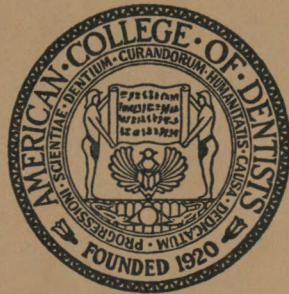


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Socio-Economic Status and the Utilization Of Dentists' Services

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BEATRICE R. TREIMAN, A.M.

In the fall of 1959, the National Opinion Research Center conducted a national survey of public attitudes and practices in the field of dental care. The survey, sponsored by the Commission on the Survey of Dentistry in the United States, covered a wide range of topics; this report presents some of the findings from a preliminary analysis of the data most directly related to the utilization of professional dental services.¹ More particularly, we are asking what is it about socio-economic status that explains the high relationship between it and going to the dentist.

The data were collected through personal interviews with 1,862 adults. To render the analysis more meaningful, we have omitted from consideration those respondents who have already lost all their natural teeth, a group constituting almost a fourth of the sample.

Presumably, the most important factor affecting the likelihood that someone will go to the dentist is the condition of his teeth. Respondents were asked what led them to initiate their last dental visit or series of visits. One-third of the respondents said they had some pain, and another third said they had other evidence of a need for dental care; but 30 per cent said they went only for a check-up or to have their teeth cleaned and 4 per cent gave other reasons for having gone to the dentist. Most people, then, who have gone to the dentist, have gone because they believed they needed dental work.

Biographical sketches of the authors appear at the end of this article, page 165.

Earlier versions of this paper were presented at meetings of the American Association for Public Opinion Research, Atlantic City, May 7, 1960, and of the Society for Social Research, Chicago, May 20, 1960.

¹This investigation was supported in large part by a research grant, D-1076, from the National Institute of Dental Research, U. S. Public Health Service. We also express our thanks to the Commission on the Survey of Dentistry in the United States and its staff for their active participation in all stages of this study. Among the many people at the National Opinion Research Center who contributed to the study, we particularly want to mention Selma Monsky, Field Director; Jacob J. Feldman, Senior Study Director; and Harold Levy, IBM Supervisor.

However, 23 per cent of all the respondents who had not lost their natural teeth thought they needed some dental care during the last 12 months and had not been to the dentist within the preceding year.

Clearly, some people who believe they need dental care do not always get it and, on the other hand, some people go to the dentist even when they do not think they need dental work other than an examination or prophylaxis. Therefore, the need for dental treatment or work is not, in itself, a necessary and sufficient reason for going to the dentist.

Previous studies have shown that persons of higher socio-economic status, as measured by income, education, or occupation, are much more likely to go to the dentist than are persons of lower status.² The findings of this study are in agreement with these other studies. For example, 34 per cent of those who had eight or fewer years of education had been to the dentist within the 12 months prior to the interview; of those who had attended at least some high school, 58 per cent had gone within the last 12 months; and of those who had attended college, 74 per cent had gone. Similarly, of those with annual family incomes under \$2,000, 31 per cent had gone within the last 12 months; of those with incomes of \$2,000 but less than \$5,000, 48 per cent had gone; of those with incomes of \$5,000 to \$7,499, 62 per cent had gone, and finally of those with incomes of \$7,500 or more, 69 per cent had gone. Note that persons who have lost all their teeth are not included, so these relations are not spurious as they might seem to be if persons with dentures were included.

This high relationship between socio-economic status and going to the dentist probably explains, in part, why perceived need for dental treatment does not determine completely whether or not a person will go to the dentist within a given year. Presumably, many persons of higher status go to the dentist preventively, and many persons of lower status do not go to the dentist even when they think they need dental care.

²For example, see: Friedson, Eliot and Feldman, Jacob J. *The Public Looks at Dental Care*. J.A.D.A. 57:325-35, September 1958; U. S. National Health Survey: *Dental Care, Interval and Frequency of Visits, July 1957-June 1959*. U. S. Public Health Service Publication No. 584-B14, Washington, D. C., 1960; Koos, Earl Lomon, *The Health of Regionville, New York*. Columbia University Press, 1954, pp. 118-25; and American Dental Association Bureau of Economic Research and Statistics, *Family Dental Survey II*. J.A.D.A. 48:74-7, January 1954.

THE PLAN OF ANALYSIS

Rather than focusing upon those persons who do go to the dentist when they believe they need dental treatment, this analysis is directed at understanding the relationship between socio-economic status and (1) why people go to the dentist preventively and (2) why people do *not* go to the dentist when they think they need dental care.

For the measure of going to the dentist preventively, the answers to several questions were used. To be categorized as going preventively, respondents must have answered that they sometimes go for a check-up, *and* answered a follow-up question that they go at least once a year, *and* have reported actually having gone to the dentist within the last 12 months. Slightly more than a third of the sample were categorized as going preventively. At the other extreme, almost a fourth of the sample consists of persons who go only when they need to, only when they have a toothache, and have never gone for a check-up, or who have never been to the dentist at all.

In order to study why some people do not go to the dentist even when they think they need dental care, the sample was reduced by omitting those who did not go to the dentist during the past year and had no self-defined need to have done so. That is, we are excluding the respondents who said they felt that they did not need any dental care during the past year *and* who, if they went today, would need not much or no work, *and* who did not go to the dentist in the preceding year. Of the remaining cases, we are most concerned with the respondents who have un-met dental needs, as they perceive the needs. These are the respondents who reported that they felt they should have had more dental care than they had during the last 12 months, *and who*, if they went to the dentist today, would need a great deal or quite a bit of work, *and who* did not go to the dentist within the last year. This category constitutes about a fifth of the cases being analyzed to answer the question why people who need dental care do not get it. The two groups of respondents we are concerned with, therefore, are not large compared to the remaining respondents who presumably go to the dentist when they think they need to do so.

Like the general measure, having gone to the dentist within the last year, the two special measures of utilization are highly related to education and income. Table 1 shows the percentage of the respond-

TABLE 1
PER CENT GOING TO DENTISTS PREVENTIVELY BY INCOME
AND BY EDUCATION

<i>Education</i>	<i>Income</i>			
	UNDER \$2,000	\$2,000-\$4,999	\$5,000-\$7,499	\$7,500 AND OVER
Grade school ..	8 (104)	12 (161)	25 (63)	33 (30)
High school ...	15 (61)	26 (261)	44 (248)	42 (151)
College	50 (12)	52 (50)	53 (97)	70 (98)

ents going to the dentist preventively by the respondents' family incomes and education. The number of cases upon which the cell percentages are calculated is given in parentheses. Although some of the percentages are based upon a small number of cases, it is clear that education and income, separately and together, are very highly associated with going to the dentist preventively. At one extreme, among the 104 respondents with incomes under \$2,000 and with a grade school education or less, only 8 per cent of the respondents go to the dentist preventively. At the other extreme, among the 98 respondents with incomes of \$7,500 and over and who have attended college, 70 per cent go preventively. Table 2 shows that income and education are also highly related to not going to the dentist when the respondent thinks he needs dental work.

In order to understand these relationships, we will consider each measure of utilization of dental services separately. It should be noted, however, that the two measures are highly and inversely related to each other. The basic form of analysis in the succeeding

TABLE 2
PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK
NEEDED BY INCOME AND BY EDUCATION

<i>Education</i>	<i>Income</i>			
	UNDER \$2,000	\$2,000-\$4,999	\$5,000-\$7,499	\$7,500 AND OVER
Grade school ..	53 (79)	36 (132)	31 (52)	9 (23)
High school ...	28 (53)	19 (216)	14 (209)	9 (128)
College	10 (10)	10 (41)	12 (88)	2 (87)

pages is the following. Characteristics of the respondents which might be related to class and going or not going to the dentist will be examined. In each case, income will be held constant; that is, the relationship between a given characteristic and each measure of dental utilization will be examined within the lower and higher income categories. Since education is highly related to income, we will in part be holding education constant as well. Thus, if a given respondent-characteristic is related to income and, within each income category, is related to one of the measures of dental utilization, that characteristic may partially explain the relationship between social class and that measure of utilization.

Several kinds of characteristics will be examined: general orientations such as time perspective; childhood dental experience and training; values, beliefs and information about teeth and taking care of them; relationships with the dentist; fear of pain; and financial resources and availability of dentists.

GENERAL ORIENTATIONS

The first explanation to be considered is that there are sub-cultural differences in general values and orientations related to socio-economic status. That is, persons of lower socio-economic status have a different way of viewing the world than persons of higher status and this difference is reflected in the care of their teeth. Several questions were included in the interview to test this possibility.

Respondents were asked, "Some people say nowadays a person has to live pretty much for today and let tomorrow take care of itself. Would you agree strongly, agree somewhat, disagree somewhat or disagree strongly with that?" Persons of lower incomes or less education are more likely to agree with the statement than persons of higher status. Furthermore, holding income constant, agreement with the statement tends to be related to going to the dentist. This seems consistent with the explanation being tested; however, respondents were also asked whether or not they agreed to this statement: "It is often better to do without something now so that things will be better later." The results do not support the explanation. Persons of lower income or education are just as likely to agree with this as are persons of higher status. It seems that persons of lower socio-economic status just agree to both items. We cannot, without

additional analysis, if then, use these items as indications of general orientations.

Another form of question was used to get at time perspective. The question is: "Judging by the things that people do, would you say that most people are more concerned with the past, the present, or the future?" This does not work either. Maybe the question is not as projective as it is supposed to be; in any case, persons of lower socio-economic position are as likely to say future as present; but higher status persons are more likely to say present rather than future.

Finally, one question was intended to assess self-control. Respondents were asked, "How often can you get yourself to do what you think you should do—nearly always, most of the time, sometimes, or hardly ever?" This is slightly related to socio-economic position; that is, persons of lower status tend to report less self-control than persons of higher status. Furthermore, within each income level, persons who say they nearly always are able to do what they should are somewhat more likely to go to the dentist preventively and somewhat less likely not to have gone to the dentist when they needed dental work than are persons who only sometimes or hardly ever are able to do what they think they should. Nevertheless, considering that only one of the four items seems to operate validly in the expected direction, it appears that subcultural values help only a little to explain class differences in going to the dentist.

CHILDHOOD TRAINING

Another possibility is that specific patterns of dental care are learned early in life (for example, going to the dentist regularly), and that this is one mechanism which helps explain why persons of lower socio-economic status are less likely to go to the dentist. In order for this explanation to be valid, persons of lower status would have to be less likely to send their children to the dentist when very young *and* people generally would have to have the same socio-economic position as their parents. As a matter of fact, both conditions generally hold and we find that persons with higher present incomes are much more likely to have gone to the dentist when they were young than are persons who presently have lower incomes.

As can be seen in Table 3, holding income constant, persons who

first went to the dentist when they were young are much more likely to go to the dentist preventively than are persons who did not go to the dentist when they were young.³ Table 4 shows the percentage of

TABLE 3
PER CENT GOING TO DENTIST PREVENTIVELY
BY INCOME AND BY AGE AT
FIRST DENTAL VISIT

<i>Age of First Dental Visit</i>	<i>Income</i>			
	UNDER \$2,000	\$2,000-\$4,999	\$5,000-\$7,499	\$7,500 AND OVER
13 or younger . .	19 (63)	31 (280)	52 (305)	56 (222)
14 or older	9 (108)	13 (195)	24 (110)	29 (59)

TABLE 4
PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK
NEEDED BY INCOME AND BY AGE AT
FIRST DENTAL VISIT

<i>Age of First Dental Visit</i>	<i>Income</i>			
	UNDER \$2,000	\$2,000-\$4,999	\$5,000-\$7,499	\$7,500 AND OVER
13 or younger . .	29 (55)	18 (239)	15 (273)	7 (196)
14 or older	48 (82)	34 (154)	19 (84)	9 (44)

respondents not going to the dentist when they need dental work, by the same variables. Age at time of first dental visit does not seem to make as much difference for not going when dental work is needed as for going preventively, but the direction of the relationship is the same.

The respondents were asked another question which pertains to the role of childhood training. The question is, "When you were a child, what did your parents do, or try to get you to do, to take care of your teeth?" On the basis of their responses to this question, respondents were divided into four groups:

³ While the age categories in Tables 3 and 4 are 13 or younger and 14 and older, the pattern is the same when age at first dental visit is divided into four categories: 2-5 years, 6-13 years, 14-18 years, and 19 and older.

A. Those who mentioned that their parents sent or took them to the dentist regularly.

B. Those who did not mention going to the dentist regularly, but mentioned that their parents made them or tried to make them brush their teeth diligently, avoid eating sweets, or drink milk or otherwise fortify their diet.

C. Those who did not mention any of the above, but only mentioned brushing their teeth, occasional dental visits, not eating hard objects, using mouth washes.

D. Those who said their parents did nothing.

Persons with higher incomes are only somewhat more likely to mention that their parents sent them to the dentist regularly than are persons with lower incomes. However, within the upper and lower income categories, those who had been sent to the dentist regularly, Group A, are much more likely to go preventively (38 per cent among those with incomes under \$5,000 and 69 per cent in the \$5,000-and-over category) than are those whose parents did nothing, Group D (14 per cent in the under-\$5,000 category; 32 per cent in the \$5,000-and-over category). The other two groups of respondents ranged in between, Group B being more likely to go preventively than Group C. In the case of not going when dental work is needed, the relationship also holds but is not as great.

It seems that early dental training is an important mechanism in the relationship between present class position and going to the dentist, at least preventively.

VALUES, BELIEFS, AND INFORMATION ABOUT TEETH AND THEIR CARE

Another possible explanation which is being investigated is that higher status persons have particular values, beliefs, and more information about teeth and dental care than lower status persons and that these ideas are related to going to the dentist. Upper status persons may have learned these ideas from their parents, dentists, teachers, or the mass media.

Among the information items in the questionnaire are two agree-disagree items. In the first, "If teeth come in straight, they can still shift and become crooked later," the correct answer is "agree." Agreement with this statement is not related to the respondents' incomes; furthermore, holding income constant, it is only slightly positively related to going to the dentist preventively and is not related

to not going to the dentist when dental work is needed. In the other item, "Once you get your permanent teeth, what you eat or drink can't affect, one way or the other, how much your teeth decay," the correct answer is "disagree." Disagreement with this statement is somewhat positively related to income; but when income is held constant disagreement is not related to either measure of utilization of dental services.

Two other questions can be used to measure the respondents' level of information about gum conditions. One question is, "Do you happen to know what pyorrhea is?" and, if the respondent answered, "Yes," he was asked, "From what you know about it, can you tell me what it is?" Simply dividing the respondents into those who said they did not know, those who claimed to know but gave only vague or completely incorrect answers, and those who gave some specific answers, we find that persons of higher income levels are somewhat more likely to have an idea of what pyorrhea is. Within each income level, those who have an idea about what pyorrhea is are somewhat more likely to go to the dentist preventively than are those who have no idea or only a vague or incorrect idea. There is no relationship between knowing what pyorrhea is and not going to the dentist when dental work is needed. Respondents were also asked, "As you understand it, what causes gums to become diseased?" When respondents were dichotomized into those who had no idea of the causes of gum disease and those who had some idea, the pattern of relationships is similar as for the question about pyorrhea.

On the whole, then, it seems that information about teeth and gums, as measured by these questions, does not help explain the relationship between socio-economic position and not going to the dentist when work is needed; neither does the level of information seem to help explain very much the relationship between social status and going to the dentist preventively.

Although information about teeth and gums does not help very much in explaining class differences in the utilization of professional dental services, perhaps beliefs about the efficacy of such services are more relevant. For example, respondents were asked whether they agreed or disagreed with this statement: "No matter how well you take care of your teeth, eventually you will lose them." As can be seen in Tables 5 and 6, persons of higher income are somewhat more

likely to disagree with this statement than are people of lower income and, within each income category, people disagreeing with the statement are somewhat more likely to go preventively and less likely to go when they need dental care. The pattern is similar for responses to the agree-disagree item: "A person can always tell if there is something wrong with his teeth and gums."

TABLE 5
PER CENT GOING TO DENTIST PREVENTIVELY
BY INCOME AND BY BELIEF THAT TEETH
WILL BE LOST EVENTUALLY

<i>Teeth Will Be Lost Eventually</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Agree	13 (299)	37 (205)
Disagree	28 (343)	52 (483)

TABLE 6
PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK
NEEDED BY INCOME AND BY BELIEF THAT TEETH
WILL BE LOST EVENTUALLY

<i>Teeth Will Be Lost Eventually</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Agree	34 (235)	21 (174)
Disagree	24 (291)	8 (418)

The respondents were also asked whether or not they agreed to these statements: "You can help prevent tooth decay if you have your teeth cleaned regularly in a dental office," and "You can help keep your gums in good condition if you have your teeth cleaned regularly in a dental office." Responses given to these items are not related to the respondents' income and are not related to the measures of utilization within income categories. This may be because of the very high general agreement with these statements or because of the tendency of lower socio-economic persons to agree with suggested statements.

Finally, we will consider briefly values about teeth as they may affect going to the dentist. One value, at this stage of the analysis, seems particularly important: the wish to keep one's teeth as long as possible. For example, Tables 7 and 8 show that people who agree that dentures are less bother than natural teeth are slightly less likely to go to the dentist, even holding income constant, than are those who disagree. Similarly, people who do *not* rank "to keep your teeth as long as possible" as the most important reason for taking care of your teeth are slightly less likely to go to the dentist.

Another way of getting at this value yielded similar results. The respondents were asked about this hypothetical case:

John Williams is in his thirties, married, and has two children. He has been having trouble with his teeth, and his dentist tells him he needs a bridge, some crowns, and some fillings to put his mouth into good condition. All this would cost about \$600. The only other thing the dentist could do would be to extract the rest of Mr. Williams' teeth and make him a set of false teeth. That would cost about half as much.

Should Mr. Williams have his teeth fixed or get a set of false teeth?

TABLE 7

PER CENT GOING TO DENTIST PREVENTIVELY BY INCOME AND BY BELIEF THAT FALSE TEETH ARE LESS BOTHER THAN NATURAL TEETH

<i>False Teeth Are Less Bother</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Agree	15 (100)	37 (76)
Disagree	24 (491)	50 (585)

TABLE 8

PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK NEEDED BY INCOME AND BY BELIEF THAT FALSE TEETH ARE LESS BOTHER THAN NATURAL TEETH

<i>False Teeth Are Less Bother</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Agree	38 (88)	17 (66)
Disagree	26 (406)	11 (503)

Persons of lower socio-economic position were more likely to say "get a set of false teeth," and among those with less income as well as among those with more, those who said "get false teeth" were somewhat more likely than the others not to go to the dentist preventively and not to go when they needed dental care.

At this point, it may be well to reflect that there may be a meaningful relationship between wanting to keep one's teeth as long as possible and believing that it is possible to preserve them. It is possible that lower status persons are less optimistic than higher status persons about the possibility of preserving their teeth because of their experience. After all, persons of lower income or less education are more likely to have lost all their teeth. Assuming that persons of the same social class tend to associate with each other, the lower status respondents who have not lost all their teeth are more likely than higher socio-economic persons to have friends who have lost all their teeth.

Furthermore, it is possible that persons of lower status go to dentists who do not emphasize preservation of teeth as much as do dentists who have patients of higher status. The general quality of care as well as the emphasis upon care may vary considerably among dentists with different classes of patients.⁴ The data from this survey cannot test such speculations completely, but in the next section some relevant findings are presented.

CHARACTERISTICS OF DENTISTS

The respondents were asked many things about their regular dentist or the dentist they last saw. The characteristics of the dental practice of the respondents' dentists are very highly related to the respondents' income and within each income level to their likelihood of going to the dentist preventively and only somewhat less related to not going when they need dental work.

For example, persons who report that their dentists send them reminders, that is, use a recall system, are much more likely to go to the dentist, particularly to go preventively, than are respondents who do not report having such a dentist. The pattern is similar for

⁴In a study of preventive practice of dentistry, it was found that "Dentists whose patients are predominantly in the higher income group have more preventive practice than dentists whose patients are predominantly in middle or low income groups." Treiman, Beatrice R. and Collette, Patricia. *Factors Associated With Preventive Practice of Dentistry*, National Opinion Research Center, Report No. 69, 1959, p. 55.

those who report having a dentist with whom one makes an appointment. There is some circularity in these relationships and additional analysis is necessary to reduce this.

Respondents were also asked if they had ever had their teeth X-rayed and, if they had, the regularity with which their dentist X-rayed their teeth. Parallel questions were asked about having their teeth cleaned in a dental office. Again, within each income level, the more frequently the dentist performed each activity, the more likely the respondents are to go to the dentist preventively and, to a somewhat lesser degree, the less likely they are *not* to go to the dentist when dental work is needed.

Respondents were asked if they had ever heard of the new high speed drills, and (if they had been to the dentist within the last ten years) whether or not their dentist had one. In Table 9, we see a high relationship between going to the dentist preventively and reporting that one's dentist has a high speed drill, holding income constant. For example, among respondents with incomes under \$5,000, 23 per cent of those who report that their dentist does not have a high speed drill go preventively; while among those who report the dentist has a high speed drill, 48 per cent go preventively. In Table 10, the comparable data are presented for not going to the dentist when dental work is needed. The relationship is weaker, but the direction is consistent with the idea that characteristics of the dentist are related to utilization of their services.

Even whether or not the respondent reports that the dentist has anyone helping him is related to utilization. There is a tendency for respondents who report that their dentist has assistants to go preventively and also not to have un-met dental needs.

TABLE 9
PER CENT GOING TO DENTIST PREVENTIVELY BY INCOME
AND BY HAVING HEARD OF HIGH SPEED DRILL AND
DENTIST POSSESSION OF HIGH SPEED DRILL

<i>High Speed Drill</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Not heard of drill	14 (413)	28 (220)
Heard of it, dentist does not have one	23 (49)	35 (80)
Heard of it, do not know if dentist has one	27 (59)	44 (101)
Heard of it, dentist has one	48 (112)	67 (293)

TABLE 10

PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK
NEEDED BY INCOME AND BY HAVING HEARD OF HIGH SPEED DRILL
AND DENTIST POSSESSION OF HIGH SPEED DRILL

<i>High Speed Drill</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Not heard of drill	35 (334)	20 (186)
Heard of it, dentist does not have one	25 (44)	12 (81)
Heard of it, do not know if dentist has one	17 (47)	23 (62)
Heard of it, dentist has one	9 (101)	3 (267)

All these reported characteristics of the dentist are highly related to the income of the respondent. The high relationship within each income category makes it clear that the dentist himself significantly affects the utilization of dental services, particularly the practice of going to the dentist preventively. Of course, to some extent the patient selects the kind of dentist he visits and to that extent some of the high relationship between characteristics of the dentist and dentist utilization are attributable to characteristics of the patients. Nevertheless, the pattern of very high relationships revealed in the data of this survey indicates that selection of the dentist does not account for the relationships entirely. At present, it seems to us, that characteristics of the dentist and the dentist-patient relationship constitute a very important mechanism in the association between social class and the utilization of professional dental services.

If characteristics of the dentist are important, it may be that attitudes about dentists also are related to going to the dentist. Toward the end of the interview, the respondents were asked whether or not they thought six particular statements were true of most dentists and also whether or not they were true of their own dentist. The statements were unflattering judgments such as "Dentists don't take enough personal interest in you," "Dentists are too interested in making money," and "They tell you there's more wrong with your teeth than there is."

Agreement with such charges about one's own dentist is somewhat negatively related to going to the dentist preventively, holding income constant. There is very little relationship between not going to the dentist when dental work is needed and agreement with these

statements. The relationship between agreement with these statements about most dentists and the two measures of dental utilization is even weaker.

FEAR OF PAIN

Although attitudes toward dentists do not seem to be an important factor in explaining the relationship between social class and utilization of dental services, perhaps fear of pain is. When persons of lower socio-economic status go to the dentist, they are more likely than persons of higher status to have particularly serious dental work done, such as extractions.⁵ This might mean that persons of lower status are more fearful of going to the dentist and this constrains them from going to the dentist.

Respondents were asked, "Many people expect and fear a lot of pain when they go to the dentist for work on their teeth. When you go to the dentist for dental work, how do you feel?" This question evoked full responses; one of the dimensions in which the answers were coded was the degree of fear acknowledged. Three major categories were distinguished: great fear, some fear, and no fear. No relationship exists between the amount of fear acknowledged by respondents and their income. Within each income category, however, as may be seen in Tables 11 and 12, persons who do express fear of going to the dentist are somewhat less likely to go to the dentist. Fear of pain, then, has some effect upon utilization of dental services, but does not help to account for the relationship between social class and going to the dentist.

⁵ U. S. National Health Survey: Dental Care, Volume of Visits, July 1957-June 1959. U. S. Public Health Service Publication No. 584-B15, Washington, D. C., 1960.

TABLE 11
PER CENT GOING TO DENTIST PREVENTIVELY BY INCOME
AND BY AMOUNT OF FEAR ACKNOWLEDGED ABOUT GOING
TO THE DENTIST

<i>Amount of Fear</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Great fear	14 (182)	37 (163)
Some fear	26 (175)	42 (142)
No fear	31 (311)	55 (252)

TABLE 12
 PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK NEEDED
 BY INCOME AND BY AMOUNT OF FEAR ACKNOWLEDGED ABOUT
 GOING TO THE DENTIST

<i>Amount of Fear</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Great fear	37 (153)	16 (148)
Some fear	31 (147)	12 (119)
No fear	21 (253)	8 (209)

FINANCIAL RESOURCES AND AVAILABILITY OF DENTISTS

Every factor which has been considered thus far seems more important in understanding why people do not go to the dentist preventively than why they do not go when dental work is perceived as needed. We had originally hypothesized that dental care habits learned in childhood, attitudes about teeth and dental care, and the relationship with the dentist would be particularly important in explaining going to the dentist preventively; this does seem to be supported by the data. On the other hand, we hypothesized that these factors would be less important in explaining why people do not go to the dentist when they think they need dental work. Having recognized the need for dental care, constraining factors such as availability of dentists and financial resources would be particularly important in explaining why people do not get the dental care needed.

As a matter of fact, we do find that persons with lower incomes are somewhat more likely to live in smaller communities and more rural areas; furthermore, among those respondents with incomes under \$5,000, persons living in smaller communities and more rural areas are more likely not to go to the dentist when they need dental care. The relationship does not hold for going to the dentist preventively. Recognizing that dentists are not as available in smaller communities as in larger metropolitan areas, the availability of dentists does seem like it may be a factor in explaining class differences in not getting dental care when it is perceived as needed.

Good measures of the respondents' financial resources are needed to test the role of simple lack of money as a factor in preventing

people from getting the dental care they need. One gross way of going beyond annual family income as a measure of financial resources is provided by the question, "If the family here suddenly had to pay out a \$200 dental bill, could you handle this without too much trouble, or would it be very difficult, or would you just not be able to pay it?" Considering the answers to this question as a measure of disposable income, Tables 13 and 14 indicate that financial resources seem to make more difference for not going to the dentist when dental work is needed than for going to the dentist preventively.

TABLE 13
PER CENT GOING TO DENTIST PREVENTIVELY BY INCOME
AND BY ABILITY TO PAY OUT \$200 FOR
A DENTAL BILL

<i>If family suddenly had to pay out \$200 for a dental bill, could pay</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Without too much trouble	33 (203)	51 (461)
Would be very difficult	21 (251)	39 (214)
Just not be able to	10 (200)	31 (26)

TABLE 14
PER CENT NOT GOING TO DENTIST WHEN DENTAL WORK NEEDED
BY INCOME AND BY ABILITY TO PAY OUT \$200 FOR
A DENTAL BILL

<i>If family suddenly had to pay out \$200 for a dental bill, could pay</i>	<i>Income</i>	
	UNDER \$5,000	\$5,000 AND OVER
Without too much trouble	14 (157)	10 (390)
Would be very difficult	23 (206)	15 (187)
Just not be able to	48 (174)	32 (25)

SUMMARY AND CONCLUSIONS

In this analysis two measures of utilization of professional dental services were differentiated: not going to the dentist when dental work was perceived as needed, and going to the dentist preventively. This has helped understand the meaning of the high relationship between utilization of dental services and social class. The data do

suggest that different aspects of social class are more important for one measure than another. Constraints such as lack of money seem particularly important for not going to the dentist when dental work is needed; childhood habits, ideas about teeth and their care, and relationship to the dentist seem particularly important for going to the dentist preventively.

Probably what is even more clear, and more important, is the relative significance of the factors discussed for both measures. Information about teeth and even beliefs about their care and values about teeth are apparently less significant factors affecting utilization than are early childhood training and particularly the characteristics of the respondents' dentists. These latter factors affect not going to the dentist when work is needed as well as going preventively. These factors appear to be particularly important mechanisms in the relationship between social class and going to the dentist.

Furthermore, it is important to note that none of these sets of factors completely explains the relationship between social class and either measure of utilization. That is, differences between respondents with more and less income persist when each factor is related to each measure of utilization. For example, looking back at Tables 3 and 4, we can see that among those who had first been to the dentist at an early age, respondents are more likely to go preventively and less likely not to go to the dentist when they think they need to do so, as their family income increases. Perhaps available cash is such an important factor that it continues to affect the utilization of dental services even when other factors are also important. Perhaps there are additional aspects of social class which have not been analyzed that account for the differences not yet explained, for example social class differences in style of life and the expectations of friends about dental care. Or, perhaps, the inter-relationships of the several variables already considered, if refined and combined together could explain nearly all the differences in social class utilization.

Obviously, then, this preliminary analysis has not answered the original questions definitively. More definite conclusions must await additional analysis. It is hoped that each major point in this paper can be studied in more detail and reported upon in later publications. This may, of course, lead to some modifications in the interpretations made at this time.

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A Demonstration Program for The Teaching of Comprehensive Dentistry

REGINA FLESCH, Ph.D.

DEFINITION OF THE PROBLEM

Comprehensive dental care, like comprehensive medical care, is preventive as well as curative.¹⁻³ In addition to a thorough knowledge of oral medicine, and mastery of the specific techniques available to the contemporary dental physician in the treatment of oral disease, comprehensive dental care also implies the ability to create the necessary human relationship with the patient so that his cooperation is enlisted for the frequently tedious, taxing, and costly dental procedures. Prevention of dental disease implies support of all kinds of dental research—biological, physiological, economic, sociological—to increase awareness and active combating of the many factors which affect the nation's dental health and contribute to dental neglect and illness. The problems associated with the effective teaching of comprehensive dentistry are of such a diversity and magnitude that dental educators have questioned their own teaching methods.⁴

In most current dental school curricula, the necessity of mastering the complexities of dental technic often discourages the student from taking into consideration problems of the patient peripheral to his dental care. While these problems may not be related directly to the patient's dental treatment, they may nonetheless have considerable bearing upon the patient's cooperation with and attitude toward the dental treatment plan.⁵ Nor does the curriculum and clinic care program in most schools of dentistry provide help for the student in overcoming this problem. By and large, dental students learn to render dental service, but not to evaluate, or even to display much interest in those peripheral patient problems—economic, cultural, emotional—which so often influence vitally the patient's cooperation with his dentist. Since the average dental school provides no instruc-

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tion, formal or informal, for assessing and dealing constructively with these marginal problem areas, "comprehensive dental care" remains to most students only a vague concept, unrelated to his current patient experience and remote from any ideas concerning his future practice.

AIMS OF COMPREHENSIVE DENTAL CARE

Before formulating suggestions for the teaching of comprehensive dental care, it may be well to outline the characteristics of such care in dental clinic practice. It should be emphasized that the following statements represent an ideal, not actual, picture of prevalent clinic practice.

1. Comprehensive dental care implies an interest in the patient's total health and well-being, which includes knowledge and utilization of other health and welfare resources in the community (hospitals, for example, and social agencies). This means that the dental practitioner (student or dental physician) should have the willingness as well as the skill to refer his patient for necessary help, and to know how to use these resources to achieve better oral health for individuals and the community.

2. The dental student who now takes into account the patient's medical health history, should be taught to become informed about the *dental health history* as well. He needs this information to understand the total patient. Adequate consideration must be given not only to the patient's past dental experiences which have influenced his manner of relating to the dental physician, but also to the meaning of this present contact for the patient's attitude toward dental care. The dental student should learn to see his contact with the patient as one link in the patient's continuing relationship with dentistry.

3. Dental clinic patients should not be viewed as socially isolated, as is now commonly the case, but as part and parcel of a family and the community. The dental student should be taught to recognize that the family also has dental attitudes which encroach on the patient's care, and that frequently dental health needs exist in other family members. Students should learn that the community, from which the patient emerges, also has dental attitudes and dental health problems peculiar to itself. Although neither family nor com-

munity are visible in the operating room, the practitioner must not forget that they are nonetheless present and are also his concern.

4. Every clinic patient should be approached with the idea of giving attention not only to his immediate dental needs, but also to those social, economic, cultural, and emotional elements in his situation which impinge on planning for, and attitudes toward, dental care. In every large dental teaching clinic, facilities should exist for aiding in understanding and meeting those social, economic, and emotional aspects of the patient's situation, which represent an obstruction to his receiving or accepting adequate dental care. These auxiliary facilities are common in large medical teaching clinics; dental teaching clinics need them as well to make possible the teaching of comprehensive dental care.

These aims of comprehensive dental care embrace concepts from sociology, anthropology, economics, psychology, and psychiatry. How are these concepts to be acquired? No amount of specific instruction in patient management technique will make up for the lack of *understanding of the aims* mentioned above. Indeed, a close review of the literature on practice management technique reveals that this is precisely its deficiency. An attempt exists in dentistry to impart *techniques* of dealing with the patient, rather than an approach to the patient as a total person existing within a relevant social context. There has been lacking a coordinated, organic approach to universal patient problems; insufficient attention has been paid to the inter-relationship between dental problems and "common human needs,"—common human problems.

If such concepts and such an approach are to be imparted to the dental student, they must be given a place in dental education along with concepts now considered equally necessary to the practice of dentistry. At present, there is only a beginning recognition of such an approach in dental education. Until an active effort is made to incorporate it into clinic teaching, discussion of *methods* of teaching this material can be only speculative.

Because of the complexity of the approach and the content, no single teaching method would appear to suffice. It is most likely that such teaching should adopt a variety of methods—didactic, through the traditional lecture, as well as clinical, through case presentation and discussion. Also, reason indicates that teaching should take

place over a longer period of time than is now usually allotted to most semester courses in practice administration. The contemporary dental student needs long exposure to what promises to be a rich and novel advance in dental education. It is likely that several teaching methods, including seminars, will have to be used over an extended period.

THE DEMONSTRATION PROGRAM

The University of Pennsylvania School of Dentistry has already taken steps to bring these concepts within daily reach of their dental students, and to provide them with a perspective beyond traditional dental education. Through a consultant social scientist whose time is freely available to students, community resources and social science concepts have been made accessible to students who have no formal educational background in these areas. The School has introduced the following additions to the customary dental educational program:

1. *Consultation with students on individual clinic patients*, with specific reference to social, economic, emotional, and cultural factors bearing on the patient's dental care. These factors are elucidated with the students, illustrated with similar problems from a growing body of case material. The patient management treatment plan developed with the student is adapted to the special problems in the case. Without additional formal instruction, students are not likely to forget concepts thus related to their own clinic patients.

2. *Interviews with clinic patients* on problems (as in 1 above) are unique in that, wherever possible, they are conducted in the presence of the dental student. Thus, the primary orientation toward the dental treatment is maintained. The interview is presented as providing service auxiliary to the patient's oral health. More important, however, is the learning experience for the student. His actual participation in the interview provides him with an opportunity to learn to explore problem areas which he is sure to encounter in any practice. In no other way, not even through the use of a one-way screen, can the professional neophyte learn so much about patient approach.

3. *Clinical conferences* for third and fourth year students have been arranged for patients presenting social and economic obstacles to dental treatment. In the ensuing general discussion the clinical

experience of individual students is shared. Various approaches are suggested by the discussants, and these may be related later to the individual practice of the participants. Thus, general information is made available to all students even while the general body of knowledge is being developed. It is planned to collect case illustrations for later seminar discussions and more formal courses.

4. *Instruction in the utilization of community resources* for the clinic patient's health, social, and economic welfare. When the student has brought any of the problems (as in 1 above) to the attention of the consultant, there is a review of facilities in the community to meet such problems. Wherever appropriate agencies exist, patient referral is discussed with both agency and student. The referral process is reviewed carefully with the student, and wherever possible is left solely to the student. The student thus learns firsthand of the existing network of social agencies outside the School, and what is more important, *learns how to use these facilities* for a patient. The constructive use of community resources for service auxiliary to the patient's oral health represents knowledge necessary in any dental practice and in any community.

5. *Extra-mural conferences on dental clinic patients* have been arranged and carried on outside the School (for example, with medical and psychiatric centers in the community). Through such conferences, the student steps outside the dental clinic and learns about other health settings and other personnel. This facilitates communication with other professions which is the bulwark of "total patient service." Coordination of the School's various clinical activities through a clinic coordinator has facilitated the interchange of information with other agencies, and has brought closer rapprochement with other health services.

6. *Home-visiting* is encouraged in selected situations so that the student can become familiar with the community to which his patient belongs, and with the kind of background and home care associated with the patient's oral health. There is no better way for the student to learn of the multiplicity of problems which relate to the prevention and treatment of oral disease than to see the conditions in home and community under which dental clinic patients live.

7. *Cooperation with the Philadelphia Health and Welfare Council.* In addition to these services within the School, the cooperation

of the Philadelphia Health and Welfare Council has been enlisted. In the past, the Council participated with the Medical School in arranging small seminars for medical students so that they could become familiar with the health and welfare resources of the community. Probably the small group method would not be practicable for the School of Dentistry because of its larger student population, but the Council representatives have indicated willingness to adapt their methods to the needs of the School of Dentistry. Very likely other adaptations will have to be made, because medical students traditionally have more acquaintance with community and home conditions of their patients than dental students. The representatives of the Health and Welfare Council have recognized some of these problems, and have expressed the conviction that much can be learned by both groups through the projected plan.

SIGNIFICANCE OF THE PROGRAM

In setting up this Demonstration Program, the School of Dentistry is following a plan already familiar to other professional schools during the past decade. Comprehensive care and teaching programs are in operation in several medical schools, for example at Pennsylvania, Cornell, and Stanford universities.⁶⁻⁷ Theological seminaries for many years have followed the custom of sending out their neophytes to family counseling centers and psychiatric hospitals. At the University of Pennsylvania, the Law School currently is engaged in research with the Departments of Sociology, Anthropology, and Psychiatry, relating these subjects to criminal law and criminology. Recently, the School of Business Administration has begun to remodel its undergraduate program to give a broader education in the social sciences and humanities.

It appears that dentistry alone, of the professions vital to our national health and welfare, still remains largely outside this main stream of development in professional education. Although ready enough to take advantage of the many recent developments in the medical, biological, and physical sciences, dentistry has lagged noticeably in its use of the social sciences.

A professional school transmits to its students both factual information and professional technics. It transmits also the attitudes and values that society recognizes as distinguishing the professional man

from the mere skilled worker. It transmits a code of ethics, a way of approaching a particular human problem, and an identification with a group of people who have served humanity in a particular capacity in many places and at many periods of time. It is the responsibility of the professional school to help the student make as complete an identification as possible with his own professional group, and through them, relate to the larger community of which he is a member. Only to the extent that the student learns to relate himself to the varying problems of the individuals he serves and the communities in which he functions—only to that extent will the dental school have educated a competent professional man and a responsible citizen. In increasing degree our society needs both.

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A Projection of Trends In Dental Education

HAMILTON B. G. ROBINSON, D.D.S., M.S.

We are living in the age of science when the atom was first split and then harnessed; when new man-made stars are being tossed into the sky in endless competition and when men are being prepared for journeys out of this world; when new drugs and antibiotics are changing our whole pattern of disease and when the average life span of man is being stretched toward the century mark. None of these things just "happened." They are the results of research and labor. In this age of science, dentistry has advanced at a rapid pace. Over half and perhaps as high as 80 per cent of the materials, supplies, and equipment bought by dentists today were research curiosities of the forties. Antibiotics, cortico-steroids, tranquilizers, high speed and air-turbine handpieces immediately come to mind, but the anesthetics, the alloys, the investments, and the plastics of today are new and better as the result of research in this age of science.

The dental student is taught better today than he was in the past. In the modern building, exemplified by Ohio State's Taj Mahal of dental education, the cubicles, the laboratories, the television-equipped, air-conditioned lecture rooms all afford the finest environment for teaching and for learning. Faculties are no longer recruited on the basis of their willingness to work for little or nothing, but are being selected from dedicated professional educators with specific training. From a small beginning forty years ago in Rochester and New Haven the special education of dental teachers and researchers developed slowly until the almost explosive development with the aid of federal monies through the Dental Teacher Training Programs, one of the first of which was that established here at Ohio State. Undoubtedly, the dental students entering school today are better than those entering in past decades—far better than the students who entered with most of us here tonight.

Presented before the Sixteenth Post-College Assembly, College of Dentistry, Ohio State University, April 18, 1960.

Dr. Robinson, former Associate Dean at Ohio State University, is now Dean of the School of Dentistry, University of Kansas City.

With better teachers, better teaching facilities, and better students, we can and must improve our curricula and produce better dentists.

It takes brave administrators and an understanding and progressive faculty to change the curriculum. Most of us like the status quo because it requires little effort to maintain it. The well prepared teacher or dentist or administrator does not fear change, but they direct it. We have been spending most of our time educating students for yesterday, and we are often aided and abetted in this educational anachronism by well-meaning but misguided alumni who think of dental education in the dimensions of their student days. We are nudged into this old mold by state boards of dental examiners who often examine students in the subject matter and techniques belonging to their era, rather than in the changed and changing dental program of tomorrow. Perhaps it is unfair to point the finger at state boards, because the "status quoers" of dental faculties encourage them to examine in the past rather than for the future to help justify the continued teaching of outmoded dentistry. We must keep in mind that we are not educating dental students for yesterday, but for tomorrow.

Dental practice has been changing slowly but surely and now the tempo of change is increasing rapidly. Exposed pulps are being treated successfully, teeth are being treated effectively by endodontic procedures, and intracoronal or full coverage restorations are being used in the proper treatment of dental caries. As the result of these therapeutic measures and of preventive methods, such as fluoridation, after-meal brushing, and dietary control, more and more teeth are being saved from the ravages of dental caries. But this leaves more teeth that are subject to periodontal disease. One conclusion is that periodontal therapy will become a major part of every dental practice and, relatively speaking, restorative dentistry will occupy less time of the dentist. If we have any faith at all in research we can look to the practical elimination of dental caries in this tomorrow of dentistry and to better therapy for periodontal diseases. Since there are so many factors in periodontal disease it will take a braver prophet than I to see the elimination of periodontal disease within the lifetime of ourselves or our students—but who knows? The physician of today does not treat many of the diseases such as plague and small pox, that occupied most of the time of his predecessor of

the nineteenth century. With occupation of the physician of tomorrow with the treatment of chronic and degenerative diseases, which in most cases have remained unsolved by research, the dentist may assume more of a role as the physician of the oral cavity. We cannot prepare student dentists for this tomorrow if we only look backwards at dentistry of yesterday.

Through better teachers, better students, better teaching facilities, and better curricula, we can save a great deal of the time now spent on historical or repetitious material. What will we do with this "saved" time? Let us invest some of it in broadening the education of our students. Can we not bring studies in the behavioral sciences such as psychology into the dental curriculum? Can we not give our students a broader base in physical diagnosis? Can we not send them to hospitals, not just to observe dental procedures, but to rub elbows with the medical students and physicians in the medical, surgical, obstetrical, pediatric, and psychiatric wards? Can we not teach the concept of treating the whole patient as a part of dental practice? Don't mistake me. I do not want to make physicians of dental students, but I am sure that patients will benefit if the dentist has this broadened concept of patient care.

Can we not teach the student how to utilize his parodontal personnel to better advantage? The school technician's very presence has improved one facet of this problem, but the dental student might work advantageously with a chairside assistant from his earliest clinical days. We at the University of Kansas City have one of the few pilot studies along this line and believe that it has tremendous advantages to the student. If the student, with some of the time we saved by better teaching, could be taught to work with the hygienist all through school it might benefit both the hygienist and the dentist.

Recently, Dr. Phillip Blackerby, asked the question, "Why Not a Department of Social Dentistry?" and then answered, in part, his own question. This department would embrace such subjects as professional responsibility, ethics and jurisprudence, care of the aged, chronically ill, and handicapped, public health, and practice administration. Such a department probably will emerge in many dental schools to help teach the young dentist his responsibilities to his individual patient, to the public-at-large, to his community, to his profession, and to himself and his family.

Yes, there are signs of healthful trends in dental education. I have touched only a few of them. There is room for experiment in dental education, for trial of new methods, for discard of historical material.

You here in Ohio have a great opportunity. Your school needs your continued support. Your faculty and dean are doing an excellent job and should be encouraged by your expressions of appreciation. In this efficient and beautiful school set in an atmosphere of general culture and health care your opportunities are unlimited. May you use it to the greatest advantage by teaching for today and tomorrow, and remember in only a few hours today will be yesterday.

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A CHANGE OF FOCUS

Perhaps the most stable element in the uncertain future of this country of ours is change itself, change so rapid in the scientific, technological and social fields that our world will resemble the woods in which poor Alice found herself. There, according to the Red Queen, to stay in the same place one must run at top speed and in order to get anywhere else one must run twice as fast. In our rapidly evolving era, education, like Alice, must run twice as fast as it is now doing if it is to get anywhere.—Mary Evans Chase, Director of Admissions, Wellesley College, in *The New York Times Magazine*, November 29, 1959.

Foundation Science in The Dental Curriculum

HAROLD J. NOYES, D.D.S., M.D.

If a dissertation may have a text as well as a title, I would like to take as mine two lines from Dr. Solyman Brown's "Dentologia":¹

"Beware of those whom science never taught
The hard but useful drudgery of thought."

If there is admonition in this couplet, it argues for a place of foundation science in the dental curriculum and a thoughtful attitude with respect to all instruction.

You may believe that the controversy between basic and clinical subjects in the dental school can be relegated to the 1880's, and I too was inclined to this opinion until the president of a great university asked the Commission on the Survey of Dentistry in the United States, "Why should anatomy be taught to dental students?" I am aware that university presidents often adopt an adroit approach to academic controversy and am not sure, therefore, that this should be construed as antagonism to such instruction but rather an effort to explore the reasoning of dental educators.

Be this as it may, one cannot gainsay the differences of opinion that have existed, and do so to this day, in the minds of the profession, faculty, and students under academic duress. I prefer to take a positive stand (and this may surprise you who believe that deans tend to sit uncomfortably with one leg upon either side of a controversial fence) in favor of foundation science in the content of dental teaching.

While there must be substance to the foundation upon which clinical teaching rests, and this base can only be supported by doctrine in biologic and physical science, I am concerned as well with the intellectual integrity of those who comprise the dental profes-

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Dr. Noyes, the immediate Past-President of the American College of Dentists, is Dean of the School of Dentistry, University of Oregon.

¹ Amer. J. D. Science. Volume 1, Number 1, 1839.

sion and their capacity to find satisfaction in exercising their minds both with matters within their professional province and outside it.

There are two aspects of this philosophy which have a bearing upon the function of foundation science in the pre-dental and dental curriculum. One is concerned with knowledge that provides a basis for procedures and services which the dentist utilizes in practice, and the other a foundation for creative effort and an understanding of the world in which he lives. Many will agree that much of clinical dentistry could be taught as technical operations with emphasis upon the "how" and little concern with the "why." The former tends to make the dentist a technician and dentistry a trade. The present path of dental education is inclined to stress the use of auxiliary personnel for the performance of technical operations under the direction and guidance of dentists fortified by education and intellect to take responsibility for the broader aspects of dental health care. Obviously, this emphasizes the role of the basic sciences.

Without detracting from the important need for a high level of technical excellence in the dental graduate, the place of sound basic knowledge must not be ignored. Nor is there necessity to consider the two to be antagonistic in their objectives. The semantic connotation which often implies an antithesis between the "practical" usually taken as synonymous with "clinical," and "theoretical," has led to some very loose thinking. In the first place, basic science in great part is not theoretical, while many clinical procedures are highly theoretical.

Often, applicants inquiring about postgraduate or graduate courses in special fields ask, "How much time is spent in theory and what amount in clinical instruction?" This leads me to a question the intellectual qualifications of the applicant. He seems to assume that if he is exposed to a large number of clinical situations he will be able to reach back and draw out of his empirical teaching the treatment for any patient who will come to him. It is obviously impossible to cover the wide variety of clinical conditions that may present to the practitioner, yet a storehouse of foundation knowledge and the development of the student's ability to think will qualify him to deal with problems which were not encountered in an interval of special training.

Among the more significant reasons for including basic science courses in the dental curriculum is that of providing education rath-

er than training. Vice Admiral H. G. Rickover has expressed the distinction between education and training in a way that appeals to me and may be recalled by those of you who read the *Saturday Evening Post*:²

Education is directed toward enlargement of the individual's comprehension of the world by giving him the knowledge and mental capacity to understand what lies beyond his personal experience and observation. . . . It renders intelligible to him the physical world and the laws of nature, so that he can judge man's potentialities and limitations—his place in nature.

Training does not stretch the mind. The intellect is not improved by acquiring habits or learning mechanical skills, nor will routine work enlarge one's mental capacities, as hard thinking will.

One cannot spend thirty years and more in teaching dental and medical students without a consciousness of the resistance which many have to courses that demand original thought and exercise of reason. Likely this is due in part to overloading of the curriculum at the expense of time for thinking and reflection, premium placed upon didactic response augmented by the use of so-called objective or short-answer examinations, among other and more complex reasons. The answer to this problem is not simple, but it does not lie in abandoning the principles or objectives of foundation science in the dental curriculum.

If the solution was obvious, more than one hundred years of experimentation in education would have solved it. As dental practice has grown in depth as well as breadth, the need for clinical instruction has increased. Moreover, the demands of course time for basic science have been expanded in larger proportion. The pattern commonly adopted has been to extend clinical hours upward and raise their level by adding science years beneath them, including lengthening the pre dental requirements.

This process resulted in a stratified curriculum, often referred to as *horizontal*, with the break coming at the end of the sophomore year. In the first two years the student spent his time in fundamental science and bench technics with an occasional optional cultural course thrown into the pre dental years as an elective. His observation of patients was largely if not entirely when he saw them on their way to or from the clinic. Clinical experience was reserved for the junior and senior years. The transition was abrupt and a period of severe adjustment.

² *The Saturday Evening Post*, November 28, 1959, p. 54.

This program grew out of expediency and a philosophy, which I believe is false, that the student must have most if not all the training and education he will receive before he prepares and places dental restorations. When the course was extended to four years a tremendous learning loss occurred between instruction received and the time it was needed for clinical performance.

Effort was then made to rectify this defect by introducing so-called practical illustrations in the foundation instruction and refresher courses in the clinical years. The former was frustrated because without clinical experience the illustrations had little meaning. The latter was a time-consuming duplication of earlier teaching.

Some fifteen years ago we began to see a modification of this plan by extending basic science and foundation courses into the last two years of the curriculum and compensating for the time loss by introducing clinical experience in the freshman and sophomore years. This program has been called a *vertical* type of curriculum and has proved much more effective.

If I may be pardoned for citing experience at Oregon, we introduce the student to the patient the second month of his first term, when he spends a very limited interval as an observer in the examining room. The second term he is taught dental prophylactic procedures and uses them upon his classmates under supervision. The third term, after six months bench technic in prosthetics, he constructs a denture for a patient under the close supervision of an instructor.

Other restorative technics are performed as technical operations in the mouth in immediate sequence following the appropriate laboratory courses. The student completes his sophomore year with clinical application of most, though not all, of the individual restorative procedures having been executed within the mouth as technical procedures. In the junior year after courses which include oral pathology, radiology, and diagnosis, for example, it is possible to synthesize them into treatment procedures for the restoration of oral health of the individual patient according to plan. Here the student begins to practice dentistry. The complexity of more difficult procedures expand with the operator's experience, dexterity, and judgment under the instruction he receives as his clinical time increases.

Basic sciences are extended as far as the third and fourth years,

placing them closer to their clinical application; for example, head and neck anatomy into the second year, laboratory bacteriology into the third year, and courses in oral pathology dealing with malignant disease, pharmacology, and therapeutics in the senior year.

In this arrangement it should be possible to reduce, at least another facet of the problem, the excessively heavy basic science load carried in the first two years to a point where not more than two laboratory sciences are scheduled in any one term. It is common in the baccalaureate years at many universities to recommend current registration in no more than two laboratory sciences, and if this is sound policy at this level it likely applies to the dental undergraduate student. Too often the pressure upon the student is so heavy he and his teachers as well are forced into a rote memory rather than a reasoning approach to the subject.

It may be difficult, if indeed possible, to effect scheduling of foundation sciences in the manner just described unless the departments are within the fabric of dental school administration. Other advantages of this policy include:

a. A better molding of hours and content to the needs of the practicing dentist and more effective correlation with other aspects of the dental curriculum.

b. There is sometimes some stigma attached to teaching dental courses in science departments of the medical school, and career teachers may find advancement in their field less difficult when the department is within the dental school.

c. Implementation of research in dental or dental-related areas and stimulation of cooperative research between dental and basic science faculty.

d. Understanding between clinical and foundation sciences personnel grows from a better knowledge of objectives and problems when dental school committees are composed of teachers in the respective disciplines.

e. Interest of the more mature dental student is stimulated by participation of their science teachers in clinical conferences and teaching within the clinic itself. At the same time the science courses are given greater purpose. This integration is practically impossible unless the science faculty is within the fabric and control of the dental school.

There is one rule which must remain inviolate: the academic qualifications, teaching ability, and salaries must be on a *basis* of parity. It is only when this policy is disregarded that an economic saving is effected in the employment of faculty for dental classes, and when this happens it is at the expense of the quality of dental teaching. Moreover, inter-school cooperation is not sacrificed but on the contrary may be enhanced if the qualifications and salaries remain

upon an equivalent level and departmental budgetary handicaps are eliminated. It has been said that the laboratory and facilities costs are greater when separate departments are maintained. This circumstance is removed when either or both schools utilize the principle of multiple service laboratories. To illustrate, an anatomy laboratory cannot be combined as both schools use the space most of each academic year. For dentistry, at least, the microscopic sciences of histology, microbiology, and pathology, general and oral, can be scheduled in the same room. Likewise, biochemistry, physiology, and pharmacology can use the same space.

The overall time per square foot occupation is almost twice as efficient as separate departmental laboratories. This economy is further increased if dental hygiene students are taught by certain of these departments.

I wish there was a formula for creating a greater cultural interest in foundation sciences such as anatomy, physiology, bacteriology, and biochemistry. I do not know why it is that, realizing the human body is the most fascinating of all biologic entities, and that the years in dental school are for most students the only time they will have to explore this phenomenon and come to a measure of understanding of it, they seem reluctant to take advantage of the opportunity. Perhaps like children they are so consumed with growing up they cannot appreciate the golden years of childhood.

SUMMARY

It has been my objective:

1. To consider the purpose and the place of foundation science in the dental school curriculum.
2. To indicate the role of basic science in the metamorphosis of a technical or trade concept to that of a learned profession in which services are performed through the exercise of reason rather than the application of mechanical and technical formulae.
3. To suggest the practical value of this knowledge in solving new problems and improving existing therapeutic procedures, and
4. To urge you to contemplate the very real contribution which sound and fundamental knowledge, regardless of where you obtain it, can make to your stature as a man and the joy of living among men.

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Current Journalism Comment

Three Views

Advertising Standards

John J. Hollister
Chicago

Selection of an Editor

T. F. McBride
Columbus

Essayists and Manuscripts

William P. Schoen, Jr.
Chicago

Among the several items discussed by the Committee on Journalism of the American College of Dentists during the past year were matters concerning advertising, editors, and papers for publication.

The three short papers that follow consider these matters and were prepared at the suggestion of the Committee; they will be included as a part of the 1960 Report of the Committee. Mr Hollister and Dr. McBride are consultants to the Committee, and Dr. Schoen is a member of the Committee.

The Committee personnel consists of Charles A. Scrivener, Chairman, Isaac Sissman, William P. Schoen, Jr., Herman L. Hubinger, and Ralph Rosen.

Advertising Standards

JOHN J. HOLLISTER

There are two fundamental reasons why every dental magazine should have a clear and concise set of standards governing advertising. The first, and most important, is the protection of the public health and the welfare of the dental profession. The second is the editors' or advertising managers' need for an administrative tool by which to evaluate the eligibility of products for advertising and the acceptability of advertising copy.

Let us look at the first. It would seem almost axiomatic that no professional publication should carry advertising for a product which is actually or potentially injurious to a patient or—almost as bad—worthless, yet many do just this. Not because of any indifference to their obligation to protect the public and profession but because of a lack of a means of determining whether a given product meets professional standards. To take a hypothetical case for purposes of illustration: A publication having no formal advertising standards receives an order from an advertising agency for a full page advertisement to appear in an early issue. The advertiser is a manufacturer of pharmaceuticals and the product to be advertised is recommended for use in the treatment of periodontal disease. Naturally, the editor or advertising manager is pleased that his publication has been selected and promptly acknowledges receipt of the order. When the copy arrives it seems innocuous enough. It merely advocates the use of the product in the treatment of usual periodontal conditions and cites numerous references to the dental literature as supportive evidence. Because of the nature of the product and the claims made for it the advertising manager reads the copy carefully and seeing nothing obviously amiss decides to accept the copy and run it. What the advertising manager did not know was that the product had been placed in Class D by the Council on Dental Therapeutics of the American Dental Association. Products so classified are those "which are unacceptable because of their demonstrated inability to meet the standards outlined in the provisions for

Director of Advertising and Exhibits, American Dental Association.

acceptance.”* Had the publication’s advertising been governed by a written set of standards requiring preferential classification by the Council on Dental Therapeutics, the advertising product in question would have been declined out of hand and the dentist-readers and their patients would have been better served.

This leads to the second reason for having a good set of standards—the need for an administrative device to determine the eligibility of both product and advertising copy. In the hypothetical case cited, the advertising manager was, of necessity, working in a vacuum. Without a set of standards he has to make his decisions on his essentially meager knowledge of the vast number of products that are offered to the profession via advertising. His decision must be personal and subjective and therefore frequently wrong. He makes himself vulnerable to the criticism that he is accepting unworthy advertising, and is inconsistent in his decisions.

It’s a good deal like running a credit department of a business without any rules to govern who is entitled to credit. Does a credit manager make his decisions on credit worthiness of an individual by appearances? Indeed not! He checks the applicant’s bank and trade references. He wants to know about his job and how long he has had it. Does he own his home or rent? In other words he wants full information before extending credit and if the information does not show the individual to be entitled to credit, he doesn’t get it. And he’s only dealing in property—not people and their health as in the case of the dental publisher.

A good set of advertising standards will do for the advertising manager what a set of basic requirements for credit will do for a credit manager. It will enable him to make good decisions on acceptability of advertising—consistently good decisions, and remove the danger of bad decisions, a constant danger when the advertising manager works in a policy vacuum.

How will the interested dental editor or advertising manager go about developing a suitable set of advertising standards for his publication? Fortunately, he doesn’t have to look far. The American Association of Dental Editors has adopted a code entitled *The Principles of the Advertising Code* which it recommends as a “basis for all

* Accepted Dental Remedies, 1960. p. VIII.

dental publications." It is an excellent statement of principles and will be very helpful in approaching the task. The American Dental Association Advertising and Exhibit Standards are, in effect, an application of the preamble of the Principles which reads as follows:

No dental journal should accept the advertising of unworthy or undesirable products, the use of which might endanger the comfort, appearance or health of the final consumers.

No dental journal should accept the advertising of products, the claims for which are therein extravagantly represented, or that are presented without proper regard for the spirit or traditions of a scientific profession, or that are dishonestly or fraudulently marketed.

The American Dental Association standards are based on this statement:

AMERICAN DENTAL ASSOCIATION ADVERTISING AND EXHIBIT STANDARDS

The standards for advertising and exhibit of the American Dental Association are established to contribute to the promotion and protection of the public health. To this end, both the text of the advertising itself and the texts, methods and materials used in the promotion of a product or service will be used as measures of eligibility for advertising and exhibit. Any product or service is eligible for advertising and exhibit in publications and meetings of the American Dental Association under the following conditions:

1. The advertising, exhibit or promotion of a product shall not violate, or assist in violating, any dental practice act or other governmental regulation or statute.

2. The advertising, exhibit or promotion shall not relate to products or services which have been adjudged worthless, dangerous, or of secret composition, by official action of appropriate agencies or consultants of the American Dental Association.

3. The advertising, exhibit or promotion shall not include claims of a type which have been the subject of unfavorable decision by the Federal Trade Commission or the Food and Drug Administration.

4. The advertising, exhibit or promotion may not relate to a product which is considered for acceptance by the Council on Dental Therapeutics of the American Dental Association and which has not been classified or which has been placed in Class C or D by official action of that agency.

5. The advertising, exhibit or promotion may not state or imply that a dentist or physician is in any way connected with the product or service, except that this restriction shall not apply to textbooks and other printed material produced for professional purposes.

6. The advertising, exhibit or promotion used in other media shall be consistent with the spirit and letter of these standards.

This set of standards in written form has been in effect since 1953 and has met fully the requirements of the American Dental Associa-

tion for a practical and equitable guide in the acceptance of advertising for its publications. In fact many dental societies have adopted the American Dental Association standards to their own needs and have likewise found them to be both practical and equitable. Dental societies which have not yet formally adopted advertising standards will find the statement of the American Association of Dental Editors and the American Dental Association highly useful in their own quests for practical policy in this important area of Association activity.

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Selection of an Editor

T. F. McBRIDE, D.D.S.

By and large, dental organizations do not give much thought to the selection of an editor. That statement is the essence of this article; but without elaboration it wouldn't make for much of a paper.

A study of the answers and comments on 188 questionnaires in a recent survey of dental periodicals,¹ plus a review of the exchange publications currently coming to the desk of this editor, indicate that dental organizations generally are outstandingly unaware that the reflective selection of a capable editor is a responsibility they should assume.

This observation is not new; the early *Transactions* of the American Association of Dental Editors show clearly that, as long ago as twenty to twenty-five years, this was considered a problem to be faced. Many of the criticisms made and the solutions presented during that period are as true today as they were then. As a background for the consideration of the selection of an editor, it is appropriate and revealing to note a few of these observations.

John E. Gurley quoted² L. F. Leland as saying that an editor should be possessed of a "keen mind, a willingness to learn, and a capacity for work."

Editor, American College of Dentists.

Harold Hillenbrand, in pointing out that one of the problems in the management of dental periodicals lies in the selection of an editor said:³

Because this job demands certain basic qualifications, it should not be awarded on a political basis or because someone has had a year's experience on the high school paper to qualify him for the task. Editors should be selected on a basis of knowledge, experience and background. If no individual possessing all three is available, a man should be chosen who will, through study and effort, bring himself to a respectable degree of knowledge in this important field.

And in commenting on editorial writing, which surely is a facet in the selection of an editor, Hillenbrand went on to say:

The editorials in most dental journals should only be the subject of criticism or charity. The present state of editorial writing represents one of the most severe deficiencies in dental journalism. The reasons for this low state are not hard to find: the outlook of many editors is provincial, uninformed and uninteresting. The purpose and the power of the editorial are not understood. The editorials themselves seem to be written without inspiration, research, effort or style. They are dedicated to subjects of colossal unimportance, to inspirational themes that have driven better writers to the hack's grave, to dusty trips through the backroads of inaccurate dental history, to whining about a state of affairs for which the editor has no constructive suggestion, to special pleading, and to chatty personalities that should have no place in an editorial at all. This is a severe indictment, but a search through current dental publications will reveal an almost complete lack of editorial guidance, interpretation and stimulation on problems that are at least of passing interest to dentists. It is here that one of the greatest failures of current dental journalism is manifest: the failure to exercise the function of informing, guiding and leading opinion in community, state and country.

Grace Rogers Spalding was of the opinion⁴ that:

Dental journalism should be a career but as it usually carried on, it is worked in among bread winning activities, on scraps of time, by good natured members of dental organizations. Too often the position of dental editor is a careless political appointment or selection. This is at times more trying to the recipient of the honor than to the readers of his publication.

She also suggested that: "It might be better for prospective dental editors to seek the position rather than have it thrust upon them. In any case, the selection should be the result of a study of the needs, and earnest consideration of available dentists."

William J. Gies stated⁵ that:

Societies that publish dental journals should endeavor to acquire the best possible editorial leadership for their periodicals, and should pay honoraria sufficient to enable the editors to give their best service without attendant economic anxiety. Dental journalism is what the editors make it. But editors cannot make dental journals what the best professional interests require until dental journalism becomes a major educational objective, and receives commensurate support from each of the responsible dental societies. Editorial efficiency and achievement, as in all other fields, are—in all but exceptional instances—products of aptitude, attention, understanding, devotion, imagination, *correlated* by industrious endeavor and *matured* by constructive experience.

Elmer S. Best said⁶ that the dental editor “must have or develop breadth and depth of understanding. His outlook must be liberal and wide and he must read and study without ceasing. He must be well informed; he must select, write, and review abstracts; he must edit and teach; he must do all these things with wisdom, in a fine frenzy for his labor of love.”

Edward J. Ryan, discussing the editor as a personality, was most forthright when he stated:⁷

He [the editor] should not set himself up as a pontifical censor. He should not give prominent space to his adherents and deny publication to his opponents. He should not be a specialist, in a partition sense; that is, he should see the whole view of dentistry. He should recognize that every department of dentistry is as important as another. He should not be a spokesman for a political clique. He should have his appointment because of ability to do the editorial job, and as a condition of this appointment, he should not be asked or expected to pull his punches or to puff his political partisans. He should not be a transitory appointee—one who exists from year to year on the thin whims of dental politicians. He should be assured of some continuity in his job, freedom to do it well, safe from the reprisals of the disgruntled. He should not be a propagandist for anything. He should be one constantly striving to examine every aspect of dental life. Above all, he cannot be an inflexible personality. Finally, if the editorial job in dental journalism or elsewhere is to be done well, the editor must have some financial support.

Even I entered into a discussion on current deficiencies in dental journalism by commenting:⁸

Our editorial writing shows the need for more intelligent deliberations, for less recourse to inspirational themes, for a more liberal and scientific point-of-view, and for less uninteresting treatment of dull topics. Our writings do not always meet prevailing conditions, nor satisfy the inquiring mind. We are too narrow in our editorial outlook; the periphery of our

approach to professional problems too frequently extends but to the limits of our local community or state—beyond that, the questions are vague and remote, and we treat them as such. We do not always make ourselves understood; neither do we maintain the interest of our readers, nor win their confidence. The demands of clarity, conciseness, directness, and simplicity are frequently ignored, and originality is a forgotten thing. Many of our editorial expressions seem to be written for our forefathers, and the men of today—those awake to the questions of advancing professionalism—are seldom considered.

At times our editorials are too complacent, when the situation demands that we startle our readers and prod them into action. Often we forget that our editorials are to inform, interpret, convince, influence, and entertain our readers. If the measuring stick of leadership value, literary quality, and professional value were laid upon many of our editorials, they would be found wanting.

And so far as the selection of an editor was concerned, I went on to say that: “. . . we should exert our influence to impress societies and organizations that editor appointments should be given more careful deliberation. Selections based on friendships, on a nebulous acquaintance with general literature, or for political reasons, must be supplanted by selections based on a reasonable amount of ability, interest, and training.”

E. G. Meisel, in discussing some of the problems in dental journalism, had this to say⁹ about the editor:

Editorial ability is not inherent in dentists, but it may be developed through study, training, and experience. One sure way to better journals and better journalism is through better editors. Hence care should be exercised in weighing the qualifications of a candidate who is being considered for editor.

Only about thirteen years ago, Gardner Foley in commenting¹⁰ on the responsibilities of dental journalism asked the question: “What . . . are the touchstones by which we can measure the qualifications of a good dental editor?” He continued: “he should have a keen, analytical mind, with a broad educational background which should include a good working knowledge of the humanities. He should be a highly regarded member of the profession, respected both for his abilities and his integrity and recognized for his knowledge of the character of his profession: its science and art, its ethical and social implications, its history and its possibilities.”

It is fitting in this discussion about the selection of an editor to record, in its entirety, Chapter 3 of *A Manual for Dental Editors*,

published by the American Association of Dental Editors in 1953 (2nd edition):

The evolution of a dental periodical, in professional character and in literary quality, depends chiefly on the editor. The relation of an editor to his periodical is like that of the brain and nervous system to the body and behavior. This analogy—and the variations it implies—suggests the general reasons for the range not only from ineptitude to genius in human beings but also from failure to brilliant success in editors.

The editor's policies obviously should be in general accord with the society's purpose in publishing a magazine. Editorial functions rank, in importance and responsibility, from those for a leaflet bulletin to those for a journal of the highest professional type. Editorial efficiency and achievement, as in all other fields, are products of aptitude, attention, and understanding, devotion and imagination, correlated by industrious effort and matured by constructive experience.

Any set of so-called minimum requirements for the editor of a dental publication should include the following qualifications and conditions:

He should be devoted to the ideals and objectives of the dental profession.

He should be professionally representative and should have the esteem and confidence of his colleagues.

He should be able to express effectively the professional views of dentists.

The editor should have, or acquire, certain skills for attaining the dental society's purpose in publishing the periodical. He should be aware of all activities in the field of the magazine's interest.

He should have sufficient facility in English composition to express his views effectually for publication and to remove errors and crudities from manuscripts accepted for publication.

The editor should be able and free, within the restraints of ethical professional responsibility, to guide the development of the periodical's procedures and policies, to publish his convictions and to attain the journalistic leadership his abilities and opportunities warrant.

He should receive sufficient remuneration and editorial assistance to enable him to give the necessary time to his duties as editor.

He should coordinate, in each issue, material that is well adapted to the attainment of the publication's objective. He also should make effective contributions of his own through the editorial columns or otherwise. He should reject contributions that would not be suitable for his publication. He should welcome the expression of views, however unconventional, that would stimulate constructive thinking.

In order to improve his publication and to make it more interesting, he should seek material that might not be available through the usual channels.

The editor should maintain mutually satisfactory working relations with his publisher, his business manager and his contributors.

He should edit, or have edited, all accepted manuscripts in conformity with a consistent style that is a part of the character of the publication. He should see that manuscripts are edited in accordance with the author's

meaning and literary style and should not intrude his own eccentricities and thoughts into articles written by others.

The editor should acquire a sufficient familiarity with printing and typography so that he can handle printing problems intelligently and can mark manuscripts properly for the printer.

The tasks of an editor are many and onerous. When these are combined with the duties of a full professional practice without additional assistance, the results will be reflected in a less effective publication. A dental society, as publisher, must undertake to furnish the editor with sufficient technical help to enable him to carry out his duties promptly and efficiently. This problem can be solved partially by the appointment by the editor of assistant editors and by the delegation to the assistants of certain duties under the direction of the editor. The fact remains, however, that the task of producing an interesting publication at stated intervals cannot be carried on successfully for long periods of time by a single individual.

These quotations of years back, that largely went unheeded, contain the general yet basic qualifications of a dental editor. Perhaps a few more might be added. But, everything considered, any dental organization aware of its responsibilities in this matter should prepare a yardstick to measure the capabilities of the man they select as their editor.

In *King John*, Shakespeare said: "I had a thing to say, But I will fit it with some better time." Now here is a thing to say, and there is no better time to say it:

The quality of dental journalism seems to be ebbing. It should, and can, be improved. One way, perhaps the most effective way, is for dental organizations to select, to appoint, and to give fitting honoraria to dentists who will become truly "editors."

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Essayists and Manuscripts

WILLIAM P. SCHOEN, JR., D.D.S., M.D.S.

There seem to be more scientific meetings of dental societies now than ever before. It should follow that with more presentations being given, more scientific papers should be available for publication—but it doesn't. There is still a great dearth of good papers for publications, especially at the constituent society level as a review of most of the state journals will indicate.

In general, the competent speaker is also a competent writer. If he happens to be cooperative too, the dental society gets both a good talk and a worthwhile paper for its journal. This is as it should be.

However, some of the good essayists do not present the editor with a copy of his paper. Often the excuse is that the paper is to be given again soon on the program of a neighboring dental society. Actually, this is not a legitimate excuse, and usually is only an indication of laziness on the part of the essayist. Most sets of facts and comments, by judicious rewriting, can be compiled in several ways; also, they can appear under various titles. While admittedly this is more labor for the essayist, it would be a worthy service to the readers of constituent journals, since few of these journals are read beyond the boundaries of the particular state.

Then there are the inadequate essayists who appear before dental groups right along. This mainly is a problem for program chairmen to solve; the editor knows it to be a truism that a poor talk can hardly make for a good paper.

Another type of essayist is the "off the cuff" or unorganized speaker. Frequently he has ability, clinical or otherwise, but because he is poorly prepared he does a mediocre speaking job. If this type of speaker would be asked to write a paper for publication before his public appearance, many times it would be found that his material would be much better organized and he would make a more creditable presentation—and the editor would have a paper as well.

Since the advent of the color slide, some interesting and showy presentations have been made. But there has also been bred a group

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of "color slide specialists." Frequently one learns little from this type of speaker except how many bloody operations or extensive rehabilitations he claims to have done. Sometimes he intimates that these operations are beyond the limited abilities of his audience. Naturally, these essayists have no papers to offer for publication.

It is my contention that some of these "look what I do" impresarios should not be asked to speak on dental society programs. Others in this group, however, might be induced to write a paper based on the color slide talk, with a few black and white illustrations, that could and should be published. His slide lecture could be presented as usual to the listening dental audience.

Most constituent dental societies could, and would be glad to publish more good papers; however their meetings do not seem to produce these papers. A simple way to help themselves out of this unfortunate situation would be by requiring that each essayist submit a paper suitable for inclusion in the state journal before the meeting date. The policy might even be—no paper, no talk. Such a procedure would not just secure needed papers, satisfy readers, and make for better journalism, but it would improve the quality of dental programs immeasurably.

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OBJECTIVES

Committee on Journalism

"The Committee on Journalism of the American College of Dentists has for its primary objective the continual betterment of dental periodical literature.

"The Committee, in all its efforts, will support and sustain that literature; and will encourage and promote ever-widening use of that literature as a major part of a continuing education effort. The Committee has the sound determination to improve the quality of, and to stimulate interest in, dental periodical literature, to the end that the virtues of our dental journalism may be more fully realized and appreciated, its inadequacies understood and remedied, and its development made a source of pride and inspiration to dentists everywhere."

The Craftsman and the Dentist: From Cutler to Dental Manufacturer

GEORGE B. DENTON, Ph.D.

Throughout the dentist's history, he has been dependent upon various craftsmen for services, materials, tools, and instruments. In the earlier years these artisans included the jeweler, the enameler, the foundryman, the mounter, the gold beater, the ivory turner, and the cutler. This paper will concern only the cutler and will attempt to trace his development to meet the needs of surgeons and particularly dentists.

Next to the jeweler and his associated craftsmen, the artisan on whom the dentist was most dependent was the cutler. This craft was concerned principally with the manufacture of knives of all sorts, especially dinner service; but until early in the nineteenth century, when the making of surgical instruments became a separate art, the cutler usually supplied all the needs of the surgeon and the dentist for lancets, scalpels, and other special knives, as well as for forceps of all descriptions, elevators, trephines, and many special laboratory tools.

Cutlery had been organized from at least the beginning of the thirteenth century. It had become an important industry in Europe in the eighteenth century. France numbered 1,108 masters in the art, and 6,934 artisans. In Germany, and particularly in England, the cutlery business was even more extensive. In France, the original statutes of the cutlers, issued in 1565 and confirmed in 1608, granted to them a monopoly of the manufacture of surgical instruments, and this right was retained until the close of the eighteenth century. At the end of the seventeenth century there were several cutlers famous for their manufacture of surgical instruments.

In the earlier days at least, surgical and dental instruments were for the most part invented and improved by surgeons. But in order to get their ideas realized in metal, they were obliged to rely on the

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skill and technical knowledge of artisans of the cutler's craft. Some of the earliest famous surgeons, such as Guy de Chauliac (1363) and Ambroise Paré (latter sixteenth century), discussed the form and construction of the instruments used in various operations; but these authors had little to say about their manufacture or the men who made them. Similarly, Scultetus (Johann Schultes), who in his *Armamentarium chirurgicum* (published in 1693) furnished the first important account of all the instruments used up to his time by the surgeon, ignored the artisan who constructed them.

Early in the eighteenth century, the celebrated surgeon, Jean Louis Petit, gave a course of public demonstrations, repeated several years, at the Surgeons' Amphitheatre (Amphithéâtre des Chirurgiens) of Paris, in order to make students acquainted with the character, form, and requirements of surgical instruments, and perhaps even to instruct the cutlers by making his explanations so that "even the workmen derive profit for their good construction." Relying heavily on this course for information with regard to recent instruments and improvements, the surgeon, Garengot, in 1723, published a work entitled *New Treatise on the Most Useful Instruments of Surgery* (*Nouveau Traité des Instrumens de Chirurgie les Plus Utiles*) in which the instruments used in all surgical operations of the time were presented with regard to their construction and use. Dental instruments were included.

The purpose of the work was partly to be instructive to young surgeons and partly to be "very useful to cutlers." It was expected that the manufacturer should learn the best design and proportions of every instrument from this work. In order to carry out this plan, Garengot enlisted the aid of a well known Parisian cutler, Guillaume Vigner, Jr., who not only supplied him with the cutler's technical language for describing the parts of the instruments but furnished him with the instruments themselves, which were reproduced in the illustrations, marked with the sign of the maker, "the ace of clubs" on each instrument. Garengot acknowledged that the credit due the cutler was similar to that received by the surgeon. "If surgeons who invent instruments more convenient and more perfect than those that preceded them," he wrote, "deserve the esteem of good and skilful people, then, likewise, the artists who know so well how to carry out their plans, have also a share in

their glory and acquire a superior reputation in the profession."

Paris was especially distinguished for cutlers who specialized in surgical instruments. The most important cutler of this sort in the eighteenth century was Jean Jacques Perret (1730-1784). In order to secure the proper scientific background, Perret studied anatomy at l'École de Médecine in Paris, where he was encouraged in his ambition by several distinguished physicians of the Faculty. When he finished his training in the craft and became master cutler in 1753, he established himself in Paris and employed twenty workmen in the manufacture of surgical instruments. His manufactory was a considerable establishment, for factories of that time seldom employed more workmen. Perret wrote a three-volume folio work *The Art of Cutlery (l'Art de la Coutellerie)* published by the Académie in 1772 and beautifully illustrated with engravings depicting the articles in full size. He gave particular attention in this work to surgical instruments, describing not only their form, but also their construction and manufacture. He described and depicted in the plates numerous dental instruments. There were explorers, cotton-carriers, files, cauteries, and pluggers. Forceps, pelicans, elevators, keys, the goat's-foot, and other extraction instruments were set forth at length. In the text, wherever possible, Perret indicated the inventor of the instrument or the person who had improved it. The originator in most cases was a dentist, but now and then a cutler was mentioned as having modified the device to advantage, and frequently it was Perret himself who was named. The construction of forceps was explained with illustrations for the various steps in the process. The prices of instruments used in dentistry were not exorbitant for hand-made work. Most of the one-piece instruments, like scalers, were one franc if made of iron; two francs if made of steel. Forceps of iron were two francs; of steel, three francs. The highest priced dental instrument made by Perret, a complicated extraction device, cost twenty-four francs.

In the early nineteenth century, the best known cutler in France manufacturing surgical instruments was Charrière (1803-1876).

Many of the early dentists in their books recommended specifically the instruments of well known cutlers. Jourdain, the eighteenth century pioneer in oral surgery, mentioned Perret.

During the early nineteenth century, the cutler specializing in

surgical instruments gradually became, or was superseded by, the surgical instrument maker. The latter abandoned the manufacture of service knives and other implements of daily life, and devoted himself to the making of surgical instruments, sometimes specializing exclusively in certain types of instruments, for example, lithotrites or extraction forceps. Some of these craftsmen possessed considerable versatility and would construct original instruments in accordance with the needs or plans of the surgeon or dentist.

One of the earliest of these surgical instruments makers in England was Jean Evrard (1807-1882), who came to be highly esteemed by dentists. He had been employed by Charrière, the cutler, in Paris, and later in London by Weiss, for whom he made lithotrites. He opened his own establishment in 1837, and continued to manufacture surgical instruments. Through the efforts of John Tomes, about 1840, he was induced to enter the manufacture of extraction forceps. For Tomes he executed the famous anatomical forceps of that dentist. In this field Evrard became preëminent.

Another famous instrument maker, and pupil of Evrard's, was Daniel Joseph Collins (1831-1901). In 1858, he set up for himself in London and became famous as a maker of forceps. His son, William Henry Collins (born c. 1861) became equally well known and was still producing hand-wrought forceps for dentists in 1935. So thoroughgoing was the younger Collins' knowledge of instrument-making that he was engaged, during the years 1910 to 1914, to demonstrate the manipulation and properties of steel and to teach students at the Royal Dental Hospital to forge and finish various dental instruments.

It was one of the ambitions of the young dentist in the middle of the nineteenth century to possess forceps made by some famous instrument maker.

In America skilled workers such as those in England and France were unknown in the early years of the nineteenth century. According to Josiah Flagg, all forceps of any merit in this country were imported from Europe until 1820. Conditions improved shortly, however, for Chapin A. Harris and other prominent dentists in the early forties were recommending instruments produced by craftsmen such as Francis Arnold of Baltimore. Instruments such as these were sometimes offered as prizes for excellence in scholarship, as

for instance, in the Baltimore College of Dental Surgery, where a set of Arnold's forceps was given as such a reward.

Almost imperceptibly, the instrument maker specializing in dental equipment, was more or less superseded by the dental manufacturer and dealer in dental supplies. This business arose largely out of the dentist's need for porcelain denture teeth. The men who developed this new department were frequently dentists who had succeeded in the manufacture of teeth to a greater degree than their colleagues, or they were craftsmen—often jewelers—who had tried their hand at the art. Besides artificial teeth, there was one other fundamental need of the dentist in the early decades of the nineteenth century which he could not fulfill himself. This was the manufacture of forceps. Originally, only the instrument maker could fulfill this need satisfactorily, but the manufacturer soon attempted to compete. "To men like Mr. Evrard," wrote the editor of the *British Journal of Dental Science* in 1881, "we are indebted for some of our most perfect instruments. Mr. Evrard is an artist, and all he does bears the stamp of perfect workmanship combined with thoughtful adaptation. We have also other makers who deserve the highest praise. At one time 'Depot forceps,' as they were called, received but scant attention. A student prided himself upon his set of 'Evrard's' or 'Collins,' but old firms like Messrs. C. Ash & Sons devote so much attention to the manufacture of their various instruments that many of their forceps may be compared with the very best designs."

Broadening his business by selling instruments and, ultimately, gold foil along with his porcelain teeth, the manufacturer differentiated himself from the instrument maker. Sometimes the dental dealer manufactured none of the products which he sold, and established the dental "depot." The well-known American dentist, Solyman Brown, who added to his dental practice the sale of all sorts of dental supplies was an example of this sort of dealer.

In England, the great firm established by Claudius Ash in the early years of the nineteenth century is representative of the development of manufacturers. In 1814, Ash and Sons were silversmiths in London. His four sons had been his apprentices. Two of these became important in the dental manufacturing business into which the firm entered. George Ash, who became a dentist, served as man-

ager of the teeth and rubber factory which the firm established in 1862. Claudius Ash, the father, had experimented extensively with porcelain in an attempt to improve denture teeth, and later manufactured the tube teeth for which the firm became famous. William Ash was at the head of the precious metal department of the company.

In America numerous manufacturers of dental instruments and supplies came into existence. Among these were Horatio Kern, Chevalier, and Samuel Stockton.

The latter, a dentist, was among the successful tooth manufacturers of Philadelphia, and between 1830 and 1845 he was one of the foremost producers. His nephew, Samuel Stockton White, was indentured to him in the year 1838, to learn the manufacturing of teeth and the art of dentistry. The latter pursuit he studied under the tutelage of J. deHaven White, a dentist. Having completed his apprenticeship with his uncle a year earlier, S. S. White, in 1844, began the business of tooth manufacture for himself on a small scale, with the help of two assistants. Shortly, he was joined by two partners, and in 1851 the firm became Jones, White, and McCurdy. By this time, other needs of the dentist had been added to the stock for sale. In 1867, by the employment of machine instrument-makers in an outside shop, the company began the production of their own steel forceps. After various vicissitudes of the original company, the firm of S. S. White Dental Manufacturing Company was organized in 1881, and it has since expanded until it is the largest in the world.

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The College Sections: Activities and Selection of Fellows

STEPHEN P. FORREST, B.S., D.D.S., M.S.

On January 9, 1960, a meeting of fifteen Fellows of the American College of Dentists, representing eight sections from the Eastern half of the United States, was held in the Central Office of the College here in St. Louis. The meeting came about as a result of a discussion on section activities by the Board of Regents at their 1959 New York session.

It was my privilege as chairman of our section to attend. This was an enthusiastic all day meeting, of the brainstorming type, and was moderated skillfully throughout the day by Secretary Brandhorst. Essentially the purpose of the meeting was "to find ways of stimulating activity by the sections of the College, and to find ways and means of carrying forward the objectives of the College at the local level." In other words, how could a section be stimulated into becoming a "working organization?" I use the phrase "working organization" mainly because the Fellows of the College are known for their industry, and because the By-laws state that "The purpose of the sections of the College is to carry on the activities and to promote the purposes and objectives of the College at the local level."

Thus the very existence of a section depends on work if it is to share in the intellectual ideas of the College, and on *hard work* in order to extend the following principles and objectives:

1. To promote the ideals of the dental profession.
2. To advance the standards and efficiency of dentistry.
3. To encourage, stimulate, and promote research.
4. To encourage graduate studies and continuing educational effort by dentists.
5. To improve the development and use of measures for the control and prevention of oral disorders.
6. To improve public understanding and appreciation of oral health service.
7. To cooperate with other groups for the advancement of professional relationships in the interest of the public.

Presented at a meeting of the St. Louis Section, January 26, 1960.

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To achieve these aims requires something of the individual, requires work. The purposes of the College are the intellectual trail blazers to the reward contained in the last of the objectives: "To recognize meritorious achievement . . . by conferring Fellowship in the College on those persons properly selected to receive such honor."

I give good hope that the sections of the College will become more and more fine "work organizations." And I do hope that the sections will not become workless, non-contributory, "hollow organizations." We know how to work. It was that—work for the profession and the public—that brought Fellowship to everyone in this room. It was hard work with hands and heart and head, and with some frustrations, many disappointments, and an occasional heart-break.

Sections should engage in activities suggested by the College, or by their own membership, in order to help fulfill and further the plans of the parent organization. Sections might interest themselves in one or more of the work plans suggested: work through special studies and activities; work through bettering programs and publications, and sponsoring demonstrations and lectureships; work through establishing special projects and awards; and work through example. Example is so important. It was noted by a Fellow at the meeting that one wrong professional act by a member of the College, or one wrong word, often leaves impressions which many years of education will be powerless to wear away.

One suggestion to come out of this meeting was that a section activity need not be planned for Fellows alone, but that the program selected could be projected to include large members of professional colleagues.

What are the sections doing at the present time? How often do they meet? About a dozen meet more than once a year. Three sections hold all day meetings; fourteen have dinner meetings; five, luncheon meetings; one, a breakfast meeting; and one, an outing with dinner. Many of these are held in conjunction with local and state dental meetings.

A study of current section activities shows a rather wide variety. Some function through local and state committees. Some engage in recruitment activities, professional relationships, and by providing emergency dental care. A few have a committee structure similar

to the national set-up and conduct similar studies at the local level. Others provide special student awards, support essay competitions, and direct attention to the College by sponsoring senior student dinners. And several spend time in studies of problems peculiar to their respective areas.

Most sections are of the opinion that they should involve the minds of all the Fellows in the section in a workshop-like effort to seek out the immediate and the long-range problems, and to establish a course of wise action and plans for the solution of these problems.

I believe that the Fellows of the College should be standing at every crossroad where the purposes and objectives of the College are to be given direction. Fellows should be especially alert in those communities where special projects on recruitment and educational programs are being tried, so that they may place proper safeguards over these intensely practical problems of professional reproduction and revitalization.

These are times when we are seeing some members of the profession and the public striking out blindly to do the best they can with such serious problems as ethics, group dental care, dental laboratory relations, the new graduates, and continuing dental education. Without the strong leadership of the College adverse situations in these areas may arise and may continue for many years. The words charlatan and quack in more modern terms are appearing again and again in our literature. Perhaps these menacing characters are making their re-appearance in order to awaken a slumbering profession to the fact that it must be on a never-ending search for new ways of being of greater and greater service to the public.

Another discussion area at the meeting had to do with the selection of Fellows. It was suggested that sections might consider a project that would study new procedures involved in the nomination, the processing, and the acceptance of persons for Fellowship in the College. Several of the section representatives raised storm warnings for members of the College to watch when nominating persons for Fellowship. They were alerting us to nominate only those individuals who have the potential for elevating the prestige of the College.

One representative presented a check-list of attitudes on nomination found among the members of his section. This was adapted from and based on an article, "What Are You? Savage or States-

man," written by L. A. Appley, president of the American Management Association, that appeared in *Nations Business* for March, 1958.

The first attitude, beginning at the *bottom* of the check-list, was savagery—"The person is qualified for nomination, but he is not my friend; he is my enemy and I shall not nominate him."

The second attitude was slavery—"The person is qualified for nomination and will serve me for some consideration; I shall nominate him."

The third attitude was paternalism—"The person should be cared for; I shall nominate him."

Still higher coming up the list was participation—"The person can contribute much to the organization; I shall nominate him."

Next to the top of the list was trusteeship—"That for which I am responsible is not mine. I am developing and administrating it for the benefit of others, and therefore the person I have in mind can help with this trusteeship; I shall nominate him."

Finally at the *top* of the list was statesmanship—"This person is capable of being far more than he is, and it is my responsibility to help him to develop to his fullest potential; I shall nominate him."

The consensus was that we should nominate worthy persons who will bring new thoughts, new ideas, and new knowledge into the College; to nominate persons who have contributed much to the profession, the community, and the country; and who are aware that they must continue to keep on believing in the powerful ideal of lifelong "contributing."

Let us then remember this: we should think and think searchingly about those who will be tomorrow's Fellows. Think about those who have the potential to be always other-regarding. Think deeply about those who are dedicating their lives in the service of others and who seek no reward. Thus thinking we should then nominate these individuals for Fellowship because we need their help in our work for God and people.

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CALENDAR OF MEETINGS

CONVOCATIONS

October 16, 1960, Los Angeles

October 15, 1961, Philadelphia

October 28, 1962, Miami Beach

October 13, 1963, Atlantic City

November 8, 1964, San Francisco

