

INTER-OFFICE CORRESPONDENCE

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SSRC
Atomic energy

FROM: JHW

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TO:

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JHW FEB 28 '46		mv

COMMENTS:

JUL 17 1947

SUBJECT: SSRC Committee on Social Aspects of Atomic Energy

The Committee on Social Aspects of Atomic Energy, which includes physical scientists, natural scientists and social scientists, met on February tenth.

Here are the minutes of their preliminary meeting.

JHW

JHW:DAA
Attachment

March 3 - Atomic Energy C Meeting

JUL 17 1947

MEETING OF SOCIAL SCIENCE RESEARCH COUNCIL

Committee on Social Aspects of Atomic Energy

February 10th, 1946

Present: Winfield Riefler (Chairman), Donald Young, W. F. Ogburn, Henry D. Smyth, Jakob Marschak, Isador I. Rabi*, Rensis Likert, Bernard Brodie, Charles Dollard*, Ansley J. Coale

*Part time

These minutes will follow the agenda drawn up by the Chairman. The conclusions agreed upon under each section are presented in the main body of the minutes, and an incomplete summary of the discussion which proceeded agreement is contained in a series of appendices.

I. DISCUSSION OF OPERATIONS AND FUNCTIONS OF COMMITTEE

Agreed Conclusions. The committee will have the following functions:

1. It will carry on continuing and routine services to aid social scientists and others studying the human relations aspects of atomic energy by:
 - a. Serving as a clearing house for information relevant to the subject. This will include collecting memoranda, reports, books, and the like, and preparing abstracts for circulation to the proper individuals and organizations. It is intended that this service be eclectic rather than comprehensive; i.e., every speech or paper advocating or damning world government will not be summarized.
 - b. Maintaining a roster of personnel actively interested in the social aspects of atomic energy, including in particular those who are engaged in study and research.
 - c. Fostering the training of personnel so that they may be better equipped to further studies in the area. Such training will be accomplished in part by the fostering of research projects, and, if proved desirable, by establishing fellowships and and like measures to develop students who combine a knowledge of the relevant branches of natural and social science.

2. The committee's most important role will be to suggest and foster research concerned with the social problems arising from atomic energy. The committee will not itself undertake such research, but will attempt to induce it at other institutions. The aim will be to promote objective research and not to indulge in political activity. The research will of necessity be focussed on relevant social and political problems, but the committee will not be concerned with the adoption of any particular solution.

II. REVIEW OF PROPOSED RESEARCH PROJECTS

A. Inspection and Control

Agreed Conclusions.

1. There is need for an authoritative statement of the criteria for an effective and relevant system of the control of the military uses of atomic energy through inspection. There is also need for a summary and syntheses of the base work on inspection especially on its technical aspects, already completed ^{or well under way} by the Carnegie and Chicago groups. This work will probably need to be supplemented especially in the area of political problems of inspection. A summary statement embodying these findings should be issued within six months in order (1) to prepare the public mind for the U.N.O. report on inspection and thus strengthen the hand of the U.N.O. Commission against political pressures to soft-pedal difficult aspects of the problem.

Assume possible

Subsequently there will be need for an evaluation of the adequacy of the report of the U.N.O. Commission and of the measures by which it may be put into effect.

2. To organize this work, a sub-committee consisting of Riefler, Brodie and Smyth will:

endeavor to meet with two representatives of the international relations group at Yale, two representatives from the Carnegie group under Dr. Shotwell, and two representative s from the Chicago group on inspection. At this meeting the subcommittee will explore the possibility of having the group at Yale undertake the functions outlined under A. The subcommittee will not conclude final arrangements but will report its recommendations to the Committee at its next meeting.

B. Economic Vulnerability to Atomic Warfare

Agreed Conclusions

Call Rali

The Committee agreed that this was an important area requiring adequate research. It desired that the problem be explored, especially from the point of view of minimizing the incentive to use atomic weapons. A Subcommittee consisting of Riefler, Ogburn, Lickert and Notestein will meet and will submit proposals for specific project in this area to the main Committee at its next meeting.

C. Social Adjustment to Technological Change

Agreed Conclusions

Long - continued
Rali - More fund. terms
10000 Bomb - 3 Bombs

The Committee agreed that the techniques of organizing relevant research problems in this important area would require extended consideration at subsequent meetings. To prepare for this discussion, it was agreed that:

1. Marschak will write a memorandum on the economics of low-cost fuel in power production.
2. Ogburn will write a memorandum on social adjustment to new invention.
3. The secretary will write a memorandum which will list and briefly discuss various proposed special uses of atomic energy.

These memoranda will be submitted for consideration of the Committee at its next meeting.

D. Public Opinion Response to Atomic Warfare

Agreed Conclusions

Long -
Rali -
10000 Bomb -
3 Bombs

The Committee agreed to set up a study in this field as rapidly as possible. Dr. Likert will be chairman of a subcommittee on public opinion measurement, which committee will include experts in the field. The committee is to be formed in consultation with Riefler and Young. Likert will submit its proposals concerning programs of opinion measurement at the next meeting of the main committee

E. A Coordinated Inquiry into the Causes of War

Agreed Conclusions

Dr. Brodie agreed to consult with the Chairman on the problem of preparing a summary of work already undertaken in this area. Dr. Likert will submit a memorandum at the next meeting of the committee suggesting studies and measurements in social psychology. These will include questions such as: Does the identification of the nation with its U N O delegate cause more friction than U N O dissolves? What are public attitudes on sovereignty, and the like?

The members of the committee will submit proposals of specific studies in segments of this field, each suggestion to include, if possible, a problem and a technique for attacking it. These proposals will be filed for consideration at the next meeting.

III. Other Matters

It was decided that the next meeting, again in New York, would be held on Sunday, the third of March.

APPENDIX I

Discussion of the operations and functions of the Committee

Young: The SSRC wishes to see research on the human relations problems arising from atomic energy. The Committee should attempt to insure that worthwhile studies in this area are undertaken, by recommending programs of study and issuing suggestions to social scientists. It should try to see that undue duplication of effort is avoided.

Riefler: The Committee should constantly stress research, keeping this research as non-political as possible.

Ogburn: Up until the present, there has been issued a large volume of opinions and recommendations, but there has been very little systematic study. The most vocal groups have been the natural scientists, and what might be called ethicists. The statements issued by social scientists have been largely ethical statements; social science as such has had little to say.

The planning and support of research is much more vital than liaison.

Riefler: The routine activities of the Committee should be to collect memoranda -- though not exhaustively -- and to know who's working in the field.

Smyth: The memoranda should be digested rather than collected. The volume of material is too great to be read in toto, and abstracts would be very useful.

Ogburn: There is a role for natural scientists, and a role for social scientists in studying the consequences of atomic energy. Physicists and chemists can supply technical information of the nature and scope of atomic energy in various forms; social scientists should be best equipped to study the problems concerned with human relations. The two groups should supplement each other rather than compete.

Smyth: The younger scientists have jumped into the social problems with enthusiasm. They have looked for help from social scientists, but in the main it has not been forthcoming. The scientists' enthusiasm is to be commended.

Likert: The natural scientists in Washington have consulted social scientists extensively, but have received inadequate and conflicting answers.

APPENDIX I

2.

Riefler: The difficulty may be that social scientists have attempted (not very optimistically) to provide complete answers: to find the way out. A change in attitude toward objective research is needed.

APPENDIX II Discussion of Control and Inspection

Riefler: Control of atomic energy through inspection is the natural solution to the problem of its military use. It is the one proposed by Truman, Attlee and the Big Three, and a U.N.O. commission has been appointed to study the problem. In this area a good objective report on inspection appearing in advance of the report by the U.N.O. commission would: a) be helpful to the commission, b) not be hampered by political considerations that may devil the commission, and c) be useful in evaluating the commission's report when issued. It is important that this work be completed early, in six months at most.

Though inspection and control is the "natural" solution, it is not as easy as it at first seems. Since the peace-time production of power -- allowable under U.N.O. proposals -- has fissionable material as a by-product, a power plant could produce bombs after a conversion period of about a month. This raises the question of inspection for what? -- we need a statement of aims.

There is a Carnegie group under Shotwell working on the technical problems of inspection; assembling information from industrial sources, mining engineers, geologists, and camouflage experts. However, there is no work of a comparable scope concerned with the political questions arising from a system of control through inspection.

Smyth: The Hanford type plant produces explosively fissionable material (plutonium) from U238, thereby having bomb material as a by-product of power. However, power could be produced by separating the Uranium isotopes, and constructing a plant using U235 without the U238, which would then produce power without having an explosive by-product. (Though of course U235 is itself explosive.)

Brodie: There has been no complete analysis of potential peace-time uses so that we can see what we have to give up in order to have the relatively effective inspection system wherein even large-scale peace-time use is forbidden. In the present absence of such an analysis, there is an emotional reaction against foregoing peace-time uses. Society is conditioned strongly toward benefitting from the material fruits of science, and considers these benefits sacred. The usual answer is that we cannot turn back the clock.

Smyth and Riefler corroborate the existence of this reaction.

Marschak: Chicago is preparing information on inspection for the War Department, much of which is classified. However, unclassified portions should be available.

The potential peace-time uses must be known in order to make a full study of inspection.

In S. adequate [Riefler: Even without knowing this, one could demonstrate (for example) that there can be either effective control through inspection or peace-time use, provided, of course, that research shows this to be the case. We need to know what will inspection and control attempt to do, and we need the technical factors as under preparation by Shotwell, plus a study of political factors involved.

If a report is prepared in the next six months, one difficulty will be in making it heard. One way of overcoming this obstacle would be to form a commission of distinguished citizens who would hold private hearings of the results obtained by various study groups and issue a report.

Young: Two such commissions have been established by the SSRC, and one was extremely successful.

Smyth: If the report is done by the most competent people available, regardless of their prominence, an audience could be insured by proper efforts in publication. One question to be considered is: what audience do we wish to reach? Scientists? Social scientists?

Riefler: As wide a circulation as possible -- equivalent, say, to the circulation of the Smyth report.

Young: Isn't the real aim to have the report read by those who make policy?

Riefler: These are best reached through the public.

Likert: Are there not two problems: (1) insuring the completion of a proper report -- and a commission of prestige might tend to include political recommendations, and (2) making sure the report is read. How first are we to get the report done?

Riefler: The commission proposed above would get it done.

Brodie: The international relations group at Yale has a chapter on control and inspection in a forthcoming book on atomic energy.

Riefler: The real problem is: What are the criteria for an effective system of control through inspection? Can we get someone to do a study on this question?

Ogburn: Criteria are too vague and not sufficiently constructive. We need to know the difficulties and advantages of various techniques.

Marschak: Let the Chicago and Carnegie groups continue their studies, and arrange to have them correlated and summarized.

(At this point the Chairman suggested that this topic be dropped until later in the day. When taken up again, the agreement summarized above was reached.)

Riefler: Economic vulnerability to atomic warfare is probably a more suitable approach from which to study this range of problems than that of dispersal of population.

Ogburn: It is a more general approach.

Riefler: Mr. Louis Dembitz has drawn up a preliminary outline of problems in this field. He is highly competent, since he has studied extensively the effects of bombing on the German economy during the recent war. His outline (exhibit B of the Agenda) is submitted for discussion.

Ogburn: The trends toward urban development should be studied. A study of the causes of urbanization would be useful in evaluating proposals for dispersal. Though the cost of dispersal would, according to estimates that have been made, cost no more than the total national expenditures on the war, there is a reaction against considering dispersal.

Brodie: In part 2 of Exhibit B., Mr. Dembitz lists (a) the reduction of vulnerability, and (b) the reduction in the incentive to attack. (b) is the more important.

The data listed in part 5 (an estimate of the destructive power of bombs, of prospective accuracy of delivery, and of the conceivable number of bombs) is not and will not be available.

Marschak: These data are not as necessary as one might think. For example, with a very large number of bombs, and with even a random distribution of this large number, dispersion has no effect. With a lesser number, there is an optimum distribution that is fairly independent of accuracy.

Riefler: Rather than considering the optimum dispersal, we can treat the points of critical vulnerability, considering the possibility of duplicating industrial facilities, transportation bottlenecks, building up stockpiles at the point of consumption, etc.

Young: The reaction against considering dispersal is predicated on an assumption that such studies are defeatist. But there should be no objection to preparing a second line of defense.

Marschak: This reaction is illogical.

(Following this discussion, the meeting recessed for lunch. Drs. Rabi and Dollard joined the group for the afternoon session. The agreements on A and B were actually reached after the recess).

Riefler: The problem in setting up studies on social adjustment to technological change is to find the proper institution to conduct them. Shall we restrict ourselves to atomic energy or consider other technological advances?

One specific suggestion is that the secretary, aided by the Chairman, compile a list of definite proposals for the use of atomic energy, e.g.: the mining of Antarctica, and the flooding of the Qualtara depression.

Ogburn: Society has before adjusted to technological change; much could be learned from a study of the industrial revolution with an eye to points which are illustrative. The industrial revolution resulted in part from the discovery of the possibilities of steam.

Brodie: We must differentiate between innovations that involve a new energy and new machinery, such as steam and its machinery, and innovations involving a new fuel. Perhaps atomic energy is more nearly analogous to, say, oil than steam.

Riefler: In assessing a new fuel, we must know costs.

Marschak: Not necessarily. Determining costs is one project, and studying the costs of a reduction in fuel cost is another. Even zero cost for fuel might not have an enormous effect on the economy.

Ogburn: By studying the effects of some major invention on society, we could learn techniques that would be useful in studying these problems, and train personnel to be capable in this field.

Young: Why not ask Marschak to submit a memorandum on the economics of low-cost fuels, and Ogburn on social adjustment to inventions.

Riefner: In public opinion measurement there exists a tool for sociological research that can be useful not only in aiding research in the other fields of this agenda, but also in providing material that will be invaluable to future historians and sociologists. We should make very rapid use of public opinion polls to record how the world reacts to a sudden important new phenomenon. The commercial polls, which have already conducted some measurements, have not phrased questions in a way to make them most useful for this purpose.

Brodie: It would be interesting to measure the level of public attention to the problem. Newspaper space reached a maximum a few weeks after the bomb was dropped, held to this maximum for a month or so, and then declined sharply. Has public interest followed this same course?

Likert: At first people were quite profoundly startled, but they have found that they can continue their daily routine unchanged, and hence unconsciously are influenced to minimize the problems of atomic energy.

There are fascinating studies to be made in this field:
What information do people have? Where did they get it?
How do they interpret it? etc.

Riefner: Dr. Likert is asked to form a committee (consulting with Young and Riefner) to draw up a program of opinion measurement.

APPENDIX VI

Discussion of a Coordinated Inquiry Into the Causes of War

Likert: There are many problems in this area susceptible to a new form of attack. By techniques of social psychology and opinion measurement, one can often predict the course of events. For example, if the attitudes inculcated in the citizens of Germany, Italy, and Japan had been measured, it would have been possible to predict trouble with near certainty. Likert's group was able to predict the effect of payroll taxes on bond sales for the Treasury, and to advise how the effect could be kept at a minimum. By measuring attitudes, light may be thrown on the probable success of UNO, and on the factors that may keep it from succeeding.

Riefler: Will Likert submit a memorandum expanding these points?

Likert: Affirmative

Brodie: There has been a great deal of work on the causes of war, much of it very good. It would be useful to summarize this work, separating research findings from opinionated doctrine.

Young: Can we not restrict ourselves to the changes that have arisen as a result of atomic energy? We need to avoid spreading into too much territory.

Rabi: There was an analogous situation before the last war. The generally held opinion (partly erroneous) was that airpower would obliterate civilian populations. It would be instructive to look into this attitude and its effects.

Riefler: There are many instances in the past when wars were destructive -- sometimes the adult male population was slaughtered and the women and children thrown into slavery. And this consequence was known in advance.

Brodie: However it is a relatively new phenomenon for the victor to suffer devastation.

Ogburn: Generalizations going back to the Greeks and Romans are perhaps not useful. We need to study the peculiar institutions and conditions of the next 20 years or so.

Marschak: There is a need for both general and particular studies. For example, there is a great need for a study of the events, speeches, and institutions in Russia which would account for Russian attitudes.

APPENDIX VI

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Riefler: It is proposed that members of the committee suggest specific problems and techniques for their solution. There is a need to increase the useful studies in segments of this field.