



ISI - INTERNATIONAL STATISTICAL INSTITUTE

DECLARATION ON PROFESSIONAL ETHICS

Adopted: August 1985

Background note

The involvement of the International Statistical Institute in establishing a declaration on professional ethics has extended over seven years. The Bureau of the Institute, in response to representations by members and a proposal by the Institute's Committee on Future Directions, established a Committee on a Code of Ethics for Statisticians, in 1979, during the 42nd ISI Session in Manila. The Committee worked to prepare a plenary meeting at the subsequent Buenos Aires Session in 1981 during which a consensus in favour of drawing up a code developed: the 'code' was to be prepared for acceptance by the Institute during its Centenary Celebration in 1985.

The Committee was composed of Roger Jowell (Chairman), W. Edwards Deming, Arno Donda, Helmut V. Muhsam and Edmund Rapaport, and it subsequently co-opted Edmundo Berumen-Torres, Gilbert Motsemme and Rene Padieu.

The Declaration which has emerged is the result of an extensive process of drafting and redrafting, of consultation with the entire ISI membership and with the ISI's Sections, of open meetings and written consultations which occurred between December 1981 and August 1985. The drafting of the Declaration provoked much interest and genuine debate which continued into the week before it was to be placed before the General Assembly of the Institute for adoption.

After due consideration and deliberation the General Assembly adopted the following resolution on 21 August 1985: 'The General Assembly of the International Statistical Institute,

1. recognising that the aim of the Declaration on Professional Ethics for Statisticians is to document shared professional values and experience as a means of providing guidance rather than regulation,

adopts the Declaration as an affirmation of the membership's concern with these matters and of its resolve to promote knowledge and interest in professional ethics among statisticians worldwide;

2. determines to send the Declaration to all members of the ISI and its Sections and to disseminate it, as appropriate, within the statistical profession;

3. commends the Committee responsible for developing the Declaration for its thorough, efficient and successful work during the last five years.'

In accordance with the spirit and letter of the resolution the International Statistical Institute is privileged to present to the reader the ISI Declaration on Professional Ethics with the hope and in the belief that this document will assist colleagues throughout the world in the pursuit of their professional goals and responsibilities.

Preamble

Statisticians work within a variety of economic, cultural, legal and political settings, each of which influences the emphasis and focus of statistical inquiry. They also work within one of several different branches of their discipline, each involving its own techniques and procedures and its own ethical approach. Many statisticians work in fields such as economics, psychology, sociology, medicine, whose practitioners have ethical conventions that may influence the conduct of statisticians in their fields. Even within the same setting and branch of statistics, individuals may have different moral precepts which guide their work. Thus, no declaration could successfully impose a rigid set of rules to which statisticians everywhere should be expected to adhere, and this document does not attempt to do so.

The aim of this declaration is to enable the statistician's individual ethical judgements and decisions to be informed by shared values and experience, rather than to be imposed by the profession. The declaration therefore seeks to document widely held principles of statistical inquiry and to identify the factors that obstruct their implementation. It is framed in the recognition that, on occasions, the operation of one principle will impede the operation of another, that statisticians - in common with other occupational groups - have competing obligations not all of which can be fulfilled simultaneously. Thus, implicit or explicit choices between principles will sometimes have to be made. The declaration does not attempt to resolve these choices or to allocate greater priority to one of its principles than to another. Instead it offers a framework within which the conscientious statistician should, for the most part, be able to work comfortably. Where departures from the framework of principles are contemplated, they should be the result of deliberation rather than of ignorance.

The declaration's first intention is thus to be informative and descriptive rather than authoritarian or prescriptive. Second, it is designed to be applicable as far as possible to different areas of statistical methodology and application. For this reason its provisions are fairly broadly drawn. Third, although the principles are framed so as to have wider application to decisions than to the issues it specifically mentions, the declaration is by no means exhaustive. It is designed in the knowledge that it will require periodic updating and amendment. Fourth, neither the principles nor the commentaries are concerned with general written or unwritten rules or norms such as compliance with the law or the need for probity. The declaration restricts itself as far as possible to matter of specific concern to statistical inquiry.

The text is divided into four sections, each of which contains principles or sets of principles followed by short commentaries on the conflicts and difficulties inherent in their operation. The principles are interrelated and therefore need to be considered together; their order of presentation should not be taken as an order of precedence.

At the end of each section, as here, a short annotated bibliography is provided for those who wish to pursue the issues or to consult more detailed texts.

General bibliography

Sjoberg (1967) though now somewhat dated, provides good historical background. Freund (1969) is written under the shadow of the biomedical paradigm, but includes a vigorous statement by Margaret Mead of the differences, on the ethical dimension, between biomedical and social science research. Diener & Crandall (1978) is a general discussion, particularly useful with reference to field experiments. Reynolds (1982) (which is a condensed and updated version of Reynolds (1979)) is a clearly written text aimed mainly at American university students. Bulmer (1979) contains reprinted and new articles on survey research and census taking in Britain and America. Barnes (1980) is an attempt to analyse sociologically why ethics has become a problem and has a full bibliography to 1978. Bower and Gasparis (1978) has a bibliography of works published between 1965 and 1976 with particularly full annotations. Bulmer (1982) contains a good bibliography on covert research and related topics. Jowell (1983) states the case for an educational, rather than a regulatory or aspirational, code, and has a bibliography with many items of special interest to statisticians. Burgess (1984) focusses on ethnographic research by sociologists in Britain. Barnes (1984) argues that ethical compromises are unavoidable in social inquiry. Other attempts have been made to formulate codes of ethics for statisticians: an earlier attempt (Deming 1972) is the outcome of the work of a Committee to Study Problems of Professional Ethics established in 1969 by the ISI; it relates mostly to the relations between the consulting statistician and his or her client. Another attempt (ASA 1980) is fully discussed by 15 authors under the title 'Ethical Guidelines for Statistical Practice: Historical Perspective, Report on the ASA ad hoc Committee on Professional Ethics, and Discussion (ASA 1983)'. More recently, French public statisticians have developed and adopted a code of ethics (AIS, 1984). Similarly, the British Government Statistical Service has produced its own Code of Practice (GSS, 1984).

1 Obligations to society

1.1 Considering conflicting interests

Statistical inquiry is predicated on the belief that greater access to well-grounded information is beneficial to society. The fact that statistical information can be misconstrued or misused, or that its impact can be different on different groups, is not in itself a convincing argument against its collection and dissemination. Nonetheless, the statistician should consider the likely consequences of collecting and disseminating various types of data and should guard against predictable misinterpretations or misuse.

No generic formula or guidelines exist for assessing the likely benefit or risk of various types of statistical inquiry. Nonetheless, the statistician has to be sensitive to the possible consequences of his or her work (see Clause 4.4), in the knowledge that society's entitlement to know about its collective characteristics sometimes conflicts with the individual's entitlement to protect his or her privacy.

All information, whether systematically collected or not, is subject to misuse. And no information is devoid of possible harm to one interest or another. Individuals may be harmed by their participation in statistical inquiries (see Clause 4.4), or group interests

may be damaged by certain findings. A particular district may, for instance, be negatively stereotyped by a statistical inquiry which finds that it contains a very high incidence of crime. A group interest may also be harmed by social or political action based on statistical findings. For instance, heavier policing of a district in which crime is found to be high may be introduced at the expense of lighter policing of a district in which crime is found to be high may be introduced at the expense of lighter policing in low crime districts. Such a move may be of aggregate benefit to society but to the detriment of some districts. Statisticians are not, however, in a position to prevent action based on statistical data. Indeed, to guard against the use of their findings would be to disparage the very purpose of much statistical inquiry.

1.2 Widening the scope of statistics

Statisticians should use the possibilities open to them to extend the scope of statistical inquiry, and to communicate their findings, for the benefit of the widest possible community.

Statisticians develop and use concepts and techniques for the collection, analysis or interpretation of data. Although they are not always in a position to determine the scope of their work or the way in which their data are used and disseminated, they are frequently able to influence these matters. In addition, they are in a position to devise more efficient uses of resources through, say, developing sampling techniques or introducing new uses for existing data (see Clause 4.3c).

Academic statisticians enjoy probably the greatest degree of autonomy over the scope of their work and the dissemination of their results. Even so, they are generally dependent on the decisions of funders on the one hand and journal editors on the other for the direction and publication of their inquiries.

Statisticians employed in the public sector and those employed in commerce and industry tend to have even less autonomy over that they do or how their data are utilised. Rules of secrecy may apply; pressure may be exerted to withhold or delay the publication of findings (or of certain findings); statistical series may be introduced or discontinued for reasons that have little to do with technical considerations. In these cases the final authority for decisions about an inquiry may rest with the employer or client. (See Clause 2.3).

Professional experience in many countries suggests that statisticians are most likely to avoid restrictions being placed on their work when they are able to stipulate in advance the issues over which they should maintain control. Government statisticians may, for example, gain agreement to announce dates of publication for various statistical series, thus creating an obligation to publish the data on the due dates regardless of intervening political factors. Similarly, statisticians in commercial contracts may specify that control over at least some of the findings (or details of methods) will rest in their hands rather than with their clients. The greatest problems seem to occur when such issues remain unresolved until the data emerge.

1.3 Pursuing objectivity

While statisticians operate within the value systems of their societies, they should attempt to uphold their professional integrity without fear or favour. They should also not engage or collude in selecting

methods designed to produce misleading results, or in misrepresenting statistical findings by commission or omission.

Science can never be entirely objective, and statistics is no exception. The selection of topics for attention may reflect a systematic bias in favour of certain cultural or personal values. In addition, the employment base of the statistician, the source of funding and a range of other factors may impose certain priorities, obligations and prohibitions. Even so, the statistician is never free of a responsibility to pursue objectivity and to be open about known barriers to its achievement. In particular, statisticians are bound by a professional obligation to resist approaches to data collection, analysis, interpretation and publication that are likely (explicitly or implicitly) to misinform or to mislead rather than to advance knowledge.

Bibliography: Obligations to society

Many books or symposia on professional ethics contain discussions of the broad context in which social inquiry is carried on, but in most cases these discussions are scattered throughout the text. Beauchamp et al. (1982) contains, in Part 2, an explicit general discussion of how and when the practice of social inquiry can or cannot be justified. The social researcher's legal and formal social obligations are analysed, in the United States context, in Beauchamp et al. (1982), Part 5. Pool (1979 & 1980) argue the case for not imposing any formal controls. Douglas (1979) does the same, more vigorously. Wax & Cassell (1981) discusses the relation between legal and other formal constraints and the social scientist's own sets of values. Frankel (1976) refers more specifically to statistics.

1.1 Considering conflicting interests

BAAS (1974) discusses these conflicts in a British, but now somewhat out-of-date, context. Baumring (1972) contrasts the interest of scientists and research subjects, favouring the latter. Ackeroyd (1984), Section 6.3, deals with conflicts of interest in ethnographic inquiry. Muhsam (1985) discusses the conflict between the right to privacy and the right to know.

The usefulness of statistical information is rarely challenged and most of the relevant literature refers merely to ways and means of enhancing its usefulness. At the Centenary Session of the ISI a meeting was devoted to this subject with special reference to developing countries (see: Chakravarty, (1985); Nyitrai, (1985); Williams, (1985)).

1.2 Widening the scope of statistics

Diener & Crandall (1978), Chapter 13, discusses this topic with reference to psychological research. Crispo (1975) presents a discussion of public accountability from a Canadian standpoint. Johnson (1982) deals with the hazards that arise in publishing research findings. Jahoda (1981) demonstrates vividly the ethical and social considerations that limit the conduct of inquiry and the publication of results.

1.3 Pursuing objectivity

Stocking and Dunwoody (1982) outline some of the pressures against the preservation of objective standards that are exerted by the mass media. In more general terms, Klaw (1970) suggests that these standards can never remain untarnished.

2. Obligations to funders and employers

2.1 Clarifying obligations and roles

Statisticians should clarify in advance the respective obligations of employer or funder and statistician; they should, for example, refer the employer or funder to the relevant parts of a professional code to which they adhere. Reports of the findings should (where appropriate) specify their role.

2.2 Assessing alternatives impartially

Statisticians should consider the available methods and procedures for addressing a proposed inquiry and should provide the funder or employer with an impartial assessment of the respective merits and demerits of alternatives.

2.3 Not pre-empting outcomes

Statisticians should not accept contractual conditions that are contingent upon a particular outcome from a proposed statistical inquiry.

2.4 Guarding privileged information

Statisticians are frequently furnished with information by the funder or employer who may legitimately require it to be kept confidential. Statistical methods and procedures that have been utilised to produce published data should not, however, be kept confidential.

An essential theme underlying each of the above principles is that a common interest exists between funder or employer and statistician as long as the aim of statistical inquiry is to advance knowledge. (See Clause 1.3). Although such knowledge may on occasions be sought for the limited benefit of the funder or employer, even that cause is best served if the inquiry is conducted in an atmosphere conducive to high professional standards. The relationship between funder or employer and statistician should therefore be such as to enable statistical inquiry to be undertaken as objectively as possible (see Clause 1.3) with a view to providing information or explanations rather than advocacy.

The independent statistician or consultant appears to enjoy greater latitude than the employee- statistician to insist on the application of certain professional principles. In his or her case, each relationship with a funder may be subject to a specific contract in which roles and obligations may be specified in advance (see Deming 1972). In the employee's case, by contrast, his or her contract is not project-specific and generally comprises an explicit or implicit obligation to accept instructions from the employer. The employee-statistician in the public sector may be restricted further by statutory regulations covering such matters as compulsory surveys and official secrecy. (See Clause 4.4).

In reality, however, the distinction between the independent statistician and the employee-statistician is blurred by other considerations. The independent statistician's discretion to insist on certain conditions is frequently curtailed by financial constraints and by the insecurity of the consultant's status. These problems apply less to the employee-statistician, whose base is generally more secure and whose position is less isolated. The employee (particularly the government statistician) is often part of a community of statisticians who are in a strong position to establish conventions and procedures that comfortably accommodate their professional goals (see Clause 1.2).

Relationships with funders or employees involve mutual responsibilities. The funder or employer is entitled to expect from statisticians a command of their discipline, candour in relation to limitations of their expertise and of their data (see Clause 3.1), openness about the availability of more cost-effective approaches to a proposed inquiry, discretion with confidential information. Statisticians are entitled to expect from the funder or employer a respect for their exclusive professional and technical domain and for the integrity of the data. Whether or not these obligations can be built into contracts or written specifications, they remain preconditions of a mutually beneficial relationship.

A conflict of obligations may occur when the funder or an inquiry wishes to ensure in advance (say in a contract) that certain results will be achieved, such as particular findings or a minimum response level in a voluntary sample survey. By agreeing to such a contract the statistician would be pre-empting the results of the inquiry by having made implicit guarantees on behalf of potential subjects as to their propensity to participate or the direction of their response. To fulfil these guarantees, the statistician may then have to compromise other principles, such as the principle of informed consent. (See Clause 4.2).

Above all, statisticians should attempt to ensure that funders and employers appreciate the obligations that statisticians have not only to them, but also to society at large, to subjects, to professional colleagues and collaborators. One of the responsibilities of the statistician's professional citizenship, for instance, is to be open about methods in order that the statistical community at large can assess, and benefit from, their application. Thus, insofar as it is practicable, methodological components of inquiries should be free from confidentiality restrictions so that they can form part of the common intellectual property of the profession. (See Clause 3.2).

Bibliography: Obligations to funders and employers

2.1 Clarifying obligations and roles

Appell (1978), Section 8, presents examples from ethnographic inquiries. Deming (1965 and 1972) specifies the roles of the consulting statistician and his or her client.

2.2 Assessing alternatives impartially

Many journal articles and chapters in books discuss this topic in general terms. Schuler (1982), Chapter 3, deals with the difficulties encountered in psychological research. Webb et al. (1966) is the popular source for alternative procedures of inquiry.

2.3 Not pre-empting outcomes

Barnett (1983) discusses this point, with reference to his own local context.

2.4 Guarding privileged information

SCPR Working Party (1974) is a general discussion of privacy in a British context, now somewhat out-of-date. Simmel (1908: 337-402) & (1952: 305-376) is the classic sociological analysis of constraints on the flow of information. Shils (1967) extends simmel's work to more recent conditions; Tefft (1980) provides exotic case studies of perceptions of privacy and secrecy. Flaherty (1979) discusses the issues posed by the monopolization of data by governments, while Bulmer (1979) looks more broadly at data obtained in censuses and large surveys. Carroll and Kneer (1976) looks, from the standpoint of political science in America, at official pressure on scientists to reveal sources of information. Appell (1979), Section 3, gives a range of dilemmas arising from various kinds of official pressure. Bok (1982) prescribes norms for concealment and revelation.

3. Obligations to colleagues

3.1 Maintaining confidence in statistics

Statisticians depend upon the confidence of the public. They should in their work attempt to promote and preserve such confidence without exaggerating the accuracy or explanatory power of their data.

3.2 Exposing and reviewing methods and findings

Within the limits of confidentiality requirements, statisticians should provide adequate information to colleagues to permit their methods, procedures, techniques and findings to be assessed. Such assessments should be directed at the methods themselves rather than at the individuals who selected or used them.

3.3 Communicating ethical principles

To conduct certain inquiries statisticians need to collaborate with colleagues in other disciplines, as well as with interviewers, clerical staff, students, etc. In these cases statisticians should make their own ethical principles clear and take account of the ethical principles of their collaborators.

Each of these principles stems from the notion that statisticians derive their status and certain privileges of access to data not only by virtue of their personal standing but also by virtue of their professional citizenship. In acknowledging membership of a wider statistical community, statisticians owe various obligations to that community and can expect consideration from it.

The reputation of statistics will inevitably depend less on what professional bodies of statisticians assert about their ethical norms than on the actual conduct of individual statisticians. In considering the methods, procedures, content and reporting of their inquiries, statisticians should therefore try to ensure that they leave a research field in a state which permits further access by statisticians in the future. (See Clause 4.1).

Statistical inquiries are frequently collaborative efforts among colleagues of different levels of seniority and from different disciplines. The reputations and careers of all contributors need to be taken into account. The statistician should also attempt to

ensure that statistical inquiries are conducted within an agreed ethical framework, perhaps incorporating principles or conventions from other disciplines, and that each contributor's role is sufficiently defined. The World Medical Association's Declaration of Helsinki (1975), for instance, gives excellent guidance to statisticians in the field of medicine.

A principle of all scientific work is that it should be open to scrutiny, assessment and possible validation by fellow scientists. Particular attention should be given to this principle when using computer software packages for analysis by providing as much detail as possible. Any perceived advantage of withholding details of techniques or findings, say for competitive reasons, needs to be weighed against the potential disservice of such an action to the advancement of statistical knowledge.

One of the most important but difficult responsibilities of the statistician is that of alerting potential users of their data to the limits of their reliability and applicability. The twin dangers of either overstating or understating the validity or generalisability of data are nearly always present. No general guidelines can be drawn except for a counsel of caution. Confidence in statistical findings depends critically on their faithful representation. Attempts by statisticians to cover up errors (see Ryten, 1981), or to invite over-interpretation, may not only rebound on the statisticians concerned but also on the reputation of statistics in general. (See Clause 1.1).

Bibliography: Obligations to colleagues

3.1 Maintaining confidence in statistics

Reynolds (1975): 598-604 discusses conflicts between, on the one hand, obligations to keep science objective and impartial and, on the other, values held as citizens about trying to change the world. The problems involved in presenting the limitations on the accuracy of statistical data are discussed at length by Gonzales et al. (1975). A more controversial stance in relation to errors is expressed by Ryten (1981).

3.2 Exposing and reviewing methods and findings Diener & Crandall (1978), Chapter 9, discusses the need for honesty and accuracy. Powell (1983) outlines the conflicts that arise when an academic merits censure from colleagues because of improper professional conduct.

3.3 Communicating ethical principles Appell (1978) deals with how to alert ethnographers to ethical issues.

FOR [PART 2](#) OF THIS DECLARATION CLICK HERE.