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FOOD ATTITUDES IN AN UNUSUAL ENVIRONMENT

A Second Study

Interim Report

March 1962

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materiel

PHASE: Identification of opera-
tional and environmental
factors in field operations
that may alter attitude and
acceptability

FOOD ATTITUDES IN AN UNUSUAL ENVIRONMENT

A Second Study

Interim Report

by

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March 1962

ABSTRACT

A questionnaire survey among enlisted men at Camp Fistclench, Greenland, in 1960 confirmed results of a similar study in 1959. Attitudes toward most aspects of the feeding situation were very favorable, although specific foods were not rated high. The presence of psychological stress was not demonstrated. The hypothesis that food has a generalized "comfort" function was neither rejected nor confirmed.

FOOD ATTITUDES IN AN UNUSUAL ENVIRONMENT

A Second Study

An exploratory study of food-related attitudes, conducted among a small sample of soldiers stationed at Camp Fistclench, Greenland, in August 1959, provided evidence that food attitudes were altered in this unusual environment (2). Strongly favorable attitudes toward food and various aspects of the feeding situation were found. These results were interpreted as evidence that food was serving as a special focus of gratification. It was hypothesized that the men sought comfort in food which served as a psychological defense against the full impact of the environment with its components of physical discomfort, its "other world" character arising out of things like constant daylight, constant cold, and recurring Arctic storms, the apparent threat of danger to anyone deviating from the fixed pattern of activities, the actual isolation from the rest of the world, and the restricted social situation. The situation was assumed to be stressful; however, little evidence of psychological stress was found. This lends weight to the simpler explanation that the strong positive attitudes reflected only the greater satisfaction arising from fulfilling a greater physiologic need. Hard work and cold weather burn calories which must be replaced; hence both desire for food and satisfaction with food were enhanced. Even though the 1959 study failed to demonstrate the need for any such construct as "stress", neither did it prove that such factors should be eliminated from consideration.

The earlier study had certain defects from the standpoint of psychological investigation, and should be considered as only "exploratory." Its initial purpose was to obtain information about a situation in order to determine whether any unusual factors were operating and, possibly, to generate hypotheses about these factors. The data were taken under relatively uncontrolled conditions. The study was planned on the spot by the principal investigator, the interview schedule was developed on the basis of general observation and limited discussions, the sample consisted of only 15 men. All data were obtained in personal interviews by the principal investigator, whose biases could have been important in determining the men's responses. Thus, these findings could not be considered definitive. Further work was needed to verify or reject them.

The present study was designed for that purpose. In the summer of 1960 Camp Fistclemch was reopened by the Corps of Engineers. Quartermaster Corps observers were again present and this time they went armed with a more adequate test procedure for obtaining information about food attitudes and related phenomena.

Environmental and Social Setting

The Camp Fistclemch environment is described in detail in the report of the 1959 study (2). The natural environment, of course, did not change, nor had there been any important alterations in the man-created features, such as camp layout and living facilities. Food supply and feeding routines were about the same. The Quartermaster Corps psychologist-observers reported certain apparent changes in the

character of the social interaction within the camp. The description of the environment given in the 1959 report is briefly recapitulated below, with actual or possible changes noted.

Camp Fistclench is located on the icecap about 200 miles from the Greenland coast at an altitude of 7,000 feet where the surface is a level, unbroken expanse of snow. Even in mid-summer, temperatures seldom rise above freezing, and then only for brief periods. They frequently are around 0°F. and may drop lower in August. There is constant daylight from the Arctic summer sun, which just begins to set for a few minutes each day near the end of August. Brilliant light reflected from snow surfaces make dark glasses a necessity, even on overcast days. There are occasional snowstorms, fog (whiteout), and frequent wind which may whip up dangerous ground blizzards. Thus, working outside is often a cold and uncomfortable experience, even though the men are always adequately clothed.

The camp itself is placed in a series of large, inter-connecting tunnels just below the snow surface in which Jamesway shelters and other light wooden structures have been erected to provide living and work space. Outside these structures, the tunnel temperatures closely follow the ambient temperature. Heat is provided by individual oil stoves and is frequently inadequate; when the ambient temperature drops floor temperatures may be below freezing. Personnel sleep in double sleeping bags on Army cots. One frame structure serves as washroom, latrine, laundry, and shower room. The main hall is a single long Jamesway shelter with kitchen and serving line at one end and four-man

tables to accomodate about 70 men occupying the rest of the space. Water is obtained by melting snow in a central oil-fired boiler; hot and cold water are piped to the latrine and mess hall but nowhere else. Artificial light, with power from a central generator, is supplied because little of the outside daylight reaches the tunnels.

Recreational facilities are limited. There is a small day-room but its supply of equipment is meager. Movies are shown and bingo sessions held periodically, and church services are conducted when chaplains are able to visit. During the period of the 1960 study the recreational situation had deteriorated from its 1959 status. There was less equipment; also, during several periods of peak occupancy the dayroom had to be used as barracks.

The camp used a somewhat modified and restricted A-ration in both 1959 and 1960, with supplies drawn through headquarters at Camp Tuto and transported to Fistclench primarily by wanigan trains. Plenty of food was always available; however, the ration would be considered inferior to the normal, stateside A-ration in regard to variety and, possibly, in regard to the quality of the items because of the compounding of difficulties over the extended supply lines. There was considerable use of frozen and canned items. There was fresh produce, but it tended to arrive in a "shop-worn" state. Bread was baked in Thule and was seldom less than a week old; however, hot breads, cakes, cookies, etc., were baked at Fistclench. In 1959 no fresh milk was available; but in 1960 supplies of good quality re-combined milk were brought in air whenever possible.

Mail service to Camp Fistclench was erratic due to the vagaries of weather, despite the practice of carrying mail back and forth from Camp Tuto at every opportunity. "Turn around" mail communication with the States usually required about a month. Radio communication, which was for official use only, sometimes blanked out, leaving the camp completely isolated. There were some short-wave radios that could be used for entertainment purposes. Programs could be tuned in from the United States, Sweden, Russia, Japan, and other romantic spots; however, reception was usually poor due to static.

Personnel at the camp could be placed into two categories. Military personnel responsible for administrative and support functions constituted a "core" group, most of whom arrived early -- near the end of May -- and stayed until the camp closed during the last week in August. The other category consisted of civilians and military assigned to various research projects, who stayed for varying lengths of time as their projects required. In 1960, during July and early August, living quarters and facilities were crowded just as they had been in 1959.

Certain observations in 1959 of camp life and social interactions were thought to indicate the presence of psychological stress. These observations were made possible by the investigator's constant association with the men at meal-times, in coffee breaks, "bull sessions", and in the planned interviews. Most of this information was hearsay -- the normal output of an active "gossip mill." Included were such things as outspoken resentment against authority figures, strong dislikes of certain aspects of camp life, recognition of antagonism between certain individuals, and discussion of alleged erratic behavior or bizarre ideas

on the part of certain persons. Other factors noted were lack of normal restraint in drinking behavior and a tendency toward exaggerated hilarity upon the occasion of impromptu or planned camp-wide parties. The interview protocols failed to demonstrate that these things were widespread or important. The probable explanation is that the aberrant behavior made good conversation, but was not, in fact, very important in the total scheme of things.

It was not possible to verify whether these general conditions remained the same in 1960. The Quartermaster Corps psychologists spent about half of their time in the field, therefore did not have the opportunity to develop the kind of associations with the Camp residents that would permit the free flow of ideas, attitudes, and opinions. Their observations about Camp Fistclench personnel may be summed up in the following: "They seemed to be a sullen and hard-working outfit. Everybody did his job; nobody was very pleased about his work or his situation. There was little overt expression of it, but one got the feeling that the resentment was there but was repressed through fear of possible consequences. It was a gloomy camp -- few parties and little gaiety. There did not seem to be much drinking, and no instances of over-indulgence were observed. Over-all, you would say that over-restraint was the typical pattern."

Method

A questionnaire was designed to obtain information about attitudes toward foods and the feeding situation, and to touch on various areas where the responses might be indicative of stress if such existed. Generally, it was based on observations made during the 1959 study.

The questionnaire is shown as Appendix A. The section designed to obtain food preference ratings has been abbreviated. Only two of the rating scales are shown with the list of foods written in below.

The population to be studied consisted of all enlisted men living at the Camp. The support group was sampled, as in 1959, and also the men who were working on research projects. There were about 35 in the former and about 25 in the latter. The questionnaire was administered twice. The first time was on 20 July, soon after the arrival of the Quartermaster Corps research team. The camp was opened about 15 May and many of the support group had been there from that time. The research groups had arrived at various times after the camp opening.

Authority to conduct the study was obtained from the Commanding Officer and arrangements were made with Section Leaders. On 20 July, after 0800 muster and before daily work assignments were started, all men except those on jobs that could not be left unattended, were told to report to the day-room. Questionnaires were passed out as the men assembled. They were given a short orientation talk by the psychologist in which the purpose of the study was represented as "...to find out what you think about the food here at Fistclench and to get your opinions on some of the other things about living here." The fact that the questionnaires would be seen only by the Quartermaster research team was emphasized to obviate possible reserve deriving from the men's fear of criticizing their superiors. The mechanics of answering each type of question were explained, then the men were allowed to work individually with the monitors standing by to answer questions. Most men were finished in 30 minutes. Before each man left, his questionnaire was checked for completeness.

The second administration was on 22 August, just before the camp was closed. The same procedures of sample selection and administration were followed, except that the instructions were abbreviated. Reception of the study was quite different the second time. The first administration was accepted "...without enthusiasm, but without much griping or comment...." One could assume that it was considered as just another part of the camp routine. However, at the second testing the small group showed resentment and impatience. The observers related this to the general sense of tension that seemed to build up during the last week as the time for final withdrawal from the camp approached.

Characteristics of the Sample

Forty-three men completed questionnaires at the first administration. Exact figures as to the total number of enlisted men staying at the Camp on 20 July were not available; however, it is estimated that this represented a 60 percent sample. The number of respondents dropped to only 17 for the second administration. Of these, four had missed the first session; therefore they were eliminated from the tabulation since the purpose of the second session was primarily to assess changes in attitudes. All of the research projects had been terminated by the time of the second administration and their personnel had left the Camp, hence the 13 "repeaters" all belonged to the support contingent.

Table 1 presents information about the respondents as obtained from the first page of the questionnaire. Answers are summarized separately for "non-repeaters" (Group I), and "repeaters" (Group II). Nearly half of the men were in the age-range of 21 to 24, with only

six men over 30. About two-thirds were married, with a higher proportion of Group II falling in this category. The two groups differed most in the factor of education, which, of course, would be related to the probability of assignment to research duties. All of the 14 college graduates were in Group I. Two-thirds of the men had been in the Army three years or less. For most of the men it was either their first or second tour in Greenland, and for the great majority of both groups it was the first summer on the icecap. When asked whether they had volunteered for this duty, as many men checked "yes" as checked "no"; however, the added comments suggested that these categorical answers might not reveal the true status. Some of the men who felt that they were "pressured" into volunteering, might have answered either way. The majority of the respondents (29 out of 43) indicated they would not want to return to Fistclench the next year. It may be noted that the Group I men showed more willingness to return. The great majority of men felt that they were physically in good shape, and nobody thought he was in poor health.

Analysis of the Data

Since the present study was designed to check on the tentative findings of the previous study, the questionnaire was written primarily to cover the points which the first study had suggested were important. Greatest emphasis was on food preferences and opinions and feelings related to the feeding situation. Secondly, information was sought about the men's own feelings and their opinions about other's behavior (and feelings) that might be indicative of the presence of stress. Finally, the questionnaire explored various aspects of the living situation, and of social relationships, that might reveal sources of

dissatisfaction or give further indication of the men's response to the total situation.

The data were tabulated separately for Group I and Group II; however, in only a few instances did there appear to be any systematic difference between the responses of the two groups. There were only negligible changes in the responses of Group II between the first and second administration with the exception of the preference ratings for the 50 foods. Therefore the data from the two groups have been combined for presentation in the tables, using only data from the first administration. Changes in the food preference ratings for Group II have been treated separately.

Results and Discussion

The first section of the questionnaire asked for hedonic scale ratings on the 50 foods shown in the appendix. Respondents were instructed to rate the foods "as served here at Fistclench" and to indicate "Not Tried" if they had not eaten a food at Fistclench.

The results are summarized in Table 2. Average ratings were obtained for each food by assigning the values 1 to 9 to the scale points, beginning at the "dislike" end. The average was then computed for the 41 foods which were also included in the National surveys of Army food preferences (3) under the same or closely similar names. The two averages are shown in Table 2, which also gives a detailed analysis of the differences for individual foods between the present study and the national surveys.

These data do not show increased liking for food. It was thought, a priori, that ratings might reflect the higher appreciation that was

suggested in the 1959 study. Instead, by comparison with figures obtained in the National Surveys, these respondents seemed to exhibit a pattern of relative disliking. The average rating is lower by 0.8 scale points, a difference which is statistically reliable. There were only 11 foods which were rated about the same as in the National Surveys (differences of no more than 0.4 scale points). The rest ranged from 0.5 to 1.9 scale points lower. These data, however, do need qualification. It has been previously shown that when people rate a food in general, i.e., when simply asked to respond to a food name, they tend to rate a conceptually optimal preparation (5). However, in the present study the men's attention was directed toward the specific recent experiences of "eating at Fistclench." In such cases one can expect ratings to reflect more of the hard reality of what the food was actually like. The appropriate control would have been ratings obtained under similar particularizing instructions from men currently living in the normal stateside environment. Therefore, these results need not be interpreted as indicating definite dislike for the foods, which would have been inconsistent with the other results. A possible interpretation is that they show, first, that the foods as served fell short of the ideal, and, second, that the men were quite capable of this realistic perception.

Thirteen subjects rated the foods a second time just prior to departure from the camp. Table 3 compares the results, averaged across foods, for each subject. If higher appreciation for food were part of the response to situational stress, then, as the stress continued, the need for the comfort of food to relieve the stress should increase.

Hence, food ratings might be expected to improve. Instead, they show the opposite trend. Only two men significantly increased their level of rating, five showed no essential change, while six showed significant decreases. Of course, this was a very limited sampling; however, Table 1 shows, in regard to most measured characteristics, these men were typical of the entire group.

Table 4 presents the results on five general questions about food and the feeding situation. Original scale categories were combined for simpler presentation, as this did not alter the meaning of the results. Answers to Question nr. 3, "How monotonous does the chow here at Fistclench seem to you?" were generally favorable. Fifty percent of the men said "not at all" and only five percent said "very." Question nr. 4 asked the men's opinions about the quality of the food supplied. If people had a definite dislike for any aspect of the feeding situation, one might expect this dislike to affect adversely their stated opinions about food quality. However, again the answers reflect a definitely favorable attitude with 58 percent of the men considering quality above average and only 12 percent stating that it was below average. Actual food quality may have been superior in some ways, but it was also inferior in others as a natural consequence of transportation hazards. The best assumption, and one which is implicit in the present interpretation of the results, is that the quality of the food was no better than average, and that preparation was probably a little above average. The men's responses are considered as indicative of their attitudes rather than as assessment of objective reality. They tell us more about the men than they do about the food.

Question nr. 8 was similar to Question nr. 4 and the results have the same import. It directed the men's attention to the total feeding situation and asked them to compare it with the situation "...at other posts where you have been." About half said that the Fistclench situation was better, and only 14 percent said it was worse.

Question nr. 6 followed the same line, asking about "...griping as compared to other Army posts." Three-quarters of the men said there was less griping, and only seven percent said there was more. This strong positive trend suggests that food does serve as a source of comfort. It has often been recognized, or at least, suspected, that when troops are dissatisfied, stressed, with morale low, complaining about the chow is a "safe" outlet for their aggressions (1). Thus, the fact that there was less griping is very significant. Favorable attitudes toward food and meal times, which were major sources of satisfaction, had to be jealously guarded. The men could not afford to follow the common pattern of using food as a target for complaints.

Question nr. 9 provides further supporting evidence. The men were asked to compare the importance of food and meal times between Fistclench and other posts. Seventy-nine percent said they were "much more" or "more" important at Fistclench, and nobody said they were less important. This same question was asked in the 1959 interviews, when all of the 15 respondents answered, "more important." The 1959 study also found that two-thirds of the men felt there was less griping.

Tables 5 and 6 summarize information obtained from the open-end questions, nrs. 10 and 11, which instructed the respondent to list,

respectively, the "three most important good points" and the "three most unfavorable or poor things...." about the feeding situation at Fistclench. The purpose of these questions was to search for reasons for satisfaction or dissatisfaction without the restrictions imposed by specific questions; however, for the most part, the results are simply verification of data obtained from the more formal questions. Respondents provided 0 to 4 different "points" for each question. Sometimes a respondent might give the same answer two or three times, expressed in different words. In such cases only one response was tabulated. Responses were grouped into categories, as shown in the tables, on the basis of content. Results are given as the percent of men listing each "point." Considered over-all, the "good points" predominated, 104 to 74. Evidently it was easier for the men to think of "good things", since if instructions had been followed, there would have been 129 each.

Under the broad category "Food", general things were mentioned as "good", whereas specific lacks -- "no fresh milk", "no fresh vegetables", -- were most often reported as "poor points." Under the "Personnel" category it may be noted that, while the spontaneous good points were not nearly as frequent as under "food", the "poor things" were almost nonexistent. Most of the "poor things" fell into the "Service" category. Half of the men said that the feeding situation was "too crowded" and about one-fifth listed each of a number of related complaints. Crowding and rushing at meals was certainly an objective fact since, during much of the time, the mess hall was taxed beyond normal capacity. But 40 percent of the men listed "good scheduling" as a positive factor.

We can assume that this represents appreciation of the efforts made to minimize inconvenience.

Interview data obtained in 1959 suggested that the cooks were given special status. A similar observation was made in connection with groups of Navy men living in isolation in the Antarctic. Cooks, along with radio operators, were consistently given the highest status positions in the groups (4). It was also thought that the other men tended to feel affection, friendliness, and appreciation toward them because of their close relationship to the primary source of comfort -- food. Table 7 gives the results of two questions designed to test this supposition. Question nr. 5, "How good a job are the cooks doing?", tends to support it. Eighty-two percent of the men thought the cooks were doing an excellent or above average job, while only two percent (one man) said "below average." Of course, we do not have an independent evaluation of the cooks' performance, but this strong response conforms to the general picture of appreciation of food and food-related matters. The results on Question nr. 7, referring to the way men "feel about the cooks and other mess personnel," while it does not directly contradict this thesis, does fail to provide further support. There is a symmetrical distribution about the central point represented by, "They are liked just about as much as any of the other fellows." Perhaps this only demonstrates the importance of the way a question is asked. It is a manly thing to show one's liking for another man by appreciating and respecting him for doing his job well, but not to recognize the liking directly.

Evaluation of Stress

In interpreting the 1959 results, stress was considered as a possible inter-current condition or explanatory principle. While there was some evidence of the presence of psychological stress in some individuals, in general the results of the 1959 study did not support this assumption. However, the possibility of psychological stress was considered salient enough that some questions in the 1960 study were devoted to exploration of areas where evidences of stress might be found.

Question nr. 18 and 19 asked respondents to list, respectively, the three "most favorable" and the three "most unfavorable" things about being at Fistclench. These questions, like the similar ones about the feeding situation, were designed to search out possible sources which had not been anticipated in the specific questions. The answers were again categorized according to content. The results are presented in Tables 8 and 9 in terms of the percentage of men listing each point. Again, respondents listed 0 to 4 "points."

Over-all, favorable and unfavorable points were given with about equal frequency -- 94 and 107. In the broad category, "Personnel Related", there were many more "good" than "bad" points listed. About one-third of the men liked "relaxed discipline", and 19 percent commented favorably on "less harrassment." Table 9, "unfavorable things" has only three sub-categories in this area and these with low frequencies. This is an indication of the relative absence of personal friction which is shown on several of the other questions. Similarly "Work Related" comments were mostly favorable ones. The opposite is true for the

other two broad categories. The "General, Situation Related" category has "isolation" going up to 30 percent, and the specifics of "poor mail service" and "adverse weather" even higher. These are not compensated by the favorable points such as "adventure" and "better pay."

Similarly, the "Living Conditions" category carried a considerable burden of unfavorable comments, with "limited recreation" leading the list. The favorable points were both more general and less frequent. It may be noted that food and the feeding situation were rarely mentioned. This omission is not considered important. Although the instructions did not so direct, it is likely that the respondents assumed that food was to be disregarded since they had already been asked about it. Generally speaking, this material was negative from the standpoint of the study, since it failed to call attention to any important new "stress" areas.

Question nr. 17 was designed to get more particular information in regard to the men's feelings about some of the possible sources of irritation or dissatisfaction. They were asked to state their opinions about the amount of improvement that might be possible in various aspects of the living situation. In contrast to Questions nrs. 18 and 19, here everyone had to take a stand. Although a feature may be considered unfavorable, it may not be important in determining the men's over-all attitude, particularly if they feel that it is as good as possible. Results are given in Table 10. They show little more than Table 9, except, perhaps, indirectly. Recreation and mail service could be improved considerably; messing and working conditions are

pretty good. The last three features in the tables are interesting. Objectively, the water supply was bad, sleeping facilities generally cold and uncomfortable, and the latrine distant and inconvenient, yet these things were seldom mentioned in the free-response question. We now see the reason. Most of the men felt they were being taken care of about as well as possible in these matters, therefore they did not become sources of resentment or dissatisfaction.

Questions were asked specifically about three factors concerned with interpersonal relations as these might be indicators of the presence of stress. Included were questions on drinking (Q. nr. 13), fighting (Q. nr. 14) and military control (Q. nr. 15). Results are summarized in Table 11. Again, scale categories have been grouped for simpler presentation.

Drinking to excess, or the men's feelings about drinking, might indicate stress, although, of course, this area would also be affected by the availability of liquor. (Beer was available in the PX, but spirits which could be obtained only through the clubs in Thule or Tuto, were scarce). Answers to Question nr. 13 show a completely uniform distribution of opinion as to whether drinking represented a greater, lesser, or the same degree of problems as at a Stateside post. Certainly, no particular stress is indicated. In the 1959 study, there was also divided opinion with a trend toward considering it as a more serious problem.

Fighting or quarreling would be a more direct indicator of stress. The results (Q. nr. 14) show a tendency toward the belief that such behavior was more frequent than at Stateside posts. Half of the men

said "more", while 30 percent said "less." This suggests the presence of some added friction, but is not very definite. It is noted that there was no spontaneous mention of this factor in the free-response questions.

Answers to the question (Q. nr. 15) about military control, reflect the same attitudes as the free-response question. Most of the men perceived military control as "loose and informal", and they liked it that way. It is interesting to note that only one man perceived discipline as "informal" and expressed dislike for such informality.

Question nr. 16 explored certain additional aspects of the living situation judged to be possible sources of dissatisfaction. Respondents were asked to rate the degree to which these things bothered them. The word "bothered", was used to suggest an affective rather than a judgmental approach. Table 12 presents the results. The two categories representing the greatest degree of "bother" have been combined. The only category which shows a high frequency of "bother" is "no female companionship", which is quite understandable and, perhaps, indicates that the men were answering honestly. "Cold weather" and "wind", both important physical realities, were placed in the higher categories of "bother" by about one-fifth of the men; and the same proportion indicated concern with "isolation" and "living closely with others." Although a majority of men were bothered by these things at least "once in a while", the results cannot be considered indicative of any great disturbance. It is interesting to note the relative lack of concern about three of the constant and obvious unusual features -- snow, constant daylight, and the tunnels. The information obtained by this

question is consistent with that presented earlier. No important chronic stress focus has been indicated.

Food as a "comforter"

Psychological study of groups of Navy men living at isolated Antarctic stations throughout the winter has pointed up the importance of food: "Food is one of the few ways through which an individual receives emotional gratification during isolation. Poorly prepared food, therefore, has a direct influence on the well-being of the group" (4). The typical "high-morale" pattern of response found in the present study suggests such a "non-functional" use of food. Not only does it provide nutrition, immediate bodily comfort and satisfaction, and esthetic enjoyment, but it may also serve as part of, or be central to, a complex set of attitudes built up as defense against the environment.

It is, of course, common to find appreciation of food associated with good morale, but it should be recognized that food is but one factor contributing to morale and efficiency. Certainly, there have been instances where well fed troops have been seriously low in morale for other reasons. Housing, discipline, and many other factors can contribute. But it is also common knowledge that food may serve as a focus of dissatisfaction arising from other causes. Man may complain about the food when it is perfectly adequate and would be like under other circumstances. The real source of dissatisfaction may be the type of duty, the officers, or something else that they are denied the opportunity to complain about. But food is a safe target, a scape-goat. The validity of this casual sequence may be questioned, but it is logical.

It was thought that this reaction might take place in the Camp Fistclench situation. Certainly many things would suggest the possibility -- hard work, primitive living conditions, long hours, isolation, lack of normal social activities and recreation, etc. Obviously this was not the case, since attitudes were consistently good. Further, it seemed that food played an important role in the men's over-all adjustment. However, the hypothesis that the feeding situation was a sole source of satisfaction and comfort was not strongly supported. One bit of negative evidence lies in the fact that the food preference ratings by the 13 "repeaters" were lower in August than in July, whereas the opposite would be required by the "comfort" hypothesis. Definitely the picture was not one of men seeking almost in desperation for anything that might offer relief. The best evidence that, in general, they were a well-adjusted group, capable of considerable adaptation, lies in the failure to find any particular evidence of psychological stress. This was true in 1959 and again in 1960, even though the present study was broadened in order to explore more possible areas where such stress might appear. Certain sources of dissatisfaction were located, such as poor recreation facilities, poor mail service, no female companionship; complaints which may be considered quite reasonable. Significantly, there was not much complaint about a lot of "unavoidables" where it might have occurred, and would probably have occurred if morale had been low.

Thus, the present study has contributed little new knowledge about the possible "comfort" role of food. It remains speculative. The great importance of food was confirmed, but there was no strong evidence that

normally non-food areas were affected. The simple explanation that the men liked food better primarily because of their greater physiological need for food cannot be rejected. On the other hand, neither can one reject the hypothesis that the strong orientation toward food was part of a total pattern of defense against the hostile environment.

Summary and Conclusions

The present study was designed as a follow-up of an exploratory investigation of food attitudes made at Camp Fistclench in the summer of 1959, and was done with a larger sample of respondents and a better controlled methodology. The earlier study had found strong positive attitudes toward food that seemed to have beneficial effects in other areas. It failed to show the presence of any important amount of psychological stress. The 1960 study confirmed the essential findings of the previous one and provided some additional related information.

Results may be summarized as follows:

1. High favorable attitudes toward most aspects of the feeding situation were again demonstrated.
2. This generally favorable attitude did not seem to affect responses to particular foods as served at Fistclench, which were rated relatively low.
3. Little evidence was found of the presence of psychological stress.
4. There appeared to be an attitude of acceptance toward many of the unusual and probably uncomfortable features of camp life but which the men felt were "as good as possible", although there were complaints about others which the men felt could be improved.

5. The evidence neither definitely rejects nor definitely confirms the theory that in this situation food is turned to a special source of comfort, independent of its physiological importance.

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Table 1

Background information on Camp Fistclench respondents

Characteristic	Categories	Number in each category		
		Group I	Group II*	Total
Age:	20 & below	4	5	9
	21-24	15	4	19
	25-29	7	2	9
	30 & above	4	2	6
Marital Status:	Married	17	10	27
	Single	13	3	16
Education:	College graduate	14	0	14
	High school graduate	9	8	17
	Below high school graduate	7	4	11
	No answer	0	1	1
Years in Service:	1 or less	13	1	14
	1+ to 3	7	8	15
	3+ to 6	4	2	6
	More than 6	6	2	8
Greenland Tours:	First	13	2	15
	Second	9	10	19
	Third	7	1	8
	Fifth	1	0	1
Fistclench Tours:	First	23	11	34
	Second	5	2	7
	Third	2	0	2
Fistclench Volunteer:	Yes	15	7	22
	No	15	6	21
Return next year:	Yes	10	2	12
	No	19	10	29
	No answer	1	1	2
Health:	Excellent or Good	26	10	36
	Fair	4	3	7
	Poor	0	0	0

*Data from first administration of the questionnaire.

Table 2

Comparison of Fistclench food preference ratings
with those obtained in National surveys

Average rating - National surveys	7.1
Average rating - Camp Fistclench	6.3
Number of foods	41
Amount of difference	
(Nat'l. surveys minus Fistclench)*	Nr. of foods
-0.4 to 0.4**	11
0.5 to 0.9	12
1.0 to 1.4	12
1.5 to 1.9	6
Total	41
*Positive values indicated higher ratings in the National surveys.	
**Essentially no change.	

Table 3

Changes in average preference rating for foods rated at
first and second questionnaire administration by Group II subjects

Subject nr.	Nr. of foods rated	Average change (second-first)	Significance level
38	48	0.31	2% Increase
37	47	0.34	1% _____
35	49	0.10	N.S.
32	45	0.07	N.S. No change
39	50	-0.04	N.S.
41	45	-0.04	N.S.
31	41	-0.10	N.S. _____
34	39	-0.31	5%
33	38	-0.63	0.1% Decrease
36	46	-0.67	0.1%
43	50	-0.72	0.1%
42	48	-0.79	0.1%
40	47	-0.83	0.1%

Table 4

Summary of answers to questions relating to
food and the feeding situation

Question nr. 3. How monotonous does the chow seem?		
	<u>Nr.</u>	<u>%</u>
Not at all	21	50
Slightly + somewhat	19	45
Very	<u>2</u>	<u>5</u>
Total	42	100
Question nr. 4. Quality of the food supplied:		
Excellent + above average	25	58
About average	13	30
Below average + poor	<u>5</u>	<u>12</u>
Total	43	100
Question nr. 6. Gripping compared to other Army posts:		
Less + Much less	32	74
About the same	8	19
More + Much more	<u>3</u>	<u>7</u>
Total	43	100
Question nr. 8. Feeding situation (food, service, general atmosphere) compared to other posts:		
Much better & somewhat better	20	46
About the same	17	40
Much worse & somewhat worse	<u>6</u>	<u>14</u>
Total	43	100
Question nr. 9. Importance of food and meal times compared to other Army posts:		
Much more + more	34	79
About the same	9	21
Much less + less	<u>0</u>	<u>0</u>
Total	43	100

Table 5

Percent of subjects mentioning various "Good Points"
about the feeding situation at Fistclench. (N=43)
(Question 10)

Category	"Good Point"	Percent
<u>FOOD</u>		
	Good Food	30
	Good supply, enough	40
	More variety, less monotonous	18
	Good preparation	28
	Specific food mentioned	14
<u>PERSONNEL</u>		
	Good cooks	18
	Friendly cooks	7
	Personnel clean, neat	18
<u>SERVICE</u>		
	Good scheduling	40
	"Better" service	7
<u>MISCELLANEOUS*</u>		21
*Includes:	"served hot", "can select size of portions", "always dessert", "coffee breaks." Respondents were asked to list three good points; 0 to 3 were given by each man. The total number, summarized over categories and respondents, was 104.	

Table 6

Percent of subjects mentioning various "Unfavorable or Poor Things" about the feeding situation at Fistclench (N=43)
(Question 11)

Category	Item	Total N = 43
<u>FOOD</u>	No fresh milk	18
	No fresh vegetables	14
	Poor preparation	9
	Not enough variety	2
	Miscellaneous	9
<u>PERSONNEL</u>	General complaints	2
<u>SERVICE</u>	Too crowded	50
	Rushed at meals	21
	Poor scheduling	18
	Breakfast too early	14
	Miscellaneous	14
<p>Respondents were asked to list the three "most unfavorable or poor things"; 0 to 4 were given by each man. The total number, summarized over categories and respondents, was 74.</p>		

Table 7

Summary of opinions of cooks

Question nr. 5	How good a job are the cooks doing.	Nr.	%
	"Excellent" + "Above average"	35	82
	"About average"	7	16
	"Poor" + "Below average"	1	2
	Total	43	100
Question nr. 7.	How do most men feel about cooks and other mess personnel?		
	"Exceptionally well-liked" + "Liked somewhat more than others"	7	16
	"Like about as much as others"	30	69
	"Generally disliked" + "Disliked somewhat more than others."	6	15
	Total	43	100

Table 8

Percent of respondents listing various
 "Things Most Favorable" about being at
 Fistclench (N=42). (Question 18)

Category	Item	Percent
<u>PERSONNEL RELATED</u>		
	Less "harassment"	19
	Relaxed discipline	31
	Good team spirit, leadership	17
	Close relation to officers	5
<u>WORK RELATED</u>		
	Interesting, "with professionals," etc.	29
	Conditions, hours, etc.	19
<u>LIVING CONDITIONS</u>		
	Good facilities	19
	Better food	14
<u>GENERAL, SITUATION RELATED</u>		
	"Adventure"	19
	Better pay, save more money	12
	Other reasons	17
<p>Respondents were asked to list the three "most favorable things"; 0 to 3 were given by each man. The total number, summarized over categories and respondents, was 94.</p>		

Table 9

Percent of respondents listing various
 "Most Unfavorable Things" about being
 at Fistclench (N=42). (Question 19)

Category	Item	Percent
<u>PERSONNEL RELATED</u>		
	Dislike leaders	7
	Discipline inadequate	7
	Other complaints	10
<u>WORK RELATED</u>		
	Long hours	5
	Shortage of materials, equipment	10
<u>LIVING CONDITIONS</u>		
	Limited recreation	40
	Inadequate PX	10
	Lack of fresh food	5
	Live too close together	17
	Other complaints	14
<u>GENERAL, SITUATION RELATED</u>		
	Isolation	30
	Poor mail service	36
	Separation from home	12
	Lack of female companionship	14
	Adverse weather	38
Respondents were asked to list the three "most unfavorable things." 0 to 4 were given by each man. The total number, combined over categories and respondents, was 107.		

Table 10

Opinions about facilities. Percent of respondents indicating each category of possible improvement. (Question 17)

	Nr.	"As good as possible"	Could be improved		
			"A little"	"Quite a bit"	"whole lot"
Recreation	42	14	46	26	14
PX	42	29	40	24	7
Mail service	42	38	26	21	15
Messing	41	59	31	10	0
Working conditions	42	57	29	7	7
Living quarters	42	54	29	12	5
Water supply	42	64	22	12	2
Sleeping facilities	42	62	29	7	2
Latrine	42	71	19	5	5

Table 11

Summary of answers to questions concerning interpersonal relationships

Question nr.	Does drinking become a serious problem, as compared with stateside posts:	Nr.	%
13.	Much less + Somewhat less	13	32
	Just about the same	15	35
	Much more + Somewhat more	14	33
	Total	42	100
14.	Fighting or quarreling, as compared to stateside posts:		
	Much less + Somewhat less	13	30
	About the same	10	23
	Much more + Somewhat more	20	47
Total	43	100	
15a.	Opinions about formality of military control:		
	Very + Somewhat loose and informal	23	55
	About average	16	38
	Very + Somewhat tight & formal	3	7
Total	43	100	
15b.	Do you like it the way it is?		
	Yes	29	67
	Indifferent	11	26
	No	3	7
Total	43	100	

Table 12

Feelings about features of the Icecap
and Fistclench environment. Percent of
respondents indicating each degree of "Bother."
(Question 16)

	N	Not at all	Once in a while	Frequently	Most of the time
Cold weather	42	36	42	10	12
Wind	42	31	47	17	5
Whiteout	42	67	26	5	2
Constant daylight	43	88	12	0	0
Snow everywhere	42	69	22	2	7
Living in tunnels	42	72	19	2	7
Isolation	42	14	57	19	10
Sleeping	42	69	21	10	0
Living closely with others	42	50	31	7	12
No female companionship	43	7	37	28	28

QUESTIONNAIRE ON FOOD AND LIVING CONDITIONS

Name _____ Grade _____ Date _____

You have been asked to participate in a research study of living conditions here on the icecap. We are interested in men's reactions to the conditions under which they live and work. You can help by giving your own personal opinions and feelings. This is not a test. There are no right or wrong answers. Just answer each question honestly according to the way you feel about it. If you are not sure what a question means, ask the monitor.

The information you give will be treated as confidential. Completed questionnaires will be seen only by the monitors, and by the QMC scientists who will analyze the data back in the States. You are asked to give your name only as a sampling control.

Please do not discuss the questions with other people either now or after you finish. We will want their own personal reactions when they come to the sessions later on.

1. Background information:

Age _____ Total time in Service _____
 Married or single _____ Tours in Greenland _____
 Education _____ Tours at Fistclench _____
 (highest grade completed)

2. Did you volunteer for this Fistclench duty: Yes No

Comment if you wish _____

Would you want to return next year: Yes No

On the next five pages are listed 50 foods, most of which have been served in the mess here. We want to know how well you like each one as served in the Camp Fistclench mess. Answer by circling the phrase to the right of the food name which best tells how well you like that food as served here. If you have not eaten one of the foods while here at Fistclench, circle "NOT TRIED" to the left of the food name.

X 9 8 7 6 5 4 3 2 1

not tried	Fried chicken	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely
not tried	Buttered asparagus	like extremely	like very much	like moderately	like slightly	neither like nor dislike	dislike slightly	dislike moderately	dislike very much	dislike extremely

(Forty-eight more foods were listed, each with its own scale like those above, as follows:)

Hot biscuits	Fried fish	Baked fish	Roast Beef
Bacon	Tossed salad	Ice cream	Coffee
Sausage links	Meat balls and spaghetti	Creamed potatoes	Mashed potatoes
Fried liver	Buttered broccoli	Macaroni and cheese	Lemonade
Fresh tomatoes	Apple cobbler	Hot cakes	Creamed carrots
Meat loaf	Lettuce and tomato salad	Hamburger steak	Milk -- beverage
Plain white cake		Creamed peas	Baked ham
Pork chops	Fresh oranges	Tomato soup	Hash brown potatoes
Ham loaf	Shrimp	French toast	Creamed beef on toast
Cucumbers	Grilled steak	Chili con carne	Fried ham
Omelet	Fried eggs	Cocoa	Beef stew
Green beans	White bread	Cherry cobbler	Vegetable soup
	Roast pork		

3. How monotonous does the chow here at Fistclench seem to you?

Not monotonous at all	Slightly monotonous	Somewhat monotonous	Very monotonous
--------------------------	------------------------	------------------------	--------------------

4. What do you think of the quality of the food supplied to the mess here at Fistclench, that is, the supplies the cooks have to work with? Would you say that the quality is:

Excellent	Above average	About average	Below average	Poor
-----------	------------------	------------------	------------------	------

5. How good a job do you think the cooks are doing?

Excellent	Above average	About average	Below average	Poor
-----------	------------------	------------------	------------------	------

6. Do you hear much griping about the food here, as compared to other Army posts?

Much more	More	About the same	Less	Much less
-----------	------	-------------------	------	--------------

7. In your opinion, which of the following statements best expresses the way most of the men here feel about the cooks and other mess personnel.

____ They are exceptionally well liked.

____ They are liked somewhat more than the other fellows.

____ They are liked just about as much as any of the other fellows.

____ They are disliked somewhat more than the other fellows.

____ They are pretty generally disliked.

8. How would you say the feeding situation here (the food, the service, the general atmosphere of the mess hall) compares with feeding situations at other posts where you have been:

Much better	Somewhat better	About the same	Somewhat worse	Much worse
----------------	--------------------	-------------------	-------------------	---------------

9. Do you feel that food and meal times here at Fistclench are more important, less important, or about the same as in other Army places you have been?

Much more important	More important	About the same	Less important	Much less important
------------------------	-------------------	-------------------	-------------------	------------------------

10. List what you feel are the three most important good points about the feeding situation here:

- a. _____

- b. _____

- c. _____

11. List the three most unfavorable or poor things about the feeding situation here:

- a. _____

- b. _____

- c. _____

12. In general, how has your health been while here at Fistclench?

Excellent	Good	Fair	Poor
-----------	------	------	------

13. Do you think that drinking (alcoholic beverages) becomes a problem for the men stationed here, for example, as compared to what it would be at a stateside post?

Much more serious	Somewhat more serious	Just about the same	Somewhat less serious	Much less serious
----------------------	--------------------------	------------------------	--------------------------	-------------------------

14. How about fighting or quarreling among the men, again as compared to a stateside post?

Much more	Somewhat more	About the same	Somewhat less	Much less
--------------	------------------	-------------------	------------------	--------------

15. How about military control and supervision? Do you think it is:

Very tight and formal	Somewhat tight and formal	About average	Somewhat loose and informal	Very loose and informal
--------------------------	---------------------------------	------------------	-----------------------------------	----------------------------

Do you like it the way it is: Yes Indifferent No

16. Listed below are certain features of the icecap and Camp Fistclench environment that may bother some people. We want to know how you feel about these things. For each thing listed in the left hand column place a check under the phrase which best represents your personal feelings.

	<u>Doesn't bother me at all</u>	<u>Bothers me once in a while</u>	<u>Frequently bothered by it</u>	<u>Bothered by it most of the time</u>
Isolation	---	---	---	---
Cold weather	---	---	---	---
Constant daylight	---	---	---	---
Wind	---	---	---	---
Whiteout	---	---	---	---
Snow everywhere	---	---	---	---
Living in snow tunnels	---	---	---	---
Sleeping	---	---	---	---
No female companionship	---	---	---	---
Living closely with others	---	---	---	---

17. What is your opinion about the facilities or conditions listed below? Do you think they are as good as possible in such an outlying camp, should they be improved, or what? For each thing listed in the left-hand column place a check under the phrase which best represents your personal opinion.

	As good as possible	Could be improved a little	Could easily be improved quite a bit	Could easily be improved a whole lot
Recreation	---	---	---	---
Messing	---	---	---	---
Latrine	---	---	---	---
PX	---	---	---	---
Water supply	---	---	---	---
Working conditions	---	---	---	---
Living quarters	---	---	---	---
Sleeping facilities	---	---	---	---
Mail service	---	---	---	---

18. Write in below the three things which you think are the most favorable about being here at Fistclench?

- a. _____

- b. _____

- c. _____

19. What are the three most unfavorable things?

- a. _____

- b. _____

- c. _____

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