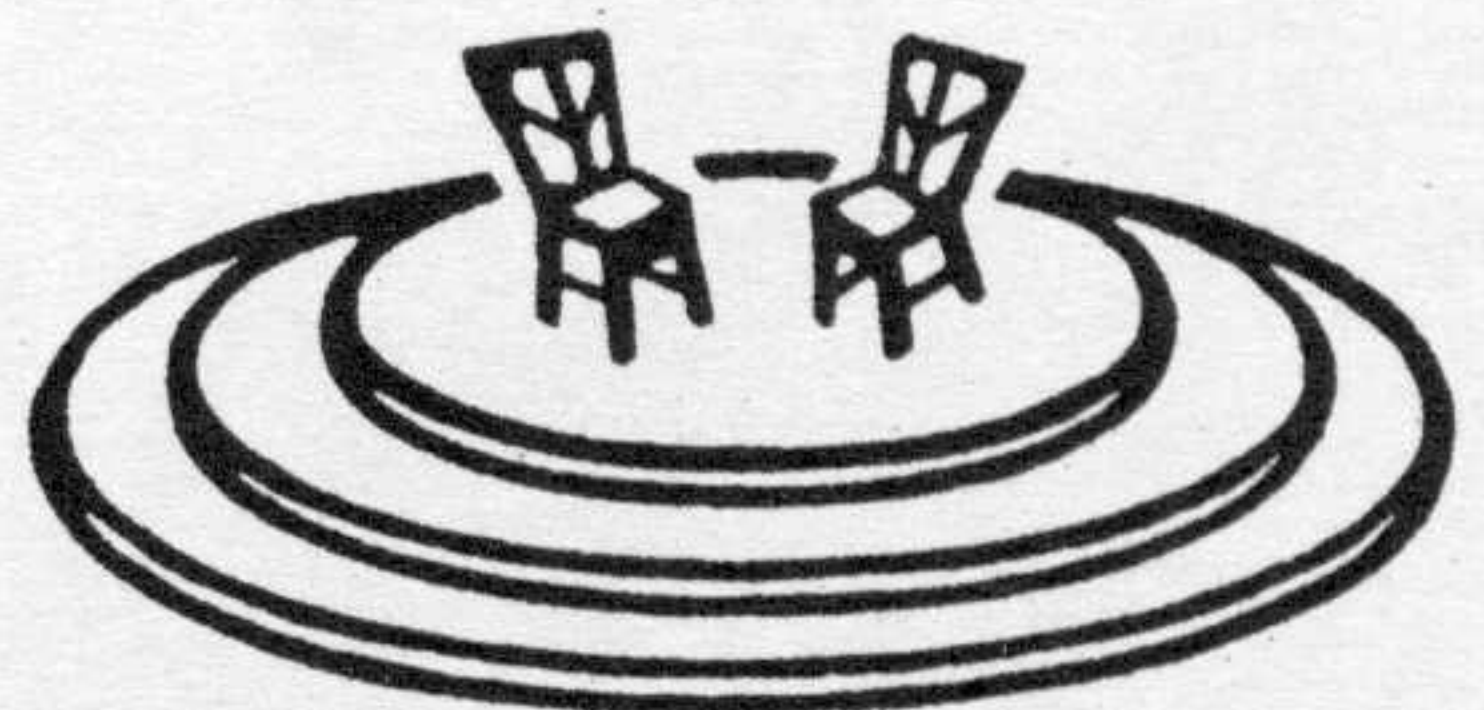


# **An Introduction to Sociogram Construction**

**Carl E. Hollander**





## Introduction

A sociogram is a sociometric instrument which diagrammatically indicates the formation and changes of a group. It is a map of interpersonal relationships and interpersonal lines of communication. Wherever people aggregate, a sociogram occurs. Seating arrangements, although apparently randomly selected, are not usually happenstance occurrences. All people utilize some sociometric criterion or set of criteria when interacting with others. The criterion may be solely aesthetic. That is, they respond to and are either attracted to or repelled by color, form, texture, or some other sensory cue. Other criteria may be dictated by the situation itself. For example, rooming, eating, studying, or working with another is predicated in the task about which one will be or has been engaged. Although sociometric choices take place among other animal forms, the current discussion is focused on the process of human interactions.

There are three major types of sociograms: the role-diagram, the perceptual sociogram, and the more conventional sociogram of the moment. The techniques for administering a sociogram, no matter what type, are essentially the same. They consist of five basic stages: (a) Criterion Selection; (b) Matrix Formation; (c) Sociogram Charting; (d) Analysis; and (e) Application. The example which will be used in explaining these techniques is the conventionally used sociogram of the moment, the existential and very real situation as the participants in the sociogram react to a stated action criterion. Much of what will follow has been said elsewhere by J.L. Moreno using a different framework (*Who Shall Survive?, The Sociometry Reader, Group Psychotherapy, and Sociometry*).



## Criterion Selection

The criterion for sociometric utilization refers to the "What" one wishes to measure, and is usually a question about some aspect of social interaction. Sociometric Criteria are the microsociological norms of groups. They are what norms and standards are in microsociology. They are the quantitative and qualitative vehicle which systematically brings the respondents to select or reject other people with whom they wish to participate in an activity. The number of criteria upon which groups are constantly forming extend into the millions. Each criterion should present significant and emotionally meaningful choices to the respondents. For example, a college dormitory counselor might ask his students, "Who would you most and least wish to have as your room-mate(s) for the entire semester?" The respondents in all likelihood will seriously consider their choices in that they will be making a commitment of about a six-month period of time. However, other personal sub-criteria will probably enter into their choices or rejections: do they desire a serious study companion, a social companion, someone who is quiet, someone who is popular, an honor student, a campus leader, or any of an endless series of other questions. In order to reduce the ambiguity of sub-criteria selection, the sociogram administrator needs to be specific and clear with instructions. If a choice requires only two people from a certain group for a specific purpose, all this information should be clearly defined. Similarly, optimal honesty and spontaneity in the administration and responding to the criteria should be stressed. Honesty can often be encouraged by sincerely communicating the seriousness of the sociometric choices to the respondents. The degree of understanding conveyed from administrator to respondents about the use of the sociogram should also be encouraged. Eliminating any myths about participant "popularity" and



"misfits" should carefully be explained. Serious concerns about exposure and penalties rest with respondents who fail to understand the limitations and consequences of sociometric responses. Some examples of criteria are:

Which two people would you most like to sit beside during a seminar? Indicate the length of time you would choose to sit with each person.

With whom would you most like to share your office? Select only one person.

With whom would you least like to share an office? Select only one person.

Which members of the class would you most like to work on an assigned group project?<sup>1</sup> Select as many or as few people as you wish.

Which person in this group would you most wish to leave your children with if you were going out? Indicate the amounts of time for each selection.

## Sociometric Matrix Formation

The sociometric matrix is a data summary sheet which systematically organizes the choices and/or rejections as presented by each respondent. It is a multicellular chart with two margins in which the respondents' names are listed: one at the left vertical margin and the other at the top, proceeding horizontally. Each chooser's responses are indicated in the cell that intersects with the name of his sociometric choice. The rejections are plotted in the same manner. The symbols commonly utilized in the cells are + for positive choices and - for negative choices (rejections).



Subsequent to recording the choices or rejections, the sociogram process-recorder summarizes the number of choices (or rejections) made by each chooser and the number of choices or rejections received by each member. These are summarized at the right vertical margin and bottom horizontal margin. See attached matrix sample (Appendix A).

It is very economical to use the matrix to locate the sociometric stars, rejectees, and isolates. The sociometric stars are those people who have received the largest number of positive choices. The sociometric rejectees receive the largest number of negative choices. The sociometric isolates are those people who have received no positive or negative choices, and they have made no choices.

## Sociogram

The development of the sociogram evolves from the sociometric matrix. A sociogram is an abstraction, a map which represents the socio-geographic positions of each group member and his relationship to every other person in the group. Two commonly used types of sociograms are the classic sociogram as designed by Moreno and the target sociogram, a modification of the classical type.

Certain traditional symbols exist among sociometrists. The triangle  $\triangle$  is generally referred to as a male member in the group. The circle  $\bigcirc$  represents a female member. Concentric circles  $\odot$  or triangles  $\triangle$  symbolize males or females who are outside of the group in question.

Among the circles and triangles are connecting straight lines called vectors ( $\longrightarrow$ ). The vectors represent the type and direction of each person's choice. Positive choices are symbolically represented with red vectors pointing toward the person chosen. Negative selections are shown via black vectors. Neutral selections are depicted via blue vectors. A



hatch mark (—|—) indicates reciprocity. When two people select one another a red line with a hatch mark reveals mutual attraction. A black line intersected by a hatch is the symbol for mutual rejection. A blue line with a hatch mark is mutual neutrality. Any combination of choices is linked with a hatched line. If a quantitative criterion is included, e.g., time spent, the number should accompany the symbol ( $\overset{40}{\text{—}}|\overset{80}{\text{—}}$ ) ( $\overset{10}{\text{—}}|\text{—}$ ).

A sociogram should be carefully constructed. That is, to be readable, the number of crossing vectors should be minimized. A sociogram which has few crossing lines is the most easily read. Subsequent to the development of the matrix, select the persons who are most frequently chosen and start the sociogram with them. Place people in natural formations - three persons in a triangle, four in a square, etc., well covering the paper upon which the sociogram has been drawn.

The sociogram has several advantages over the sociometric matrix: it presents all the data simultaneously, it permits analysis of minute details, and it clearly highlights selection reciprocities.

### Classic Sociogram

The classic sociogram is drawn on any plain rectangular page. The sociometric stars are located toward the center of the page with succeeding graduations moving toward the periphery. Isolates are charted at the edges of the page. Whenever possible, the symbolic closeness or distance of individuals to each other should be indicated. When a quantitative criterion is used, some metric representation exists. For example, one inch might represent sixty-minutes and fractions thereof might be appropriately increased in inches as time intervals decrease:





Whenever possible, plan each symbolic position to minimize the number of crossing vectors. The fewer vectors which cross and become entangled, the easier the sociogram can be read, analyzed, and interpreted. (See Appendix B for Classical Sociogram.)

### Target Sociogram

The target sociogram is a modification of Moreno's sociogram. It differs in design rather than method. Instead of locating the triangles and circles freely on a page, concentric circles are preestablished to resemble a bulls-eye target and the symbols are placed in the appropriate circle. Stars are placed in the innermost or center-most circle.

Isolates are placed in the largest or outer circle (farthest from the "bulls-eye"). Non-stars and non-isolates are placed in the circles in a gradient fashion — from greatest number of choices to fewest number (See Appendix C). Each circle represents a "number-of-choices-received" range. The method of linking people with vectors is identical to the classical type sociogram. One might desire to make overlay targets placing emphasis on one circle per sociogram. For example, target sociogram Number One might reflect the relationship of all individuals to only the stars. Target sociogram Number Two might reflect the relationship of all individuals in circle two to all other participants, etc. When each target is placed over another, the transparency will reflect the combined circles in relationship to each other.

### Analysis

Analyzing a sociogram depends upon what one is hoping to find. One may be searching for dyads (pairs), triangles



(grouping of threes), squares (foursomes), isolates, stars, or chains (inter-linking people). (See Appendix D.) Others might be looking for a symbolic reflection of cohesion as represented by mutual choices. Still, others might wish to locate telic, empathic, or transference type relationships.

### **Tele-Empathy-Transference**

Tele is a term used by Moreno which is a central theme in sociometry. It represents the two-way process of action between individuals. It is often characterized by reciprocation and originates from the Greek word meaning "far" or "far off" and as applied by Moreno means a feeling into distance for the real attributes of another person. Tele is the cement which holds a group in cohesion. Telic sensitivity is the smallest unit of feeling which can be measured by a sociogram. Although it can not be measured directly (like intelligence and personality factors), its manifestations can be measured. "Tele is the fundamental factor underlying our perceptions of others. We see them, not as they are; nor yet as we are; but as they are in relation to ourselves" (Moreno, 1956). The high degree of mutuality found on sociograms is due to tele.

According to Moreno relationships cannot be built or maintained through projections. Transference, for example, is a process of establishing a relationship in which the primary mechanism of that relationship is projection. Similarly, empathy is a one-way projection in which one person feels into an object, situation, or the circumstances of another person. Relationships built upon a transference and empathic situations do not last. They either disintegrate or become telic relationships. Therefore, all relationships must be composed of at least one of these mechanisms, that they are not mutually exclusive, and indeed may exist together.

Diagrammatically, empathy and transference are illustrated by vectors (————→) and tele is drawn as a



hatched line (—+—). It is not clearly evident from a sociogram whether the relationship between two individuals is one of tele, empathy, or transference. In order to clarify which mechanism exists another set of criteria need to be established. For example, if the initial criterion for the sociogram is "With whom would you best like to study?", the following question needs to be asked: "For what reasons did you make your choice?" and "Why do you feel you might be chosen?" If there are similar responses by mutually attracted people on the three criteria, the relationship is telic. If A chose B because of some characteristic which A has and B does not have, then the response is a transference one. Or, if A chose B because of some situation he sees in B that he sees in himself, the diagrammatic selection is empathic.

## Application

Before implementing a sociogram into action, if there is an action criterion<sup>2</sup>, remember that criteria are frequently only applicable to the time of administration and the conditions which surrounded the criteria. If a long interval of time passes before applying the criterion, the choices might change and render the sociogram inapplicable. Also, people might be added to or deleted from the social network which was used during the sociometric selections and again invalidate its implementation.

If the participants of a sociometric investigation wish feedback via the sociogram, the administrator needs to carefully explain the rationale of sociometric procedure, the inherent limitations of this tool and receive total consensus from the participants that feedback is desired. Failure on the part of the administrator to respond to these three explanations may antagonize the participants, destroy their trust, and perhaps cause someone unnecessary pain, embarrassment, or exposure.



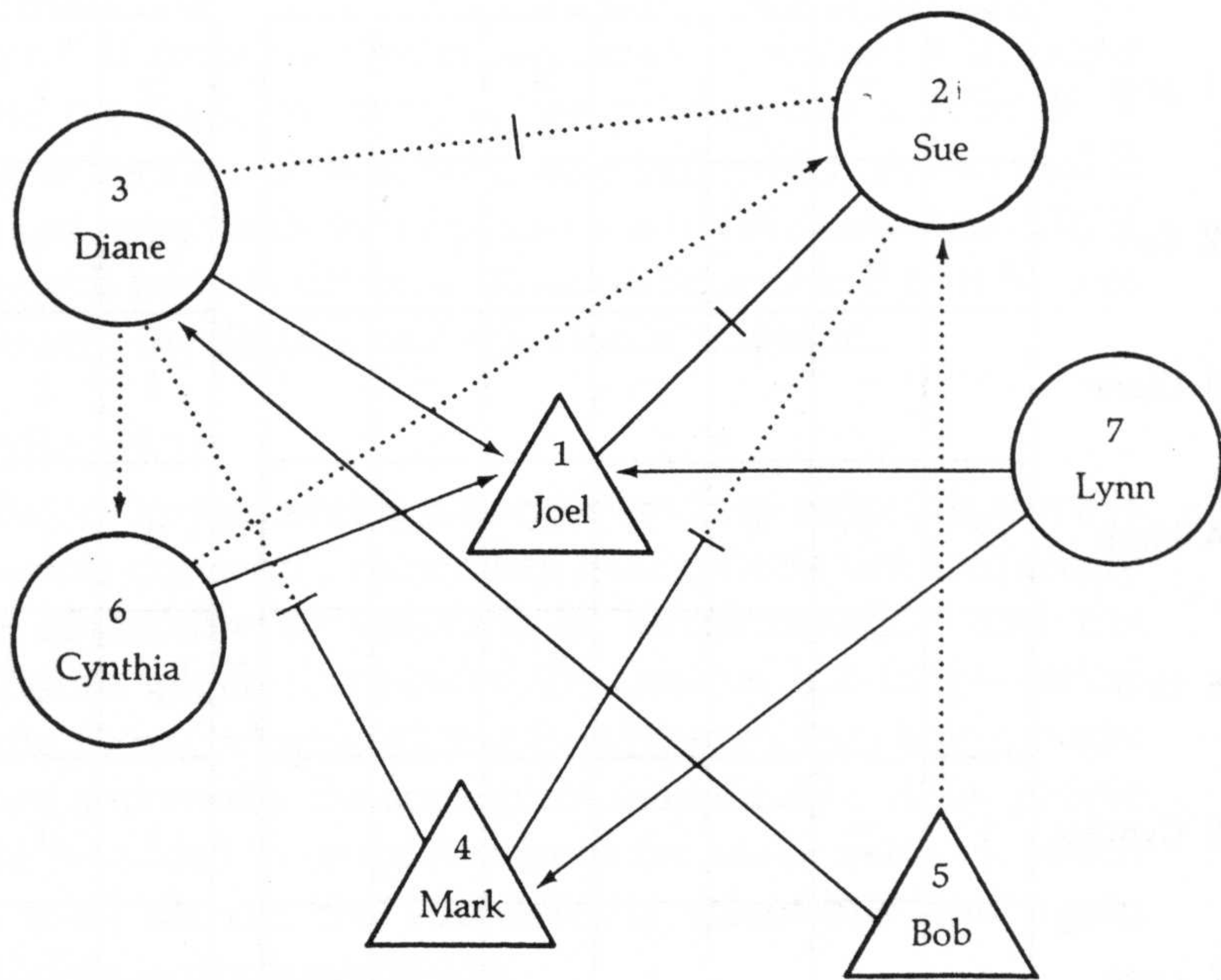
## Appendix A Sociometric Matrix

	1	2	3	4	5	6	7	+	-	Total
1 Joel		+		-	+			2	1	3
2 Sue	+		-	-				1	2	3
3 Diane	+	-		-		-		1	3	4
4 Mark	+	+	+		-			3	1	4
5 Bob	+	-	+	-				2	2	4
6 Cynthia	+	-						1	1	2
7 Lynn	+			+				2		2
Positive	6	2	2	1	1	0		12		12
Negative	0	3	1	4	1	1			10	10
Total	6	5	3	5	2	1				22



## Appendix B

### Classical Sociogram

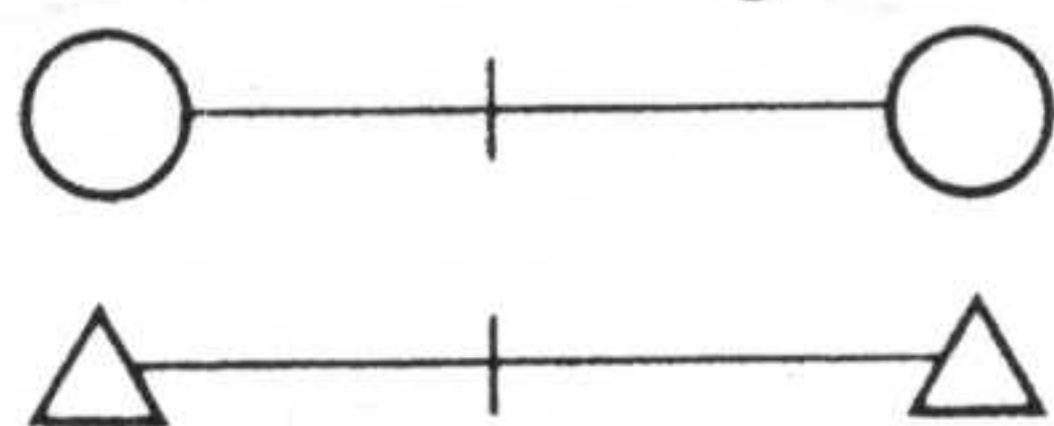


- .....→ Rejection
- .....|..... Mutual Rejection
- Attraction
- +———— Mutual Attraction

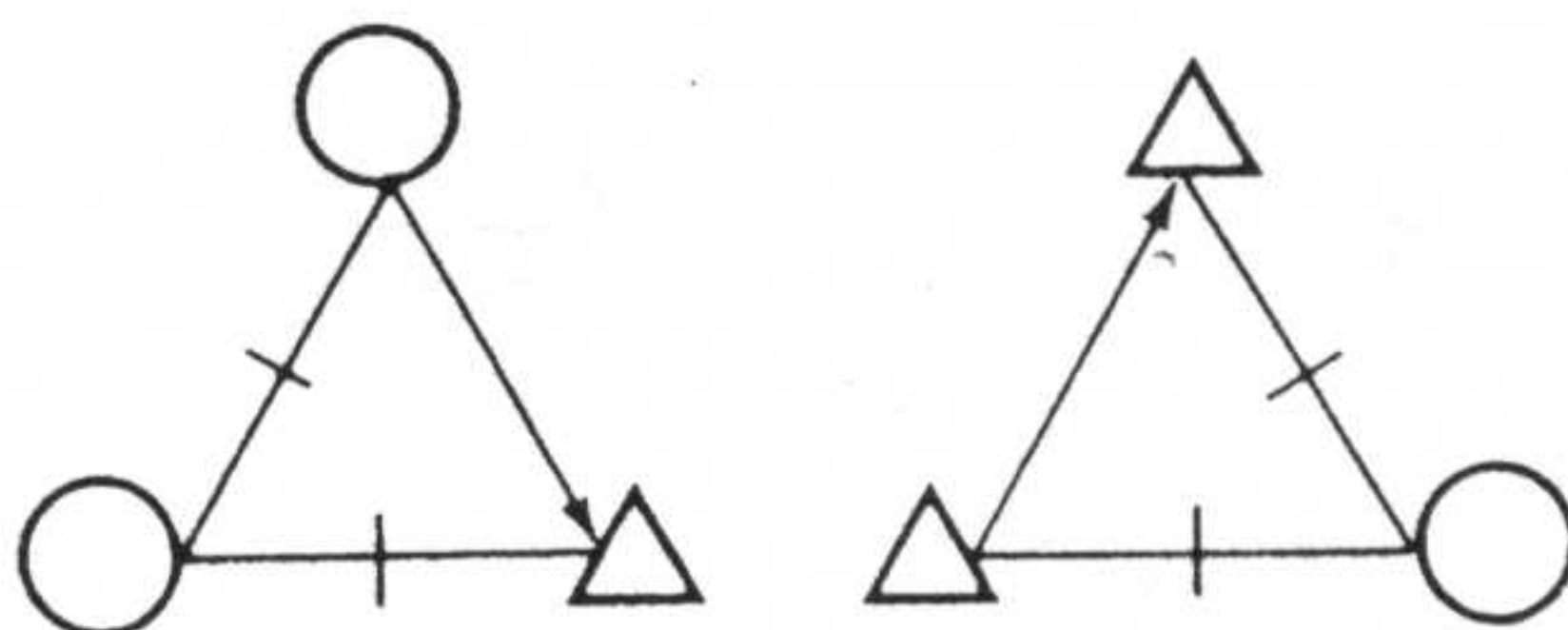


## Appendix D Sociometric Configurations

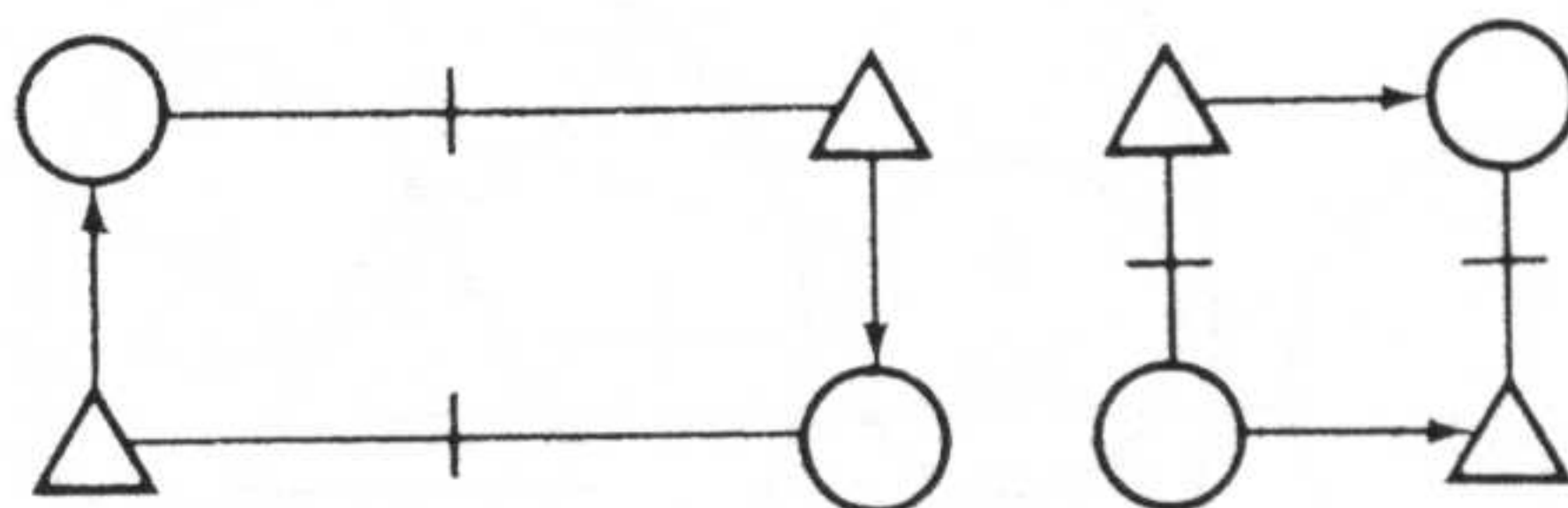
Dyads:



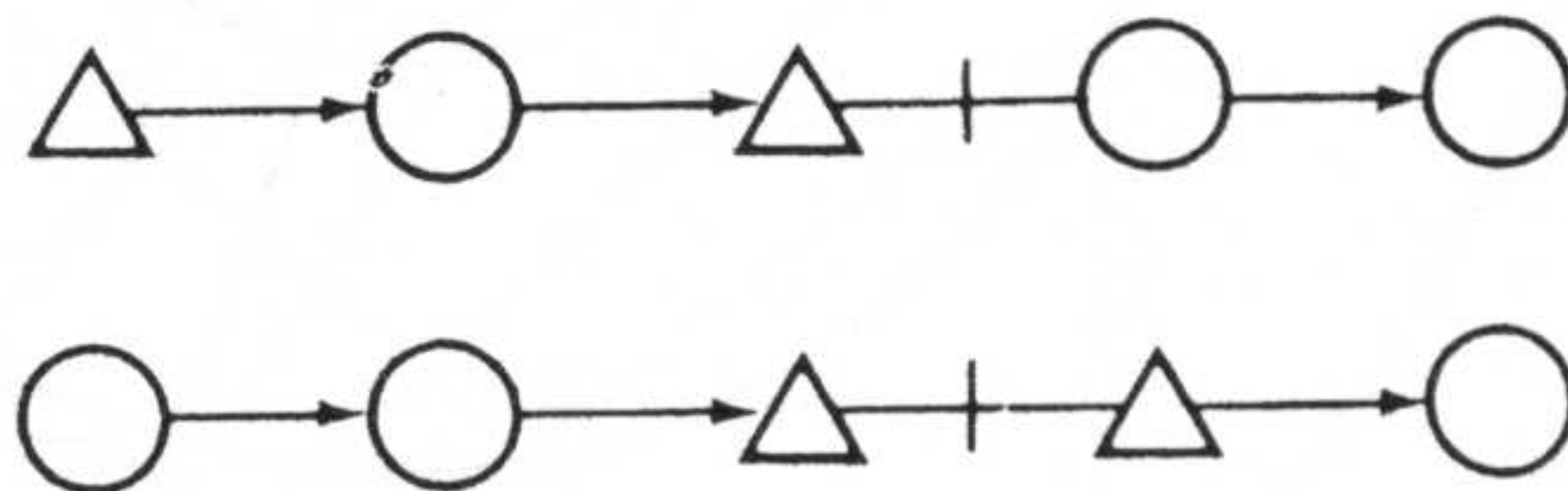
Triangle:



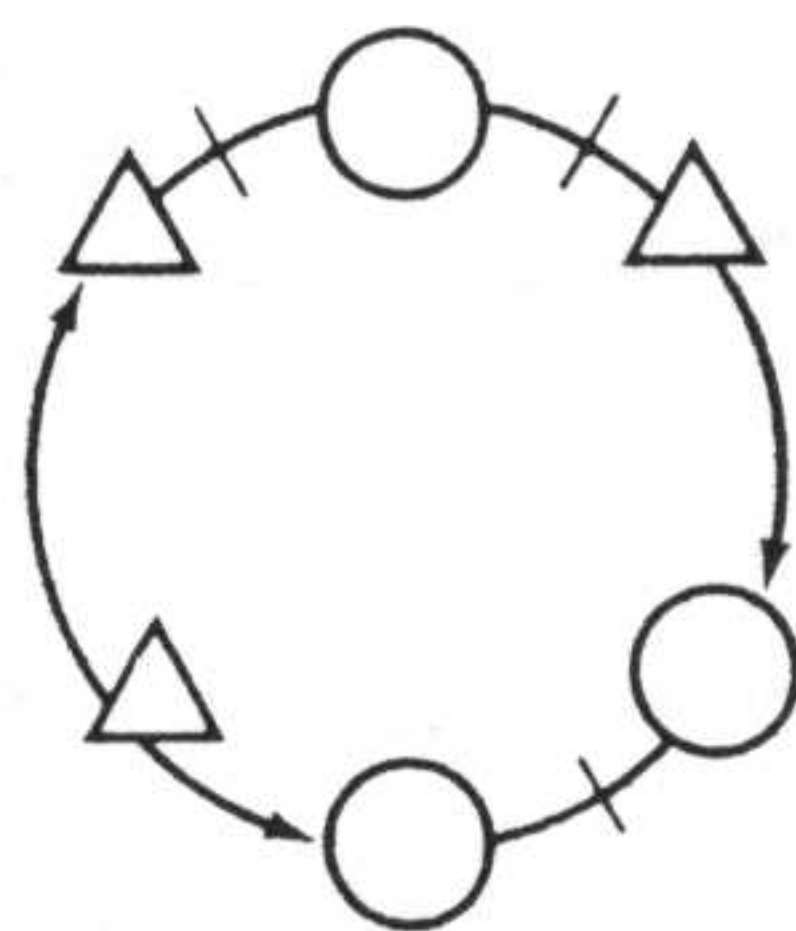
Square:



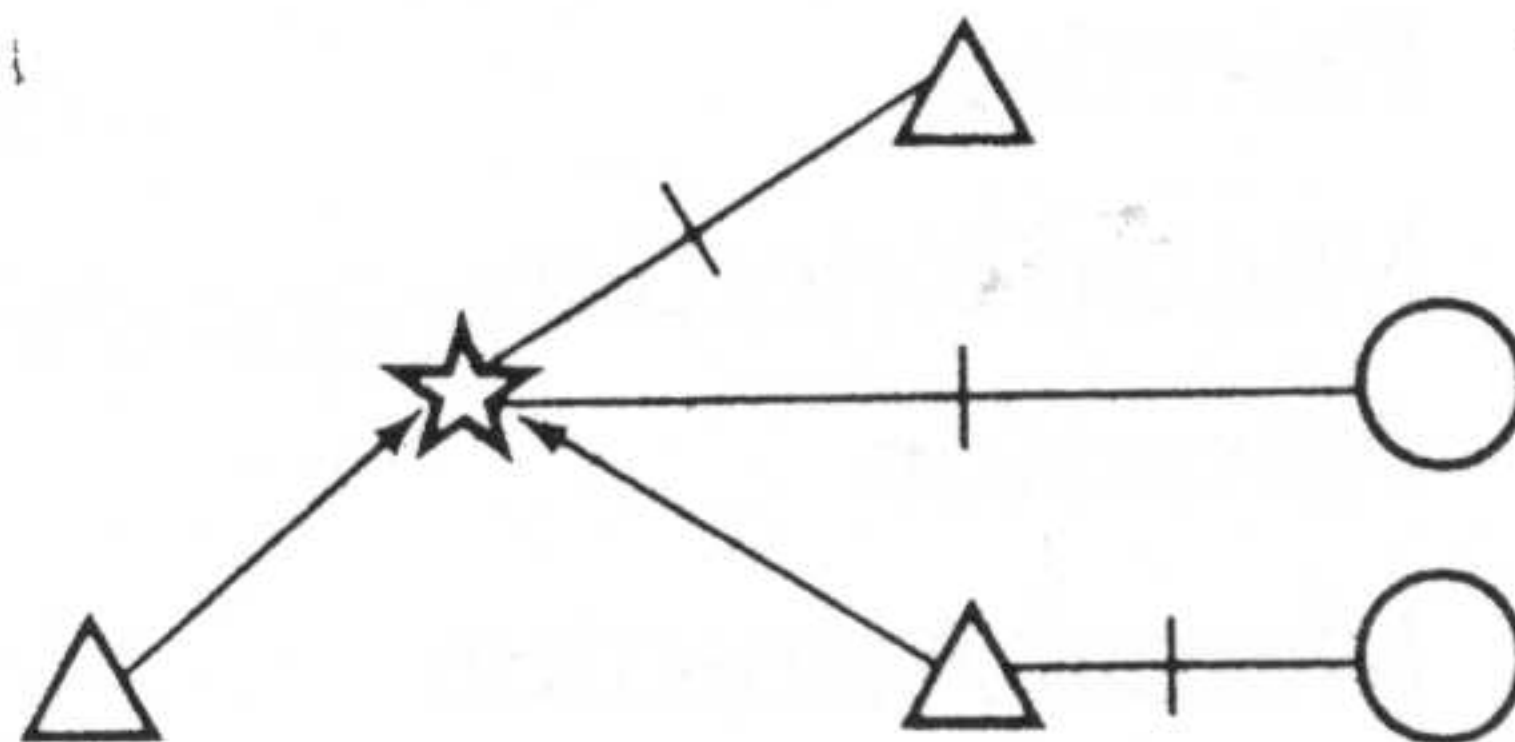
Chain:



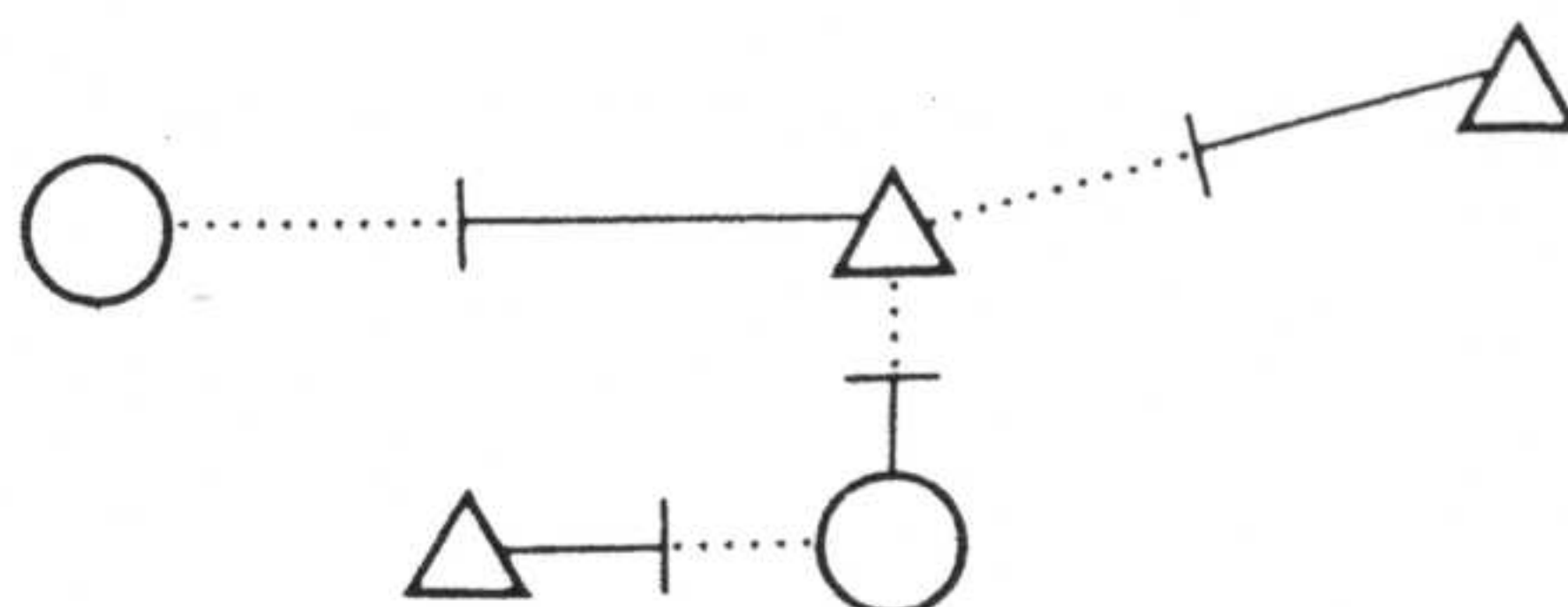
Circle:



Star:



Incompatibility:





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## Footnotes

<sup>1</sup> Specify project when using this criterion.

<sup>2</sup> Example: "Next to what two peoples' offices would you like to have your office located?"



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