forty years old or older.
- have above-average income; this is correlated with control of resources and some of the following factors.
- have above-average education, often are college educated.
- occupy higher-status occupations (professionals, businessmen, self-employed).
- are long-time residents of their community; either have lived there all their lives or have been residents for a long time — few newcomers are found to be power actors.
- have control over key resources (jobs, credit, money mass media, land, information).



Hahn has identified power actors in a different way. He analyzed those who regularly participated in community decision making and found patterns of certain individuals being more involved than others. He classified individuals into five major groupings.

### First — PARTICIPANTS IN LOCAL GOVERNMENT, such as:

- elected officials
- administrators of departments or programs
- professional and technical advisors to local governmental units (e.g., paid consultants)

- political party leaders
- public employees

### Second — LEADERS IN NONGOVERNMENTAL ENTERPRISES, such as:

- owners and managers of businesses
- industrial managers and executives
- bankers
- real estate brokers
- mass media managers and executives (e.g., radio, T.V., newspapers)
- public utility managers and executives (e.g., electricity, gas, water)
- professionals (e.g., M.D.'s, lawyers, dentists)
- large land-owners

### Third — HEADS OF NONPROFIT PUBLIC SERVICE AGENCIES, such as:

- hospitals
- private schools
- public charities

### Fourth — DIRECTORS OF VOLUNTARY ORGANIZATIONS, such as:

- neighborhood associations (which are becoming increasingly active in most cities)
- civic clubs (Rotary, Kiwanis, JC's,)
- business and professional groups (e.g., Chambers of Commerce, American Medical Association, American Bar Association)
- minority group organizations (e.g., NAACP, Urban League)

### Fifth — CLERGYMEN AND LABOR LEADERS.

## Some Comments About Power Actors

### Individuals and/or groups

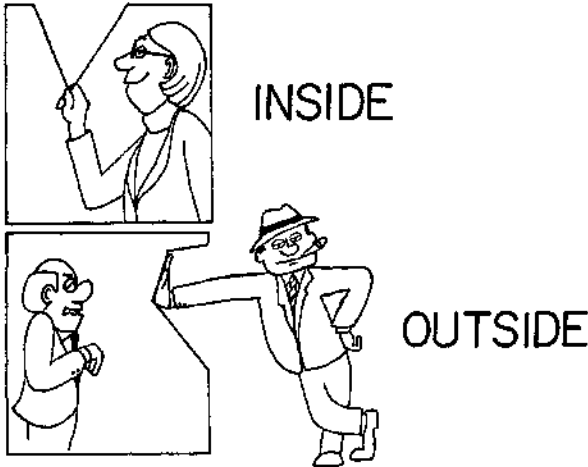
While we usually think of power actors as individuals, we should also consider groups or organizations which act as a unit in exercising social power. Thus, regardless of whether the individual members have social power, the group may be influential in communal decision making. Organiza-



tions such as unions (industrial, government workers', teachers', etc.), church congregations, corporations, ethnic and racial organizations, and civic clubs may be regarded as power actors.

Often social power flows to the leader of an organization that has and exercises social power; occasionally organizations acquire social power from their leaders who are power actors.

### Inside and Outside Communities

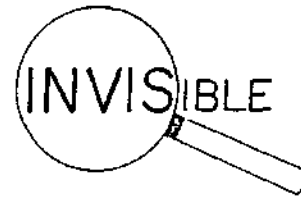


In the past, only local individuals or groups were considered community power actors. In today's complex, interrelated communities, nonresident individuals and outside organizations are also community power actors. Some individual, and many organizational power actors have significant social power in distant communities, as in the following examples:

- the corporate executive, who decides to locate a plant in another community;
- state or federal bureaucrats who allocate resources among different, and often competing, communities;
- the United States senator who can help or hinder the acquisition of resources, through contacts within the federal bureaucracy;
- the military planners in Washington, D.C., who establish and close down military installations around the nation.

Thus, it is crucial to determine the nonresident power actors because their role is often very important in community decision making.

### Visible and Invisible



Many power actors are visible to those who are willing to look for them. They often occupy prominent positions of authority, though this does not necessarily mean all people in prominent positions are power actors. The visible community power actors act out their roles in public; they are members of commissions and boards, elected public officials, appointed public officials, or prominent executives and businessmen who seem to be highly involved in their community's public affairs.

However, some individuals have social power but shun publicity and avoid public roles and positions; consequently they are not visible to most people. They play quiet roles, stay in the background, or remain behind the scenes. Some examples would be the corporate executive who plays very low-key roles, the church minister who is often consulted for approval, and the large landholder whose opinion and approval is always sought. These individuals play crucial roles that are often overlooked. Thus, when considering the power actors of a community, consider those who work behind the scenes.

#### Summary

*POWER ACTORS are the people who have and use social power in the community; they may be individuals or groups. Power actors can be local or nonresident; they may be visible or invisible.*



# POWER STRUCTURES

Social science research indicates that power actors do not operate independently of one another but rather communicate among themselves. There are **patterns of interaction** among a community's power actors. These interrelationships are known as "power structures."

## Kinds of Power Structures

During the past 30 years, in many types of communities, studies aimed at understanding power structures, their compositions and behaviors. Researchers agree that in most communities, there is an identifiable power structure — that is, a network of power actors who communicate with each other and seem to cooperate in community decision making.

One group of studies conducted by Powers and his associates focused on power structures in midwestern rural communities and small cities. They classified power structures into four kinds:

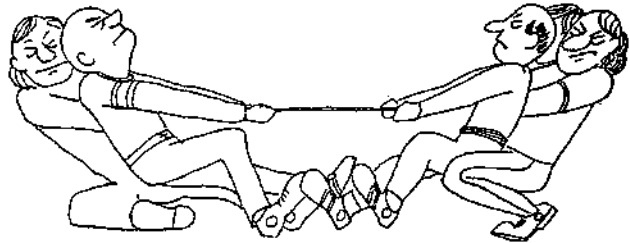
- **One-Person** power structures — A single individual makes all the community's decisions. (Such communities were rare.)



- **Tightly-Knit-Group** power structures — A small group of power actors, with common interests and high interaction, controlling decisions. (Such situations were also relatively rare.)



- **Split Community** power structures — Usually two opposing, tightly-knit groups or individuals who vie for dominance comprise this kind of arrangement. (Again, an uncommon situation.)

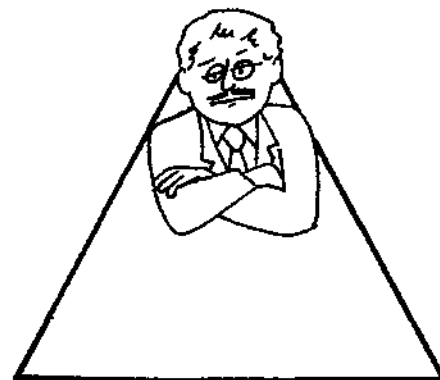


- **Power Pool** power structures — A loosely-knit group of power actors who know each other but rarely act in concert and who do not all participate in every decision. (Most communities belonged in this group.)

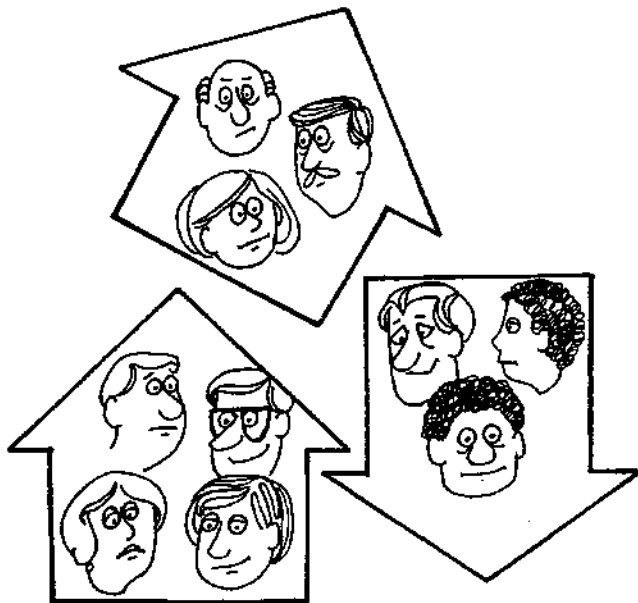


John B. Mitchell of Ohio State University and Sheldon G. Lowry of Michigan State University reviewed many power structure studies and developed the following set of categories:

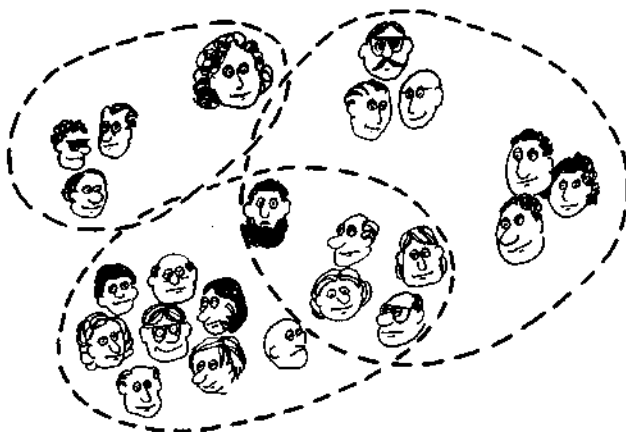
- **Pyramidal** power structures — These structures consist of a small number of power actors with significant social power concentrated at the top of a pyramid; these could be one family, one industry, a single organization, or a tightly knit group of individuals.



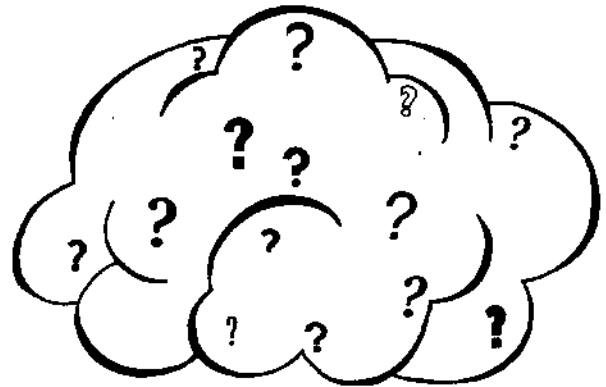
- **Factional** power structures — Two or more factions — interest groups, power blocs, pressure groups — competing for control as, for example, two political parties, an industry and a labor union, make up this kind of structure.



- **Coalitional** power structures — These can be shifting coalitions of individuals and groups, usually coalescing around specific issues, working together for a common purpose. The authors speculated that this type of power structure did the most to promote pluralistic leadership.

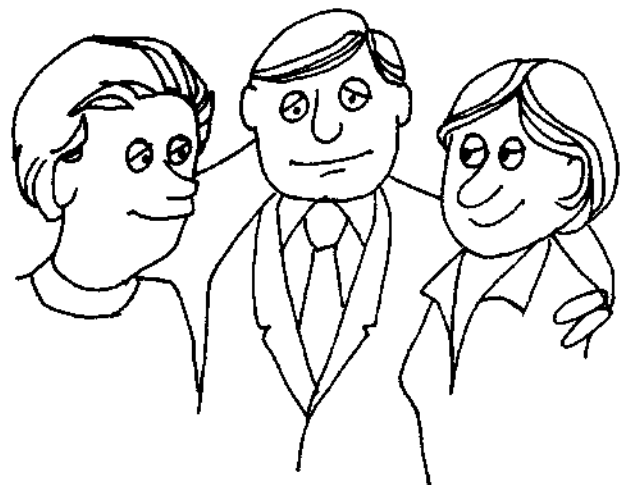


- **Amorphous** power structures — No apparent pattern of interaction, and no discernible power actors can be uncovered in this situation. An example would be a relatively new subdivision, an apartment complex, or a mobile home park.

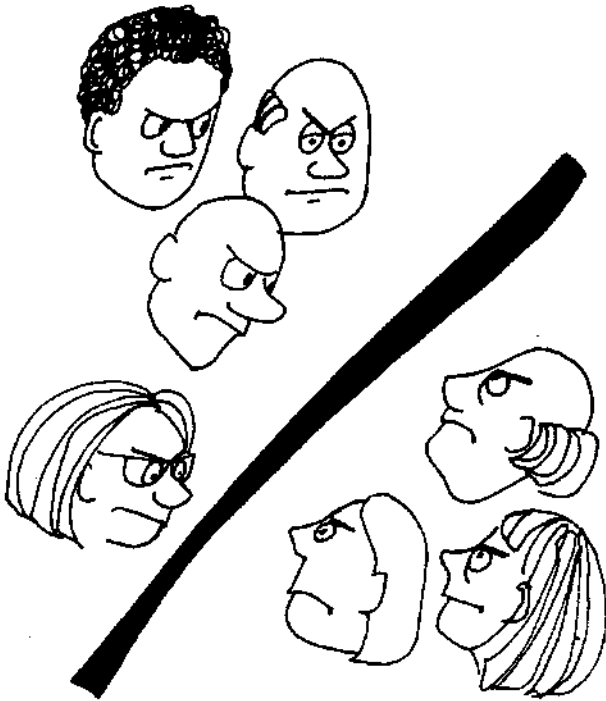


Hahn, in studying social power over the years, concentrated more on complex urban communities and defined three types of power structures:

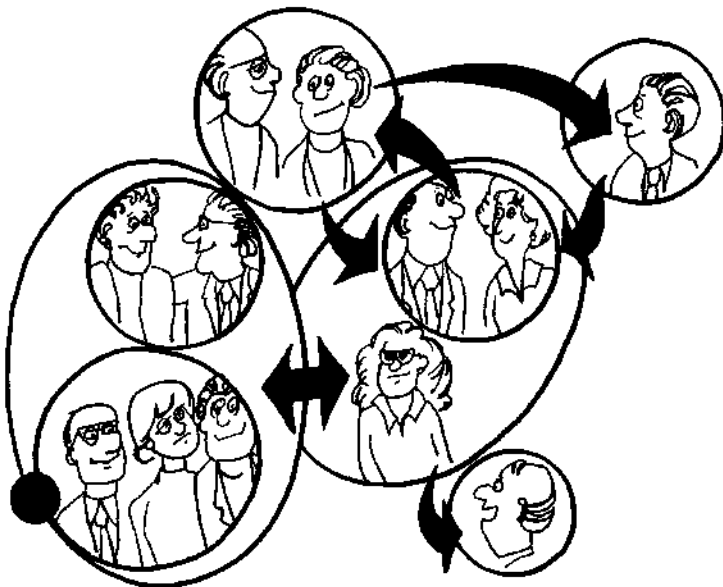
- **Cohesive Structure, or Clique** power structures — consisting of tightly-knit groups of power actors working together.



- **Competitive Structure** power structures — consisting of one or more factions which come together to vie for power against another coalition.



- **Fragmented Structure** power structures — comprised of many cliques forming temporary coalitions, with competition, conflict, and stresses between them. This situation, he found, characterized most large urban communities.



## Some Characteristics of Power Structures

- Power structures **evolve** over time as the community changes. Generally they change from **simple to complex**, as communities grow and become more urbanized.
- There are **differences** between **rural** and **urban** communities. Power structures are generally simpler in rural or traditional communities, and more complex in urban areas.
- A community's power structure is **not autonomous**; it is susceptible to the influence of outside power actors and power structures.
- Power structures, despite the static implications of the word "structure," are actually **dynamic**. Membership can change drastically, even in a short period of time, and coalitions vary in duration and composition. There are changes in complexity and in internal dynamics over time.
- Not all power actors are involved in all the issues and decisions; they **participate selectively**, depending on their competencies. The more complex the power structure, the more specialized the power actors.
- Power actors do not always hold positions of visible leadership; hence, they are often **difficult to identify**. Identifying the kind of power structure that operates within a community — particularly a complex, urban community — can be a problem.

### Summary

**POWER STRUCTURES** are networks of power actors which, despite the various types, all share common characteristics: They evolve from simple to complex; they are not autonomous; they are dynamic and change over time; members participate selectively. Discerning power structures and identifying power actors is often difficult.

# IDENTIFYING POWER ACTORS AND POWER STRUCTURES

Social scientists have developed methods for identifying power actors and power structures in order to study them. The four major methods are:

- Positional
- Reputational
- Event analysis or decisional
- Social participation or social activity approach

Each is different and will identify slightly different power actors, although in some cases there is considerable overlap in the individuals identified. Each has advantages and disadvantages.

## The Positional Method

### Assumptions

- Power rests in important positions in key formal organizations.
- Individuals in these positions of authority are power actors.
- Key organizations are those which control resources and have influence.

### Procedures

- First, identify the key organizations in the community.
- Then, identify the people in authority within the organizations.

### Advantages

- Easy to conduct the study.
- Power actors are easily identified.
- Little cost in time or money.

### Disadvantages

- Many people in positions of authority do not use their power; hence they are not power actors.
- Method overlooks power actors not occupying formal positions of authority.
- Does not identify power actors behind the scenes.

## The Reputational Method

### Assumptions

- Individuals who have and exercise power acquire a reputation of having power.
- Power actors know who they are — personally or by reputation.

- Knowledgeable people know who the power actors in the community are, by their reputations.

### Procedures

- Identify the knowledgeable people in the community.
- Interview them about reputed power actors.
- The frequency with which an individual is named is a measure of his/her relative power.

### Advantages

- Method identifies hidden power actors, as well as those in positions of authority.
- It distinguishes those who do exercise power from those who can but do not.
- It can identify both general power actors and those active only in specific areas.
- Relatively rapid, low-cost, and easy to use.

### Disadvantages

- "Knowledgeables" might not actually know who the real power actors are.
- Apparent power actors might have a reputation but no real power.
- People might be identified as power actors who have social status rather than social power.
- Reputational lag: power actors who no longer exercise power but have the reputation are identified; new power actors who have not developed a reputation might not be identified.

## The Event Analysis or Decisional Method

### Assumptions

- Power is acquired through participation in decision making, i.e., through the exercise of power.
- Actual participation is the real indicator of power.

### Procedures

- Select several key community decisions, either from the past or present.
- Determine, from as many sources as possible, who was involved in the decision-making process, what they did, and how important it was.
- On the basis of these decisions, identify as power actors those who participated most actively in the most decisions.

### **Advantages**

- Behavior, rather than reputation, is the criterion for identifying power actors.
- General and issue-specific power actors can be identified.
- Roles of power actors can be identified and traced.

### **Disadvantages**

- Time-consuming and expensive to conduct.
- Requires highly trained people.
- Can fail to uncover covert power actors.

## **The Social Participation Method**

### **Assumptions**

- Power is acquired through participation in voluntary organizations.
- Active power actors are very involved in community voluntary organizations.

### **Procedures**

- Inventory all community voluntary organizations and all persons occupying formal positions in them.
- Power actors are those individuals who occupy the highest positions in the greatest number of organizations and/or in the most prestigious organizations.

### **Advantages**

- Identifies power actors who are active in local affairs, especially those involved with community action, not just decision making.
- Easy to conduct.

### **Disadvantages**

- Time-consuming.
- Fails to identify covert power actors.
- Tends to identify emerging power actors, overlooking many actual power actors.
- Identifies general but not issue-specific power actors.

Once power actors have been identified, the manner in which they interact — the kinds of coalitions or cliques they form — must be studied. Only after this research is done can a determination be made of the **nature** of the power structure within a community.

### *Summary*

*POWER ACTORS may be identified by any one of four methods: 1) Positional — the people in authority in the key organizations are the power actors; 2) Reputational — those with reputation of social power among the knowledgeable members of the community are the power actors; 3) Event Analysis — the persons who participated most actively in the most community decisions are the power actors; 4) Social Participation — the individuals who occupy positions of authority in the greatest number or most prestigious organizations are the power actors.*

# POWER ACTORS, POWER STRUCTURES, AND COMMUNITY DECISION MAKING

By concentrating this discussion on power actors and power structures, we may leave the impression that they are the only people who "count" in community decision making and action. What we have tried to do is to describe the qualities of the people who are most intimately involved in most community decisions. This does not imply that others cannot or should not become involved.

It is important to realize that under a democratic system, we must strive toward two objectives in community decision making:

**First** — those who have social power should represent **all** major sectors of the community, rather than specific sectors. Implicit in this is that social power should not be concentrated in the hands of a few. We must, therefore, constantly strive to broaden leadership and see to it that new people gain skills in acquiring and using social power.

**Second** — we should encourage those who lack social power and/or do not hold leadership positions to become involved in decision making, both in making

contributions to the decision-making process and in reacting to the decisions that have been made. This is the essence of citizen participation — individuals exercising their freedom of choice to decide when, where, and why they might become involved in community decision making. When people no longer have this choice, we will no longer have a democratic society.

For decision making to work in the long-range interest of all the community, representation of all segments of the community and adequate citizen participation are essential.

## **Summary**

*The promise of a democratic society requires that the power structure of a community represent the interests of all sectors of that society and that those who cannot lead must be encouraged to contribute to and react to the decisions that are made on their behalf.*

## SELECTED READINGS

The following publications served as source material for this Extension bulletin. They are recommended as reading material for those who are interested in pursuing this subject matter further.

Cook, James B., *Citizen Participation: A Concepts Battery*. (Mimeo) Columbia: Department of Regional and Community Affairs, University of Missouri, 1972.

Hahn, Alan J., *Who Decides? Participants in Community Decision Making*. Information Bulletin 53. Ithaca: New York State College of Human Ecology, Cornell University, 1973.

Hahn, Alan J., *How Are Community Decisions Made? The Decision-Making Process*. Information Bulletin 54. Ithaca: New York State College of Human Ecology, Cornell University, 1973.

Hahn, Alan J., *How Well Are We Represented? Decision Makers and the Rest of the Community*. Information Bulletin 55. Ithaca: New York State College of Human Ecology, Cornell University, 1973.

Loomis, Charles P., *Social Systems*. Princeton, D. Van Nostrand Company, Inc., 1960.

Mitchell, John B. and Lowry, Sheldon G., *Power Structures, Community Leadership and Social Action*. North Central Regional Extension Publication No. 35, NCRS-5 Leadership Series No. 5. Columbus: Cooperative Extension Service, The Ohio State University, 1973.

Powers, Ronald C., *Identifying the Community Power Structure*. North Central Regional Extension Publication No. 19, NCRS-5 Leadership Series No. 2. Ames: Cooperative Extension Service, Iowa State University of Science and Technology, 1965.

Tait, John L., Bokemeier, Janet, and Bohlen, Joe M., *Identifying the Community Power Actors: A Guide for Change Agents*. North Central Regional Extension Publication 59. Ames: Cooperative Extension Service, Iowa State University of Science and Technology, 1978.

MICHIGAN STATE UNIVERSITY



COOPERATIVE  
EXTENSION  
SERVICE

MSU is an Affirmative Action/Equal Opportunity Institution. Cooperative Extension Service programs are open to all without regard to race, color, national origin, or sex.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U. S. Department of Agriculture. Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, E. Lansing, MI 48824.

This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by the Cooperative Extension Service or bias against those not mentioned. This bulletin becomes public property upon publication and may be reprinted verbatim as a separate or within another publication with credit to MSU. Reprinting cannot be used to endorse or advertise a commercial product or company.

C-13360

1P-12-81-2.5M-DG-UP. Price 80 cents. For sale only.

**FILE: 31.83**