main theory more independent of each other than they have been before. But the relative independence of main and auxiliary theory is demonstrated here in using a more general derivation of formulae.

References.

BLALOCK, HUBERT M., *Multiple Indicators and the Causal Approach to Measurement Error*, "American Journal of Sociology", LXXV (1969), pp. 264-272.

BOUDON, RAYMOND, *A Method of Linear Causal Analysis: Dependence Analysis*, "American Sociological Review", XXX (1965), pp. 365-374; *A New Look at Correlation Analysis*, in H. M. and A. B. BLALOCK (eds.), *Methodology in Social Research*, New York, McGraw-Hill, 1968.

COSTNER, HERBERT L., *Theory, Deduction, and Rules of Correspondence*, "American Journal of Sociology", LXXV (1969), pp. 245-263.

DUNCAN, OTIS DUDLEY, *Path Analysis: Sociological Examples*, "American Journal of Sociology", LXXII (1966), pp. 1-16.

DUNCAN, OTIS DUDLEY, HALLER, ARCHIBALD O., and PORTES, ALEJANDRO, *Peer Influences on Aspiration: A Reinterpretation*, "American Journal of Sociology", LXXIV (1968), pp. 119-137.

H. A. BECKER: OBSERVATION BY INFORMANTS IN INSTITUTIONAL RESEARCH.

1. *A blind spot.*

There comes a moment in every empirical field of study when a research technique must be found to suit the problem at hand. Sociology has advanced to the point of having an adequate research technique at its disposal for most of the problems which might arise. As a rule such a technique has to be adapted to the specific requirements of the object under examination, of course. But one may not always be able to find an adequate technique within the "box of tools".

In this article, we shall examine more closely such a lack of an instrument, and then discuss a number of techniques which are being developed and which may probably alleviate the situation. The sociologist meets up with the "lack" in question as soon as he tries to conduct investigations:

a) dealing with phenomena in social reality which are complex and institutionalized [1];

b) in which he wants to make statements about these phenomena that are descriptive as well as explanatory [2];

This article is based upon the results of a study which received financial support from the Netherlands Organization for the Advancement of Pure Scientific Research.

[1] By "institution" we mean a constellation of values, norms and customs, which have more or less taken a definite form, and which intensively influence the current of human activity. By "institutionalizing" we mean the process, in which constellations of values, standards and customs take a more definite form.

[2] "Explanatory" meant as in E. NAGEL, *The Structure of Science*, London, 1968, p. 15, and ff.

c) and whereby he wants to make statements about these phenomena that mention something about regularities occurring in a certain generality.

Perhaps an example can elucidate the argument. We will take the "use" of sociological knowledge in policy-making systems [3].

There are hundreds of organizations in the sphere of the government, business and social service organizations in which the executives make decisions that are more or less based on essays of sociologists published in periodicals, books, etc., on the results of sociological research, or on the advice of sociologists. It is desirable to start intensive research into the practice of the use of sociology, and especially its determinants. It is possible to imagine a series of organizations, for instance, that can be placed on a scale ranging from optimal to inadequate utilization of sociology. To what extent is there a connection between, for example, the optimal use of sociology and the position of power held by the organizations involved? If such a connection exists, how is this to be accounted for? [4].

[3] By "use" of sociology we mean the acts by which persons other than professional sociologists base their decisions on sociological knowledge. Politicians, business managers, social administrators etc. use sociology. This has to be distinguished from the "application" of sociological knowledge, which requires the activities of professional sociologists, for instance as scientific advisers.

[4] Research has already been made into policy-systems, and into the use of science. In our opinion, however, this could and should be done more intensively.

In our opinion the technique of research which will accomplish the aims mentioned above to the most optimal degree should have the following characteristics:

a) an *over-time* data gathering. The practice of the use of sociology, especially, requires registration over a period of a month up till a few years. To give an example: a question in a survey as to what a respondent remembers concerning the events of the past week will not produce enough information;

b) gathering data as "*unobtrusive*" as possible. For example a single direct questioning would certainly yield unreliable data;

c) gathering data which enable a *prediction.* The explanation aimed for should be able to be tested experimentally;

d) a data collection which can be applied *on a large scale*; in order to bring forward regularities of a somewhat general character one must be able to compare, if necessary, hundreds of cases.

Now we shall first give a brief survey of the extent to which the research techniques now in use offer possibilities to study such objects adequately. At present the best method is probably an approach by *participant observation.* In sociology this technique has produced a number of very fertile and influential studies [5]. The strength of participant observation especially lies in the possibility to describe and explain values and

[5] See for instance, P. M. BLAU, *The Dynamics of Bureaucracy*, Chicago, 1955; W. F. WHYTE, *Street-corner Society*, Chicago, 1955.

norms, i.c. complex and institutionalized phenomena, both in respect to their formal side and in their actual functioning in the social system studied. Participant observation is, however, limited in that only a few situations, and, at times, only a single case can be studied within the framework of a special project. One researcher acting as participant observer can hardly undertake more.

A widening of the scope of a participant observer is sometimes achieved by introducing informants, who act as "the observers' observer" [6]. Another attempt to widen the scope is using several participant observers. Supervision of the observations and intake of the results will then take place centrally. As a rule the number of situations which can be drawn into the research project in this way is also small [7]. There exists an example of eight co-ordinated participant observations. Widening the scope of the participant observer by utilizing existing data like documents or by interviewing is within the range of possibilities, but does not cause a major alteration in the range limit [8].

A second alternative is the *survey*. The strength of the survey lies in its uniform manner of collecting relatively few data from a relatively great number of persons. This is often an adequate approach, and therefore it is rightly called the "royal road" of research in the social sciences. However, this road is not always adequate. During the one or two hours which a survey-interview usually requires, certain data cannot be established at all, and certain other data can only be established in part. These drawbacks are especially revealed if one uses a survey to collect data about instituzionalized phenomena. The persons interviewed often have difficulty in adequately reconstructing from memory the values, norms, expectations, parties wielding power, etc. which are part of a given situation. The drawbacks can be decreased by making use of very long interviews, during which, for instance, by means of a large series of "incidents" [9], an adequate approach to the knowledge of the respondent of institutionalized phenomena and the like is made possible. Gross c.s. in their inquiry concerning the role-relation of the "school superintendent" work with interviews lasting eight hours on the average (not less than seven, not exceeding ten hours) [10]. Such interviews were relatively simple to arrange for these school superintendents because they are com-

[6] Cf. M. ZELDITCH JR., *Some Methodological Problems in Field Studies*, "American Journal of Sociology", LXVII (1962).

[7] The same applies to the application of pure observation in this type of research.

[8] For a comparison between participant observation and survey vide a.o. C. J. LAMMERS, *Het Koninklijk Instituut voor de Marine* [*The Royal Institute for the Navy*], Assen, 1963, chapter 15.

[9] Brief descriptions of occurrences which are submitted to respondents in order to make them explicitate their attitudes, motives etc.

[10] N. GROSS c.s., *Explorations in Role Analysis*, Glencoe, 1958.

paratively free to arrange their working hours, and besides the interview could take place during working-hours. Generally speaking, interviews of more than three hours are rarely conducted if the respondents have to give their co-operation in their off-duty time.

As last relevant variant of the survey we mention the *panel*. The panel can be defined as a research design in which a large number of persons is questioned several times simultaneously with the aid of standardized questionnaires [11]. This research design is considered to be very suitable for the studying of changes in the behaviour or conduct of individuals, such as voting behaviour or political interest and for the studying of processes which affect many individuals, such as school career and professional career [12]. It has been brought forward that the panel also offers possibilities for the intensive study of objects which are not only investigated with regard to their changing, but, so far, little use has been made of this.

Thirdly, *the studying of existing data*. In general this approach only lends itself occasionally to describing and explaining phenomena as mentioned in the preceding paragraph. There is a possibility of applying this technique if, for example, values and norms are applied in conflict situations and a kind of juridical process and a written statement of the motives behind the verdict is available. As a rule, existing data viewed in this framework only provide additional information for the purpose of investigation of institutionalized phenomena.

Finally the question as to what extent *combinations* of the techniques mentioned can be really effective in narrowing the gap. A pilot study may be conducted, in which participant observation and/or study of written documents may be used to gather for inventory as many components of the object studied as possible. This would then be followed by a main inquiry, in which a survey can be made with a great number of respondents, tracing to what extent the components inventorized play a part. Such a combination has been applied successfully in the research of Gross a.o. [13]. In this investigation, however, to our opinion, the main inquiry is a weak link because the object (especially "school superintendent roles") has to be recorded for one single point of time and therefore the possibilities to analyse developments

[11] a.o. J. A. KROPMAN, *Mogelijkheden en problemen van de panel-study* [*Possibilities and problems of the panel-study*], Nijmegen, 1968 (mimeographed), p. 3.

[12] In case of panel-research, respondents are sometimes requested to make observations in the periods between the interrogations. Cf. K. WEBER, *Ein Verfahren zur Erhebung von Zeit-Budgets in Form von Tageslaufschilderungen* [*A method to register and analyse time-budgets by way of written accounts on their time-budget*], "Kölner Zeitschrift für Soziologie und Sozial-Psychologie", XXII (1970).

[13] Cf. for instance M. JAHODA, M. DEUTSCH & S. W. COOK, *Research Methods in Social Relations*, New York, 1951, part II, p. 589.

(such as changes in the social system involved) are limited.

Summarizing: The research techniques which now have generally become adopted only partly enable an adequate research of the category of objects mentioned.

2. *Characteristics of observation by informants.*

It is certainly not necessary to regard the lack in the set of research-instruments which has been mentioned as a problem without a solution. There are a number of techniques which, at least to some extent, offer possibilities to eliminate the gap. The characteristic of the techniques in question is that observation is used, and that observation takes place by persons who are regular members of the institutionalized system under research. The investigator (project chairman or team-member) will select the necessary "informants", arrange observation-activities with the participants, instruct them and receive data from them. This technique is mentioned a.o. by Zelditch [14]. He mentions this approach under the heading "the informant as the observers' observer", and says *inter alia* the following about it: "The third common use of the informant is to report events not directly observed by the field worker. Here the investigator substitutes the observation of a member for his own observation". ... "such a procedure is not only ligitimate but absolutely necessary to adequate investigation of any complex structure". Thus it seems necessary, to interpret this technique explicitly so that it can accomplish more than just widening the scope of a participant observer. Furthermore one should not be satisfied with only mentioning this technique but it should be further elaborated and tested.

We shall refer to this technique (or techniques) as "observation by informants", for short "*informant observation*". The informant-observer in that case will gather and pass on to the investigator data about what takes place within his "scope". This can be their own conduct (work, family situation and the like), the conduct of persons in their immediate surroundings (colleagues, bosses, neighbours, etc.), activities in bordering social systems (neighbouring divisions, institutes, neighbourhoods, etc.). The limit to which the observations can be valid depends, a.o., upon the aim of the research. As a rule the more accurately one wants to describe and explain a given situation the more narrow the "scope" of the observing informant will have to be chosen. Working with informants who gather data, after having been instructed, is not new for sociological research. Experiments have been conducted on these lines, a.o. by Lundberg and Sorokin [15]. In other sciences one also uses informants, such as in cultural anthropology. However, so far in sociology, this technique has been elaborated and applied to only a very limited extent.

[14] Vide note 6.

[15] Vide description in article of WEBER, note 12.

Outside the scope of scientific research there is a technique of gathering information, which has many features in common with "observation by informants". If the other members of the observed system (enterprise, government department, army unit etc.) are not informed of this gathering data, we have to do with "*espionage*".

3. *Extensive and intensive informant observation.*

We shall first examine more closely some extensive variations of informant-observation which are being applied at present. In this category we first place all those *time-budget-studies*, in the course of which, at the request of the investigator, "respondents" keep a record of data about their own time budget during a certain period (a week, a month, etc.), and pass this on to the investigator [16]. As an example we mention a number of studies on managers.

The classical starting point is the book by S. Carlson [17], which gives an account of a survey in Swedish business life. In this study, nine top-managers kept a record of their daily activities during a period of four weeks. Attention was especially paid to the kind of their activities, the time spent per activity and the kind of contacts within and outside their own enterprise. The information thus gathered was supplemented by interviews. The research data deal with enterprises with which Carlson was already concerned before the research. No doubt the most important merit of this study is, that it proves that such research-projects are feasible, and that, in spite of all their limitations, they nevertheless can lead to a number of relevant results. We choose from the results the following illustration: The "typical" manager of the nine cases spends 44% of his working day outside the enterprise (33% discussions etc., 3% travelling time and 8% stay in their own home) against 56% inside the enterprise (of which 10% "working alone").

Some years after the publication of Carlson's study, T. Burns [18] conducted a project with a similar design, partly with the purpose of following up Carlson's approach. Burns studied four managers in the same enterprise, and consequently found out both their mutual contacts and their contacts with others. These research projects can be compared with and are repeated on a somewhat larger scale by J. H. Horne and T. Lupton [19]. Sixty-six middle-managers in 10 enterprises were involved. They all kept a record of

[16] Does not apply to studies in which during a survey time-budgets are requested.

[17] S. Carlson, *Executive Behaviour*, Stockholm, 1951.

[18] T. Burns, *The Direction of Activity and Communication in A Departmental Executive Group*, "Human Relations", 1954.

[19] J. H. Horne and T. Lupton, *The Work Activities of "Middle" Managers- An Exploratory Study*, "The Journal of Management Studies", 1965.

the way in which they spent their time. A distinction was made between "formulating", "organizing", "unifying" and "regulating activities". Such research-projects have shown, for example, that managers overestimate the time which they spend on financial matters. One of the underestimations was with regard to time spent on personnel matters. In recent years vities". Such research projectes have been performed, as appears from papers, written for the world congresses of sociology in Evian (1966) and Varna (1970)[20]. To mention a few examples, budgets have been collected of workers, recreants, country-dwellers, teachers and researchers in the field of scientific education. The asset of typical time-budget studies is, that they describe much and in an exact manner, but their drawback is that they offer few possibilities for explanation. That is why there is a tendency of recording "who is doing what when and where?" as well as recording phenomena (norms, attitudes etc.) which relate to causal factors.

In this connection the question arises as to the exact point one can speak of time-budget studies and still make sense. As soon as a great many aspects of the activities of somebody in a social system are registered and the way he spends his time constitutes only a minor aspect of the scope of the research, the character of the approach is becoming more than only a time-budget study[21].

Another example of extensive informant-observation is a study of Jaide on vocational choice. In this research-project, schoolchildren are watched throughout a year, i.e. by observation by the teacher and talks about him with parents and pupils. Distinctly an approach which leads to qualitative case-studies[22].

In our opinion the extensive variations in general, can hardly be said to fill the gap substantially which we outlined in the first paragraph. The extensive variants rarely get beyond a description, and only now and then contribute to explanation. The extensive variants, however, are able to show,

[20] a.o. F. STUART CHAPIN, JR., *Some exploratory directions in time-budget research*, paper presented at the VII World Congress of Sociology, Varna, 1970.

[21] Probably Staikov draws from such a more extended interpretation of the concept time-budget research arguments for his, in our view most optimistic, thesis: "Time-budget is the most complicated, but ideal system of the cybernetic type for a scientific analysis of gross social phenomena and processes with the use of all the latest achievements of science and technology. Being a basis for application of mathematics, cybernetics, electronics in the analysis of all social phenomena and processes, time-budget may be considered as a methodological foundation for social planning and forecasting". (Z. STAIKOV, *Time budget as a methodological basis for planning and forecasting of social phenomena and processes*, Sofia, 1970, p. 9).

[22] W. JAIDE, *Die Berufswahl* [*Vocational choice*], München, 1966. Kropman characterizes this kind of studies: "Based on such research it is difficult to reach conclusions of a general validity; the functions thereof are more on the problemsetting and illustrating level" (o.c., p. 5).

that observation by informants as such is possible. From the experience with extensive variants more intensive variants can be developed.

We borrow our first example of *intensive* observation by informants from the sphere of organization research [23]. In case of an approach developed by organization economists and applied, amongst others, in banks, each time one or a few employees are selected as observers from the divisions to be investigated. The employee chosen receives a rather intensive training for his tasks as an observer, which he performs besides his normal daily work. Furthermore he either gets an extra remuneration, or perhaps a promise that he will be eligible for promotion after a period of informant observation. The other members of the division, particularly the managers, are informed of the new additional task of the employee concerned. Furthermore the manager is informed of the information which the observer passes on to the researcher. Usually such an observation takes up a period of one year or more. As a rule observation by informants is combined with gathering data along different lines (information about labour productivity etc. of the organizational unit concerned).

As a second instance we mention an exploratory research project which we conducted into the functioning of "contact positions" and "contact units". There is a category of positions in organizations, and of units of organizations, which are in frequent contact with clients, customers, the public, etc., on behalf of the organization. Such positions and units (inspections, counter units) show a number of sociologically relevant common characteristics. The frequent social contact with third persons often brings in its wake tensions and conflicts; tensions arise for example if the contact-functionaries identify themselves both with their own organization and with the opponents, and then have to act out of a "double loyalty" [24]. Forty-five contact positions were involved in this research. The contact functionaries participating in the research were interrogated three times, each time with an intermediary period of one week. In that intermediary period they systematically collected a number of data. During their observation, the informants collected time budgets and "critical incidents", the latter a technique developed by Flanagan [25]. Furthermore the informants had to draw up an introduction for an imaginary successor. About half of the informants had been approached via the employer, so that their observation-activities in

[23] For instance the Scott-Mulligan System. Except for data gathering this can also be used for action research.

[24] Results of a pilot study (participant observation) reported in H. A. BECKER, *Approaching a Service Relation from the Role Concept*, "Sociologica Neerlandica", II (1964).

[25] J. C. FLANAGAN, *The Critical Incident Technique*, "Psychological Bulletin", LI (1954).

the organization were known to one or more persons. With the other informants the observation as such remained "secret". The informants received a compensation in money for their co-operation [26].

4. *Research-technical and methodological aspects.*

At this point we should like to consider some aspects of research-technique and methodology. Our reflections are based on what can be found in literature about this subject, as well as the author's own experience in the exploratory research mentioned in paragraph 3. It should be clear that this basis is as yet inadequate for a complete and verified set of "rules". Just as with other instruments from the "box of tools" of social research it is obvious, and usually necessary and inevitable, that informants-observation should be used in combination with other techniques. Contacts with informants with regard to their instruction, or with regard to collecting data function also as opportunities to ask questions. Documents etc. can be collected and analysed before or parallel to the observation. Often the informant will be able to collect written material as part of his observation-activities.

Observation by informants, just as the other approaches, is restricted in the number of aspects of a social system it can investigate. One of the assets of observation by informants is that a relatively large number of aspects can be drawn into the data gathering. This is especially important with regard to factors which may be considered to stand in causal connection to the dependent variable or variables in the object to be researched.

Will the persons needed as informants be willing to co-operate? The experiences with time-budget studies show that chances are not too unfavourable for sufficient co-operation. As a rule, however, financial or other compensations will be required. For example the Dutch continuous wireless and television research has as a compensation the raffling off of a holiday trip for two persons among those who send in the requested data regularly and completely. Such compensations will especially be needed if the informants are recruited from the lower and medium positions within organizations etc. In case of higher positions willingness to co-operate in scientific research will often be a sufficient incentive. In our exploratory research, however, also a number of lower and medium functionaries were willing to co-operate free of charge.

The above especially applies, if projects are concerned which in the short run are not useful to those concerned and their organization. The situation is different, however, as soon as research is concerned which is being done on the request of the work-organization of the informants. In that

[26] About $10. The informants had to come to the house of the researcher for instructions, questioning, etc.

case, as a rule, one is assured of co-operation. In such circumstances, however, it may happen that superior officials try to wriggle out of furnishing the information. At any rate if their own problems (for instance the functioning of the system of decision making) are involved, their co-operation must be stipulated. They can neither send a subordinate to the dentist if they themselves have a toothache.

On the one hand the scope of the observation per informant is confined to what he can intensively observe de facto. On the other hand it is confined to the aim of the research-project. As a rule the more intensively the data must be gathered, the more limited the scope of observation per informant must be chosen. The narrowness of the scope per informant often involves that more than one informant per system-component (division of an organization etc.) has to be employed. In case we have informants working closely together in the same division of an organization, contact between them may lead to distortion of the data. The risk of distortion by contact between informants can be reduced in different ways. One of these is the possibility of having informants observe by turns and not continuously; or at discontinuous times, which are determined by the leader of the research-project (multi moment recording). Discontinuous observation can also be desirable from the point of view of saving costs.

With regard to registration techniques we should like to refer to literature concerning time-budgets, communicograms, sociograms etc. Flanagan's technique of the critical incidents deserves to be mentioned separately. This technique had been developed many years ago, and so far it has been rarely applied. It might be that in the development of data gathering techniques such as observation by informants, the critical incidents technique especially will have to be built on. One use of this technique is making informants collect incidents in a first, exploratory phase of the observation, then having the researcher select and standardize from these incidents the most important ones. Then in a second, hypotheses testing phase of the observation he uses the incidents as registration categories for events and their hypothesized causes. Certainly throughout the second phase, combining with time-budgets is important.

We now come to the operations which must be performed per informant. The most important one is predicting events etc. in hypothesis-testing research. Suppose, that in a research-project the observing is being done in three phases by the informant. Then the investigator can predict from phase 1 to phase 2, from phase 2 to phase 3. Such predictions can test the validity of the collected data intensively. Such validity-tests can, of course, be performed both in the period of the data gathering and in the period of the data analysis.

We shall now turn to the preparation in exploratory research. We take an observation in three

phases with interrogations at the end of the phases. By taking the observation results of phase 1 as a starting point for questions in the next interview, and so on, the possibility arises of a kind of cross examination of the observing informant. Observation-results from protocols of other informants can also contribute to this. The combination of observation-results and interviews used in this manner enable a very intensive data gathering. The supervision of observing informants requires employing very able and experienced investigators or research assistants. These members of the team in exploratory research have to meet still higher requirements than in hypothesis-testing research, because the former variant entails a less standardized data gathering.

In informant observation the informant reaches a rather long and intensive relation with the research team, at any rate with his supervisor. Moreover a compensation and the secrecy of the observation often plays a part in the matter. These factors, when combined, frequently produce enough arguments to make the contacts with the informant take place in the institute of the investigator and not, for instance, at the home of the informant. The assets of such a procedure are: less interruptions during the contact (no T.V. etc.) and more possibilities to make the informant undergo tests etc.

What is the degree of validity of the data collected in this way? The main sources for a low validity are:

a) the informant observes incorrectly without realizing it himself; this can be merely a perception mistake, of the effect of prolonged observation etc.

b) the informant observes incorrectly, but this time he is more or less aware of it; he can be afraid of his information leaking through; he can feel ashamed of his information; he can distort his information in view of the reward, because he likes or dislikes the research, his supervisor in the research-project etc.

To a great extent these are distortions which can occur in any sociological research. In case of observation by informants, however, these distortions presumably play a disproportionate part. The vital question now becomes: can these distortions be reduced to an acceptable minimum, and if so, how? The main possibility for sifting out wrong information has already been mentioned above in predicting per phase events in the system that is observed by the informant. In this way, the external validity of the data can be tested and improved. A second possibility is to control the data per informant with regard to their mutual connection. This leads to an increase of the internal validity.

The usefulness of observation by informants as a technique of gathering data will have to be tested further in research, in which, for example, a similar object is examined both by means of this technique and by other techniques. Participant observation and panel are the most adequate techniques for such comparisons.

5. Possibilities and impossibilities.

We already pointed to a possibility on meso-level in respect to the use of observation by informants: research of the use of sociology in policy systems. We should like to mention some more possibilities on this level. Drastic reorganizations now taking place in many countries in the universities, scientific institutes etc., inclusive of the normative reorientation usually corresponding with it, can utilize observation by informants. Another example is decision making in institutionalized systems of power, such as the management of a business enterprise, the direction of a government department, etc. Also on micro-level, data gathering can require the outlined approach. In this case we especially think of measuring "social well-being", and laying down these and other factors in "social indicators" [27], which in their turn must allow for a macro-analysis. So far, administrative data, the data collected by means of surveys, and short term panels have not produced an adequate basis. Probably this is partly due to the specific case of "social well-being" which must be divided into the more constant satisfaction tendencies on the one hand, and the shorter ups and downs; in other words "climate" and "weather conditions". On macro-level we can think of the relations between large organizations, during the beginning or the end of mergers, or during processes of centralization or decentralization. Finally we should like to mention as a possible application the evaluation-research into the effects of policy action in altering institutionalizing phenomena, such as values and norms, including the effects on the actual behaviour of individuals or the real activities of organizations.

After the possibilities the impossibilities. Observation by informants evokes specific problems of an ethical character if the informants perform their observation without the knowledge of their environment, or if the observation is kept secret for the leaders of their work organization, for their colleagues etc. Observation which is kept secret as such, or which is kept secret as to its purpose, is also being applied in social psychology, as well as in sociology (especially participating observation).

Can rules be given here? Generally speaking, in case of disguised data gathering and publication of the results, one ought to act such, that those concerned, in case they had been informed in advance, could not have made valid objections. Moreover, in case of research which is not being done under instructions of a policy-making body, and in which "unobtrusive" data gathering is applied only in order to obtain data as valid as possible, those concerned may be asked permission to publish after the research has been finished. The general rule in our opinion of-

[27] T. A. BAUER (ed.), *Social indicators,* Cambridge, Mass., 1966.

fers an acceptable basis to avoid excesses when these kind of techniques are applied. In that case, however, this rule ought to be applied adequately; perhaps by a sort of juridical process, such as can be organized by professional organizations. In the Netherlands such a procedure has been set up by those engaged in social research.

The outlined technique raises problems, not only for the relation between public and researcher, but also for the relation among the investigators themselves. If one researcher in sociology proceeds to pay compensation to informants, it is getting difficult for other investigators in, for example a survey, to obtain co-operation of respondents free of cost. In this case difficulties to a large extent may be met by pointing out the amount of work involved for those concerned in co-operating with the observing informant.

6. *Final remarks.*

Generally speaking, in our opinion, in empirical sociology the techniques of *collecting* data are far less developed than the techniques of *analysing* data. This discrepancy is disastrous. Nowadays much more detailed data can be analysed by means of multi-variate analysis, computer-simulation techniques etc. than can be fed into these analysing-techniques. Consequently many analyses are, technically speaking, performed correctly, but their results from a social and scientific point of view are not very relevant because the input data are far too weak. With regard to simulation this stood out clearly during a conference held in the Netherlands in 1971 [28]. The actual conduct of affairs in much simulation-research was cynically characterized as "garbage in, garbage out".

The lack in the technique of data gathering referred to in this article concerns objects of investigation which belong to the very heart of what the sociologist should be able to develop as his contribution to society and for the extension of his science. This lagging behind pointed to is anything but a trivial affair. The technique outlined in this article will never be able to pretend to completely offset the discrepancy indicated. Other techniques will have to be developed as well, in order to make a more differentiated set of research-instruments available. After all, the outlined technique in many respects is still in a stage of development. We hope to have rendered it plausible that further developments of these techniques offer interesting prospects.

[28] Papers etc. of the second international conference on simulation and gaming of social systems, held in Utrecht in 1971, are published in H. A. BECKER & H. M. GOUDAPPEL (eds.), *Developments in simulation and gaming*, Meppel, 1972.