

GENDER OR STATUS: THE EFFECTS OF DIFFERENCES
IN SEX ON BEHAVIOR UNDER CERTAIN
CONDITIONS OF DISADVANTAGE*

Henry A. Walker
and
Louise Smith-Donals

Department of Sociology
Stanford University

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INTRODUCTION

Conventional wisdom suggests that men and women behave in fundamentally different manners. Although individual variations in behavior are recognized, women generally are assumed to be more passive, dependent, compliant, cooperative, and socially oriented than men, who are believed to be more aggressive, independent, competitive, and task-oriented social actors. However, in most cases, conventional wisdom has been put to the test in studies involving both men and women. Behavior consistent with the stereotypes suggested above has been found in mixed-sex, small group studies of the effects of status on collective decisionmaking (Strodtbeck and Mann, 1956; Strodtbeck et al., 1957; Zander, 1969; Messe et al., 1972; Maier, 1970) as well as in "sex-role" studies of male-female differences (see Chafetz, 1974; and Maccoby and Jacklin, 1974, for cogent summaries).

It is particularly noteworthy that research involving same-sex samples of men and women has been unable to document sex differences in behavior with similar consistency. Some investigations which compare performances of all-male and all-female groups do report differences (Allen and Crutchfield, 1963; Bass, 1967; Julian et al., 1969; Weil and Sobieszek, 1976; Oskamp and Perlman, 1965), but not all reported differences fit the expected models of behavior. For example, Zander (1969) found women more concerned with personal performances, than men who were more concerned with group outcomes. In studies using the Prisoner's Dilemma Game, some investigators have found women more competitive than men (cf. Rapaport and Chammah, 1965). In

addition, many studies fail to find significant sex differences in behavior (Wiley, 1973; Spoelders-Claes, 1973; Lockheed and Hall, 1976).

The apparent inconsistencies in this literature arise from several sources which are distinguishable from the issue of the existence or nonexistence of sex differences in behavior. First, it appears that sex differences may be reported more often than similarities. As a consequence, the extent to which the literature is biased in favor of sex differences is not known (Maccoby and Jacklin, 1974). Second, due to irregularities in reporting and inconsistent findings, it is not clear which behaviors are actually differentiated by sex. Third, research findings are taken from a multitude of studies which utilize a variety of settings, samples, and observational techniques. Hence, it is difficult to compare observations and to construct empirical generalizations. Fourth, since research findings are inconsistent, it is possible to construct conflicting empirical generalizations. As a result, theoretical development is hampered. Finally, because many studies are designed to demonstrate the existence (or nonexistence) of sex differences rather than to test theories, it is often unclear which, if any, theoretical variables are operationalized in some studies.

Theories of sex-role socialization and status-effects theories are usually offered as opposing explanations for the behavior of women and men in task groups, but neither appears to adequately account for between-groups differences in behavior of members of same-sex groups. While we do not attempt to overcome all the deficiencies extant in the literature, this paper does

(1) consider the implications of both status-effects and sex-role socialization theories for behavior in same-sex groups and (2) report the results of an experimental investigation of responses to endorsement of task structure among members of all-male and all-female task groups. The relative merit of those theories is then evaluated in light of our findings.

Status-Effects Versus Sex-Role Arguments

The status-effects theories argue that differences on a status characteristic such as gender organize interaction in task-oriented groups. (See Berger et al., 1977, for a highly-formalized and extensively researched theory of expectation states and status effects.) The theory suggests that lower status actors, when interacting with higher status actors, are more passive, compliant, and cooperative, while higher status actors are more aggressive, competitive, and persuasive. Thus, in mixed-sex interaction, lower status female actors are expected to be more passive and cooperative than higher status males. Indeed, research on mixed-sex groups has yielded findings which are highly consistent with status-effects theory (e.g., Tuddenham et al., 1958; Aries, 1976; Whittaker, 1965; Strodbeck and Mann, 1956). That is, men tend to be more competitive, to talk more--both absolutely and to one another--to attempt to exercise and to actually exert more interpersonal influence than women.

Theories of sex-role socialization suggest that women and men behave differently because they are socialized to different roles (Bales and Slater, 1955; Zelditch, 1955). As girls, women learn that they are expected to be dependent, nonaggressive, and

socially oriented, whereas boys learn to be independent, competitive, and task oriented. In the extreme version of this theory, sex roles are assumed preeminent; hence women and men, if properly socialized, generally behave in manners consistent with the role expectations of their sex. A more moderate version of this argument assumes that sex roles are more salient under some (specifiable) conditions than others. That is, women and men may learn the same sets of behaviors--and are able to perform them--but learn that certain behaviors are appropriate to their sex only in specific situations.¹ In general, the implications of both sex-role and status-effects theories are similar for interaction in mixed-sex groups.

It is with respect to interaction in single-sex groups that the implications of the two theories differ. While it may appear that status-effects arguments are irrelevant to interaction in groups, the members of which share the same &erx-etatus, such is not the case. This is due to the qualitative differences in the comparisons made of interaction in mixed- and same-sex groups. In mixed-sex groups, the behaviors of men and women are compared

¹An argument which utilizes ideas from sex-role and status-effects theories can be labelled the legitimation argument (cf. Meeker and Weitzel-O'Neill, 1977; and the work of McMahan and associates [McMahan et al., 1976; Fennel et al., 1978]). The legitimation argument suggests that some task behaviors are legitimate for some actors but not for others. Fennel et al. have argued that laboratory task groups are functioning organizations and that behaviors which are typical of high status actors are legitimate for males but not for females in organizational settings. Hence, unless the effects of legitimation are overcome, sex differences in behavior are anticipated even in between-group comparisons of same-sex groups.

within groups. Thus if sex is a status characteristic which organizes interaction, members of different sex-statuses should exhibit different kinds of behaviors. Or, if sex is a preeminent role or if the situation is one in which sex roles are salient, men and women will exhibit different kinds of behavior because they have been socialized to behave in different ways.

In same-sex groups, the behaviors of men and women are compared between groups. While status-effects theories can account for differentiation on some basis other than sex, if women and men are equated on those other factors, the theory would predict no differences in the behaviors of women and men.² This is true even if the patterns of behavior within groups are identical to those exhibited in mixed-sex groups. On the other hand, if behavior is determined by sex role learning, individual females and males should exhibit patterns of behavior similar to individual males and females in mixed-sex groups. As a consequence, comparisons of males and females should indicate significant sex differences. The study we report is designed to test the predictions these two theories make for behavior of women and men in same-sex groups.

²The most recent version of status characteristic theory (Berger et al., 1977) argues that status characteristics will organize interaction in groups of status equals if the status characteristic is task-connected. However, findings from investigations which have examined the effects of task characteristics on behavior (e.g., Milton, 1959; Taynor and Deaux, 1975) suggest that males are assumed more competent than females, independently of sex-typing of the task.

THE ENDORSEMENT STUDIES

The nature of legitimacy and the effects of variations in legitimacy on behavior are unresolved issues (see Schopler, 1965; Michener and Burt, 1974, 1975). We investigated sex differences in responses to legitimacy as part of a series of investigations of legitimation and power (Zelditch et al., 1977; Walker, 1979; Thomas et al., 1981). The investigations use a setting in which actors work at a collective task under conditions of relative disadvantage. The disadvantage can be reduced if the actors alter the experimental situation. In the study we report, endorsement (a form of legitimation) is varied experimentally by informing subjects that their peers unanimously support the status quo. Legitimation theory suggests that group members who believe the task situation is endorsed will be less likely to attempt to alter the task situation than group members who believe the situation to be unendorsed.

The setting is conducive to a study of sex differences in response patterns. When same-sex homogeneous groups are used, initial status distinctions are minimized. A decision to alter the structure requires subjects to define the situation as disadvantageous, to act competitively, to initiate a proposal to alter the situation, and, in the endorsed condition, to disregard the opinion of others, i.e., not comply with same-sex peers. It is widely believed that women and men are differentiated on each of these behaviors.

If sex differences in behavior result primarily from the effects of sex-role socialization, one would expect women and men to behave differently in both conditions of the study. If

findings in the literature are taken as evidence of patterned behavior, men should be more likely to perceive the situation as disadvantageous (Kahn, 1972), to act more self-interestedly (Lane and Messe, 1971) and to act more independently, i.e., to be less responsive to pressures to conform (Allen and Crutchfield, 1963).

On the other hand, if sex differences in behavior result primarily from the effects of differences in sex-status, one would expect men and women to behave similarly in both conditions of the study. That is, definitions of the situation, motivations to compete, rates of initiation of proposals and attempts to alter the situation should be similar for members of both sexes. In addition, there should be no differences in responses to conformity pressure from same-sex peers. The two sets of predictions, along with those suggested by theories of legitimacy, are stated below.

Predictions of Legitimacy Theory

Hypothesis 1. Subjects whose co-workers endorse the task situation are less likely to attempt to change it than subjects whose co-workers have not endorsed the task situation.

Predictions of Sex-Role Theory

Hypothesis 2A. Female subjects are less likely to attempt to change the task situation than male subjects.

Hypothesis 2B. The degree to which co-workers' endorsement of the task situation reduces subjects' attempts to change the situation is greater for female than for male subjects.

Predictions of Status-Effects Theory

Hypothesis 3A. Female subjects are as likely to attempt to change the task situation as male subjects.

Hypothesis 3B. The degree to which co-workers' endorsement of the task situation reduces subjects' attempts to change the situation is the same for female subjects as it is for male subjects.

Descriptions of the research setting, characteristics of the task and experimental protocol are included in the next section.

SAMPLE, SETTING, AND TASK

Thirty-eight male and forty female undergraduates were randomly assigned to treatments in a 2 x 2 factorial design. The study utilized two levels of endorsement (unendorsed and endorsed) in addition to variations in sex of subjects.

Subjects were provided videotaped task instructions during which endorsement was experimentally manipulated. After instructions were given and one practice trial was completed, subjects worked up to ten trials at the task, or until their participation was terminated by the experimenters.

Setting and Task Procedures

Subjects arrived at the Laboratory for Social Research at Stanford and were individually seated in small, sound-proofed rooms. Each room contained a video monitor, instruction booklet, and materials needed for written transmission of messages. Each subject was identified by a color name to reduce attributions of status differences. One subject, "Orange," was always a confederate.

Subjects were informed that they would work with four other persons, all of whom were of the same sex, on a series of "graph construction problems." The task was a modified version of the Faucheux and Mackenzie (1966) Type B task. The task required each subject to successfully construct a series of five-point, multi-line graphs. At the start of each trial, each subject was provided a set of points and lines which comprised part of the solution. No subject held all the information necessary to complete the answer graph. Subjects had to exchange information in order to construct the correct solution. The exchange of information was accomplished by passing written messages. To insure cooperation, subjects were told that \$.25 would be awarded the group for each correct solution submitted on each of ten trials. The group earnings (maximum of \$12.50) were to be divided equally among team members at the end of the study. A trial was considered complete when the experimenters (or office) had received an answer from each subject.

Each group was assigned to work in a Bavelas (1950) "wheel" structure. The structure consisted of a hub or central position and four peripheral positions. Each peripheral position was

connected to the hub by one full communication channel. As a consequence, only the hub (which was always occupied by the confederate) could communicate directly with every other member. The experimental team intercepted all messages, and, in reality, each subject played against the confederate.

Before they began the series of criterion trials, the group members were instructed that they could open additional communication channels (thus altering the task structure) by majority vote and payment of a group fee of \$.05 for each additional channel during each trial on which the new channel was open. The procedure for altering the structure was explained in detail and group members worked one practice trial prior to beginning the series of ten trials.

Experimental Manipulations

Subjects in the unendorsed condition were given the basic instructions and told to begin the practice trial. A short questionnaire was administered after the practice trial was completed. After the questionnaire was answered, the host reappeared on the video screen and indicated that because the group had worked so slowly on the practice trial, he was offering a bonus of \$1.25 on each trial to be paid to the first group member to submit the correct solution. Because a confederate occupied the hub of the wheel, no naive subject could expect to win the bonus. Under these conditions the confederate could ostensibly earn over ten times as much as any other individual. Each subject was faced with several possibilities at each trial. The subject could (1) continue to work at the task under

conditions of relative financial disadvantage and inequity, (2) withdraw from the study, or (3) devise some strategy which effectively altered the task conditions, e.g., by asking to open more channels, by asking to redistribute the bonus, or by behaving uncooperatively. Because each subject could communicate only with the confederate, the point at which the subject suggested some means of altering the experimental situation and of alleviating her or his disadvantage could be readily determined by examining messages which were transmitted. Each subject's participation was terminated at the point at which such an attempt occurred or after the completion of ten trials. The trial at which termination occurred was recorded, and after the subjects completed a post-session questionnaire, they were interviewed, debriefed, and paid for their participation.

Subjects in the endorsed condition received treatment identical to that of subjects in the unefvdor&ed condition up to the point at which the short questionnaire, administered after the practice trial, was answered. One questionnaire item asked, "Based on your experience with the practice problem, would you say you approve or disapprove of this communication system?" Responses were distributed on a five-point scale from "highly approve" to "highly disapprove."

After the questionnaire was answered, subjects received a memo from the office which purported to indicate the group members' responses to all the questionnaire items. The memo indicated that each of the subject's co-workers had highly approved the communication system. After the memo was distributed, the host reappeared on the video screen, introduced

the bonus procedures and instructed the group to start the set of criterion trials just as in the unendorsed condition. The other procedures in this condition are identical to those used in the unendorsed condition.

RESULTS

The basic behavioral datum is the number of trials a subject completes, and there are several possible sources of variation in that measure which might affect the basic result. It is not the wheel structure alone which disadvantages a subject, but the method of distributing the bonus coupled with the task structure. As a consequence, it might be expected that subjects who disapprove the task structure and/or the method of awarding the bonus might be more likely to attempt to change the task structure than subjects who approve those features of the task situation. Items on the short questionnaire and the post-session questionnaire asked subjects to indicate the extent to which they approved or disapproved the task structure and the bonus mechanism. Analysis of responses to those items indicates that both men and women initially approve the task structure, and while men express greater approval, the differences are not statistically significant ($F = .240$ at 1,74 d.f., $p = .625$).³ Subjects in the unendorsed condition generally expressed greater

³Data on several questionnaire items are missing for two subjects and this is reflected in the degrees of freedom associated with the F-statistic. The behavioral data are complete for all 78 subjects.

approval of the system than subjects in the endorsed condition, but those differences were also not statistically significant ($F = 1.786$ at 1,74 d.f., $p = .186$). Although subjects in all conditions expressed general disapproval of the bonus, there were no significant differences across experimental conditions ($F = .195$ at 1,74 d.f., $p = .66$) or by sex of subject ($F = .009$ at 1,74 d.f., $p = .924$).

Two sets of factors are important to our analysis. Legitimacy theory suggests that endorsement can inhibit subjects' attempts to alter the task structure while sex-role theory suggests that sex role behavior should also have an effect on subjects' responses to disadvantage. Two possibilities exist: Subjects who are inhibited may simply wait longer in the trial sequence before suggesting alteration, or they may never suggest alteration of the task situation. Hence, there is the possibility of between-group variation in both the mean number of trials completed and the numbers (or proportions of persons completing all ten trials. Comparisons of either of these measures can be misleading.

Neither measure takes into account the shapes of the distributions of responses. Quite different sets of responses may have the same mean value. In addition, we believe that treating intervals between trials as equivalent is inappropriate. A subject working at the seventh trial is working under quite different conditions than a subject working at the first or second trial. The subject working at the seventh trial (in either of the experimental conditions) believes that his or her co-workers have not challenged the structure up to that point.

After completing a few trials, a subject may begin to attribute endorsement of the task structure to his or her co-workers. Hence, the longer a subject works at the task the more reluctant s/he should be (by the endorsement principle) to attempt to alter the task situation.

We have therefore chosen to treat the dependent variable as a survival variable. Each subject enters the study and has an active "life" of from one to ten trials. On each trial a subject either survives, i.e., continues in the study, or is terminated. Differences in the survival experiences of subjects in several experimental conditions can be determined by comparing the entire survival curves of each group--the graph of the proportion of subjects surviving, plotted against time. An analysis based on survival curves has the advantages of comparing the complete response curves instead of an isolated point on those curves and of preserving the unique qualities of experiences at various points in time.

Several tests for significance of differences in survival curves exist (cf. Elandt-Johnson and Johnson, 1980; Mantel and Haenszel, 1959). One such test, described by Peto and Peto (1972; and Peto et al., 1977) is based on the notion that the probability of a subject surviving through some time, t , is a function of the degree of risk the subject faces in the interval from time 1 through $t - 1$, multiplied by the risk at t . Groups which have faced different degrees of risk will have different survival experiences. A test statistic can be calculated in a manner analogous to chi-square by subtracting the number of terminations expected on any trial from the observed number of

terminations, squaring the difference and dividing by the number of expected terminations. The realized values for each trial are summed to produce the test or logrank statistic. This statistic is distributed approximately as chi-square at $k - 1$ degrees of freedom and standard chi-square tables can be consulted to determine significance values.⁴

[Figure 1 about here]

Figure 1, the graph of the log of the survival functions for the unendorsed and endorsed conditions shows that the survival experiences of members of groups which worked in these conditions are quite different. The test statistic indicates that the observed differences are statistically significant ($\chi^2 = 5.269$, $p = .011$). Subjects in the endorsed condition were likely to complete more trials than subjects in the unendorsed condition.

[Figure 2 about here]

Figure 2 is the graph of the log of the survival functions for male and female subjects. The survival curves are different

⁴The statistic we report as chi-square is the Lee-Desu statistic which is generated by the survival program in SPSS (Hull and Nie, 1979). The statistic differs from the logrank statistic only in terms of the method of calculation. We also report an "ANOVA" calculated from Lee-Desu values which produces results consistent with ANOVA generated by other means of estimation. (See Breslow, 1975, for a discussion of this method and its comparability to estimates based on Maximum Likelihood.)

early in the sequence of trials but are very similar after the fourth trial. Women appear to have somewhat longer survival experiences than men; however, these observed differences are not statistically significant ($\chi^2 = 1.75, p = .095$).

[Figure 3 about here]

Figure 3, the graph of the log of the survival functions for each sex with experimental condition controlled, demonstrates that there are two sets of similar curves. One set represents the response curves for male and female subjects in the unendorsed condition, and the second set represents the curves of responses of males and females in the endorsed condition. Table 1 provides an ANOVA based on these four curves, (cf. Breslow, 1975). The findings indicate (1) a significant main effect of endorsement ($p = .02$), (2) no significant main effect of sex ($p = .19$) and (3) no significant endorsement and sex interaction ($p > .50$). These findings are generally more consistent with the predictions we attribute to status-effects theory than they are with the predictions of sex-role socialization theories.

[Table 1 about here]

DISCUSSION

This investigation of responses to endorsement of task structure examines the behavior of females and males in same-sex groups. The study requires women and men to work at the same task under the same conditions. Variation in our dependent

measure depends on subjects of both sexes deciding to undertake (or not undertake) behaviors which are generally associated with males in our society. Our findings indicate that under these conditions women and men behave quite similarly.

Women and men are about equally likely to attempt to alter the task structure in order to reduce inequity and disadvantage; and peer endorsement of the task structure has the effect of uniformly inhibiting attempts of both females and males to alter the task structure. These findings appear to be more consistent with a status-effects interpretation of behavior than with a sex-role socialization interpretation.⁵ There are, however, several issues which we wish to address.

First, our findings are taken from a study of middle and upper class college women and men. The literature suggests that women are less rigidly sex-typed than men and that middle and upper class persons are less rigidly sex-typed than members of the lower class. As the literature on family power suggests, children of middle or upper class parents may be more likely to have observed women (and especially mothers) acting in aggressive, persuasive, and instrumental ways. Thus, if sex-role socialization is a primary determinant of behavior, sex

⁵The status-effects interpretation assumes that sex is not activated as a status characteristic, i.e., sex is not task-connected (see Berger et al., 1977). If sex were task-connected the theory would suggest significant between-group differences. However, there is no evidence which suggests that our task is sex-typed.

differences in behavior should be minimized, by the social class characteristics of our sample.

Second, we fail to find a significant sex and endorsement interaction effect as suggested by sex-role theory. This piece of evidence is also consistent with our interpretation of status-effects theory; that is, under conditions of status equality the influence effects of endorsement are expected to be similar for members of both sexes. Women and men are expected to acquiesce to or resist influence to the same extent.⁶

While we are cognizant of the potential effects of the class-status of members of our sample, we do not believe that the possibility of an effect of social class reinforces theories of sex-role socialization. On the contrary, we believe that the effect is to point up an inherent weakness in theories of sex-role socialization. As typically stated, the arguments are too general; therefore we believe that the effect is to moderate the theory, i.e., move toward clearer specification of the conditions under which sex-role socialization has significant effects on behavior.

Similarly, while we take our findings as evidence against theories of sex-role socialization, we do not believe that sex-role socialization does not occur or that it is unimportant.

⁶We believe these findings are also inconsistent with the legitimation hypothesis as presently formulated. As we understand that perspective, the norms of the larger society should make alteration of the task structure a more legitimate or empirically usual activity for men than for women. Hence, the legitimation hypothesis suggests significant main effects of sex under the conditions of our study.

What is learned is obviously of importance. In fact, we would argue that both status-effects theories and sex-role theories are theories of role learning. The two theories differ with respect to (1) what they assume is learned, (2) the extent to which what is learned is internalized, and (3) the conditions under which role learning is assumed to affect behavior.

As we interpret the arguments, sex-role theories suggest that women and men learn general patterns of behavior which are internalized. As such, the behavioral implications of role learning are less responsive to changes in the social environment. That is, women are generally passive while men are generally aggressive and these differences are maintained across settings. The situational version of this argument suggests that what is learned is appropriate for particular (but usually not empirically or theoretically specified) situations.

The status-effects arguments suggest that persons learn status-appropriate behavior, and it is not assumed that actors internalize the behaviors. As a consequence, behavior is more dependent on the social context. The behavior of any actor is expected to vary from situation to situation unless the actor's relative status remains the same. Thus, even males know the status-specific, deferent behavior which is expected of persons who occupy lower status positions, and they are perfectly able to perform that behavior when the situation warrants.

Our findings are more supportive of status-effects theory than of sex-role theory--as the two theories are presently formulated--but the results of one study are inadequate to determine the "best" explanation for the behavior of women and

men in same-sex groups. Answering that question requires more rigorous theoretical analysis and further research.

SUMMARY

This paper has reviewed the predictions made by status-effects and sex-role socialization theories for the behaviors of women and men in mixed- and same-sex groups. While the two theories offer similar predictions for mixed-sex groups, the predictions for behavior in same-sex groups diverge. The latter predictions have been tested in a laboratory investigation of the effects of endorsement of task structure on attempts to alter task situations. Our findings indicate no significant main effect of sex and no significant sex by endorsement interaction. We conclude that the findings are more supportive of status-effects than sex-role theory. Theoretical implications of those findings are discussed.

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Table 1

ANALYSIS OF VARIANCE: CUMULATIVE PROPORTION
OF SUBJECTS SURVIVING BY EXPERIMENTAL CONDITION
AND SEX OF SUBJECT

Source	X ²	df	Prob.
Main effects			
Experimental condition (A)	5.269	1	.022
Sex of subject (B)	1.753	1	.186
Interactions			
A x B	.210	1	.500
Total	7.232	3	

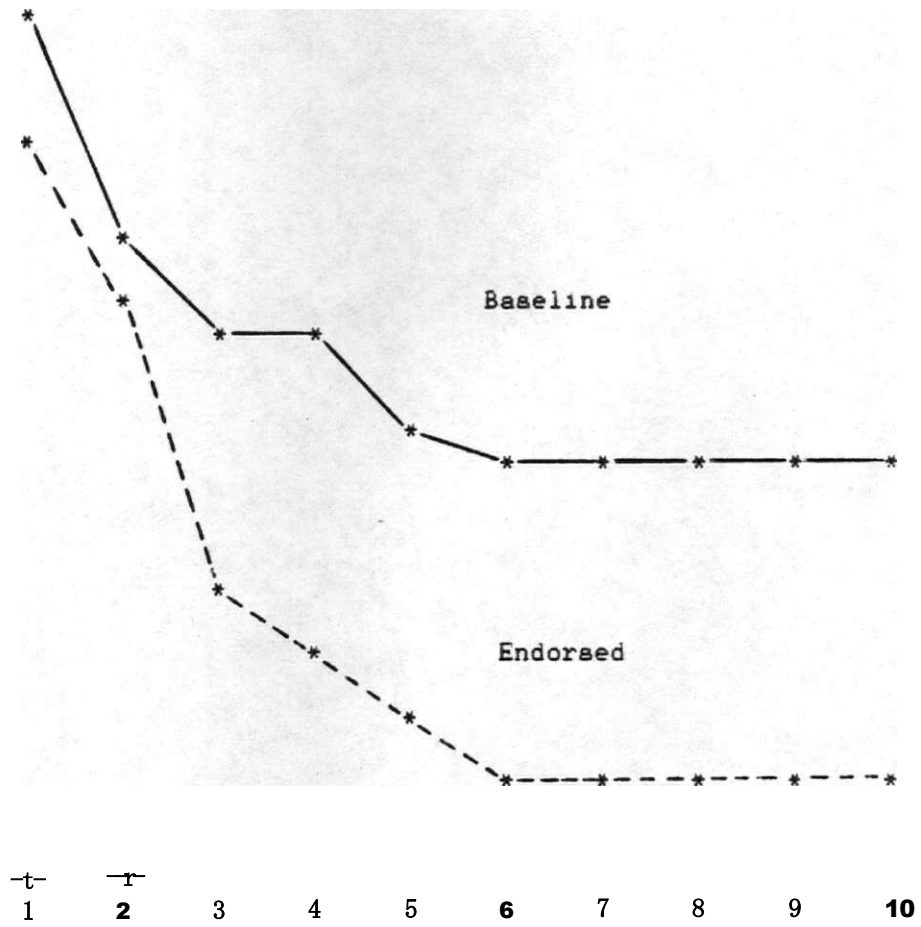


Figure 1. Survival Curves of Proportion of Subjects Surviving Against Number of Trials by Experimental Condition.

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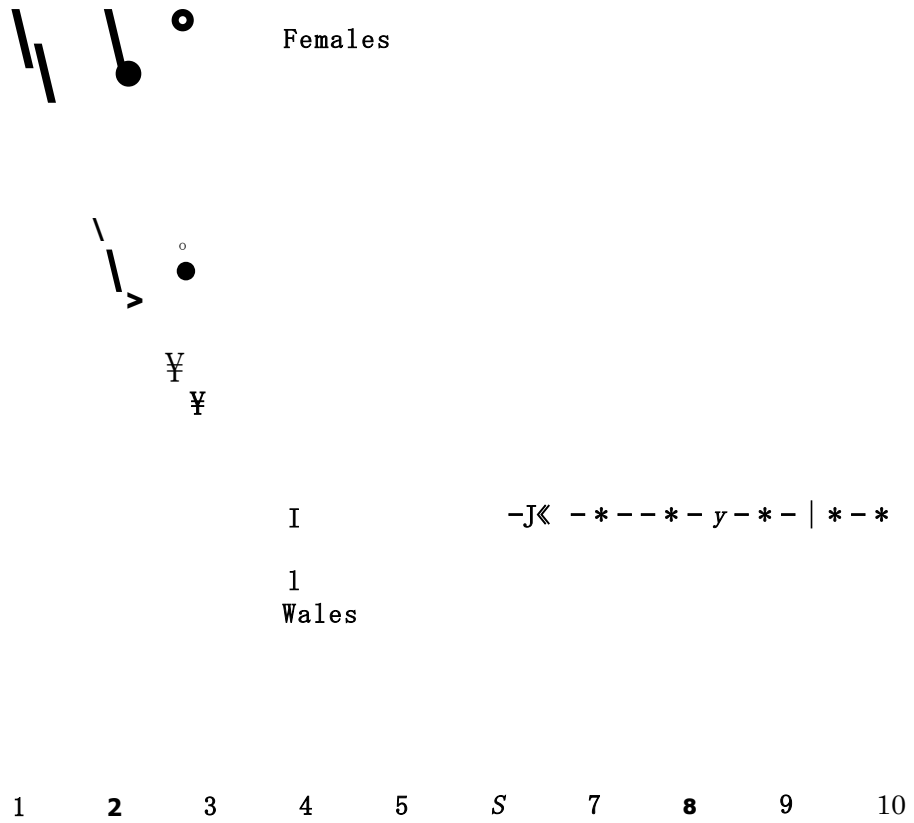


Figure 2. Survival Curves of Proportion of Subjects Surviving Against Number of Trials by Sex of Subject.

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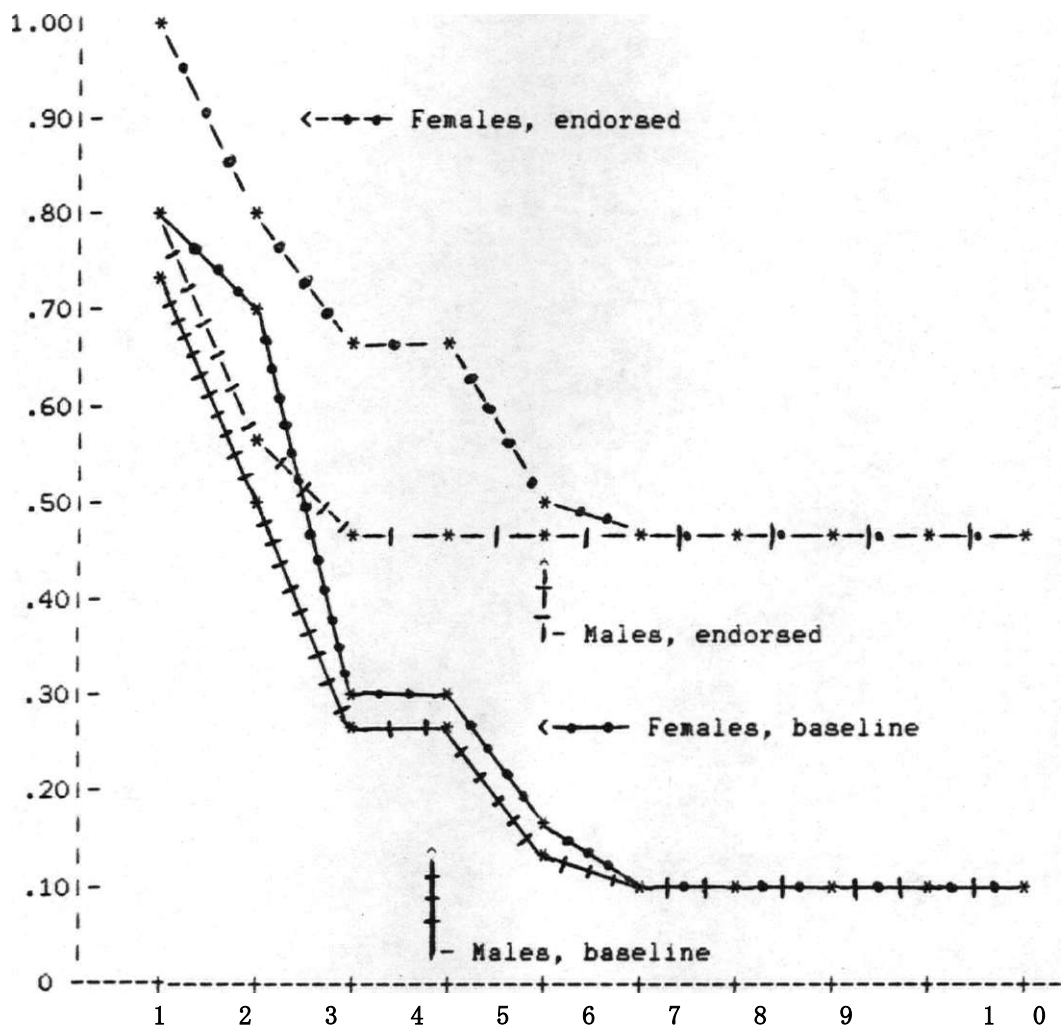


Figure 3. Survival Curves of Proportion of Subjects Surviving Against Number of Trials by Experimental Condition and Sex of Subject.