PRESIDENTIAL ADDRESS
THE EDUCATIONAL INFRASTRUCTURE OF THE SURVEY RESEARCH PROFESSION

ROBERT M. GROVES

Vignette 1. During the last 10 years of my father's life, I'd see him maybe once or twice a year. Almost every time there would come a point, after we talked about family and old memories, that he would ask the question, "Now, Bob, exactly what *do* you do in your work?" As I recall, my answers would vary over successive occasions, in some attempt to use words that might make, at long last, the right connections in my father's mind. I must profess an utter failure over those years. In meeting my father's neighbors and friends on those visits, they would often say, "Oh, you're the son who works with computers!" the one attribute that must have registered permanently for my father.

Vignette 2. One of my friends, who also specializes in survey methodology and design, was asked to become a member of a technical advisory board for a survey measuring economic issues on a sample of households. All other members of the advisory board were economists, only a minority of whom were ever involved in actual data collection or formally trained in research design. One such member, in a side conversation during a coffee break, asked, apparently sincerely, "Is there really anything scientific about what survey methodologists do? I mean, do you really *know* anything or do you mainly give opinions about what works?"

Vignette 3. I was called a few years ago by a political pollster who runs a firm that provides campaign strategy advice and polling to inform that advice. His firm is reported to have gross revenues that exceed most survey organizations in the country. Indeed, it later dawned on me that he had probably designed and conducted more surveys than I had. He called to ask me whether it really made any difference who in the household answered the questions: would taking the person who answered the phone be acceptable?

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Vignette 4. A presidential commission decided to do a survey to measure the extent of the social problem they were investigating. They perceived that they needed assistance in the statistical design of the sample and the statistical analysis of the data but felt completely at ease constructing the questionnaire, because it was, in their words, basically "common sense," and they were the experts about the problem.

These stories illustrate several facts. We don't have a simple occupational title for survey methodologists or researchers; there is widespread belief among both academics and other users that there is no scientific basis or stable theoretical foundation for most survey design decisions; many persons who use the survey method most actively have no formal education (or interest?) in quality aspects of surveys. To the majority of users of the survey method, it is merely a tool to answer questions about a population. They tend not to possess an intellectual curiosity about improving surveys in general.

What follows are the thoughts of one in AAPOR for whom measurement through statistical surveys and qualitative investigations is a paramount concern. In choosing this topic, I think I return to the roots of AAPOR. Indeed, the very first AAPOR gathering, the Central City, Colorado, meeting of 1946 was explicitly called to grapple with the problems of an emerging survey research industry.

Those specializing in surveys are found in market research organizations, in academic research institutes, in the classroom teaching research methods, in political polling organizations, in media research and audience measurement, in the print and electronic media themselves, and in government statistics agencies measuring the society or economy. The common theme to this field is the application of research methodology in framing research questions, moving from concept to measure, statistical knowledge of sample design, social science knowledge of questionnaire design, management skills and knowledge regarding data collection, computer expertise in database construction and manipulation, statistical expertise in the analysis of data, and technical writing abilities to put into words the results of empirical analysis. Members of the field strongly believe that the value of information to a decision is irrevocably a function of the design and execution of the measurement step. *All data are not created equal.*[1]

This discussion makes three observations: (1) the increasing demand for information in our world is going to place survey research more

1. This statement seems obvious but stands in stark contrast to the common teaching of the statistical analysis of data as if they were pure reflections of the concepts of interest to the analyst. Lack of attention to the measurement step of science seems to plague many disciplines currently; see, e.g., Griliches 1994.

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and more at the forefront; (2) the field has identified an expanding body of theoretical and technical knowledge that must be mastered in order to be a competent survey professional; and (3) we lack, however, key ingredients of a profession; there is much work to do preparing the next generation of survey researchers.

A View of the Future

I have more and more confidence that the perceived importance of information will grow at increasing rates in future societies. The explosion of the Internet, the embedding of customer satisfaction surveys into management decisions, the ubiquity of opinion measurement on current events, the demand for more timely and richer economic statistics—in all fields the demand for information by business and the citizenry seems only to be rising. Surveys are key to feeding this information frenzy. We could be approaching a golden age for survey research, where the sophistication of users of information will grow as they are exposed to more and more information, and their demands for higher-quality information will rise.

Part of this golden age I foresee will be a deepening of the technical sophistication of those producing the information—that is, the maturation of a profession that designs, collects, and analyzes survey and other data on human populations. I speak today about whether we as a field are positioning ourselves to take advantage of this opportunity.

I fully acknowledge that such a future need not occur. We should not confuse motion with progress. There may be no process of natural selection and evolution out of the unorganized anarchy of the World Wide Web as it now exists. Users may not demand *good* information but only *lots* of information. Finally, survey research professionals may not prove to be up to the task of serving this new world.

The Status of the Field

We are a field that is only about 60 years old.[2] Do we have the ingredients of a profession? Since we are an association with many having formal training in sociology, I'll cite Parsonsian requirements of a profession (Parsons 1979): service to the society, skill development, and formal technical training.

2. Before the reader objects, I too am aware of early "surveys" of large-scale populations. I start the clock at the development of well-grounded theories permitting the measurement of the quality of inference from the sample to the population.

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By "service to the society" Parsons meant some institutionalized means of making sure the competencies of the profession were put to socially responsible uses. We are strong on this; it unites us. It includes the founding beliefs of George Gallup that surveys are instruments communicating the people's wishes in a democracy. It is reflected in more recent revolts by statistical societies in Britain, protesting the Thatcher government's redefinition of the unemployment rate, as violating the fact that those numbers belong to the people, to be used to judge the government, not to the government, to shape public opinion. Those in the commercial survey sector can feel proud of informing providers about the reactions of their customers; those in the federal sector gain satisfaction from knowing their surveys provide feedback for an informed citizenry and its elected government to judge the state of the common good; those in the academic sector gain rewards from discovering the behavioral and attitudinal bases of important social problems.

By "skill development" Parsons meant that not only must a cultural tradition be mastered, in the sense of being understood, but skills in its use must be developed. Here, I think that the survey industry does have a set of professional practices that move from selection of the sample, questionnaire development and pretesting, interviewer training and management, data file structure design, coding and data editing, data analysis, and technical writing (turning statistical findings into words). Unfortunately, they remain uncodified by any professional organization.

By "formal technical training" Parsons included some institutionalized mode of validating both the adequacy of the training and the competency of the trained individuals. It is interesting, and unfortunate for us, I believe, that our field may be the weakest on this third point. After 50–60 years of activity for large-scale statistical surveys, it is still the norm to enter the field with no formal education in its theories and practices, to learn from experience slowly and at great expense to an employer, and, if blessed with the right opportunities and mentoring, to become competent. There is no mechanism for the field to validate whether such experiences have provided minimal competency as a survey professional.

At the origins of the field, when the *invention* of techniques was key to its survival, this lack of formal training in the field itself was irrelevant. Indeed, from the 1940s to the 1960s the field was founded and enriched by those with formal education in physics, psychology, economics, mathematics, and a host of other fields. They created and evaluated the theories and practices that form the field. Their creativity and that of the next generation of survey researchers were so great, however, that the body of knowledge now needed for competency is

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1. Full-time performance of an occupational function
2. Establishment of a school not connected to a university
3. Establishment of a university school
4. Formation of a local professional organization
5. Formation of a national professional organization
6. Enactment of a licensing law
7. Development of a formal code of ethics

Figure 1. Wilensky's (1964) steps of formation of a profession

much broader than was true in their time. What served the field decades ago will not serve it well in the future.

This viewpoint may appear to be elitist to the current survey researchers who "came up the hard way," who did not receive formal education in the theories and methods of survey research (because it was not available). I want to distinguish my thoughts about the past of survey research from my thoughts about the future of survey research. I believe that the success of the current generation of survey researchers has been sufficiently large that the next generation has much more to learn than can be efficiently absorbed without more formal educational systems. The first attorneys were those who helped write the laws. Their productivity made necessary the legal training of the next generation. So too, the legacy of past and current survey researchers is a body of knowledge large enough to require formal study by the next generation.

While Parsons took a static view of the requisites for a field to be a profession, Wilensky (1964) asserted a seven-step process in the creation of a profession. It's useful to assess where the survey field lies in this sequence. Most of my comments focus on item 3 in figure 1, the establishment of a university school, but I make brief comments on the others.

1. FULL-TIME PERFORMANCE OF AN OCCUPATIONAL FUNCTION

There certainly is an occupational function—the U.S. federal government spends approximately $2.7 billion per year on economic and social information collection and dissemination (Office of Management and Budget 1996). There are over 12,000 staff members of the statistical agencies. The U.S. commercial sphere spends about $4–$5 billion and has many more employees. In each year there are tens of thousands of surveys conducted by state and local organizations to learn about client or member satisfaction, to learn the health care priorities of local areas, or to learn about employee concerns.

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Table 1. Membership in Sections of Selected Professional Associations

Association	Approximate Membership
AAPOR	1,500
American Evaluation Research Association, Education Statisticians	200
American Marketing Association, Research Special Interest Group	250
American Political Science Association, Political Methodology Section	550
American Psychological Association, Evaluation, Measurement, Statistics Division	1,600
American Sociological Association, Methodology Section	350
American Statistical Association, Survey Research Methods Section	1,500
International Association of Survey Statisticans	1,100
Marketing Research Association	2,500

2. ESTABLISHMENT OF A SCHOOL NOT CONNECTED TO A UNIVERSITY

In the early 1940s the U.S. Department of Agriculture established a school that trained many of the first-generation sampling statisticians; in 1947, the Survey Research Center at Michigan established the Summer Institute in Survey Research Techniques; somewhat later the Burke Institute established a series of courses in survey and marketing research. There is now a very active set of continuing education activities sponsored by commercial, academic, and nonprofit organizations.

4. FORMATION OF A LOCAL PROFESSIONAL ORGANIZATION

The survey field appeared to skip this phase of development and go directly to the next.

5. FORMATION OF A NATIONAL PROFESSIONAL ORGANIZATION

As table 1 demonstrates, there is no single organization for survey researchers. AAPOR was formed in the 1940s; the Survey Research Methods Section of the American Statistical Association was not formed until the 1970s. Some of the associations are linked to academic

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disciplines, as interest sections. Some are linked to industry groups. Only two appear to be devoted to the profession solely—the International Association of Survey Statisticians and the Marketing Research Association. There are many persons in the field who are members of more than one of the groups listed in table 1. Given the size of the industry, many survey professionals are not members of any of the associations.

6. ENACTMENT OF A LICENSING LAW

There are no such plans, to my knowledge, and the division of the field into government, commercial, and university sectors has led to diverse standards in the field.

7. DEVELOPMENT OF A FORMAL CODE OF ETHICS

The AAPOR code of ethics is one of the few with an enforcement provision (American Association for Public Opinion Research 1991); the Council of American Survey Research Organizations (CASRO) has a statement of ethics; the American Statistical Association has a set of principles of behavior of statisticians (American Statistical Association 1995). The AAPOR history shows that the code of ethics was one vehicle chosen to increase the professional stature of the association (instead of having it be, in Cisin's words, a "Chowder and Marching Society" [Sheatsley and Mitofsky 1992, p. 72]). The code was the tool by which the standards of the field were asserted. It is interesting to note that the code contains standards of ethical behavior and not, by and large, professional practice.

Let me return to the third step in Wilensky's creation of a profession.

3. ESTABLISHMENT OF A UNIVERSITY SCHOOL

The recent AAPOR member survey included a question asking the respondent to check all fields of formal education. Most marked more than one field. For purposes of this talk, I was interested in assessing the extent of formal training reported in technical areas of our field, for which I included marketing research, statistics, and survey research. About half of the respondents reported education in some combination of the social sciences (communications, demography, journalism, political science, psychology, sociology) with no mention of technical training. About 10 percent reported degrees in education or some other field, with no technical training reported. In total about 40 percent reported at least some formal education in marketing research,

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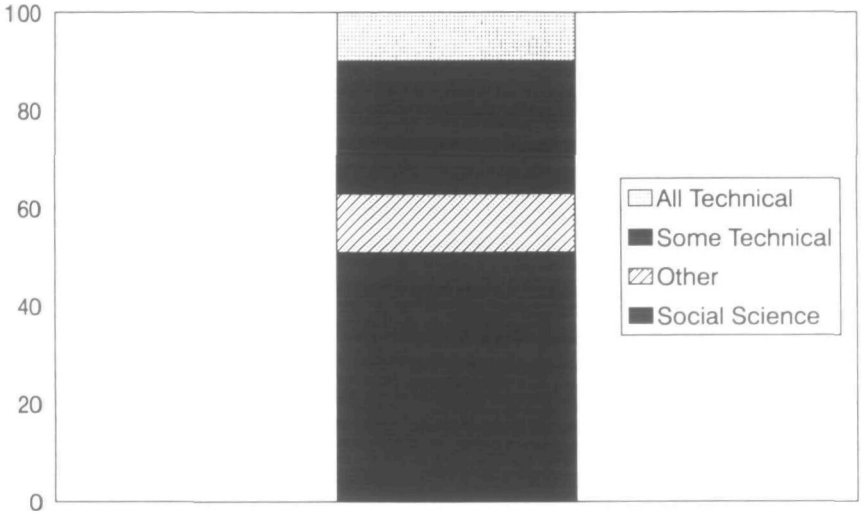

Figure 2. Areas of formal education—AAPOR member survey

statistics, or survey research, most of these combining the training with some social science discipline (fig. 2). We all mostly trained in mainline disciplines and have technical training as a sideline.

After spending all my life in the academy, I regret to say that I believe one of the most significant challenges to the intellectual maturation of the survey field is the organization of the U.S. university. Most universities are divided into a set of colleges and departments. Staff are viewed essentially as citizens of a department more than of the university; evaluations and promotions are made by criteria accepted within the field; and honors are conferred by the national association of that discipline. Departments determine what courses are offered; they determine what research questions are deemed interesting; they determine what is hot and what is not. In the frog pond of the campus, what lily pad you're on makes a difference.

On most college campuses throughout the United States, however, there is no one home for a survey methodologist or statistician. Some are in departments of statistics; some are in departments of sociology; some are in departments of political science; some are in schools of business. In almost all cases, however, they are at the margins of their disciplines.

These scholars face intense pressures to define themselves primarily as members of their disciplines. Many must say, "I am a statistician, with interest in surveys," or "I am a sociologist who's interested in research methods." Hence, it is a field of hyphens—a statistician–

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survey researcher or a sociologist–survey methodologist. Worse, it is a field that is often the post-hyphen part of the pair.

Of all the possible university venues for survey design issues, I've always thought that departments of statistics might be most natural. After all, sampling statistics, perhaps the tightest theoretical substructure for surveys, was taught rather early in such departments, and they could have expanded on that base. The first university texts in surveys were for sampling statistics (Deming 1950; Hansen, Hurwitz, and Madow 1953).

I recently commissioned a small survey of statistics departments, chosen from among those offering statistics degrees. There were 44 departments represented in the study.[3] For their graduate degree programs, only nine of the 44 require a course in survey sampling (almost all of which were sampling theory courses). Almost none offer courses in applied survey methodology.

For anyone trying to hire a well-trained sampling statistician, such results are no surprise. Survey statistics, except perhaps that related to adjustment procedures for missingness, is not currently "hot" in statistics. By this point in our history there are very few teaching faculty with practical experience in large-scale sample design; hence, the students cannot be turned on to the field by the practical problems facing real survey designs.

Having your own lily pad in the frog pond has the advantage of nurturing the theoretical as well as the applied. It permits curiosity-driven research in a way that is rarely possible in a commercial or government environment, where premiums are paid for identifying solutions in a timely fashion. Not all truth can be unlocked by the threat of a deadline. Paul Lazarsfeld and Robert Merton recognized this as early as 1950, when they prepared a proposal for a School of Social Research at Columbia and submitted it to the Ford Foundation. The proposal would have created an educational structure that might have changed the last 40 years of the field. The proposal was rejected by the foundation.[4]

But there is good news here. Even universities change, albeit very slowly. In 1980 the University of Georgia established its master's in marketing research (to be followed by the University of Texas at Ar-

3. The sampling frame consists of departments of statistics listed in *Schools Offering Degrees in Statistics*, 1995 edition, American Statistical Association. A total of 81 departments or divisions of statistics that offered graduate degrees in statistics were identified and telephoned repeatedly. Data were obtained from 44 of the 81.

4. My thanks to Allen Barton for pointing out this fact. See Lazarsfeld and Merton 1950; the text of the Ford Foundation proposal is largely reproduced in Lazarsfeld (1972, pp. 361–91). It is noteworthy that the Netherlands did build departments of research methods, while the United States failed to act on the idea.

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Table 2. U.S. Graduate Programs in Survey/Marketing Research

University	Degree Title	Start	Cohort Size
Georgia	Marketing Research	1980	13
Michigan	Applied Social Research	1981	2
Connecticut	Survey Research	1984	14
Wisconsin	Marketing Research	1990	7
Southern Illinois	Marketing Research	1988	22
Texas at Arlington	Marketing Research	1990	20
Joint Program in Survey Methodology	Survey Methodology	1992	18

lington, Southern Illinois University, and the University of Wisconsin—Madison; see table 2). In 1981, Michigan began its program in Applied Social Research; in 1984 Connecticut began its survey research master's. The National Science Foundation–sponsored Joint Program in Survey Methodology was founded in 1992, creating, in essence, a separate department of survey methodology within the University of Maryland.

These programs have diverse curricula and lengths. Some emphasize design, some analysis and presentation; some emphasize the statistical side and some, the social science issues of surveys. Those attached to a mainline discipline generally have the student take some courses in that discipline; those in business schools have the students learn some management and marketing principles.

It is interesting to me that these programs largely developed after the field was about 45 or 50 years old; they are creations of second- or third-generation survey researchers. They developed at a time when the technical knowledge underlying practice had accumulated and was documented in scholarly articles and books so that graduate-level education could be focused on the field.

These programs were late on the scene and are educating too few students. I believe that our country alone could use 20–30 such programs.

Advancing the Field as a Profession

Let me summarize my thoughts on the survey field as a profession. We already possess several of the key components of a profession.

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We have recognized occupational categories and complete work organizations devoted to our business. Our work spans every sector of the economy and society. We have codes of ethics that guide us in our work. We serve the society by informing it about itself, and we gain satisfaction and prestige from that role.

Further, the world needs us more and more. We live during a significant expansion of demand for our services. By luck or wisdom, we have chosen a great career for our little time on this earth.

We are a dynamic field. Our practices are changing rapidly. Computer and other electronic technologies are permitting measurement techniques that were unthinkable 10 years ago; advances in our understanding of cognitive and communicative aspects of surveys are identifying theoretical principles underlying key measurement issues; advances in statistical estimation are improving our handling of nonresponse and measurement of uncertainty.

For example, in 1951 Stanley Payne wrote the first serious text on survey question wording, a compendium of his experience with questionnaire development. By 1996 there were over 10 volumes of scientific research findings that have identified the cognitive and communicative principles underlying the role of question wording in survey measurement error (for a recent example, with an extended bibliography, see Sudman, Bradburn, and Schwarz 1996). In 1953 Hansen, Hurwitz, and Madow, wrote a two-volume exposition of the theory of sampling, almost exclusively devoted to estimated means and totals. By 1989, the theory and practice had been extended to whole families of complex analytic statistics, including regression models, multilevel models, and a variety of models on discrete data (Skinner, Holt, and Smith 1989). In 1953 Cochran's text on sampling contained less than 20 pages on nonresponse issues, out of a total of 400 pages. By 1990, there were full texts reviewing social science behavioral principles underlying survey participation, survey design features to reduce nonresponse, and statistical techniques of imputation and weighting to compensate for missing data (Dillman 1978; Goyder 1987; Rubin 1987). As late as the early 1980s almost all survey data collection used paper instruments; by the 1990s there were many survey organizations that used no paper instruments, all of them relying on some form of computer-assisted data collection. Every one of these advances required the survey professional to learn new concepts and technical practices. In short, to do a state-of-the-art survey today requires much more knowledge than was true just 10 years ago. It's harder and harder to keep up as a hyphenated survey researcher.

On the other hand, I am disappointed that after 50–60 years of scientific surveys, it is a field that must recruit new employees from a labor market that is by and large unschooled in its principles and practices.

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It appears to be stuck in an unspoken model of informal apprenticeships as the way careers are formed. Apprenticeship models are fine for fields that are stable but act as brakes to change for fields that are dynamic.

Engineering firms, in contrast to survey organizations, can look forward to hiring new engineering school graduates, well trained in the latest developments in material science and computerized design systems. The older staff update themselves through exposure to the new hires. The firms' socialization processes can be more focused on the specific work of the company, dealing with clients, and other aspects of day-to-day practice. (Note that formal education does not replace the need for practical experience.) Their firms save thousands of dollars in education costs with each new hire—costs that survey organizations must bear. Further, innovation in their firm is energized by hiring new talent.

Large survey organizations, with little chance of hiring well-trained new recruits, have adapted by constructing work organizations that compartmentalize the design and production process. There are separate work units for questionnaire design and pretesting, for sample selection, for programming, data collection, and so forth. This structure allows organizations to save costs in training, by limiting training only to those tasks performed by the narrowly defined unit. The consequence is young staff can acquire comprehensive skills only slowly, by moving across the units of the organization.

Some of our remaining shortcomings as a profession come, I believe, as the unintended residue of the university disciplinary paradigm in which my cohort and earlier cohorts were educated. At that time there were no departments of survey methodology or marketing research or survey research. Our educational worlds taught us that the important questions and career options lie within the conceptual framework that determined undergraduate majors and graduate fields. Only the deviant and the stubborn could resist those forces.

In the last 15 years we have begun a slow process of legitimation within the university setting. There now exist in the United States at least seven graduate programs offering professional education in the technical aspects of the field. They are mixed between the social sciences and business schools, and this hampers coordination and collaboration. Further, and most important, they are training many too few students for the needs of the industry.

We need more such programs. My preference is that they be separate departments, free to make their own appointments, without subservience to a mainline discipline. Only then can the significant advances in survey methods arising from individual disciplines be blended into a fully comprehensive theory of surveys.

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Given this history it is then understandable that there is no one professional association in which we gather. We are spread across several associations, some still holding to the structure of the disciplines, some linked to a branch of the profession, others independent. I do not now espouse the creation of an American Association of Survey Methodology. I do, however, see the need for partnerships among those representing professionals in the field.

In addition to needing more programs to improve the field, we must attract the best students to them. We need to make the profession visible to the next generation earlier in their education. One common life story of AAPOR members, I suspect, is that they discovered the fact that they could make a living and have fun as a survey researcher, after their undergraduate years, after they had chosen a major—maybe even after a first career was started and then stopped. We need to approach young people much earlier to alert them to the career option and educational opportunities.

Closing

How do I end these musings about our field? I think we are beginning our adolescent years as a collection of occupational skills. I believe we as a field could soon be visited with enormous benefits from the inevitable increase in demand for information about the society and the economy. We lack only a few ingredients to become a full-fledged profession. Most of them are focused on the next generation of survey researchers.

They must be able to blend the quantitative and qualitative aspects of our field; *they* must incorporate and advance a set of knowledge that is interdisciplinary and growing; *they* must create integrated designs and collection schemes that fit the new world. In short, they must be better than we are. I am convinced that we need to get our educational house in order for the field to become the profession it deserves to be.

Imagine, for a moment, a world where survey organizations could look to the hiring of new staff as a source of innovation for the organization rather than as a cost in on-the-job training. Imagine a world where it became more commonplace that staff could execute both the quantitative and qualitative aspects of our practice. Imagine a world where young staff could articulate to clients how question wording or nonresponse or CATI screen design can affect the information produced. To attain this world we're going to need a new partnership among the commercial, academic, and government branches of our

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field. This won't happen working within our own sectors. We need each other to make this work. It is up to us to make this happen.

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