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An experimental study to measure pro-social and anti-social interaction patterns in small group drinking sessions.

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AN EXPERIMENTAL STUDY TO MEASURE PRO-SOCIAL AND ANTI-SOCIAL INTERACTION PATTERNS IN SMALL GROUP DRINKING SESSIONS:

A Quantification Analysis of General Behavioural Changes Associated With the Use of Alcohol Among Natural Drinking Groups of Male Automotive Workers In An Experimental Drinking Situation

By

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ABSTRACT

The merits of alcohol drinking have always argued between those who condemn and those who condone its use. To what extent this analysis will provide information about the positive and socially negative qualities of alcohol use is not clear. It is not the researcher's intention to provide evidence for or against judgements made about alcohol use. The purpose of this study will be to describe the changes manifest in group interaction patterns during non-drinking and drinking sessions with a fixed conversational task.

The investigation focuses on what will be defined as pro-social and anti-social behaviour. The observations were made of ten four-member groups of male autoworkers, who participated in two experimentally-controlled task sessions in a small-group laboratory setting.

During the non-drinking session, all subjects were asked to be seated around a table to discuss their work situation (conditions in the plant, common experiences during and after work, etc.) for one-half hour.

During the drinking session, the same group repeated the task but were allowed to consume freely for one and one-half hours their choice of alcoholic drink. Each four-member group consisted of friends who were screened as social drinkers and who had at some time previously come together for the purpose of leisure time drinking.

During the course of the experiment, the observer made notes about the general group practices and records of the

alcohol consumption for each group. Each observational session was videotaped through a polarized (one-way) mirror.

The non-drinking sessions were video-taped in their entirity. The drinking sessions were video-taped in three ten-minute segments, each segment following twenty minutes of interaction time.

The subjects were subsequently given a short questionnaire to complete for the purpose of combining this material with observations made during the sessions. The purpose and the general design of the experiment was then explained to the participants; following the questionnaires the video-tapes were viewed by the subjects and an informal discussion usually followed.

All taped data was then scored using Bales (1951) Interaction Process Analysis categories. The scores were recorded by means of a Bales Interaction Recorder. Each individual act scored was then punched onto an I.B.M. card, and the frequencies were tabulated and cross-tabulated with the use of the S.P.S.S. system (Statistical Package for the Social Sciences, 1970).

A discussion of the pro-social and anti-social enacted behaviour as defined by Bales positive and negative social-emotional categories will follow, along with a discussion of two main roles (drinking group leader and drinking group isolate) and their variations within the groups.

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INTRODUCTION

The methods which have been used to study drinking patterns are as diversified and numerous as the many different drinking practices. The purpose of this approach will be to describe and establish exploratory relationships among a very select drinking population. This analysis will focus on convivial drinking practices among Canadian autoworkers in a highly industrialized Canadian city. The patterns of interaction will involve groups of autoworkers who are identified as belonging to established social drinking groups, working together in a Windsor auto plant. A description of specific kinds of drinking behaviours can provide us with some useful information regarding the nature of problems commonly associated with alcohol use.

The merits of alcohol drinking have always been argued between those who condemn and those who condone its use. To what extent this analysis will provide information about the positive or socially negative qualities of alcohol use is not clear. It is not the researcher's intention to provide any evidence for or against judgements made about alcohol use. The purpose of these experimental sessions will be to describe the changes manifest in group interaction patterns during non-drinking and drinking sessions with a fixed conversational task.

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A discussion of the pro-social and the anti-social enacted behaviour as defined by Bales positive and negative social - emotional categories will follow, along with a discussion of two main roles (drinking group leader and drinking group isolate) and their variations within the groups.

CHAPTER I

Statement of the Research Problem

The decision to investigate the interaction process of social drinking groups was based upon the recognition of certain similarities in a number of different occupational drinking groups. In taverns located in industrial areas, many working groups such as autoworkers, tradesmen and truckers, can be seen at various intervals during the day enjoying the sociability to be found in the tavern. Regular tavern patrons are often observed sitting together with a group of working companions relaxing after work. For these groups, alcohol is used as a catalyst for social interaction. During this time, discussion of the job or of everyday matters is an important outlet after a day in a noisy shop. For some, it is one of the few opportunities open for discussion during the day. As Clinard (1962) observed:

> While tavern-based drinking groups can develop pathological norms which encourage and sustain patterns of deviant drinking, most tavern patrons do not engage in such behaviour. Instead, they are attracted to these settings by the sociability provided. In many taverns there are social controls which actually prevent deviant drinking and which may not be available to the patrons of other settings. (p. 274)

In order to study social drinking in a given community or social group, direct measures of interactive behaviour can be useful in providing much-needed evidence to assist

in conceptualizing new theoretical knowledge. What actually occurs in the course of small-group behaviour during drinking periods is the focus of this particular analysis.

The task of the project came to be defined as the use of a quantitive approach to measure general changes in interaction patterns while drinking. Electronic instruments such as television and the computer have been used to facilitate the analysis. Although this is essentially a quantitative analysis, a qualitative analysis would also be possible with the use of video-recording tape.

The justification for the approach used is summed up by McGrath and Altman (1966) as follows:

> Closely related to the problem of temporal analysis is the need for more attention to analysis of the behaviour of groups - their interaction - as opposed to the products or outcomes of that behaviour. Typically, we assume that various "inputs" to the group members - group structure, task conditions - have effects or outcomes that are mediated via interactive behaviour. Yet relatively few studies of small groups attempt to measure their intervening, interactive behaviour directly; most small group researchers are apparently content to measure and relate "input" and "output" variables and then to make inferences about intervening process accounting for obtained relationships. There is a great need for better methods of observing, recording and analysing group interaction and for more studies that utilize such methods. (pp. 73-74)

CHAPTER II

Review of the Literature

A preliminary investigation of the literature in the areas of drinking and alcoholism presents a perplexing situation. The magnitude of the writings and the diversity of the approaches makes the task of compiling a theoretical summary a difficult one. This chapter will be concerned with reviewing the literature relevant to a discussion of the changes in the emotional levels of group interaction while under the influence of alcohol.

At the risk of overgeneralizing, these introductory remarks will focus on only a few of the basic factors linked to the study of drinking behaviour. The comments are meant to serve as a framework for the analysis undertaken. Any mention of "alcoholism" will be made to stress the importance of studying group behaviour, towards a more meaningful understanding of drinking problems.

The term "drinking" is inclusive of many related aspects in the study of drinking behaviour. A study of drinking behaviour is outlined by Lisansky (1968) as follows:

> . . in describing drinking behaviour, one needs to know the kind and amount of beverage ingested and the circumstances of ingestion, such as where it is drunk, how rapidly, with whom, how diluted, whether before or during meals, etc.

> The term "drinking" encompasses the determination of the blood-alcohol level produced by the drinking; the effects on efficiency, mood and social interaction; the past experiences of the drinker; and the drinking customs of the social group. (p. 264).

The phenomena of "drinking" is a multifaceted problem which can be interpreted in terms of several theoretical orientations. Alcohol drinking may be defined as normal or deviant. In normal or moderate social drinking patterns, the behaviour is best defined by the World Health Organization (1954) as:

> . . alcoholic drinking which in its extent falls within the traditional and customary 'dietary use' of the ordinary compliance with social drinking customs of the whole community concerned. (p. 10)

Excessive drinking or deviant patterns are handled in three generalized areas: drinking to intoxication; the behaviour problems associated with excessive drinking over periods of time; and finally, the discussion of alcoholism. Keller (1962) defines alcoholism in these terms:

> Alcoholism is a psychogenic dependence on or a physiological addiction to ethanol, manifested by the inability of the alcoholic consistently to control either the start of the drinking or its termination once started. (p. 312)

This analysis will be concerned with what have been identified as normal drinking patterns among a sample of Canadian autoworkers. In order to construct a theoretical

background for a discussion of their specific patterns, the literature will be reviewed with regard to the psychological and social aspects of drinking.

Psychological Aspects

The psychological aspects of drinking are those concerned with the behavioural effects of alcohol on individuals. Included in this approach are the numerous animal studies and the effects of alcohol on animal behaviour. Experimental psychological research, according to Lisansky (1968) has been mainly concerned with

> . . studies of alcohol effects in classical or operant conditioning procedures, reaction time and maze behaviour, but there have also been many laboratory reports demonstrating increased voluntary consumption of alcohol under different experimental conditions, such as vitamin deficiency or stress, as well as some reports of laboratory work demonstrating genetic strain differences in alcohol preference. (p. 264)

It seems the task orientation of this kind of research has been to establish information for the treatment of alcoholism. Few of these studies have been useful for an analysis of the human condition. Kalant (1962) cautions the investigator with the outcome of these experiments:

> These include studies dealing with voluntary intake by animals in which 'anxiety' was induced or which was labelled as 'emotional' or whose alcohol intake was influenced by horomonal manipulation. Caution is advocated in applying the results of the studies to human alcoholism. (p.55)

Various researchers quote animal studies as introductions to the human situation in their studies of drinking behaviour.[1]

Research during the first forty years of this century reports a diversity of laboratory experimentation on psychological variables. Jellinek and McFarland (1940) summarized these studies and made the following general statements about alcohol;

> ...alcohol has a depressing effect on all psychological functions yet measured.
>
> ...such stimulation as has been reported for some psychological variables is a pseudostimulation (pp. 362-363)

It was further concluded at the time that;

> ...the simple psychological functions are less affected by alcohol than the complex ones. (p. 363)

It is believed by many and summed up by Lisansky (1964) that;

> ...alcohol in small and moderate amounts is frequently a behavioural depressant, but may- under some conditions, for some tasks, for some individuals - act as a facilitator (pp. 104-121)

In order to further test these findings, a new trend developed which stressed the relationship of alcohol to emotional behaviour. Personality variables were viewed in terms of their importance in explaining drinking behaviour.

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[1] For an example of this, see Bennett, Buss and Carpenter, "Alcohol and Human Physical Aggression," Quarterly Journal of Studies on Alcohol, XXX (December, 1969), 870-76.

Social Aspects

The Anthropological Approach

Horton (1943) was responsible for the first systematic cross-cultural study of drinking patterns. Several distinctive patterns of drinking behaviour became evident in the course of his study; each was an expression of the crucial psycho-cultural variables which the societies exhibiting these patterns shared.

The psychological and physiological effects of alcohol were reviewed; the relationship of inhibition and anxiety and the effect of alcohol on them was explained. Anxiety was regarded as a universal and constant experience of human societies; some means of alleviating anxiety are sought by all people. Horton makes the assumption that the primary function of alcoholic beverages in all societies is the reduction of anxiety. When anxiety is reduced, inhibited agressive and sexual impulses may be released; societies then punish this behaviour, which leads to counter-anxieties connected with drinking. The extent of drinking in a society will depend on the balance between reward (the reduction of anxiety) and punishment.

Field (1962) later challenged Horton's explanation that a major factor in determining the degree of drunkenness in

a society is the level of anxiety. When a group of cross-cultural scales developed by many different raters was assembled on the basis of their theoretical relevance to alcohol problems and applied to tribes studied by Horton, there were no statistically significant relationships identified. Field concluded that:

> The most important single conclusion was the degree of drunkenness at periodic communal drinking bouts is related to variables indicating a personal (or informal) rather than a corporate (or formal) organization, but is substantially unrelated to the level of anxiety in the society. (p.40)

Field (1962) dismissed Horton's anxiety-reduction view in favour of exploring further relations between social organization and drunkenness in primitive societies.

In further research carried out by Bacon (1965) and others, critical commentaries were made on Field's dismissal of the relationship between drinking and anxiety.

Concurrent with Bacon's criticisms of Field's conclusions, Bacon et al (1965) explored the effect of socialization upon drinking patterns. The hypothesis tested was that amounts and patterns of alcohol consumption have their roots partly in the degree of nurturing in infancy, the extent of the demands for self-reliance and achievement in childhood, and the extent to which the expression of

dependent needs is permitted in adult life. Bacon et al concluded that

> . . . frequent drunkenness or high consumption, or both, tend to occur in cultures where needs for dependence are deprived or punished, both in childhood and in adult life, and where a high degree of responsible independent and achieving behaviour are required. (p. 43)

Klausner (1964) also contributed an extensive cross-cultural survey of drinking patterns with his work on the ceremonial usage of alcohol among primitive peoples. Klausner views the widespread use of alcohol in the sacrificial ritual of primitive peoples as suggesting a link between its use and coping with the problems of evil in man's relationship to man (and God). Analogous to this, the modern "cocktail party" exhibits formal similarities to ancient sacrificial ritual and serves a "guilt-ridding" and integrating function equivalent to that formerly met through these rituals.

These anthropological investigations represent some of the principal studies which examine the importance of socio-cultural factors in explaining drinking behaviour.

The Sociological Approach

Selden Bacon's Alcohol and Complex Society (1945) was one of the first essays to summarize the functional and the dysfunctional aspects of alcohol in a complex society,

from a sociological viewpoint. The complex features of society were described in order to consider the significance of social complexity in terms of its relationship to the part played by alcohol, both in relation to society as a whole and in relation to the life of the individual. Bacon summarizes the functional aspects of alcohol in the following statement:

> . . .Stratification, individualism, intergroup ignorance, and internal competitive tradition, all engendered by the complexity of society, enhance the function of alcohol. Complexity results in a need for greater integrative functioning; relaxation of tension, uncertainty and suspicion is necessary for this function; alcohol has been found useful in its accomplishment. (p. 189)

Dysfunctionally, alcohol can be equally as damaging to human relationships. Bacon (1945) believes that all types of group relationships in a complex society "demand greater sensitivity, greater efficiency in action, greater imagination and greater caution than in a simple society." (p. 193) Bacon further summarizes the potential dangers of alcohol as follows:

> Alcohol lowers sensitivity, efficiency and caution. It deteriorates balance and timing. Personal aggression and irresponsibility are far more dangerous in a complex society, and as an adjustment to this, child training in a complex society lays heavy emphasis on self-control, indoctrinates inhibitions and repressions on aggression and irresponsibility; alcohol allows release of these inhibitions. (p. 183)

This essay provoked many empirical investigations, that have concluded with similar findings. Research by E.M. Jellinek (1947) and J.R. Seeley (1960) have established relationships between urbanism (complex society) and alcohol consumption and estimates of rates of alcoholism in various societies.

Drinking patterns have also been studied in terms of the relationship of customary drinking practices and the patterns of alcohol consumption. R.F. Bales (1944) studied traditional patterns of drinking among the Jews in contrast with the Irish. Bales (1968) states:

> A great part of the drinking which the individual participates in, from the beginning to the end of his life cycle in the Irish culture, is convivial drinking, which has symbolic elements, to be sure, but symbolic elements which are different in two important ways from those which are a part of ritual drinking in the religious sense as practiced by Jewish culture. (p. 183)

Further research in the area has been carried out by Snyder (1958), who summarizes his conclusions with the following statement:

> In short the traditional prescriptions to drink ceremonially reinforce the connections between the ideas and sentiments associated with the generalized ritual attitude and the act of drinking itself. A stable attitude toward drinking of alcoholic beverages is consequently molded which does not leave the outcome of drinking to chance, individual experiment, fear, or ignorance. (p. 211)

Sociological research has taken a diversity of approaches to drinking behaviour. Observed regularities have been recorded in the relationship between the use of alcohol and such variables as sex, age, ethnicity, religious affiliation, socio-economic status and rural-urban residence, examples of such studies are the work of Gadourek (1963), Lawrence and Maxwell (1962) and Mulford and Miller (1960). Sociologists have shown interest in the gross social correlates of drinking through surveys of drinking behaviour and attitudes among the population defined.

Dollard (1945) was one of the first to emphasize the importance of utilizing specific variables for the sociological investigation of drinking in complex society. Dollard pointed out that;

> The social controls exercised by various social classed toward drinking and the effects of permissiveness in certain social classes toward drinking have been studied explicitly. (p. 95)

Other researchers such as Maxwell (1952), Haer (1955) and Straus and Bacon (1953) have explored the etiology of alcoholism and drinking patterns through analysis of various group measurements.

In North America, we have traditionally used alcohol as a food, a medicine, and a drug to facilitate social interaction. As a food, alcohol contains no vitamins or other nutrients necessary to balanced diet. As a medicine, alcohol has no useful purpose other than being a mild sedative.

As a social facilitator the various changes in behaviour are unquestionable.

In nearly all human societies alcoholic beverages have established the function of effectively reducing anxiety. The paradox of alcohol consumption, however, is that both pro-social and anti-social acts can result from states of altered inhibition. In order to understand the behaviour of groups within the context of a society, it is necessary to examine both these extremes of behaviour as observed during social drinking situations.

With normal social use, alcohol serves positive functions for both individuals and society at large according to Dock (1963). A clearer understanding of the reasons why alcohol is the most widely used psychoactive drug in our society may arise from an examination of the many social situations in which drinking occurs. Alcohol is used to promote solidarity and reduce the tension involved during all types of social encounters. Weddings, holidays, the after-work drink, and even funerals are just a few of the situations in which alcohol is used to enhance the emotional texture of the interaction.

The great majority of drinkers never acquire deviant drinking patterns. The prime emphasis, however, has been in the area of research on alcohol abuse; seldom are the positive aspects of drinking stressed.

As Trice and Roman (1972) state:

> The social lubricant function of alcohol should not be minimized or ignored. Complex societies create an infinite number of combinations of different statuses and roles to the extent that many individuals have little in common with one another. The conduct of social life often requires that persons with such variant backgrounds come into contact with each other, for both social and instrumental reasons. The cocktail party is probably the best example of this encounter, and the relaxing effects of alcohol can greatly reduce the potential tension in such circumstances. Even when persons are well-acquainted with each other, alcohol may serve to make social interaction flow more smoothly than would be the case in its absence. (p. 37)

Small Group Research

There are few studies which attempt to demonstrate the effects of alcohol on emotional behaviour from an experimental approach. Of primary importance were the studies conducted by Takala, Pihkanen and Markkanen (1957) at the Finnish Foundation for Alcohol Studies. The physiological and neurological parts of the study dealt with the effects of beer and blended brandy on certain intellectual and motor functions. The psychological part was a basic investigation to isolate the personality factors which would describe individual motives and social factors which may influence the choice of alcohol. Subjects were divided into eight groups of four to six persons each. Each person participated in five sessions; an 'interaction' session in which either beer or brandy was drunk and group tasks were performed, and four 'test situations' (two using beer and two using

brandy). The Bales (1951) system of Interaction Process Analysis (1951) was adapted, with modifications, and used to outline the differences in non-drinking (control groups) and drinking situations.

Takala concluded that when sober, individuals usually cooperated, submitted to methods indicated by a leader, compromised, and even discussed matters they were not interested in. During the drinking sessions, yensions were openly revealed; they arose in all groups irrespective of age and educational level. Even a very slight percentage of alcohol in the blood was said to be enough to add considerably to emotional reactions and aggressions compared with non-drinking situations.

The emphasis on socially-defined behaviour was further refined by Bruun (1959). In order to demonstrate the possibility of explaining individual differences in reactions under the influence of alcohol, a re-analysis was performed of material originally presented by Takala (1957).

Verification of Takala's data some three years later revealed exploratory relationships which suggested that the proportion of negative reactions manifest during drinking were influenced by the position of the individual in the group; for example, "central" persons vs. "isolated" persons, and the degree of permissiveness towards aggression.

These exploratory findings stimulated Bruun to continue analysis of the social phenomena of drinking. The refined techniques which were being developed in the area of small-group research were utilized by Bruun in his dissertation (1959) which gave full treatment to the influence of roles and norms while drinking.

The major limitations of the Bruun (1959) and Takala (1957) research is that they 1) seem to minimize the pro-social aspects of drinking behaviour and 2) it is difficult to assess the effect of variations in cultural norms surronding drinking and anti-social behaviour so that the findings may be generalized to different cultural settings.

Although research on alcohol requires an interdisciplinary orientation, the sociological approach best focuses on the variations in observable drinking situations. The small group provided a model for all levels of abstraction about everyday life situations as well as global theories on the effects of alcohol on societies.

As Wiseman (1973) points out in her review of Drunken Comportment by MacAndrew and Edgerton (1969);

> Investigations in alcoholism have shown a curious relectance to study heavy drinkers in action in their social milieu. Rather, most of the voluminous literature in this area represents

studies of the problem drinker when sober and often when institutionalized. Focus is not on the drinking behaviour but on his attitudes, and his pathological and demographic characteristics. Alcoholism research has thus emerged as a field which is somewhat long on theory and short on systematic knowledge of excessive drinking and its accompanying behaviour-in-process.

Summary

From a review of the literature, then, it can generally be stated that alcohol can reduce inhibitions and facilitate social interaction. For example, actual levles of talk increase, sexual interest sometimes increases, and the imbiber feels that the alcohol has a stimilating effect.

With larger doses of alcohol there is a marked impairment of concentration and judgement of task performance; visual perceptions and speech functions become impaired. The user will commonly act in ways unfamiliar to his sober state; aggressive actions and verbalizations will at times increase. High doses of alcohol are often factors in accidents, homicides and suicides. As Kalant (1971) summarizes;

> It is very well known, both from court records and from everyday experience, that a certain proportion of people who become intoxicated with alcohol become aggressive and that some of these commit violent acts. (p.90)

An examination will be made of changes in interaction patterns in drinking and non-drinking situations and how the position of the group member effects his interaction with other group members and his drinking patterns. This study deals with the quantitative analysis of drinking as a common everyday experience in the lives of autoworkers. No attempt was made to theorize about deviant drinking patterns or the control of anti-social acts.

The literature indicates the wide range of potential effects of alcohol use on individual and group behaviour. It is difficult to generalize about how alcohol will emerge in observable behaviour without specific empirical measures to supplement the widely diverse body of knowledge regarding alcohol associated behavioural changes presented in the literature. The general behavioural changes associated with alcohol use will be used as a background to refine specific hypotheses regarding the observed changes in interaction patterns in the groups studied. The primary assumption that can be made regarding the effect of alcohol on behaviour is that it will change the interaction patterns of groups.

The analysis to quantify this behaviour, measured the behaviour of the same groups under two conditions during equal time segments. The subjects, in acting as their own controls, were an ideal test situation to make and quantify direct measures of behavioural change. In order to generate

specific hypotheses the analysis centered on three general behavioural changes that are most commonly associated with the use of alcohol.

The first hypothesis deals with the use of alcohol as a facilitator of social interaction. An increase in the overall number of acts will provide information as to the degree of change when the two interaction segments, the non-drinking and the drinking are compared.

The second hypothesis will deal with the use of alcohol as it acts to reduce inhibitions. Moderate amounts of alcohol should make the social situation more enjoyable, therefore increasing the levels of pro-social behaviour which were also measured with the Bales system. The extent of the change will be measured among all of the groups to determine, in a controlled experimental condition, exactly what changes do take place.

The third hypothesis will deal with the use of alcohol to the extent that it will change the anti-social levels of behaviour also measured by the Bales system. It is clear from the studies mentioned that alcohol has been attributed to general increases in the anti-social levels of behaviour. As Wolfgang (1958) states;

> Alcohol appears to be merely a releaser of violent traits and forms of behaviour which ordinarily are kept under artificial control. (p. 251)

In order to analyse the significant changes that were measured in the anti-social areas of behaviour the impact of

increasing proportions of alcohol was measured to test for a correlation between the number of anti-social acts and increasing amounts of alcohol consummed.

There is no clearly defined data at this point to use as an empirical referent.

The next hypothesis was formulated to analyse the reduction of inhibitions in terms of the directionality of anti-social acts. The category scored as antagonism was examined to determine if the reduction of inhibitions would make the initiator of the act more likely to address antagonistic statements directly to other members within the group while under the influence of alcohol.

The exploratory analysis of roles which was included in the last chapter enters into a discussion of anti-social interaction in terms of drinking leader and drinking isolate patterns. This analysis was not covered in the main body of the experiment but was included because of the well defined patterns between leaders and isolates.

CHAPTER III

Description of the Method

Experimental Design

A commonly-used experimental design as outlined by Phillips (1966), pp. 87 - 104, is that in which the subjects act as their own controls. Each subject is tested twice under different conditions. The experimental design used was as follows.

The group, as well as the experimental conditions, were matched to themselves - they served as their own controls. The advantage of this design is that it controls for group differences by using the same subjects for both conditions. The data describes the degree to which each group changes, which is the kind of information required to test predictions of change on a group basis.

Each group was scored using Bales 12-item category system during a non-drinking session which acted as the control situation, and a drinking session which acted as the experimental situation. The difference between the non-drinking and the drinking sessions constitutes the measure of the effect of alcohol on the group interaction patterns. There was no reason to question internal factors, experimenter

factors or external factors as exerting an influence on the performance of the subjects. There was also no significant interaction between the two segments scored.

Pretest

The equipment and setting were first pre-tested with a group of three workers from a different automotive plant. Probes were made to determine if the setting, place location and procedure would present any difficulties to the subjects and experimenter in general.

The Sample

This section will deal with the characteristics and selection of the sample population . All forty of the auto-workers who made up the ten four-member groups were recruited from the same plant area of a large automotive factory in Windsor, Ontario. The forty men worked in the assembly line area, but for some groups their jobs were considerably different.

The occupational classifications for the groups were as follows:

Four skilled tradesmen

Eight union officials (elected representatives)

Twenty-eight assembly line workers.

The men had been employed in the auto industry from six months to twenty-two years.

All of the men in the groups had previously been drinking together on at least one previous occasion. Group members were acquainted with each other from a minimum period of six months to a maximum period of ten years.

The ages of the men ranged from twenty to fifty-two years, with a mean of 31.2 years. Thirty-five of the men were married, four were never married, and one was divorced.

Recruitment of the Groups

To collect the data by which these hypotheses could be tested, it was necessary to use natural drinking groups, and not groups whose cohesion had been established for the experimental procedure. The task was to find groups of subjects who, on social occasions, would generally drink together. This included such times as before or after work shifts or during holidays, with most of the group drinking being centered around the work week. In order to recruit a homogeneous population, a decision was made to restrict the groups

to male autoworkers from the automotive industry in Windsor, Ontario. Participants would be recruited from various auto and feeder plants throughout the city of Windsor. A group consisted of workers from the same workplace; no attempt was made to randomize the selection.

From previous observations made in tavern settings, it appeared that the recruitment of groups would be relatively easy. Small groups of automotive workers can be observed drinking together near any of the large auto plants or their feeder industries.

The first attempt was made to recruit subjects at a local tavern. Contacts were made with tavern waiters who were fully familiar with the general drinking habits of their regular customers. The waiters initially approached the groups and explained the general situation to the potential groups. Further detailed information was then provided by the researcher, and if the groups were interested a scheduled time was arranged. Although three groups of twelve subjects were tentatively scheduled by using this method of approach, at least one in each group cancelled out prior to the experiment. These volunteers were not used in the study, as it became evident that simply walking into a bar, and attempting to make contacts, was not a successful method of recruitment.

The second method of approach involved using contacts of the researcher who worked within the plants. By recruiting at least one or two groups in this manner, it was assumed that other volunteers could be recruited when the initial groups reported their experience in the plant. This approach also proved unsuccessful due to the difficulty of co-ordinating specific meeting times.

The third and final approach restricted the groups to a specific large autoplant. All subjects were recruited from the plant where the automobiles are actually assembled. The recruitment of the groups was left to the discretion of union representatives. These contacts were familiar with their co-workers social lives and would be better able to schedule the groups from within the plant, during breaks and lunch periods. Specific directives were given to the two contact stewards, who would be involved in scheduling, selecting and organizing the groups. This approach proved highly efficient and successful. All forty subjects who volunteered were scheduled after their shifts finished, which generally is their regular drinking time together.

The Setting of the Experiment

Although a natural tavern setting would have been ideal, it proved impossible to provide a proper physical setting

for the type of interaction room needed. The use of the small-group laboratory was granted by a regional office of the Ontarion Addiction Research Foundation for the experimental sessions. The selection of a proper setting for this type of experimental design was of the utmost importance. The setting was not located in a strictly institutional or office type of construction. Separate access to the laboratory from the outside eliminated the necessity of the subjects entering the interaction room from the Foundation offices. Many of the subjects believed that the room had been set up specifically for the study. Every possible precaution was taken to minimize the possible apprehension the subjects might feel.

The situational influences on the effects of alcohol have been emphasized by several researchers. Kalin, McClelland and Kahn (1965) argue that the goal of isolating the effects of alcohol per se cannot be attained without examining the relationship between the experimental manipulation and the setting. Kalin et al use the experimental study of Frankenhaeuser, Ungsten and Jarpe (1962) as an example of a study which inhibits "positive" emotional effects which may occur under normal drinking conditions. These researchers administered alcohol intravenously in a hospital setting, then went on to conclude that they found no increase in the frequency among subjects who were given alcohol to

say they felt "happy" or "carefree" as compared with control subjects. Kalin et al point out that the reactions to such an anxiety-arousing setting cannot be overcome by the effects of a little alcohol. Thus comparing alcohol-using subjects and placebo subjects does not isolate the effects of alcohol on subjects in an anxiety-arousing atmosphere. As Kalin et al were interested in the reasons why people drink, they studied the effects of social drinking on fantasy, allowing people to drink as they normally would in natural party setting in which a choice of drinks was available for ad lib consumption.

A.F. Williams (1966) was also aware of the effects of the situation or setting of the experiment on the outcome of the investigation. Williams, who investigated psychological reasons for normal social drinking, states:

> Although it is recognized that people drink in order to "feel differently", there has been little research on emotional effects of alcohol; the bulk of current knowledge or lore in this area derives from clinical and introspective reports. Clearly systematic investigation of emotional effects of alcohol is needed, with attention focused on variables which would seem to be of importance; personality, amount of alcohol consumed, and the situation in which it is consumed. (p. 689)

Williams studied a series of fraternity cocktail parties and structured the setting as little as possible allowing subjects to drink as they normally would, in natural party settings in which a choice of drinks was available for ad lib consumption.

Bruun (1959) also exercised caution in selecting the setting for his experiment. In an attempt to create as "normal" a drinking milieu as possible, Bruun used the club premises of the Finnish Alcohol Monopoly. The interaction room was set up to resemble as closely as possible a private room of an ordinary Finnish restaurant.

The researcher avoided any of the usual physiological directives such as weighing the subjects or informing them not to eat prior to the session to test for blood alcohol level. The experimental sessions were to be as close as possible to an everyday drinking situation. The laboratory setting used in this study proved quite suitable. Many of the subjects commented that it was an ideal place to have a few drinks after work. In other types of experimental sessions the researcher has observed a great deal of concern over the fact the sessions were being recorded. During the twenty sessions taped for this experiment, there was no visible apprehension about the setting, task, or the fact the sessions were videotaped. Prior to the beginning of the sessions, all subjects were asked if they wanted to view the observation room. Only eight of the men requested a look at the equipment before the sessions.

The interaction room was three by five meters in size. A trapezoid-shaped table was placed in the centre of the

room with four chairs on three sides of the table. To the immediate right of the table was a smaller table which served as the bar. On the floor next to the bar table there was a small ice cooler which contained the beer and the mixers. Participants did not have to leave their seats or summon a bartender to obtain a drink. The job of bartender was usually designated or assumed by those who sat on the extreme right of the table, closest to the bar table.

The sound was picked up in the interaction room by two omni-directional microphones which led to the observation room. One was connected to the audio-tape recorder, the other to the video-tape recorder.

Observations and video-tape recording were made through a polarized glass (one-way mirror). The necessary lighting was provided by three spot-lights directed upwards for a ceiling bounce.

The choice of beverages included beer, liquor and wine, and only regularly used mixers were provided. The beverages were offered cost free, and the groups set their own pace of drinking.

In the observation room a monitor was available for the video playback to the groups following both sessions.

The Course of the Experiment

As the groups were scheduled by plant union officials to accomodate the changing shifts, it was impossible to set a fixed meeting time. Twelve of the twenty sessions were conducted after the afternoon shift, from approximately 12:30 a.m. to 3 a.m. Many of the men stipulated a preference for this time because it is often a practice of the men to leave work and go for the "last call", or last legal serving before closing, at local bars.

When the subjects arrived at the small-group laboratory the purpose of the study was explained. Subjects were told that the researcher was gathering information on industrial work groups. All participants were asked if they worked together and socialized together while drinking. It was then explained that this would be a study of social drinking, and the idea was to relax and talk as freely as desired about the conversation task. The participants were then led to the interaction room where they were asked to take a seat of their choice. The subjects were then reminded that a video-tape would be made during the sessions. They were told that strict confidentiality would be observed with the use of the taped data.

The discussion task was introduced to ensure a constant

flow of communication. The theme was their work situation, as all of the subjects were equally familiar with this topic of discussion. The theme was introduced to both the control and the drinking sessions as follows:

> Please discuss your work situation, that is, anything you have in common about working together. You do not have to worry about what you say, as the content of the discussion will not be identified with any person present. You will be informed when to stop.

The researcher used this theme of the work situation because it is one of the common unifying aspects of this association as a drinking group. It was observed in field observations and the pre-test that discussion about the work situation would be as close as possible to a replication of a natural drinking situation. The conversation often varied from task presented, but at no time were the subjects at a loss for conversation. The "work situation" was a general enough topic to maintain an active level of discussion among all of the subjects. The task was completely open to the group to interpret as they wished. There was no attempt made to stop the proceedings if the group altered the discussion topic.

Following the completion of both sessions, a short questionnaire was administered. The experiment was then explained to the participants and a general discussion of drinking usually followed. The participants were then

invited to view the videotape playback. Four of the groups participated in the drinking segment first and were later scheduled for the non-drinking sessions, usually the following day. The remaining six groups participated first in the non-drinking segment followed by the drinking sessions. All groups were informed not to discuss the nature of the experiment with other workers in the plant until the data for the ten groups was collected.

The Time Segments

During the non-drinking session, a thirty-minute audio-visual tape was used. The scoring phases were divided into three ten-minute segments (segments 1,2,and 3).

During the drinking session, a thirty-minute audio-visual tape was used. The scoring phases were divided into three ten-minute time segments (segments 4,5, and 6). Each ten-minute phase was recorded after twenty minutes of interaction time. Therefore, the sample represented one-third of the ninety-minute session. The rationale for the drinking sample segment procedure was of a twofold nature.

First, a twenty-minute period was the appropriate time necessary for the alcohol to begin entering the bloodstream. And secondly, time segment 3 of the drinking session would correspond to time segment 4 of the non-drinking segment.

Both were scored after twenty minutes of interaction time together.

The cost of the videotapes was also prohibitive for recording the entire drinking segments. The portable VTR unit used only a maximum reel size of thirty minutes, which made it difficult to change reels while observing the interaction simultaneously. All time segments were marked off with the use of a stopwatch.

The Method of Observation

To test the hypotheses defined previously, it was necessary to quantify the number of pro-social and anti-social acts which occurred during the sessions. The quantification of the acts which occurred is best handled using systematic observation methods.

Observation methods for the direct observation of group phenomena utilize two principal types of observation instruments: category systems and rating scales. Heyns and Zander (1953) describe a category system in the following manner:

> One of the most useful devices to describe qualitative social situations in quantitative form is that of coding the behaviour within separate categories.
>
> A category is a statement describing a given class of phenomena into which observed behaviour

> may be coded; a category system consists of two or more categories. A carefully developed category system provides a common frame of reference for observers and increases the likelihood that the relevant aspects of the total behaviour will be noted with reliability. (p. 389)

Rating scales as described by Heyns and Zander (1953) may also be effectively used to record quantified observations of a social situation. Simple rating scales often provide less reliable data than do well-developed category systems. Heyns and Zander further state:

> By the phrase "simple scale" we mean a scale with a set of points which describe varying degrees of the dimension being observed. (p. 393)

Rating scales are most often used to either record behaviour at frequent intervals throughout the sample of social interaction or to rate the entire social event after if has ended. Both observation schemes are referred to as systematic observation systems. Borgatta and Crowther (1965) have indicated that:

> . . . such systems of observation are not so much related to the testing of theories as to the provision of the opportunity for observing regularities that are themselves then considered to be the fundamental building blocks of theories. (p. 8)

In order to test the hypotheses defined the researcher has utilized a category system which was used in modified versions by both Takala (1957) and Bruun (1959) during

similar investigations. The original twelve-category system was used.

Interaction Process Analysis (IPA) is an observational scheme which enables a systematic categorization of the changes in the social-emotional and task areas of interaction.

Systems like Interaction Process Analysis define a "natural" unit of analysis, which may be a part of or total behavioural sequences or an arbitrary unit which can be incorporated into the observer's task. The Bales (1951) system defines as its unit a coherent thought or communication. Bales defines the unit to be scored as:

> ... the smallest discriminable segment of verbal or nonverbal behaviour to which the observer, using the present set of categories after appropriate training, can assign a classification under conditions of continuous serial scoring. This unit may be called an act, or more properly, a single interaction, since all acts in the present scheme are regarded as interactions. The unit defined here has also been called the single item of thought or the single item of behaviour. (p. 37)

The categories are meant to be a general-purpose framework for observation which can be used to obtain a series of standard indices regarding the structure and dynamics of interaction in any small group.

A small group is defined by Bales (1951) as;

> . . . any number of persons engaged in interaction with each other in a single face-to-face meeting or a series of such meetings, in which each member receives some impression or perception of each other distinct enough so that he can, either at the time or in later questioning, give some reaction to each of the others as an individual person, even though it be only to recall that the other was present. (p. 33)

The Bales set of categories is concerned with aspects of interaction so general that they will appear regardless of the type of small group or the topic under discussion. The measurement was used to show the variations in the social-emotional areas which are related to the hypothesized social-emotional changes during the alcohol drinking sessions. Each of the categories have been specifically defined by Bales (1951) pp. 177-195.

The Bales conceptual model defines a number of properties of the interaction of the groups analyzed. In an analysis of the positive or negative direction or the social-emotional areas of interaction, the categories are mutually exclusive. Every observed act can be classified in one of the twelve categories.

The system of categories used in the observation periods and their major relations are as follows:

Bales's Categories

A. Social-emotional area: positive reactions	1. Shows solidarity, raises other's status, gives help, reward.
	2. Shows tension release, jokes, laughs, shows satisfaction.
	3. Agrees, shows passive acceptance, understands, concurs, complies.
B. Task area: neutral, attempted answers	4. Gives suggestion, direction, implying autonomy for other.
	5. Gives opinion, evaluation, analysis, expresses feeling, wish.
	6. Gives orientation, information, repeats, clarifies, confirms.
C. Task area:neutral, questions	7. Asks for orientation, information, repetition, confirmation.
	8. Asks for opinion, evaluation, analysis, expression of feeling.
	9. Asks for suggestion, direction, possible ways of action.
D. Social-emotional area: negative reactions	10. Disagrees, shows passive rejection, formality, withholds help.
	11. Shows tension, asks for help, withdraws out of field.
	12. Shows antagonism, deflates other's status, defends or asserts self.

Scoring Procedure

The scoring of the videotapes was accomplished with the use of a Bales Gerbrands Interaction Recorder (1947). The apparatus consists of a case containing a driving mechanism for a wide paper tape upon which scores can be recorded. The list of the categories fits on top of this case. To the right of the list, the scores are marked down on the moving tape. As the score is marked down, the tape moves, leaving a space free for the next score. The researcher began scoring from the videotapes after two viewing sessions, the original observation and the immediate playback session. The tapes were then scored twice, at different times, in order to assure reliability. The actual scoring involves simply writing down the number of the initiator of the act and the target of the act, just opposite the category. The advantage of the immediate playback of the video data enabled the researcher to clarify any questionable categorization of a non-verbal or gestural sequence, which would otherwise be omitted during the original session or on the strictly audio playback.

The processing of the data was facilitated by transferring all scores to I.B.M. punch cards. One card was punched per score with the identification number and the initiator and target of the act. The data was then analyzed using

the Statistical Package for the Social Sciences (SPSS , 1970).

A total of 5,701 acts were scored during the six time segments or 600 minutes of total interaction scored. This averages out to 9.5 acts per minute.

Instrumentation

Recording Equipment

All sessions were recorded using a Sony videotaping system (Sony Video Camera Model AVC - 3400, a zoom lens, 12.5 - 75 mm., f/1.8, C-mount, a Sony AV - 3400 videocorder using a Sony Solid-State Transistor Video Monitor CVM - 110VA).

Audio input to the system was achieved using the Sony F96 omni-directional dynamic microphone, 600 ohms. Complete audio recordings were made with a Sony tape recorder using an F 96 omni-directional microphone.

The lighting used was three 200-watt spotlights directed upwards for a ceiling bounce, along with four six-foot fluorescent tubes.

The Bales Gerbrands Interaction Recorder

The Bales Gerbrands Interaction Recorder was developed for use in the observation of interpersonal behaviour. The machine provides a moving paper tape surface, 3" by 8", upon which scores may be written. The machine moves horizontally at a constant speed of twelve inches per minute. The scores are thus kept in time order, and disappear as the tape moves.

CHAPTER IV

The Hypotheses That Were Tested

In order to quantitatively test the notion that even small amounts of alcohol produce changes in and thus facilitate social interaction, the following null hypothesis was formulated.

1:1

H_o - There is no significant difference in the number of Bales interaction units scored during the drinking sessions sampled as compared with an equal amount of time during the non-drinking sessions sampled.

In accordance with the alcohol literature reviewed, the following alternative hypothesis was considered valid.

1:1

H_1 - As alcohol is used as a social facilitator, there will be a significant increase in the number of Bales interaction units scored during the group drinking sessions sampled as compared with an equal amount of time during the non-drinking sessions sampled.

Operationally Stated:

Scored interaction units as defined by Bales (1951) 12-item category system will show a significantly greater number of interaction units (combined categories 1 - 12) during the drinking sessions (group scores for time segment 4) than during the non-drinking sessions (group scores for time segment 3). Both drinking and non-drinking sessions were ten minutes in duration for each of the ten groups and each was scored after twenty minutes of interaction time together.

A review of the literature indicates that the effect of alcohol reduces inhibitions and facilitates interaction in general. It was assumed that alcohol would significantly increase the amount of pro-social behaviour. The following null hypothesis was used to test this assumption:

1:2

H_o - There is no significant difference in the number of Bales pro-social interaction units scored during the drinking sessions sampled as compared with an equal amount of time during the non-drinking sessions.

General observations of drinking behaviour have led us to the notion that moderate amounts of alcohol will promote

pro-social behaviour within groups. The following hypothesis was considered to be indicative of the behaviour within the drinking groups.

1:2

H_1 - As alcohol is used to promote pro-social behaviour within groups, the number of Bales pro-social interaction units scored during the drinking sessions sampled will significantly increase as compared with an equal amount of time during the non-drinking sessions.

Operationally Stated:

Scored observations of pro-social behaviour as defined by Bales (1951) 12-item category system will reveal a significantly greater number of (A)-acts (combined categories 1,2,3) during the drinking sessions (group scores for time segment 4) than during the non-drinking sessions (group scores for time segment 3). Both drinking and non-drinking sessions were ten minutes in duration for each of the ten groups and each was scored after twenty minutes of group interaction time together.

A review of the literature indicates the effect of alcohol reduced inhibitions and facilitates interaction

in general. It was assumed that alcohol would significantly increase the amount of anti-social behaviour. The following null hypothesis was used to test this assumption:

1:3

H_o - There is no significant difference in the number of Bales anti-social interaction units scored during the drinking sessions sampled as compared with an equal amount of time during the non-drinking sessions sampled.

Anti-social behaviour is often equated with the drinking of alcohol. The following hypothesis was considered also indicative of the behaviour within the drinking groups.

1:3

H_1 - As alsohol is often closely equated with anti-social behaviour within groups, the number of Bales anti-social interaction units scored during the drinking sessions sampled will significantly increase as compared with an equal amount of time during the non-drinking sessions.

Operationally Stated:

Scored observations of anti-social behaviour as defined

by Bales (1951) 12-item category system will reveal a significantly greater number of (D)-acts (combined categories 11,12,13) during the drinking sessions (group scores for time segment 4) than during the non-drinking sessions (group scores for time segment 3). Both drinking and non-drinking sessions were ten minutes in duration for each of the ten groups and each was scored after twenty minutes of group interaction time together.

The literature in the field of alcohol use and abuse often explores the relationship between drinking and anti-social behaviour. In order to further analyse the significant increase in anti-social acts as defined by Bales categories 11,12,12 (D)-acts in the preceeding hypothesis, the following null hypothesis was formulated. The relationship between the amount of alochol consumed and the level of anti-social behaviour as manifest during drinking sessions was explored.

2:1

H_o -- There is no significant difference in the amount of Bales anti-social interaction units as the amount of alcohol consummed increases.

It was assumed that as the groups ingested more alcohol, the levels of anti-social behaviour would increase. Certainly the social interaction would be less inhibited. The

following alternative hypothesis was considered to be valid.

2:1

H_1 - The amount of Bales anti-social interaction units will increase proportionally to the time spent drinking. As the amount of alcohol consumed increases, a significantly greater number of anti-social acts will be scored.

Operationally Stated:

Scored observations of anti-social behaviour as defined by Bales (1951) 12-item category system will reveal a significantly greater number of (D)-acts (combined categories 10,11,12) as the amount of alcohol increases from time segment (4) to time segment (5) to time segment (6). Each time segment was ten minutes for each of the ten groups and scored following twenty minutes of interaction time together.

As alcohol reduces inhibitions, it was assumed that initiators of anti-social acts, specifically category (12)- Shows antagonism, would tend to address a greater number of anti-social acts to targets within the groups that to targets outside the groups during the drinking sessions.

An outside target would be a person who was familiar

to the members of the group but not necessarily on a personal basis and not present during the sessions. The following null hypothesis was formulated to quantitatively test this assumption:

2:2

H_o - There is no significant difference in the number of anti-social acts, category (12) addressed to targets present during the drinking sessions and the number of anti-social acts, category (12) addressed to targets not present during the drinking and the non-drinking sessions.

The following alternative hypothesis was considered to be valid based on the ability of alcohol to lower inhibitions and therefore increase the number of antagonistic acts directed within the group.

2:2

H_1 - There will be a significantly greater number of anti-social acts, category (12) addressed to targets present during the drinking sessions than to outside targets not present during the drinking sessions.

And, as a corollary of H_1, the following hypothesis:

H_{1a} - There will be a significantly lower number

of anti-social acts, category (12) addressed to targets present during the non-drinking sessions than to outside targets not present during the non-drinking sessions.

Operationally Stated:

Using Bales (1951) 12-item category system, scored units of category (12) - Shows antagonism, deflates other's status, defends or asserts self, will reveal a significantly greater number of acts of antagonism addressed to members within the group, inclusive of persons (1 to 4 or the group as a whole) during the drinking sessions than to persons familiar to the group but not present during the drinking sessions (scored as (5) - received, outside target). The comparisons made between the drinking and the non-drinking segments will be inclusive of the total scores in category (12) for time segments 1,2,3 and time segments 4,5,6, the total segment time for the non-drinking and drinking sessions scored being equal.

CHAPTER V

Discussion and Results

This chapter will deal with the results of the analysis of data used to test the five hypotheses designed to measure general behavioural changes associated with alcohol use. The comparative and descriptive statistics were pooled for the ten groups studied. The significance of the results were tested with the use of the t-test of the hypothesis that a mean difference is zero as suggested by Gourvitch (1965) p. 235, and the F test, an analysis of variance using raw data as also suggested by Gourvitch (1965) p. 235. Significant percentages were reported with obvious differences without further analysis. In specific groups that were definite exceptions to the directionality of the hypothesis the observer's notes were used to account for these exceptions and to supplement the discussion of results.

Table 1:1

A comparison of the total number of interaction units scored, inclusive of categories 1 - 12, during the non-drinking time segment 3 and the drinking time segment 4.

Group Number	Time segment 3 Non-drinking Total Group Interaction Units	Time segment 4 Drinking Total Group Interaction Units
1	84	115
2	84	116
3	68	92
4	103	113
5	96	78
6	94	86
7	86	109
8	111	107
9	82	117
10	65	101
Total interaction units	n= 873	n= 1034

(t= 2.57, df = 9) (P. = .02) for a two-tailed test.

Hypothesis H_o was rejected.

Level of significance = .05

Results of the comparison of the ten experimental groups on the total number of scored interaction units during the non-drinking and the drinking sessions revealed there was a significantly greater number of interaction units scored during the drinking sessions. Table 1:1 scores represent the verbal output and the scores assigned to the non-verbal behaviour combined. The evidence is supportive of theories about the facilitating effects of alcohol and shows a definite pattern of increased interaction among seven of the ten groups. Further examination of the table reveals three groups in which the interaction did not increase in the number of units scored. Group numbers 5,7 and 8 did not increase. The time the drinking sessions were scheduled might have influenced these particular groups. The drinking sessions were scheduled after the afternoon shift. As some of the men in these groups were in the process of changing shifts from the morning to the afternoon it was reasonable to assume that some were tired and perhaps not as alert to participate. Using only groups on the same shifts might have controlled for this effect. Further analysis of the interaction profiles revealed that these groups did not increase their interaction levels during time segments five and six. This trend eliminated attributing the variation to a slower pace which would have decreased the influence of the alcohol during the initial drinking segment scored.

Table 1:2

A comparison of the combined categories 1,2,3 A-acts scored during the non-drinking time segment 3 and the drinking time segment 4.

Group Number	Time segment 3 Non-drinking Total Group Scores of A-acts	Time segment 4 Drinking Total Group Scores of A-acts
1	2	4
2	17	11
3	8	14
4	12	15
5	32	4
6	18	8
7	14	14
8	14	15
9	15	21
10	8	26
Total number of A-acts scored	n= 141	n= 131

(t = .85, df = 9) (P. = .40) for a two-tailed test.

The null hypothesis was not rejected.

Level of significance = .05

The comparison of the ten groups during the drinking sessions and the non-drinking sessions is shown in Table 1:2. In terms of the number of pro-social units scored, the categories did not represent a significant difference. The finding were not consistent with the general expectations.

On the basis of the theoretical notions that the conversation would become more convivial in respect to the pro-social levels defined by categories 1,2, and 3, increases were scored in six of the ten groups. Only three of the groups showed a relatively marked change. One of the groups maintained the same level in these categories and three of the groups decreased in their levels of pro-social behaviour. The total number of observations for these categories were very close for the two segments scored. As the theoretical evidence for the changes has substantial empirical support it was assumed.

The first possible explaination for the lack of change within the groups was the fact that these men were in friendship groups. Differences might not be as readily observable as in groups of strangers. Friendship groups, because they maintain a high level of pro-social to begin with undoubtedly do not require the use of alcohol to increase pro-social behaviour as in the case when alcohol is consumed in groups of strangers. Repetition of the

experimental situation among groups of strangers may very well show a significant increase in the prosocial levels.

The obvious effect of harmonious interpersonal relationships is that interaction is easier among persons who are attracted to each other. An excellent example of this is the study by Deutsch (1949) in which he created cooperative and competitive groups. Observers who rated the discussions reported "significantly fewer communication difficulties" in cooperative that in competitive groups. Festinger (1950) also reports that communication difficulties are reduced among friends.

As the total number of scores are almost identical it could be assumed that friendship groups do not manifest as marked a change in their pro-social levels while drinking.

The second possibility influencing the groups was the obvious lack of scores designated in the first category, which is shows solidarity, raises other's status, gives help, reward;. An explaination for this may be found in observations made by the researcher while working in industrial settings. In all male shops overt friendly behaviour towards peers often becomes a target for ridicule. Commradely ties are more likely to be masked with aggressive gestures or verbalizations, especially in the company of others. An obvious example of this was when one of the groups spent a large portion of their drinking time openly criticising a member of the group, when the questionnaires were later

administered, all of the members of the group included him in their sociometric preference as a drinking companion. Wolfgang and Ferracuti (1967) write about the significance of a jostle, or a slightly derogatory remark being perceived differently in different social classes and by women differently than men.

If the number of solidarity scores were so obviously low this may be a trait common to the industrial work groups which is not accounted for in the largely middle class discussion that have been studied by Bales.

There was no conclusive explaination as to why the level of pro-social behaviour did not significantly increase. It would appear rather sweeping to generate conclusions about the lack of change in these particular groups without further expirical support. A tailor made category system which refined the classification of pro-social acts would probably have been more effective in detecting these subleties common to working class groups. On the other hand further exploratory research on these types of groups could define variables that would explain this lack of change if it is not a function of culture bias in the system.

Table 1:3

A comparison of the combined categories 11,12,13 D-acts acored during the non-drinking time segment 3 and the drinking time segment 4.

Group Number	Time segment 3 Non-drinking Total Group Score of D-acts	Time segment 4 Drinking Total Group Score of D-acts
1	14	35
2	4	8
3	2	4
4	6	21
5	-	6
6	-	3
7	14	23
8	6	5
9	4	2
10	-	-
Total number of D-acts scored	n= 50	n= 107

(t. = 2.49, df = 9) P. = .05) for a two tailed test

Hypothesis H_o was rejected.

Level of Significance = .o5

The comparison of the ten groups during the two different sessions on the number of anti-social interaction units is shown on Table 1:3. This overall difference as expected shows a significant change in the anti-social behaviour attributable to alcohol. The evidence lends support to the theoretical explainations relating to the disinhibition of thoughts and feelings and the altering of control over the behaviours. Examination of the table reveals increases in seven of the ten groups scored. Two of the groups revealed slight decreases in the number of units scored. In one group there was no scores recorded in this area. Although there was a significant increase in the total number of units scored caution must be exercised in the interpretation of the results.

In looking at these changes it is essential to further examine the high scores of select individuals. Anti-social behaviour is not evenly distributed throughout the group members. In general the content of the interaction reveals a trend towards a greater amount of anti-social behaviour throughout the entire drinking session, but this phenomena is almost consistently attributable to persons who are observably more aggressive even during the non-drinking sessions. The categories of course still measure change even among the high scoring persons in the control situation.

In order to exclude individuals with known histories of violence or excessive aggression patterns while drinking, the union stewards were requested to exclude individuals they could identify as known troublemakers when drinking. Individuals who were defined by them as excessive drinkers were also excluded. The analysis was designed to also include two different aggression scaled with measured attitudes. The scales were defined by Walters and Zaks (1959) and Bruun (1959) bu the analysis and correlations with the group and individual anti-social scores did not discriminate any proclivity to overt anti-social behaviours. When individual anti-social acts were ranked and correlated with the Walters and Zaks (1959) scale, only four participants were identified as manifesting high aggression scores along with high anti-social acts scored. The Bruun (1959) aggression items were also deleated because of misleading information on the validation of the results.[1] The required information as reported in Bruun's disertation was not available until after the questionnaires were administered.

Observations during and after the sessions failed to identify any of the participants as behaving in unusually anti-social ways. Verbal disagreement which is common in all area, working class taverns was obviously present, bu[illegible] one case of physical aggression was reported. [illegible]llow up of behaviour, which occurred

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[1]The aggression scale items are not fully discussed in Bruun's article , The Significance of Roles and Norms the Small Group for Individual Behavioural Changes while Drinking. Q.J.S.A. XX (1959), 53-64.

after one of the groups left the experimental session but continued on to the tavern. A fight occured but did not involve another member of the group.

The changes in the emotional texture of the drinking sessions could easily be identified by other indirect measures such as the level of vioces which increased during the drinking sessions. An analysis of the content of the discussions consistently included discussions of violence. Caution must be exercised in the interpretation of the observations especially in referring to working class groups and anti-social behaviour. Most of the observations made of discussion task groups have been with middle-class subjects. To say that the trend of working class drinking groups to display excessive anti-social or violent behaviour is without support.

As observed many times by the researcher in similiar kinds of groups the normative expectation of topics discussed other than the work situation follow a close pattern; sex, drinking habits and violence are almost consistently included in tavern conversation topics. The conversation during the drinking sessions consistently included violence, especially in terms of the use of guns. During the drinking sessions the conversation was also more revealing and included many references to deviant acts, some of which were highly revealing disclosures, especially since they knew the conversation was being recorded

It was not the direct purpose of this particular analysis to include all these other measures but rather test the validity of the category system used in discriminating overall changes.

Specific conclusions on the levels of anti-social behaviour as manifest in the groups cannot be made without using repeated measures on other types of drinking groups.

It will be necessary to repeat these measures within different social classes and control for many different variables before specific generalizations can be made to working class drinking groups. A collection of similiar measures among several types of small-groups would considerably increase our knowledge of the social drinking situation. Which at this time seem long on theory and short on empiric observation.

Table 2:1

A comparison of the combined categories 11,12,13 D-acts scored during the drinking time segments 4,5 and 6.

Group Number	Time segment 4 Drinking Total Group Scores of D-acts	Time segment 5 Drinking Total Group Scores of D-acts	Time segment 6 Total Group Scores of D-acts
1	35	12	24
2	8	7	19
3	4	5	14
4	21	20	6
5	6	2	1
6	3	5	7
7	23	13	33
8	5	5	-
9	2	7	4
10	-	3	9
Total number of D-acts scored	n= 107	n= 79	n= 117

($F.$ = .40) with 2,27) df, a non-significant value.

Source of Variation	Sum of Squares	df	Variance Estimate	F
Time segments	76	2	38	.40
Group differences	2517	27	93	

The analysis of variance for the three time segments during the drinking sessions on the number of anti-social interaction scores is shown in Table 2:1. This overall similarity among the three time segments was inconsistent with expectations based on a general review of the literature It was expected that the number of anti-social acts would increase proportionately with the increasing amount of alcohol ingested. The evidence does not support the notion of losing control over the emotions with larger doses of alsohol, at least for the amount of alcohol available for a fixed time of one and a half hours of drinking.

In the ~~first~~ drinking segment the alcohol was just beginning to alter the texture of the interaction, however there was a greater number of anti-social acts than in the second drinking segment scored. The total number of anti-social acts decreased in this segment. It is possible that this segment could very well be representative of the relaxation associated with the initial phase of alsohol ingestion. If this was the case then the first segment or the initial period when the alcohol begins to enter the blood should be further examined in terms of the possible influences the drinking setting itself has on the expression of anti-social behaviour. Further analysis of the whole aura of the drinking experience could possibly explain behavioural changes in terms of the social contagion present

even before the alcohol has entered the blood. The last segment scored indicates an increase in the total number of anti-social acts. Six of the groups increased in the amount of anti-social behaviour from the fifth segment but not much more than the level in the initial drinking segment.

Table 2:2

Percentage differences of the total number of antagonistic acts (category 12) directed to targets present during the interaction and to outside targets not present during the interaction, during the total drinking and non-drinking segments.

Non-drinking segments 1,2,3	Within Group Target 8.3	Outside Group Target 91.6	Total n= 84
Drinking segments 4,5,6	Within Group Target 39.6	Outside Group Target 60.3	Total n= 164

The comparison of the number of antagonistic acts directed to targets present during the interaction and the targets not present during the interaction is shown in Table 2:2. The results were consistent with the expected change attributed to the disinhibition of thoughts and feelings with the use of alcohol. A target object was defined by Bales (1951) as;

> ...the focus of the situation i.e., other or in-group, or outer situation, or the process of action itself which the actor aims to affect or change, or which is affecting and changing him and to which he is therefore giving primary attention in the present momentary act.(p.30)

An outside target was a person who was not present during the interaction but known to the members present but not necessairly on a personal level. These outside targets were scored as the target objects of antagonistic statements directed towards them.

A commonly scored example of this was an antagonistic or derogatory statement made about a particular forman during the course of the conversation. The statement being received by other group members, byt the antagonistic remark being directed to an outside target..

Results of the comparison of the ten experimental groups on the number of scored anti-social acts, actegory 12, addressed to targets present during the drinking sessions

a significantly greater number of acts addressed to outside targets, a difference of 30.7 per cent.

Results on the comparison of the non-drinking sessions also revealed a significantly greater number of acts addressed to outside targets, a difference of 83.3 per cent.

The number of within group targets increased during the drinking sessions by 31.3 per cent.

The number of outside group targets during the drinking ssessions by 31.3 per cent.

Certainly it can be said that a drinker is more likely to say what he thinks in terms of addressing an antagonistic remark to another member of his group.

Summary of the results given in this chapter are as follows:

1:1 The total number of interaction units increased in the initial-drinking time segment as compared to the non-drinking segment.

1:2 The number of pro-social interaction units did not significantly increase during the drinking sessions.

1:3 The number of anti-social interaction units significantly increases during the drinking sessions.

2:1 The analysis did not establish significant variance in the number of anti-social acts while drinking. Behaviour changes are evident in the anti-social area after alcohol is consumed but change did not occur with increasing amounts consumed.

2:2 There was a significantly greater number of antagonistic acts, category 12, directed to members inside the group during the drinking sessions, as opposed to outside targets.

CHAPTER VI

Exploratory Analysis of Roles

This chapter will explore some of the attributes of specialized roles within the drinking groups. As all of the groups existed prior to the experimental sessions, certain roles were already assumed by group members. The original design of the experiment was to analyze several types of leadership and isolate patterns which were identified from the data collected. It became obvious to the researcher that analysis of other identified roles such as the task leader and the leader in the groups would require a separate treatment. The analysis was therefore limited to what will later be defined as the drinking group leader and the drinking group isolate. As the analysis only deals with a small population of leaders and isolates, all of the ramifications of these roles were not discussed.

The analysis revealed some interesting exploratory data on the differences of enacted pro-social and anti-social behaviour within these roles defined. The task was to quantitatively identify the roles within the group from the sociometric choices made and to present the behaviour in the social-emotional areas.

The identification of roles within a small group structure is extremely useful in developing descriptive models of behaviour expected in various situations. Easily identified roles, such as that of a foreman in an industrial work group, fit into a broader categorization of roles usually described as formal roles. The focus of this chapter is the description of informal roles as identified by the sociometric question of the participants. The two roles focused upon in this chapter are what will be defined as the drinking group leader and the drinking group isolate.

According to Dunphy (1972), the most frequently used method of describing role behaviour is the interaction profile (p. 193). When a summary is made of the percentages of each type of act initiated by the identified role occupant, the characteristic behaviour of the role can be defined. The more interaction profiles that can be gathered on the defined "enacted roles", the more confidence the researcher will have that the specific behaviours are characteristic of the roles.

A similar use of interaction profiles was made in the analysis of Slater (1956). Slater identified major informal roles by having members rank themselves and all other members after each meeting according to ideas, guidance ability, and liking. He found that the principal kind of

differentiation which occurred was a separation of the ranking of likes from the ranking of other measured characteristics. The "idea specialist" and "best-liked man" were identified as key roles in the group and interaction data was used to construct composite interaction profiles for these two informal roles.

In a similar experiment to Slater's, White and Lippitt (1953) trained four adult leaders in three leadership styles to work with four groups of ten year-old boys. The enacted roles were then observed and quantitatively scored. Profiles of enacted behaviour were then made of the three leadership styles.

The analysis of the two identified roles "drinking group leader" and "drinking group isolate" was calculated from the composite percentage of total enacted behaviour in categories 1,2,3 (A) and categories 4,5,6 (D). A comparison was made in these categories of the total time in the non-drinking sessions and total time in the drinking sessions. Nine drinking leaders and nine drinking isolates were identified. Only one of the groups did not present clear evidence of a group leader-isolate pattern.

Gibb (1958) defines leadership in the following manner:

> . . . leadership is a concept applied to the structure of a group to describe the situation when some personalities are so placed in the group that their will, feeling and insight are perceived to direct and control others in the pursuit of common ends. Leaders in the group are those persons who are perceived most frequently to perform roles or functions which initiate and control behaviour of others towards the achievement of group goals and subgoals. (p. 214)

A drinking group leader was operationally defined as a participant within the group who was identified by at least two other members in the group as their first choice in response to the question: "Which person from your drinking group would you prefer to go out and drink with?"

Six of the nine drinking leaders initiated the highest amount of overall interaction during the drinking sessions. Five of the nine drinking leaders also initiated the highest amount of overall interaction during the non-drinking sessions.

LaPiere (1954) defines isolation as a

> . . . failure of the individual, through inability, preference or whatever, to establish and maintain communication with those about him. (p. 330)

A drinking group isolate was operationally defined as a participant within the group who was not mentioned by any of the other members in response to the question: "Which

person from your drinking group would you prefer to go out and drink with?"

Seven of the nine drinking isolates initiated the lowest amount of overall interaction during the drinking sessions. Eight of the nine drinking isolates initiated the lowest amount of overall interaction during the non-drinking sessions.

Although the identification of these roles was based on the choice of the participants, the experimenter's notes confirmed these leader - isolate patterns. During the drinking sessions, eight of the nine leaders sat immediately next to the bar table. These people often poured the drinks and consistently controlled the pace of drinking by key phrases such as "drink up" or "time for another".

The isolates in six of the nine cases sat away from the bar table in seats numbered one or two. These subjects consistently maintained very low levels of interaction during the sessions.

Table 3:1

Percentage of Pro-Social Acts (Combined Categories 1,2,3) Initiated By Drinking Group Leaders and Isolates During The Non-Drinking and The Drinking Group Sessions

	A-acts Drinking Group Leaders	A-acts Drinking Group Isolates	A-acts Others	A-acts Total
Non-drinking sessions 1,2,3	47.3	4.2	48.5	n= 329
Drinking sessions 10,11,12	39	14.9	66.1	n= 343

Leaders decreased the number of A-acts 8.3 percent.

Isolates increased the number of A-acts 10.7 percent.

Table 3:2

Percentage of Anti-Social Acts (Combined Categories 11,12,13) Initiated by Drinking Group Leaders and Isolates During The Non-Drinking and The Drinking Group Sessions

	D-acts Drinking Group Leaders	D-acts Drinking Group Isolates	D-acts Others	D-acts Total
Non-drinking sessions 1,2,3	47	3.8	49.2	n= 157
Drinking sessions 10,11,12	49.3	12.9	37.8	n= 272

Leaders increased the number of D-acts 2.3 percent.

Isolates increased the number of D-acts 9.1 percent.

The comparison of the nihe drinking group leaders and the nine drinking group isolates on the number of pro-social acts shows in Table 3:1.

The comparison of the nine drinking group leaders and the nine drinking group isolates on the number of anti-social acts is shown in Table 3:2. The increase in the number of D-acts also appears to be just under the significant level.

The overall differences as expected shows that isolates change their level of aggression more than the leaders, which is generally consistent with the findings of Bruun (1959).

Conclusion

The hypotheses formulated and their results quantifiably measure the general changes in behaviour due to the consumption of alcohol. The experimental design of this study was largely based on the work of Takala (1955) and Bruun (1959).

In the areas analysed, the researcher demonstrated direct confirmation of Bruun's results. Hypothesis 1:3 supports his findings that due to the consumption of alcohol, the proportion of negative reactions of the group members' total interaction is increased. The results of Hypothesis 2:1 support his findings that the amount of alcohol consumed has no significant relation to the magnitude of change in the proportion of negative reactions.

Tables 3:1 and 3:2 are similar to his conclusions that leaders and isolates differ from each other not only in the degree of emotionality displayed, but also in the degree of change in emotionality during the course of the drinking sessions. It must be remembered, however, that Bruun used a different operational definition of drinking group leader based upon a more substantial identification of roles, using sociometric data.

Although these findings are similar to the results presented by Takala (1957) and Bruun (1959), and are generally based upon the same assumptions about the effects of alcohol, this study was not a replication. In spite of some deficiencies in the area of role analysis, in comparison with these earlier studies, the researcher has made direct methodological improvements, notable in the areas of more efficient collection and analysis procedures afforded by the use of videotape.

There are several concluding remarks that should be discussed in terms of the methodology used in this analysis.

1. A quantification of observed behaviour as demonstrated in this analysis with the use of a category system has added a high degree of objectivity to statements made about behavioural changes during the course of drinking in a group. This analysis has presented a method of time segment analysis which can both measure conversation after a fixed interval in the pretest and posttest sessions as well as further changes which can be expected with increasing amounts of alcohol ingested.

2. As the groups studied were screened and selected by other workers (union stewards) who were aware of the needs of the researcher as well as the dynamics of these various

drinking groups the data was descriptive of actual drinking behaviour. These groups were not artifically assembled for a laboratory study.

3. There were many difficulties in using the Bales system of Interaction Process Analysis that should be dealt with before undertaking a research problem. In the first place the researcher must be able to spend a considerable amount of time learning proper scoring procedure. Although the advantages of videotape recording makes the task far easier than having to depend only on the initial situation and subsequent audio recordings, the training time is far to lengthy to undertake short term projects. Category scoring, especially with four-member groups is a job that requires constant practice.

4. It must be remembered that all findings are independent of individual differences in blood alcohol levels. Any attempt to make such measurements would have been destructive to the spontaneous flow of conversation. The task was to study the group as it actually interacts not to make individual evaluations which would have called attention to personal drinking habits.

5. A considerable portion of the data was not analysed in terms of the changes manifest in the neutral task areas,

especially the general decreasing trend in the drinking sessions of the number of questions asked, in the neutral task areas.

6. An unfortunate aspect of this type of analysis is that it does not include more descriptive material in terms of the content of the conversation and the general dynamics involved in worker's drinking groups. The focus of this analysis was to measure a basic question asked among alcohol researchers, that is, to what extent do members of a particular group change in terms of interpersonal relations while drinking. By measuring the groups as they interact both with and without alcohol this type of analysis can define the perpherial dimensions of the group drinking experience. Once changes have been determined further analysis can then procede to the question of content and closer examination of the many variables altering group drinking patterns.

Whatever theoretical beliefs we have about alcohol it must be realized that there is little empirical evidence to clarify either disinhibition theories or the assumption that alcohol facilitates both pro-social and anti-social behaviour. Descriptions of drinking habits are virtually nonexhistant in terms of this particular type of analysis. There seems to be ample emphasis on all other areas of alcohol research but little effort has been placed on defining the everyday drinking habits common to all types of occupational strata.

APPEXDIX A

Alcohol Consumed

Chemical tests are perhaps the only means of obtaining objective measures of the amount of alcohol in the system of the subject. As exact chemical measures were not deemed necessary for this inquiry, blood alcohol levels were not chemically determined. Approximations of the blood alcohol levels were made based on the average of the total amount consumed at the beginning of each of the three time segments sampled. The interaction scoring commenced after twenty minutes, which is the lapsed time necessary for alcohol to enter the bloodstream in most cases.

During the 900 minutes of total drinking time, the forty participants consumed 3,188 ounces of beer, 160 ounces of wine and 164 ounces of spirits. This was an average of 6½ bottles of beer (12 ounce bottles), 4 ounces of spirits, and 4 ounces of wine per person.

To convert ounces of beverage to absolute alcohol, the following average values were employed for beverages sold in Ontario:

Beer - 5% alcohol by volume

Wine - 16% alcohol by volume

Spirits - 40% alcohol by volume.

Based on these averages and the average amount consumed by each group, it was estimated that the participants' blood alcohol levels for time segment 4 would roughly correspond to 0.05 or less; for time segment 5, 0.05 to 0.09; and for time segment 6, 0.09 to 0.21. The A.M.A. maintains that a blood alcohol level of 0.10 per cent should be accepted as prima facie evidence of alcoholic intoxication.[2]

2 A.M.A. recommendation cited in Aspects of Alcoholism, (Philadelphia, Lippincott: 1963), p. 54.

APPENDIX B

Directives Given to the Union Stewards As to the Composition of the Groups

That the use of alcohol has not become a problem for anyone, but that all members are, so to speak, normal drinkers;

That all members of the group have on at least one previous occasion been drinking together;

In addition to the above conditions, it would be considered desirable that all members of the group on occasion spend their leisure time together.

APPENDIX C

The Reliability of the Scoring

The scoring was done after two viewings of the interaction - the live situation and a video playback of the tapes. The scores were then rechecked at periodic points and rescored if there were numerous inconsistencies. The experimenter was not able to find an independent scorer familiar with the Bales method which involves a considerable amount of training time. The advantage of the electronic playback more than compensated for this fact.

Another distinct advantage during the scoring was the degree to which the scorer could assume the role of the generalized other. Having been employed as an autoworker on several occasions in the past proved to be a valuable asset. The reliability of the scoring ultimately depends on the training which the observer acquires and the degree to which the observer attempts to assume the role of the generalized other. According to Bales (1951),

> . . the observer tries to think of himself as a generalized group member, or insofar as he can, as a specific other to whom the actor is talking, or toward whom the actor's behaviour is directed, or by whom the actor's behaviour is perceived. The observer then endeavours to classify the act of the actor according to its instrumental or expressive significance to that other group member. (p. 39)

APPENDIX D

Numeric Coding Procedure For IBM Punch Cards

Column 1	Group number 1 2 3 4 5 6 7 8 9 0
Column 2	Group number 1 - 9 = space, 1 = 0
Column 3	Non-drinking = 1 Drinking = 2
Column 4	Time segment 1 2 3 4 5 6 (1,2,3 Non-drinking) (4,5,6 Drinking)
Column 5	Category number 1 2 3 4 5 6 7 8 9
Column 6	Category number cont'd. 0 = 10; 1 = 11; 2 = 12
Column 7	Initiator of act 0 1 2 3 4
Column 8	Target of act 0 1 2 3 4

APPENDIX E

Scoring Designation of Participants

The actor is designated by the assigned number 1,2,3,4.

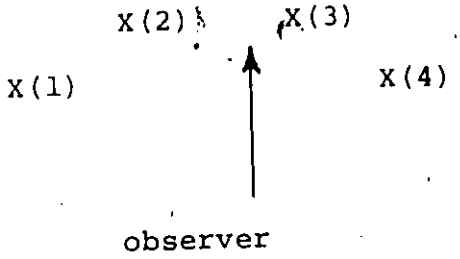
The self is designated by the letter "y".

The other is designated by the assigned number 1,2,3,4.

The in-group as a whole is designated by the symbol "0".

The other(s) not present and in the out-group, the outer situation and the observer are all designated by the number "5".

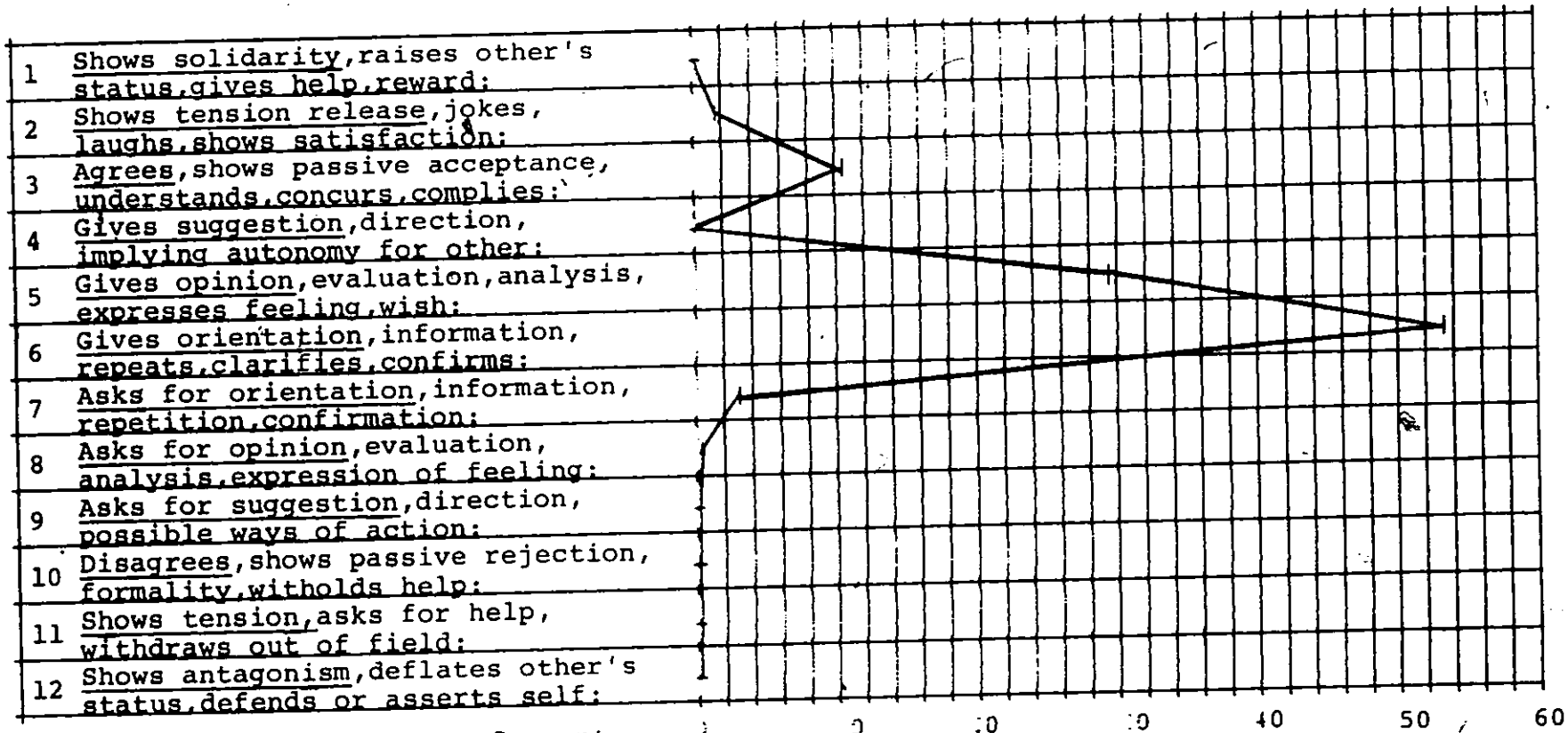
All videotapes were scored in this manner:



Bales's Category System

Interaction Profile (four persons)

Chart # 1 Group # 1 ession non-drinking me -0 min. Segment 1)

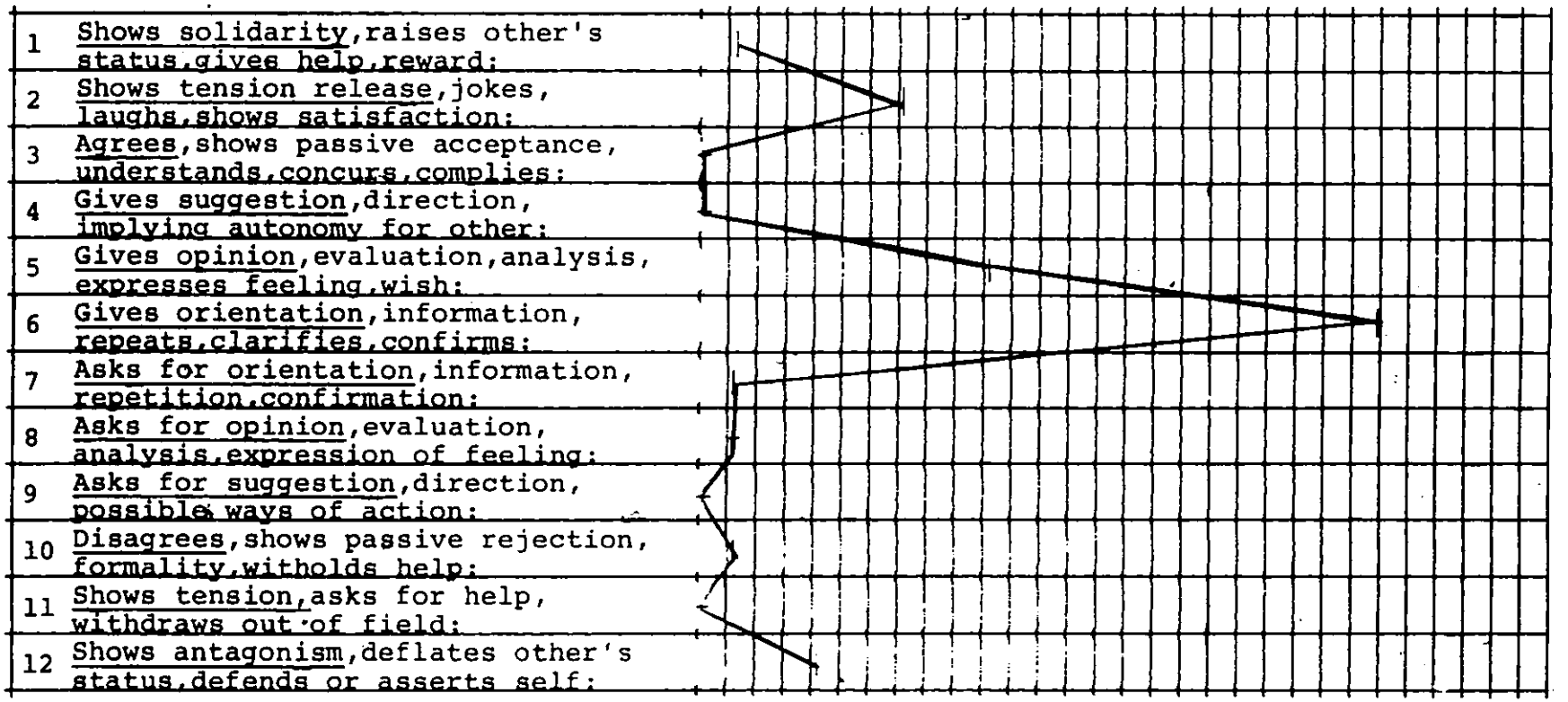


N = 107

Bales's Category System

Interaction Profile (four persons)

Chart # 2 Group # 2 Session Non-drinking Time 20 min. (Segment 1)

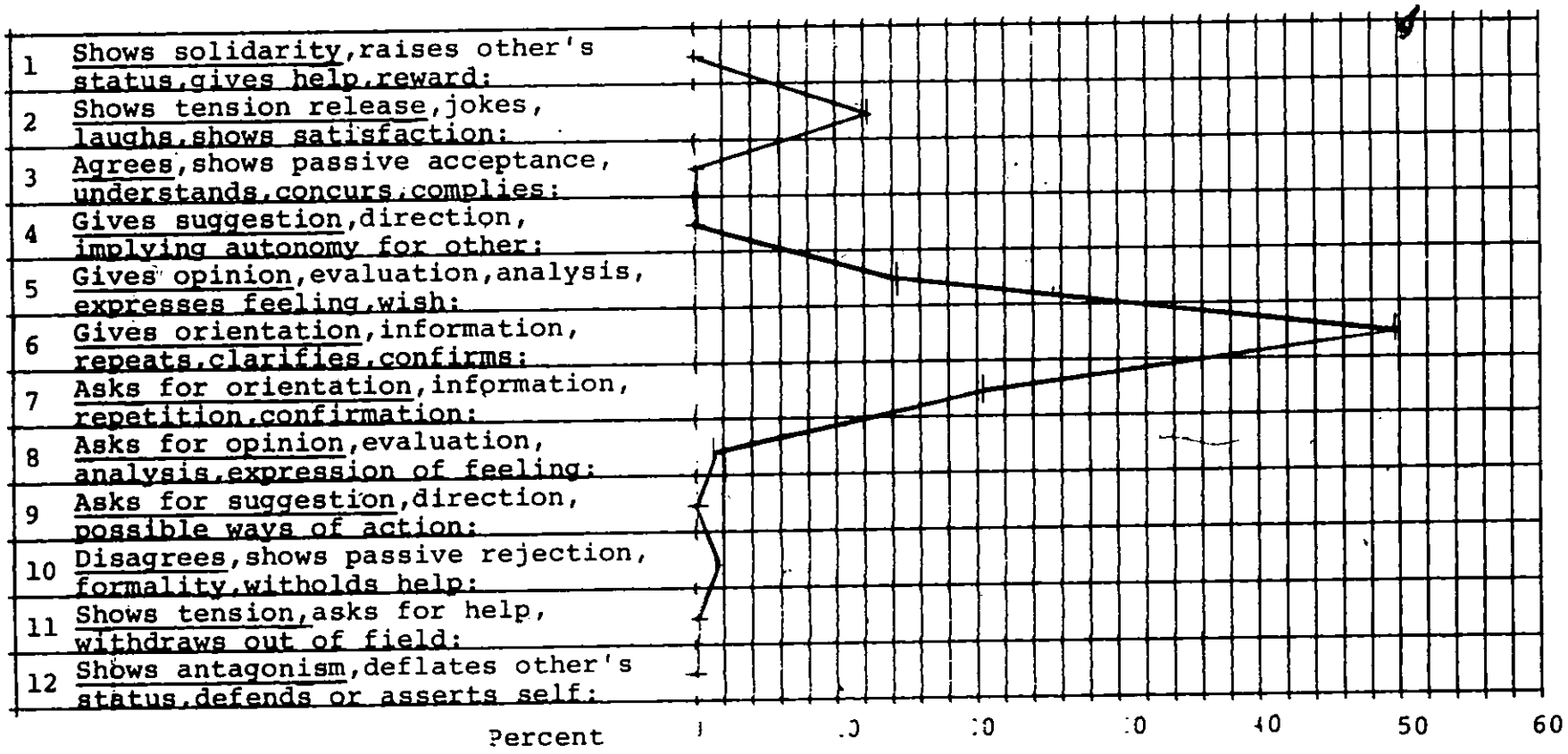


N = 82

Bales's Category System

Interaction Profile (four persons)

Chart # 3 Group # 3 Session non-drinking Time 40 min. (Segment 1)

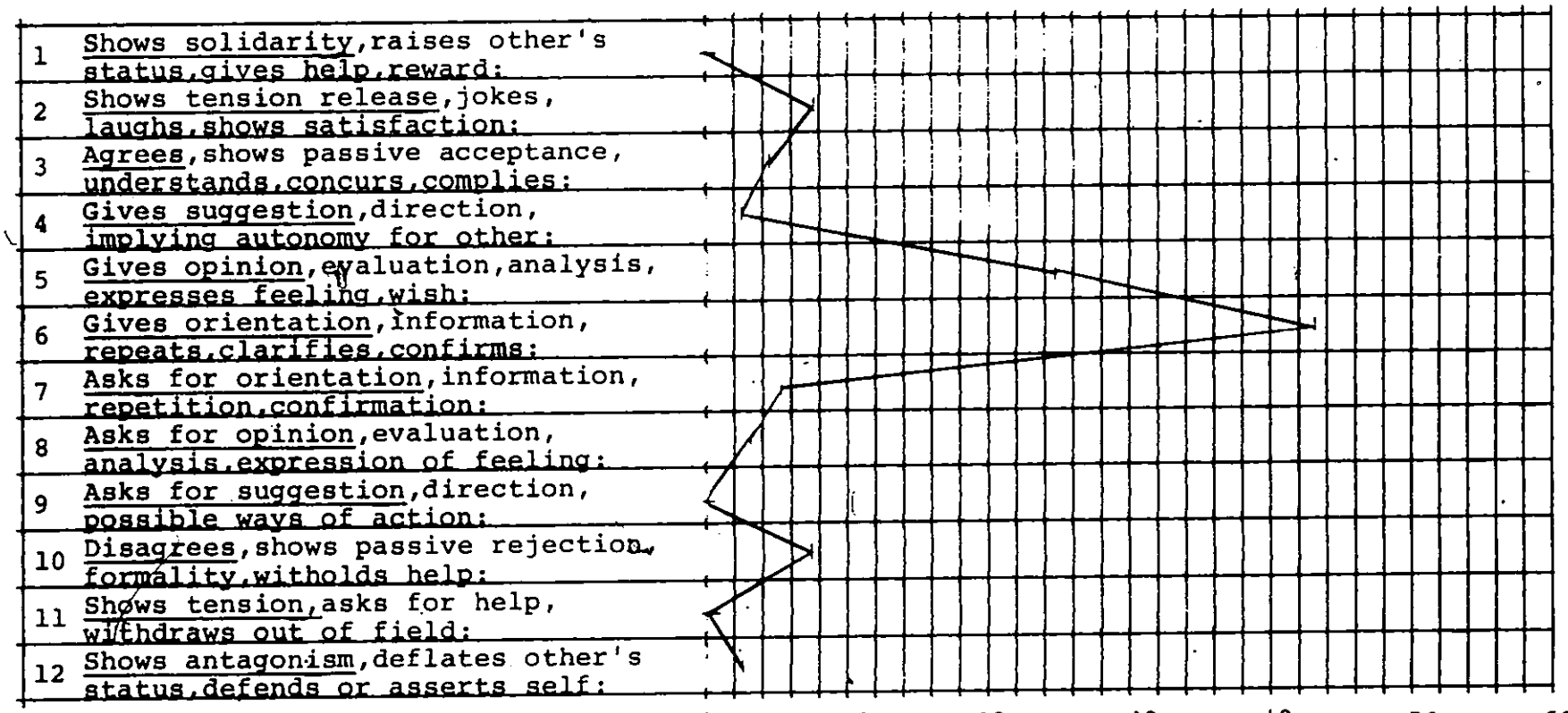


N = 63

Bales's Category System

Interaction Profile (four persons)

Chart # 4 Group # 4 , Session Non-drinking Time -



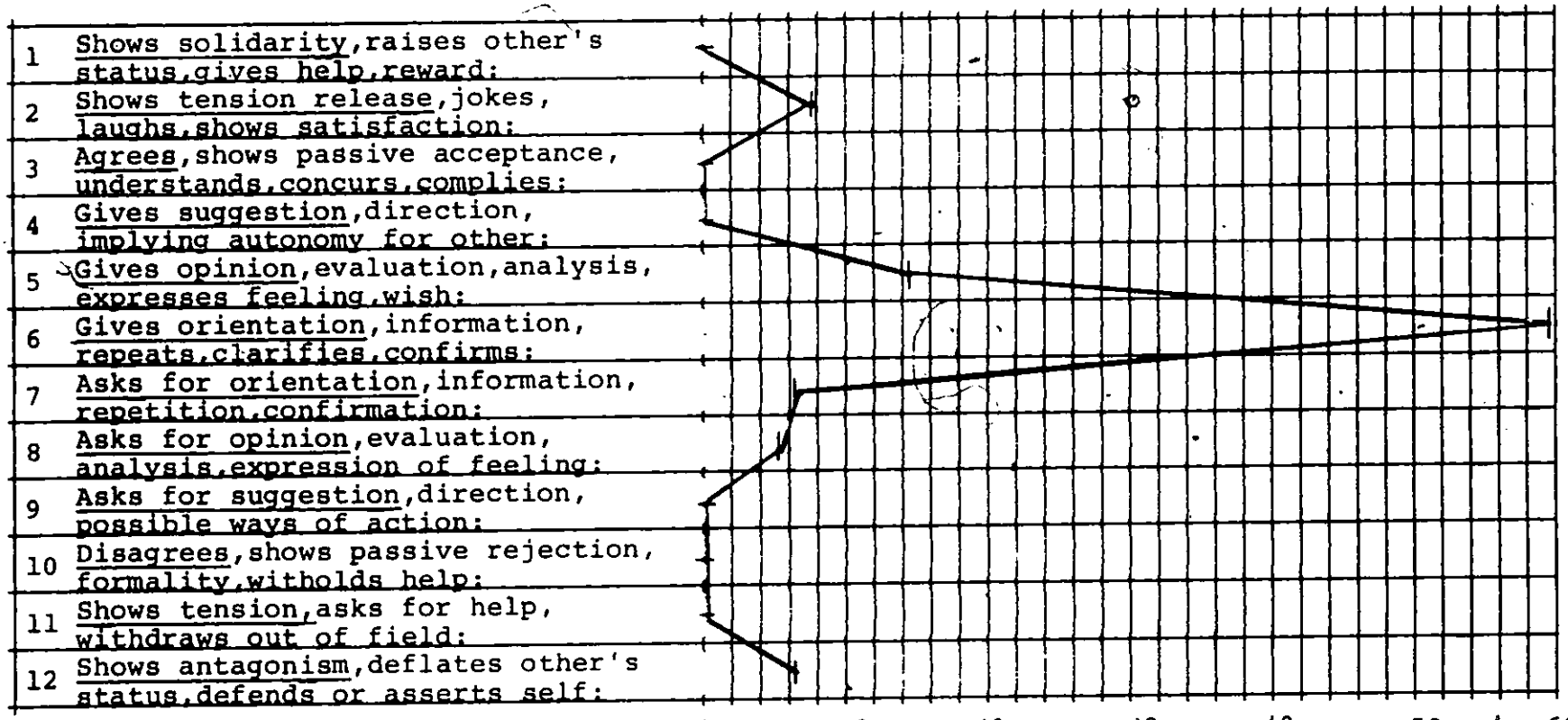
N = 89

90

Bales's Category System

Interaction Profile (four-persons)

Chart # 5 Group # 5 Session Non-drinking Time 40 min. (Segment 1)

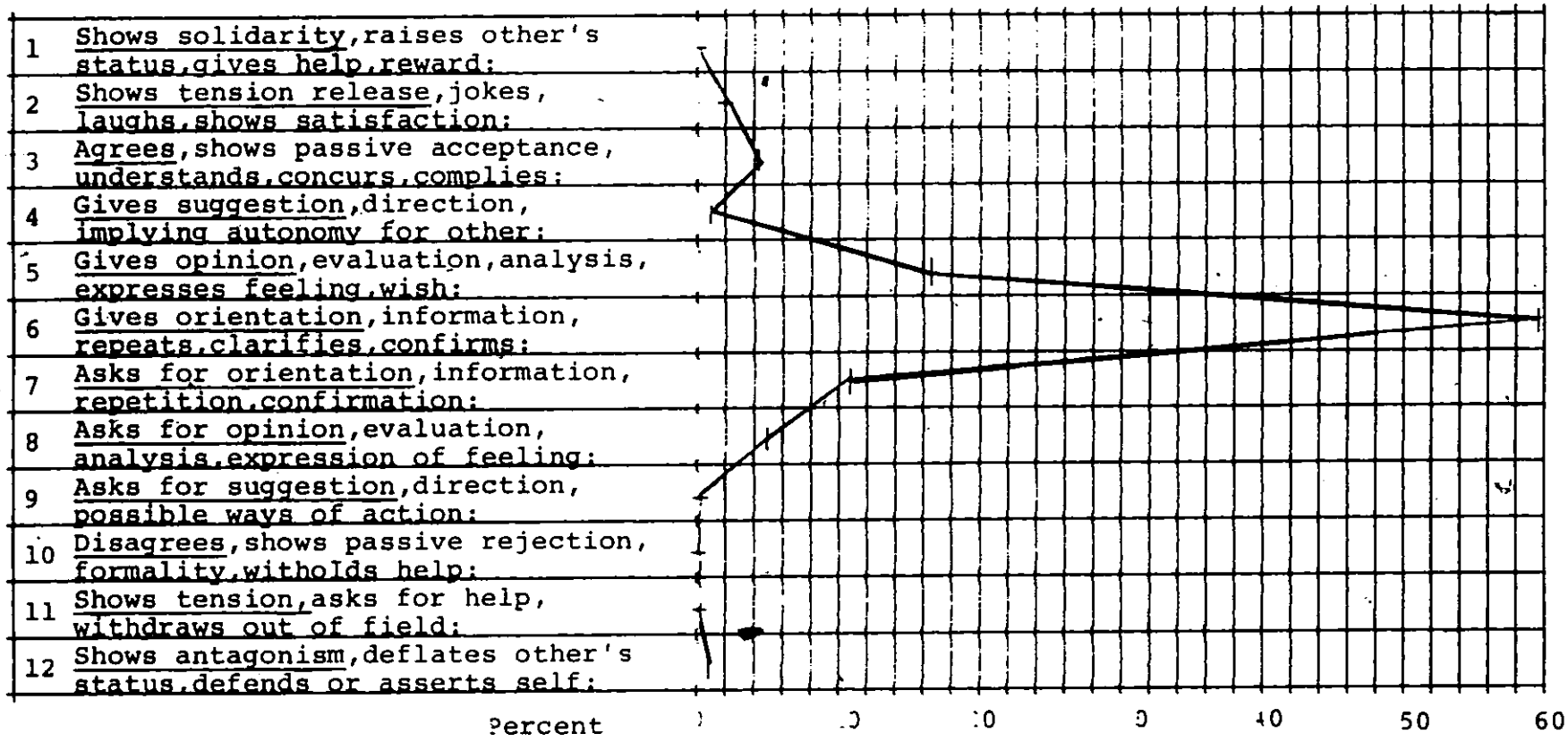


N = 79

Bales's Category System

Interaction Profile (four persons)

Chart # 6 Group # 6 Session Non-drinking Time 40 min. Segment 1)

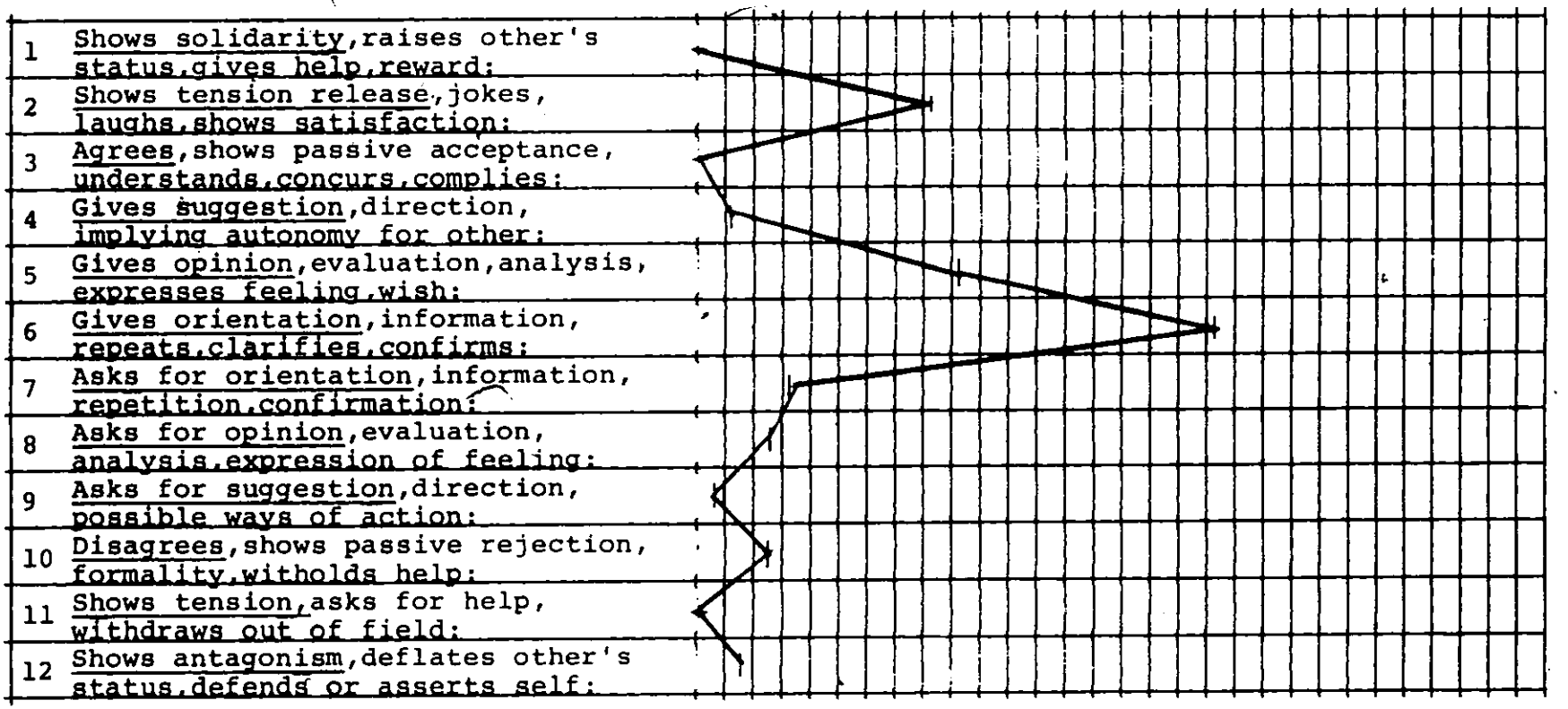


N = 98

Bales's Category System

Interaction Profile (four persons)

Chart # 7 Group # 7 Session non-drinking Time 40 min. Segment 1)

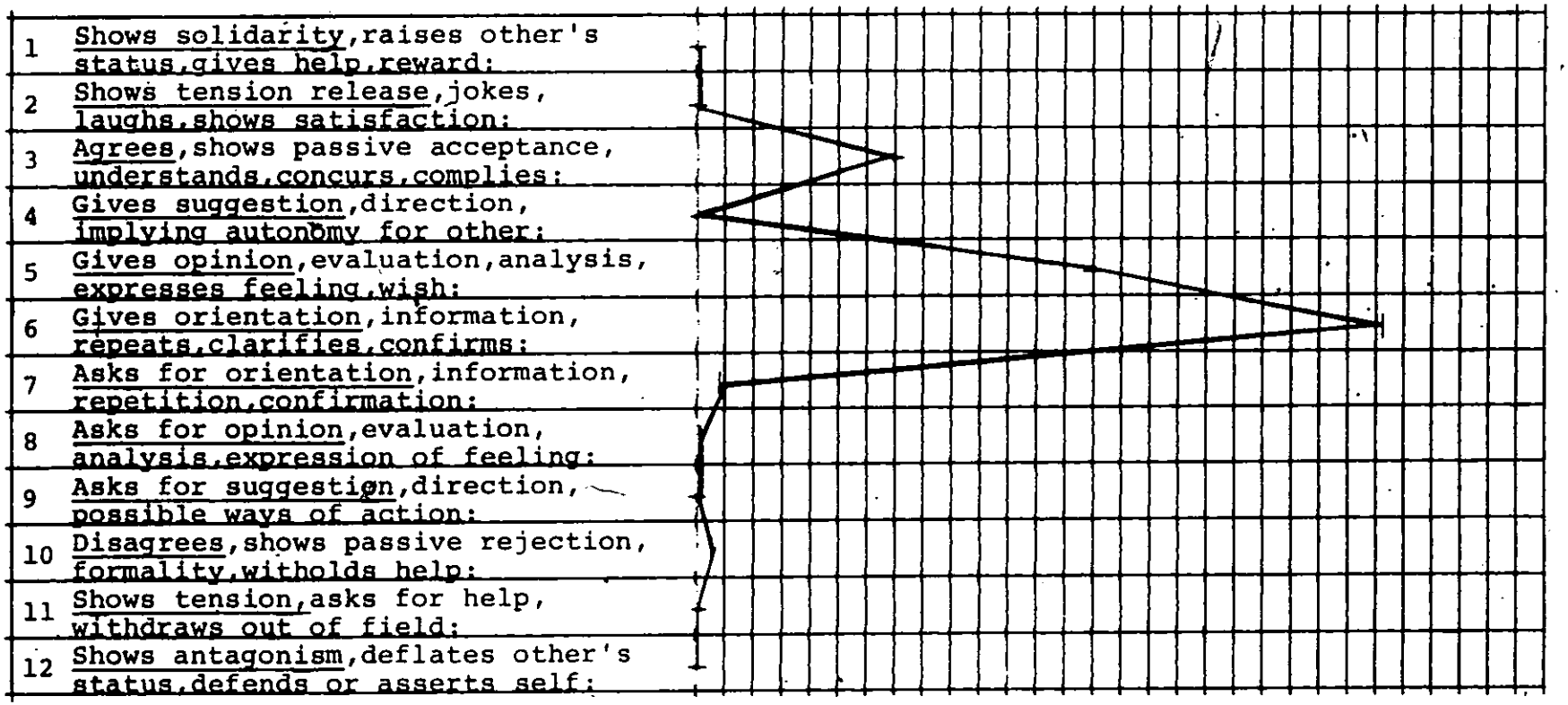


N = 106

Bales's Category System

Interaction Profile (four persons)

Chart # 8 Group # 8 Session Non-drinking Time 40 min. (Segment 1)

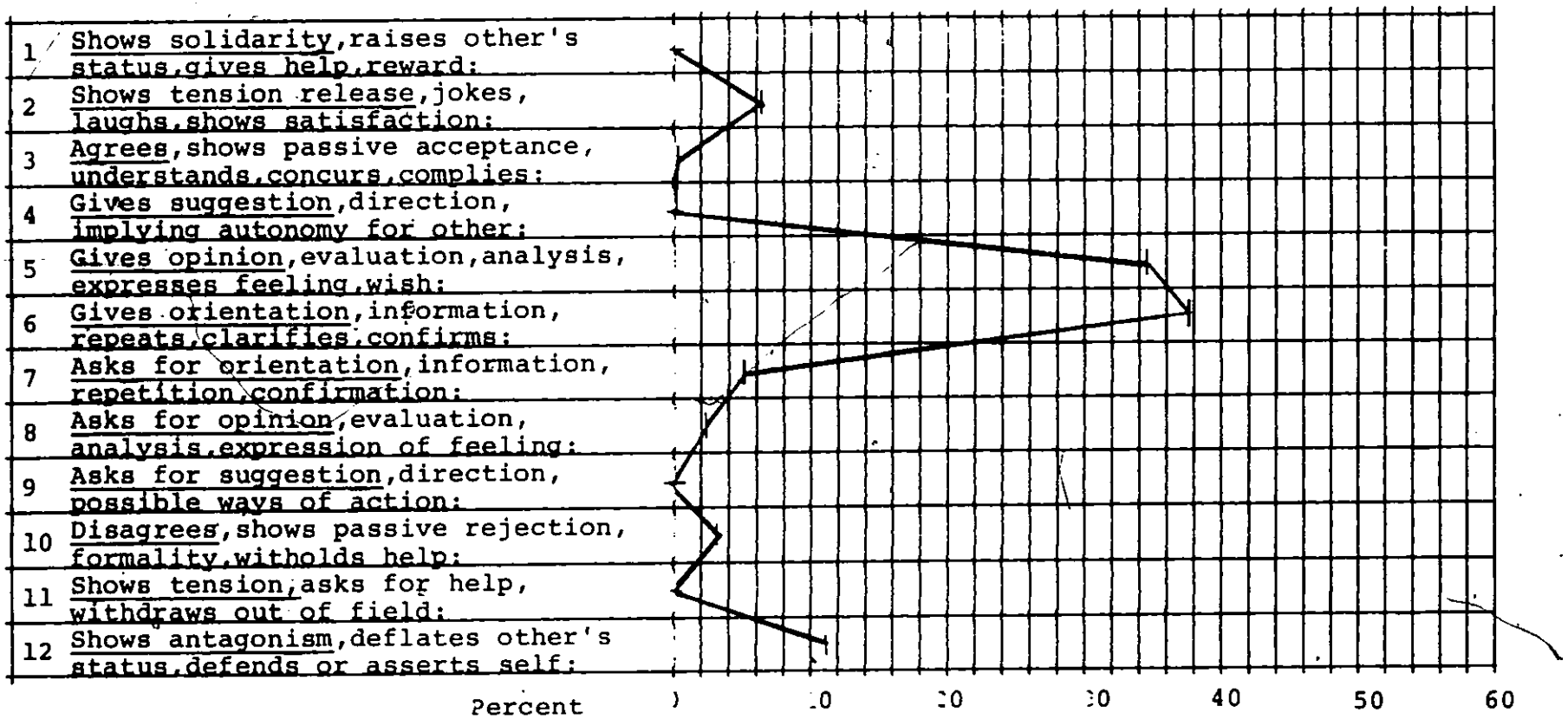


N = 107

Bales's Category System

Interaction Profile (four persons)

Chart # 9 Group # 9 Session non-drinking Time 30 min. Segment 1)

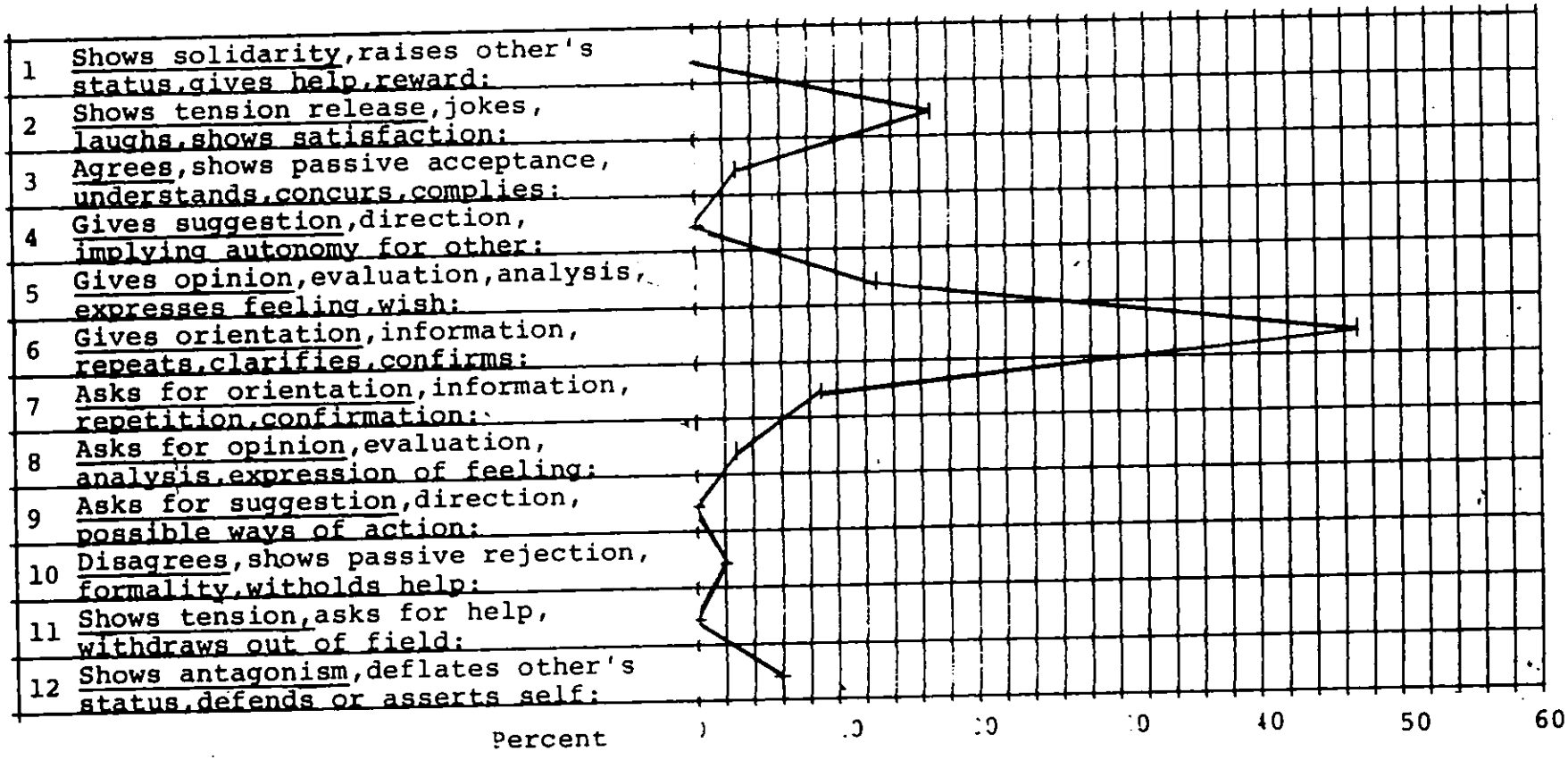


N = 96

Bales's Category System

Interaction Profile (four persons)

Chart # 10 Group # 10 Session non-drinking Time 30 min. Segment 1)

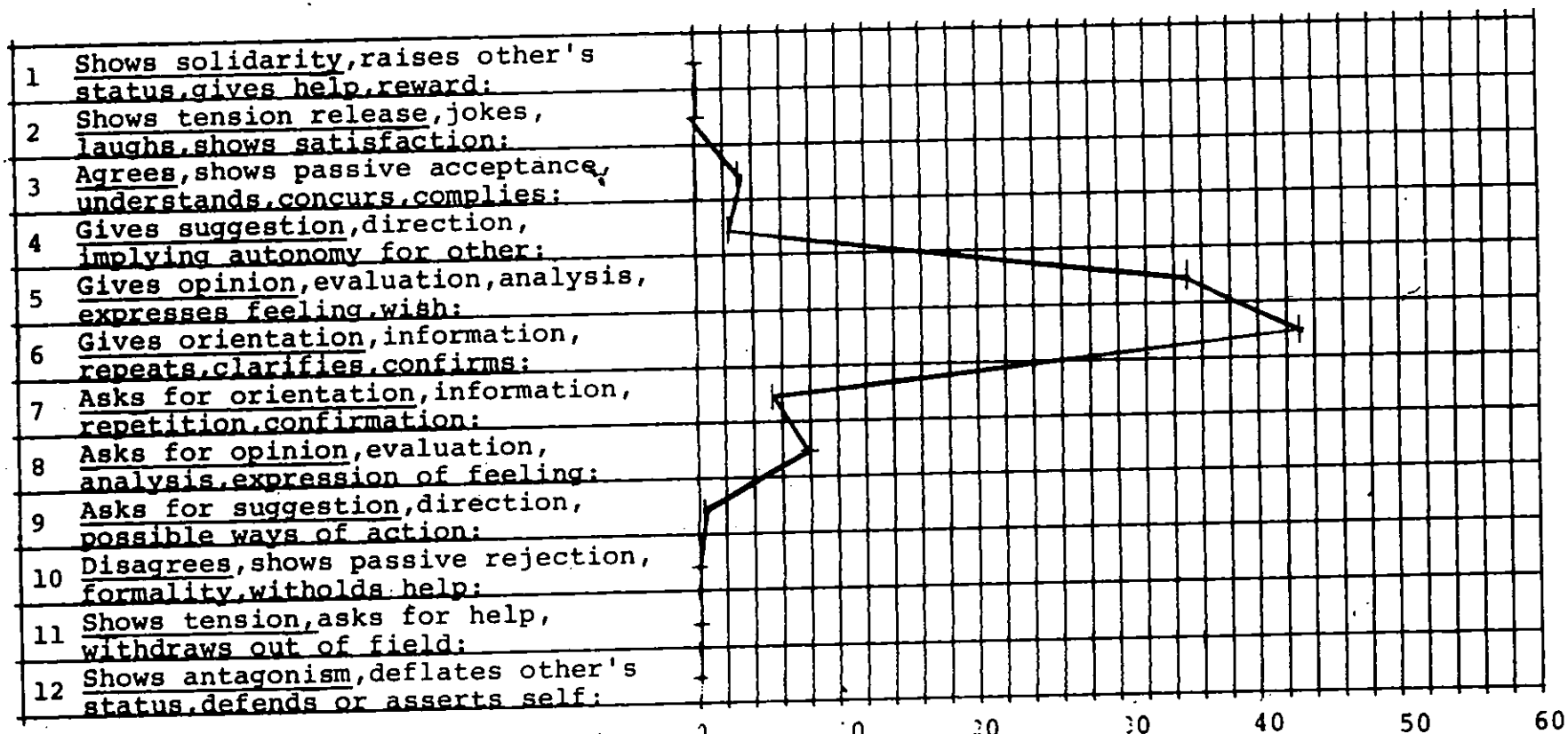


N = 100

Bales's Category System

Interaction Profile (four persons)

Chart # 11 Group # 1 Session Non-drinking Time 40 min. (Segment 2)

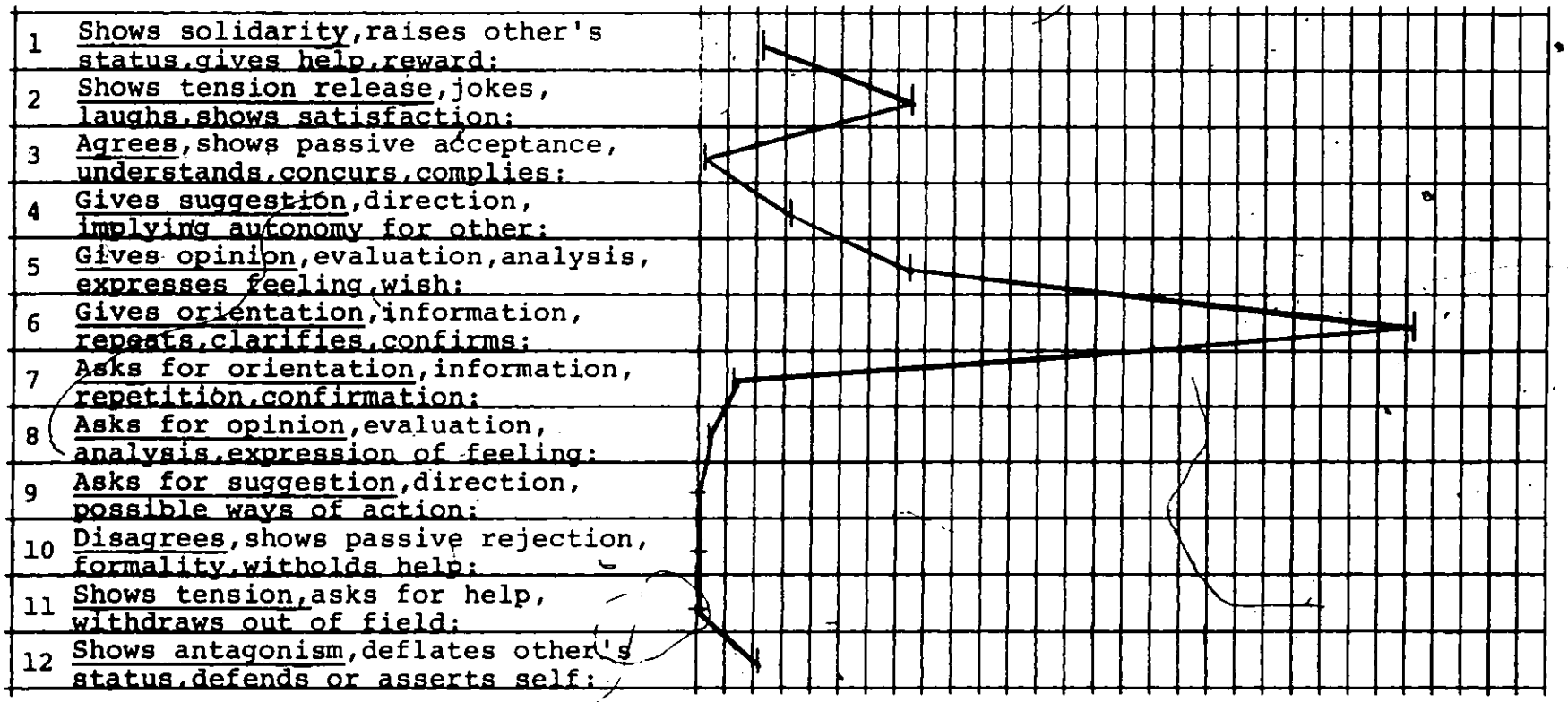


N = 87

Bales's Category System

Interaction Profile (four persons)

Chart # 12 Group # 2 Session Non-drinking Time 40 min. (Segment 2)

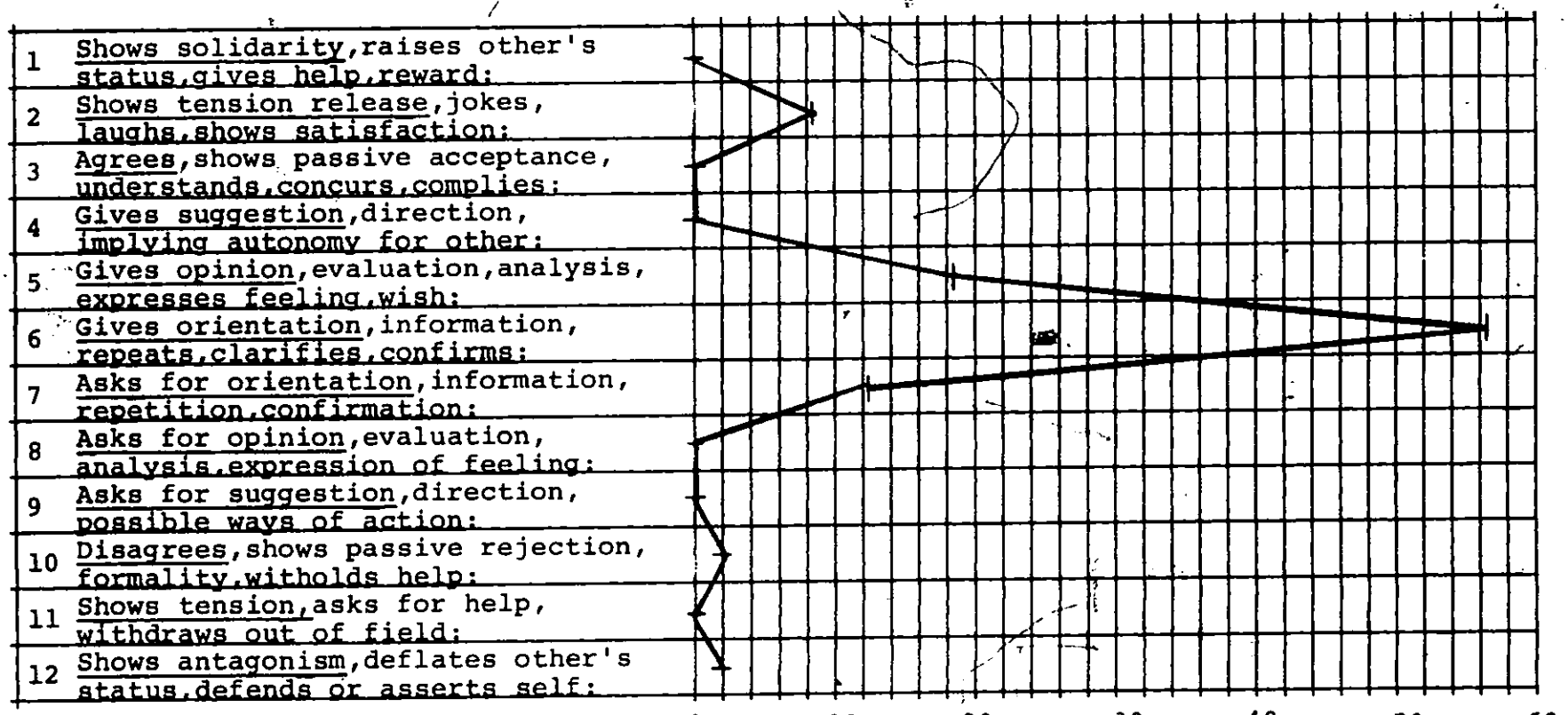


N = 95

Bales's Category System

Interaction Profile (four persons)

Chart # 13 Group # 3 Session Non-drinking Time 10 min. (Segment 2)

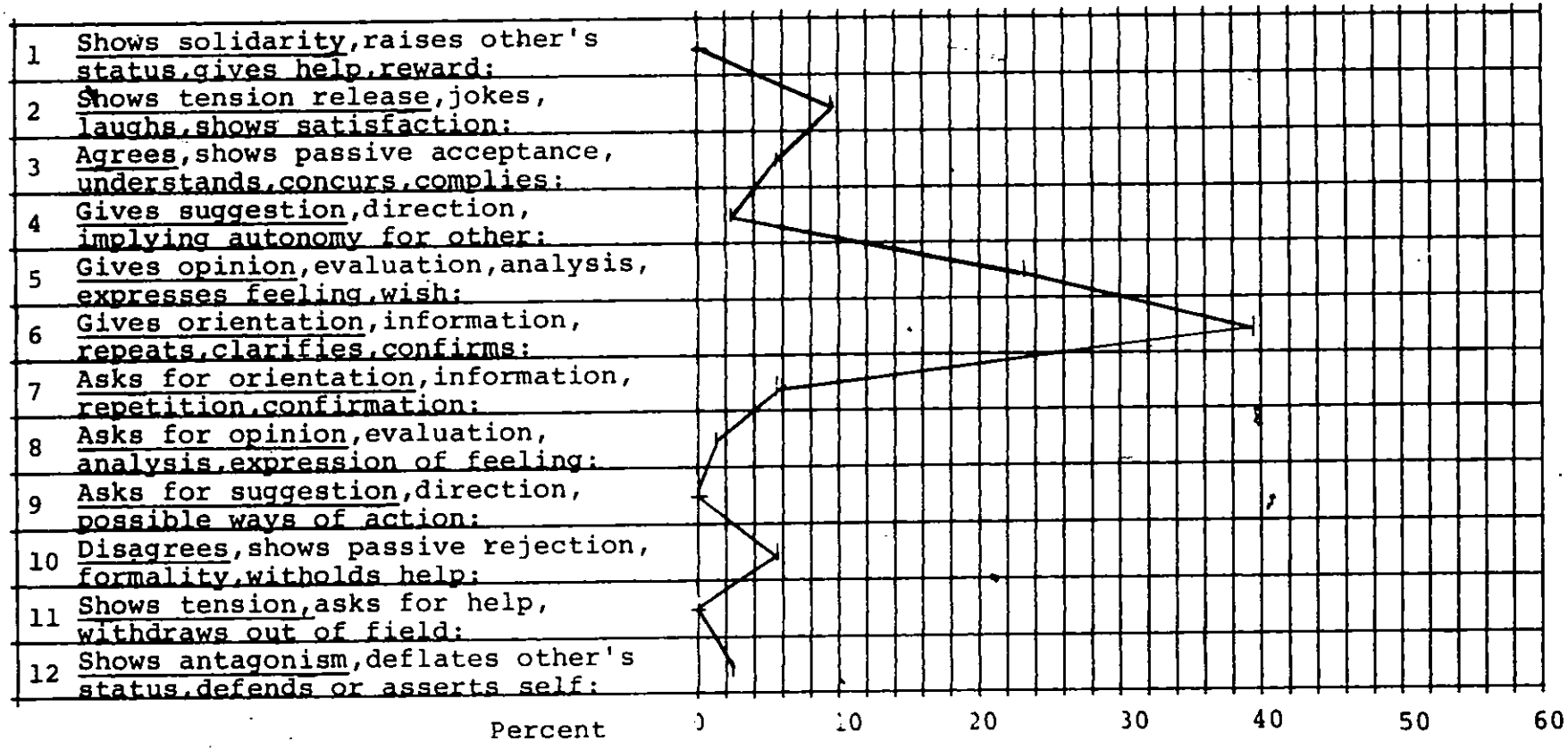


N = 49

Bales's Category System

Interaction Profile (four persons)

Chart # 14 Group # 4 Session Non-drinking Time 2

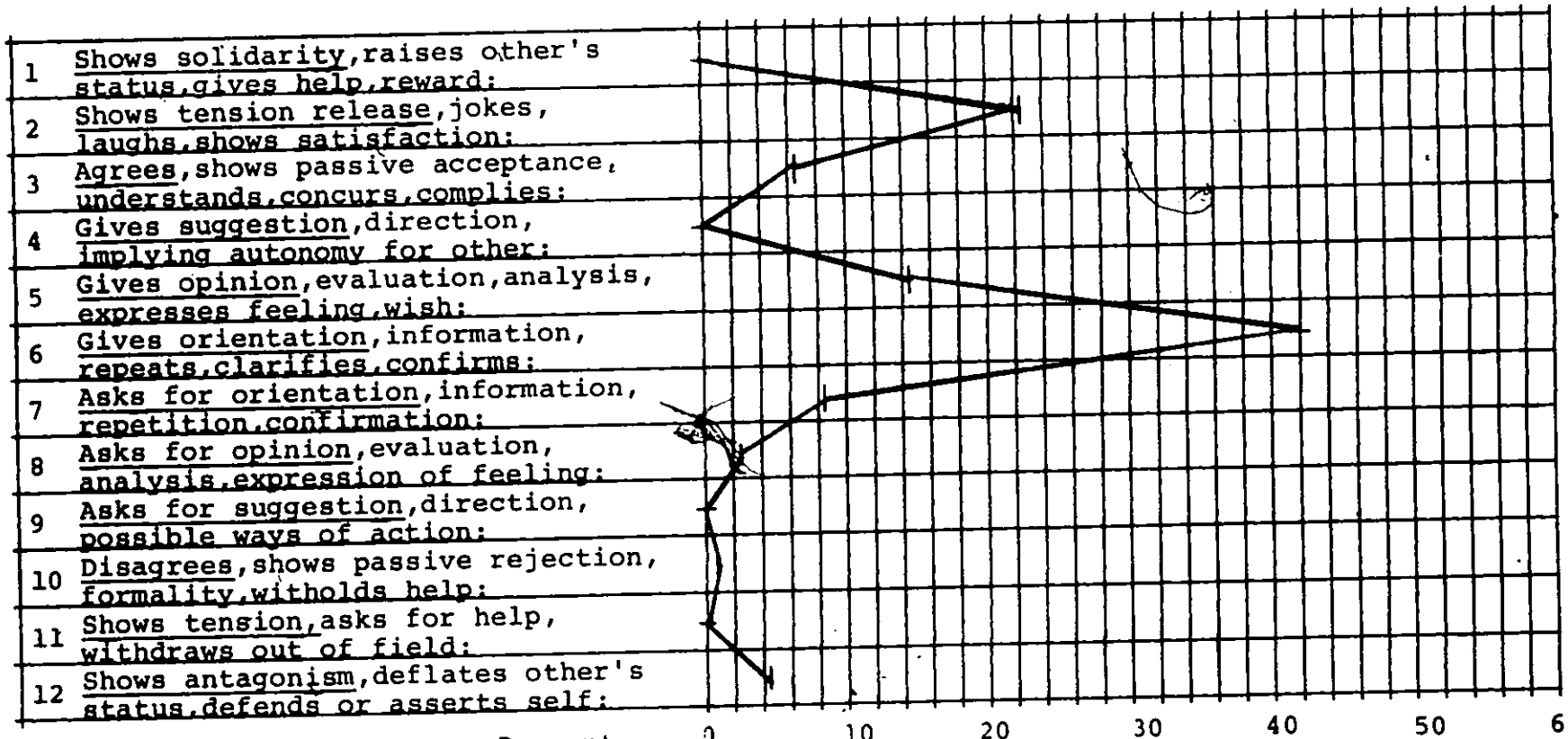


N = 117

Bales's Category System

Interaction Profile (four persons)

Chart # 15 Group # 5 Session Non-drinking Time 20 min. (Segment 2)

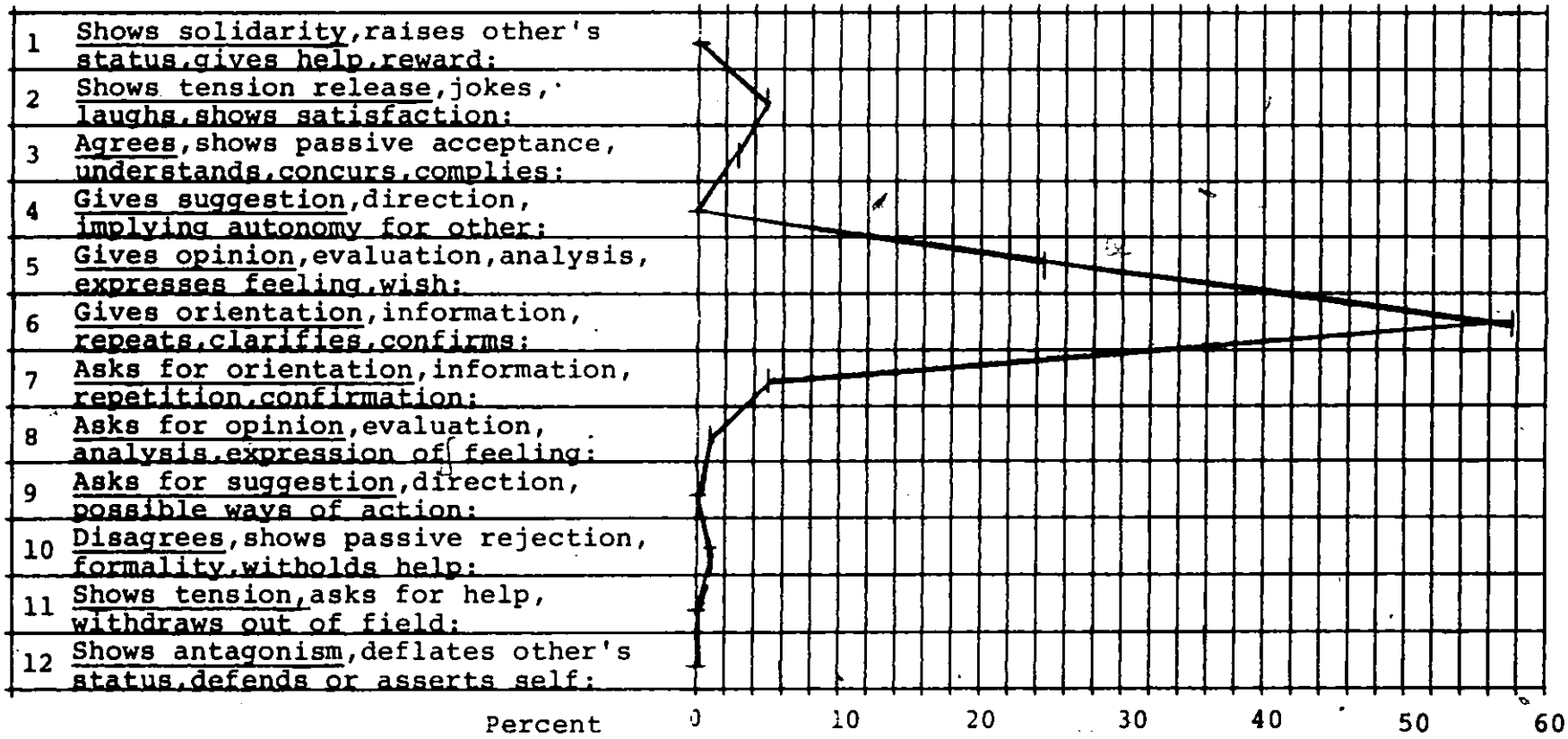


N = 81

Bales's Category System

Interaction Profile (four persons)

Chart # 16 Group # 6 Session Non-drinking Time 10 min. (Segment 2)

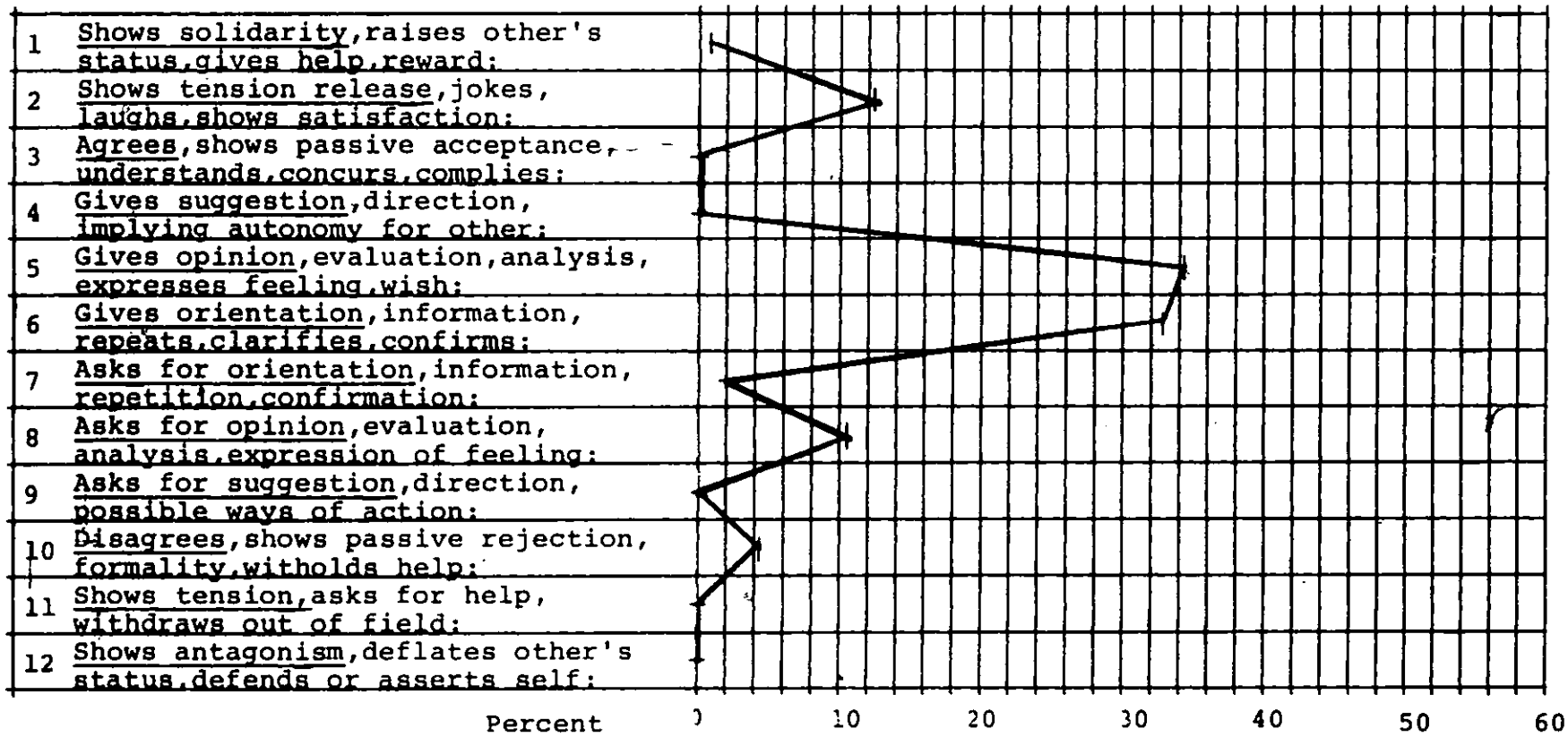


N = 90

Bales's Category System

Interaction Profile (four persons)

Chart # 17 Group # 7 Session Non-drinking Time 10 min. (Segment 2)

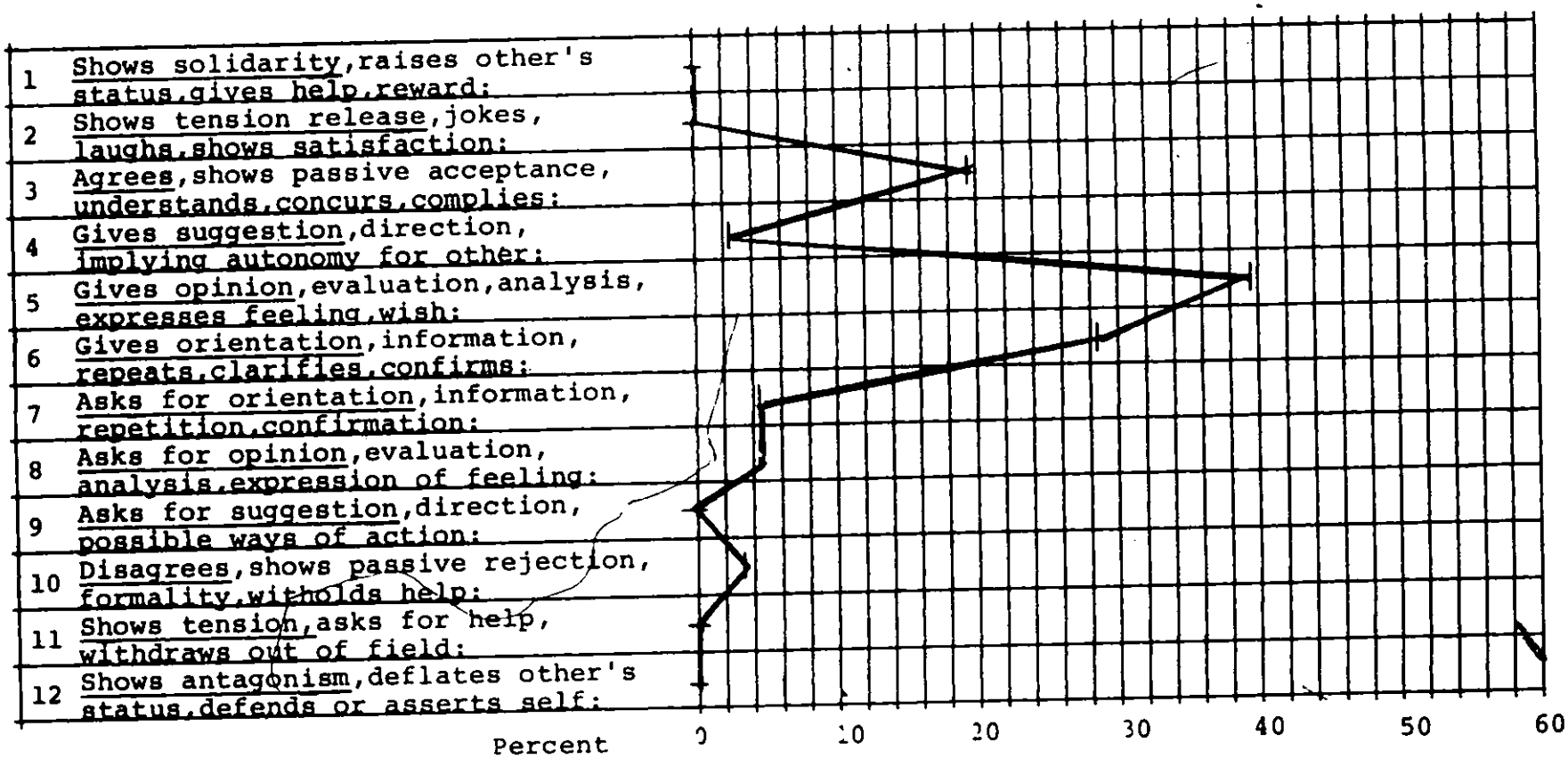


N = 98

Bales's Category System

Interaction Profile (four persons)

Chart # 18 Group # 8 Session Non-drinking Time 10 min. (Segment 2)

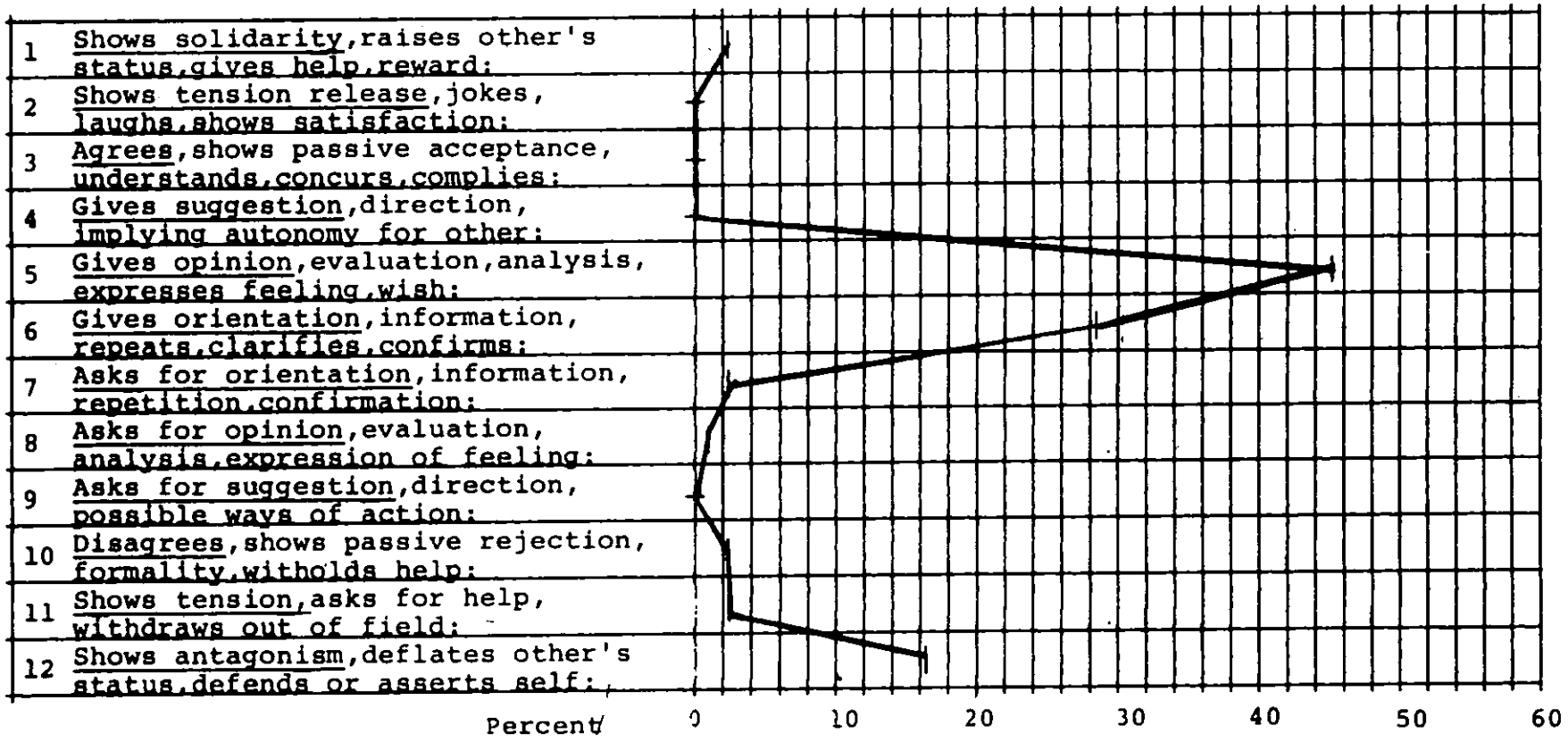


N = 108

Bales's Category System

Interaction Profile (four persons)

Chart # 19 Group # 9 Session Non-drinking Time 20 min. (Segment 2)

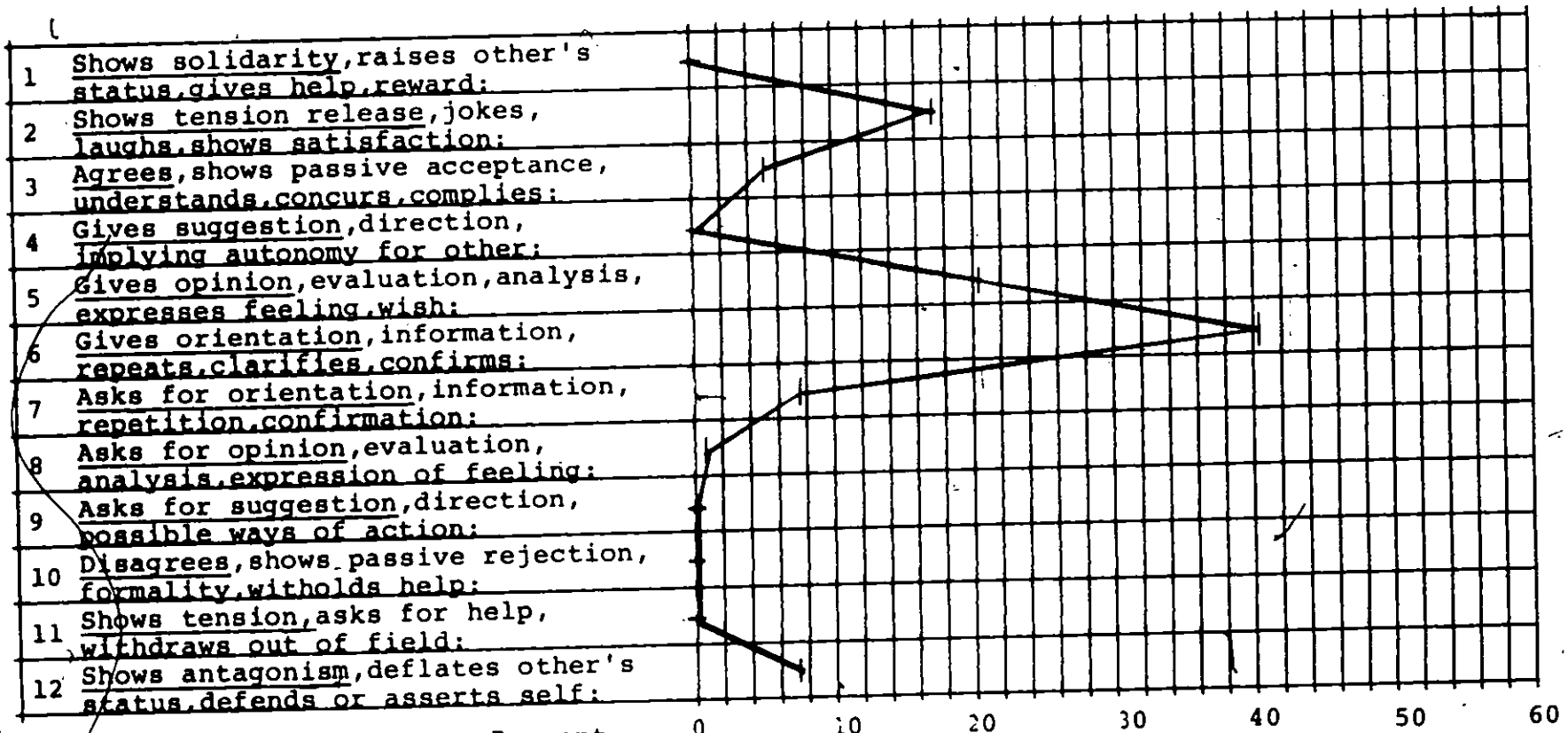


N = 92

Bales's Category System

Interaction Profile (four persons)

Chart # 20 Group # 10 Session Non-drinking Time 10 min. (Segment 2)

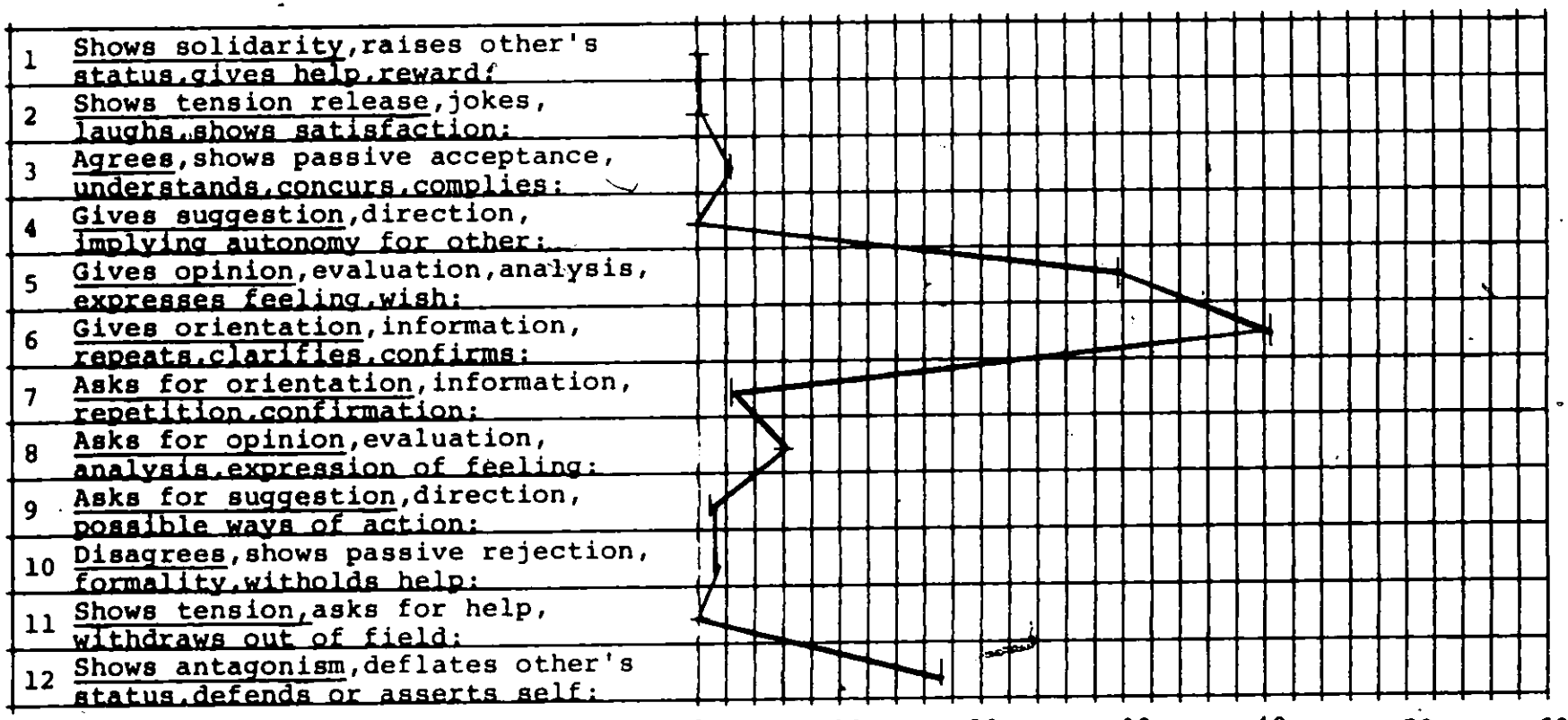


N = 96

Bales's Category System

Interaction Profile (four persons)

Chart # 21 Group # 1 Session Non-drinking Time 10 min. (Segment 3)

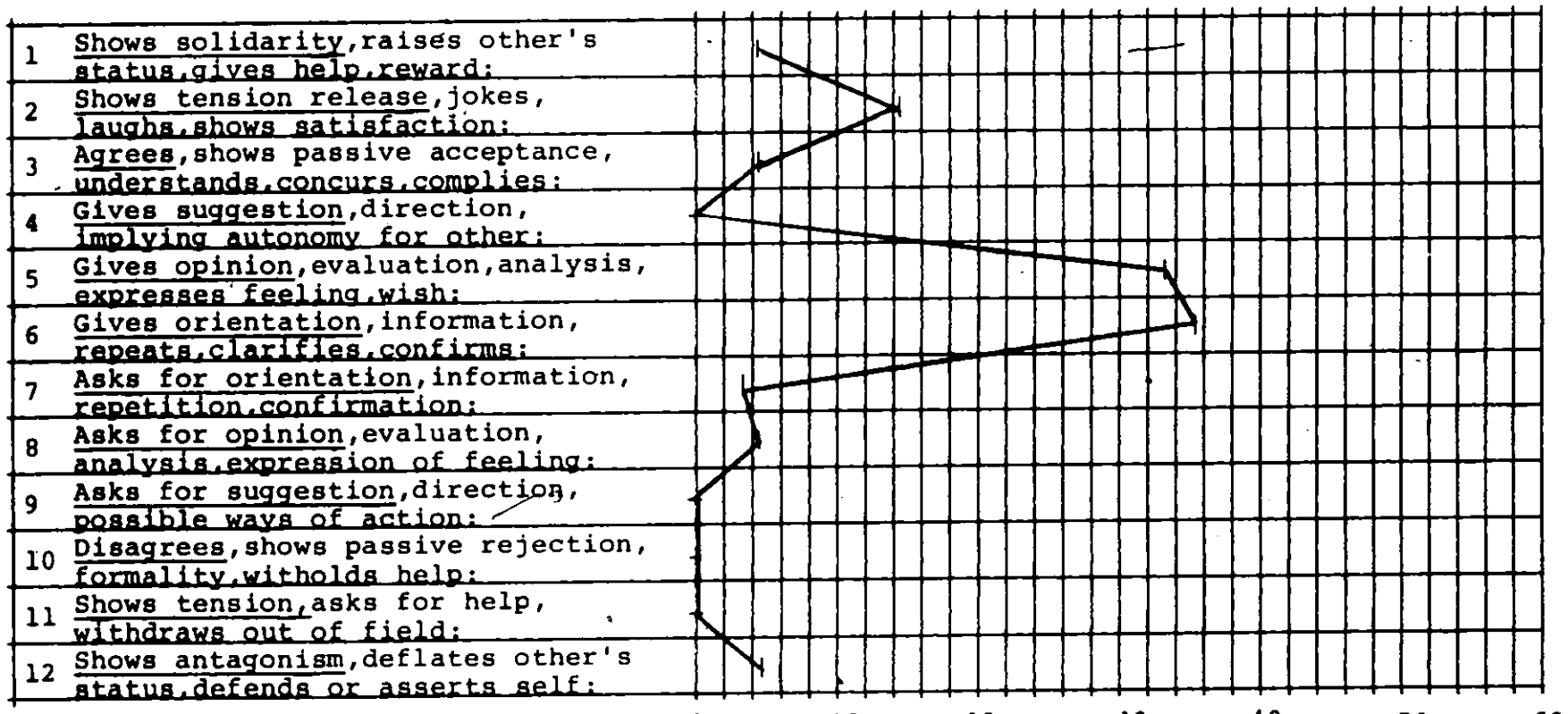


N = 84

Bales's Category System

Interaction Profile (four persons)

Chart # 22 Group # 2 Session Non-drinking Time 10 min. (Segment 3)

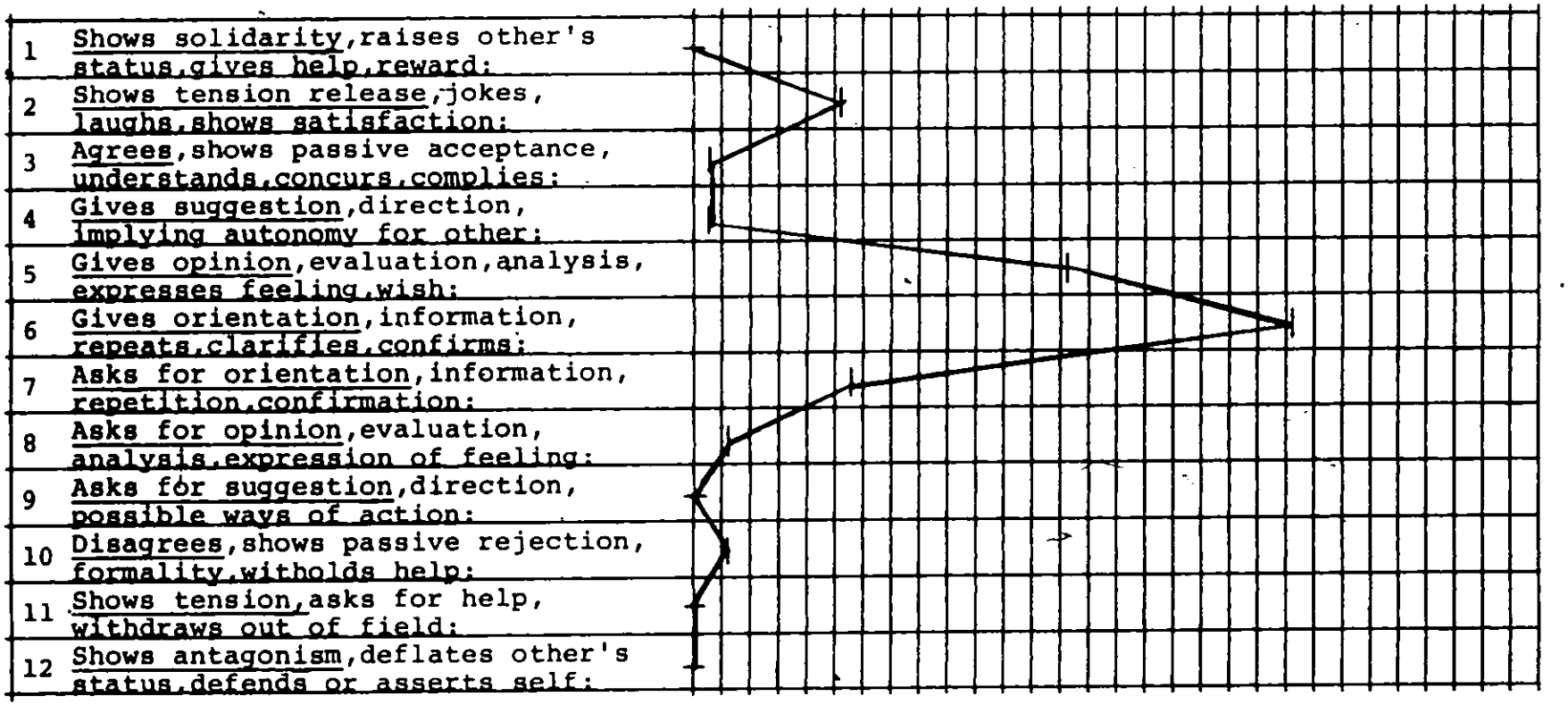


N = 84

Bales's Category System

Interaction Profile (four persons)

Chart # 23 Group # 3 Session Non-drinking Time 40 min. (Segment 3)

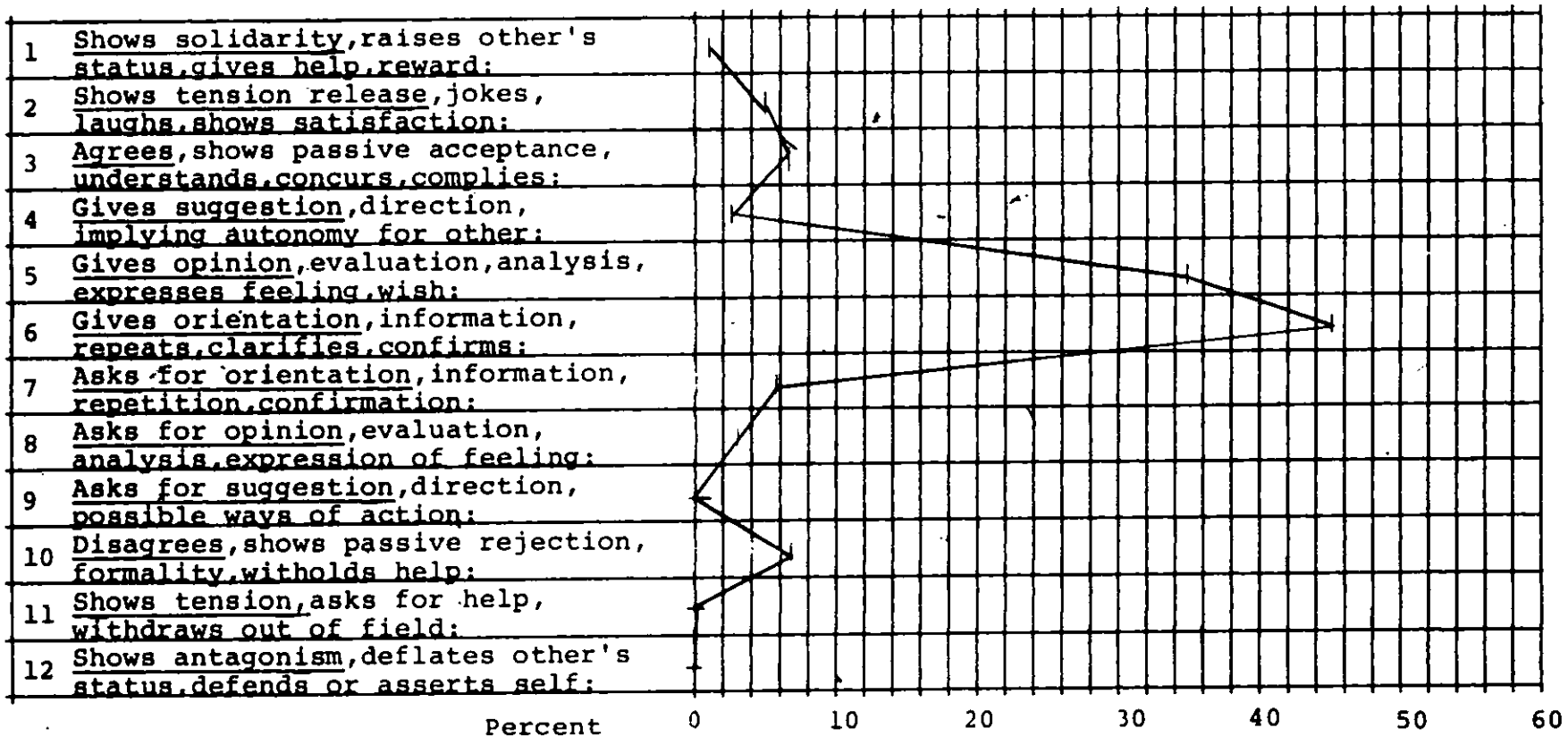


N = 68

Bales's Category System

Interaction Profile (four persons)

Chart # 24 Group # 4 Session Non-drinking Time 3

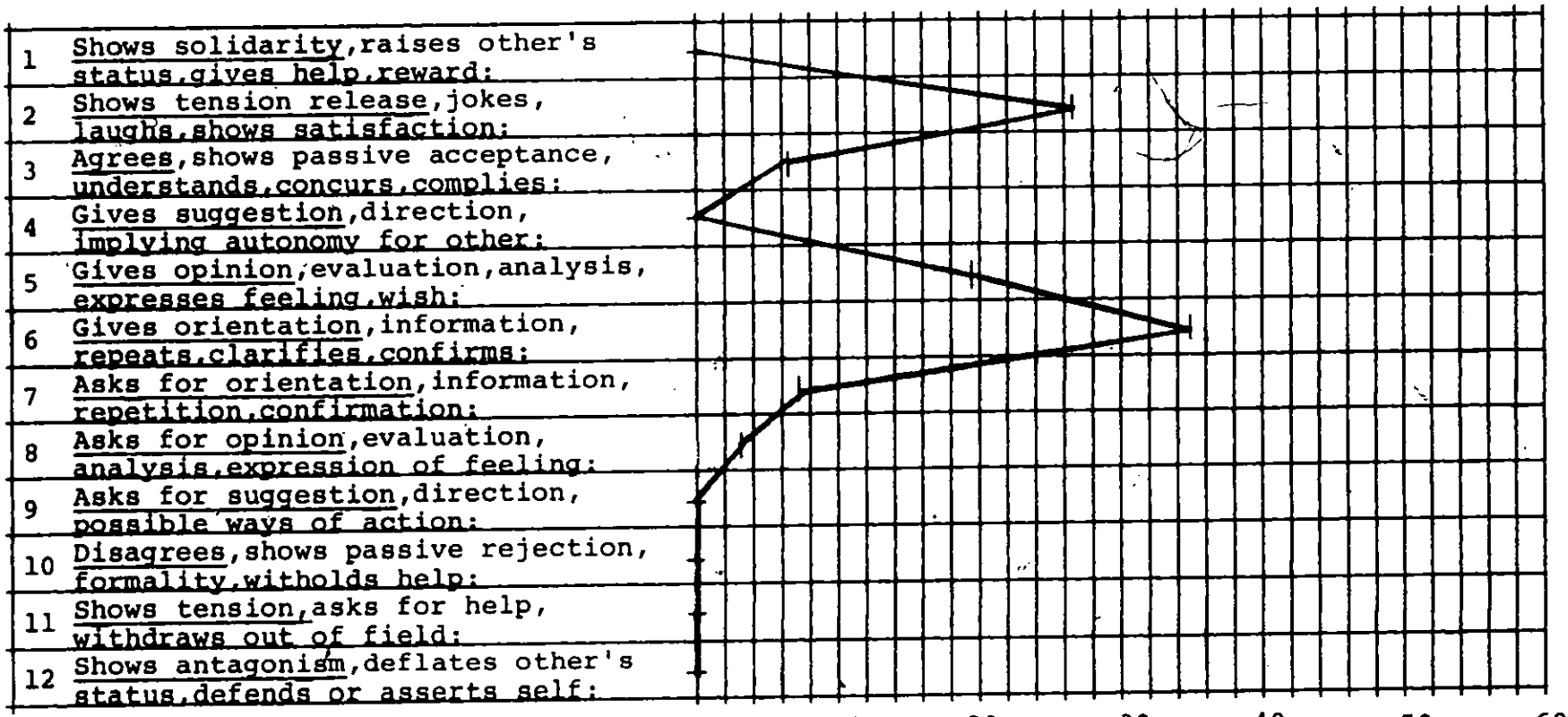


N = 103

Bales's Category System

Interaction Profile (four persons)

Chart # 25 Group # 5 Session Non-drinking Time 10 min. (Segment 3)

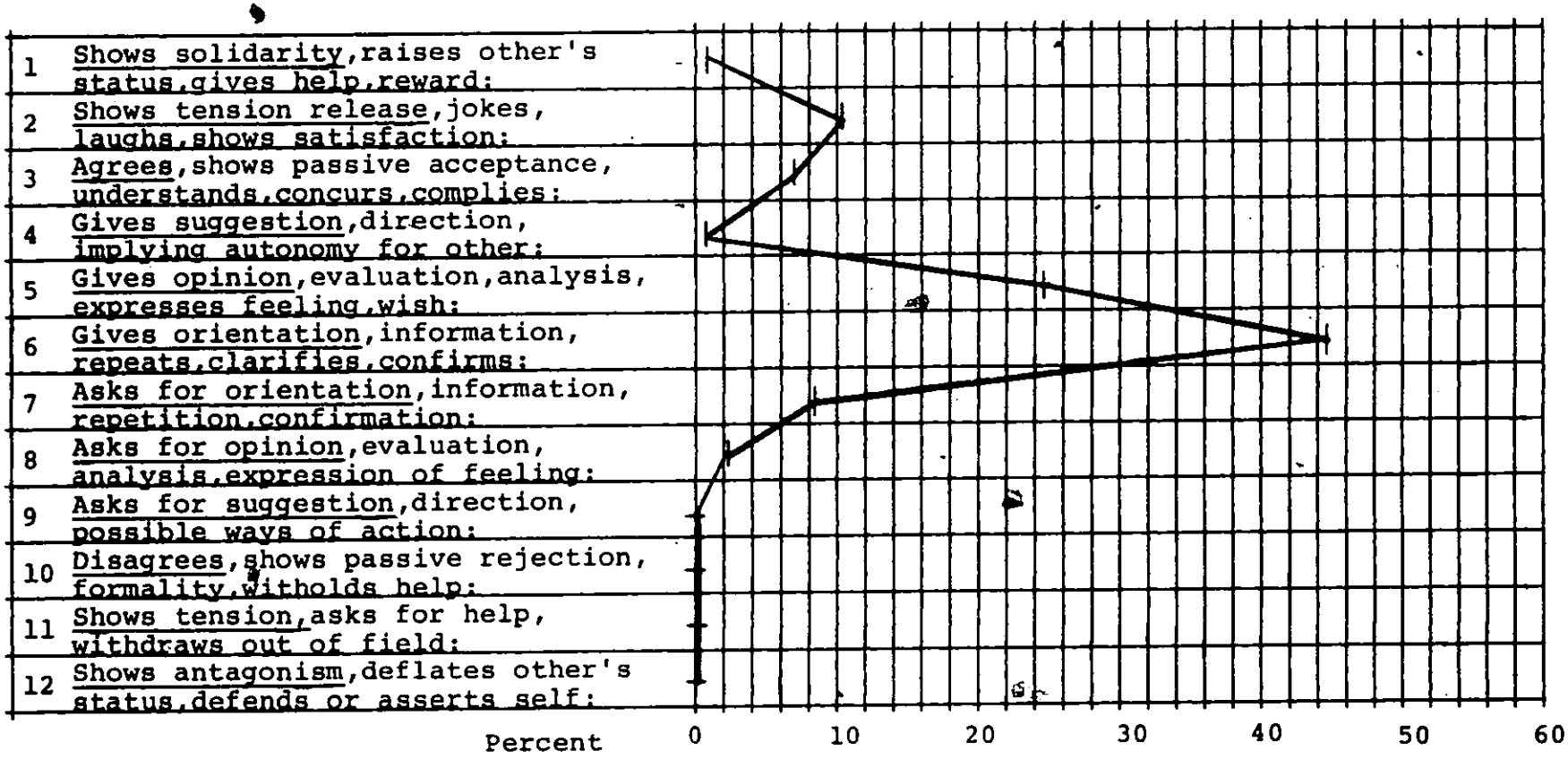


N = 96

Bales's Category System

Interaction Profile (four persons)

Chart # 26 Group # 6 Session Non-drinking Time 10 min. (Segment 3)

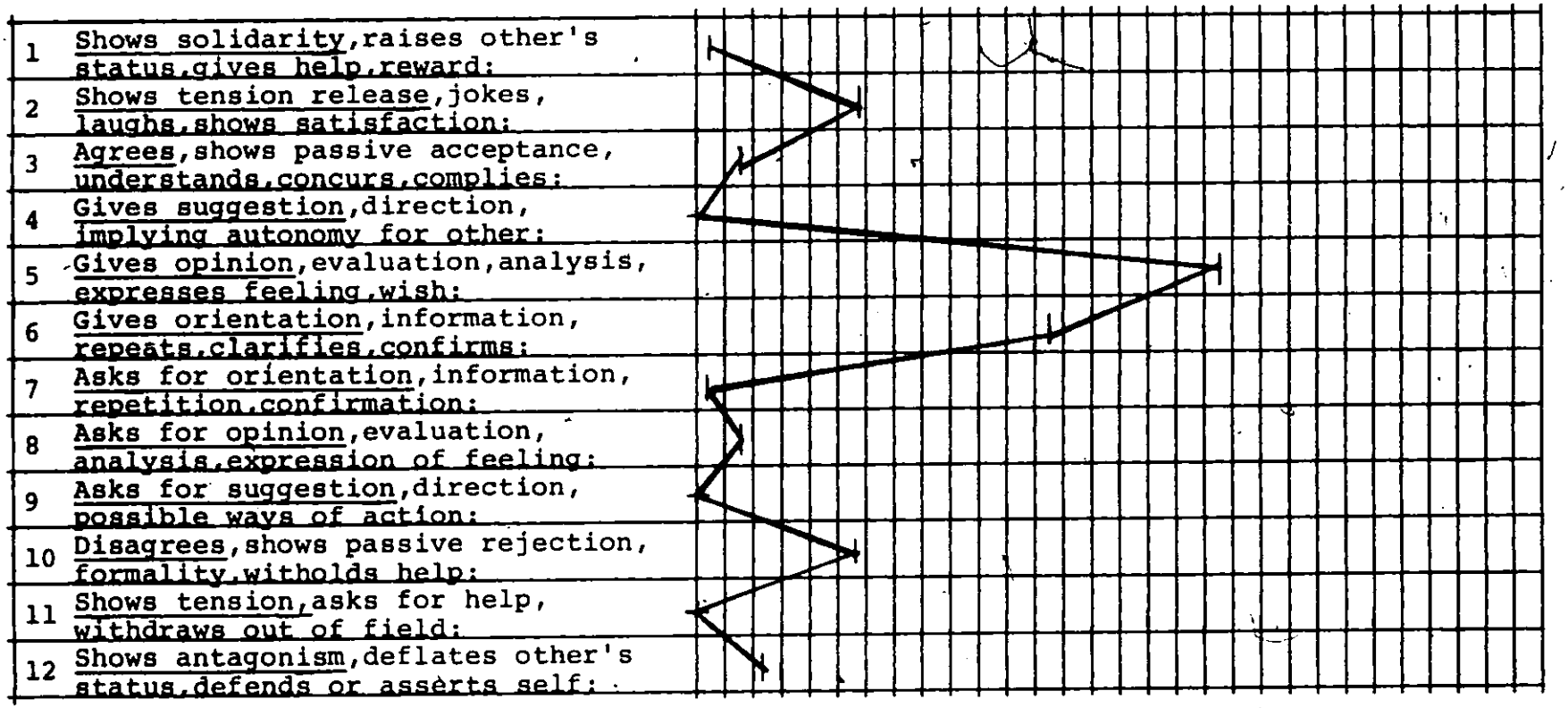


N = 94

Bales's Category System

Interaction Profile (four persons)

Chart # 27 Group # 7 Session Non-drinking Time 10 min. (Segment 3)

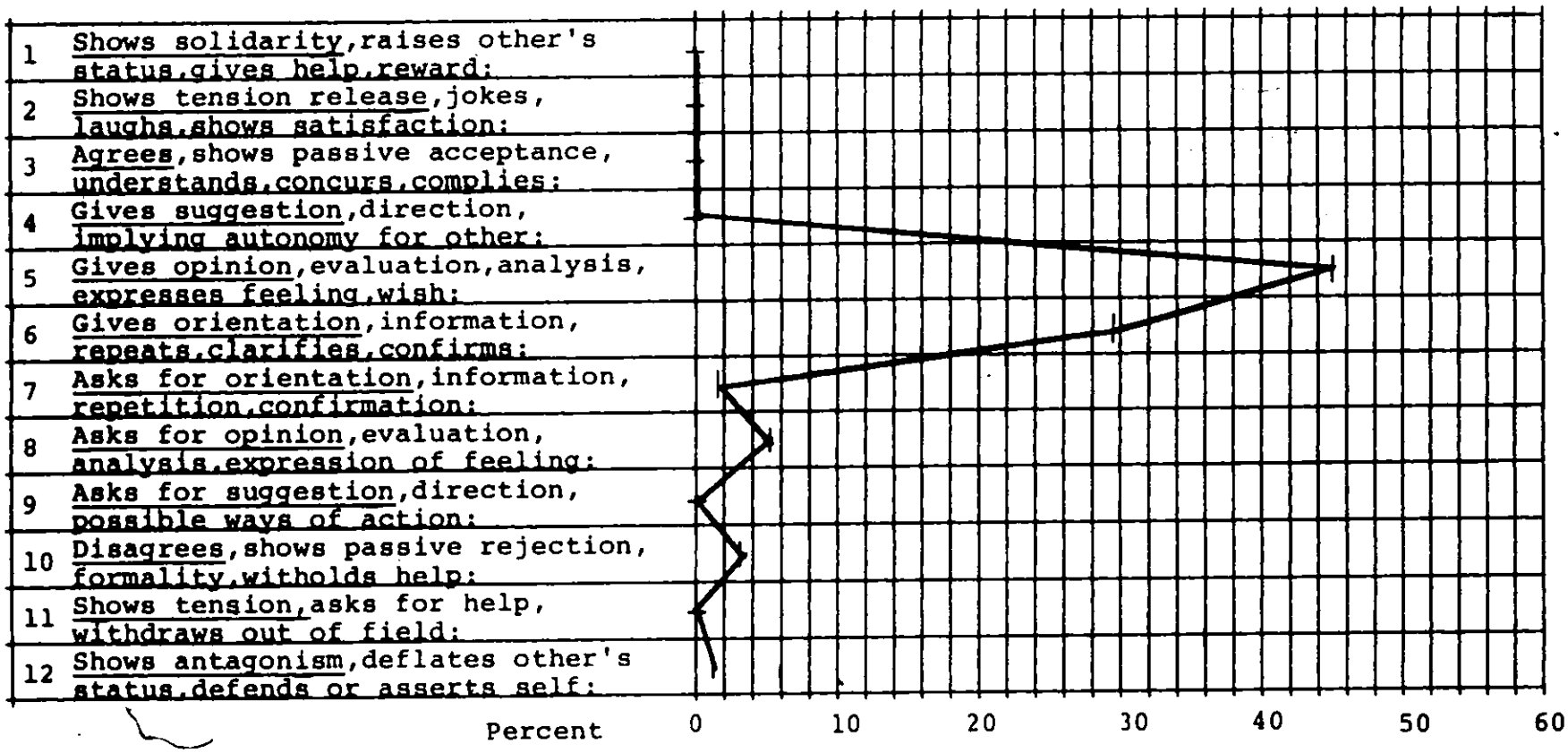


N = 86

Bales's Category System

Interaction Profile (four persons)

Chart # 28 Group # 8 Session Non-drinking Time 10 min. (Segment 3)

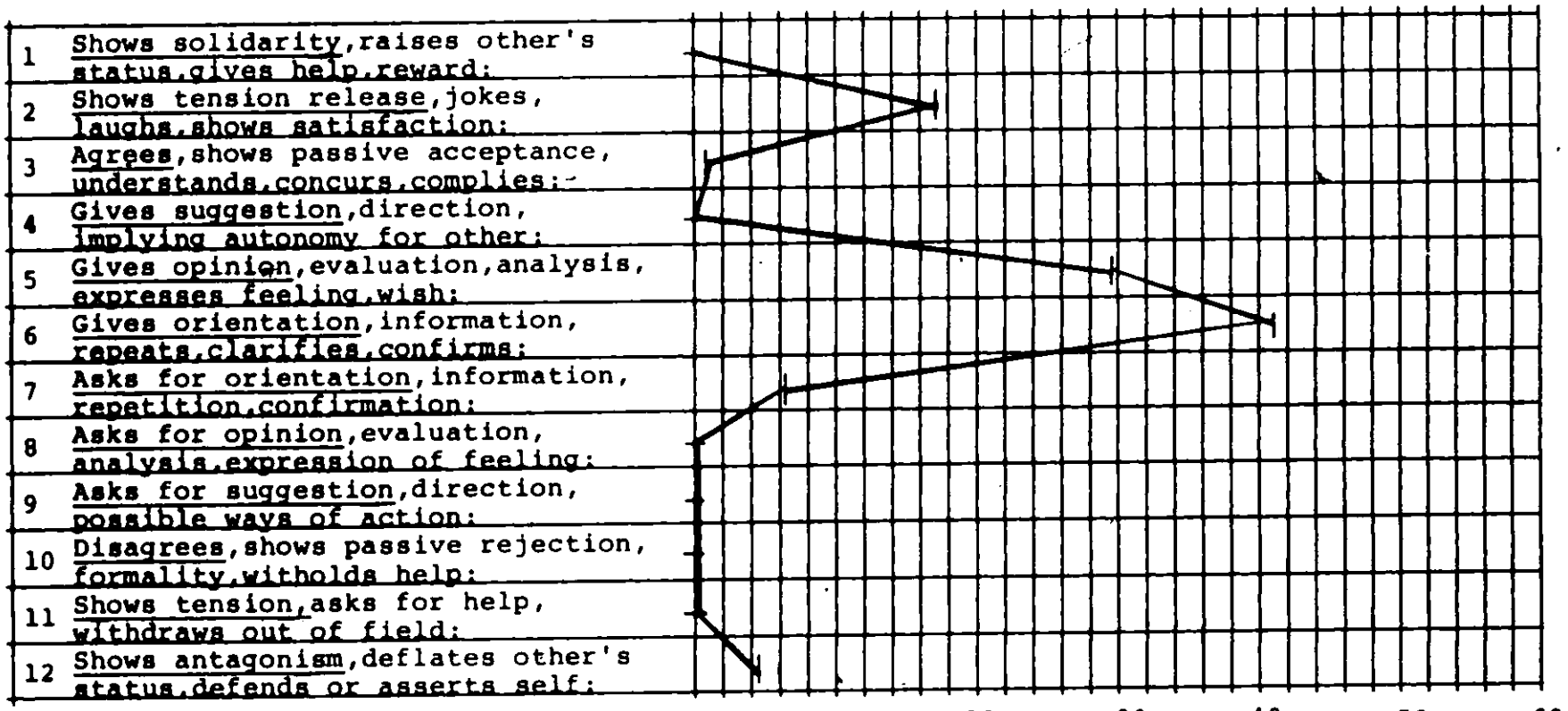


N = 111

Bales's Category System

Interaction Profile (four persons)

Chart # 29 Group # 9 Session Non-drinking Time 10 min (Segment 3)

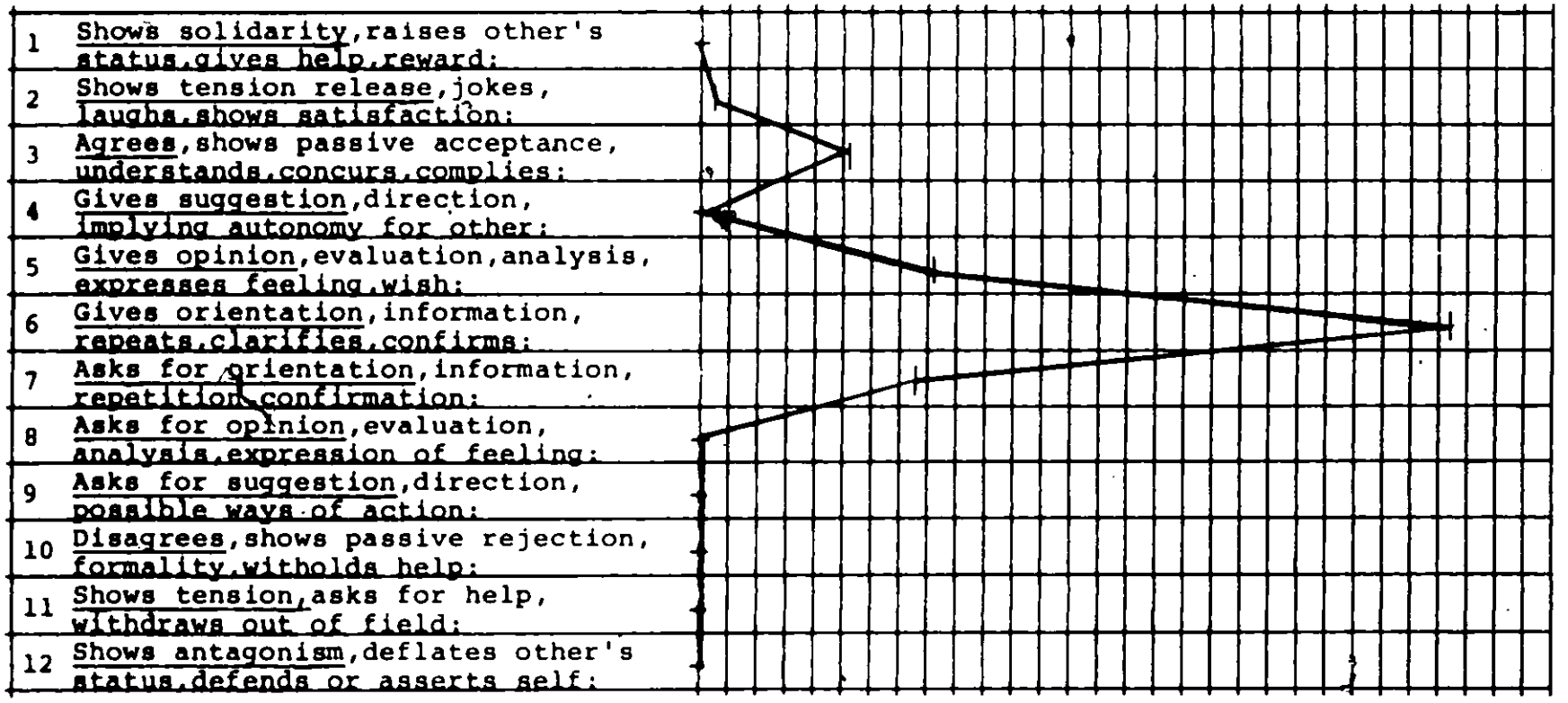


N = 82

Bales's Category System

Interaction Profile (four persons)

Chart # 30 Group # 10 Session Non-drinking Time 10 min. (Segment 3)

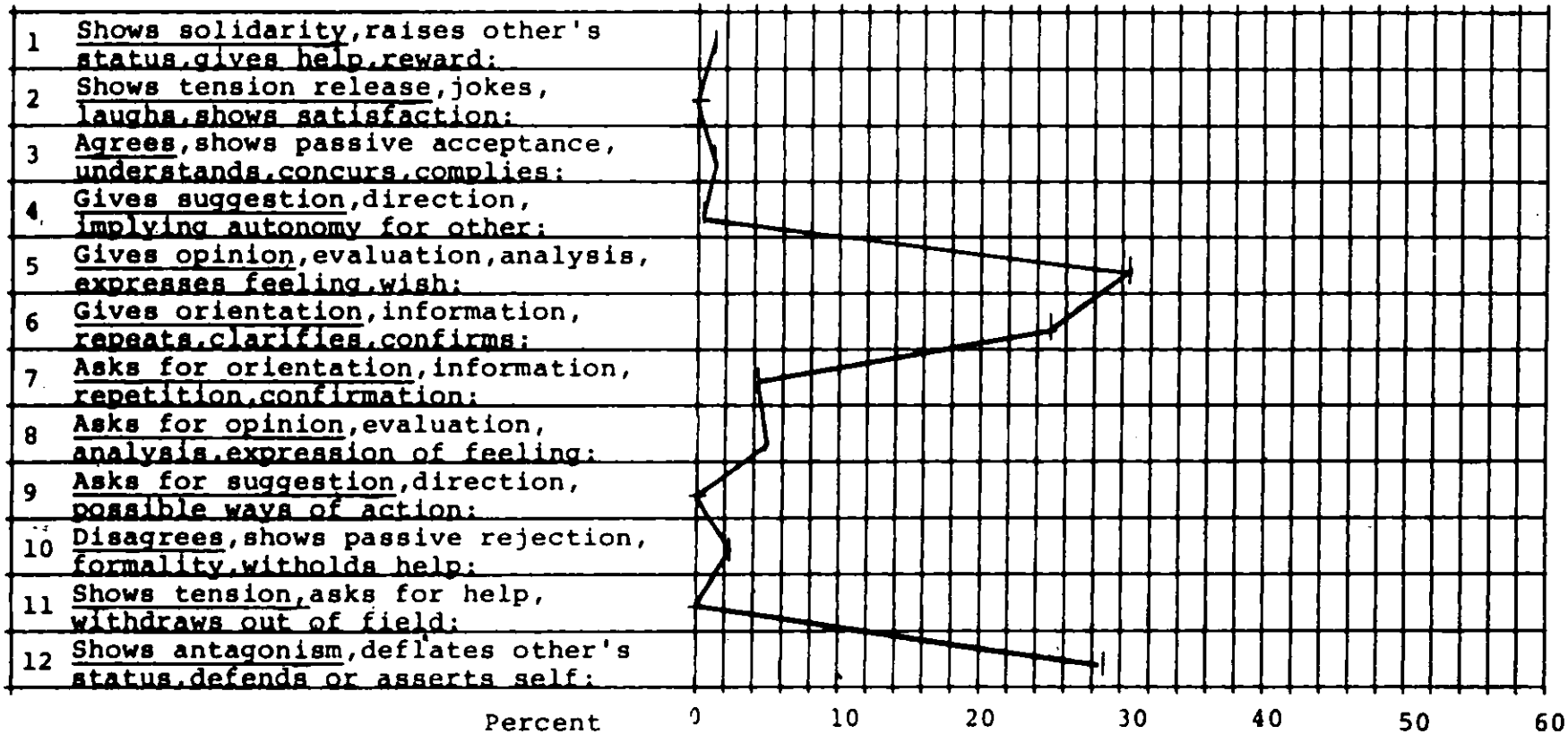


N = 65

Bales's Category System

Interaction Profile (four persons)

Chart # 31 Group # 1 Session Drinking Time 10 min. (Segment 4)

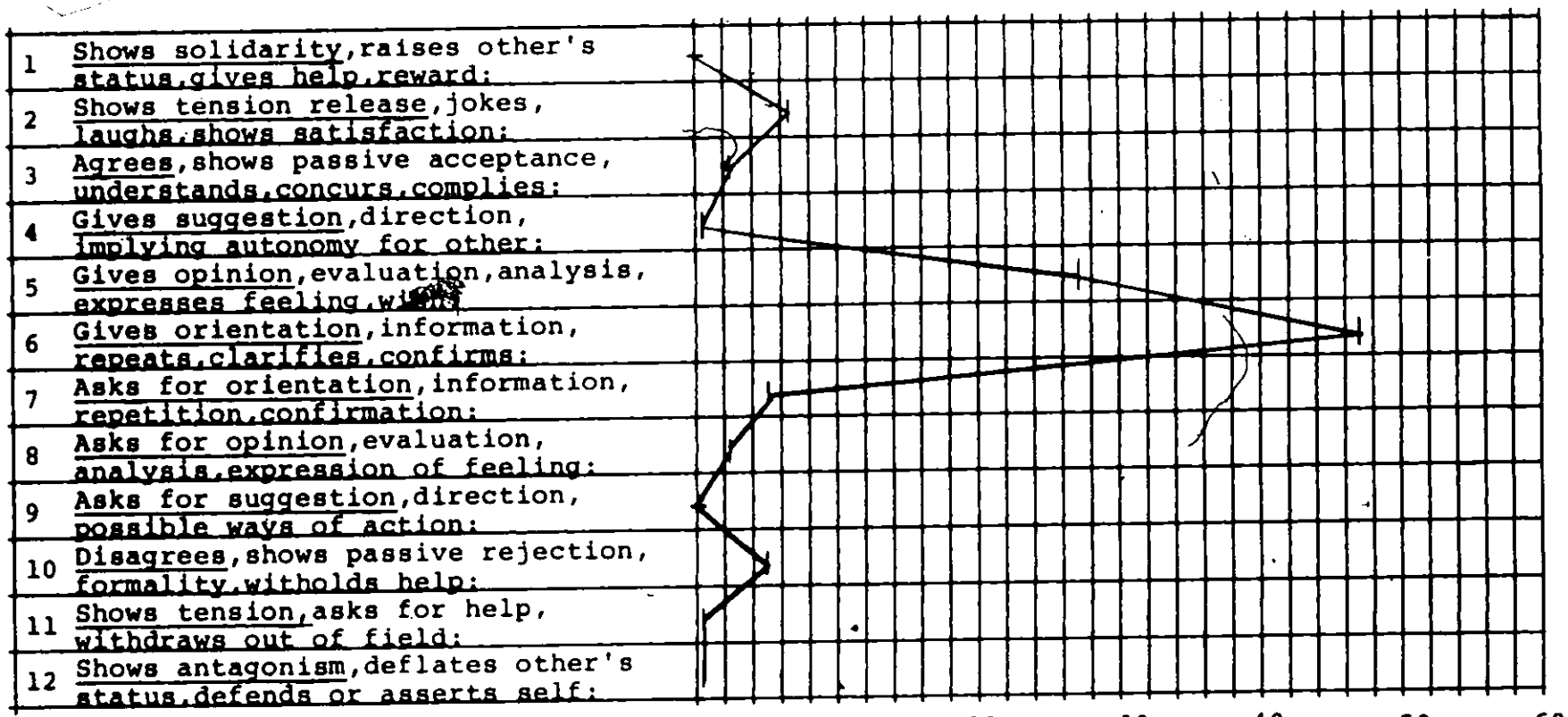


N = 115

Bales's Category System

Interaction Profile (four persons)

Chart # 32 Group # 2 Session Drinking Time 10 min. (Segment 4)

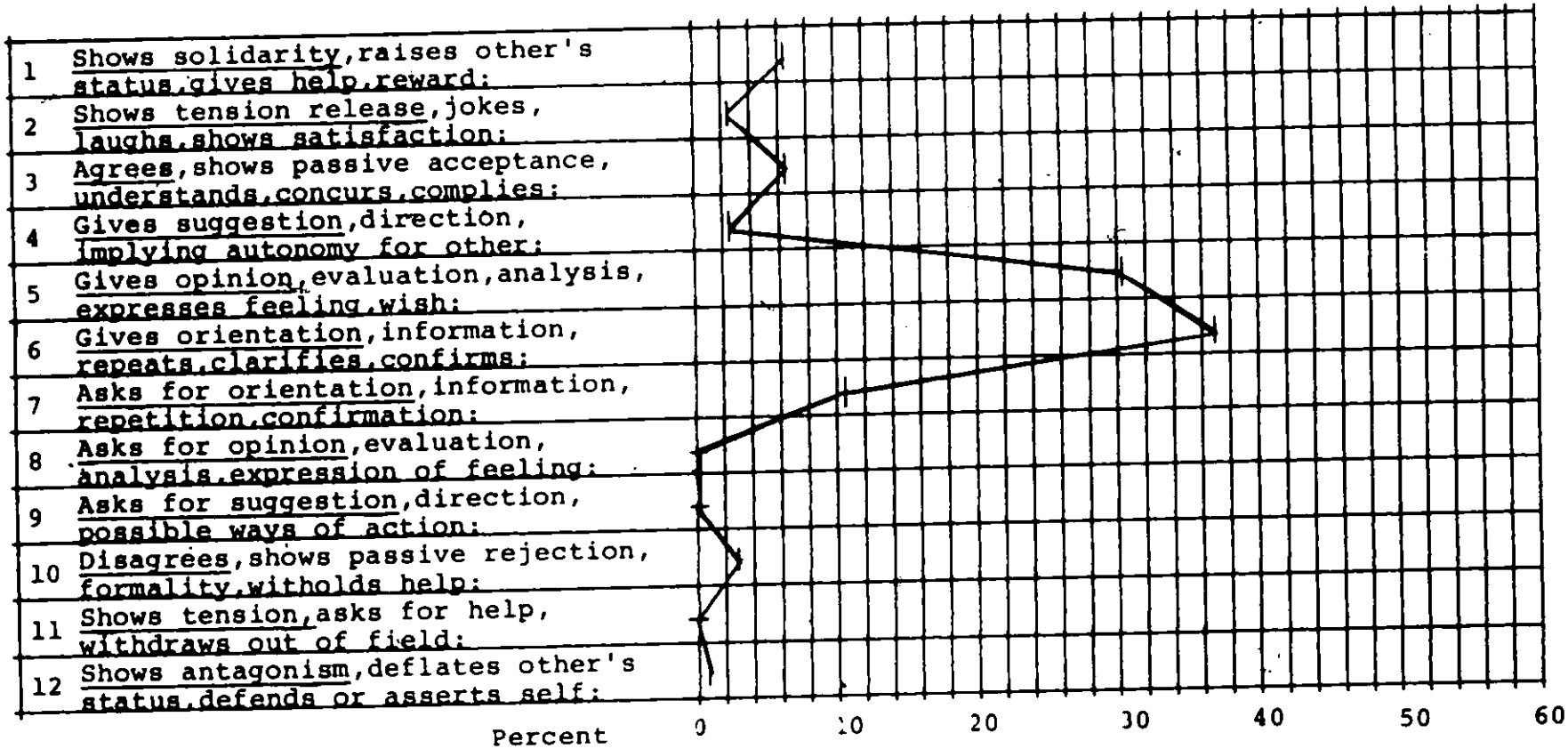


N = 116

Bales's Category System

Interaction Profile (four persons)

Chart # 33 Group # 3 Session Drinking Time 10 min. (Segment 4)

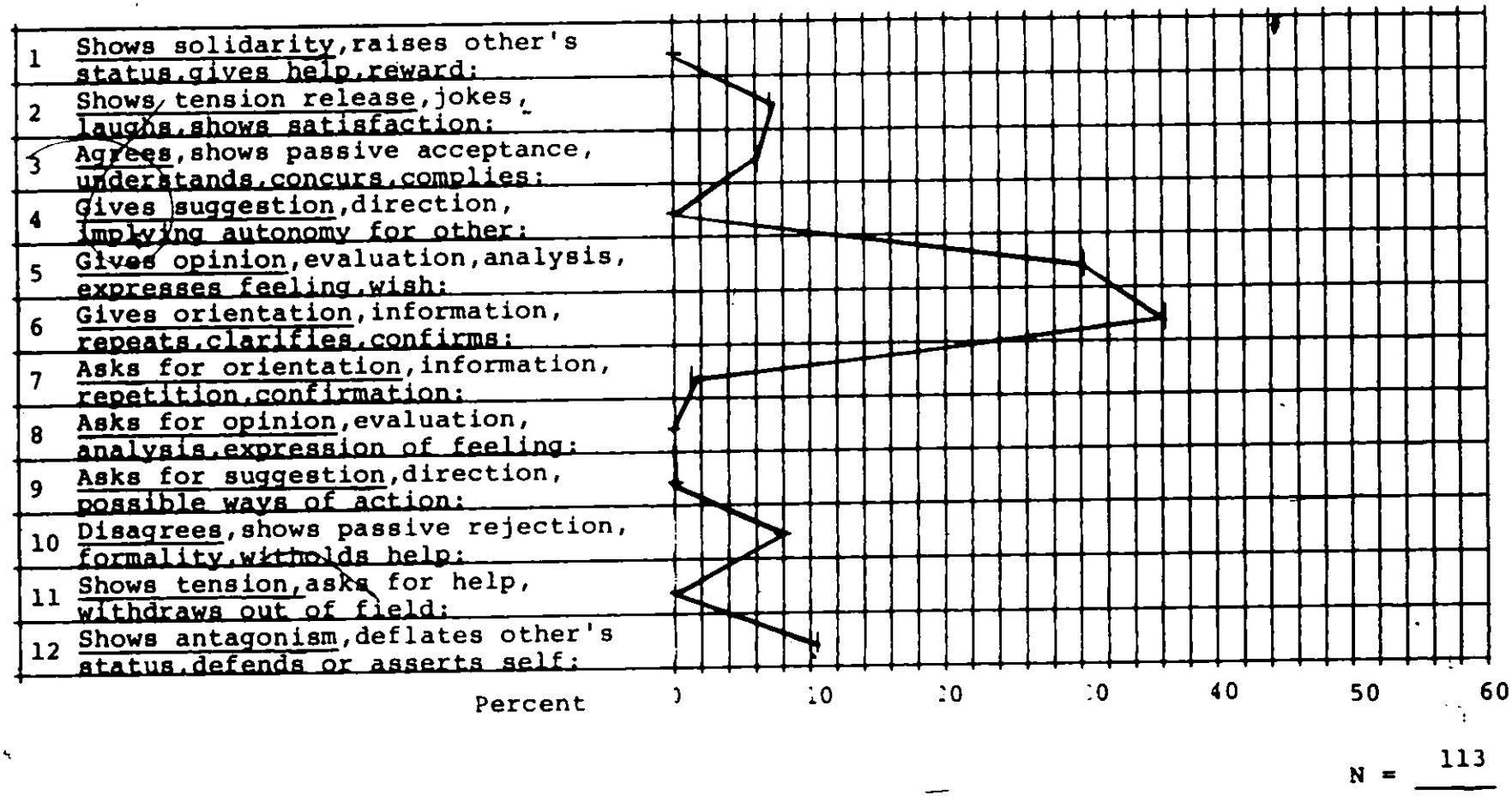


N = 92

Bales's Category System

Interaction Profile (four persons)

Chart # 34 Group # 4 Session Drinking Time 10 min. (Segment 4)

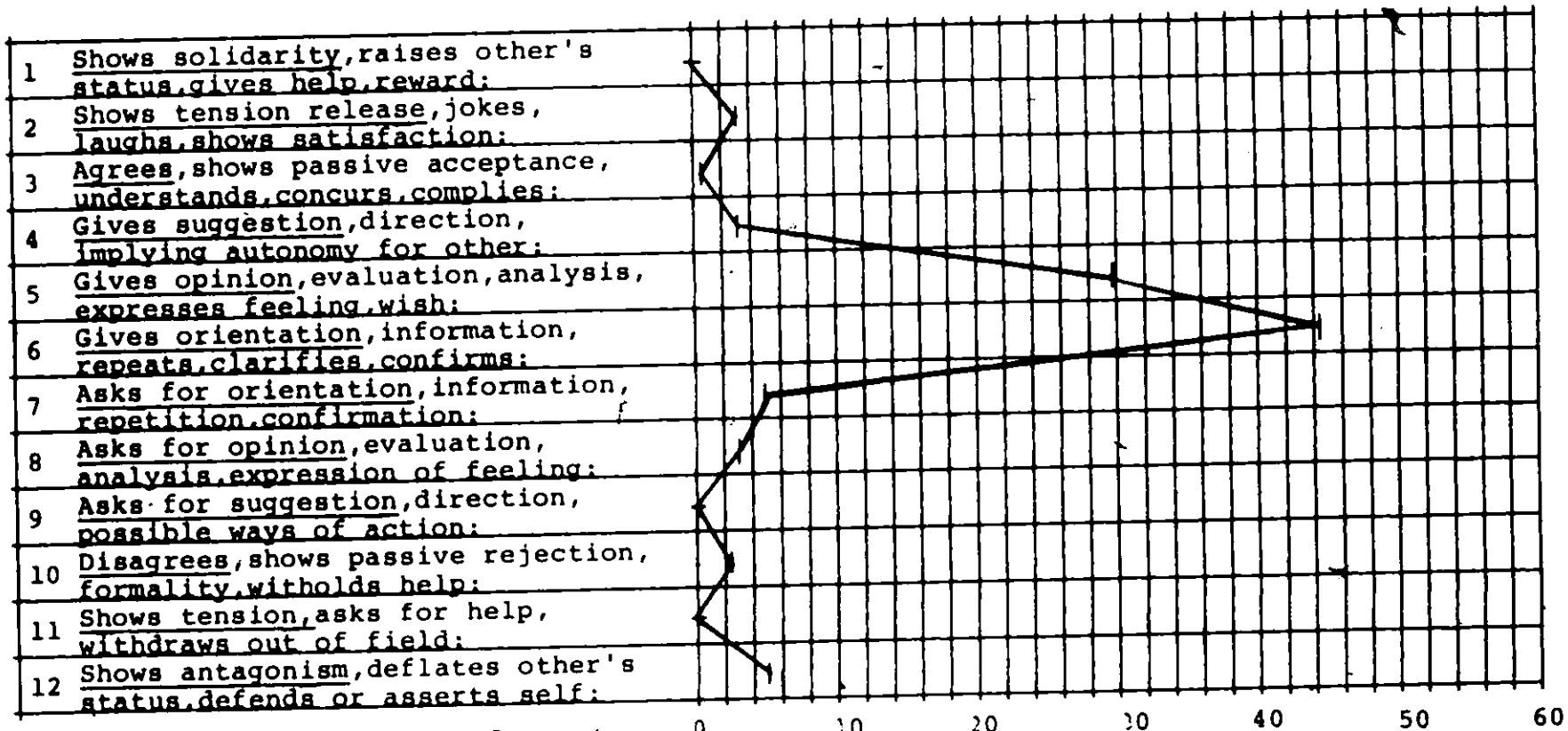


N = 113

Bales's Category System

Interaction Profile (four persons)

Chart # 35 Group # 5 Session Drinking Time 10 min. (Segment 4)

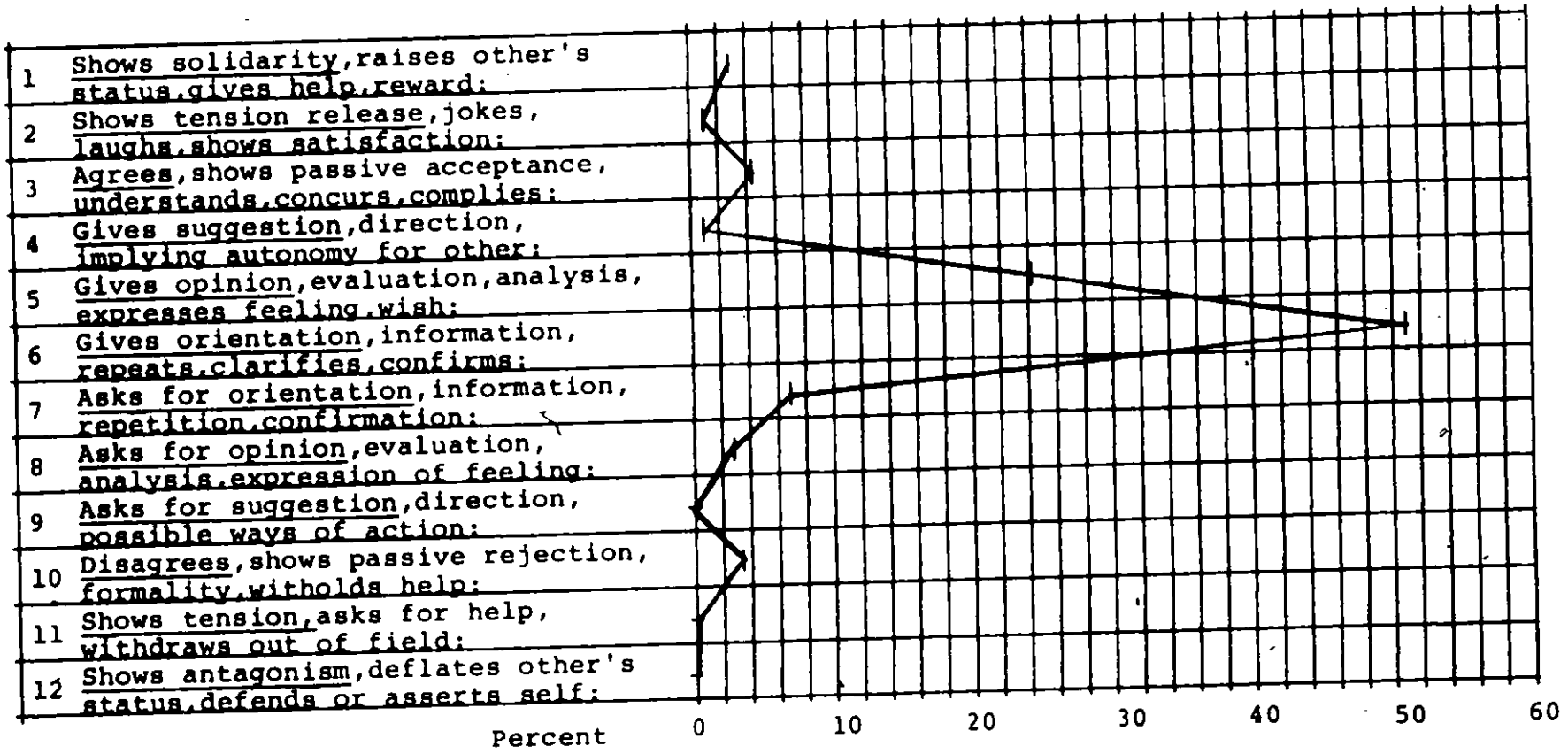


N = 78

Bales's Category System

Interaction Profile (four persons)

Chart # 36 Group # 6 Session Drinking Time 10 min. (Segment 4)

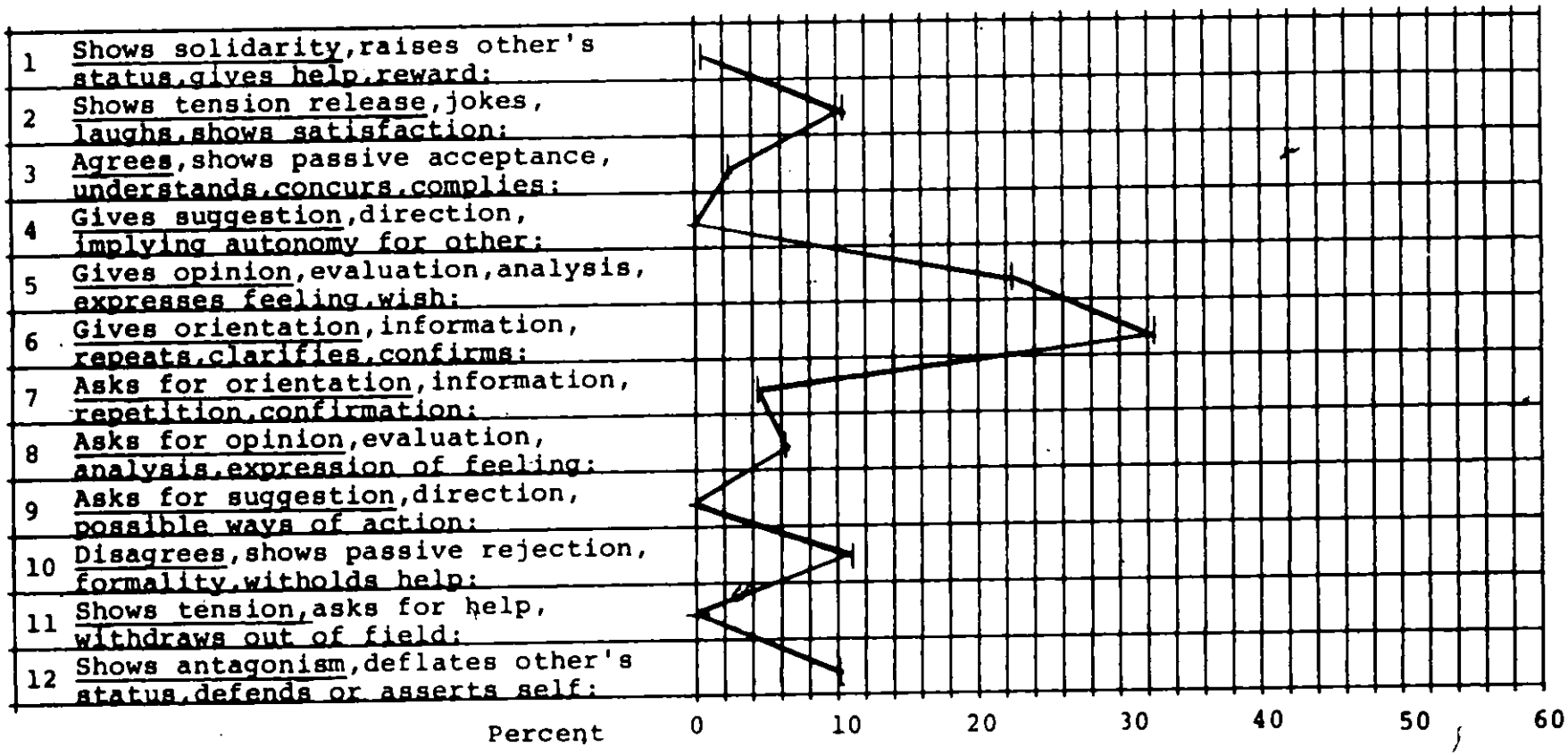


N = 86

Bales's Category System

Interaction Profile (four persons)

Chart # 37 Group # 7 Session Drinking Time 10 min. (Segment 4)

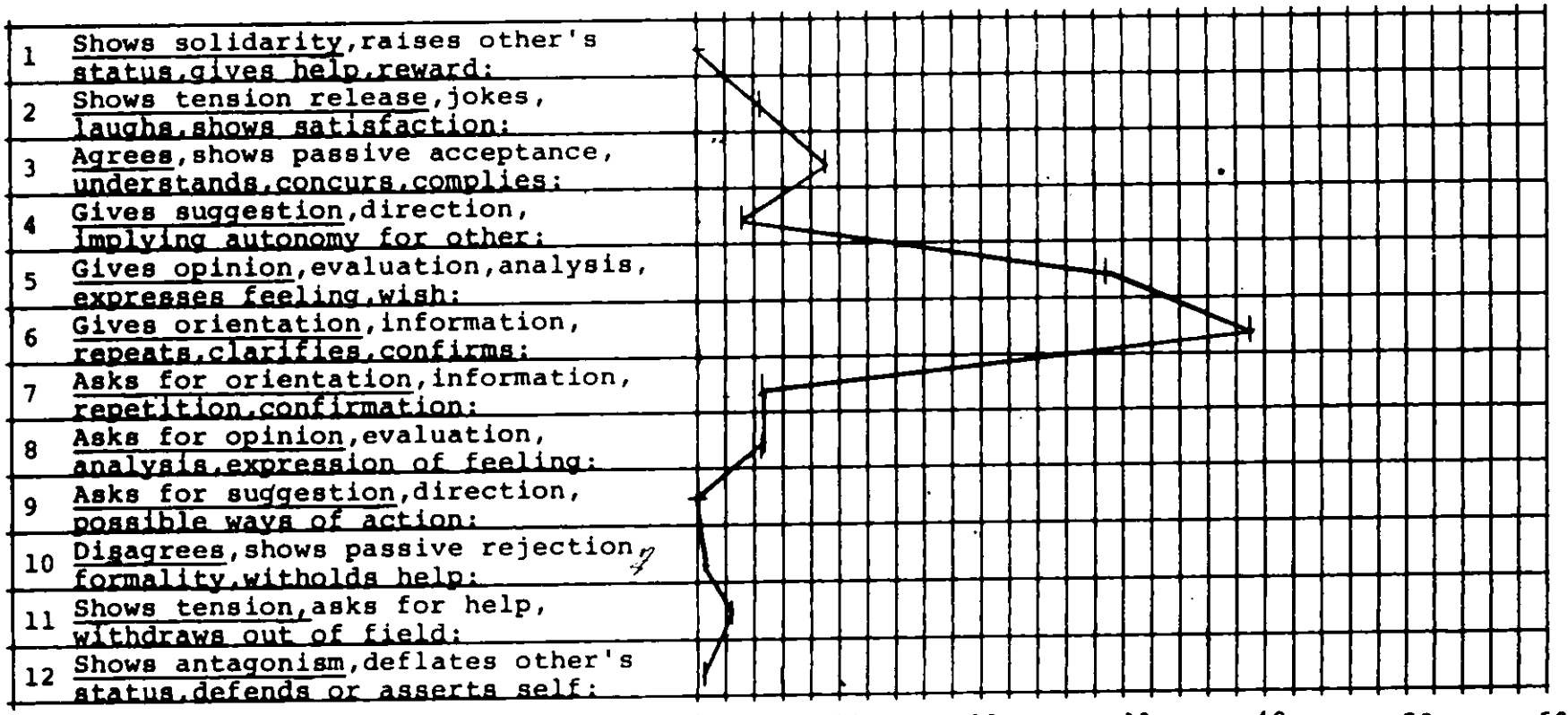


N = 109

Bales's Category System

Interaction Profile (four persons)

Chart # 38 Group # 8 Session Drinking Time 40 min. (Segment 4)

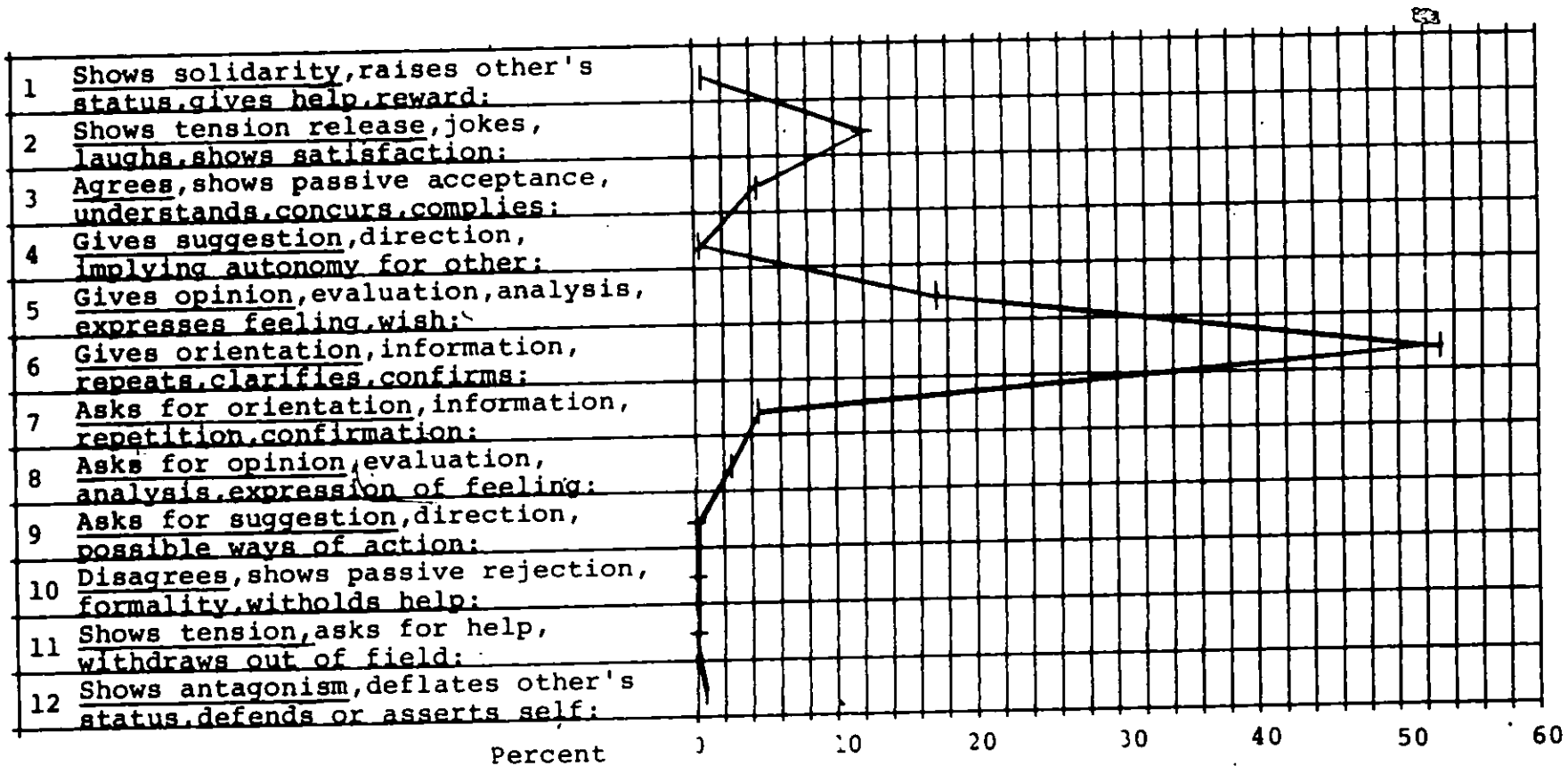


N = 107

Bales's Category System

Interaction Profile (four persons)

Chart # 39 Group # 9 Session Drinking Time 10 min. (Segment 4)

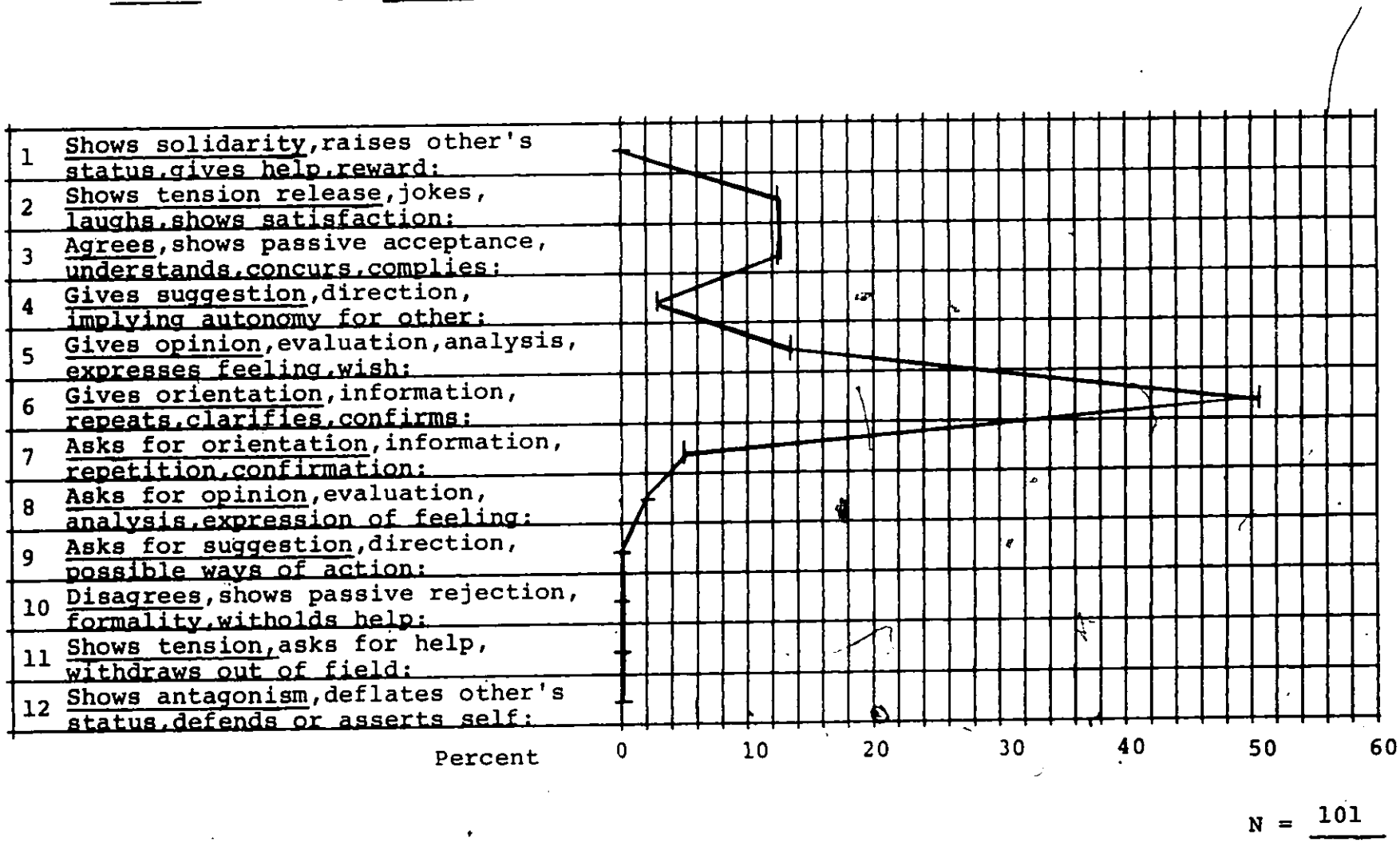


N = 117

Bales's Category System

Interaction Profile (four persons)

Chart # 40 Group # 10 Session Drinking Time 10 min. (Segment 4)

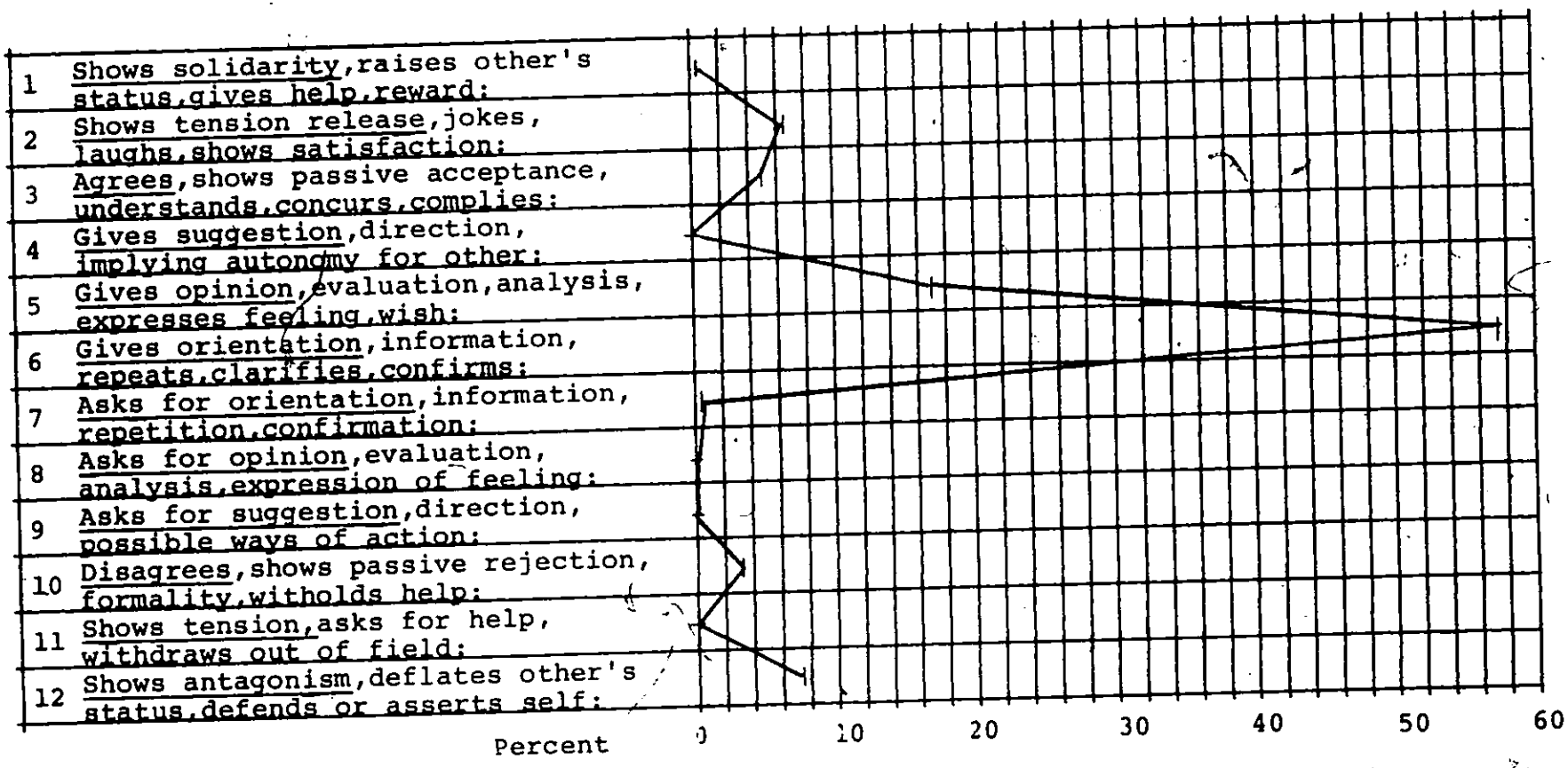


N = 101

Bales's Category System

Interaction Profile (four persons)

Chart # 41 · Group # 1 Session Drinking Time 10 min. (Segment 5)

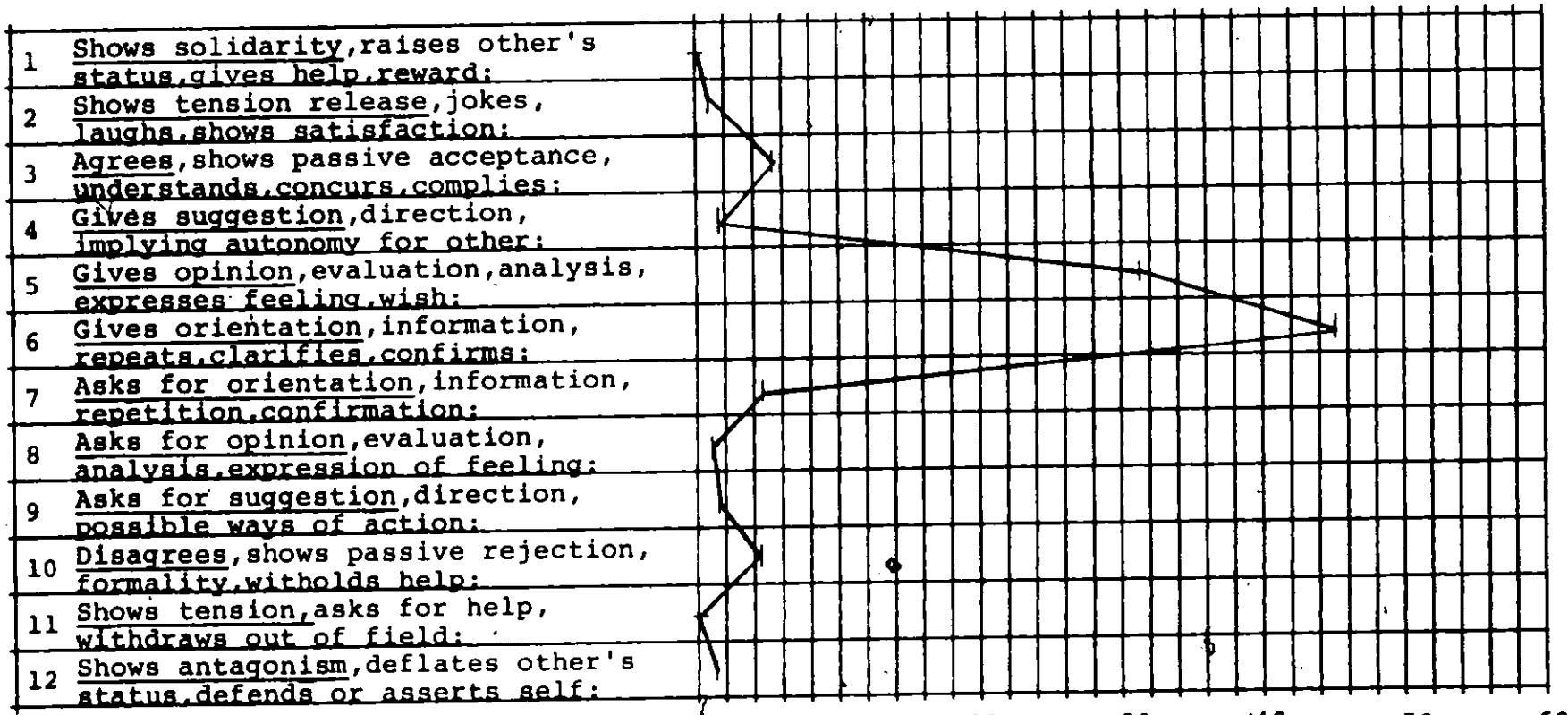


N = 106

Bales's Category System

Interaction Profile (four persons)

Chart # 42 Group # 2 Session Drinking Time 10 min. (Segment 5)

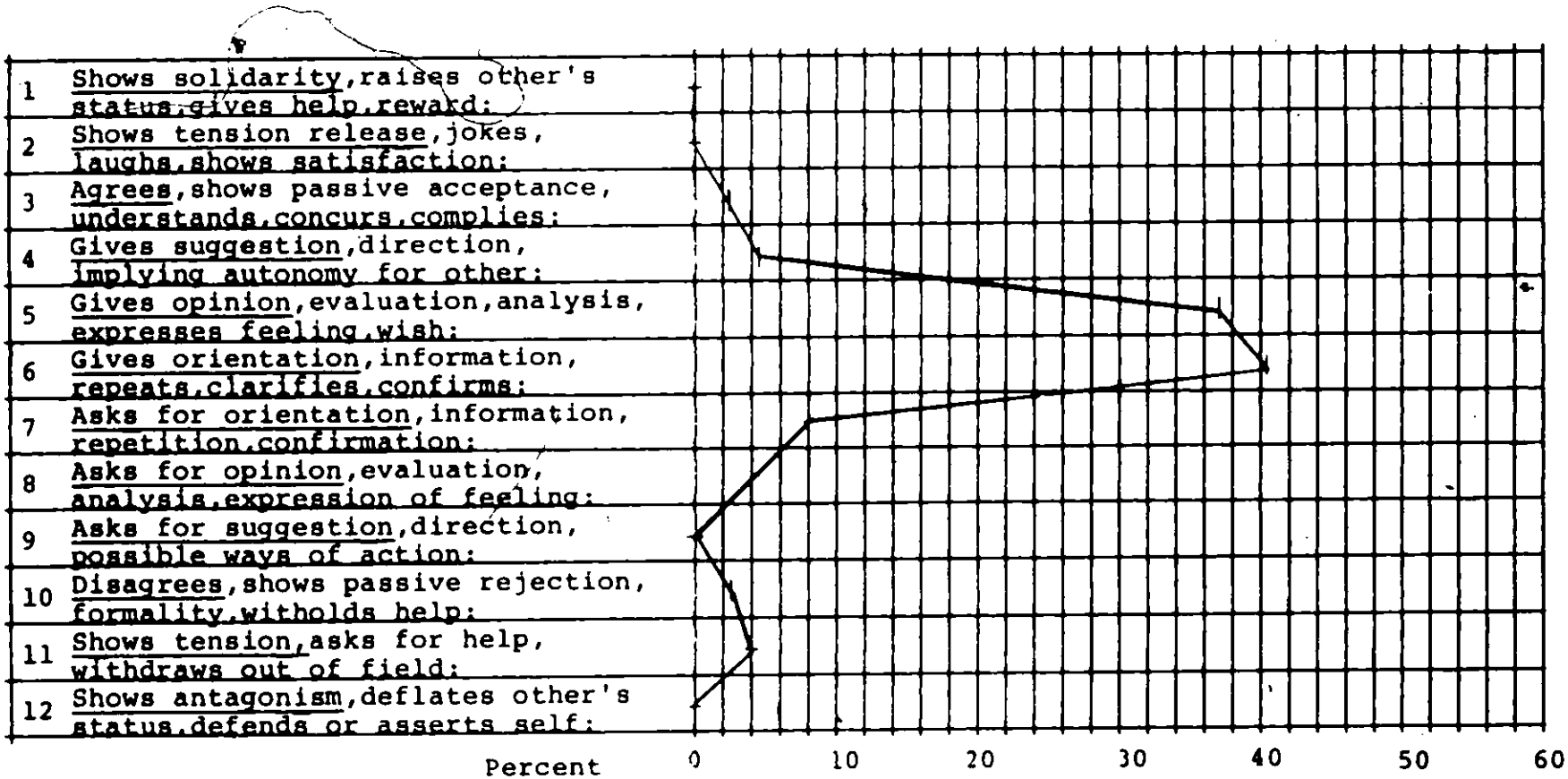


N = 104

Bales's Category System

Interaction Profile (four persons)

Chart # 43 Group # 3 Session Drinking Time 10 min. (Segment 5)

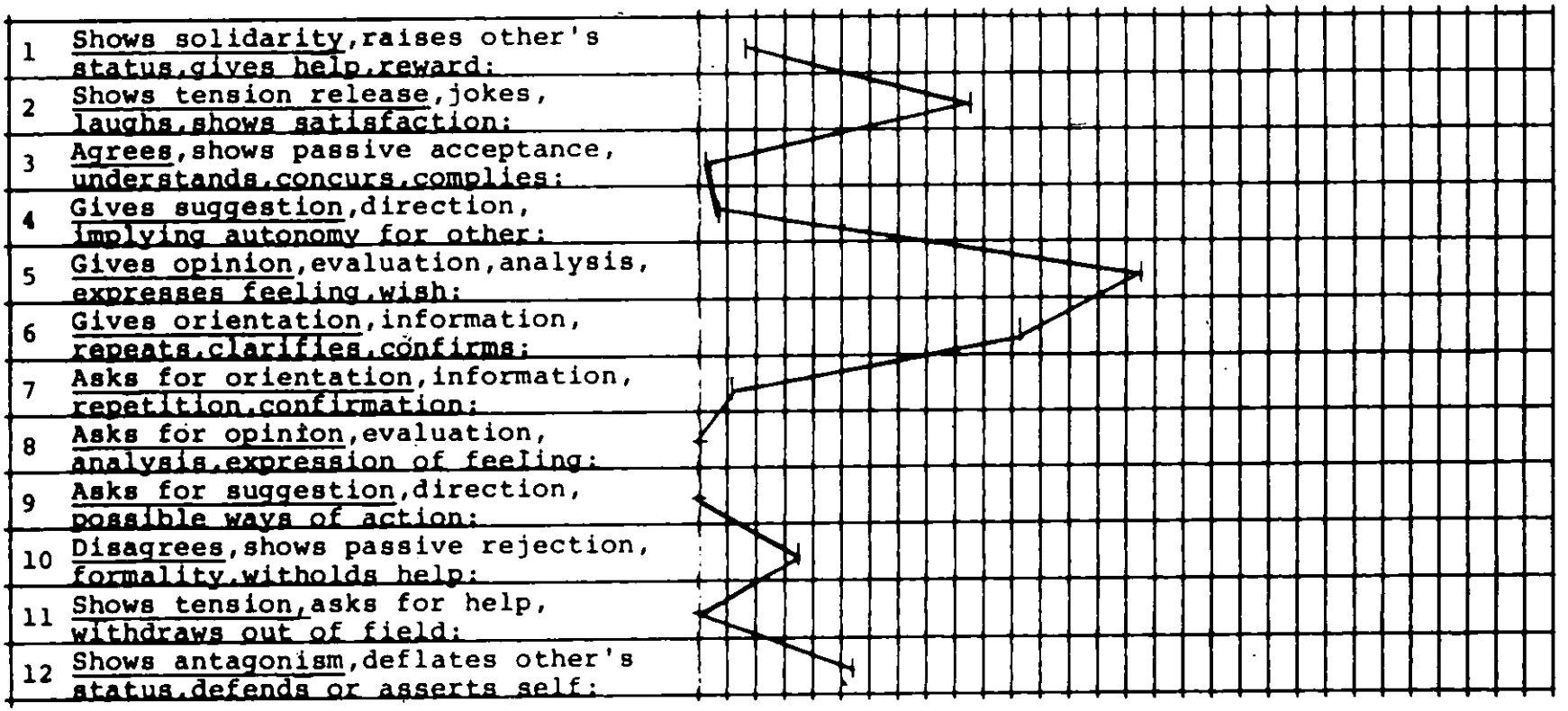


N = 75

Bales's Category System

Interaction Profile (four persons)

Chart # 44 Group # 4 Session Drinkin g Time 10 min. (Segment 5)

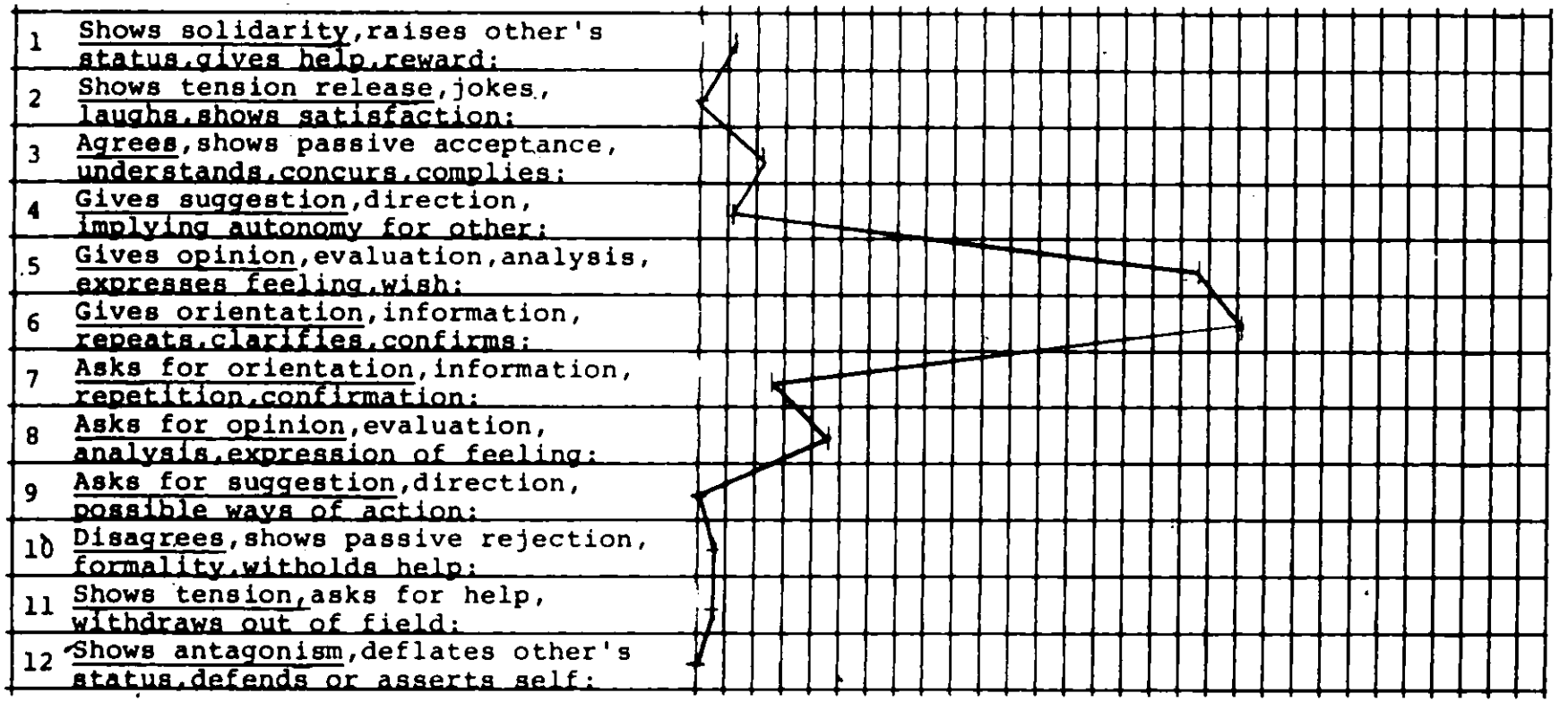


N = 114

Bales's Category System

Interaction Profile (four persons)

Chart # 45 Group # 5 Session Drinking Time 10 min. (Segment 5)

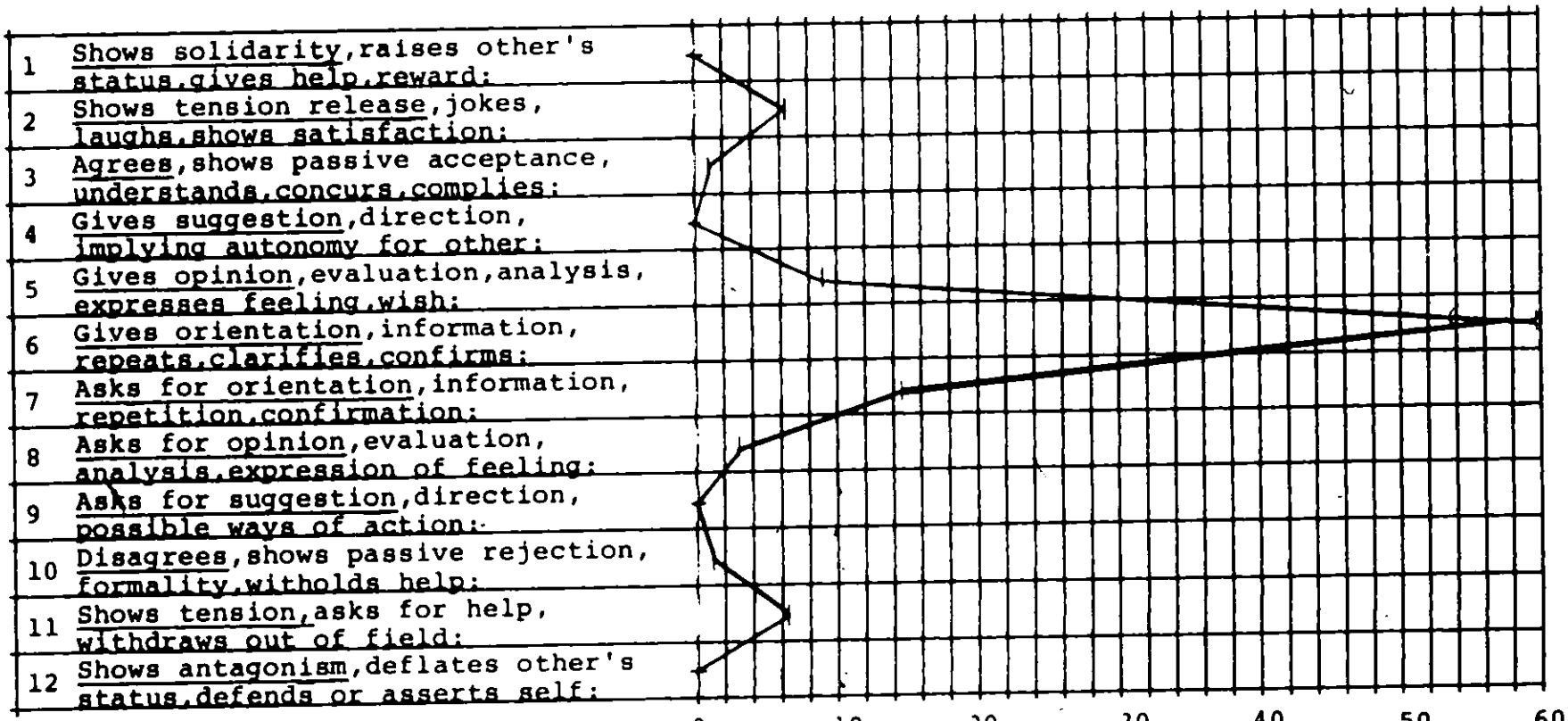


N = 88

Bales's Category System

Interaction Profile (four persons)

Chart # 46 Group # 6 Session Drinking Time 10 min. (Segment 5)

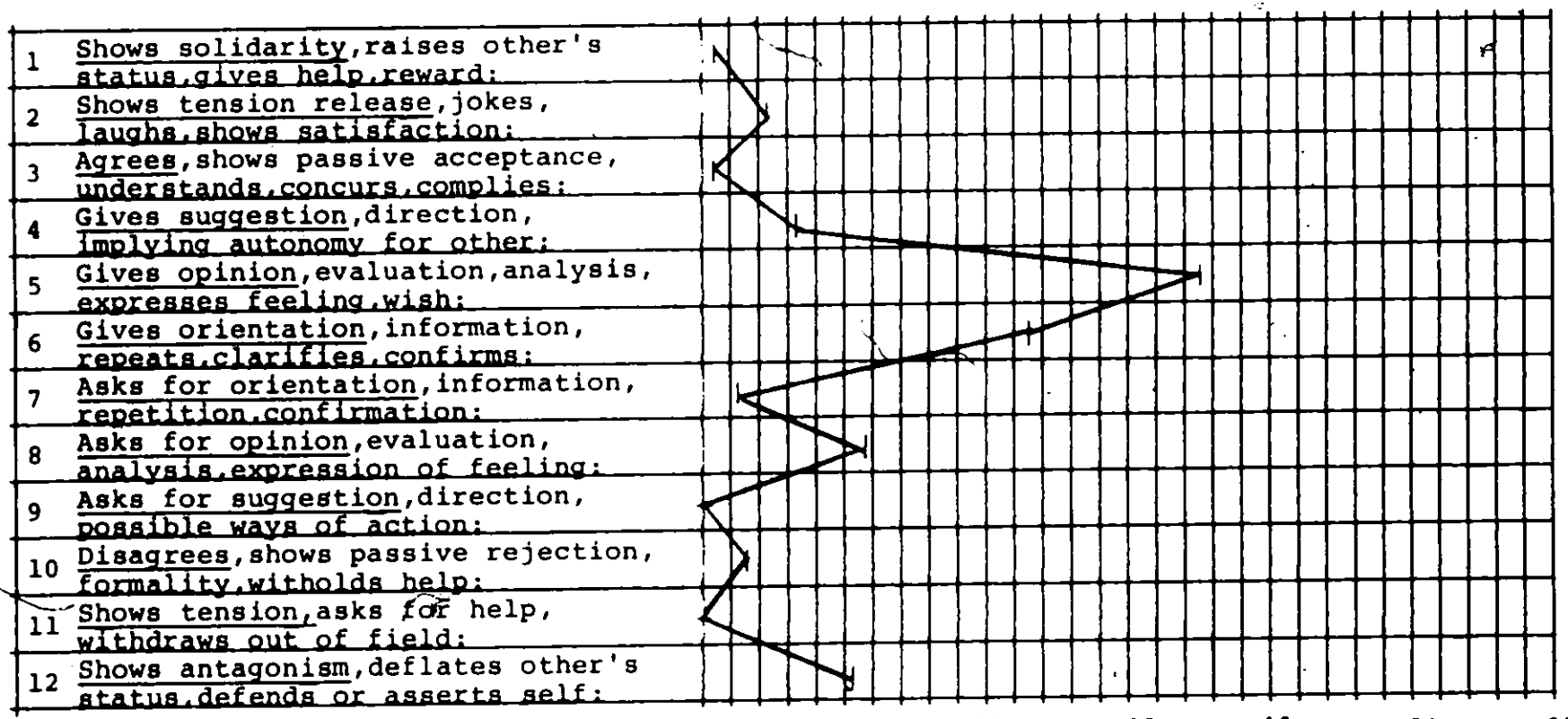


N = 66

Bales's Category System

Interaction Profile (four persons)

Chart # 47 Group # 7 Session Drinking Time 30 min. (Segment 5)

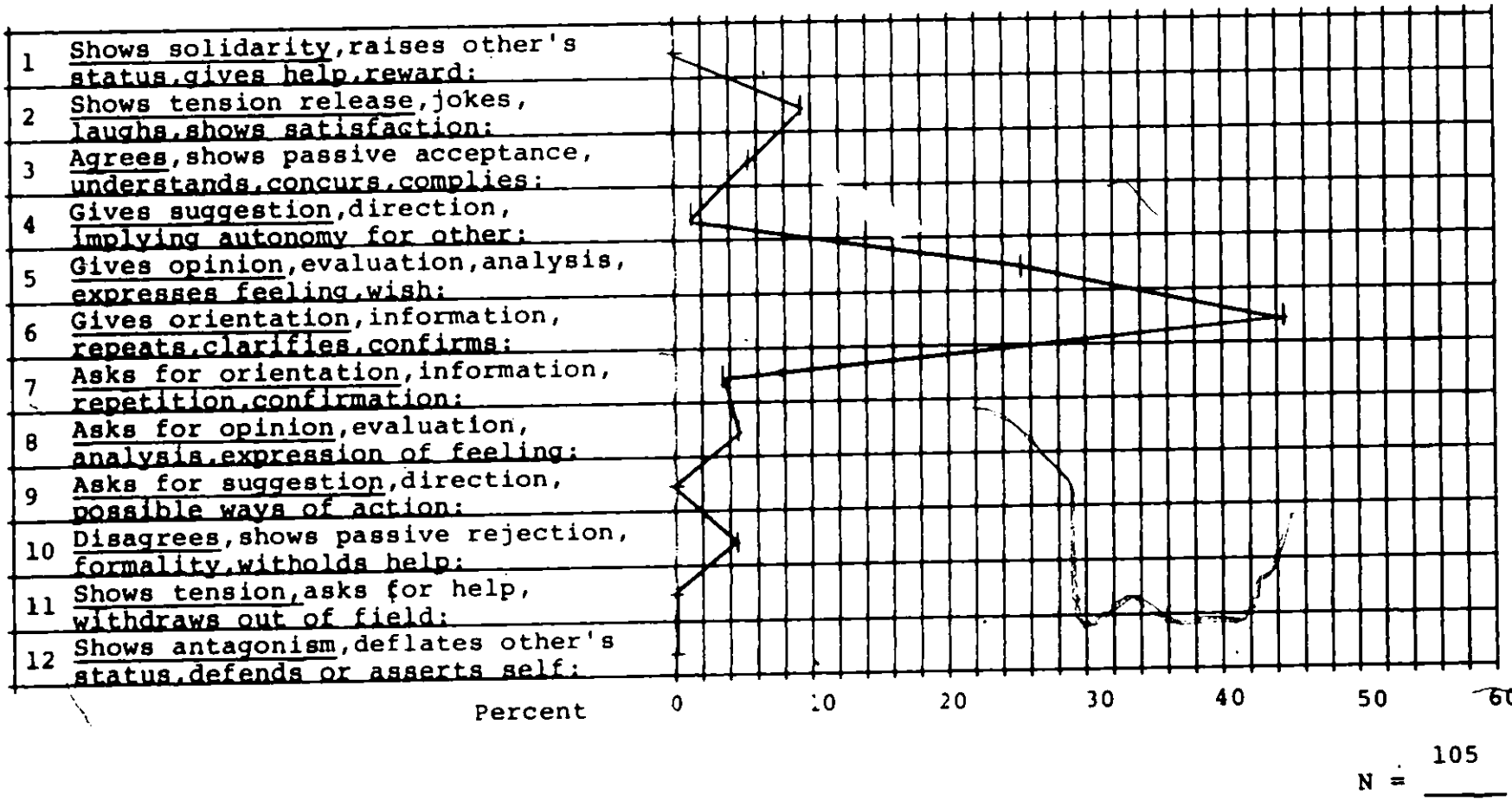


N = 93

Bales's Category System

Interaction Profile (four persons)

Chart # 48 Group # 8 Session Drinking Time 10 min. (Segment 5)

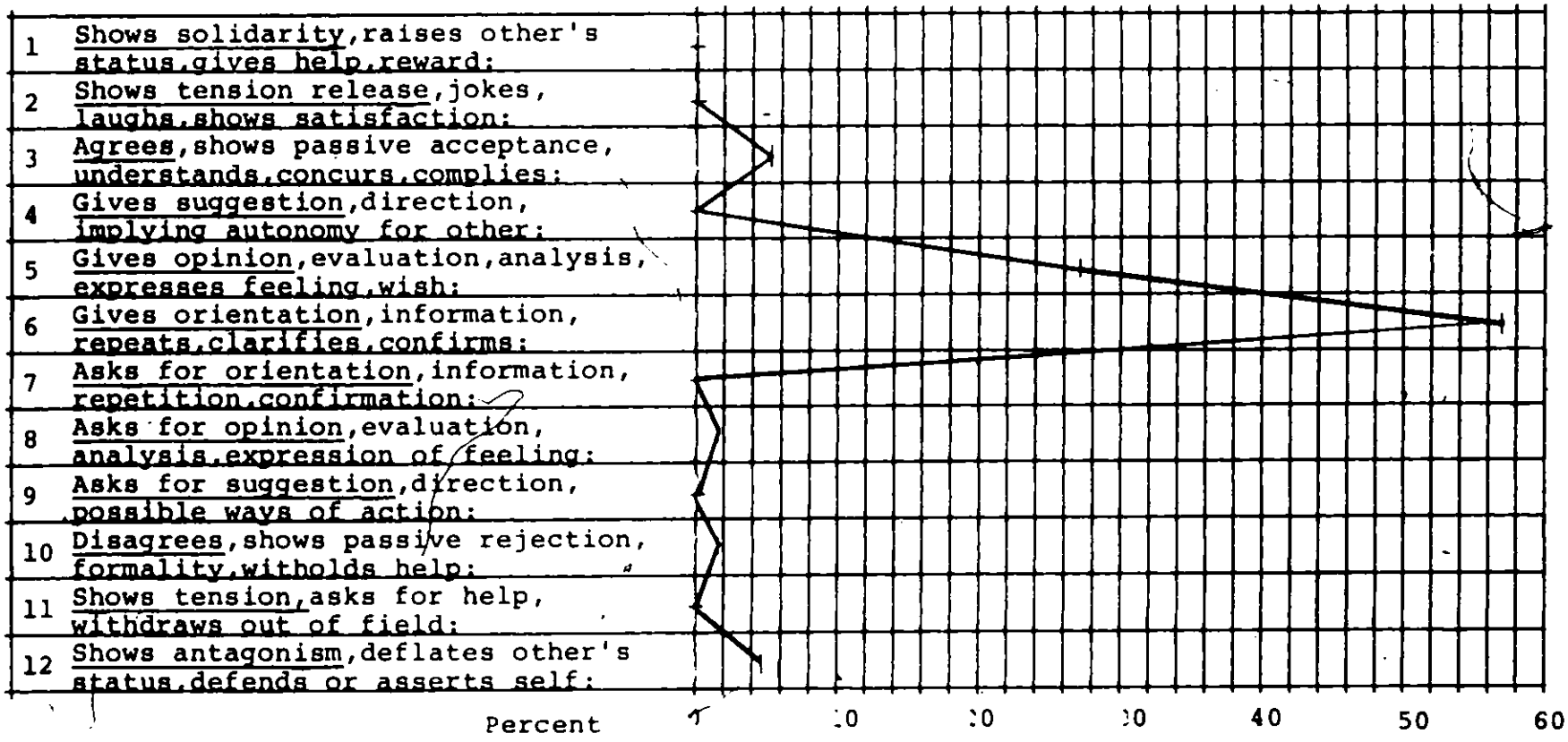


N = 105

Bales's Category System

Interaction Profile (four persons)

Chart # 49 Group # 9 Session Drinking Time 40 min. (Segment 5)

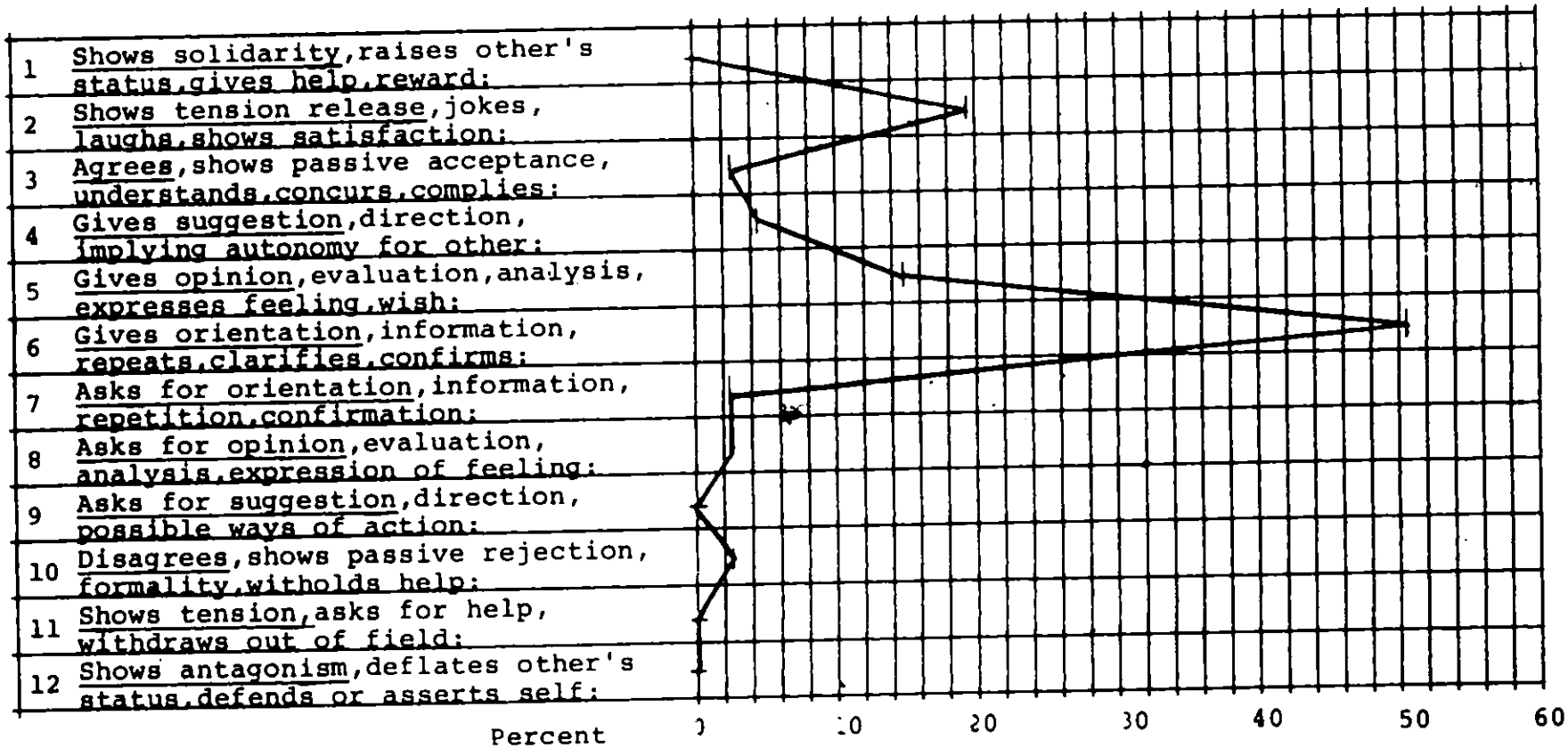


N = 107

Bales's Category System

Interaction Profile (four persons)

Chart # 50 Group # 10 Session Drinking Time 40 min. (Segment 5)

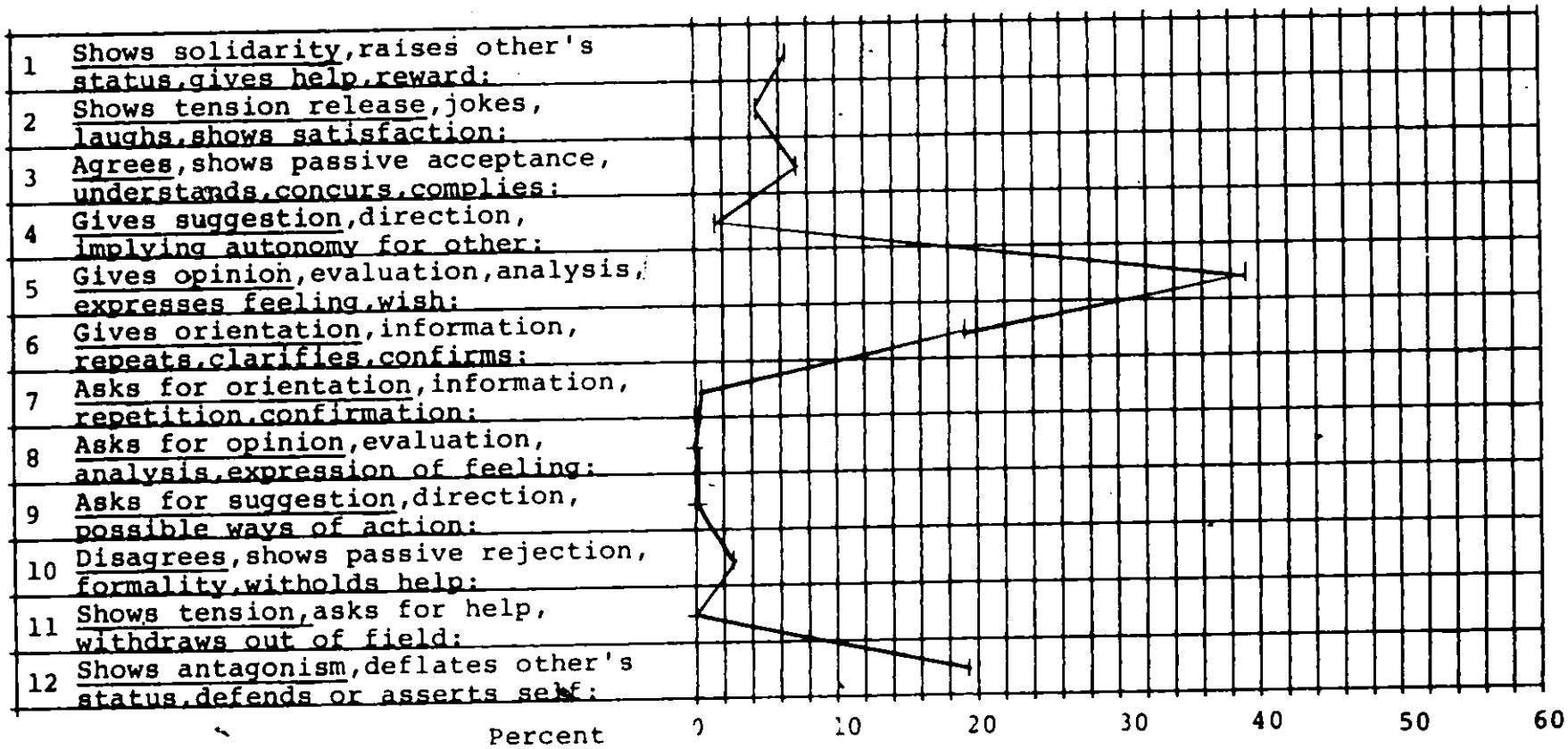


N = 120

Bales's Category System

Interaction Profile (four persons)

Chart # 51 Group # 1 Session Drinking Time 10 min. (Segment 6)

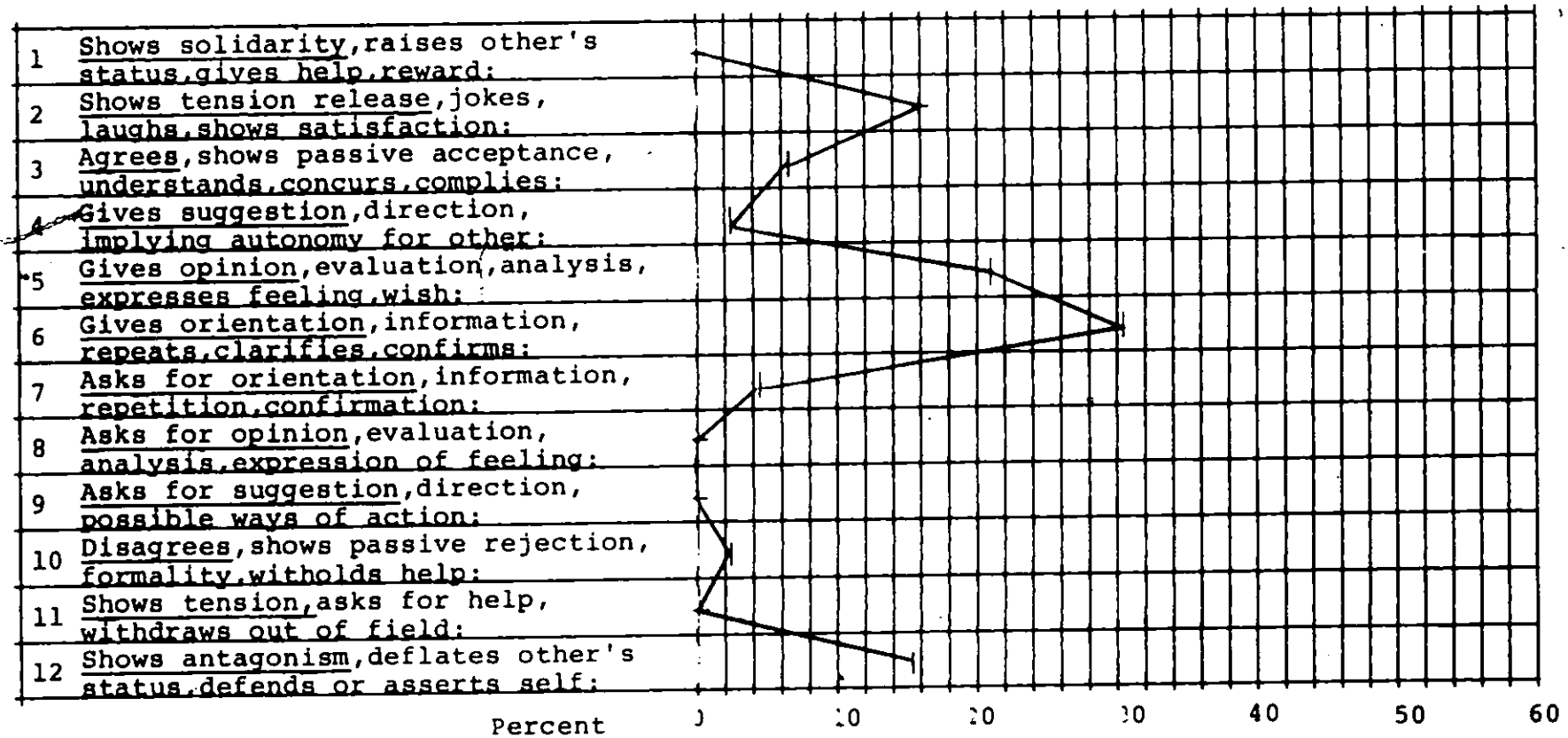


N = 109

Bales's Category System

Interaction Profile (four persons)

Chart # 52 Group # 2 Session Drinking Time 20 min. (Segment 6)

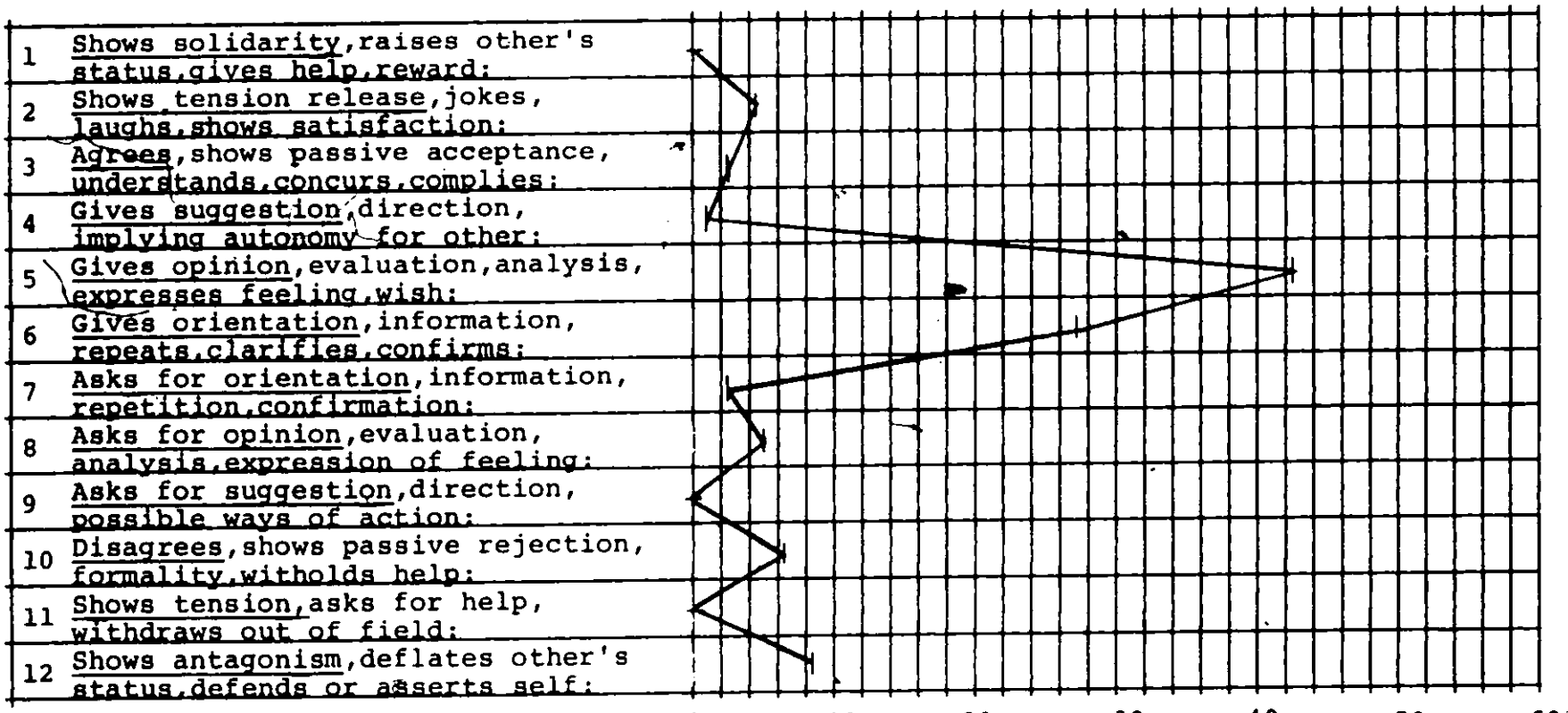


N = 106

Bales's Category System

Interaction Profile (four persons)

Chart # 53 Group # 3 Session Drinking Time 10 min. (Segment 6)

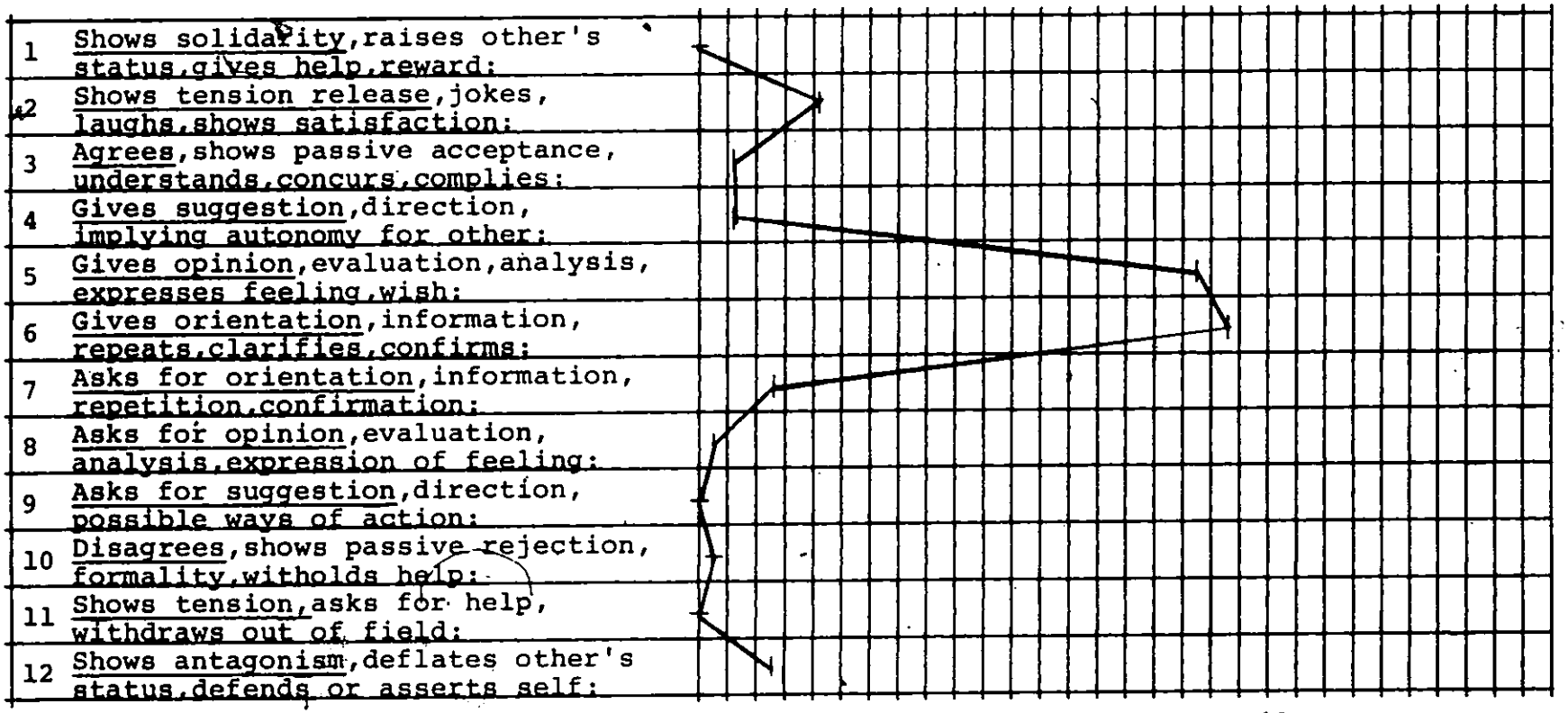


N = 97

Bales's Category System

Interaction Profile (four persons)

Chart # 54 Group # 4 Session Drinking Time 10 min. (Segment 6)

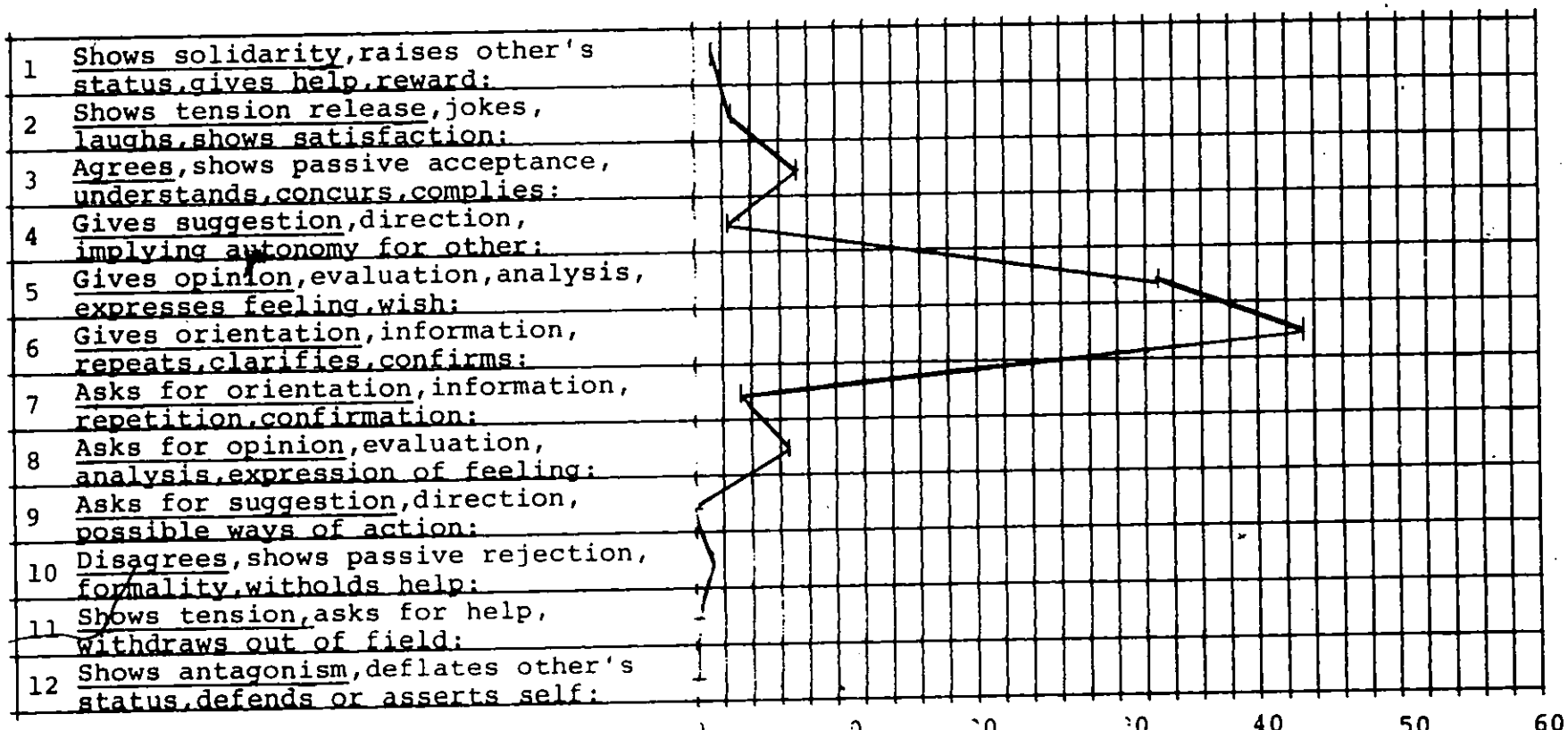


N = 85

Bales's Category System

Interaction Profile (four persons)

Chart # 55 Group # 5 Session Drinking Time 10 min. (Segment 6)

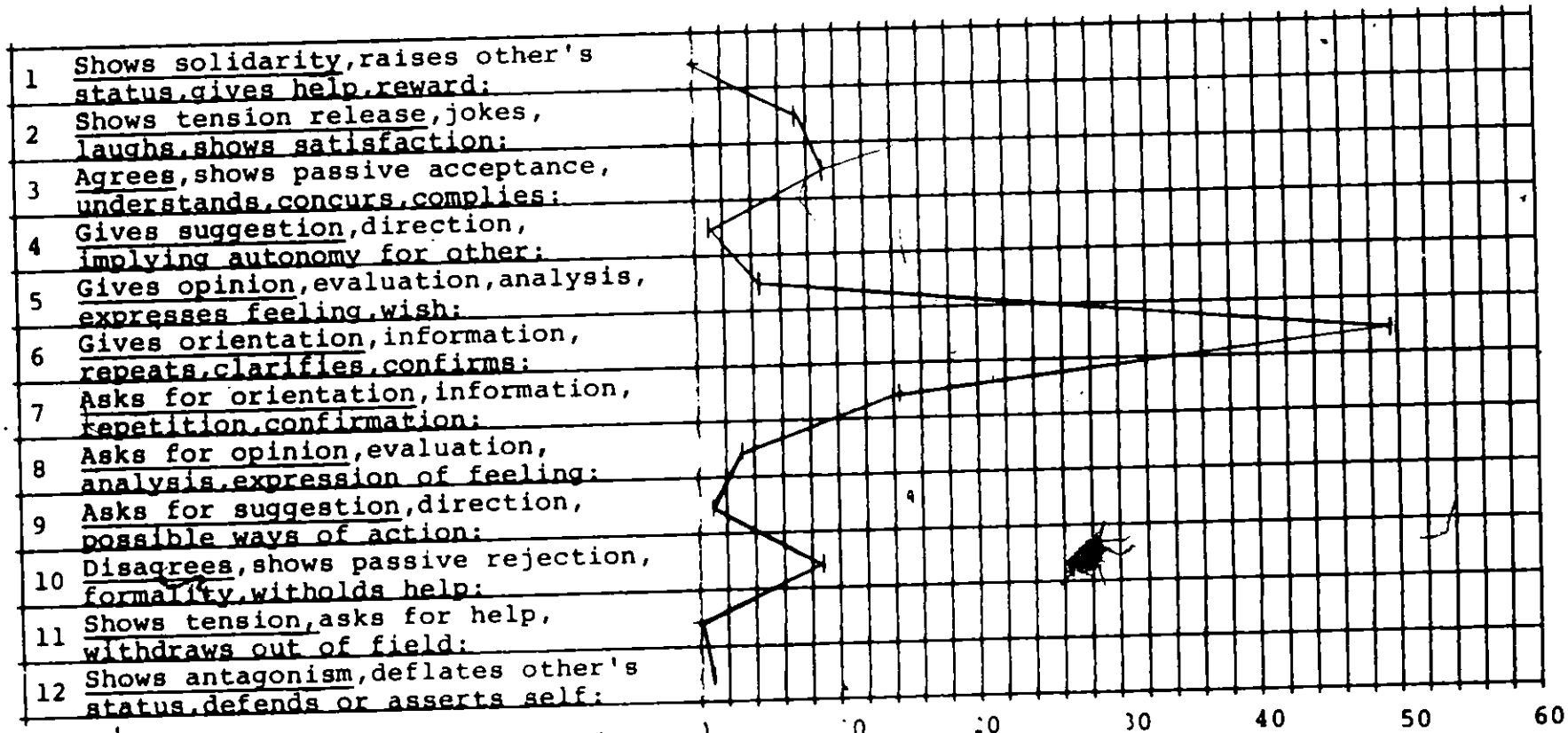


N = 94

Bales's Category System

Interaction Profile (four persons)

Chart # 56 Group # 6 Session Drinking Time 10 min. (Segment 6)

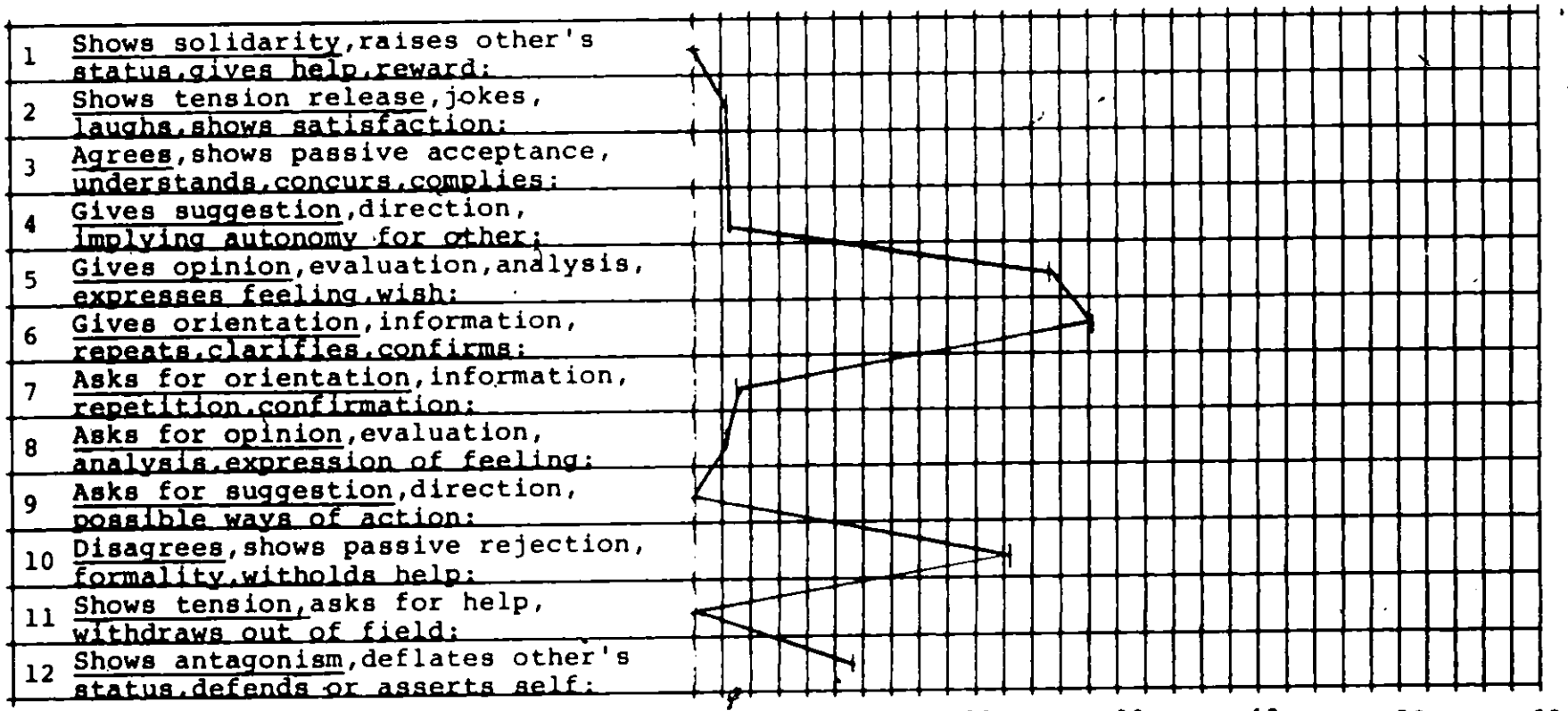


N = 81

Bales's Category System

Interaction Profile (four persons)

Chart # 57 Group # 7 Session Drinking Time 10 min. (Segment 6)

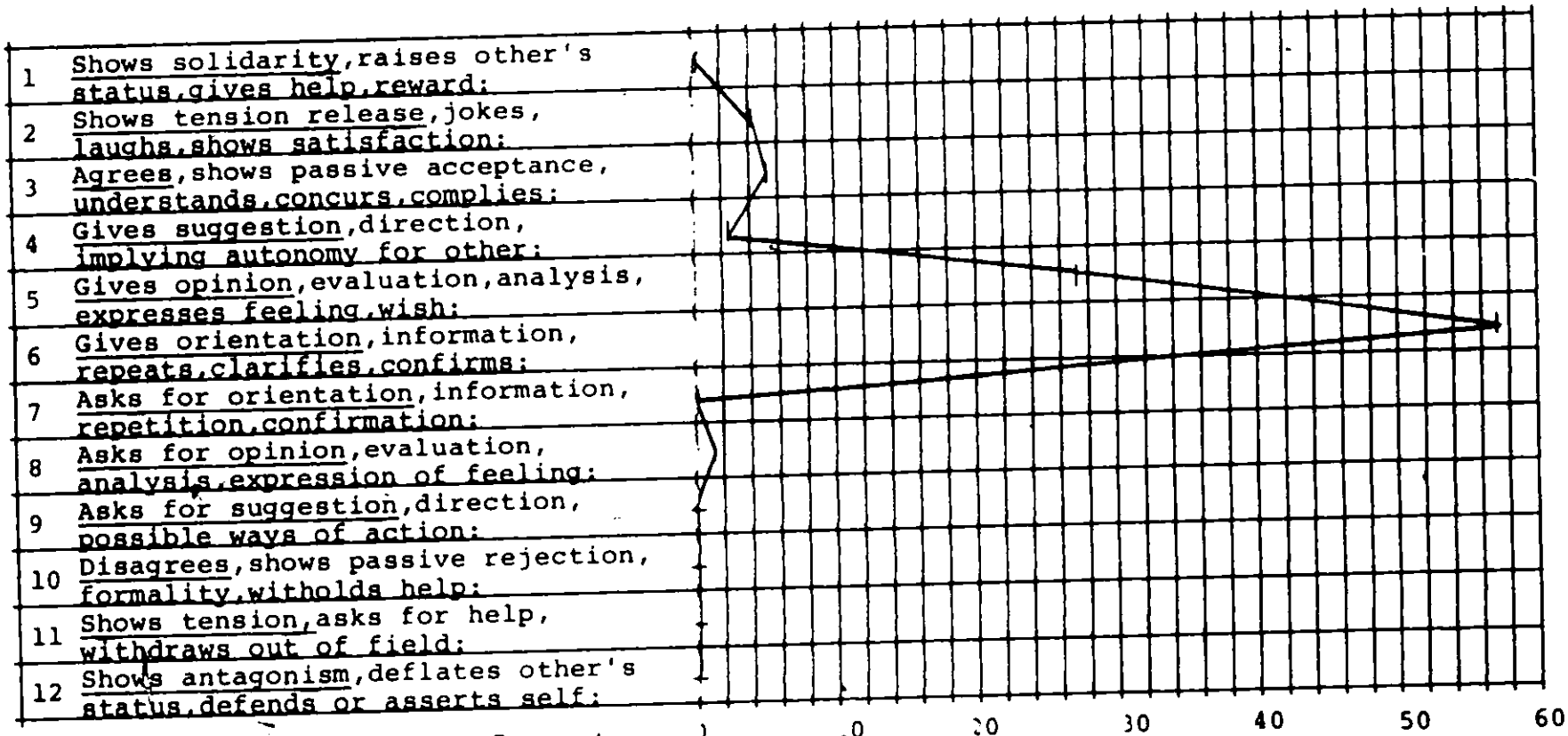


N = 95

Bales's Category System

Interaction Profile (four persons)

Chart # 68 Group # 8 Session Drinking Time 40 min. (Segment 6)

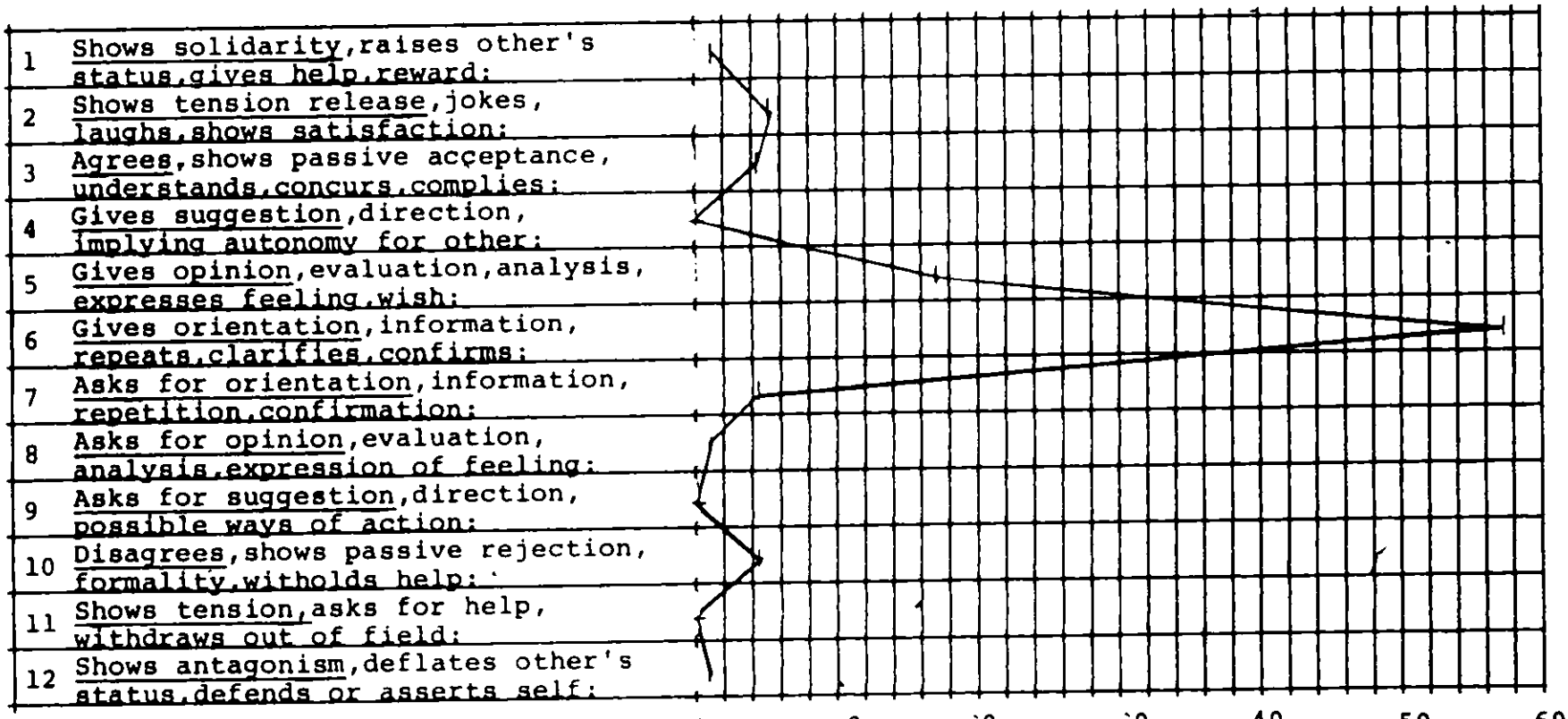


N = 118

Bales's Category System

Interaction Profile (four persons)

Chart # 59 Group # 9 Session Drinking Time 10 min. (Segment 6)

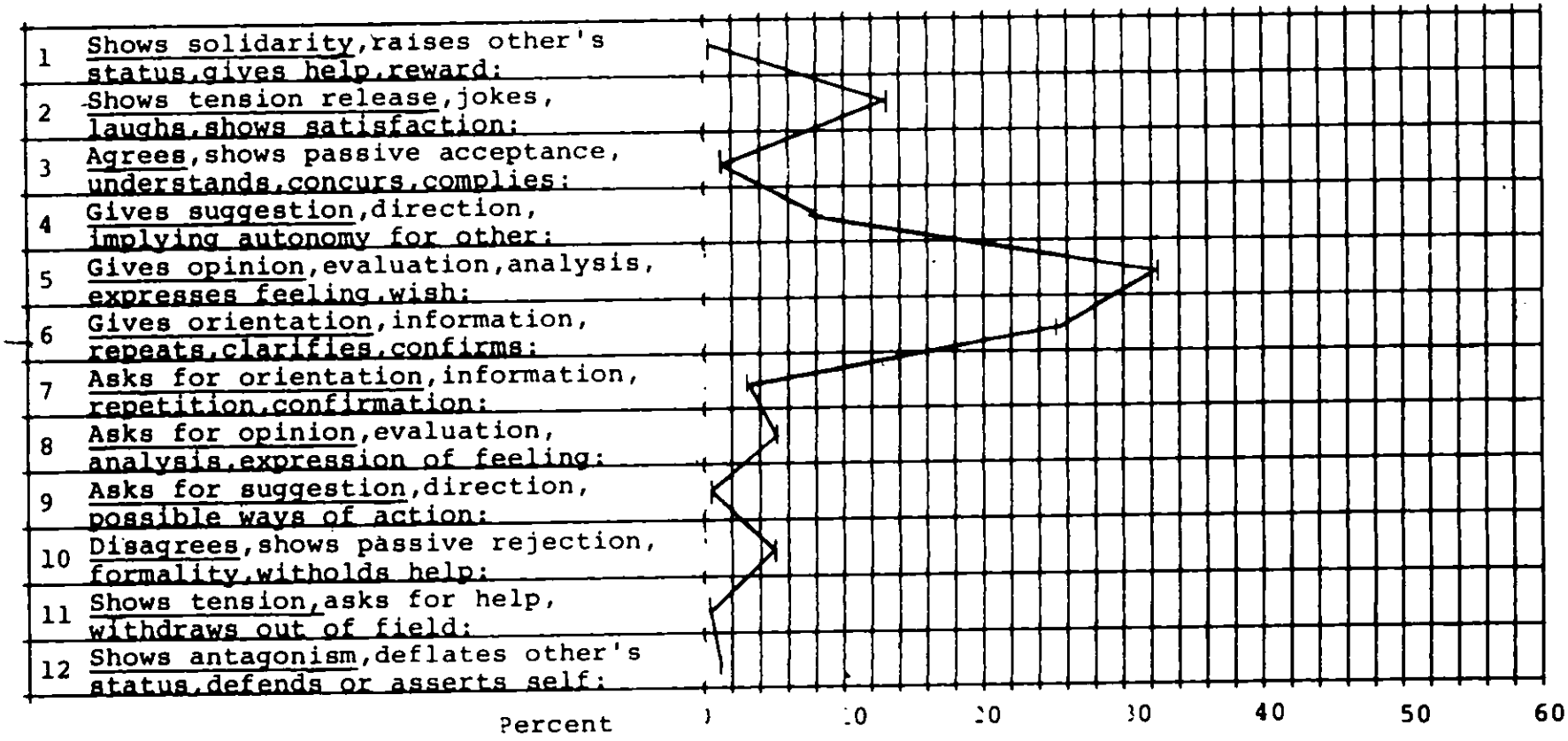


N = 86

Bales's Category System

Interaction Profile (four persons)

Chart # 60 Group # 10 Session drinking Time 20 min. (Segment 6)

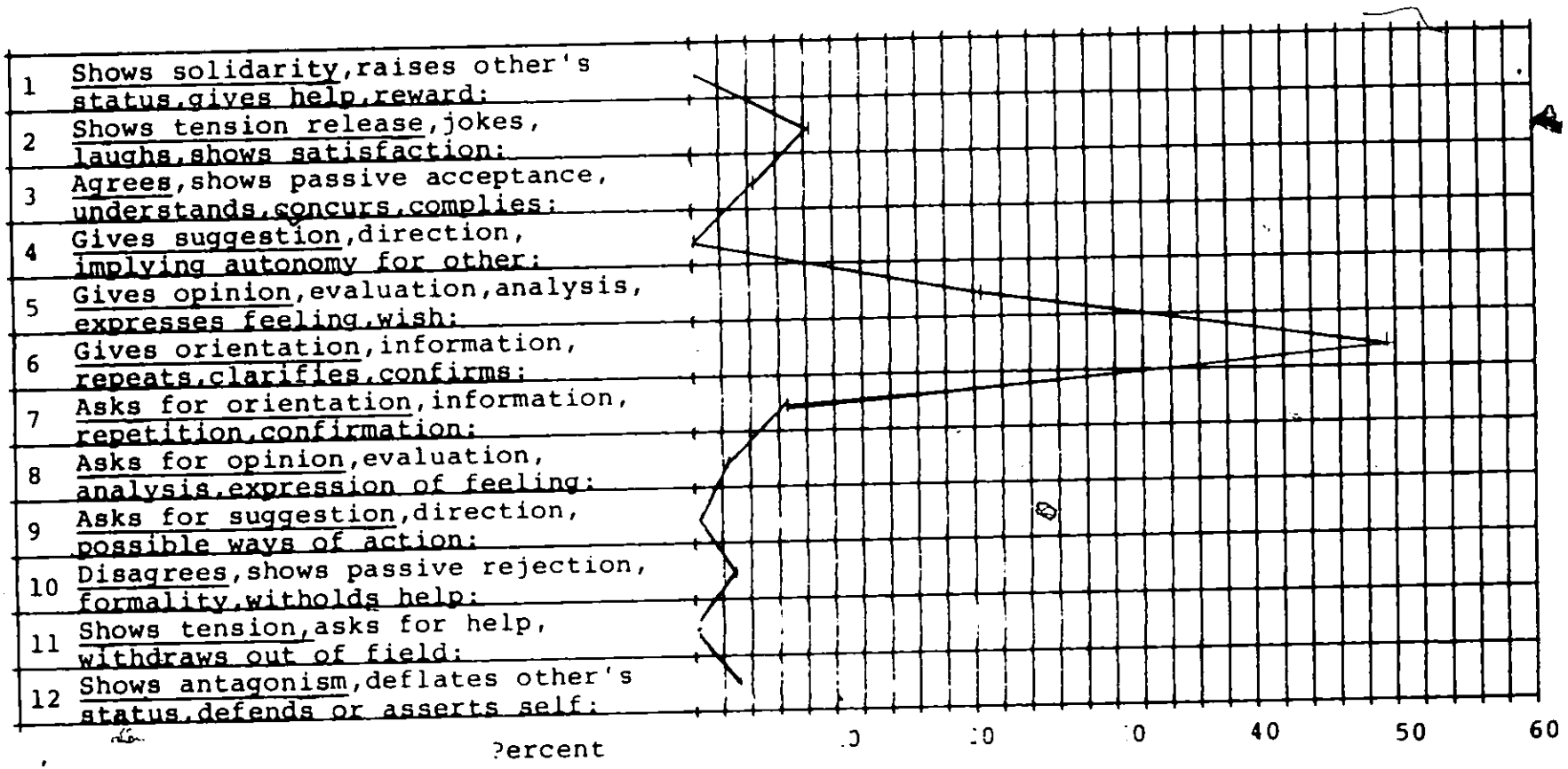


N = 112

Bales's Category System

Interaction Profile (four persons)

Chart # 60;1 Group #1-10 pooled Session Non-drinking Time 1 / 30 min.

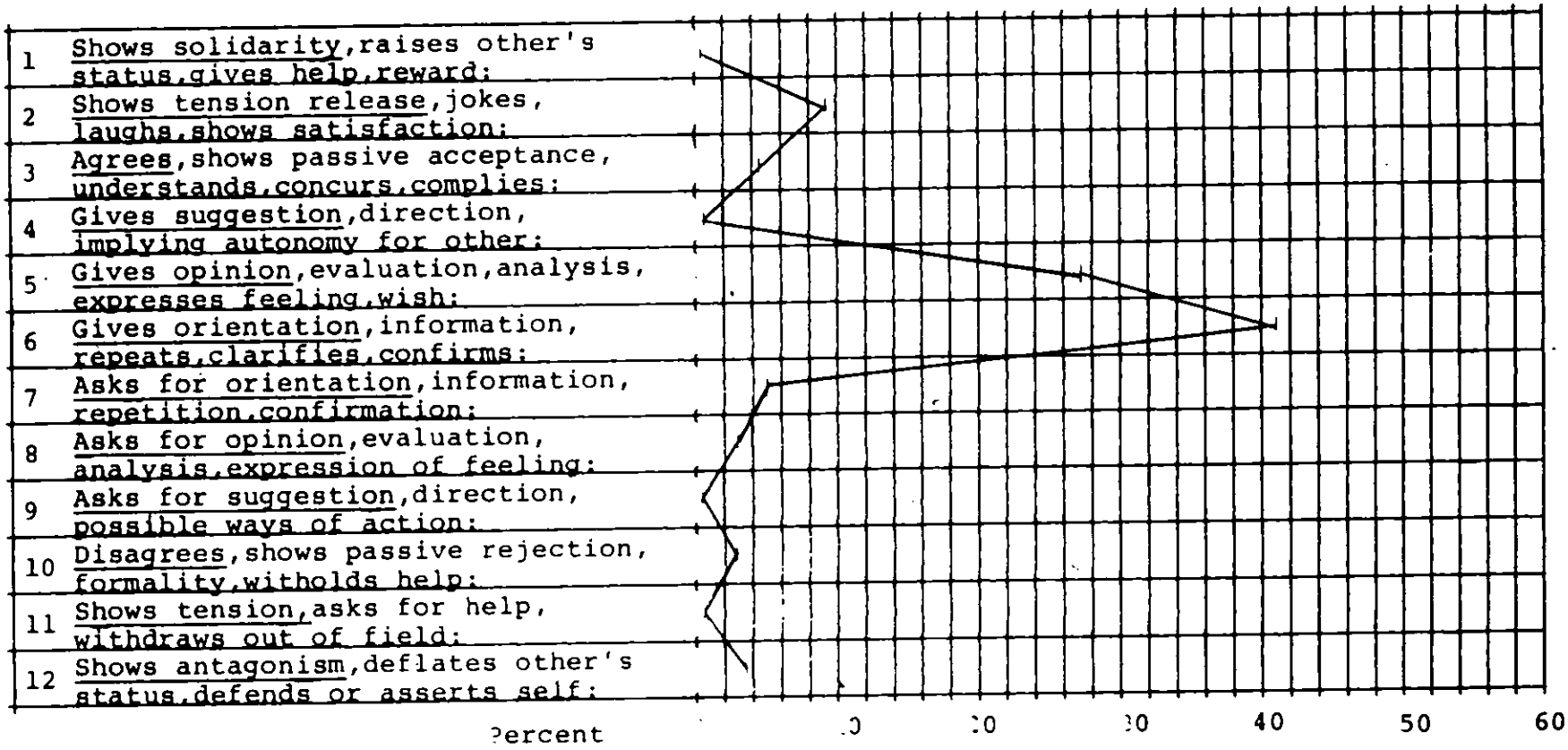


N = 928

Bales's Category System

Interaction Profile (four persons)

Chart # 60:2 Group #1-10 pooled Session Non-drinking Time 2
200 min.

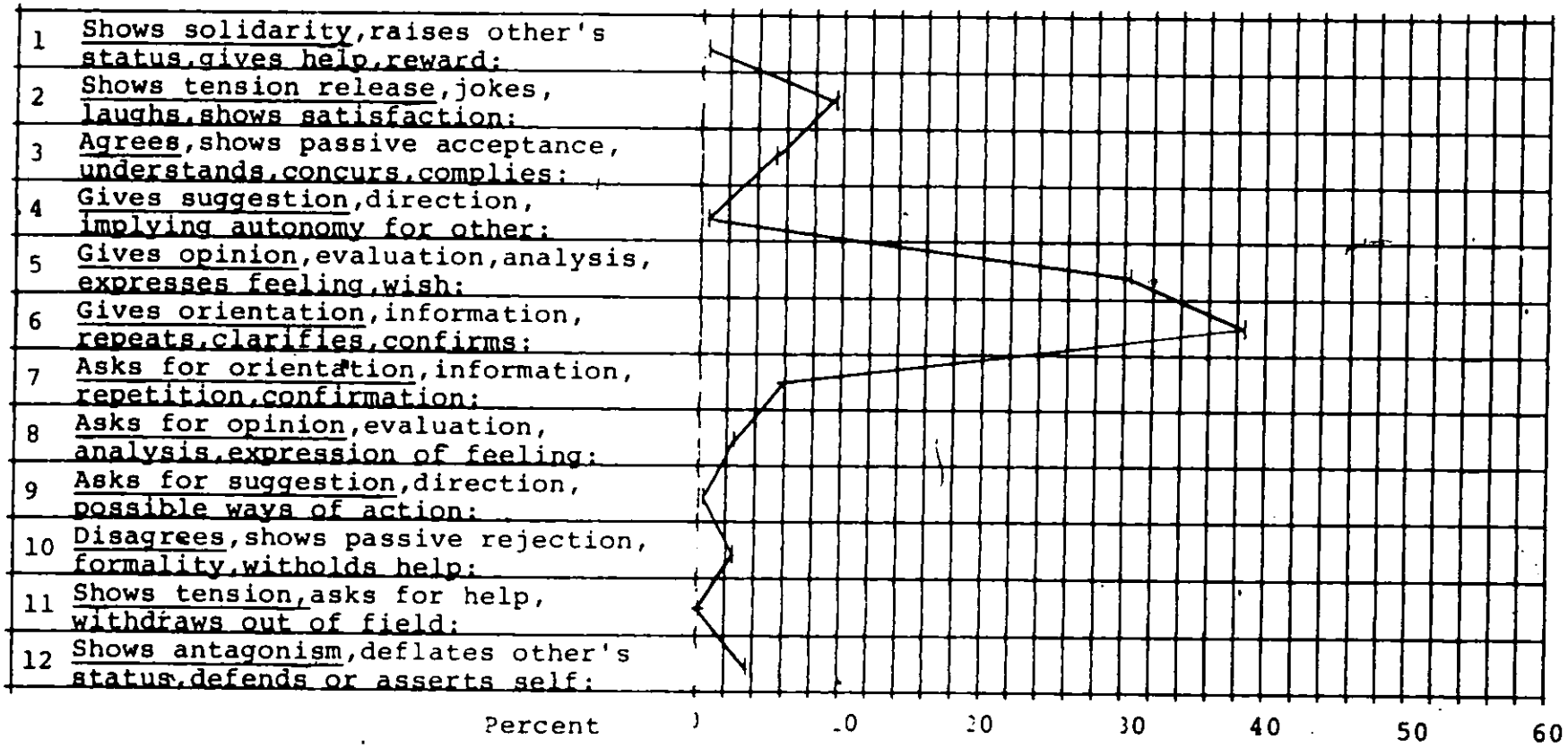


N = 906

Bales's Category System

Interaction Profile (four persons)

Chart # 60:3 Group #1-10 pooled Session Non-drinking Time 3
:00 min.

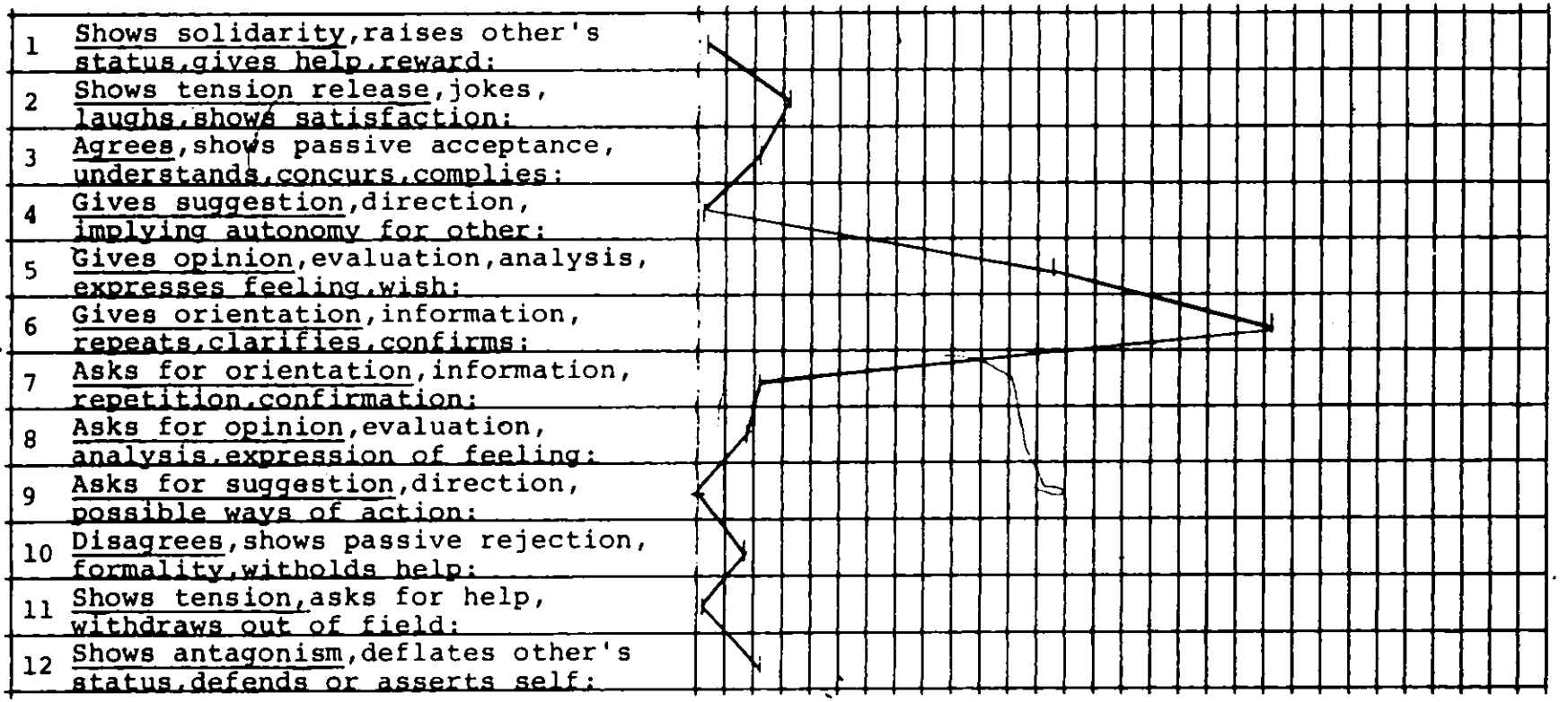


N = 873

Bales's Category System

Interaction Profile (four persons)

Chart # 60:4 Group # 1-10 pooled Session -rinking Time 4 00 min.

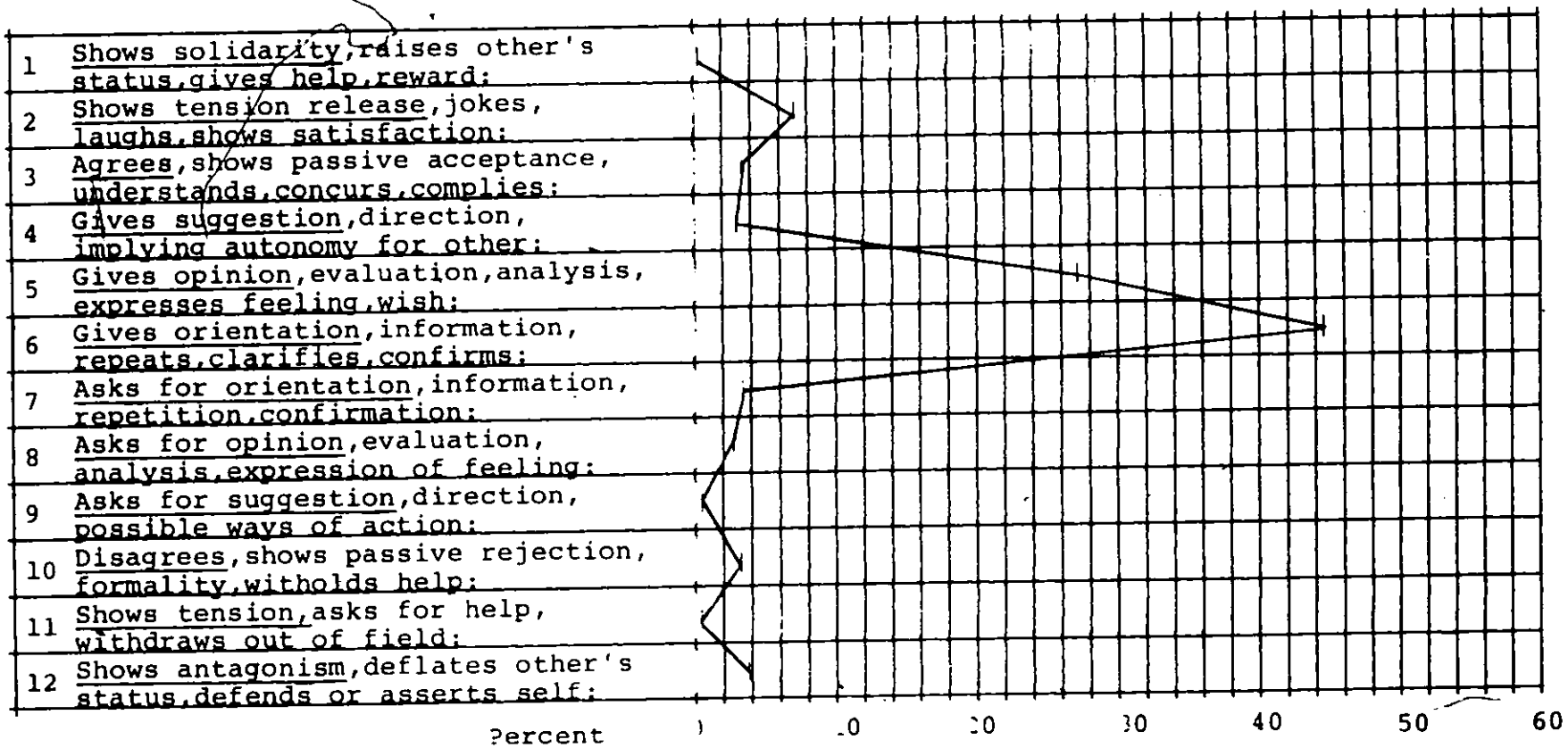


N = 1034

Bales's Category System

Interaction Profile (four persons)

Chart # 60.5 Group #1-10 pooled Session Drinking Time 5
90 min.

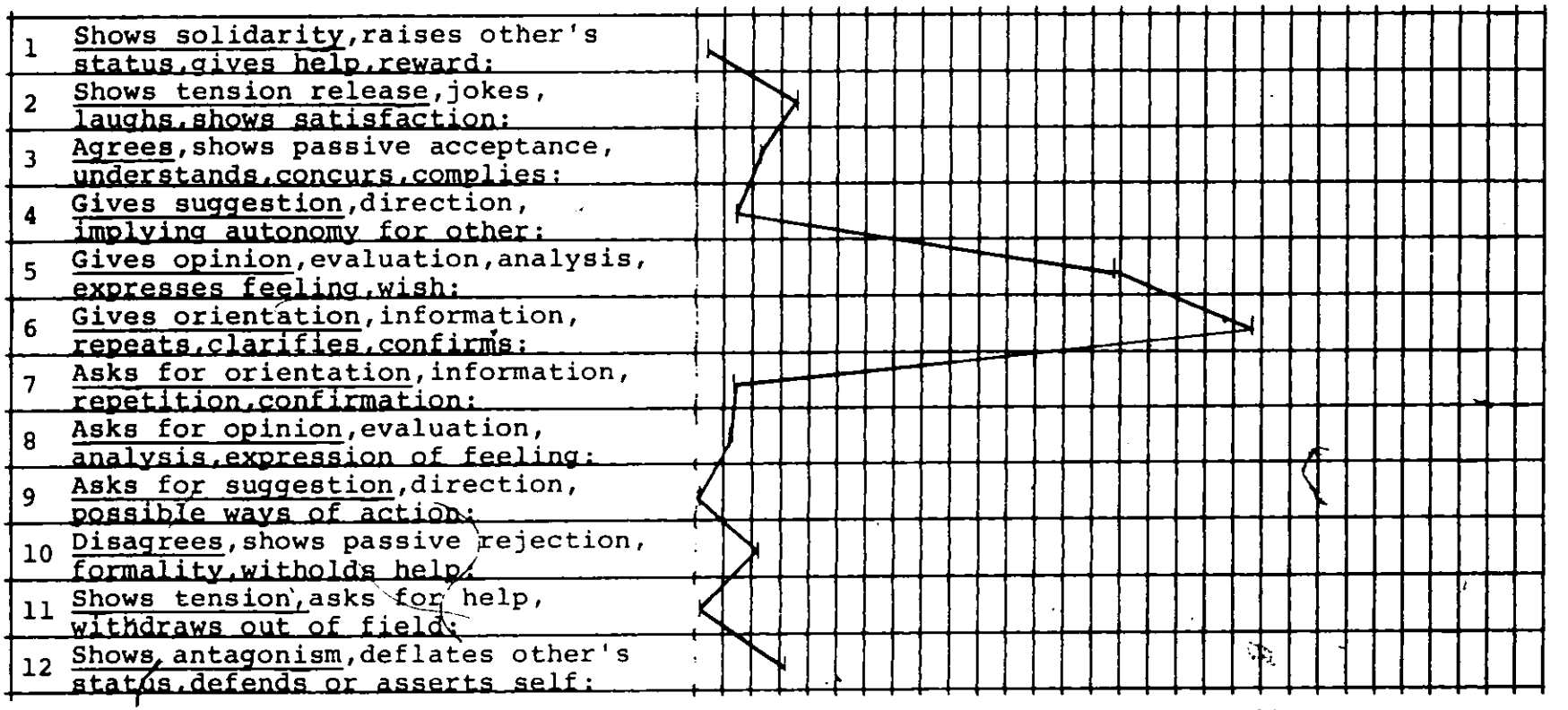


N = 978

Bales's Category System

Interaction Profile (four persons)

Chart # 60.6 Group #1-10 pooled Session Drinking Time 6
300 min.



N = 982

APPENDIX H

Total Percentages of Scored Acts In All The Time Segments

Observational Time Segment		Mean Percentage of A-acts	Mean Percentage of B-Acts
Non-drinking	=1 N= 928	12.4	71.6
	=2 N= 906	14.8	70.8
	=3 N= 873	16.0	69.3
Drinking	=4 N= 1034	12.8	68.5
	=5 N= 978	11.7	73.2
	=6 N= 982	12.9	70.3
		of C-acts	of D-acts
Non-drinking	=1 N= 928	9.4	6.6
	=2 N= 906	8.3	6.1
	=3 N= 873	9.0	5.7
Drinking	=4 N= 1034	8.3	10.4
	=5 N= 978	7.2	8.1
	=6 N= 982	5.9	10.8

Table # 1 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1,2,3

Person		1		2		3		4		Group (5)				
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	1	1	1	2	2
	3	3	1	4	5	5	-	4	10	-	-	-	16	16
B	4	-	-	-	-	2	-	-	2	-	-	-	2	2
	5	2	8	28	11	13	13	45	20	-	36	-	88	88
	6	4	7	18	16	19	21	89	9	-	77	-	130	130
C	7	2	-	6	-	2	3	-	6	-	2	-	11	11
	8	1	-	3	2	4	4	5	5	-	2	-	13	13
	9	-	-	-	-	2	-	-	1	-	1		2	2
D	10	-	-	1	-	-	-	-	1	-	-	-	1	1
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	1	-	-	2	12	-	-	-	11	13	13
Total		12	16	61	34	47	44	157	54	1	119	11	278	278

(5) targets not present during session

Table # 2 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1, 2, 3

Person		1										Group (5)			
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	1	-	3	3	-	-	-	-	2	2	8	8
	2	2	2	4	4	16	4	-	2	15	25	-	37	37
	3	-	2	1	1	2	1	-	-	1	-	-	4	4
B	4	-	6	2	-	4	-	-	-	-	-	-	6	6
	5	18	12	17	10	18	21	5	-	-	15	-	58	58
	6	17	13	16	12	71	24	14	2	-	67	-	118	118
C	7	3	2	2	1	3	3	-	-	-	2	-	8	8
	8	1	-	2	1	1	3	1	-	-	1	-	5	5
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	-	1	1	-	-	1	-	-	-	-	-	2	2
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	1	-	-	-	11	-	3	-	-	-	15	15	15
Total		42	39	46	32	134	57	23	4	16	112	17	261	261

(5)- targets not present during session

Table # 3 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1,2,3

Person		Group (5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	1	1	3	3	3	3	3	3	12	12	-	19	19
	3	-	1	-	-	-	-	1	-	-	-	-	1	1
B	4	1	-	-	-	-	-	-	-	-	1	-	1	1
	5	8	1	10	3	12	5	6	3	-	19	-	36	36
	6	19	9	19	15	31	11	19	18	-	35	-	88	88
C	7	4	8	2	3	4	10	17	4	-	2	-	27	27
	8	1	-	-	2	-	1	2	-	-	-	-	3	3
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	1	1	2	-	-	-	-	2	1	1	-	4	4
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	1	-	-	-	-	-	1	1	1
Total		35	21	36	24	49	30	47	34	13	70	1	180	180

(5) targets not present during session

Table # 4 Number of interactions initiated and received by persons, by categories, . four-man discussion groups

Time segment 1, 2, 3

Person		roup (5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	1	1	-	-	-	-	-	-	1	1
	2	9	1	8	1	6	5	1	-	-	17	-	24	24
	3	3	4	4	3	6	5	4	-	-	5	-	17	17
B	4	4	-	2	4	1	2	-	-	-	1	-	7	7
	5	30	14	22	16	21	12	8	1	-	38	-	81	81
	6	32	24	55	13	29	20	10	7	-	62	-	126	126
C	7	5	1	3	1	1	9	7	-	-	5	-	16	16
	8	1	1	2	2	1	3	3	-	-	1	-	7	7
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	5	-	3	8	5	10	1	-	-	1	-	19	19
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	1	-	2	2	2	3	-	-	-	-	-	5	5
Total		90	45	106	51	73	69	34	8	-	130	-	303	303

(5) targets not present during session

Table # 5 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1,2,3

Person		1		2						Group (5)					
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	1	-	13	1	1	3	4	2	31	44	-	50	50
	3	2	4	5	4	1	-	3	1	-	2	-	11	11
B	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	16	8	14	8	4	4	9	7	-	16	-	43	43
	6	46	13	38	11	11	6	24	20	-	69	-	119	119
C	7	5	5	4	5	6	1	5	5	-	4	-	20	20
	8	4	-	-	1	-	1	1	-	-	3	-	5	5
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	1	-	-	-	-	-	-	1	-	-	-	1	1
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	7	-	-	-	-	-	-	-	-	-	7	7	7
Total		82	30	74	30	23	15	46	36	31	138	7	256	256

(5) targets not present during session

Table # 6 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1,2,3

Person		Group 5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	1	-	-	-	-	-	-	-	-	1	-	1	1
	2	5	1	3	3	1	1	1	1	5	11	-	17	17
	3	6	4	2	2	5	5	1	1	-	-	-	14	14
B	4	-	1	1	-	1	-	-	-	-	1	-	2	2
	5	14	18	17	1	24	23	5	2	-	17	-	61	61
	6	57	19	11	17	71	20	16	-	-	99	-	155	155
C	7	6	10	3	1	12	5	2	1	-	3	-	22	22
	8	2	4	4	-	1	3	-	1	-	2	-	8	8
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	-	-	-	-	1	-	-	-	-	-	-	1	1
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	-	-	1	-	-	-	-	-	1	1	1
Total		91	57	41	25	120	59	25	5	5	134	1	282	282

(5) targets not present during session

Table # 7 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1, 2, 3

Person		Group (5)												
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	2	-	-	-	1	2	2
	2	-	-	11	-	6	16	15	2	-	21	-	39	39
	3	-	-	-	-	-	3	3	-	-	-	-	3	3
B	4	-	-	-	-	-	3	3	-	-	-	-	3	3
	5	4	-	22	13	36	42	24	22	-	9	-	86	86
	6	-	1	15	19	55	27	24	16	-	31	-	94	94
C	7	-	-	3	3	-	3	-	4	-	-	-	10	10
	8	-	-	3	6	14	4	2	9	-	-	-	19	19
	9	-	-	-	-	2	-	-	2	-	-	-	2	2
D	10	-	-	2	11	16	8	1	3	-	2	-	24	24
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	3	-	4	-	1	-	-	-	8	8	8
Total		4	1	64	52	140	107	75	58	7	63	9	290	290

(5) targets not present during session

Table # 8 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1, 2, 3

Person		1		2		3		4		Group (5)				
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	8	23	2	18	40	3	-	1	-	-	-	50	50
B	4	-	3	-	-	3	-	-	-	-	-	-	3	3
	5	20	40	35	15	68	21	-	-	-	47	-	123	123
	6	32	34	37	17	51	11	1	-	-	59	-	121	121
C	7	5	1	1	3	1	3	-	-	-	-	-	7	7
	8	1	-	9	-	-	3	-	-	-	-	-	10	10
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	6	3	2	6	2	1	-	-	-	-	-	10	10
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	2	-	-	-	-	-	-	-	-	-	2	2	2
Total		74	111	86	59	165	47	1	1	-	106	2	326	326

(5) targets not present during session

Table # 9 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1,2,3

Person		Group 5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-					-	-	-	-	2	2
	2	7	2	-	-	8		2	-	3	17	-	20	20
	3	1	1	-	-	1		-	-	-	-	-	2	2
B	4	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	19	12	11	11	29	19	40	14	-	43	-	99	99
	6	16	5	-	2	38	4	42	3	-	81	-	96	96
C	7	3	2	3	2	4	2	3	4	-	3	-	12	12
	8	2	1	-	-	1	-	-	2	-	-	-	3	3
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	-	2	1	-	1	1	3	2	-	-	-	5	5
	11	-	-	-	-	-	-	2	-	-	2	-	2	2
	12	3	-	-	4	15	-	11	-	-	4	21	29	29
Total		51	25	15	18	98	29	103	27	3	150	21	270	270

(5) targets not present during session

Table # 10 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 1,2,3

Person		Group (5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	8	10	27	2	-	2	-	21	-	35	35
	3	-	-	13	1	2	13	-	1	-	-	-	15	15
B	4	1	-	-	-	-	1	-	-	-	-	-	1	1
	5	6	3	15	7	15	20	8	6	-	8	-	44	44
	6	6	5	28	25	82	10	5	21	-	60	-	121	121
C	7	3	1	4	9	5	14	14	1	-	1	-	26	26
	8	-	-	1	2	3	1	-	1	-	-	-	4	4
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	-	-	2	-	-	-	-	1	-	-	1	2	2
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	9	1	4	1	-	-	-	-	11	13	13
Total		16	9	80	55	138	62	27	33	-	90	12	261	261

(5) targets not present during session

Table # 11 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 4, 5, 6

Person		Group (5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	3	10	-	-	7	-	10	10
	2	2	2	4	2	1	6	5	1	-	-	1	12	12
	3	2	6	5	-	5	2	4	3	-	-	-	16	16
B	4	-	-	2	-	-	2	1	1	-	-	-	3	3
	5	20	6	15	10	22	28	38	22	-	29	-	95	95
	6	2	3	3	4	46	10	59	11	-	82	-	110	110
C	7	-	3	2	-	-	2	5	1	-	1	-	7	7
	8	-	3	2	1	-	2	4	-	-	-	-	6	6
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	-	2	2	4	3	-	5	3	-	1	-	10	10
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	1	2	1	13	11	46	2	-	1	45	61	61
Total		26	26	37	22	90	66	177	49	-	121	46	330	330

(5) targets not present during session

Table # 12 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 4, 5, 6

Person		roup 5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	2	6	1	10	-	4	12	-	4	6	-	26	26
	3	3	8	2	4	9	3	2	1	-	-	-	16	16
B	4	-	3	2	1	4	-	-	1	-	1	-	6	6
	5	27	10	19	19	35	21	-	10	-	28	-	88	88
	6	47	8	6	23	68	11	13	2	-	90	-	134	134
C	7	7	2	3	3	4	3	2	3	-	-	-	16	16
	8	-	1	2	-	2	2	-	1	-	-	-	4	4
	9	-	-	1	-	-	2	1	-	-	-	-	2	2
D	10	4	5	-	3	6	2	1	1	-	3	-	14	14
	11	-	-	1	-	-	1	-	-	-	-	-	1	1
	12	3	-	4	-	5	1	7	-	-	-	18	19	19
Total		96	43	41	63	140	55	45	19	4	128	18	326	326

(5) targets not present during session

Table # 13 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 4,5,6

Person		1		2								Group (5)			
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	3	-	1	-	-	1	2	-	-	1	4	6	6
	2	4	1	-	2	-	1	2	-	1	3	-	7	7
	3	4	3	2	4	3	1	1	2	-	-	-	10	10
B	4	-	6	2	1	3	1	3	-	-	-	-	8	8
	5	36	27	25	24	17	12	19	12	-	22	-	97	97
	6	47	18	22	16	7	14	14	11	-	31	-	90	90
C	7	6	8	3	4	5	3	4	1	-	2	-	18	18
	8	-	2	1	-	1	2	3	-	-	1	-	5	5
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	6	3	1	5	2	1	2	2	-	-	-	11	11
	11	-	-	2	-	-	-	1	-	-	3	-	3	3
	12	5	1	4	1	-	-	-	1	-	1	5	9	9
Total		111	69	63	57	38	36	51	29	1	64	9	264	264

(5) targets not present ∅ during session

Table # 14 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 4, 5, 6

Person		Group (5)												
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	2	2	2	2	-	-	-	-	-	4	4
	2	6	13	12	4	14	-	-	3	5	17	-	37	37
	3	1	4	7	1	2	4	-	1	-	-	-	10	10
B	4	-	2	3	-	1	-	-	1	-	1	-	4	4
	5	26	30	33	36	34	13	6	4	-	16	-	99	99
	6	7	19	37	11	39	11	16	9	-	49	-	99	99
C	7	3	-	1	4	2	3	4	2	-	1	-	10	10
	8	-	1	-	-	1	-	-	-	-	-	-	1	1
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	2	6	9	3	6	9	1	-	-	-	-	18	18
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	2	-	10	8	16	7	1	-	-	-	14	29	29
Total		47	75	114	69	117	49	28	20	5	84	14	311	311

(5) targets not present during session

Table # 15 Number of interactions initiated and received by persons, by categories, four-man discussion groups

me segment 4,5,6

Section	Person Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
	roup 5)													
A	1	-	-	-	-	-	-	-	-	-	-	-	3	3
	2	-	-	-	-	-	-	-	-	-	-	-	5	5
	3	4	4	-	-	3	4	1	-	-	-	-	12	12
B	4	3	-	-	4	-	-	-	-	-	2	-	7	7
	5	42	16	12	3	22	4	9	3	-	52	-	85	85
	6	54	13	3	3	30	3	17	11	-	72	-	110	110
C	7	5	5	-	-	1	1	5	1	-	3	-	12	12
	8	11	2	-	1	1	3	3	4	-	4	-	17	17
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	1	1	-	-	-	-	-	2	-	-	-	4	4
	11	-	-	-	-	-	-	-	-	-	1	-	1	1
	12	4	-	-	-	-	-	-	-	-	-	4	4	4
Total		132	43	27	23	59	25	41	27	1	138	4	260	260

(5) targets not present during session

Table # 16 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 4, 5, 6

Person		Group 5)													
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	[illegible]	[illegible]	-	-	-	[illegible]	[illegible]	-	-	-	3	3
	2	[illegible]	-	-	[illegible]	[illegible]	-	[illegible]	-	[illegible]	4	-	11	11
	3	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	4	[illegible]	-	-	-	12	12
B	4	-	[illegible]	[illegible]	-	[illegible]	-	-	-	-	-	-	2	2
	5	13	3	[illegible]	2	[illegible]	[illegible]	4	[illegible]	-	13	-	31	31
	6	87	10	[illegible]5	12	30	[illegible]	10	[illegible]	-	110	-	142	142
C	[illegible]	[illegible]	13	[illegible]0	-	[illegible]	[illegible]	[illegible]	-	-	[illegible]	-	15	15
	8	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	8	8
	[illegible]	[illegible]	-	-	-	-	-	-	[illegible]	-	-	-	1	1
D	10	[illegible]	-	-	[illegible]	[illegible]	[illegible]	-	-	-	-	-	4	4
	11	-	[illegible]	-	-	[illegible]	-	[illegible]	-	-	2	-	4	4
	12	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		118	49	36	27	51	20	27	[illegible]7	[illegible]1	130	-	233	233

(5) targets not present during session

Table # 17 Number of interactions initiated and received by persons, by categories, four-man discussion groups

... segment 4, 5, 6

... roup 5)

Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	1	1	-	-	-	-	-	-	-	2	2
	2	1	1	1	1	4	-	1	1	4	10	-	17	17
	3	-	-	1	-	-	4	-	-	-	-	-	5	5
B	4	-	-	1	1	4	1	1	-	-	3	-	8	8
	5	6	-	21	15	25	45	30	9	-	6	-	82	82
	6	-	1	18	17	55	17	11	19	-	30	-	84	84
C	7	1	-	1	1	-	3	5	1	-	-	-	10	10
	8	2	1	3	1	5	13	5	4	-	-	-	20	20
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	-	1	13	3	18	19	5	-	-	-	-	37	37
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	-	-	17	-	14	17	1	2	-	-	6	32	32
Total		10	14	90	54	127	128	66	46	4	49	6	297	297

(5) targets not present during session

Table # 18 . Number of interactions initiated and received by persons, by categories, four-man discussion groups

segment 4, 5, 6

Person											.oup 5)			
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	.	[illegible]	-	[illegible]	1
	2	10	[illegible]	-	[illegible]	-		-	-	.	13	-	19	19
	3	4	10	[illegible]	3	14	[illegible]	[illegible]	[illegible]	-	-	-	22	22
B	4	[illegible]	[illegible]	[illegible]	-	[illegible]	-	[illegible]	[illegible]	-	4	-	9	9
	5	24	30	37	15	23	14	[illegible]	[illegible]	-	29	-	90	90
	6	57	32	55	19	20	25	25	4	-	77	-	157	157
C	7	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	[illegible]	-	10	10
	8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	.	-	[illegible]	-	12	12
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	4	[illegible]	[illegible]	4	-	-	-	-	-	-	-	6	6
	11	-	-	-	.	-	-	[illegible]	-	-	2	-	3	3
	12	-	-	-	-	-	-	[illegible]	-	-	[illegible]	-	1	1
Total		109	88	116	52	64	48	39	13	2	129	-	330	330

(5) targets not present during session

Table # 19 Number of interactions initiated and received by persons, by categories, four-man discussion groups

...e segment 4,5,6

Person		...roup 5)												
Section	Category	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Initiated	Received	Received Outside Target	Total	
A	1	-	-	-	-	2	-	-	-	-	2	-	3	3
	2	1	-	2	1	11	-	-	-	3	18	-	19	19
	3	-	10	-	-	4	-	11	2	-	-	-	15	15
B	4	1	-	-	-	-	-	-	-	-	-	-	1	1
	5	28	3	3	4	18	22	13	-	-	26	-	67	67
	6	67	10	3	-	30	14	25	13	-	136	-	180	180
C	7	2	2	2	-	1	1	1	2	-	3	-	9	9
	8	-	2	2	-	4	-	1	1	-	2	-	7	7
	9	-	-	-	-	-	-	-	-	-	-	-	-	-
D	10	1	1	-	-	-	-	1	-	-	-	-	2	2
	11	-	-	-	-	-	-	-	-	-	-	-	-	-
	12	4	-	-	-	3	-	-	-	-	-	7	7	7
Total		104	34	23	15	125	41	53	26	5	187	7	310	310

(5) targets not present during session

Table # 20 Number of interactions initiated and received by persons, by categories, four-man discussion groups

Time segment 4.5.6

Section	Category	Person 1 Initiated	Person 1 Received	Person 2 Initiated	Person 2 Received	Person 3 Initiated	Person 3 Received	Person 4 Initiated	Person 4 Received	Group (5) Initiated	Group (5) Received	Received Outside Target	Total	
A	1	-	-	-	-	-	-	-	-	-	-	-	1	1
	2	-	-	12	14	34	5	3	3	-	18	-	51	51
	3	-	-	3	-	2	3	-	2	-	-	-	18	18
B	4	4	2	5	-	-	12	5	2	-	2	-	17	17
	5	3	2	20	15	26	24	14	3	-	22	-	68	68
	6	2	2	45	20	73	21	23	4	-	115	-	142	142
C	7	2	1	2	4	5	5	2	2	-	2	-	12	12
	8	2	2	3	2	4	5	2	-	-	2	-	11	11
	9	1	-	-	-	-	-	-	-	-	-	-	1	1
D	10	2	-	4	2	4	4	-	3	-	-	-	9	9
	11	-	-	-	-	-	-	-	-	-	-	-	1	1
	12	-	-	2	-	-	2	-	-	-	-	-	2	2
Total		19	13	103	55	153	80	58	23	-	162	-	333	333

(5) targets not present during session

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